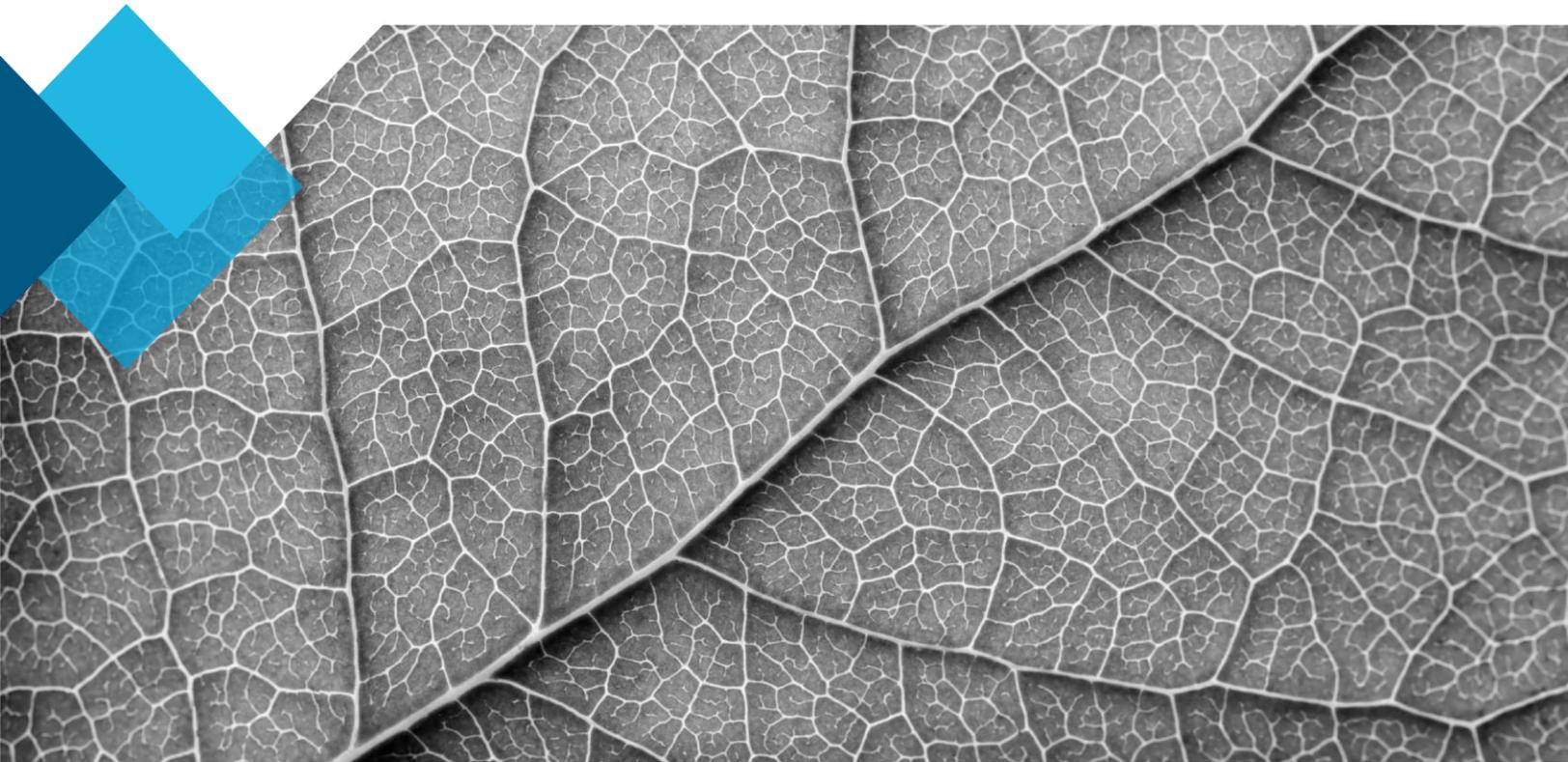




SNC • LAVALIN

Shaw Dam Class Environmental Assessment Draft Environmental Study Report

Ontario Ministry of Natural Resources and Forestry



Environment & Geoscience

December 12, 2018

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Acronyms

DSA	Dam Safety Assessment
EA	Environmental Assessment
EAA	Environmental Assessment Act
EPP	Emergency Preparedness Plan
ESR	Environmental Study Report
IDF	Inflow Design Flood
km	Kilometre
km ²	Kilometre squared
LRIA	Lakes and Rivers Improvement Act
m	Metre
MNRF	Ministry of Natural Resources and Forestry
OMS	Operation, Maintenance and Surveillance (Manual)
RSFD	Resource Stewardship and Facility Development (Projects)

1 Introduction

1.1 Purpose

SNC-Lavalin Inc. (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry (MNRF) to conduct a Category C Class Environmental Assessment (EA) under MNRF's Class Environmental Assessment for Resource Stewardship and Facility Development projects. This process fulfills the requirements of the Ontario Environmental Assessment Act.

The purpose of this study is as follows:

- Summary of baseline environmental conditions;
- Develop alternatives for the undertaking;
- Evaluate the proposed alternatives according to relevant impacts to the natural environment, to land use and resource management, to socio-economic and cultural features, relative cost, and to local and First Nation communities;
- Consultation with Indigenous communities, the public and agencies to evaluate the proposed alternatives and to determine the best alternative to the undertaking; and
- Recommend a Preferred Alternative including specific mitigation measures.

This Draft Environmental Study Report (ESR) summarizes the Class EA process and provides a record of stakeholder consultation. Once the Ministry of Natural Resources and Forestry issues the Statement of Completion for the Class Environmental Assessment, the recommendations made in the Final ESR are considered approved under the Environmental Assessment Act and can proceed to implementation.

1.2 Study Area

The Shaw Dam is located within the district of Algoma, approximately 10 km north of Thessalon in the northeastern portion of the Kirkwood Township in Ontario (refer to **Figure 1**).

The Project Study Area (the Study Area) included the Shaw Dam Lake, and the Little Thessalon River to McCreight's Dam and up to 120 metres from the access road (refer to Section 3.1.3). The Study Area is located within the Georgian Bay Ecoregion (5E), which extends from southeastern Lake Superior in the west to the Quebec border in the east. Climatic conditions within the ecoregion are characterized as cool-temperate and humid. Vegetation cover throughout the ecoregion varies, and includes mixed forest, deciduous forest, coniferous forest and sparse forest. It is underlain by Precambrian bedrock, characterized by a landscape of exposed bedrock, forest cover and wetlands. The Study Area is located in the western portion of the ecoregion, which is characterized by exposed bedrock, till, glaciofluvial outwash deposits, glaciomarine deposits and fluvial deposits.

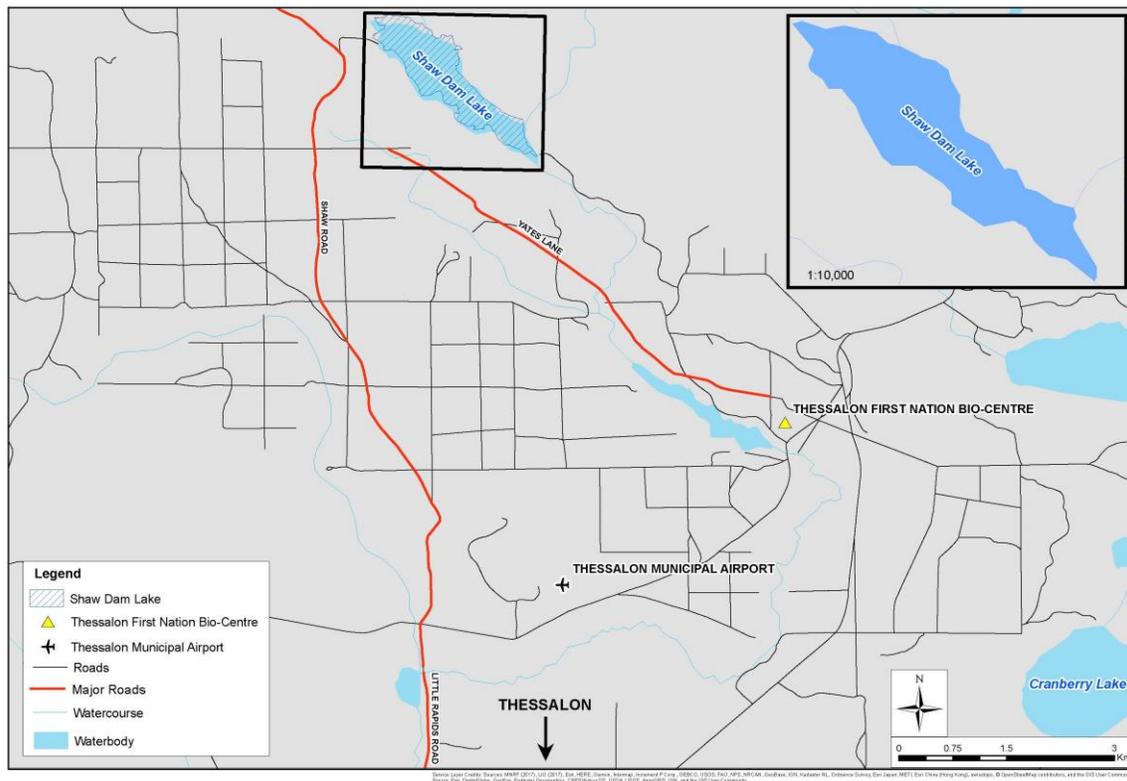


Figure 1 Study Area Keyplan

Hydrologically, the Georgian Bay Eco-region is located within the Great Lakes Basin. The Study Area falls within the Lake Huron watershed, but more specifically the Garden Tertiary watershed. Shaw Lake has an estimated spring baseflow of 1.7 m³/s and an estimated fall baseflow of 0.8 m³/s. The Shaw Lake reservoir is estimated to be 6.5 m³x10⁶. **Figure 2** shows the sub-regional location of the Shaw Dam Lake.

Wildlife of the region surrounding the Study Area includes Moose (*Alces alces*), American Black Bear (*Ursus americanus*), Beaver (*Castor Canadensis*), Snowshoe Hare (*Lepus Americanus*), and White-Tailed deer (*Odocoileus virginianus*). Birds include Bald Eagle (*Haliaeetus leucocephalus*), Common Loon (*Gavia*), Barred Owl (*Strix varia*), Osprey (*Pandion haliaetus*) and Pileated Woodpecker (*Hylatomus pileatus*).

Within the local region surrounding the Study Area, there are a number of lakes, including Birch Lake, Cranberry Lake, Brownlee Lake, Little Basswood Lake, Basswood Lake, Loon Lake and Rose Lake, which support many species of fish. Fish commonly found in the area include Lake Trout (*Salvelinus namaycush*), Lake Whitefish (*Coregonus clupeaformis*), Largemouth Bass (*Micropterus salmoides*), Burbot (*Lota lota*), Smallmouth Bass (*Micropterus dolomieu*), Northern Pike (*Esox Lucius*), Yellow Perch (*Perca flavescens*), as well as small forage fish species.

The Shaw Dam Lake site is underlain by bedrock consisting primarily of rock types belonging to the Cobalt Group of the Huronian Supergroup. The rock types include argillites, arkose, quartz arenite and conglomerates. Immediately to the northeast of the dam site, the geology map indicates Nippising

diabase. A narrow dyke of mafic intrusive rock passes in line with the gorge at the dam site, and extends some 9 m from the dam site in a southeasterly direction.

The Shaw Dam Lake is located within a gorge at the far southeast end of the lake. Steep bedrock slopes rise some 30 m on the southwest and 50 m on the northeast side of the dam. The slope on the southwest side is tree covered with a thin overburden cover. The opposite slope has little vegetation near the lake because of its steepness and probable previous erosion.

Below the dam site, the terrain consists of exposed bedrock, dropping to a lower pond area and rocky basin, which extends downstream to McCreight's Pond.

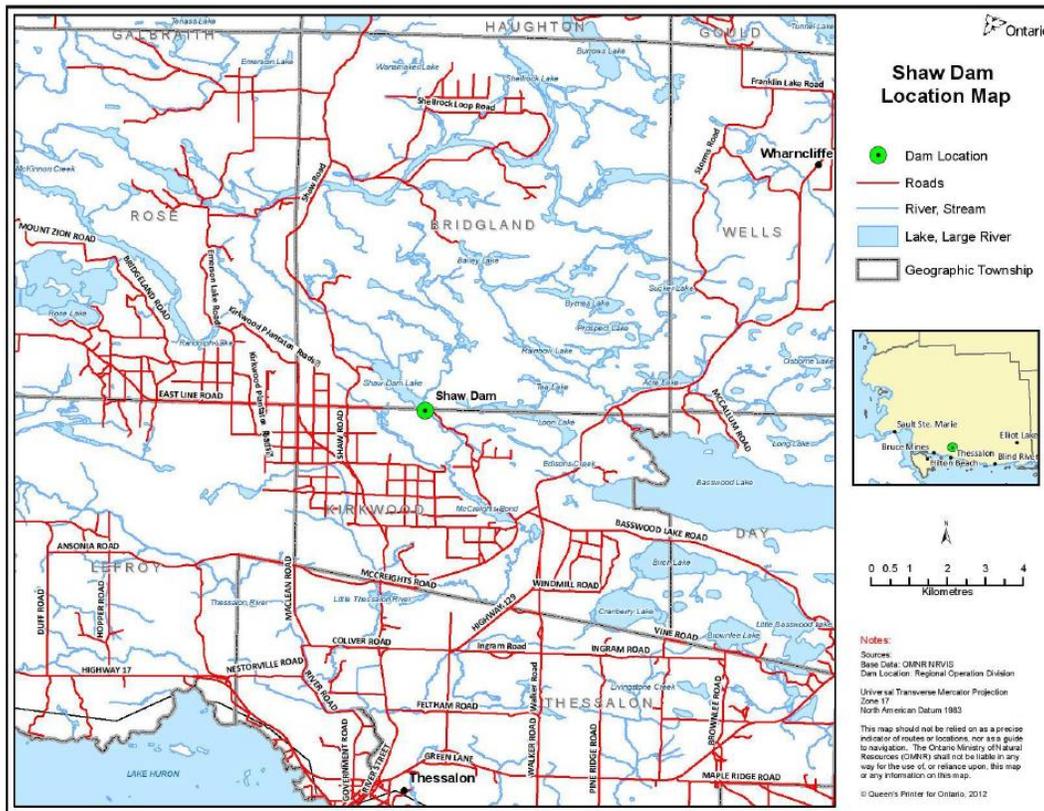


Figure 2: Shaw Dam Location Map

1.3 Project Background

Constructed in 1931, the Shaw Dam is a masonry and concrete gravity structure located on the south end of Shaw Dam Lake, in Ontario, in the Ministry of Natural Resources and Forestry District of Sault Ste. Marie. The dam was constructed for the Thessalon Power Development to replace an earlier dam used by the Town of Thessalon. The dam is approximately 11.91 m high and 97 m long, with an upstream reservoir area of about 0.65 km² and a total drainage area of approximately 99.5 km². This dam is the first of three control dams located on the Little Thessalon River, with McCreight's Dam and Little Rapids Dam located downstream.



Figure 3: Shaw Dam Lake

The discharge capacity of the dam originally consisted of three stop-logs controlled, ogee crest spillway bays and two valved, low-level, gated outlets, all being located in the main dam structure. However, because the low-level outlets were inoperable and the dam was found unstable at peak flows in 1971, the structure was modified for unattended operation to a spill dam by removal of all stop logs from the spillway bays. In addition, the end section of the side wall was removed between 1971 and 1977 to create a free-overflow crest. The level of the overflow crest was marginally higher than the spillway crest level. The MNRF surveyed the site and produced contour and dimensional drawings in November 1983.

Trow Consulting (now EXP) Engineers inspected the dam in 1993 and issued a final report in January 1994. A pond Rating Curve for Operation, Maintenance and Surveillance (OMS) Manual was completed in 2000. A Dam Safety Assessment (DSA) report and Emergency Preparedness Plan (EPP) was completed by Acres International (now Hatch) in April 2001.

Prior to 2001, the dam was classified as a “medium” structure with a “large” storage impoundment. The 2001 Dam Safety Assessment Report (DSA) advised that a failure of the dam could result in a cascade downstream failure of the McCreight’s Dam and the Little Rapids Dam. Such a dam failure could lead to the incremental loss of life and other unacceptable damages downstream of the Little Rapids Dam. As a result, the dam was assigned a “High” Incremental Hazard Potential rating, as per the 1999 draft Ontario

Dam Safety Guidelines. Additionally, the DSA determined that the dam cannot pass an Inflow Design Flood (IDF) without significant overtopping.

Under normal loading conditions, the dam has adequate factors of safety; however, under the IDF and ice loadings, the Shaw Dam is not considered to meet dam safety criteria with respect to stability. To address the concerns highlighted in the DSA (2001) report, during the 2003-2004 period, the wing wall along the spillway and overflow weir were cut to elevation 232.90 masl and 232.43 masl respectively to lower the water level in the head-pond, with an attempt to reduce the risk to dam stability. No major repair and renovation was implemented after 2004.

To improve Shaw Dam's stability and ensure public safety in downstream communities, the DSA recommended that the Shaw Dam be rehabilitated.

1.4 Study Objectives

The purpose of the Shaw Dam Project (the Project) EA process is to complete a Category C Class EA, as per the MNR's RSFD process. This Class EA investigated various alternatives, including the repair, replacement or removal of the Shaw Dam.

As part of a Category C project, consultation with Indigenous communities, and the public are an important component of the Class EA process. The details of the consultation program are discussed in **Section 2.3** to **Section 2.5** of this ESR. As part of this consultation, a public meeting will be held to seek input from area residents, businesses and the community of the study and the assessment of alternatives.

1.5 Alternatives Considered

The following alternatives were assessed as part of the Shaw Dam Class EA:

- **Alternative 1: Do Nothing** – This alternative represents a status quo scenario that considered the potential impacts of the dam remaining in its current state with no repair, replacement or removal activities completed. As the current structure does not meet current safety regulations, this alternative is considered unachievable.
- **Alternative 2: Rehabilitation and Repair** – This alternative considered rehabilitation activities to enhance the structural integrity of the Shaw Dam, and provide for the safe operation and passage of flows up to and including the Inflow Design Flood (IDF). Rehabilitation/repair activities considered included the construction of a cofferdam upstream to allow for work to be undertaken on the structure. Following the construction of the cofferdam, removal of the masonry stone would be undertaken to expose the concrete core of the structure. The guardrail and dam deck would also be removed to allow for support anchors to be installed into the foundation of the Shaw Dam. Following the installation of the foundation anchors, poured concrete would be applied upstream and downstream of the structure to provide additional strengthening. While these rehabilitation/repair works are expected to result in an extension to the Shaw Dam lifespan of 20-30 years, there is the possibility that once the centre core of the structure is visible, the core may be too degraded to repair. Should this alternative be put forward to detail design, a core sample should be taken to determine the feasibility of this alternative.

- **Alternative 3a: Removal of the Existing Dam** – This alternative involves the complete removal and demolition of the Shaw Dam to the original streambed. Prior to the removal of Shaw Dam, a cofferdam would be constructed upstream to allow for the machinery/work necessary for the removal. A program of gradual release of the water in Shaw Dam Lake would be implemented. The gradual release should be scheduled for times outside of flooding season to ensure downstream dams are not put under stress due to the removal of Shaw Dam. Monitoring would be required to ensure that the sediment is not mobilized and transported to downstream reaches. This alternative would be a permanent solution but would likely involve follow up revegetation and plantings. Should this alternative be selected as the Preferred Alternative, recommendations regarding plantings, and sediment control during construction will be determined as the design progresses. It is likely that recommendations regarding plantings will include a strong focus on the introduction of native species. As Alternative 3a would result in a significant change from the current dam, an example of what a similar dam removal project looked like has been included in **Figure 4** and **Figure 5** below.
- **Alternative 3b: Partial Removal of the Existing Dam** – This alternative involves partial decommissioning and removal of the dam. As part of the decommissioning works, the Shaw Dam would be cut to the level of the current spillway elevation (approximately an elevation of 8.2 metres). Following the partial removal of Shaw Dam, concrete anchors would be installed into the foundation of the structure. To provide additional stability to the structure, concrete would be applied to the downstream side of the structure. Upstream of the structure, an overflow crest would be created. The lifespan of this work would likely be 25-30 years depending on the state of the concrete core. Should this alternative be put forward to detail design, a core sample should be taken to determine the feasibility of this alternative.
- **Alternative 4: Remove the Dam and Rebuild Downstream** – This alternative considered a new dam, which would be constructed near the same location (approximately 20 m from the current dam) and meet current dam safety criteria. To allow for the construction work, a cofferdam would need to be constructed to allow for the construction work. The existing water levels downstream and upstream would likely mirror current levels. With the exception of Alternative 3a, this alternative would result in the longest lifespan for the new Shaw Dam.

While the aforementioned alternatives were assessed as part of this ESR, additional alternatives may be identified through the Class EA consultation process. Should additional alternatives be identified, these alternatives will also be assessed to determine the final Preferred Alternative.



Source: Ontario Rivers Alliance, 2017

Figure 4: Armstrong Creek Dam, Markdale Ontario (Before)



Source: Ontario Rivers Alliance, 2017

Figure 5: Armstrong Creek Dam, Markdale Ontario (After)

2 Class Environmental Assessment for Resource Stewardship and Facility Development Projects Process

2.1 Overview

The purpose of the *Environmental Assessment Act* (EAA) is "...the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation, and wise management in Ontario of the environment". The Ministry of Natural Resources and Forestry complies with the Act by: adhering to the conditions of exemption or declaration orders (Orders); or following the requirements of a Class EA; or preparing an Individual EA for specific projects. The Environmental Assessment Act allows for the preparation of Class Environmental Assessments. A Class Environmental Assessment is an approved planning document that defines groups of projects and activities and the environmental assessment (EA) processes that project proponents commit to following for each category of undertaking.

The Class EA process provides a consistent, streamlined, easily understood process for planning and assessing and implementing projects. The process provides a means for the identification of issues and concerns, and the preferred means of addressing them, with due regard to environmental management, protection, and mitigation measures. The process also provides the flexibility to be tailored to the activity, taking into account the environmental setting, public interest, and unique situation requirements. Provided the process is followed, projects and activities included under a Class EA do not require formal review and approval under the EA Act.

An approved Class EA permits a group of projects and activities in a defined class to proceed in accordance with the approved Class EA without having to fulfill the full requirements of an Individual EA under Part II of the EAA for each project. In 2003, the Class EA for MNR Resource Stewardship and Facility Development Projects replaced the Class Environmental Assessment for Small Scale MNR Projects (1992) by updating the requirements applicable to the ten projects covered by that document, and also incorporated the projects covered by several Orders.

This study has followed the process outlined in the Ministry of Natural Resources and Forestry's Class Environmental Assessment Resource Stewardship and Facility Development Projects (2003) which is approved under the Environmental Assessment Act (1990).

The MNR Class EA approach is considered a suitable means for the assessment of and planning for dam projects because such projects:

- Have a common process of planning, design, approval, construction, operation and monitoring; and,
- Have a generally predictable range of effects, which, although significant enough to require environmental assessment, are generally responsive to standard mitigation measures

It is the responsibility of the Ontario Ministry of Natural Resources and Forestry to ensure the planning process, as set out in the Class EA document, is undertaken. The projects assessed are those with

predictable environmental effects, and proposed mitigation measures that will be identified and documented.

2.2 MNR Class EA Process

Based on the screening criteria table completed and the guidance provided in Table 3.2 of the Class EA, it has been determined that this project is a Category C undertaking. This determination was made in large part to recognize that the project is not fully defined and alternatives need to be considered and evaluated. Consultation and consideration of the proposal and reasonable alternatives is anticipated to help to define. In addition, the Category C determination addresses the potential to increase public understanding of the project by examining alternatives and the potential for medium net environmental effects and/or public/agency concern, dependent on which alternative is selected.

As this project has been determined to be a Category C project it will follow the evaluation and consultation process for a Category C project. Generally, the projects subject to Class EA's are characterized by environmental effects that are well understood, recurring in nature and have minimal and/or localized short-term effects on the environment. While some Class EAs deal with a narrow range of related projects, often a project will involve several components. Projects subject to the MNR RSFD Class EA process must undergo the Screening Process described in Section 3.2 of the RSFD process document. The screening process determines the appropriate category a project should be subject to under the Class EA, as shown in **Figure 6**. This Class EA deals with a wide variety of projects, all of which are related to MNR's mandate for resource stewardship and facility development.

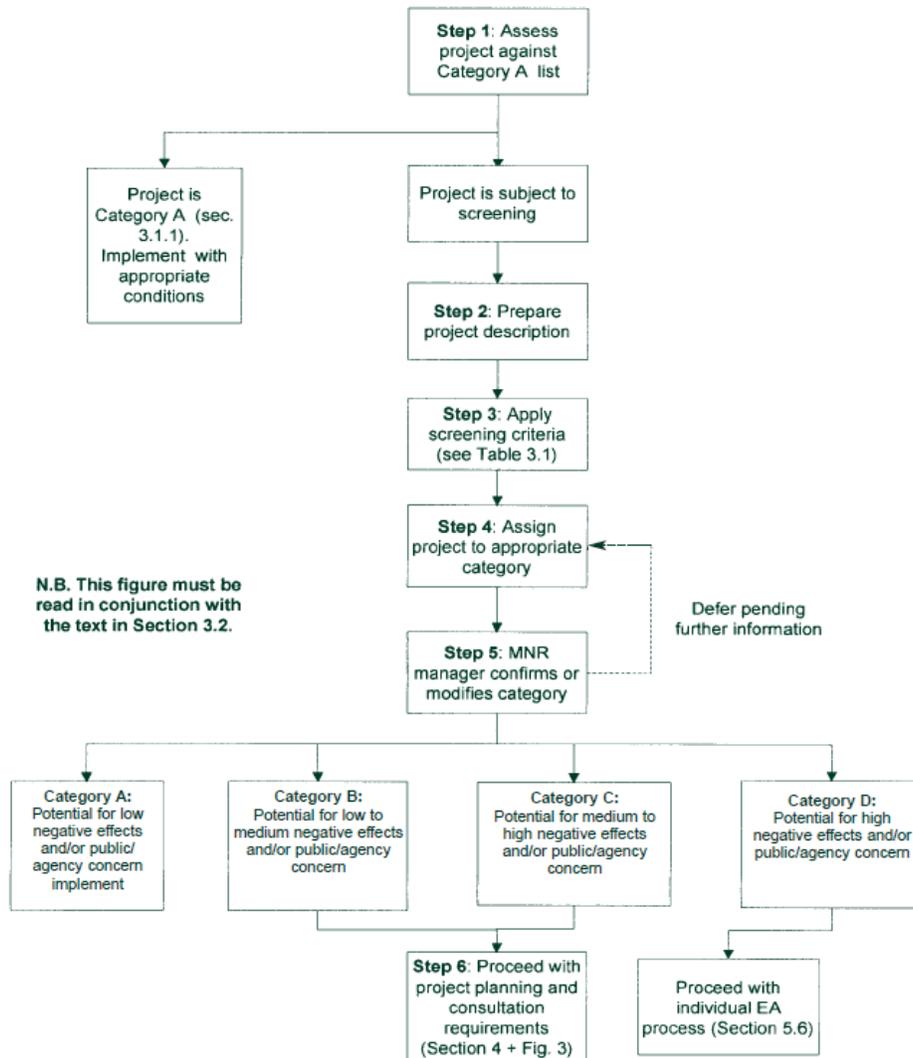


Figure 6: RSFD Class EA Screening Process (2003)

Step 1 of the screening process evaluation confirmed that the Shaw Dam project is not captured within the Category A project list. As a result, a project description (Step 2) and screening criteria table (Step 3) were prepared to assist MNR in assigning an appropriate project category (Steps 4 and 5). Based on the screening criteria table completed, it has been determined that this project is a Category C undertaking, as there is potential for medium to high negative effects and/or public/agency concern. As such, the Class EA will follow the evaluation and consultation process outlined in Section 4.2 of the RSFD Class EA document (2003) as shown in **Figure 7**.

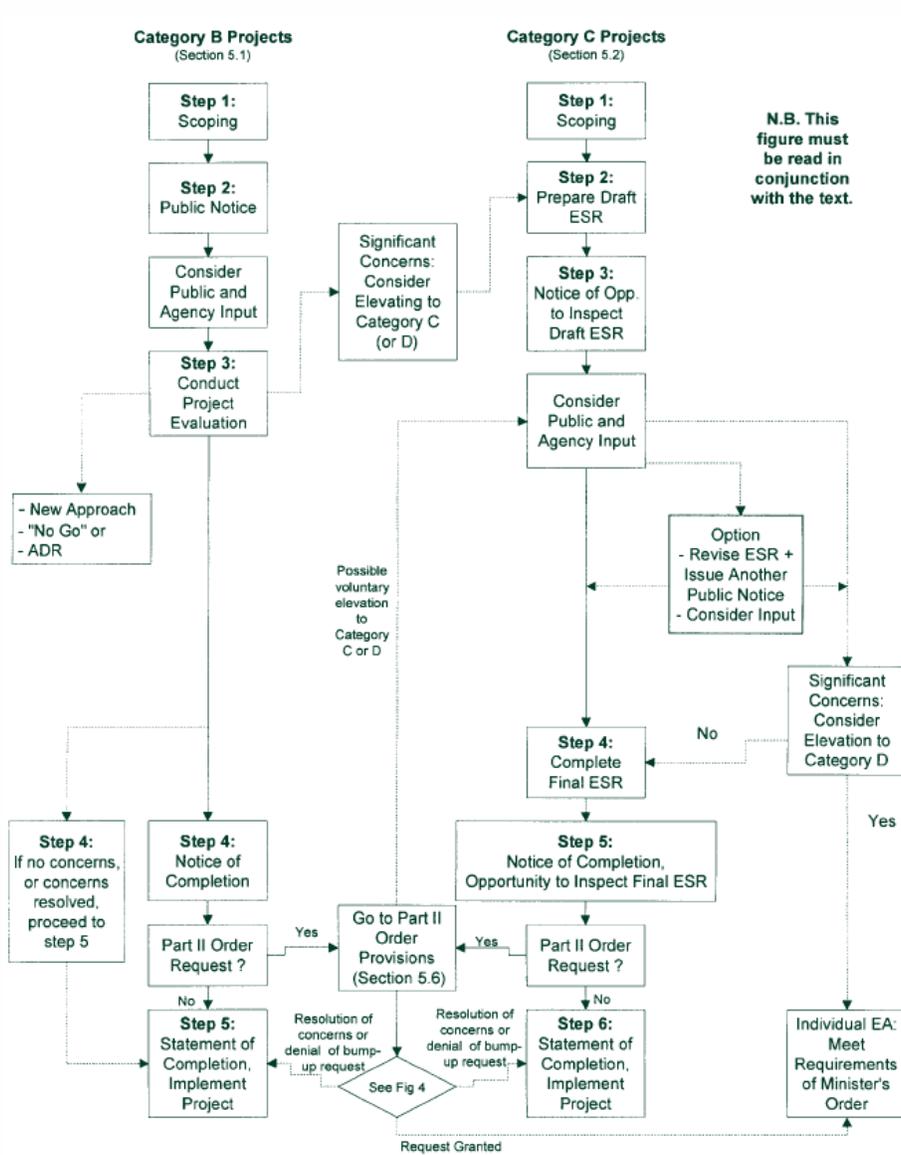


Figure 7: RSED Class EA Project Evaluation Processes for Category B and C Projects (2003)

2.3 Consultation Plan Overview

Early and meaningful engagement of representative interests that may be affected by the project is a critical element of achieving the intent of the Class EA. The purpose of public, agency, and Indigenous community consultation and engagement is to provide those who may have an interest in the project, or those who may wish to participate, with the opportunity to contribute to and inform decisions being made by the project team relating to the project. It provides the proponent with the opportunity to gain

information and knowledge related to social, cultural, economic and environmental considerations of relevance to the project.

SNC-Lavalin and the MNRF plan to continue to consult with the public and other stakeholders, as well as First Nation and Métis organizations. Discussions with various federal and provincial government agencies will be ongoing, as necessary, throughout the Class EA processes, and follow-up permitting and approval processes.

A Consultation Plan has been developed for this study to support the required consultation activities and identify opportunities to further enhance those engagement activities with the general public, interested persons, First Nation and Métis Communities and government agencies.

The Consultation Plan developed for this project is presented in **Appendix A**, and a summary of the engagement and consultation principals governing this project can be found in **Section 2.4** and **Section 2.5**. The Record of Consultation for the Project is presented in **Appendix B**.

2.4 Engagement and Consultation with Indigenous Communities

The MNRF recognizes the value and requirement of early engagement with potentially affected First Nations and Métis communities, as their perspectives on a Project adds value to the process and results. Efforts have been made to ensure that First Nations and Métis communities are made aware of the Project and are given the opportunity to become informed and provide input on the Project.

The following Indigenous Communities have been identified for consultation in connection with this Project:

- Thessalon First Nation;
- Mississauga First Nation;
- Garden River First Nation;
- Batchewana First Nation;
- Métis Nation of Ontario, Historic Sault Ste. Marie Regional Consultation Committee; and
- Bar River Métis Community.

As this project is located within the traditional territory of several Indigenous communities, there is potential to impact First Nations and Métis traditional uses. Preliminary contact and discussions with the aforementioned Indigenous communities has been undertaken to discuss this project and to better understand the use/importance of the Shaw Dam Lake to the Indigenous communities in the area. Each First Nation and Métis community will continue to be engaged throughout the remaining phases of the Project to evaluate the effectiveness of proposed alternatives and ensure any potential impacts are avoided and/or mitigated.

As part of the engagement and consultation for this project a meeting with Thessalon First Nation was held on June 13, 2018. The purpose of this meeting was to introduce the project and to solicit any comments on the project, or the Shaw Dam the Thessalon First Nation was willing to provide. A follow up teleconference with the Thessalon First Nation to present the progress of the project also occurred. Following the release of this draft ESR, an in person meeting will be scheduled with the Thessalon First Nation to obtain any comments they may have on the project, the alternatives, or the ESR. Following the in person meeting with the Thessalon First Nation, a follow up meeting will be scheduled.

Each Indigenous community will receive a copy of the Draft ESR and the Final ESR for comment. All feedback received on the ESR and from any and all meetings will be incorporated into the evaluation of the alternatives and in the selection of the Preferred Alternative.

2.5 Consultation with the Public and Other Parties

A consultation list was prepared for this project identifying local and regional stakeholders who may have an interest in the Shaw Dam Class EA. This consultation list includes local residents, nearby municipalities, provincial agencies, local businesses, interest groups, and any other individuals who expressed an interest in the project. Stakeholders will be notified of the availability of the Draft ESR for review. Notification will take place via a targeted stakeholder mailout, Canada Post Admail to the potentially impacted locations within the Municipality of Huron Shores, and newspaper advertisements in two (2) local area newspapers. The Draft ESR comment period is December 12, 2018 to January 26, 2019. The Draft ESR will be available for review at the following locations:

Huron Shores Public Library
10 Main Street
Iron Bridge, ON
P0R 1H0

Thessalon Public Library
P.O. Box 549
Thessalon, ON
P0R 1L0

Municipality of Huron Shores
7 Bridge Street, P.O. Box 460
Iron Bridge, ON
P0R 1H0

Corporation of the Town of Thessalon
187 Main Street, P.O. Box 220
Thessalon, ON
P0R 1L0

An electronic copy of the ESR will also be made available on the Municipality of Huron Shores website. This report can be accessed using the following: <https://huronshores.ca/category/community-news/>

Comments or questions can be submitted to:

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A Public Meeting will be held to advise local area residents of the project, discuss alternatives, and to obtain feedback regarding the works being evaluated. The Public Meeting is scheduled for **December 18, 2018** at the following location:

Thessalon Township Community Centre
6 pm to 8 pm
4 Little Rapids Road
Town of Thessalon (Little Rapids)
P0R 1L0

Following the conclusion of the Draft ESR review period, the project team will consider the input received, and make revisions where appropriate. A Final ESR will then be completed and made available for a 30-day inspection, along with the issuance of a Notice of Completion. The Notice of Completion will only be provided to those individuals who commented as part of the Notice of Opportunity to Inspect the Draft ESR. The project team will consider comments received and any outstanding issues that may require further consultation. Further consultation is at the discretion of the MNRF at this stage of the process. Input and advice received during the comment period will be discussed in the “Conclusion of EA” component of the Statement of Completion. A Final ESR will then be completed and made available for inspection, along with the issuance of a Notice of Completion. The Notice of Completion will only be provided to those individuals who commented as part of the Notice of Opportunity to Inspect the Draft EA. Should interested and/or affected parties have any outstanding concerns regarding the Project that cannot be resolved in discussions with MNRF and the project team, a submission to the Minister of the Environment, Conservation and Parks may be made, requesting that the Project be subject to an Individual Environmental Assessment under Part II of the Environmental Assessment Act (referred to as a Part II Order request). The deadline for this request is 30 days from the publication/distribution of the Notice of Completion.

Any comments and personal information regarding this project are collected under the authority of the *Environmental Assessment Act* to assist MNRF in making decisions. Comments not constituting personal information as defined by the *Freedom of Information and Protection of Privacy Act*, will be shared among MNRF and others as appropriate, and may be included in documentation available for public review. Personal information will remain confidential unless prior consent to disclose is obtained.

3 Baseline Inventory

3.1.1 Background Review

A background review was completed to help document existing natural heritage conditions in the Shaw Dam Lake Study Area. Background information was gathered from government agencies and other stakeholders, as well as published and unpublished data sources. Information related to the following environmental features was reviewed:

- > Vegetation;
- > Wetlands;
- > Surface water and fisheries;
- > Wildlife and wildlife habitat;
- > Species at Risk; and
- > Protected areas.

3.1.2 Information Sources

The following sources were used to establish the possible presence of natural features for the background review:

- > Aerial photography;
- > Ontario Species at Risk, May 2000, Committee on the Status of Species at Risk in Ontario (COSSARO);
- > Natural Heritage Resources of Ontario Rare Vascular Plants, 1999;
- > Department of Fisheries and Oceans Aquatic Species at Risk Mapping;
- > Royal Ontario Museum ichthyology collection mapping (Royal Ontario Museum 2018);
- > MNRF's Fish ON-line (MNRF 2018b) database;
- > Significant Wildlife Habitat Technical Guide (2000);
- > Significant Wildlife Habitat Ecoregion Criteria Schedules (2012);
- > Natural Heritage Information Centre (NHIC) Biodiversity Explorer database;
- > Provincial Park Management Plans and Life Science Reports (various dates);
- > Committee on the Status of Endangered Wildlife in Canada (COSEWIC) reports;
- > Species at Risk in Ontario (SARO) List;
- > Ontario's Woodland Caribou Conservation Plan (2009);
- > Ontario Mammal Atlas. 1994;
- > Ontario Breeding Bird Atlas (OBBA). 2007;
- > Ontario Herpetofaunal Summary Atlas. 2000; and,
- > Ontario Nature Reptile and Amphibian Atlas.

3.1.3 Vegetation Communities

3.1.3.1 Background Information and Existing Conditions

Shaw Dam Lake is located in Ecodistrict 5E-1 of Ecoregion 5E (Georgian Bay) (Hills 1959; Crins & Uhlig 2000). Typical vegetation within this region includes Sugar Maple (*Acer saccharum*), Yellow Birch (*Betula alleghaniensis*), Eastern Hemlock (*Tsuga canadensis*), and White Pine (*Pinus strobus*) on fresh sites; White Spruce (*Picea glauca*) and Balsam Fir (*Abies balsamea*) on fresh clays and cooler valleys mixed with hardwoods at higher altitudes; and Black Spruce (*Picea mariana*) and Tamarack (*Larix laricina*) in

cold wet areas. Forest climate for this area is mid- humid, warm-boreal. The site location is within the Algoma section of the Great Lakes-St. Lawrence Forest Region, in ecological Site District 5E-1. This region is typified by a mid-humid, warm-boreal climate and supports a variety of tree communities, ranging from softwoods occupying the cool valleys to hardwoods associated with higher altitudes (Hills 1959, Rowe 1972).

3.1.3.2 Ecological Land Classification

Shaw Dam project is located north of the Town of Thessalon in the Province of Ontario (refer to **Figure 1**). Access to the dam is provided by a series of ATV trails or access roads through an area occupied mainly by pine plantation before arriving at the existing natural forest approximately 1.5 km downstream of the dam.

On July 26 of 2018 an assessment of the vegetation present within the project area was conducted in order to delineate and classify vegetation communities possibly affected by the proposed works. The vegetation assessment is based on interpretation of aerial photos and satellite imagery, as well as wandering transects and sample plots taken at key locations along potential access to the site. Classification is based on Ecosites of Ontario – Operational Draft (2009) Great Lakes-St. Lawrence (MNR 2009). The ELC of the Study Area is presented in **Figure 8**.

The proposed development area is located on a hill rising away from the existing access road. Principal canopy species across the site include Red Pine, White Birch, Black Spruce, Trembling Aspen and White Pine. Understorey trees include mainly Red Oak (*Quercus rubra*), Red Maple, and Balsam Fir. Shrub growth was generally sparse (low tree growth was more common) with the most common being Beaked Hazel. There is significant overlap of species composition between the ecosites, and variation in ecosite is principally a question of variation in species abundance at a given location. Soil samples were taken using a hand auger to determine moisture regime. Soils varied across the site but were generally sandy in nature. The major communities along with their constituent ecosites are described below.

Deciduous Forest

A small deciduous forest fragment was found just west of Highway 129, located north of the Yates Lane entrance along an ATV trail. The supercanopy was relatively sparse (trees >20 m, 20% cover) and dominated by Large tooth Aspen (*Populus grandidentata*) with occasional White Pine. Tree species in denser sub canopy layers (40-50% cover) were dominated by Red Maple with White Birch and White Spruce also present. Shrub species included Beaked Hazel (*Cornus cornuta ssp cornuta*) and Fly Honeysuckle (*Lonicera canadensis*) with these lower layers also containing significant presence of Red Maple and Red Oak (*Quercus rubra*). Herbaceous cover was fairly dense (40% cover) and included Canada Mayflower (*Maianthemum canadensis*), Bracken Fern (*Pteridium aquilinum*), with less frequent Wintergreen (*Gaultheria procumbens*) and Bluebead Lily (*Clintonia borealis*). Soils were coarse sandy and the moisture regime was determined to be Dry (0). The ecosite designation for this community is G040 – Dry, Sandy: Aspen-Birch Hardwood.

Closer to Yates Lane a number of rock barren areas were identified.

Conifer/Mixedwood Forest

This forest community is located along the access road/trail to the dam where the Little Thessalon River turns south west (approximately 1.5 km downstream). The supercanopy was variable (5-40% cover) and consisted of species including White Pine, White Birch, Large tooth Aspen, Trembling Aspen, and White Spruce in various patches of conifer/mixedwoods. Subcanopy and understory growth was more dense (generally 50% cover) with a high component of Balsam Fir. Other common species in the regeneration layer included White Spruce, Red Maple, White Birch and Red Oak. Shrub and low tree layers were generally sparse (10-20% cover) consisting of mainly Beaked Hazel, Bush Honeysuckle (*Diervilla lonicera*) as well as small trees matching the subcanopy layers. The herbaceous groundcover was patchy based on local soil conditions but the main species encountered were Bracken Fern, Canada Mayflower, Goldthread (*Coptis trifolia*), Wild Sasparilla (*Aralia nudicaulis*), Large-leaved Aster (*Eurybia macrophylla*), and Bunchberry (*Cornus canadensis*). Soils were generally found to be deep (<1m) consisting of medium-coarse sandy loams and the moisture regime was Fresh (2). Ecosites identified within this community were G053 – Dry to Fresh, Coarse: Conifer, and G055 – Dry to Fresh, Coarse: Aspen-Birch Hardwood.

Interspersed along the access road and within the conifer/mixedwood forest were a number of rock barren inclusions which fall under the ecosite designation G164 – Rock Barren. These are exposed bedrock outcroppings with limited tree/shrub cover. These outcroppings were restricted to only a few metres in height and included species such as White Pine, White Birch, Red Oak, Chokecherry (*Prunus virginiana*), and Large tooth Aspen growing in cracks or small surficial deposits. Low shrubs including Velvet leaf Blueberry (*Vaccinium myrtilloides*) and Low Sweet Blueberry (*Vaccinium angustifolium*) were also present. Grasses were also present in small surficial deposits though species identification was not possible as they were past fruiting and were extremely dry. Lichen species were fairly widespread (50% cover) and included Reindeer Lichen (*Cladina rangiferina*), Cladonia sp., and Woolly Foam Lichen (*Sterocaulon tomentosum*).

Pine Plantation

This community occupies most of the area between the Little Thessalon River and Highway 129. The majority of the plantation is dominated by Red Pine, but some areas are White Pine dominated. The supercanopy is fairly dense (35-50% cover) and exclusively either Red Pine or White Pine depending on the location, in both cases over 20 m high. Subcanopy/understory was variable in cover (10-60% cover) consisting mainly of Red Maple, and Red Oak. Other species in these layers include Large tooth Aspen, Balsam Fir and White Spruce. The shrub layer was typically dense (40-60% cover), though not always so, and included Beaked Hazel, Bush Honeysuckle, and small trees found in the upper layers. Herbaceous cover was also variable consisting mainly of Bracken Fern, Canada Mayflower, and Wild Sarsaparilla. Soils were usually deep, although shallow soils (~25 cm deep) were encountered nearer Highway 129. They were uniformly coarse sandy and the moisture regime was Dry (0). Ecosites comprising this community included: G011 – Very Shallow, Dry to Fresh: Red Pine-White Pine Conifer, and G033 – Dry, Sandy: Red Pine-White Pine Conifer.

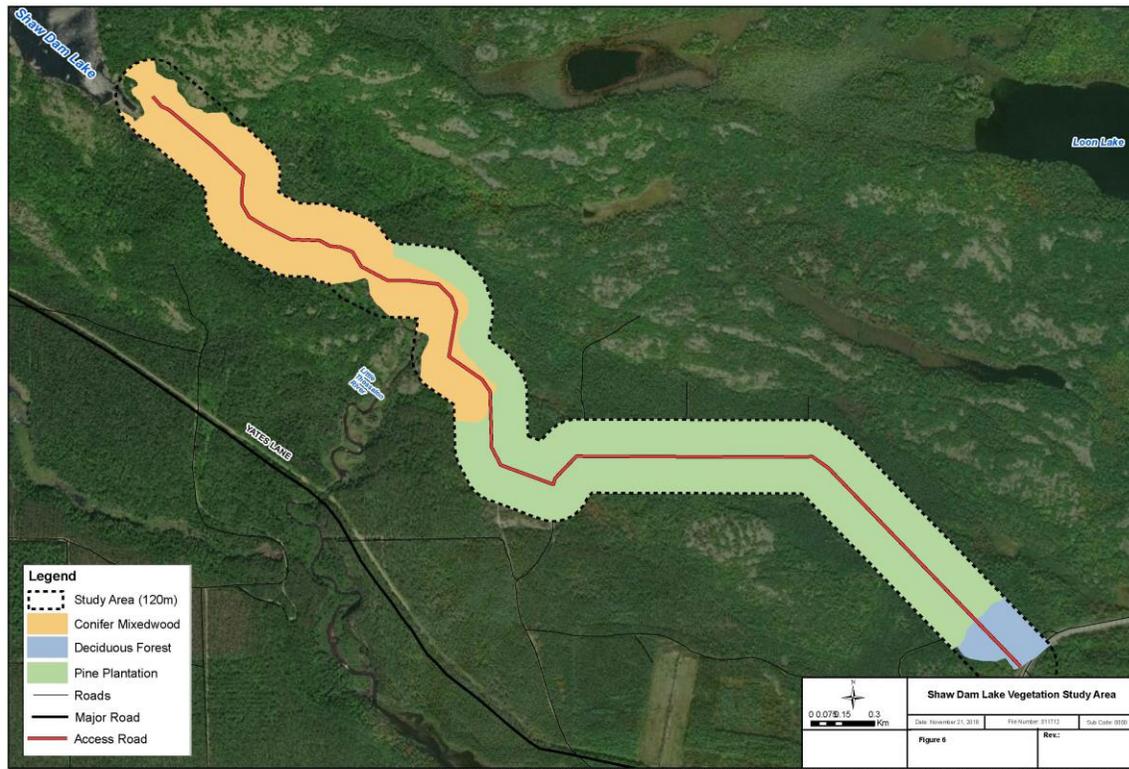


Figure 8: Shaw Dam Lake ELC Map

3.1.4 Wildlife

3.1.4.1 Amphibians – Anuran Calling

A breeding amphibian survey was not completed for this project.

3.1.4.2 Breeding Birds

Formal breeding bird surveys were not completed, however birds were anecdotally recorded during the field investigations and records were obtained from the Ontario Breeding Bird Atlas (OBBA, 2007).

Twenty-seven (27) species of birds were observed or heard during the field investigations between July 26 and 28, 2018. The list of birds identified in the OBBA as well as those detected during the field surveys are listed in **Table 1**.

The OBBA database identified records for seventy-eight (78) bird species within the 10km² area 17LM03 in the vicinity of Shaw Dam Lake (OBBA, 2018). There are five species listed under the *Ontario Endangered Species Act* (ESA) and include Whip-poor-will (*Antrostomus vociferus*), Eastern Wood Peewee (*Contopus virens*), Barn Swallow (*Hirundo rustica*), Canada Warbler (*Cardellina canadensis*) and Bobolink (*Dolichonyx oryzivorus*). The Eastern Wood Peewee and Canada Warbler are listed as Special Concern and receive no habitat or species protection under the Act and does receive species and habitat protection under the Act.

NHIC database records were accessed in August 2018 for the following regional square within Shaw Dam Lake and adjacent lands; 17LM0435. This square was used for information purposes as it is nearby Shaw Dam Lake and there were no squares located directly at Shaw Dam Lake. The results of the NHIC search are summarized in **Table 1**.

There is no Provincially Significant Wetlands (PSW), Significant Wildlife Habitats (SWH), ANSI, or provincial parks in the records for Shaw Dam Lake adjacent lands. The Byrnes Lake White Birch Conservation Reserve is located approximately 3 km to the northeast of the site. The Conservation Reserve covers 1,569 ha and is characterized mainly by mixed wood forest types dominated by White Birch, poplar species, and White Pine generally between 30 and 90 years old.

Ontario Partners in Flight (PIF) and the Ontario Landbird Conservation Plan identify bird species of conservation concern in Ontario and Manitoba: Boreal Hardwood Transition Region (Bird Conservation Region 12 or BCR 12). The purpose of the plan is to “guide landbird conservation efforts in order to sustain the distribution, diversity and abundance of birds in this settled landscape” (Ontario Partners in Flight, 2008). The Landbird Conservation Plan has identified area sensitive bird species and these habitats typically coincide with interior habitat 100m in from forest edges. There are twenty-six (26) area sensitive species as designated by Bird Studies Canada (Courturier, 1999) that were noted in the Ontario Breeding Bird Atlas square in the Shaw Dam Lake area and include: Common Goldeneye (*Bucephala clangula*), Common Merganser (*Mergus merganser*), American Bittern (*Botaurus lentiginosus*), Sandhill Crane (*Antigone canadensis*), Barred Owl (*Strix varia*), Whip-poor-will (*Caprimulgus vociferus*), Hairy Woodpecker (*Leuconotopicus villosus*), Pileated Woodpecker (*Dryocopus pileatus*), Least Flycatcher (*Empidonax minimus*), Blue-headed Vireo (*Vireo solitarius*), Red-breasted Nuthatch (*Sitta canadensis*), Brown Creeper (*Certhia americana*), Winter Wren (*Troglodytes hiemalis*), Veery (*Catharus fuscescens*), Hermit Thrush (*Catharus guttatus*), Northern Parula (*Setophaga americana*), Magnolia Warbler (*Setophaga magnolia*), Black-throated Green Warbler (*Setophaga virens*) (---), Blackburnian Warbler (*Setophaga fusca*), Pine Warbler (*Setophaga pinus*), Black-and-White Warbler (*Mniotilta varia*), American Redstart (*Setophaga ruticilla*), Ovenbird (*Seiurus aurocapilla*), Canada Warbler (*Cardellina canadensis*), Savannah Sparrow (*Passerculus sandwichensis*) and Scarlet Tanager (*Piranga olivacea*).

Table 1: Bird Species Potentially Present within the Shaw Dam Lake Study Area

Family	Scientific Name	Common Name	G-Rank ¹	S-Rank ¹	Breeding Evidence	COSEWIC Status	COSSARO Status	OBBA species	Detected in Study Area
Anatidae	<i>Brant canadensis</i>	Canada Goose	G5	S5	CONF	No status	No Status	X	X
	<i>Anas platyrhynchos</i>	Mallard	G5	S5	CONF	No status	No status	X	
	<i>Lophodytes cucullatus</i>	Hooded Merganser	G5	S5	POSS	No status	No status	X	
Phasianidae	<i>Bonasa umbellus</i>	Ruffed Grouse	G5	S5	CONF	No status	No status	X	X
Gaviidae	<i>Gavia immer</i>	Common Loon	G5	S4	POSS	No status	No status	X	X
Phalacrocoracidae	<i>Phalacrocorax auritus</i>	Double-crested Cormorant	G5	S5	NONE	No status	No status		X
Cathartidae	<i>Cathartes aura</i>	Turkey Vulture	G5	S5	NONE	No status	No status		X
Accipitridae	<i>Buteo jamaicensis</i>	Red-tailed Hawk	G5	S5	POSS	No status	No status		
	<i>Buteo platypterus</i>	Broad-winged Hawk	G5	S5	PROB	No status	No status	X	
Gruidae	<i>Antigone canadensis</i>	Sandhill Crane	G5	S4	POSS	No status	No status	X	X
Charadriidea	<i>Charadrius vociferus</i>	Killdeer	G5	S5	CONF	No status	No status		

Scolopacidae	<i>Scolopax minor</i>	American Woodcock	G5	S5	POSS	No status	No status	X	
	<i>Actitis macularius</i>	Spotted Sandpiper	G5	S5	NONE	No status	No status		X
Laridae	<i>Larus delawarensis</i>	Ring-billed Gull	G5	S5	NONE	No status	No status		X
	<i>Larus argentatus</i>	Herring Gull	G5	S5	NONE	No status	No status		
Columbidae	<i>Columba livia</i>	Rock Dove	G5	SE	POSS	No status	No status		
	<i>Zenaida macroura</i>	Mourning Dove	G5	S5	POSS	No status	No status	X	
Cuculidae	<i>Coccyzus erythrophthalmus</i>	Black-Billed Cuckoo	G5	S4	POSS	No status	No status	X	
	<i>Coccyzus americanus</i>	Yellow-Billed Cuckoo	G5	S4	POSS	No status	No status	X	
Apodidae	<i>Chaetura pelagica</i>	Chimney Swift	G5	S4	NONE	THR	THR	X	
Strigidae	<i>Strix varia</i>	Barred Owl	G5	S5	POSS	No status	No status	X	
Trochilidae	<i>Archilochus colubris</i>	Ruby-throated Hummingbird	G5	S5	POSS	No status	No status	X	
Alcedinidae	<i>Megaceryle alcyon</i>	Belted Kingfisher	G5	S5	POSS	No status	No status	X	
Picidae	<i>Sphyrapicus varius</i>	Yellow-Bellied	G5	S5	CONF	No status	No status	X	

		Sapsucker							
	<i>Picoides pubescens</i>	Downy Woodpecker	G5	S5	POSS	No status	No status	X	X
	<i>Picoides tridactylus</i>	Hairy Woodpecker	G5	S5	POSS	No status	No status	X	
	<i>Colaptes auratus</i>	Northern Flicker	G5	S5	POSS	No Status	No Status	X	X
	<i>Dryocopus pileatus</i>	Pileated Woodpecker	G5	S4	PROB	No status	No status	X	X
Falconidae	<i>Falco sparverius</i>	American Kestrel	G5	S5	NONE	No status	No status		X
Tyrannidae	<i>Contopus cooperi</i>	Olive-Sided Flycatcher	G4	S5	POSS	SC	SC	X	
	<i>Empidonax alnorum</i>	Alder Flycatcher	G5	S5	PROB	No status	No status	X	X
	<i>Empidonax minimus</i>	Least Flycatcher	G5	S5	POSS	No status	No status	X	
	<i>Sayornis phoebe</i>	Eastern Phoebe	G5	S5	POSS	No status	No status	X	
	<i>Myiarchus crinitus</i>	Great Crested Flycatcher	G5	S5	NONE	No status	No status		X
	<i>Tyrannus tyrannus</i>	Eastern	G5	S5	CONF	No status	No status	X	

		Kingbird							
Corvidae	<i>Perisoreus canadensis</i>	Gray Jay	G5	S5	CONF	No status	No status	X	
	<i>Cyanocitta cristata</i>	Blue Jay	G5	S5	CONF	No status	No status	X	X
	<i>Corvus brachyrhynchos</i>	American Crow	G5	S5	POSS	No status	No status	X	X
	<i>Corvus corax</i>	Common Raven	G5	S5	CONF	No status	No status	X	X
Vireonidae	<i>Vireo solitarius</i>	Blue-headed Vireo	G5	S5	PROB	No status	No status	X	X
	<i>Vireo olivaceus</i>	Red-eyed Vireo	G5	S5	CONF	No status	No status	X	X
Hirundinidae	<i>Tachycineta bicolor</i>	Tree Swallow	G5	S5	POSS	No status	No status	X	
	<i>Hirundo rustica</i>	Barn Swallow	G5	S5	CONF	THR	THR		
Paridae	<i>Poecile atricapilla</i>	Black-capped Chickadee	G5	S5	CONF	No status	No status	X	X
Sittidae	<i>Sitta canadensis</i>	Red-breasted Nuthatch	G5	S5	POSS	No status	No status	X	X
Troglodytidae	<i>Troglodytes hiemalis</i>	Winter Wren	G5	S5	POSS	No status	No status	X	
Regulidae	<i>Regulus satrapa</i>	Golden-crowned	G5	S5	POSS	No status	No status	X	

		Kinglet							
Turdidae	<i>Catharus fuscescens</i>	Veery	G5	S4	POSS	No status	No status	X	
	<i>Catharus ustalatus</i>	Swainson's Thrush	G5	S5	POSS	No status	No status	X	
	<i>Catharis guttatus</i>	Hermit Thrush	G5	S5	POSS	No status	No status	X	
	<i>Hylocichla mustelina</i>	Wood Thrush	G4	S5	POSS	THR	SC	X	
	<i>Turdus migratorius</i>	American Robin	G5	S5	CONF	No status	No status	X	
Mimidae	<i>Dumetella carolinensis</i>	Gray Catbird	G5	S5	CONF	No status	No status	X	
	<i>Mimus polyglottos</i>	Northern Mockingbird	G5	S5	PROB	No status	No status		
Sturnidae	<i>Sturnus vulgaris</i>	European Starling	G5	SE	CONF	No status	No status		
Bombycillidae	<i>Bombycilla cedrorum</i>	Cedar Waxwing	G5	S5	PROB	No status	No status	X	X
Parulidae	<i>Seiurus aurocapilla</i>	Ovenbird	G5	S5	PROB	No status	No status	X	
	<i>Parkesia noveboracensis</i>	Northern Waterthrush	G5	S5	POSS	No status	No status	X	
	<i>Vermivora cyanoptera</i>	Blue-winged Warbler	G5	S4	NONE	No status	No status		

	<i>Mniotilta varia</i>	Black-and-White Warbler	G5	S5	PROB	No status	No status	X	X
	<i>Oreothlypis ruficapilla</i>	Nashville Warbler	G5	S5	PROB	No status	No status	X	
	<i>Geothlypis philadelphia</i>	Mourning Warbler	G5	S5	POSS	No status	No status	X	
	<i>Geothlypis trichas</i>	Common Yellowthroat	G5	S5	PROB	No status	No status	X	
	<i>Setophaga petechia</i>	American Redstart	G5	S5	CONF	No status	No status	X	
	<i>Setophaga magnolia</i>	Magnolia Warbler	G5	S5	PROB	No status	No status	X	
	<i>Setophaga fusca</i>	Blackburnian Warbler	G5	S5	POSS	No status	No status	X	
	<i>Dendroica petechia</i>	Yellow Warbler	G5	S5	CONF	No status	No status	X	
	<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler	G5	S5	CONF	No status	No status	X	
	<i>Setophaga caerulescens</i>	Black-throated Blue Warbler	G5	S5	POSS	No status	No status	X	
	<i>Setophaga coronata</i>	Yellow-rumped Warbler	G5	S5	PROB	No status	No status	X	

	<i>Setophaga virens</i>	Black-throated Green Warbler	G5	S5	PROB	No status	No status	X	
	<i>Cardellina canadensis</i>	Canada Warbler	G5	S5	PROB	THR	SC	X	
Thraupidae	<i>Piranga olivacea</i>	Scarlet Tanager	G5	S5	PROB	No status	No status	X	
Emberizidae	<i>Pipilo erythrophthalmus</i>	Eastern Towhee	G5	S5	PROB	No status	No status		
	<i>Spizella passerina</i>	Chipping Sparrow	G5	S5	PROB	No status	No status	X	
	<i>Spizella pusilla</i>	Field Sparrow	G5	S5	CONF	No status	No status		
	<i>Passerculus sandwichensis</i>	Savannah Sparrow	G5	S5	CONF	No status	No status		
	<i>Melospiza melodia</i>	Song Sparrow	G5	S5	CONF	No status	No status	X	X
Cardinalidae	<i>Cardinalis cardinalis</i>	Northern Cardinal	G5	S5	CONF	No status	No status		
	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	G5	S5	POSS	No status	No status	X	
	<i>Passerine cyanea</i>	Indigo Bunting	G5	S5	POSS	No status	No status	X	
Icteridae	<i>Agelaius phoeniceus</i>	Red-Winged Blackbird	G5	S5	CONF	No status	No status		

	<i>Quiscalus quiscula</i>	Common Grackle	G5	S5	PROB	No status	No status	X	
	<i>Molothrus ater</i>	Brown-Headed Cowbird	G5	S5	PROB	No status	No status		
Passerellidae	<i>Zonotrichia albicollis</i>	White-throated Sparrow	G5	S5	CONF	No status	No status	X	X
	<i>Melospiza lincolni</i>	Lincoln's Sparrow	G5	S5	PROB	No status	No status	X	
	<i>Melospiza georgiana</i>	Swamp Sparrow	G5	S5	PROB	No status	No status	X	
Fringillidae	<i>Carduelis tristis</i>	American Goldfinch	G5	S5	PROB	No status	No status	X	X
	<i>Haemorhous purpureus</i>	Purple Finch	G5	S5	POSS	No status	No status	X	
Passeridae	<i>Passer domesticus</i>	House Sparrow	G5	SE	PROB	No status	No status	X	

3.1.4.3 Mammals/Reptiles

Incidental mammal surveys were conducted to enable the delineation of habitat and completion of wildlife inventory. Visual observations of area wildlife (including mammals and insects) were recorded during the site investigation at Shaw Dam Lake and the access roads including:

- > Den sites, nesting, breeding, migratory stopover, overwintering areas, and all areas that are recognized as Significant Wildlife Habitat (per the Technical Guide, MNR, 2000) in compliance with the Provincial Policy Statement (PPS) (Ministry of Municipal Affairs and Housing, 2014);
- > Comprehensive list of all wildlife observed in the project area, with their respective rank identified (e.g., local, provincial, national ranking);
- > Opportunistic sightings or sign of mammal presence during field activities were also recorded.

Mammals were also documented according to incidental sightings including sight, smell, scat, trails, tracks, roadkill or other evidence of presence within the project area.

Incidental wildlife observations at Shaw Dam Lake and the access roads include: Moose (*Alces alces*), Black Bear (*Ursus americanus*), White-tailed Deer (*Odocoileus virginianus*), Beaver (*Castor canadensis*), Wolf (*Canis lupus*), Eastern Chipmunk (*Tamias striatus*) and Red Squirrel (*Sciurus vulgaris*). All of these mammals are common and secure in Ontario, and include species that are tolerant of human presence and disturbance, commonly found in urban and urbanizing landscapes.

No mammal Species at Risk or potential habitat were documented in the Study Area.

A Snapping Turtle (*Chelydra serpentina*) was observed in the Little Thessalon River approximately 800 m downstream of the dam (refer to **Figure 9**). There is no turtle habitat in the vicinity of the dam. Snapping Turtle is listed as a species of Special Concern under the *Endangered Species Act* and does not receive any habitat or individual protection under the Act.

3.1.5 Significant Wildlife Habitat

Wildlife habitat is defined as areas where plants, animals, and other organisms live and find adequate amounts of food, water, shelter, and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual life cycle; and areas which are important to migratory or non-migratory species (OMMAH, 2014).

Wildlife habitat is referred to as significant if it is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System (OMMAH, 2014).

Guidelines and criteria for the identification of significant wildlife are detailed in the Significant Wildlife Habitat Technical Guide (OMNR, 2000), Draft Ecoregion 5E Significant Wildlife Habitat Criterion Schedule (MNR, 2012), and the Natural Heritage Reference Manual (OMNR, 2009). Significant wildlife habitat is described under four main categories:

- > Seasonal concentrations of animals;
- > Rare vegetation communities or specialized habitats for wildlife;
- > Wildlife movement corridors; and
- > Habitats of Species of Conservation Concern.



Figure 9: Snapping Turtle Observed in the Little Thessalon River

For a listing of the wildlife identified as potentially present within the Study Area, refer to **Table 2**.

Table 2: Wildlife Potentially Present within the Shaw Dam Lake Study Area

Family	Scientific Name	Common Name
Insectivora	<i>Sorex cinereus</i>	Common Shrew
	<i>Sorex hoyi</i>	Pygmy Shrew
	<i>Condylura cristata</i>	Star-nosed Mole
Chiroptera	<i>Myotis lucifuga</i>	Little Brown Myotis
	<i>Lasionycteris noctivagans</i>	Silver-haired Bat

Family	Scientific Name	Common Name
	<i>Eptesicus fuscus</i>	Big Brown Bat
	<i>Lasiurus borealis</i>	Eastern Red Bat
	<i>Lasiurus cinereus</i>	Hoary Bat
Lagomorpha	<i>Lepus americanus</i>	Snowshoe Hare
Rodentia	<i>Tamias striatus</i>	Eastern Chipmunk
	<i>Marmota monax</i>	Woodchuck
	<i>Sciurus carolinensis</i>	Gray Squirrel
	<i>Tamiasciurus hudsonicus</i>	Red Squirrel
	<i>Glaucomys sabrinus</i>	Northern Flying Squirrel
	<i>Castor canadensis</i>	Beaver
	<i>Peromyscus maniculatus</i>	Deer Mouse
	<i>Clethrionomys gapperi</i>	Southern Red-backed Vole
	<i>Microtus pennsylvanicus</i>	Meadow Vole
	<i>Ondatra zibethicus</i>	Muskrat
	<i>Rattus norvegicus</i>	Norway Rat
	<i>Mus musculus</i>	House Mouse
	<i>Napaeozapus insignis</i>	Woodland Jumping Mouse
	<i>Erethizon dorsatum</i>	Porcupine
Carnivora	<i>Canis latrans</i>	Coyote
	<i>Canis lupus</i>	Gray Wolf
	<i>Vulpes vulpes</i>	Red Fox
	<i>Ursus americanus</i>	Black Bear
	<i>Procyon lotor</i>	Raccoon
	<i>Martes americana</i>	American Marten

Family	Scientific Name	Common Name
	<i>Martes pennantii</i>	Fisher
	<i>Mustela erminea</i>	Ermine
	<i>Mustela vison</i>	Mink
	<i>Mephitis mephitis</i>	Striped Skunk
	<i>Lontra Canadensis</i>	River Otter
	<i>Lynx Canadensis</i>	Canada Lynx
	<i>Lynx rufus</i>	Bobcat
Artiodactyla	<i>Odocoileus virginianus</i>	White-tailed Deer
	<i>Alces alces</i>	Moose

3.1.5.1 Seasonal Concentrations of Animals

Areas of seasonal concentrations of animals are defined as “areas where animals occur in relatively high densities at specific periods in their life cycle and/or particular seasons.” At these times, species are vulnerable to ecological interferences or weather impacts. Areas of seasonal concentration are typically small in comparison to the larger habitat areas used by species at other times of the year. Examples include migrant stopover areas for birds, winter deer yards, bird breeding colonies, amphibian concentration areas, and hibernacula for snakes or bats. The identification of habitats associated with seasonal concentrations of species is typically based on known occurrences (MNR, 2009).

An assessment was carried out to determine the potential for wildlife concentration areas on the OMSF Site. Resources and protocols outlined in the OMNR Significant Wildlife Habitat Technical Guide (2000) and Draft Ecoregion 5E Significant Wildlife Habitat Criterion Schedule (MNR, 2012) were utilized to evaluate the potential for species concentration area occurrence.

3.1.5.2 Rare Vegetation Communities/Specialized Habitats for Wildlife

Rare or specialized habitats include rare vegetation communities or concentrations of rare plant species. These specialized areas may also support rare animal species. The majority of tree cover at Shaw Dam Lake and the access roads consist of common species such as Red Pine, White Pine, Large tooth Aspen, Trembling Aspen, White Birch, Red Maple, White Spruce and Balsam Fir.

Further, the Study Area lacked significant old growth forest features which, if present, might provide specialized habitats and food sources for other species dependent on these features. None of the vegetation communities identified on the Site are designated as rare or threatened in this region.

Other specialized habitats include Waterfowl Nesting Areas, Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat, Woodland Raptor Nesting Habitat, Turtle Nesting Areas, Seeps and Springs, and

Amphibian Breeding Habitats. The Study Area does not fit the criteria for any of the above specialized habitats.

3.1.5.3 Animal Movement Corridors

Animal Movement Corridors are used by wildlife to move from one habitat to another, and are important to ensure genetic diversity in populations, to allow seasonal migration of animals, and to allow animals to move throughout their home range from feeding areas to cover areas. Animal movement corridors can occur at various scales; from deer moving between summer and winter grounds across a landscape, to amphibians moving between breeding habitat and feeding areas within a single vegetation unit.

Animal Movement Corridors are considered where confirmed or candidate Significant Wildlife Habitat has been identified by MNRF or the planning authority based on documented evidence of a habitat identified within the criterion schedules or the Significant Wildlife Habitat Technical Guide (2000). Given that no Significant Wildlife Habitat has been identified within the Study Area, and no large scale animal movement corridors for Moose or White-tailed Deer have been identified through a review of background documentation, consultation with MNRF, or field work conducted to date, a corridor analysis was not undertaken. The Little Thessalon River and adjacent lands likely serve to concentrate animal movement and this valley will not be disturbed by dam construction activities or upgrades to the access roads.

3.1.5.4 Habitats of Species of Conservation Concern

Species of Conservation Concern generally include the groups listed below:

- > Species defined as Special Concern in Ontario;
- > Species that are listed as rare or historical in Ontario based on records kept by the NHIC;
- > Species whose populations are known to be experiencing significant declines in Ontario; and Species that have a high percentage of their global population in Ontario and are rare or uncommon in the subject area.

A geographical search for rare or special concern species presence and associated habitat was conducted using the NHIC database (OMNR, 2011). There was only one element occurrence for the area searched and the Eastern Wood Peewee is listed as Special Concern on the ESA.

A review of aerial photographs, available habitat types within the general area, the Ontario Breeding Bird Atlas (OBBA) (Cadman et al, 2007), the Ontario Reptile and Amphibian Atlas (Ontario Nature, 2011), and the Atlas of Mammals (Dobbyn, 1994) were completed to determine potential for species of Conservation Concern. In addition to the Endangered and Threatened species addressed in **Section 3.2.3**, there is also potential for several species of Special Concern, including Canada Warbler (*Wilsonia canadensis*), Common Nighthawk (*Chordeiles minor*), Peregrine Falcon (*Falco peregrinus*), Short-eared Owl (*Asio flammeus*), Eastern Wood-pewee (*Contopus virens*), and Wood Thrush (*Hylocichla mustelina*), Monarch (*Danaus plexippus*), and Snapping Turtle (*Chelydra serpentina*), within the Study Area. An assessment of the habitat potential for the above-mentioned species of conservation concern in the Study Area is provided in **Table 3**.

Table 3: Species of Conservation Concern Habitat Potential Assessment

Common Name	ESA	SARA	Preferred Habitat	Habitat Potential	Field Observations
Canada Warbler	SC	THR	Wide range of coniferous and deciduous forests with well-developed shrub layer and structurally complex forest floor.	Yes	Species not observed. There is suitable habitat for this species.
Common Nighthawk	SC	SC	Open ground; clearings in dense forests; ploughed fields; gravel beaches or barren areas with rocky soils; open woodlands; flat gravel roofs.	No	Species not observed. There is suitable habitat.
Eastern Wood Peewee			open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks	Yes	Species was observed on site along the access road corridor.
Peregrine Falcon	SC	THR	Rock cliffs, crags, especially situated near water; tall buildings in urban centre.	No	Species not observed but is likely to occur.
Wood Thrush			undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12 m	No	Species not observed but habitat is suitable along the access road corridor.
Short Eared Owl	SC	SC	Generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields.	No	Species not observed. Suitable habitat does not exist on site.
Snapping Turtle	SC	SC	The preferred habitat of the species is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often located in ponds, sloughs, shallow bays or river edges, and slow streams, or areas combining several of these wetland habitats.	Yes	Species was observed in the Little Thessalon River.
Monarch Butterfly	SC	SC	Exist primarily wherever milkweed (<i>Asclepius</i>) and wildflowers (such as Goldenrod, asters, and Purple Loosestrife) exist. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow.	Yes	Species was not observed but is expected to be present.

3.1.6 Fisheries

Shaw Dam Lake is located within the Lake Huron watershed, but more specifically the Thessalon River watershed. The lake is fairly small at approximately 68 ha in surface area and has a maximum depth of 8.5 m and an average depth of 3.4 m (MNRF, 2018a). The shoreline of the lake is a combination of steep bedrock outcrops where water is much deeper at the lake edge and dense riparian vegetation dominated by Speckled Alder (*Alnus rugosa*) (refer to **Figure 10**). There are also shoreline areas of much shallower water with emergent vegetation consisting of rushes, arrowhead and sedges.



Figure 10: Shaw Lake Upstream of Dam

Brown Trout (*Salmo trutta*) has been stocked in the lake for years and stocking records indicate that more than 27,000 yearling Brown Trout have been stocked between 2008 and 2017 (MNRF, 2018b). The final year of Brown Trout stocking in Shaw Dam Lake will be 2019 (MNRF, pers comm, October, 2108).

Fish community sampling was conducted in July 2018 at Shaw Dam Lake. Minnow traps and gill nets were set in suitable fish habitat around the perimeter of the lake. Seven minnow traps were deployed for a twenty-four (24) hour period. Two (2) gill net gangs consisting of four (4) gill net panels per gang were set in two separate locations on the south side of the lake in areas where there would be little or no boat traffic. The gill nets were set for a ten (10) hour period and checked every two (2) hours and were not set overnight. The following species were captured in the gill nets included Rock Bass (*Ambloplites rupestris*), Common White Sucker (*Catostomus commersonii*), Shiners (*Luxilus* sp.) and Mooneye

(*Hiodon tergisus*). Only one minnow trap had any fish captured and included Rock Bass and Northern Redbelly Dace (*Chrosomus eos*).

The Little Thessalon River outlets from the overflow channel at Shaw Dam Lake through a series of waterfalls and cascades over large boulders and bedrock (refer to **Figure 11**). The river is a meandering, slow flowing river with a substrate comprised of cobbles and gravels in the riffles and a silty substrate in the pools and slow flowing flat areas. The river is approximately 12-15 m and is 0.3-0.6 m deep on average and much deeper in the pools. Electrofishing was conducted in the Little Thessalon River approximately 800m downstream of the dam in a wadable reach of stream. Species captured during the fish community survey included Rock Bass, Northern Redbelly Dace and Lake Chub (*Couesius plumbeus*).



Figure 11: Shaw Lake (Downstream View of Dam)

The Little Thessalon River flows into the Thessalon River which flows into Lake Huron at the Town of Thessalon.

The fish community of Shaw Dam Lake is typical of lakes in this region of Ontario. For a listing of the fish species potentially located within Shaw Lake, refer to **Table 4**.

Table 4: Fish Species Potentially Present within Shaw Dam Lake

Family	Scientific Name	Common Name
Salmonidae	<i>Oncorhynchus mykiss</i>	Rainbow Trout
	<i>Salmo trutta</i>	Brown Trout
	<i>Salvelinus fontinalis</i>)	Brook Trout
Esocidae	<i>Esox lucius</i>	Northern Pike
Cyprinidae	<i>Chrosomus eos</i>	Northern Redbelly Dace
	<i>Couesius plumbeus</i>	Lake Chub
	<i>Luxilus cornutus</i>	Common Shiner
	<i>Catostomus commersonii</i>	Common White Sucker
	<i>Ameiurus nebulosus</i>	Brown Bullhead
	<i>Lepomis gibbosus</i>	Pumpkinseed
	<i>Ambloplites rupestris</i>	Rock Bass
Centrarchidae	<i>Lepomis macrochirus</i>	Bluegill
	<i>Micropterus dolomieu</i>	Smallmouth Bass
	<i>Perca flavescens</i>	Yellow Perch

Source: Holm et al, 2009

3.1.7 Species at Risk

In order to determine the potential for Species at Risk (SAR) to be present within the Study Area, all available background data was reviewed including aerial imagery, personal and professional knowledge of the Study Area and the various species habitat requirements was utilized, and a site visit was undertaken to confirm habitat.

A comprehensive list of all SAR (as assessed by COSSARO and/or ESA) whose ranges overlap the Shaw Dam Lake area is available in table format in **Appendix C**. The table lists species' status, describes preferred habitat of the SAR, and includes a preliminary desktop evaluation of potential for presence or of suitable habitat for SAR within the Study Area.

The following sections include a brief discussion on the species that are afforded individual and habitat protection under the ESA legislation – that is to say species that are listed as Threatened, Endangered, or Extirpated. For those species whose habitat could be located within the Shaw Dam Lake area there are

permits and/or authorizations that may be required in order to pursue certain activities associated with development, alteration of lands, or even typical site preparation and standard maintenance activities.

For the purpose of this review, the SAR have been divided into six (6) taxa: Birds, Herpetofauna, Mammals, Arthropods, Vegetation, and Fish and Molluscs.

3.1.7.1 Birds

A number of avian SAR could be present in the Shaw Dam Lake area, and only one (1) was detected during the field investigations undertaken in July 2018; the Eastern Wood Peewee. Six (6) other avian SAR that could be located within the Study Area that are listed on the OBBA include the Canada Warbler, Olive-sided Flycatcher, Common Nighthawk, Bald Eagle, Wood Thrush and Eastern Whip-poor-will.

The Canada Warbler is an interior forest species who prefers dense, mixed coniferous, deciduous forests with closed canopy, wet bottomlands of cedar or alder; shrubby undergrowth in cool moist mature woodlands. They also utilize riparian habitat and generally require at least 30 ha of good habitat for breeding.

The Olive-sided Flycatcher habitat includes semi-open, conifer forest. It prefers spruce near ponds, lakes or rivers and treed wetlands for nesting. It will also utilize burns with dead trees for perching.

Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings.

Bald Eagles nest in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting.

The Wood Thrush lives in mature deciduous and mixed (conifer-deciduous) forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches.

The Eastern Whip-poor-will is usually found in areas with a mix of open and forested areas, such as savannahs, open woodlands or openings in more mature, deciduous, coniferous and mixed forests.

The remaining avian species listed in **Table 1** are dependent on a variety of specialized habitats (e.g., old deciduous forests, large marshes, sandy beaches, large tracts of grassland). As these habitat types are not readily apparent within the Study Area, it is unlikely that the birds associated with these habitat features are using this area.

3.1.7.2 Herpetofauna

Snapping Turtles require permanent and semi-permanent fresh water; marshes, swamps or bogs as well as rivers and streams with soft muddy banks or bottoms. The turtle will often use soft soil or clean dry sand on south-facing slopes for nest sites and may nest some distance away from water. They will often hibernate together in groups in mud under water and have a home range size of ~28 ha. A Snapping Turtle was observed in the Little Thessalon River and suitable habitat for the turtle is present in the river downstream of the dam (refer to **Figure 9**). While Snapping Turtles are likely living in Shaw Dam Lake, there is no suitable habitat near the dam.

The Snapping Turtle is listed as Special Concern under the ESA, no habitat protection is afforded to species.

No other SAR herpetofauna listed in **Appendix C** that have been formally assessed under the ESA or SARA were identified as having habitat within the Study Area, as they require specialized habitats that are not present within the Study Area.

3.1.7.3 Mammals

There are four bat species that are listed as Endangered on the ESA. These four species, Tri-colored Bat (*Perimyotis subflavus*), Little Brown Myotis (*Myotis lucifugus*), Eastern Small-footed Bat (*Myotis leibii*) and Northern Myotis (*Myotis septentrionalis*), are known to roost in a variety of locations, such as crevices within buildings, hollow trees, under loose bark, and barns (COSEWIC, 2013). The presence of forested habitat and Shaw Dam Lake contributes to the likelihood that these species are located within the Study Area.

3.1.7.4 Arthropods

The Monarch Butterfly (*Danaus plexippus*) is listed as Special Concern under the ESA and its habitat is currently not protected under the Act. The Monarch prefers habitat with Milkweed (*Asclepius* spp.), and fields with other wildflowers. Monarchs were not observed during the July 2018 field investigations but it is likely that they are present within the Study Area.

3.1.7.5 Vegetation

The species listed in **Appendix C** are dependent on a variety of high-quality habitats and as the habitat types required for life processes of the listed species are not readily apparent within the Study Area, it is unlikely that the species associated with these habitat features are using this area.

3.1.7.6 Fish and Molluscs

No SAR fish or molluscs formally assessed under the ESA and listed in **Appendix C** were identified as having habitat within the Study Area.

3.2 Public Safety

The Shaw Dam has been assigned a High Hazard classification for dam failure based on the 1999 Ontario Ministry of Natural Resources and Forestry Dam Safety Guidelines.

As the Shaw Dam no longer meets dam safety criteria with respect to stability, a long term solution is required to reduce/eliminate the risk associated with a failure of the structure. Should a solution for the structure not be determined, the Dam will continue to age and deteriorate, posing an ever increasing risk of operational and dam safety issues to downstream populations.

3.3 Cultural and Built Heritage

A Cultural Heritage Evaluation of the Shaw Dam was undertaken as part of the project works. The Evaluation of the structure determined the Shaw Dam displayed cultural heritage potential, and recommended that due to the condition of the structure it would be preferred to retain the structure as a

heritage feature, with a secondary dam being built downstream (Alternative 4: Rebuild the Dam). The Cultural Heritage Evaluation advised that wherever feasible, construction activities should be suitably planned and undertaken to avoid impacts to the existing dam and identified cultural heritage attributes. The Cultural Heritage Evaluation recommended the following mitigation measures be undertaken should another alternative emerge as the Preferred Alternative.

Should Alternative 2: Repair and Maintain the Existing Dam be selected as the Preferred Alternative, a Heritage Impact Assessment (HIA) report should be completed by a Cultural Heritage Specialist based on more detailed rehabilitation plans and proposed structural drawings.

Should Alternative 4: Rebuild the Dam downstream with a new structure be selected as the Preferred Alternative, the following mitigation measures should be considered:

- The existing Shaw Dam should be retained in situ after the construction of the new downstream structure;
- Construction of a new dam with replication of the appearance of the heritage structure in the new design, with allowances for the use of modern materials should be considered; and,
- Commemorative strategy (i.e. a plaque), may be appropriate.

Should retention of the existing dam in situ be deemed infeasible and demolition of the structure be selected as the Preferred Alternative (Alternative 3a: Removal of the Existing Dam and Alternative 3b: Partial Removal of the Existing Dam), the following mitigation options should be considered:

- A report documenting the existing structure should be completed by a Cultural Heritage Specialist and filed with the Municipality of Huron Shores, the Ministry of Natural Resources and Forestry, and any other heritage stakeholders that may have an interest in this project; and,
- Development of a commemorative strategy, such as plaquing, may be appropriate.

3.4 Archaeology

As the area surrounding Shaw Dam Lake has been determined to be extensively and intensively disturbed due to the activities undertaken at the time of construction, no archaeological assessment was undertaken as part of the EA process.

3.5 Social Economic Impacts

Since the Hazard Potential Classification of the Shaw Dam is governed by life safety considerations, estimation of property losses are difficult to evaluate. Nevertheless, given the High Hazard classification for dam failure based on the 1999 Ontario Ministry of Natural Resources and Forestry Dam Safety Guidelines, potential impact of dam failure on downstream locations, property losses have been assigned a high ranking.

The areas affected by a breach of Shaw Dam include some sectors located along the shore of McCreight's Lake, and a number of areas downstream of the dam at Little Rapids. The majority of these areas are comprised of few residential and recreational properties, as well as some industrial uses.

3.6 Recreational Uses

The Shaw Dam Lake, and the surrounding area has potential to be used recreationally for hiking, fishing, and various uses. Discussions with local residents, and stakeholders will be undertaken to determine the extent of the recreational uses, and to determine potential impacts to these uses for each alternative under consideration and evaluation.

4 Evaluation of the Alternatives

4.1 Evaluation Criteria

For resource stewardship and facility development projects, the MNR Class EA process requires an assessment of alternatives, including a 'Do-Nothing' alternative, be examined in order to determine the preferred alternative. For the Shaw Dam project, SNC-Lavalin identified and considered five alternatives. These alternatives were developed based on the screening criteria used for this project, and their evaluation included a systematic approach that considered the impacts of each alternative against the criteria. These alternatives are detailed below in **Section 4.2** of this ESR.

4.2 Alternative Evaluation

As detailed in **Section 1.5** of this report, the following alternatives were assessed. To determine their potential impacts, each alternative was assessed for the potential positive and negative effects on a list of given criteria. The alternatives evaluated were as follows:

- **Alternative 1: Do Nothing** – This alternative represents a status quo scenario that considered the potential impacts of the dam remaining in its current state with no repair, replacement or removal activities completed. As the current structure does not meet current safety regulations, this alternative is considered unachievable.
- **Alternative 2: Rehabilitation and Repair** – This alternative considered rehabilitation activities to enhance the structural integrity of the Shaw Dam, and provide for the safe operation and passage of flows up to and including the Inflow Design Flood (IDF). Rehabilitation/repair activities considered included the construction of a cofferdam upstream to allow for work to be undertaken on the structure. Following the construction of the cofferdam, removal of the masonry stone would be undertaken to expose the concrete core of the structure. The guardrail and dam deck would also be removed to allow for support anchors to be installed into the foundation of the Shaw Dam. Following the installation of the foundation anchors, poured concrete would be applied upstream and downstream of the structure to provide additional strengthening. While these rehabilitation/repair works are expected to result in an extension to the Shaw Dam lifespan of 20-30 years, there is the possibility that once the centre core of the structure is visible, the core may be too degraded to repair. Should this alternative be put forward to detail design, a core sample should be taken to determine whether this alternative is feasible.
- **Alternative 3a: Removal of the Existing Dam** – This alternative involves the complete removal and demolition of the Shaw Dam to the original streambed would be undertaken, with a lowering or draining of the reservoir likely over several years and restoration of the newly exposed shoreline areas, and monitoring to ensure that the sediment is not mobilized and transported to downstream reaches. Prior to the removal of Shaw Dam, a cofferdam would be constructed upstream to allow for the machinery/work necessary for the removal. A program of gradual release of the water in Shaw Dam Lake would be implemented. The gradual release should be scheduled for outside of flooding season to ensure downstream dams are not put under stress due to the removal of Shaw Dam. This alternative would be a permanent solution but would likely involve follow up revegetation and plantings. Should this alternative be selected as the Preferred Alternative, recommendations regarding plantings, and sediment control during construction will

be determined as the design progresses. However, it is likely that recommendations regarding plantings will include a strong native species focus.

- **Alternative 3b: Partial Removal of the Existing Dam** – This alternative involves partial decommissioning and removal of the dam. As part of the decommissioning works, the Shaw Dam would be cut to the level of the current spillway elevation (approximately an elevation of 8.2 metres). Following the partial removal of Shaw Dam, concrete anchors would be installed into the foundation of the structure. To provide additional stability to the structure, concrete would be applied to the downstream side of the structure. Upstream of the structure, an overflow crest would be created. The lifespan of this work would likely be 25-30 years depending on the state of the concrete core. Should this alternative be put forward to detail design, a core sample should be taken to determine whether this alternative is feasible.
- **Alternative 4: Remove the Dam and Rebuild Downstream** – This alternative considered a new dam, which would be constructed near the same location (approximately 20 m from the current dam) and meet current dam safety criteria. To allow for the construction work, a cofferdam would need to be constructed to allow for the construction work. The existing water levels downstream and upstream would likely mirror current levels. With the exception of Alternative 3a, this alternative would result in the longest lifespan for the new Shaw Dam.

Table 5 summarizes the evaluation of the alternatives developed for consideration.

Table 5: Evaluation of Alternatives

Environment	Screening Criteria	Alternatives Considered				
		Alternative 1: Do Nothing	Alternative 2: Repair and Maintain the Existing Dam	Alternative 3a: Removal of the Existing Dam	Alternative 3b: Partial Removal of the Existing Dam	Alternative 4: Rebuild Dam
Natural Environment	Air Quality	No impacts anticipated as a result of this alternative.	Temporary impacts are anticipated, as there would be additional vehicle and dust emissions resulting from the work. These impacts are temporary and unavoidable.	Temporary impacts are anticipated, as there would be additional vehicle and dust emissions resulting from the work. These impacts are temporary and unavoidable.	Temporary impacts are anticipated, as there would be additional vehicle and dust emissions resulting from the work. These impacts are temporary and unavoidable.	Temporary impacts are anticipated, as there would be additional vehicle and dust emissions resulting from the work. These impacts are temporary and unavoidable.
	Downstream Sedimentation	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	Minor impacts to soils and sediment quality may result, due to construction; these impacts are temporary and unavoidable.	May involve significant costs due to sediment control and disposal of material from dam removal.	May involve additional cost due to sediment control and disposal of material from partial dam removal.	May involve additional cost due to sediment control and disposal of material from new dam construction.
	Species at Risk	No impacts anticipated as a result of this alternative.	While SAR have not been identified within the study area, there is potential for SAR or their habitat to be impacted during construction. Mitigation measures should be implemented during construction to reduce potential impacts.	While SAR have not been identified within the study area, there is potential for SAR or their habitat to be impacted during construction. Mitigation measures should be implemented during construction to reduce potential impacts.	While SAR have not been identified within the study area, there is potential for SAR or their habitat to be impacted during construction. Mitigation measures should be implemented during construction to reduce potential impacts.	While no permanent impacts to SAR are anticipated as a result of this alternative, temporary impacts due to construction activities are possible.
	Significant Earth or Life Science Features	As no significant earth or life science features are located within the Study Area, no impacts are anticipated as a result of this alternative	As no significant earth or life science features are located within the Study Area, no impacts are anticipated as a result of this alternative	As no significant earth or life science features are located within the Study Area, no impacts are anticipated as a result of this alternative	As no significant earth or life science features are located within the Study Area, no impacts are anticipated as a result of this alternative	As no significant earth or life science features are located within the Study Area, no impacts are anticipated as a result of this alternative
	Fish and Fish Habitat (Shaw Lake)	Potential for dam failure may cause a loss of habitat for fisheries	Reinforcement of the Shaw Dam is not anticipated to affect fish or other aquatic species, communities or their habitat, as water quantity and quality conditions would not change and their current ecosystem would be maintained. Additionally, risks to downstream fish and fish habitat would be protected from dam breach. Mitigation measures such as sediment and erosion control would be implemented to prevent any deposition of sediment downstream of construction areas.	Complete removal would result in high impact to fish and fish habitat. A fish rescue would be required prior to undertaking the works. Additionally, there would also be a change to the water temperatures in the downstream habitat. There would also be losses to fish habitat as a result of this alternative. Further analysis will be conducted to assess downstream impacts should this alternative be selected as the Preferred Alternative.	This alternative would likely eliminate the risk to downstream fish and fish habitat, but further study of a proposed design is required to assess impacts.	While some impacts may result from construction activities, these impacts are temporary and unavoidable.
	Fish and Fish Habitat (Little Thessalon River)	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative. This alternative does not remove the risk of downstream flooding.	Potential for temporary impacts due to construction.	Complete removal of the Shaw Lake Dam would allow for a return to natural conditions downstream.	This alternative would likely eliminate the risk to fish and fish habitat in the Little Thessalon, but further study of a proposed design is required to fully assess impacts.	While some construction related impacts may result, these impacts are temporary and unavoidable.
	Risk to Public Safety	Maintaining the dam in its current state poses a significant risk of dam failure and downstream flooding.	Reduces the risk of downstream flooding, but requires additional inspections/surveillance.	Eliminates the risk to public safety, as the dam would cease to exist.	Reduces the risk of downstream flooding, but requires additional inspections/surveillance..	This alternative reduces the risk of downstream flooding, but would still require additional inspections and surveillance of the new dam. .

Environment	Screening Criteria	Alternatives Considered				
		Alternative 1: Do Nothing	Alternative 2: Repair and Maintain the Existing Dam	Alternative 3a: Removal of the Existing Dam	Alternative 3b: Partial Removal of the Existing Dam	Alternative 4: Rebuild Dam
		This option poses a severe risk to the public and downstream communities.				
	Recovery of a Species Under a Special Management Program	As there are no recovery programs located within the Study Area, no impacts are anticipated as a result of this alternative.	As there are no recovery programs located within the Study Area, no impacts are anticipated as a result of this alternative	As there are no recovery programs located within the Study Area, no impacts are anticipated as a result of this alternative	As there are no recovery programs located within the Study Area, no impacts are anticipated as a result of this alternative	As there are no recovery programs located within the study area, no impacts are anticipated as a result of this alternative
	Ecological Integrity	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	The complete removal of the Shaw Dam is anticipated to result in impacts to the local watercourse, as previous channels would be restored to more natural conditions. The removal of a barrier could benefit aquatic migration and the change in water levels/flow may benefit other aquatic/and or terrestrial species.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.
	Terrestrial	Potential for dam failure may result in impacts to the terrestrial environment	While there may be temporary impacts due to construction, these impacts are temporary and unavoidable. As existing conditions would be maintained, no permanent impacts are anticipated as a result of this alternative.	The reduction of water levels and increased flow may result in impacts to migratory waterfowl birds and their habitat. Additionally, the potential for inundation may compromise existing habitat	While there may be temporary impacts due to construction, these impacts are temporary and unavoidable.	While there may be temporary impacts due to construction, these impacts are temporary and unavoidable. As existing conditions would be maintained, no permanent impacts are anticipated as a result of this alternative.
	Natural Vegetation and Terrestrial Habitat Linkages or Corridors through Fragmentation, Alteration and/or Critical Loss	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	While there would be impacts to local water levels resulting from this alternative, no significant changes to existing linkages or corridors would occur.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.
	Permafrost	As permafrost is not located within the Study Area, no impacts are anticipated	As permafrost is not located within the Study Area, no impacts are anticipated	As permafrost is not located within the Study Area, no impacts are anticipated	As permafrost is not located within the Study Area, no impacts are anticipated	As permafrost is not located within the Study Area, no impacts are anticipated
	Soils and Sediment Quality	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	Minor impacts to soils and sediment quality may result, due to construction; these impacts are temporary and unavoidable.	Impacts to soils and sediment quality may result, due to the removal works and the release of sediment downstream.	Minor impacts to soils and sediment quality may result, due to construction; these impacts are temporary and unavoidable	Minor impacts to soils and sediment quality may result, due to construction; these impacts are temporary and unavoidable
	Risk of Flooding	There is a high risk of flooding associated with this alternative.	The risk of downstream flooding is reduced with this alternative.	The risk of downstream flooding is reduced with this alternative.	The risk of downstream flooding is reduced with this alternative.	The risk of downstream flooding is reduced with this alternative.
	Release of Contaminants in Soils, Sediments	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	It is not anticipated that the release of contaminants in soils and sediments would result due to this alternative.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.	As existing conditions would be maintained, no impacts are anticipated as a result of this alternative.
Land Use, Resource Management Considerations	Access to Trails	No impacts are anticipated as a result of this alternative	No impacts are anticipated as a result of this alternative	No impacts are anticipated as a result of this alternative	No impacts are anticipated as a result of this alternative	No impacts are anticipated as a result of this alternative
	Navigation Obstructions	No impacts are anticipated as a result of this alternative	While there may be some impact to navigation during construction, these impacts are temporary and unavoidable.	The complete removal of the Shaw Dam is likely to impact the use of Shaw Dam Lake, as the reduction in water levels/ water flow may reduce or eliminate favourable conditions for	While there may be some impact to navigation during construction, these impacts are temporary and unavoidable.	While there may be some impact to navigation during construction, these impacts are temporary and unavoidable.

Environment	Screening Criteria	Alternatives Considered				
		Alternative 1: Do Nothing	Alternative 2: Repair and Maintain the Existing Dam	Alternative 3a: Removal of the Existing Dam	Alternative 3b: Partial Removal of the Existing Dam	Alternative 4: Rebuild Dam
				certain uses (i.e., canoes, pleasure craft).		
	Traffic Impacts	No impacts are anticipated as a result of this alternative	While there may be a small impact through increased traffic during construction, this is temporary and unavoidable.	While there may be a small impact through increased traffic during construction, this is temporary and unavoidable.	While there may be a small impact through increased traffic during construction, this is temporary and unavoidable.	While there may be a small impact through increased traffic during construction, this is temporary and unavoidable.
	Recreational Use (private and public)	No impacts are anticipated as a result of this alternative	While there may be some impacts to recreational use during construction, these impacts are temporary and unavoidable.	The complete removal of the Shaw Dam will impact recreational use of the dam due to reduced water levels/water flow.	While there may be some impacts to recreational use, further analysis of this alternative is required once a potential design is determined.	This alternative removes the risk of dam flooding. While there may be some impacts to recreational use during construction, these impacts are temporary and unavoidable.
	Excess Waste	No impacts are anticipated as a result of this alternative	There is potential for additional waste to be produced as a result of construction activities. Proper mitigation measures should be implemented to reduce this impact.	There is potential for additional waste to be produced as a result of construction activities. Proper mitigation measures should be implemented to reduce this impact.	There is potential for additional waste to be produced as a result of construction activities. Proper mitigation measures should be implemented to reduce this impact.	There is potential for additional waste to be produced as a result of construction activities. Proper mitigation measures should be implemented to reduce this impact.
	Capital Costs	No additional capital costs associated with this alternative	Would result in additional costs to repair the existing dam. These costs may be greater than a new dam.	Likely lower capital costs than other alternatives evaluated	A cost effective option	Higher capital costs than other options
	Noise Levels	No impacts are anticipated as a result of this alternative	Temporary impacts are anticipated due to construction activities. These impacts are temporary and unavoidable. Appropriate mitigation measures should be implemented to reduce impacts.	Temporary impacts are anticipated due to construction activities. These impacts are temporary and unavoidable. Appropriate mitigation measures should be implemented to reduce impacts.	Temporary impacts are anticipated due to construction activities. These impacts are temporary and unavoidable. Appropriate mitigation measures should be implemented to reduce impacts.	Temporary impacts are anticipated due to construction activities. These impacts are temporary and unavoidable. Appropriate mitigation measures should be implemented to reduce impacts.
	Views and Aesthetics	No impacts are anticipated as a result of this alternative	Maintain local cultural heritage resource	As views and aesthetics are considered a subjective measure, the Project Team cannot evaluate whether an alteration to views and aesthetics would be considered positive or negative to individual users. However, the removal would provide the area with a more natural aesthetic.	As views and aesthetics are considered a subjective measure, the Project Team cannot evaluate whether an alteration to views and aesthetics would be considered positive or negative to individual users. However, the removal would provide the area with a more natural aesthetic.	As views and aesthetics are considered a subjective measure, the Project Team cannot evaluate whether an alteration to views and aesthetics would be considered positive or negative to individual users. However, the new dam may be built with a similar style.
Social, Cultural, and Economic	Adjacent or Nearby Uses	No impacts are anticipated as a result of this alternative	There may be temporary impacts due to construction related activities. These impacts are temporary and unavoidable.	The complete removal of the Shaw Dam will result in changes to water levels/water flows and may impact recreational activities on Shaw Dam Lake. Additionally, impacts associated with construction are anticipated. These impacts are temporary and unavoidable. Changes in water levels and flow may also impact the recreational experience on Shaw Lake.	There may be temporary impacts due to construction related activities. These impacts are temporary and unavoidable.	There may be temporary impacts due to construction related activities. These impacts are temporary and unavoidable.
	Cultural Heritage Resources	As existing conditions are being maintained, no impacts	A cultural heritage assessment is currently in progress to determine	A cultural heritage assessment is currently in progress to determine	A cultural heritage assessment is currently in progress to determine	A cultural heritage assessment is currently in progress to determine

Environment	Screening Criteria	Alternatives Considered				
		Alternative 1: Do Nothing	Alternative 2: Repair and Maintain the Existing Dam	Alternative 3a: Removal of the Existing Dam	Alternative 3b: Partial Removal of the Existing Dam	Alternative 4: Rebuild Dam
Considerations		are anticipated as a result of this alternative	impacts associated with the repair of the dam.	impacts associated with the removal of the dam.	impacts associated with the partial removal of the dam.	impacts associated with this alternative.
	Local Character	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative	As existing conditions are being maintained, no permanent impacts are anticipated as a result of this alternative	The complete removal of the Shaw Dam will likely impact the local character. The change in local water levels at the dam will change the experience at the dam (i.e. impacts to hunting/fishing).	As existing conditions are being maintained, no permanent impacts are anticipated as a result of this alternative	As existing conditions are being maintained, no permanent impacts are anticipated as a result of this alternative
	Public Health and Safety	This alternative poses a significant public safety risk, as potential dam failure would result in significant damage and/or loss of life downstream.	This alternative reduces the risk of downstream flooding and therefore is a positive benefit to public health and safety.	This alternative reduces the risk of downstream flooding and therefore is a positive benefit to public health and safety	This alternative reduces the risk of downstream flooding and therefore is a positive benefit to public health and safety	This alternative reduces the risk of downstream flooding and therefore is a positive benefit to public health and safety
	Local Economy and Businesses	Should a dam overflow occur, there would significant impacts to the local economy and community as a result of this alternative. Impacts could include significant damages, and potential loss of life.	This alternative would reduce the risk of a dam overflow and therefore reduce potential risk to the local economy and businesses.	This alternative would reduce the risk of a dam overflow and therefore reduce potential risk to the local economy and businesses.	This alternative would reduce the risk of a dam overflow and therefore reduce potential risk to the local economy and businesses.	This alternative would reduce the risk of a dam overflow and therefore reduce potential risk to the local economy and businesses.
	Tourism	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative	Impacts to tourism may result due to this alternative, as reduced lake levels may impact the recreational experience.	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative
Indigenous Communities	Impacts to Reserve Lands	The project is located approx. 15km from the nearest First Nation reserve lands. It is anticipated that the project will not directly affect the reserve lands of local Indigenous communities. Ongoing land claim negotiations with Thessalon First Nation may alter this assessment.	The project is located approx. 15km from the nearest First Nation reserve lands. It is anticipated that the project will not directly affect the reserve lands of local Indigenous communities. Ongoing land claim negotiations with Thessalon First Nation may alter this assessment.	The project is located approx. 15km from the nearest First Nation reserve lands. It is anticipated that the project will not directly affect the reserve lands of local Indigenous communities. Ongoing land claim negotiations with Thessalon First Nation may alter this assessment.	The project is located approx. 15km from the nearest First Nation reserve lands. It is anticipated that the project will not directly affect the reserve lands of local Indigenous communities. Ongoing land claim negotiations with Thessalon First Nation may alter this assessment.	The project is located approx. 15km from the nearest First Nation reserve lands. It is anticipated that the project will not directly affect the reserve lands of local Indigenous communities. Ongoing land claim negotiations with Thessalon First Nation may alter this assessment.
	Spiritual, Ceremonial, or Cultural Sites	MNRF is not aware of any spiritual/ceremonial features at this location so new impacts are not anticipated. This should be confirmed by engagement with local Indigenous communities.	MNRF is not aware of any spiritual/ceremonial features at this location so new impacts are not anticipated. This should be confirmed by engagement with local Indigenous communities.	MNRF is not aware of any spiritual/ceremonial features at this location so new impacts are not anticipated. This should be confirmed by engagement with local Indigenous communities.	MNRF is not aware of any spiritual/ceremonial features at this location so new impacts are not anticipated. This should be confirmed by engagement with local Indigenous communities.	MNRF is not aware of any spiritual/ceremonial features at this location so new impacts are not anticipated. This should be confirmed by engagement with local Indigenous communities.
	Traditional Land or Resources Uses	Traditional uses include fishing in the waterway and hunting/gathering on surrounding lands; potential affects to these activities could result if there was a dam failure (flooding), but affects could be positive or negative depending on perspective.	Traditional uses include fishing in the waterway and hunting/gathering on surrounding lands; repairs to existing dam would not likely impact on these activities	Traditional uses include fishing in the waterway and hunting/gathering on surrounding lands; dam removal could impact on some traditional uses as a result of changes to aquatic environment (lake vs. river). Changes could be positive or negative depending on perspective	Traditional uses include fishing in the waterway and hunting/gathering on surrounding lands; dam removal could impact on some traditional uses as a result of changes to aquatic environment (lake vs. river). Changes could be positive or negative depending on	Traditional uses include fishing in the waterway and hunting/gathering on surrounding lands; rebuilding the dam should minimize impacts to traditional uses in the area

Environment	Screening Criteria	Alternatives Considered				
		Alternative 1: Do Nothing	Alternative 2: Repair and Maintain the Existing Dam	Alternative 3a: Removal of the Existing Dam	Alternative 3b: Partial Removal of the Existing Dam perspective	Alternative 4: Rebuild Dam
	Indigenous Values	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative.	While impacts to First Nation Reserve/Indigenous Communities are not anticipated to result from this alternative, further discussions with local First Nation communities will be undertaken prior to the determination of the final Preferred Alternative to confirm.	While impacts to First Nation Reserve/Indigenous Communities may result from this alternative, further discussions with local First Nation communities will be undertaken prior to the determination of the final Preferred Alternative to confirm.	While impacts to First Nation Reserve/Indigenous Communities may result from this alternative, further discussions with local First Nation communities will be undertaken prior to the determination of the final Preferred Alternative to confirm.	While impacts to First Nation Reserve/Indigenous Communities are not anticipated to result from this alternative, further discussions with local First Nation communities will be undertaken prior to the determination of the final Preferred Alternative to confirm.
	Economic Impacts	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative	As existing conditions are being maintained, no impacts are anticipated as a result of this alternative	May have a negative impact upon fisheries, traplines, bait harvest areas, tourism, though local Indigenous communities are not actively involved in these activities on a commercial basis in the vicinity of the dam. Thessalon FN owns a tree nursery located on McCreights Pond downstream; water supply for the nursery comes from McCreights Pond, so changes to water levels will be of interest.	May have a negative impact upon fisheries, traplines, bait harvest areas, tourism, though local Indigenous communities are not actively involved in these activities on a commercial basis in the vicinity of the dam. Thessalon FN owns a tree nursery located on McCreights Pond downstream; water supply for the nursery comes from McCreights Pond, so changes to water levels will be of interest.	No impacts are anticipated as a result of this alternative
	Lands Subject to Land Claims	There is a land claim that overlaps the dam location. Ontario and Thessalon First Nation are involved in negotiations in connection with the claim. In the meantime, Thessalon First Nation claims that the dam location lands are part of the reservation it should have had at the time of Treaty. It is unlikely that any alternative will impact on the land claim process (the dam is likely to be retained by Ontario in any negotiated land claim settlement for public safety reasons), but it is important to ensure that Thessalon First Nation has been offered the opportunity to be meaningfully involved in the identification and assessment of all alternatives.	There is a land claim that overlaps the dam location. Ontario and Thessalon First Nation are involved in negotiations in connection with the claim. In the meantime, Thessalon First Nation claims that the dam location lands are part of the reservation it should have had at the time of Treaty. It is unlikely that any alternative will impact on the land claim process (the dam is likely to be retained by Ontario in any negotiated land claim settlement for public safety reasons), but it is important to ensure that Thessalon First Nation has been offered the opportunity to be meaningfully involved in the identification and assessment of all alternatives.	There is a land claim that overlaps the dam location. Ontario and Thessalon First Nation are involved in negotiations in connection with the claim. In the meantime, Thessalon First Nation claims that the dam location lands are part of the reservation it should have had at the time of Treaty. It is unlikely that any alternative will impact on the land claim process (the dam is likely to be retained by Ontario in any negotiated land claim settlement for public safety reasons), but it is important to ensure that Thessalon First Nation has been offered the opportunity to be meaningfully involved in the identification and assessment of all alternatives.	There is a land claim that overlaps the dam location. Ontario and Thessalon First Nation are involved in negotiations in connection with the claim. In the meantime, Thessalon First Nation claims that the dam location lands are part of the reservation it should have had at the time of Treaty. It is unlikely that any alternative will impact on the land claim process (the dam is likely to be retained by Ontario in any negotiated land claim settlement for public safety reasons), but it is important to ensure that Thessalon First Nation has been offered the opportunity to be meaningfully involved in the identification and assessment of all alternatives.	There is a land claim that overlaps the dam location. Ontario and Thessalon First Nation are involved in negotiations in connection with the claim. In the meantime, Thessalon First Nation claims that the dam location lands are part of the reservation it should have had at the time of Treaty. It is unlikely that any alternative will impact on the land claim process (the dam is likely to be retained by Ontario in any negotiated land claim settlement for public safety reasons), but it is important to ensure that Thessalon First Nation has been offered the opportunity to be meaningfully involved in the identification and assessment of all alternatives.

4.3 Selection of the Preferred Alternative

To determine the Preferred Alternative, SNC-Lavalin hosted an internal workshop with representatives from various disciplines to review and evaluate each alternative under consideration. A Pugh Matrix was used to evaluate and rank each alternative based on the level of impact which would result from its implementation on a predetermined series of criteria. These criteria were the following:

- Terrestrial Impacts;
- Fish and Fish Habitat (Shaw Dam Lake);
- Fish and Fish Habitat (Little Thessalon);
- Species at Risk;
- Downstream Sedimentation;
- Natural Heritage Features;
- Wildlife;
- Risk to Public Safety;
- Flood Mitigation;
- Recreational Use;
- Cultural Heritage Features;
- View and Aesthetics;
- Economic Impacts in the Event of Dam Failure;
- Capital Costs;
- Property Losses in the Event of Dam Failure;
- Constructability;
- Performance;
- Service Life;
- Land Claims;
- Impacts to Reserve Land;
- Spiritual Ceremonial Sites;
- Economic Impacts; and,
- Impacts to Indigenous Traditional Land Use.

Each alternative was measured against Alternative 1: Do Nothing. For some criteria no impacts (Same) were identified as resulting from the implementation of the alternative being considered. For each alternative where a positive (Better or Much Better) or negative (Worse or Much Worse) criteria rank was determined, is discussed below:

Alternative 1: Do Nothing

As Alternative 1 maintains the status quo, for the majority of criteria examined, a rank of Same resulted. In the criteria of Economic Impacts in the Event of Dam Failure, and Property Losses in the Event of Dam Failure, Alternative 1 was ranked as Worse. In the criteria of Dam Performance, and Risk to of Public Safety, Alternative 1 yielded a ranking of Much Worse.

Alternative 2: Repair and Maintain the Existing Dam

Alternative 2 was ranked as Better than the status quo in of Alternative 1 the following criteria: Performance, Economic Impacts in the Event of Dam Failure, Service Life, Property Losses in the Event of Dam Failure, and Risk to Public Safety. In other criteria examined, Alternative 2 ranked Same.

Alternative 3a: Removal of the Existing Dam

Alternative 3a ranked Much Better in several criteria. These criteria were Fish and Fish Habitat (Little Thessalon), Economic Impacts in the Event of Dam Failure (eliminates the possibility of Dam failure), Property Losses in the Event of Dam Failure (eliminates the possibility of Dam failure), Performance, Service Life, and Risk to Public Safety. The criteria where Alternative 3a ranked Better were, Terrestrial Impacts, and Constructability.

Alternative 3a ranked Worse than the status quo of Alternative 1 in the following criteria: Downstream Sedimentation, Cultural Heritage Features (Shaw Dam has been found to hold cultural heritage potential, so a complete removal would require additional documentation and mitigation measures such as commemoration of the structure), and Capital Costs (i.e. construction costs).

Alternative 3a was ranked as Much Worse compared to the maintenance of the status quo of Alternative 1 in the criteria of Fish and Fish Habitat (Shaw Dam Lake), and Recreational Use. As the removal of the Shaw Dam would result in a gradual drawing down of Shaw Dam Lake, both of these criteria would be significantly impacted.

Alternative 3b: Partial Removal of the Existing Dam

In comparison to the maintenance of the status quo of Alternative 1, Alternative 3b ranked Better in the following criteria: Terrestrial Impacts, Risk to Public Safety, Economic Impact of Dam Failure, Property Losses in the Event of Dam Failure, Constructability, Performance, and Service Life.

Criteria where Alternative 3b ranked Worse than Alternative 1 were Cultural Heritage Features, and Capital Costs.

Alternative 4: Rebuild the Dam

In comparison to the maintenance of the status quo of Alternative 1, Alternative 4 ranked Better in the criteria of Risk to Public Safety, Flood Mitigation, Economic Impact of Dam Failure, Property Losses in the Event of Dam Failure, Constructability, and Service Life.

Alternative 4 ranked Much Better in the criteria of Performance, Worse in Cultural Heritage Features, and Much Worse in terms of Capital Costs.

A workshop was held with the MNR to discuss the alternatives, review the results of the Pugh Matrix and obtain MNR's input into the analysis. An additional meeting and consultation will be held with Indigenous communities to discuss the alternatives, the Pugh Matrix rankings, and any preferences regarding the alternatives. Of particular importance will be to obtain input from local Indigenous communities on the criteria and impacts from each alternative to Land Claims, Impacts to Reserve Land, Spiritual Ceremonial Sites, Economic Impacts, and Impacts to Indigenous Traditional Land Use.

Following these meetings, and at the conclusion of the review period for the Draft ESR, all input and comments received will be incorporated into the analysis and the reporting, and a final Preferred Alternative will be determined and presented in the Final Environmental Study Report.

4.4 Permitting Requirements

The identification of regulatory requirements will be confirmed through consultation with provincial and federal authorities regarding the permits, approvals and/or authorizations, once the final Preferred Alternative has been selected. A preliminary list of key permits, approvals and authorizations that may be required for this project are identified in **Table 6**.

Table 6: Permits, Approvals or Authorizations that may be required

Agency	Permit/Act	Applicability to the Project
Ontario Ministry of Natural Resources and Forestry	<ul style="list-style-type: none"> Permit under Section 17 of the <i>Endangered Species Act</i> (2007) 	<ul style="list-style-type: none"> Potential for construction work to have effects on listed species, if identified
	<ul style="list-style-type: none"> Permit to Collect Fish for Scientific Purpose under the <i>Fish and Wildlife Conservation Act</i> (1997) 	<ul style="list-style-type: none"> To facilitate the capture and transfer of fish during potential in-water works
	<ul style="list-style-type: none"> Work Permits under the <i>Public Lands Act</i> (1990) 	<ul style="list-style-type: none"> Works on public lands and/or shore lands including geotechnical investigations, construction/upgrades of access roads and trails
	<ul style="list-style-type: none"> Land Use Permits 	<ul style="list-style-type: none"> May be required for access roads to and within Project site, temporary laydown and/or spoil areas
	<ul style="list-style-type: none"> <i>Lakes and Rivers Improvement Act</i> (2011) Section 16 Approval 	<ul style="list-style-type: none"> Required for Dam Decommissioning/Removal
	<ul style="list-style-type: none"> License of Occupation under <i>Public Lands Act</i> (1990) 	<ul style="list-style-type: none"> Required if construction work occurs on Crown lands
	<ul style="list-style-type: none"> <i>Environmental Assessment Act</i> (1990) 	<ul style="list-style-type: none"> Completion of the RSFD Class EA process
Ontario Ministry of the Environment, Conservation and Parks	<ul style="list-style-type: none"> Permit to Take Water under the <i>Ontario Water Resources Act</i> 	<ul style="list-style-type: none"> Where project construction requires taking more than 400,000 L/day from a lake, stream, river or groundwater source.
Ontario Ministry of Labour	<ul style="list-style-type: none"> <i>Occupational Health and Safety Act</i> (1990) 	<ul style="list-style-type: none"> Notice of Project under Section 23 (2)

Ontario Ministry of Municipal Affairs and Housing (MMAH)	<ul style="list-style-type: none"> • Letter of Conformity or Zoning Conformity Permits 	<ul style="list-style-type: none"> • Required for areas located in unorganized townships
Fisheries and Oceans Canada	<ul style="list-style-type: none"> • <i>Fisheries Act</i> 	<ul style="list-style-type: none"> • Work that may result in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery

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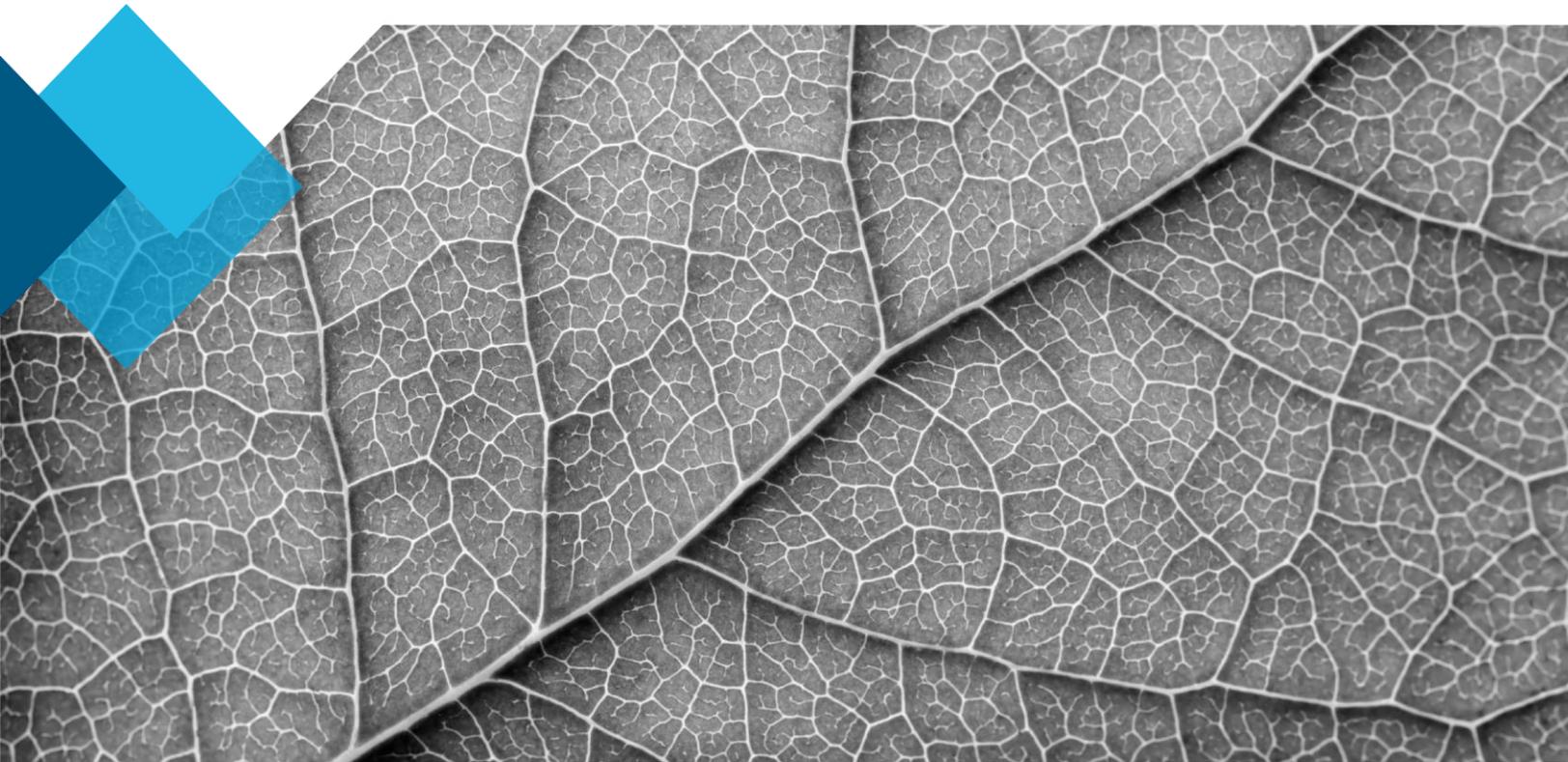
Appendix A
Consultation Plan



SNC • LAVALIN

Shaw Dam MNRF Class Environmental Assessment Draft Consultation Plan

Ontario Ministry of Natural Resources and Forestry



Environment & Geoscience

December 12, 2018

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1 Introduction

SNC-Lavalin (SLI) has been retained by Ontario Ministry of Natural Resources and Forestry (MNRF) to conduct an Environmental Assessment (EA) for the Shaw Dam under the principles outlined in the MNRF's Class EA for Resource Stewardship and Facility Development (RSFD) process. Below is a key plan of the study area.

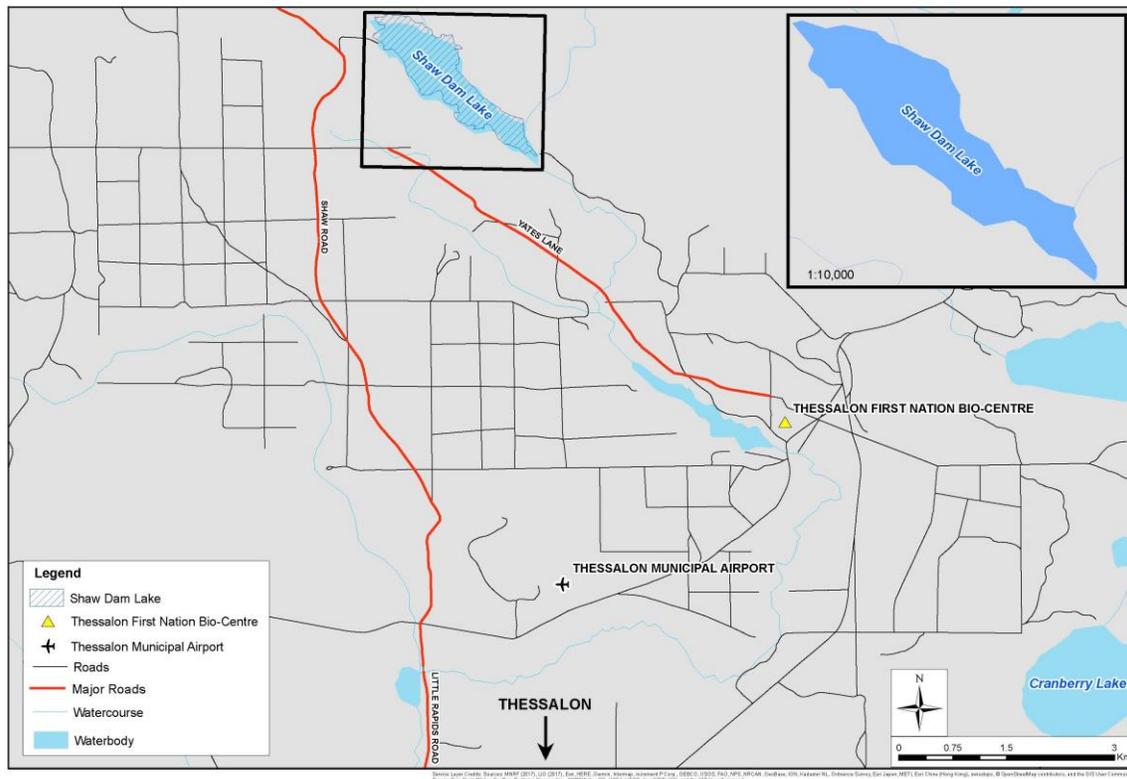


Figure 1: Shaw Lake Dam Study Area

The Shaw Dam does not meet current safety requirements, and this Class EA will examine alternatives available to address the safety concerns associated with the dam. Alternatives identified by the project team include the following:

- **Alternative 1: Do Nothing** – This alternative represents a status quo scenario that considered the potential impacts of the dam remaining in its current state with no repair, replacement or removal activities completed. As the current structure does not meet current safety regulations, this alternative is considered unachievable.

- **Alternative 2: Rehabilitation and Repair** – This alternative considered rehabilitation activities to enhance the structural integrity of the Shaw Lake Dam, and provide for the safe operation and passage of flows up to and including the Inflow Design Flood (IDF). Rehabilitation/repair activities considered included the construction of a cofferdam upstream to allow for work to be undertaken on the structure. Following the construction of the cofferdam, removal of the masonry stone would be undertaken to expose the concrete core of the structure. The guardrail and dam deck would also be removed to allow for support anchors to be installed into the foundation of the Shaw Dam. Following the installation of the foundation anchors, poured concrete would be applied upstream and downstream of the structure to provide additional strengthening. While these rehabilitation/repair works are expected to result in an extension to the Shaw Dam lifespan of 20-30 years, there is the possibility that once the centre core of the structure is visible, the core may be too degraded to repair. Should this alternative be put forward to detail design, a core sample should be taken to determine whether this alternative is feasible.
- **Alternative 3a: Removal of the Existing Dam** – This alternative involves the complete removal and demolition of the Shaw Dam to the original streambed would be undertaken, with a lowering or draining of the reservoir likely over several years and restoration of the newly exposed shoreline areas, and monitoring to ensure that the sediment is not mobilized and transported to downstream reaches. Prior to the removal of Shaw Dam, a cofferdam would be constructed upstream to allow for the machinery/work necessary for the removal. A program of gradual release of the water in Shaw Dam Lake would be implemented. The gradual release should be scheduled for outside of flooding season to ensure downstream dams are not put under stress due to the removal of Shaw Dam. This alternative would be a permanent solution but would likely involve follow up revegetation and plantings. Should this alternative be selected as the Preferred Alternative, recommendations regarding plantings, and sediment control during construction will be determined as the design progresses. However, it is likely that recommendations regarding plantings will include a strong native species focus.
- **Alternative 3b: Partial Removal of the Existing Dam** – This alternative involves partial decommissioning and removal of the dam. As part of the decommissioning works, the Shaw Dam would be cut to the level of the current spillway elevation (approximately an elevation of 8.2 metres). Following the partial removal of Shaw Dam, concrete anchors would be installed into the foundation of the structure. To provide additional stability to the structure, concrete would be applied to the downstream side of the structure. Upstream of the structure, an overflow crest would be created. The lifespan of this work would likely be 25-30 years depending on the state of the concrete core. Should this alternative be put forward to detail design, a core sample should be taken to determine whether this alternative is feasible.
- **Alternative 4: Remove the Dam and Rebuild Downstream** – This alternative considered a new dam, which would be constructed near the same location (approximately 20 m from the current dam) and meet current dam safety criteria. To allow for the construction work, a cofferdam would need to be constructed to allow for the construction work. The existing water levels downstream and upstream would likely mirror current levels. With the exception of Alternative 3a, this alternative would result in the longest lifespan for the new Shaw Dam.

Through the Class EA process, and consultation with Indigenous communities, the public, and agencies, additional alternatives may be identified and examined.

The project is following the approved planning process for a Category 'C' Class Environmental Assessment (EA) as per the MNRF's Resource Stewardship and Facility Development (RSFD) process. An Environmental Study Report (ESR) will be prepared for this project and placed on the public record. The ESR will document the existing biophysical and socio-economic environment, a summary of alternatives considered and design features, potential impacts of the undertaking, and required mitigation measures. The ESR will be made available for review and comment.

1.1 Purpose of Consultation

The purpose of consultation is to promote effective two-way communication, to present and receive information and to identify issues and concerns related to the project. Consultation is an integral component of the Class EA process and essential to the successful completion of the study.

To ensure a successful consultation program, consultation must be inclusive, timely and clear to be effective, and aims to achieve the following goals:

- Identify Indigenous and public concerns and values;
- Identify agency concerns;
- Collect information about the existing environment;
- Involve Indigenous communities, stakeholders, governmental agencies and the public;
- Provide relevant information to Indigenous communities, the public and agencies regarding decisions and potential effects; and,
- Provide regulatory compliance regarding the EA process.

1.2 Purpose of the Consultation Plan

This Consultation Plan outlines the activities that will be carried out to consult with Indigenous communities, the public, and external agencies (provincial, federal, municipal) throughout the course of the study. Proposed frequency and timing, methods of notification, and key stakeholders are identified in this plan.

1.3 The Project Team

Graham Janson (Senior Project Engineer, Ministry of Natural Resources and Forestry) and Ljiljana Josic (Project Manager, SNC-Lavalin) will lead the Project Team. Nick Hayward (Land Use Planning Intern, MNRF) and Christine Darson (Environmental Planner, SNC-Lavalin) will lead the environmental component of the project with Michael Fox (President of ICE Indigenous & Community Engagement) leading the engagement with Indigenous communities. These Project Team members will be the main contacts involved in the consultation activities for this project.

2 Consultation Plan

This Consultation Plan identifies tasks to guide the Project Team throughout the project.

To facilitate the consultation process, notification of consultation activities/opportunities will be given to external agencies and the public. All applicable external agencies, municipalities, interest groups, local political representatives, local residents, and members of the public on the stakeholder mailing list will be notified by letter/notice of the project and any concerns and commitments raised shall be addressed in the ESR. Throughout the project, all written or prepared communications material will be submitted to the MNRF Environmental Planner for review 2 weeks in advance for approval prior to dissemination.

For this project, the Consultation Plan includes the following:

- Preparation and maintenance of an external agency/stakeholder contact list;
- Preparation and maintenance of an Indigenous communities contact list
- Preparation and distribution of external agency/stakeholder contact letters;
- Preparation and distribution of Indigenous contact letters;
- Liaison with relevant Indigenous communities, and stakeholders including municipal staff and council, regulatory agencies, interested parties and members of the public as required, including meetings, negotiations, external presentations, and associated minutes/correspondence;
- Consultation with Indigenous communities; and,
- Summary of the consultation process.

2.1 External Agency/Stakeholder Contact List

A contact list of potentially affected stakeholder groups and individuals will be maintained throughout the study, updated for completeness and accuracy as required. This list includes government agencies and ministries, utility companies, municipal staff and elected officials, Indigenous communities, Members of Provincial Parliament (MPP), emergency services, public interest groups and property owners/local farmers who may be directly or indirectly affected by the project. Refer to **Appendix 1** for the External Stakeholder Contact List.

The Contact List is a fluid document and will be continually updated as additional stakeholders become known or current stakeholders indicate that they no longer wish to be involved in the study.

2.2 Ontario Government Notice

Ontario Government Notices will be published for this project. These notices will advise the public of significant project milestones such as public meetings, and the availability of the ESR for review and comment. The OGNs to be published for this project include:

- Notice of Opportunity to Inspect Draft Environmental Study Report and Notice of Public Meeting; and,
- Notice of Completion, Opportunity to Inspect Final Environmental Study Report.

All OGNs will be submitted to the Ministry two weeks prior to publication for review and approval. As per the December 15, 2017 proposal, all OGNs shall be prepared and submitted to the Ministry in English only.

All OGN's will be published in two local area newspapers. The newspapers that service the study area are:

- Thessalon North Shore Sentinel
- Sault Ste. Marie This Week

Written responses will be prepared for any correspondence received, and sent to MNR for review. Comments will be responded to in the same manner as they were received (i.e. email comments will receive an email response).

Environmental Study Report Submission

The Notice of Opportunity to Inspect Draft Environmental Study Report will be combined with the Notice of Public Meeting. This combined notice will outline the purpose of the notice, provide information on the recommended plan, provide information on the public meeting, the process that was followed, and how to comment on the draft Environmental Study Report. This notice will state that the ESR will be available for public review for and provide information regarding public review locations. The Notice will also include the Freedom of Information statement.

The Notice of Completion for Environmental Study Report will outline the purpose of the notice, provide information on the recommended plan, the process for the selection of the Preferred Alternative, and the Preferred Alternative. This notice will also state that the ESR will be available for public review, and provide information regarding public review locations and contact information for the project team. The Notice will also include the Freedom of Information statement.

2.3 French Languages Services Act

The French Language Services Act guarantees members of the public the right to receive services in the French-language from their provincial government in designated areas of the province.

Any and every government ministry and agency must offer French-language services to individuals in these designated areas regardless of where the office is located. The District of Algoma is identified as a French Language Designated Area.

There are no specific French Language newspapers that offer coverage within the Study Area. To meet the requirements of the French Languages Services Act, it is recommended that a French language OGN and an English language OGN be published in the Thessalon North Shore Sentinel, as this paper has the largest coverage of the study area.

2.4 External Agency/Stakeholder Contact Letters

All identified affected stakeholders will be notified of any public meetings and the filing of the ESR by distribution of letter. The notice letters will include a Contact Information Form where stakeholders can opt in/out of receiving project updates, as well as provide any preliminary comments. Letters will also be distributed to property owners and businesses in the Municipality of Huron Shores via Canada Post Admail.

2.5 Communication, Negotiations and Consultation

Communication and consultation with external agencies and stakeholders may be required to discuss and resolve any environmental or design issues that arise during the study and to review concerns and commitments made throughout the course of the project. The MNR Environmental Planner and Project Manager will be included in any communication and negotiation with stakeholders, where applicable.

2.6 Consultation and Engagement with Indigenous Communities

Consultation with Indigenous communities shall be undertaken in accordance with provincial directives regarding consultation with Indigenous communities.

Michael Fox from ICE Indigenous & Community Engagement will be the direct contact with Indigenous communities. The following Indigenous communities have been identified as having a potential interest in this project, and have been contacted as part of this study:

- Thessalon First Nation
- Mississauga First Nation
- Garden River First Nation
- Batchewana First Nation
- Metis Nation of Ontario, Historic Sault Ste. Marie Regional Consultation Committee
- Bar River Metis Community

Written notice advising the identified Indigenous communities of this project were distributed at the outset of the project as part of the consultation works. The notices indicated that SNC-Lavalin had been retained as a consultant to lead the Class EA process for this project. Additional methods of contact with the identified Indigenous communities will include teleconferences, and meetings.

Additional notification advising Indigenous communities of the availability of the Draft and Final Environmental Study Report (ESR) for review at public locations will also be distributed. Included within this correspondence will be a copy of the ESR, with a request for comments on the report, the alternatives under consideration, and any preferred alternative. Any comments received shall be recorded and included within the project reporting and documentation. Also included within the notice will be a brief summary of how the alternatives under consideration could potentially impact Traditional Land Uses, or the Treaty rights of the Indigenous communities. This will also be detailed in the draft and final ESR.

It is important to note that Province of Ontario is currently in negotiation with the Thessalon First Nation regarding claims regarding the lands under and surrounding the dam, and an additional consultation program will be undertaken with the Thessalon First Nation which will include meetings with the First Nation to discuss the project, the alternatives under consideration, impacts associated with each alternatives, and potential mitigation measures. These meetings shall be held in the Thessalon First Nation and in Sault Ste. Marie for members of Thessalon First Nation. A preliminary meeting has already been held with the Thessalon First Nation. The consultation material presented during this meeting is included in **Appendix 5** of this Consultation Plan.

The draft ESR and the final ESR will be circulated to the Indigenous communities for their review for at least 45 days to review the information and provide any comments on it. Communities may identify additional impacts and comment on proposed mitigation measures or propose other mitigation measures. Comments received during the draft ESR phase, will be addressed with a direct response, and inclusion within the final ESR.

2.7 Consultation with Local Municipal Council

Presentations to, or meetings with municipal engineering/planning staff may be made throughout the design process, at the request of council. Meetings with the Project engineering staff may be convened, to present the proposals developed to date and to receive comments. Ongoing consultation will be conducted with municipal staff by the Project Team.

Presentations to local councils and committees may be required in order to present the Project and to discuss the proposed designs, staging and construction timing. If necessary the Project Team will secure a position on the agenda for the Council Meeting for this purpose if requested/required.

2.8 Consultation with Stakeholder and Local Area Residents

All identified affected stakeholders will be notified of the Notice of Opportunity to Inspect the Draft ESR and the Notice of Completion, Opportunity to Inspect the Final Environmental Study Report via notices in local area papers. The Notice of Opportunity to Inspect the Draft ESR will also include information for a Public Meeting

Any comments received on the ESR or at the Public Meeting shall be recorded responded to by the project team, and included within the reporting and documentation for this project.

2.9 Environmental Project Documentation

Issues that arise during the stakeholder consultation process will be documented in the project file and the resolutions summarized and presented at internal progress meetings.

As outlined in the *Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects, 2003*, a Draft Environmental Study Report (ESR) documenting the study will be prepared for this Category “C” project and submitted to MNRF for internal review and comment prior to the report being entered on the public record. The ESR will include a summary of the consultation process for this project. Upon completion of the Draft ESR public review period, the project team will review all comments received and issue responses. Comments shall be responded to in the manner in which the comment was received (i.e. a comment received via email will have a response issued via email). Following a review of the comments received, those comments which are applicable shall be incorporated into the Preferred Alternative, and a Final ESR will be entered on the public record. This will be communicated by way of a letter to those on the External Contact List, Canada Post Admail to the businesses and residents located within the Municipality of Huron Shores, and Ontario Government Notices.

Should no Part II Order Requests be received, the SNC-Lavalin Environmental Planner shall issue a Statement of Completion letter to the MNRF Environmental Planner following the completion of the requirements of the Class EA process and the resolution of any outstanding environmental issues. This letter will include a summary of how SLI, on behalf of the Ministry, has addressed the principles of the Class EA.

2.10 Quality Control

All documentation, correspondence, reports, and notices will be checked for their accuracy, quality, applicability, and adherence to RFP, MNRF and Class EA Document, and Environmental Standards and Practices by the consultant team prior to being sent to MNRF for their review and approval.

2.11 Freedom of Information and Privacy Act

All project correspondence and Public Notices will notify the public of their rights under the *Freedom of Information and Protection of Privacy Act (1990)*. Personal information will not be included in the report documentation.

2.12 Accessibility for Ontarians with Disabilities Act

In keeping with the Accessibility for Ontarians with Disabilities Act (2005), all project correspondence and Public Notices will notify the public to contact the Project Team should they require any accessibility requirements in order to participate in the project.

2.13 Procurement of Formal Environmental Approvals and Bylaw Exemptions

SLI will identify and outline the acquisition process of any external agency environmental exemptions, clearances, or approvals through correspondence with external agencies. All environmental approval negotiations and formal applications will be subject to pre-approval and participation by MNRF.

All required exemptions, clearances, or approvals will be highlighted in the Environmental Study Report.

The EA environmental clearance eligibility will be confirmed in writing to MNRF in accordance with the Class EA requirements.

3 Conclusion

Consultation with Indigenous Communities, external agencies, interested parties, and the public will be consistent with the requirements for a Category “C” Class EA project. The results of consultation and engagement will be presented at each project team meeting and responses will be prepared for each inquiry/comment.

Appendix 1
External Contact List

STAKEHOLDER LIST:
Class Environmental Assessment for the Shaw Lake Dam
December 2018

Title	First_Name	Last_Name	Job_Title	Company	Address_1	Address_2	City	Prov	Postal_Code	Phone	Fax	Email
FEDERAL AGENCIES												
Ms.	Anjala	Puvananathan	Director, Ontario Regional Office	Canadian Environmental Assessment Agency	55 York Street, Suite 600		Toronto	Ontario	M5J 1R7	416.952.1575	416.952.1573	anjala.puvananathan@ceaa-acee.gc.ca
Sir/Madam			Fisheries Protection Program	Fisheries and Oceans Canada	867 Lakeshore Road		Burlington	Ontario	L7S 1A1	1.855.852.8320		fisheriesprotection@dfo-mpo.gc.ca
Mr.	Rob	Dobos	Manager Environmental Assessment Section	Ministry of Environment and Climate Change Canada	Environmental Protection Branch - Ontario Regio	867 Lakeshore Road	Burlington	Ontario	L7S 1A1	905.336.4953		rob.dobos@canada.ca
PROVINCIAL AGENCIES												
Ms.	Wendy	Kaufman	Manager of Community Planning and Development	Ministry of Municipal Affairs and Ministry of Housing	159 Cedar Street, Suite 401		Sudbury	Ontario	P3E 6A5	705.564.6802	705.564.6863	wendy.kaufman@ontario.ca
Ms	Karla	Barboza	Team Lead (A), Heritage Heritage Program Unit - Programs and Services Branch	Ministry of Tourism, Culture and Sport	401 Bay Street, Suite 1700		Toronto	Ontario	M7A 0A7	416.314.7120		karla.barboza@ontario.ca
MPP												
Mr.	Michael	Mantha	Member of Provincial Parliament (Algoma - Manitoulin)		Room 160	Main Legislative Building, Queens Par	Toronto	Ontario	M7A 1A5	416.325.1938	416.325.1976	mmantha-co@ndp.on.ca
LOCAL AGENCIES												
Mr.	Robert	MacLean	Clerk	Town of Thessalon	187 Main Street	P.O. Box 220	Thessalon		P0R 1L0	705.842.2217	705.842.2572	robert.thessalon@bellnet.ca
Ms	Kristen	Lawrence	Recreation Coordinator	Town of Thessalon	187 Main Street	P.O. Box 220	Thessalon		P0R 1L0	705.842.2217	705.842.2572	kristen.thessalon@bellnet.ca
Mr.	James	Orlando	Mayor	Town of Thessalon	187 Main Street	P.O. Box 220	Thessalon		P0R 1L0	705.842.2217	705.842.2572	
Councillor	Ben	Tetreault	Recreation Infrastructure Committee	Town of Thessalon	187 Main Street	P.O. Box 220	Thessalon		P0R 1L0	705.842.2217	705.842.2572	
Councillor	Bill	Rosenberg	Recreation Infrastructure Committee	Town of Thessalon	187 Main Street	P.O. Box 220	Thessalon		P0R 1L0	705.842.2217	705.842.2572	
Mr.	Keith	Bell	Chief Administrative Officer	Algoma District Services Administration Board	1 Collver Road		Thessalon	Ontario	P0R 1L0	705.742.3370 Ext. 247		kbell@adsab.on.ca
Ms.	Ann	Chalut	Executive Assistant	Algoma District Services Administration Board	1 Collver Road		Thessalon	Ontario	P0R 1L0	705.742.3370 Ext. 265		
FIRE, OPP, POLICE AND EMERGENCY SERVICES												
Chief	Marty	Lovelace	Fire Department Chief	Thessalon Fire Department	187 Main Street	P.O. Box 220	Thessalon	Ontario	P0R 1L0	705.842.2217	705.842.2572	townthess@bellnet.ca
Chief	Randy	Moore	Fire Department Chief	Bruce Mines Volunteer Fire Department	P.O. Box 220	9126 Hwy 17. East	Bruce Mines	Ontario	P0R 1C0			
Chief	Jim	Kent	Huron Shores Fire Department Chief	Huron Shores Fire Department	10 John Street		Iron Bridge	Ontario	P0R 1H0			
Staff Sargent	Tyler	Sturgeon		Ontario Provincial Police - Thessalon Detachment	P.O. Box 400		Blind River	Ontario	P0R 1B0	705.842.3243	705.842.3843	
Chief	Henry	Alamenciak	Chief of Paramedic Services	Algoma District Services Administration Board Paramedic Services	1 Collver Road		Thessalon	Ontario	P0R 1L0	705.742.3370 Ext. 315		halame@adsab.on.ca
INTEREST GROUPS												
Madam/Sir				Thessalon Marina	P.O. Box 220	56 Algoma Street East	Thessalon	Ontario	P0R 1L0	705.842.5188		
Madam/Sir				Algoma Sno-Plan Affiliation	P.O. Box 1508		Blind River	Ontario	P0R 1B0	705.356.5757		info@algomatrails.com
Madam/Sir				Algoma Country Travel Association			Sault Ste. Ma	Ontario		1.800.263.2546		info@algomacountry.com

Appendix 2
Indigenous Communities Contact List

INDIGENOUS COMMUNITY LIST:
Class Environmental Assessment for the Shaw Lake Dam
December 2018

Title	First_Name	Last_Name	Job_Title	Indigenous_Community	Address_1	Address_2	City	Prov	Postal_Code	Phone	Fax	Email
INDIGENOUS COMMUNITIES												
Ms.	Kathleen	Napoose	Lands and Resources Coordinator	Thessalon First Nation	40 Sugarbush Road	Box 9, RR2	Thessalon	Ontario	P0R 1L0	705.842.2323		knaponse@vianet.ca
Mr.	Dan	Sayers	Manager of Natural Resources	Batchawana First Nation	236 Frontenac Street	Rankin Reserve 15D	Batchewana First Nation	Ontario	P6A 6Z1	705.759.0914		
Ms.	Alexis	Vanderheyden	Lands & Resource Officer	Garden River First Nation	7 Shingwauk Street		Garden River	Ontario	P6A 6Z8	705.946.6300	705.945.1415	info@gardenriver.org
Mr.	Keith	Sayers	Lands & Resource Officer	Mississauga First Nation	64 Park Road	P.O. Box 1299	Blind River	Ontario	P0R 1B0	705.356.1621	705.356.1740	
Mr.	Ernie	Gatien	Historical SSM Metis	Métis Nation of Ontario	26 Queen Street		Sault Ste. Marie	Ontario	P6A 1Y3	705.254.1768	705.254.3515	goalagame@hotmail.com
Mr.	David	Johnston	Bar River Metis Community	Bar River Metis Community	582 Bar River Road, East	RR 4	Echo Bay	Ontario	P0S 1C0	705.248.2862		

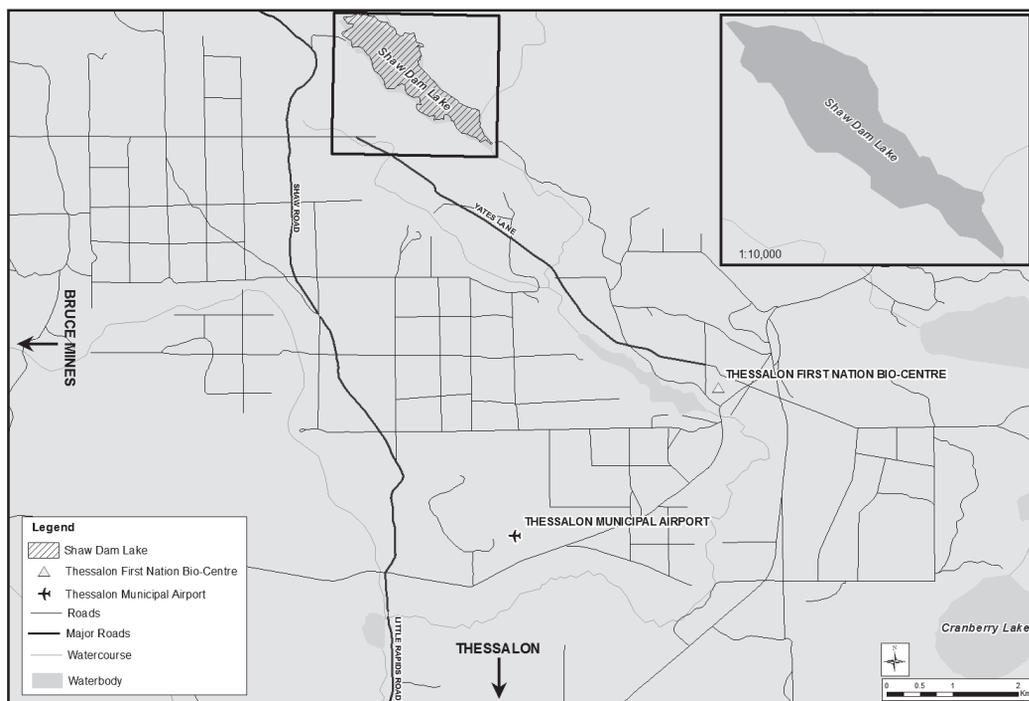
Appendix 3
Ontario Government Notice

BARRAGE SHAW, DISTRICT D'ALGOMA, ONTARIO

Avis d'une occasion d'examiner l'ébauche du rapport d'étude environnementale Évaluation environnementale de portée générale relative à des projets d'intendance environnementale et de développement d'installations du MRNF

Le **ministère des Richesses naturelles et des Forêts** de l'Ontario a retenu les services de la firme **SNC-Lavalin Inc. (SLI)** pour réaliser une évaluation environnementale du barrage Shaw situé dans le district d'Algoma, à environ 10 kilomètres au nord de la ville de Thessalon, comme le montre le plan repère ci-contre. Le barrage Shaw ne respecte pas les critères de sécurité des barrages actuels en matière de stabilité. Le demandeur invite le public à faire part de ses commentaires sur une ébauche du rapport d'étude environnementale, qui évaluera différentes solutions de rechange afin de choisir la solution privilégiée, laquelle permettra d'améliorer et de renforcer le fonctionnement et la sécurité du barrage.

L'ébauche du rapport d'étude environnementale a été préparée conformément aux exigences des projets de catégorie C de l'évaluation environnementale de portée générale relative à des projets d'intendance environnementale et de développement d'installations du MRNF.



L'ébauche du rapport d'étude environnementale décrit la nécessité de ce projet, l'élaboration des solutions de rechange à l'entreprise proposée ainsi que les répercussions environnementales possibles et les mesures d'atténuation proposées. SNC-Lavalin a recensé des solutions de rechange possibles à l'entreprise proposée, soit :

- Solution 1 : Ne rien faire – Cette solution de rechange représente le statu quo
- Solution 2 : Remettre en état et réparer – Cette solution de rechange tient compte des activités de remise en état visant à améliorer l'intégrité structurelle du barrage Shaw
- Solution 3a : Retirer le barrage actuel – Cette solution de rechange prévoit le démantèlement et le retrait complets du barrage Shaw
- Solution 3b : Retirer une partie du barrage actuel – Cette solution de rechange prévoit le démantèlement et le retrait partiels du barrage Shaw
- Solution 4 : Retirer le barrage Shaw et le reconstruire en aval – Cette solution de rechange tient compte d'un nouveau barrage, lequel serait construit près du barrage Shaw actuel (à environ 20 m du barrage)

Vous êtes invité à envoyer vos questions, commentaires ou demandes concernant le projet ou les solutions de rechange envisagées à **SNC-Lavalin** ou au **ministère des Richesses naturelles et des Forêts** avant le **26 janvier 2019**.

Des copies de l'ébauche du rapport d'étude environnementale sont mises à la disposition du public dans les lieux d'examen suivants :

Bibliothèque publique d'Huron Shores 10, rue Main Iron Bridge (Ontario) P0R 1H0	Bibliothèque publique de Thessalon C.P. 549 Thessalon (Ontario) P0R 1L0	Municipalité de Huron Shores 7, rue Bridge, C.P. 460 Iron Bridge (Ontario) P0R 1H0	Corporation de la ville de Thessalon 187, rue Main, C.P. 220 Thessalon (Ontario) P0R 1L0
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Une version électronique de l'ébauche du rapport d'étude environnementale a également été déposée sur le site Web de la municipalité de Huron Shores. On peut consulter le site Web à l'adresse suivante : <https://huronshores.ca/category/community-news/>

Une réunion publique aura lieu pour discuter du projet. Elle donnera au public et aux autres intervenants l'occasion de discuter du projet avec l'équipe du projet et de formuler des commentaires. Voici les détails concernant la date, l'heure et le lieu de la réunion :

18 décembre 2018, de 18 h à 20 h
Centre communautaire du canton de Thessalon
4, chemin Little Rapids, Ville de Thessalon (Little Rapids)

Pour discuter du projet ou être ajouté à la liste d'envoi du projet, veuillez communiquer avec :

Ljiljana Josic, ing.

Chef de projet
SNC-Lavalin Inc.
195, The West Mall, Toronto (Ontario) M9C 5K1
tél. : 416 252-5315, poste 52044
courriel : Ljiljana.Josic@snc-lavalin.com

Graham Janson, ing.

Ingénieur principal de projet, Ministère des Richesses naturelles et des Forêts
Région du Nord-Est
5520, autoroute 101 Est, sac postal 3020, South Porcupine (Ontario) P0N 1H0
tél. : 705 235-1077
courriel : Graham.Janson@ontario.ca

Les commentaires et les renseignements personnels concernant ce projet sont recueillis en vertu de la *Loi sur les évaluations environnementales* afin d'aider le MRNF à prendre des décisions. Les commentaires qui ne constituent pas des renseignements personnels en vertu de la *Loi sur l'accès à l'information et la protection de la vie privée* seront diffusés au sein du MRNF et auprès d'autres organismes, au besoin, et pourront être inclus dans la documentation mise à la disposition du public aux fins de consultation.

Les renseignements personnels resteront confidentiels sauf si le ministère obtient préalablement l'autorisation de les divulguer.

SHAW DAM, DISTRICT OF ALGOMA, ONTARIO

Notice of Opportunity to Inspect the Draft Environmental Study Report Class Environmental Assessment for MNRF Resource Stewardship and Facility Development Projects

SNC-Lavalin Inc. (SLI) has been retained by the Ontario **Ministry of Natural Resources and Forestry** to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon as shown in the Key Plan beside. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the applicant is inviting comments on a Draft Environmental Study Report (ESR) which will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam.

The Draft ESR was prepared in accordance with the requirements for Category C projects under the Class Environmental Assessment for MNRF Resource Stewardship and Facility Development Projects. The Draft ESR documents the need for the project, the development of alternatives to the undertaking, and potential environmental impacts and proposed mitigation measures. SNC-Lavalin has identified the following potential alternatives to the undertaking:

- Alternative 1: Do Nothing – This alternative represents a status quo
- Alternative 2: Rehabilitation and Repair – This alternative considered rehabilitation activities to enhance the structural integrity of the Shaw Dam
- Alternative 3a: Removal of the Existing Dam – This alternative involves a complete decommissioning and removal of the Shaw Dam
- Alternative 3b: Partial Removal of the Existing Dam – This alternative involves partial decommissioning and removal of the Shaw Dam
- Alternative 4: Remove the Shaw Dam and Rebuild Downstream – This alternative considered a new dam, which would be constructed near the current Shaw Dam (approximately 20 m from the current dam)

You are invited to direct any inquiries, comments or requests regarding the project, of the alternatives being considered to *SNC-Lavalin* or *MNRF* by **January 26, 2019**.

Copies of the Draft ESR have been made available at the following public review locations:

Huron Shores Public Library
10 Main Street
Iron Bridge, ON P0R 1H0

Thessalon Public Library
P.O. Box 549
Thessalon, ON P0R 1L0

Municipality of Huron Shores
7 Bridge Street, P.O. Box 460
Iron Bridge, ON P0R 1H0

Corporation of the Town of Thessalon
187 Main Street, P.O. Box 220
Thessalon, ON P0R 1L0

An electronic version of the Draft ESR has also been placed on the Municipality of Huron Shores website. The website can be accessed at the following address: <https://huronshores.ca/category/community-news/>

A Public Meeting is being held to discuss this project. The Public Meeting will provide the public and other stakeholders with the opportunity to discuss the project with the Project Team and provide comments. The Public Meeting will be held on:

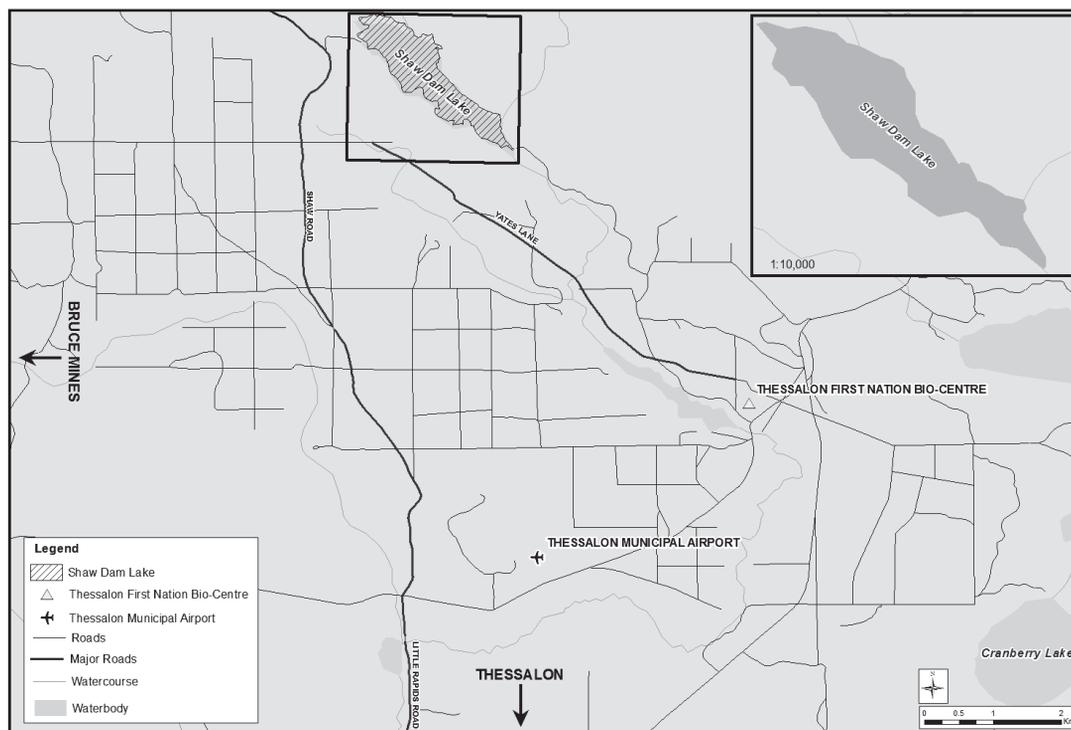
December 18, 2018
6:00 p.m. to 8:00 p.m.
Thessalon Township Community Centre
4 Little Rapids Road
Town of Thessalon (Little Rapids)

To discuss the project, or to be placed on the project mailing list, please contact:

Ljiljana Josic, P.Eng.
Project Manager, SNC-Lavalin Inc.
195 The West Mall, Toronto, ON M9C 5K1
tel: 416-252-5315, ext. 52044
e-mail: Ljiljana.Josic@snclavalin.com

Graham Janson, P.Eng.
Senior Project Engineer, Ministry of Natural Resources and Forestry
Northeast Region
5520 Highway 101 E., P.O. Bag 3020
South Porcupine, ON P0N 1H0
tel: 705-235-1077
e-mail: Graham.Janson@ontario.ca

Comments and personal information regarding this project are collected under the authority of the *Environmental Assessment Act* to assist MNRF in making decisions. Comments not constituting personal information as defined by the *Freedom of Information and Protection of Privacy Act*, will be shared among MNRF and others as appropriate, and may be included in documentation available for public review. Personal information will remain confidential unless prior consent to disclose is obtained.



Appendix 4

Consultation Letters



SNC • LAVALIN

SNC-LAVALIN INC.
195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 11, 2018

Ms. Alexis Vanderheyden
Lands & Resource Officer
Garden River First Nation
7 Shingwauk Street
Garden River, Ontario P6A 6Z8

**Re: Class Environmental Assessment Study
Shaw Dam
District of Algoma**

Dear Ms. Vanderheyden,

SNC-Lavalin (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the study will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam. Below is a Key Plan of Shaw Dam Lake.

The study is following the approved planning process for a Category 'C' project in accordance with the Ministry of Natural Resources and Forestry's *Class Environmental Assessment (Class EA) for Resource Stewardship and Facility Development (RSFD) Projects (2003)*. A Draft Environmental Study Report (ESR) is available for the review of the Garden River First Nation and has been included with this correspondence.

Your input is valuable to the study, and as such, the purpose of this letter is to notify the Garden River First Nation of the ESR, and to solicit any comments the Garden River First Nation may have on the project or the ESR.

Attached to this correspondence is a *Contact Information Form*. If the Garden River First Nation would like to provide any input at this time, a reply by January 26, 2019 is appreciated.

Interested persons are encouraged to review the Draft ESR and provide comments by January 26, 2019. Following the conclusion of the Draft ESR review period, the project team will consider the input received, and make revisions where appropriate. A Final ESR will then be completed and made available for inspection, along with a Notice of Completion.

To discuss the project, or to provide comments, please feel free to contact us at the information listed below.

Yours truly,

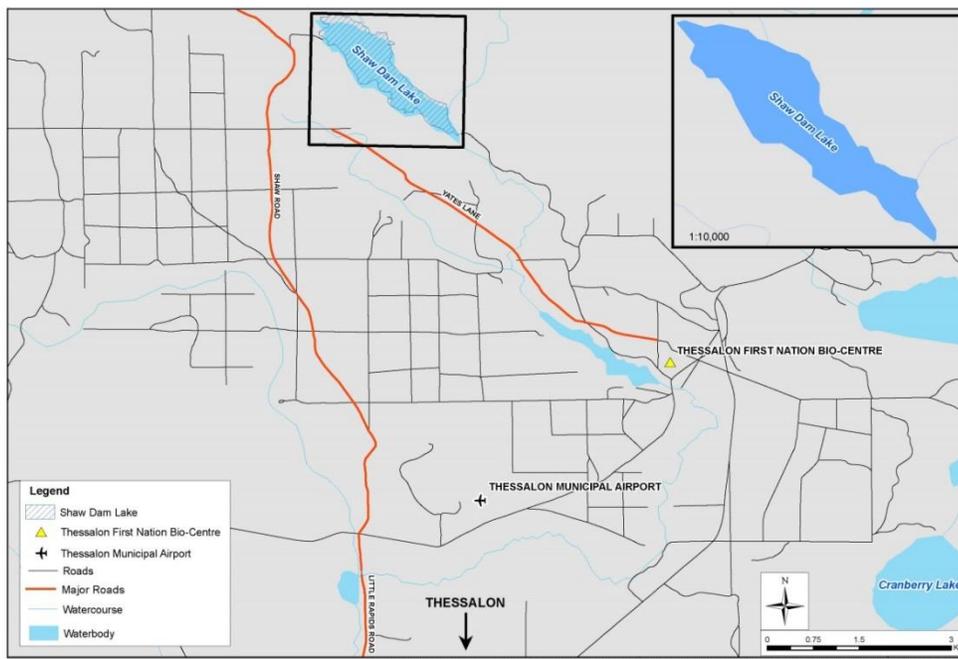
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 Project Manager
 SNC-Lavalin Inc.
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 Toronto, ON
 M9C 5K1
 Tel: (416) 252-5315 ext. 52044
 E-mail: Ljiljana.Josic@snclavalin.com

Graham Janson, P.Eng.
 Senior Project Engineer
 Ministry of Natural Resources and Forestry
 Northeast Region
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 South Porcupine, ON P0N 1H0
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Enclosed:
 Contact Information Form

CC: Nick Hayward, MNR Land Use Planning Intern
 Christine Darson, SNC-Lavalin Environmental Planner



Key Plan – Shaw Dam Lake



SNC • LAVALIN

SNC-LAVALIN INC.
195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 11, 2018

Mr. David Johnston
Bar River Metis Community
582 Bar River Road, East
RR 4
Echo Bay, Ontario P0S 1C0

**Re: Class Environmental Assessment Study
Shaw Dam
District of Algoma**

Dear Mr. Johnston,

SNC-Lavalin (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the study will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam. Below is a Key Plan of Shaw Dam Lake.

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Your input is valuable to the study, and as such, the purpose of this letter is to notify the Bar River Metis Community of the ESR, and to solicit any comments the Bar River Metis Community may have on the project or the ESR.

Attached to this correspondence is a *Contact Information Form*. If the Bar River Metis Community would like to provide any input at this time, a reply by January 26, 2019 is appreciated.

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To discuss the project, or to provide comments, please feel free to contact us at the information listed below.

Yours truly,

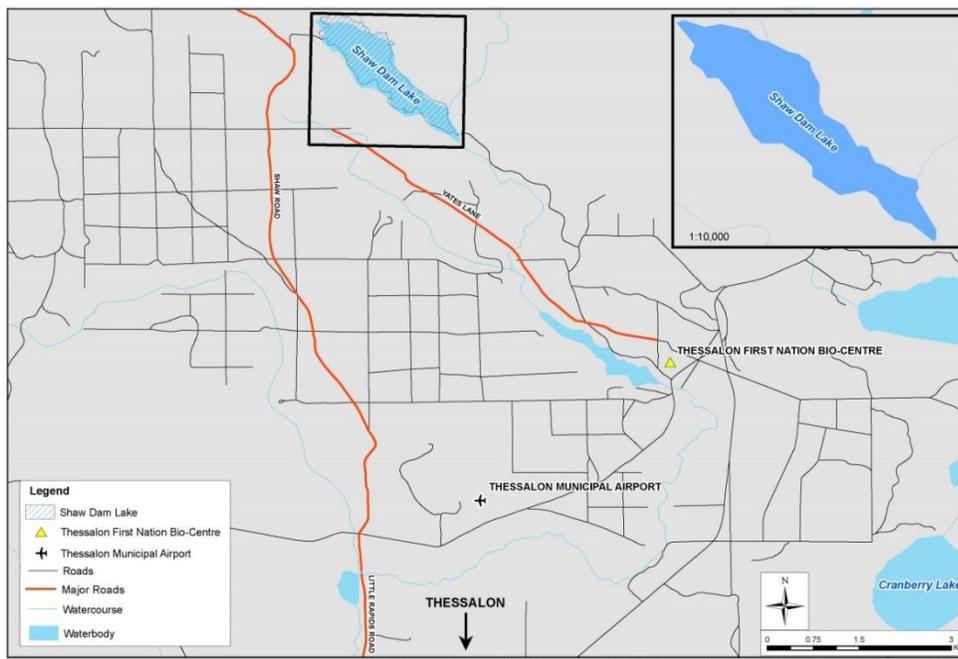
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 Senior Project Engineer
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CC: Nick Hayward, MNR Land Use Planning Intern
 Christine Darson, SNC-Lavalin Environmental Planner



Key Plan – Shaw Dam Lake



SNC • LAVALIN

SNC-LAVALIN INC.
195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 11, 2018

Mr. Dan Sayers
Manager of Natural Resources
Batchewana First Nation
236 Frontenac Street
Rankin Reserve 15D
Batchewana First Nation, Ontario P6A 6Z1

**Re: Class Environmental Assessment Study
Shaw Dam
District of Algoma**

Dear Mr. Sayers,

SNC-Lavalin (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the study will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam. Below is a Key Plan of Shaw Dam Lake.

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Your input is valuable to the study, and as such, the purpose of this letter is to notify the Batchewana First Nation of the ESR, and to solicit any comments the Batchewana First Nation may have on the project or the ESR.

Attached to this correspondence is a *Contact Information Form*. If the Batchewana First Nation would like to provide any input at this time, a reply by January 26, 2019 is appreciated.

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Yours truly,

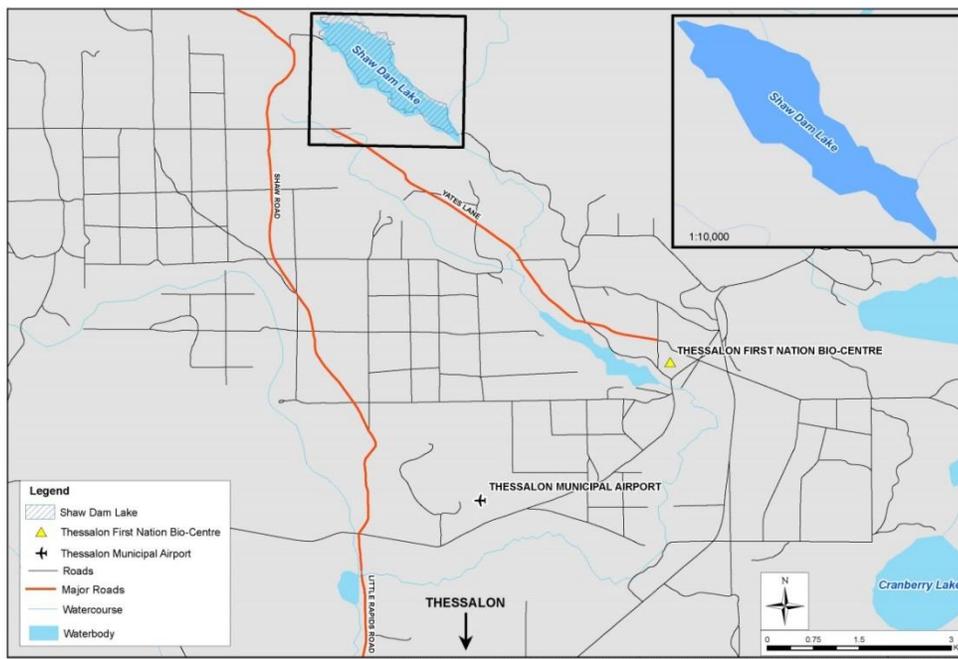
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 Contact Information Form

CC: Nick Hayward, MNR Land Use Planning Intern
 Christine Darson, SNC-Lavalin Environmental Planner



Key Plan – Shaw Dam Lake



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SNC-LAVALIN INC.
195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 11, 2018

Mr. Ernie Gatien
Historical SSM Metis
Métis Nation of Ontario
26 Queen Street
Sault Ste. Marie, Ontario P6A 1Y3

**Re: Class Environmental Assessment Study
Shaw Dam
District of Algoma**

Dear Mr. Gatien,

SNC-Lavalin (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the study will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam. Below is a Key Plan of Shaw Dam Lake.

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Your input is valuable to the study, and as such, the purpose of this letter is to notify the Métis Nation of Ontario of the ESR, and to solicit any comments the Métis Nation of Ontario may have on the project or the ESR.

Attached to this correspondence is a *Contact Information Form*. If the Métis Nation of Ontario would like to provide any input at this time, a reply by January 26, 2019 is appreciated.

Interested persons are encouraged to review the Draft ESR and provide comments by January 26, 2019. Following the conclusion of the Draft ESR review period, the project team will consider the input received, and make revisions where appropriate. A Final ESR will then be completed and made available for inspection, along with a Notice of Completion.

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Yours truly,

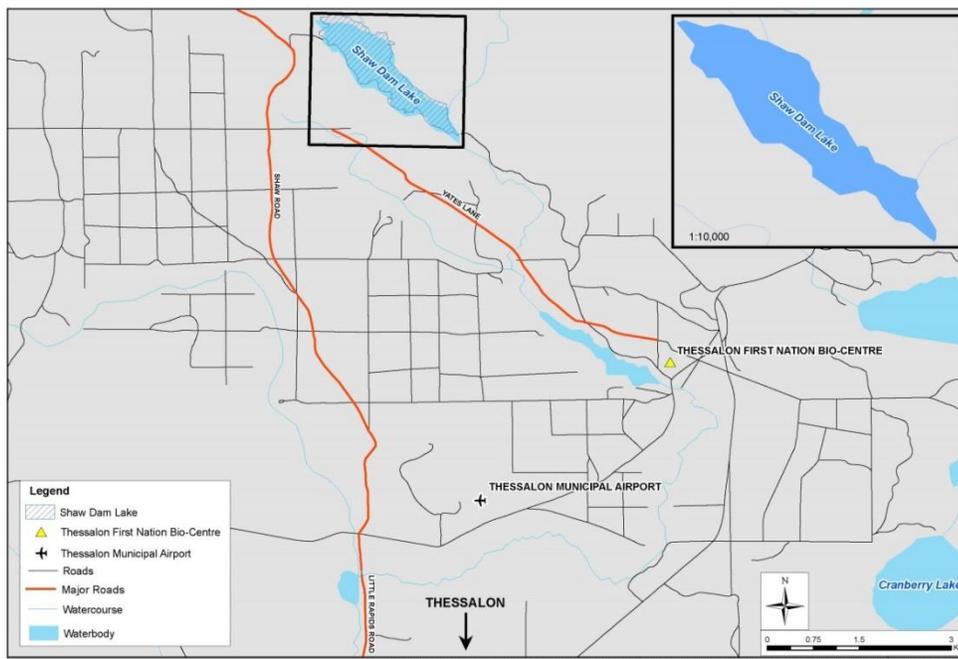
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 Christine Darson, SNC-Lavalin Environmental Planner



Key Plan – Shaw Dam Lake



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195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 11, 2018

Mr. Keith Sayers
Lands & Resource Officer
Mississauga First Nation
64 Park Road
P.O. Box 1299
Blind River, Ontario P0R 1B0

**Re: Class Environmental Assessment Study
Shaw Dam
District of Algoma**

Dear Mr. Sayers,

SNC-Lavalin (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the study will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam. Below is a Key Plan of Shaw Dam Lake.

The study is following the approved planning process for a Category 'C' project in accordance with the Ministry of Natural Resources and Forestry's *Class Environmental Assessment (Class EA) for Resource Stewardship and Facility Development (RSFD) Projects (2003)*. A Draft Environmental Study Report (ESR) is available for the review of the Mississauga First Nation and has been included with this correspondence.

Your input is valuable to the study, and as such, the purpose of this letter is to notify the Mississauga First Nation of the ESR, and to solicit any comments the Mississauga First Nation may have on the project or the ESR.

Attached to this correspondence is a *Contact Information Form*. If the Mississauga First Nation would like to provide any input at this time, a reply by January 26, 2019 is appreciated.

Interested persons are encouraged to review the Draft ESR and provide comments by January 26, 2019. Following the conclusion of the Draft ESR review period, the project team will consider the input received, and make revisions where appropriate. A Final ESR will then be completed and made available for inspection, along with a Notice of Completion.

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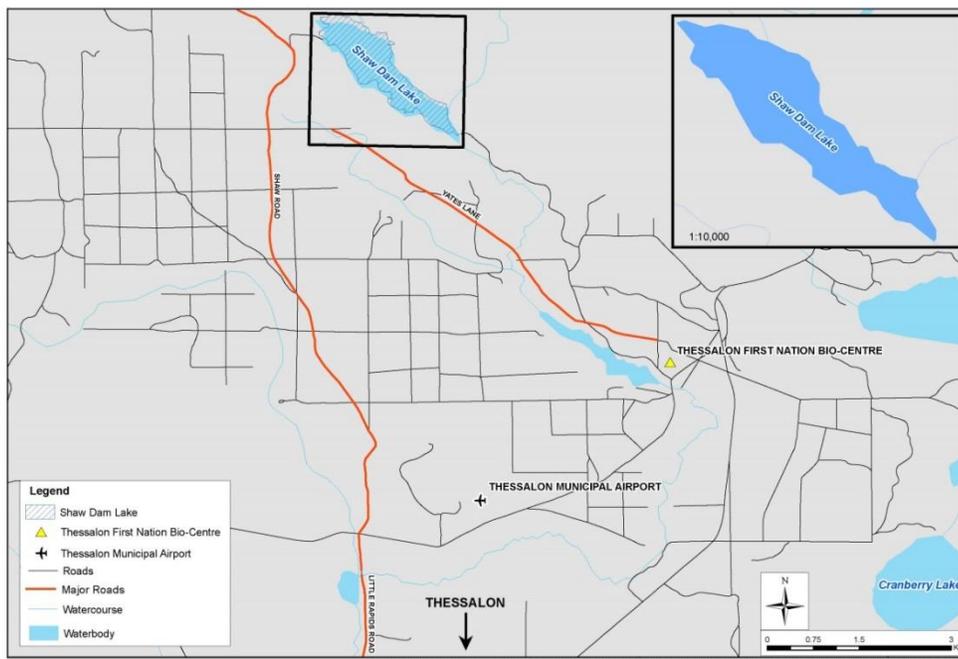
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Graham Janson, P.Eng.
 Senior Project Engineer
 Ministry of Natural Resources and Forestry
 Northeast Region
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Enclosed:
 Contact Information Form

CC: Nick Hayward, MNR Land Use Planning Intern
 Christine Darson, SNC-Lavalin Environmental Planner



Key Plan – Shaw Dam Lake

Darson, Christine

From: Darson, Christine
Sent: November 29, 2018 2:23 PM
To: 'knaponse@vianet.ca'
Cc: 'cbisaillon.tfn@vianet.ca'
Subject: FW: Shaw Lake Draft ESR
Attachments: 20181129_654862_Shaw Lake Draft ESR_TFN.pdf

FYI

From: Darson, Christine
Sent: November 29, 2018 2:12 PM
To: 'knaponse.tfn@vianet.ca'
Subject: Shaw Lake Draft ESR

Hi Kathleen

Thank you for meeting with us on Thursday November 22, 2018. As discussed, attached is a copy of the Draft Environmental Study Report for the Shaw Dam project. Please note that the consultation material for this report is currently under review so it has been purposely left out of the report.

If you could please provide some dates the Thessalon First Nation is available to meet and discuss this project, it would be greatly appreciated.

If you have any issues accessing the document, or questions regarding the content please do not hesitate to contact Michael Fox or myself directly.

Thank you.

Christine Darson, *BURPI*

Environmental Planner
Environment & Geoscience
Engineering, Design and Project Management

Tel.: 416-252-5315 x 54255

SNC-Lavalin
195 The West Mall
Toronto | Ontario | Canada | M9C 5K1



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SNC-LAVALIN INC.
195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 7, 2018

Mr. Michael Mantha
Member of Provincial Parliament (Algoma-Manitoulin)
Room 160
Main Legislative Building, Queens Park
Toronto, ON M7A 1A5

**Re: Class Environmental Assessment Study
Shaw Dam
District of Algoma**

«GreetingLine»

SNC-Lavalin (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the study will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam. Below is a Key Plan of Shaw Dam Lake.

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Huron Shores Public Library
10 Main Street
Iron Bridge, ON
P0R 1H0

Thessalon Public Library
P.O. Box 549
Thessalon, ON
P0R 1L0

Municipality of Huron Shores
7 Bridge Street, P.O. Box 460
Iron Bridge, ON
P0R 1H0

Corporation of the Town of Thessalon
187 Main Street, P.O. Box 220
Thessalon, ON
P0R 1L0

The Draft ESR documents the need for the project, the development of alternatives to the undertaking, and potential environmental impacts and proposed mitigation measures. The proposed alternatives detailed in the Environmental Study Report are:

- Alternative 1: Do Nothing – This alternative represents a status quo
- Alternative 2: Rehabilitation and Repair – This alternative considered rehabilitation activities to enhance the structural integrity of the Shaw Dam
- Alternative 3a: Removal of the Existing Dam – This alternative involves a complete decommissioning and removal of the Shaw Dam



- Alternative 3b: Partial Removal of the Existing Dam – This alternative involves partial decommissioning and removal of the Shaw Dam
- Alternative 4: Remove the Shaw Dam and Rebuild Downstream – This alternative considered a new dam, which would be constructed near the current Shaw Dam (approximately 20 m from the current dam)

Local area residents in Huron Shores will be informed of this project and the ESR review period by letter sent via Canada Post Admail, and the publication of Ontario Government Notices published in the following:

- Thessalon North Shore Sentinel on Wednesday December 5, 2018 in both French and English; and,
- Sault Ste. Marie This Week on Thursday December 6, 2018 in English.

Copies of the Draft ESR have been made available at the following public review locations:

Huron Shores Public Library
10 Main Street
Iron Bridge, ON
P0R 1H0

Thessalon Public Library
P.O. Box 549
Thessalon, ON
P0R 1L0

Municipality of Huron Shores
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Thessalon, ON
P0R 1L0

An electronic version of the Draft ESR has also been placed on the Municipality of Huron Shores website. The website can be accessed at the following address:

<https://huronshores.ca/category/community-news/>

A Public Meeting is being held to discuss this project. The Public Meeting will provide the public and other stakeholders with the opportunity to discuss the project with the Project Team and provide comments. The Public Meeting will be held on:

December 18, 2018

4:00 to 8:00 pm

Thessalon Township Community Centre

4 Little Rapids Road

Town of Thessalon (Little Rapids)

Interested persons are encouraged to review the Draft ESR and provide comments by January 26, 2019. Following the conclusion of the Draft ESR review period, the project team will consider the input received, and make revisions where appropriate. A Final ESR will then be completed and made available for inspection, along with a Notice of Completion.

To discuss the project, or to provide comments, please feel free to contact us at the information listed below.

Yours truly,

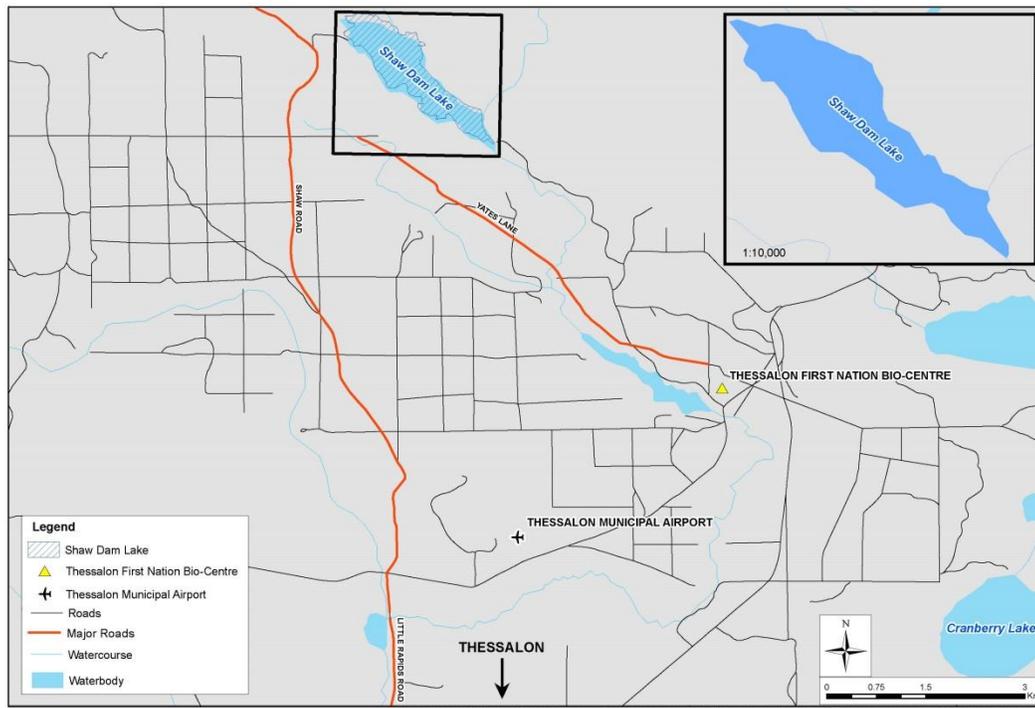
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Enclosed:
 Contact Information Form

CC: Nick Hayward, MNR Land Use Planning Intern
 Christine Darson, SNC-Lavalin Environmental Planner



Key Plan – Shaw Dam Lake



SNC • LAVALIN

SNC-LAVALIN INC.
195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 12, 2018

Canada Post Admail Letter

Sir/Madam

**Re: Environmental Assessment Study
Shaw Dam
District of Algoma**

Dear Sir/Madam,

SNC-Lavalin (SLI) has been retained by the Ontario Ministry of Natural Resources and Forestry to complete an Environmental Assessment for the Shaw Dam located in the District of Algoma, approximately 10 kilometres north of the Town of Thessalon. The Shaw Dam does not meet current dam safety criteria with respect to stability, and the study will evaluate and assess various alternatives to identify a preferred alternative which will improve and enhance the functioning and safety of the dam. Below is a Key Plan of Shaw Dam Lake.

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Iron Bridge, ON
P0R 1H0

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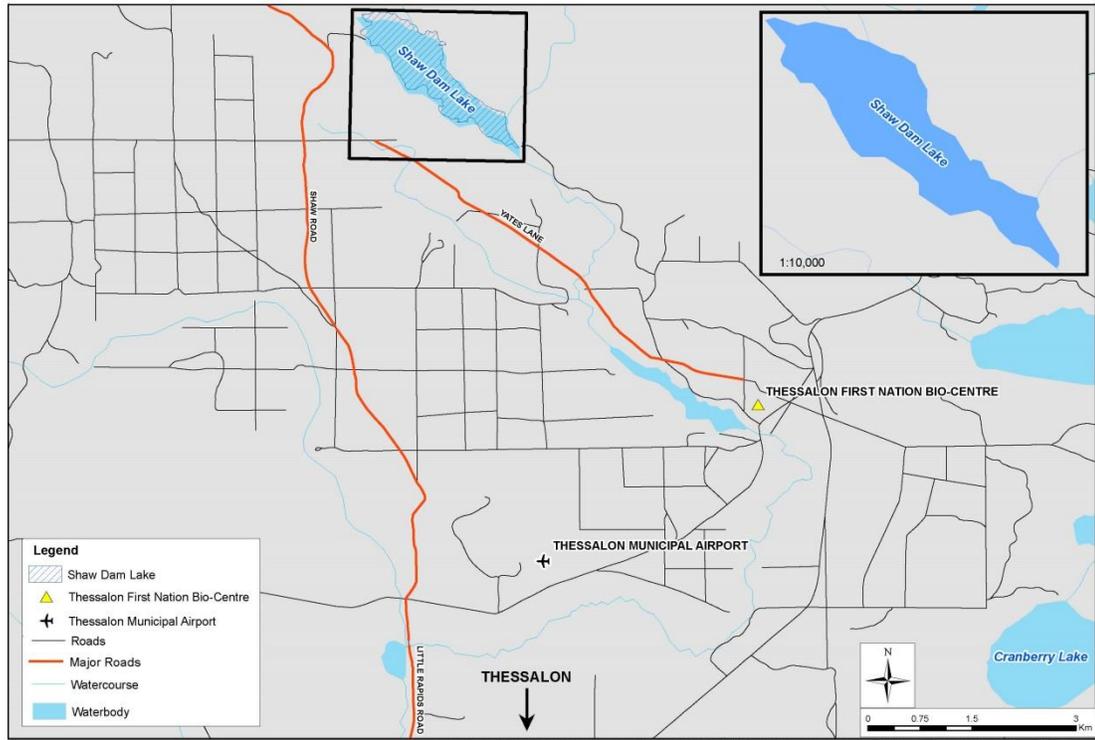
Corporation of the Town of Thessalon
187 Main Street, P.O. Box 220
Thessalon, ON
P0R 1L0

The Draft ESR documents the need for the project, the development of alternatives to the undertaking, and potential environmental impacts and proposed mitigation measures. The proposed alternatives detailed in the Environmental Study Report are:

- Alternative 1 - Do Nothing
- Alternative 2 - Repair and Maintain the Existing Dam
- Alternative 3a - Removal of the Existing Dam
- Alternative 3b - Partial Removal of the Existing Dam
- Alternative 4 - Rebuild Dam Several Metres Downstream of the Existing Dam

An electronic version of the Draft ESR has also been placed on the Municipality of Huron Shores website. The website can be accessed at the following address:

<https://huronshores.ca/category/community-news/>



Key Plan – Shaw Dam Lake



SNC • LAVALIN

SNC-LAVALIN INC.
195 The West Mall
Toronto, Ontario
Canada M9C 5K1

Telephone: +1.416.252.5311
Fax: +1.416.231.5356

December 12, 2018

Stakeholder/Agency Letter

«Title» «First_Name» «Last_Name»
«Job_Title»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «Province»
«Postal_Code»

**Re: Environmental Assessment Study
Shaw Dam
District of Algoma**

«GreetingLine»

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- Alternative 1: Do Nothing – This alternative represents a status quo
- Alternative 2: Rehabilitation and Repair – This alternative considered rehabilitation activities to enhance the structural integrity of the Shaw Dam
- Alternative 3a: Removal of the Existing Dam – This alternative involves a complete decommissioning and removal of the Shaw Dam
- Alternative 3b: Partial Removal of the Existing Dam – This alternative involves partial decommissioning and removal of the Shaw Dam
- Alternative 4: Remove the Shaw Dam and Rebuild Downstream – This alternative considered a new dam, which would be constructed near the current Shaw Dam (approximately 20 m from the current dam)

Copies of the Draft ESR have been made available for a 30-day public review period beginning December 12, 2018 to January 26, 2019, at the locations listed below.

Huron Shores Public Library
10 Main Street
Iron Bridge, ON
P0R 1H0

Thessalon Public Library
P.O. Box 549
Thessalon, ON
P0R 1L0

Shaw Dam
Resource Stewardship and Facility Development Class Environmental Assessment Project

CONTACT INFORMATION FORM

PLEASE RETURN BY FAX/MAIL/EMAIL BY JANUARY 26, 2019 TO:

Chrstitine Darson
Environmental Planner
SNC-Lavalin
195 The West Mall
Toronto, Ontario M9C 5K1
Phone: (416) 252-5315 ext. 54255
Fax: (416) 231-5356
Email: Christine.Darson@snclavalin.com

1) Please indicate whether you or your organization has an interest in the project and if you would like to provide any input at this time?

Yes No

2) If yes, please provide a contact person and their information (if different from original notice):

Name: _____
Title: _____
Department: _____
Organization: _____
Mailing Address: _____

Phone: _____
Fax: _____
Email: _____

3) In the space below, please provide any comments you may have regarding the study.

Comments and personal information regarding this project are collected under the authority of the *Environmental Assessment Act* to assist MNRF in making decisions. Comments not constituting personal information as defined by the *Freedom of Information and Protection of Privacy Act*, will be shared among MNRF and others as appropriate, and may be included in documentation available for public review. Personal information will remain confidential unless prior consent to disclose is obtained.

Appendix 5

Thessalon First Nation Meeting Consultation Material



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**SHAW LAKE DAM CLASS
ENVIRONMENTAL ASSESSMENT**

Thessalon First Nation Meeting

June 13, 2018

A world leader

Founded in 1911, SNC-Lavalin is one of the leading engineering and construction groups in the world and a major player in the ownership of infrastructure. From offices in over 50 countries, SNC-Lavalin's employees are proud to build what matters. Our teams provide EPC and EPCM services to clients in a variety of industry sectors, including oil and gas, mining and metallurgy, infrastructure and power. SNC-Lavalin can also combine these services with its financing and operations and maintenance capabilities to provide complete end-to-end project solutions.



Project Description

- The Shaw Lake Dam is masonry and concrete gravity structure located on the south end of Shaw Lake, on the southern boundary of Bridgland Township, Ontario
- The dam was built in 1931 for Thessalon Power Development replacing an earlier dam used by the Town of Thessalon to create a reservoir for a power plant located downstream at Little Rapids.
- It is about 11.91 m high and 97 m long with an upstream reservoir area of about 0.65 km² with a total drainage area of approximately 99.5 km².
- This dam is the first of three control dams located on the Bridgland River, which is a tributary to the Thessalon River

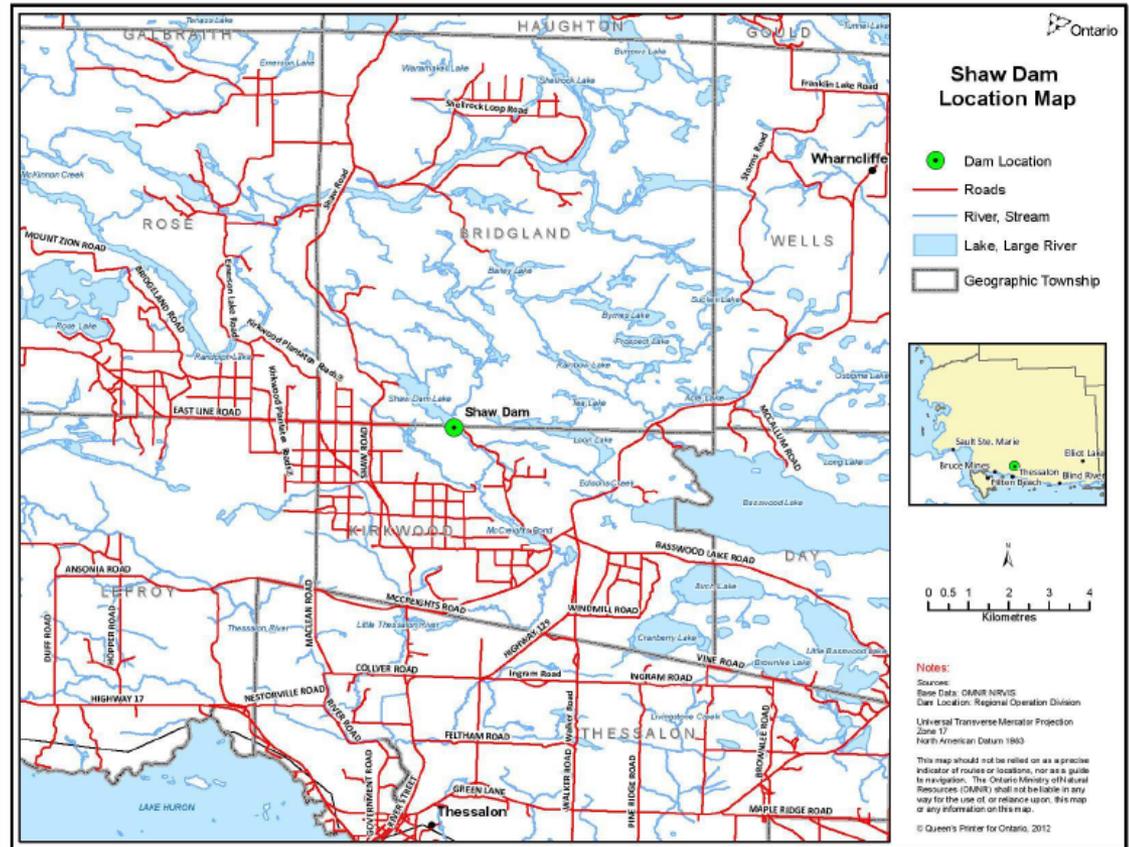


Project Photos



Project Description cont'd

- The Dam site accessed by McCreights gravel road off 129 Highway, 11.5 km north of the Town of Thessalon
- It is about 11.91 m high and 97 m long with an upstream reservoir area of about 0.65 km² with a total drainage area of approximately 99.5 km²
- This dam is the first of three control dams located on the Bridgland River with MacCreightts Dam and Little Rapids Dam located downstream



Scope of Work

- Collect and review all background information relevant to the Shaw Lake Dam
- Complete an ecological review through a desk-top and literature review for Species at Risk
- Undertake public and Indigenous community consultation
- Carry out a site investigation or site inspection
- Carry out a geotechnical investigation, topographical, bathymetry, geophysical and ecological surveys will be conducted
- Identification and evaluation of dam repair alternatives
- Conceptual design of the preferred alternative
- Assess the environmental impact of the preferred alternative
- Public, stakeholder, agency and Indigenous notification and consultation.
- Complete a Category C Class Environment Assessment (Environmental Study Report)



Work Plan

Milestone A-Class Environmental Assessment - Phase 1

- Task 1: Kick-Off Meeting (March)
- Task 2: Review of Existing Information (April – May)
- Task 3: Site Visit / Inspection and Reports (Structural, Hydrotechnical, Geotechnical, Environmental and Ecological) (June)
- Task 4: Ecological Review (July)
- Task 5: Site Plan Preparation (July)
- Task 6: Environmental Screening and Preparation of a Project File (March – April)
- Task 7: Flood and Dam Safety Review and Assessment (April)
- Task 8: Structural Stability and Dam Break Analysis (May)
- Task 9: Identification of Alternatives and Design of Preferred Alternative (June/July)
- Task 10: Preliminary Draft Environmental Study Report (ESR) (September/October)



Work Plan

Milestone B – Class Environmental Assessment – Phase 2

- Task 11: Site Investigations and Surveys (July)
 - Task 11.1: Geotechnical Investigation
 - Task 11.2: Topography and Bathymetry Surveys
- Task 12: Draft Environmental Study Report (September/October)
 - Task 12.1: Review Preliminary Draft ESR (following site investigations)
 - Task 12.2: Consultation with Public and Agencies
 - Task 12.3: Consultation with Indigenous Communities
 - Task 12.4: Notice of Opportunity to Inspect
- Task 13: Completion of Final ESR (February)
 - Task 13.1: Notice of Completion, Opportunity to Inspect Final ESR
 - Task 13.2: Statement of Completion



Values that guide us

Our values keep us anchored and on track. They speak to how we run our business, how we express ourselves as a group, and how we engage with our stakeholders and inspire their trust.

Teamwork & excellence

We're innovative, collaborative, competent and visionary.

Customer focus

Our business exists to serve and add long-term value to our customers' organizations.

Strong investor return

We seek to reward our investors' trust by delivering competitive returns.

Health & safety, security and environment

We have a responsibility to protect everyone who comes into contact with our organization and the environment we work in.

Ethics & compliance

We're committed to ethical business.

Respect

Our actions consistently demonstrate respect toward our stakeholders.





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Appendix B
Record of Consultation

Indigenous Communities Record of Consultation

Indigenous Community	Date	Stakeholder Name	Method of Contact (phone, email, etc.)	Contact Summary	Action Items
Thessalon First Nation	25-Apr-18	Receptionist	Met with Receptionist to drop off material and discuss project	Discussed the project with Kathleen Napoose who advised that she was the correct contact to discuss Shaw Lake. Information was exchanged, and material was left	Set up meeting to discuss the project in more detail
Thessalon First Nation	22-May-18	Kathleen Napoose	Phone to set up meeting in community	Spoke to Kathleen Napoose on the phone to set up a meeting with the project team and the Thessalon First Nation	
Thessalon First Nation	23-May-18	Kathleen Napoose	Meeting with Kathleen Napoose to discuss project	Discussed the Shaw Dam study and agreed that a meeting with council was the right approach before the site visit	
Thessalon First Nation	13-Jun-18	Kathleen Napoose and Council	Meeting with TFN Council to do a presentation	See Summary Notes	
Thessalon First Nation	14-Jun-18			Met with members of the Thessalon First Nation for a site visit	
Thessalon First Nation	19-Jul-18	Kathleen Napoose	Emailed Shaw Lake Presentation	To provide the Thessalon First Nation with greater familiarity with the Shaw Dam Lake and the project, the June 13, 2018 presentation was provided	
Thessalon First Nation	22-Nov-18	Kathleen Napoose	Phone	Teleconference was held to discuss project progress and to advise that draft material would be made available for the Thessalon First Nation review/comment shortly. The alternatives being evaluated were discussed and it was determined that while THessalon First Nation had no comments at this time, Kathleen would circulate the draft ESR amongst the council and they would discuss the alternaives and would provide any comments on them.	Email the draft ESR for Thessalon First Nation Review
Thessalon First Nation	29-Nov-18	Kathleen Napoose	Email/Phone	C. Darson emailed Ms. Napoose the Draft ESR for the review and comment of the Thessalon First Nation. A follow up phone call was placed to confirm the correct email address.	
Thessalon First Nation	03-Dec-18	Kathleen Napoose	Phone	A phone call was made by C. Darson to schedule a follow up meeting with Chef and Council to discuss the draft ESR, and the alternatives under consideration. C. Darson was advised to follow up the following day.	
Thessalon First Nation	04-Dec-18	Kathleen Napoose	Email	C. Darson emailed Ms. Napoose draft meeting minutes from the November 22 teleconference. In her email she inquired if a day/time had been determined for the meeting with the Chef and Council.	
Thessalon First Nation	05-Dec-18	Kathleen Napoose	Email	C. Darson received confirmation that a meeting with the Chef and Council could be held on December 18, 2018. C.Darson followed up to confirm this meeting date and inquired if the meeting would be held at the Band Office	
Thessalon First Nation	06-Dec-18	Kathleen Napoose	Email	Ms. Napoose confirmed that the meeting would be held at the Band Office.	
Batchawana First Nation	26-Apr-18	Receptionist	Met with Receptistist to drop off material	M. Fox spoke with receptionist who advised the Chief and staff were too busy to meet, however they would review any material submitted. M. Fox advised that material would be submitted via email and left business card.	M. Fox to forward project material to Chief Sayers
Batchawana First Nation	26-Apr-18	Chief Dean Sayers	Email was sent by Michael Fox to Chief	M. Fox sent project material via email - See Email Attachments	
Batchawana First Nation	27-Apr-18	Chief Dean Sayers	Email was sent from Chief Sayers	Chief Sayers acknowledge receipt of email.	
Batchawana First Nation	28-Apr-18	Dan Sayers, Manager, Natural Resources	Email was sent from Chief Sayers	Chief Sayers acknowledge receipt of email.	
Batchawana First Nation	06-Dec-18		Phone	C. Darson left message regarding the release of the Draft ESR, and asking if an electronic copy or hardcopy of the report was preferred	
Garden River First Natin	26-Apr-18	Alexis Vanderheyden, Lands & Resource Officer	Meeting with Alexis Vanderheyden to discuss project	Discussed the Shaw Dam project & left business card if any issues or concerns	
Garden River First Natin	06-Dec-18		Phone	C. Darson left message regarding the release of the Draft ESR, and asking if an electronic copy or hardcopy of the report was preferred	
Mississauga First Nation	01-Aug-18	Keith Sayers, Lands & Resource Manager	Meeting with Keith Sayers to discuss project	Discussed the Shaw Dam project & left business card if any issues or concerns	
Mississauga First Nation	17-Aug-18	Keith Sayers, Lands & Resource Manager	Email from Keith. Michael replied.	Shared Shaw Lake Power Point Presentation	
Mississauga First Nation	06-Dec-18		Phone	C. Darson left message regarding the release of the Draft ESR, and asking if an electronic copy or hardcopy of the report was preferred	
Mississauga First Nation	10-Dec-18	Keith Sayers, Lands & Resource Manager	Phone	K. Sayers confirmed that he would like to receive the ESR electronically	
Historical SSM Metis	01-Aug-18	Receptionist	Met Receptionist at Blind River	Spoke to the receptionist about the Shaw Lake project and receptionist agreed to forward material to Mr. Ernie Gatien	
Historical SSM Metis	06-Dec-18		Phone	C. Darson left message regarding the release of the Draft ESR, and asking if an electronic copy or hardcopy of the report was preferred	
Bar River Metis Community	01-Aug-18	Dave Johnston	Met with Dave Johnston at his home in Echo Bay	Spoke to Dave about Shaw Lake and reviewed the material and left business card if any issues or concerns	
Bar River Metis Community	06-Dec-18		Phone	C. Darson left message regarding the release of the Draft ESR, and asking if an electronic copy or hardcopy of the report was preferred	

Appendix C

List of Currently Known Species at Risk in the Shaw Dam Lake Study Area

APPENDIX C: Species at Risk Potentially Located in the Study Area, Habitat Characteristics, and Preliminary Presence/Absence Determination.

Species		Status in Canada ¹	Status in Ontario ²	S-RANK ³	Information Source ⁴	Observed During Field Studies	Habitat Requirements ⁵	Potential Habitat in Local Study Area	Rationale
Scientific Name	Common Name								
MAMMALS									
<i>Myotis leibii</i>	Eastern Small-footed Myotis	No Status	Endangered	S2, S3	Species at Risk in Ontario Public Registry	No	In or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees.	No	The study area includes forests that could have hollow trees or rocks. However, Eastern Small-footed Myotis' northern range tends to stop at Lake Superior Provincial Park.
<i>Myotis lucifugus</i>	Little Brown Myotis	Endangered	Endangered	S4	Atlas of the Mammals of Ontario	No	Caves, quarries, tunnels, hollow trees, buildings, attics, barns, wetlands, forest edges	Yes	Atlas of the Mammals of Ontario records indicate that this species has been observed within the study area.
<i>Myotis septentrionalis</i>	Northern Myotis	Endangered	Endangered	S3	SAR Public Registry	No	Houses, manmade structures, hollow trees, under loose bark, forests.	Yes	The study area includes forests that could have hollow trees or loose bark.
<i>Puma concolor cougar</i>	Eastern Cougar	No Status	Endangered	SU	Atlas of the Mammals of Ontario	No	The Cougar or Mountain Lion lives in northern remote undisturbed forests where there is little human activity. However, few cougar sightings have been confirmed in recent decades. Forested habitats must support plenty of White-tailed Deer (<i>Odocoileus virginianus</i>) and other prey species for cougars.	No	The habitat within the study area is not considered remote enough for cougars.
<i>Canis lycaon</i>	Eastern Wolf	Special Concern	No Status	S4	Atlas of the Mammals of Ontario	No	Deciduous and mixed forest landscapes with low human density. Dens tend to be located in conifer/hardwood-dominated landscapes near a permanent water source.	Yes	The habitat within the study area could support eastern wolves, but population trend information outside of Algonquin Park is not well known.
BIRDS									
<i>Haliaeetus leucocephalus</i>	Bald Eagle	No Status	Special Concern	S2N, S4B	OBBA	No	Prefer to nest in large trees almost always near a major lake or river where they do most of their hunting.	Yes	OBBA records indicate that this species has been found breeding within the study area.
<i>Riparia riparia</i>	Bank Swallow	No Status	Threatened	S4B	OBBA	No	Sand, clay or gravel riverbanks or steep riverbank cliffs; lakeshore bluffs of easily crumbled sand or gravel; gravel pits, road-cuts, grassland or cultivated fields that are close to water.	No	OBBA records indicate that this species has been found breeding near the study area.
<i>Hirundo rustica</i>	Barn Swallow	No Status	Threatened	S4B	OBBA	No	Prefer open habitat for foraging: grassy fields, pastures, ROWs, agriculture crops, and wetlands. Post-European settlement: Nest in human structures including barns, garages, houses, bridges, and culverts. Barn swallows generally reuse nests from year to year and are therefore sensitive to the removal of nesting structures.	No	OBBA records indicate that this species has been found breeding near the study area.
<i>Chlidonias niger</i>	Black Tern	Not at risk	Special Concern	S3B	OBBA	No	Marshes, wet meadows, and ponds.	No	OBBA records indicate that this species has been found breeding near the study area.
<i>Cardellina canadensis</i>	Canada Warbler	Threatened	Special Concern	S4B	OBBA	No	Interior forests; dense, mixed coniferous, deciduous forests with closed canopy, wet bottomlands of cedar or alder; shrubby undergrowth in cool moist mature woodlands; riparian habitat.	No	OBBA records indicate that there is confirmed breeding evidence for this species within the study area.

Species		Status in Canada ¹	Status in Ontario ²	S-RANK ³	Information Source ⁴	Observed During Field Studies	Habitat Requirements ⁵	Potential Habitat in Local Study Area	Rationale
Scientific Name	Common Name								
<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Special Concern	S4B	OBBA	No	Open ground; clearings in dense forests; peat bogs; ploughed fields; gravel beaches or barren areas with rocky soils; open woodlands; flat gravel roofs.	Yes	OBBA records indicate that there is possible breeding evidence for this species within the study area.
<i>Sturnella magna</i>	Eastern Meadowlark	Threatened	Threatened	S4B	OBBA	No	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	No	OBBA records indicate that there is possible breeding evidence for this species near the study area.
<i>Antrostomus vociferous</i>	Eastern Whip-poor-will	Threatened	Threatened	S4B	OBBA	No	Dry, open, deciduous woodlands of small to medium trees; oak or beech with lots of clearings and shaded leaf-litter, wooded edges; pine plantations.	Yes	OBBA records indicate that there is probable breeding evidence for this species near the study area.
<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern	Special Concern	S4B	OBBA	Yes	Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks.	Yes	OBBA records indicate that this species has been found breeding near the study area.
<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened	Special Concern	S4B	OBBA	No	Semi-open, conifer forest, prefers spruce, Jack Pine, and Balsam Fir; near pond, lake, or river; treed wetlands for nesting; burns with dead trees for perching.	Yes	OBBA records indicate that there is possible breeding evidence for this species near the study area.
<i>Falco peregrinus anatum/tundrius</i>	Peregrine Falcon anatum/tundrius	Special Concern	Special Concern	S3B	OBBA	No	Rock cliffs, crags, especially situated near water; tall buildings in urban centres.	No	OBBA records indicate that this species has been found breeding near the study area.
<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	S4B	OBBA	No	Nests in the boreal forest; prefers shores of wetlands, peat bogs, swamps, and beaver ponds.	No	OBBA records indicate that this species has been found breeding near the study area.
<i>Asio flammeus</i>	Short-eared Owl	Special Concern	Special Concern	S2N, S4B	OBBA	No	Opens areas, particularly meadows, marshes, bogs, and tundra.	No	OBBA records indicate that there is probable breeding evidence for this species near the study area.
<i>Hylocichla mustelina</i>	Wood Thrush	Threatened	Special Concern	S4B	OBBA	No	Undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges.	Yes	OBBA records indicate that there is possible breeding evidence for this species near the study area.
<i>Coturnicops noveboracensis</i>	Yellow Rail	Special Concern	Special Concern	S4B	OBBA	No	Large, freshwater or brackish grass and sedge marshes with dense vegetation including bullrushes, horsetails, grasses.	No	OBBA records indicate that there is possible breeding evidence for this species near the study area.
FISH									
<i>Myoxocephalus thompsonii</i>	Deepwater Sculpin	Threatened	No Status	S3	Holm et al., 2009	No	Cold deep lakes	No	Lakes in the study area are known to support Deepwater Sculpin.
<i>Acipenser fulvescens</i>	Lake Sturgeon	No Status	Endangered	S2	NHIC, Scott and Crossman, 1998, Holm et al., 2009	No	Cool waters of large rivers and lakes. Prefers sand and silt bottoms but is also found over rubble and gravel.	No	Rivers and lakes in the study area are known to support Lake Sturgeon.
<i>Ichthyomyzon fossor</i>	Northern Brook Lamprey	Special Concern	Special Concern	S3	Scott and Crossman, 1998, Holm et al., 2009	No	Clear, coolwater streams with soft substrates such as silt and sand for burrowing larvae. Spawning occurs in fast flowing riffles comprised of rock or gravel.	No	Rivers and lakes in the study area are known to support Northern Brook Lamprey.
<i>Coregonus zenithicus</i>	Shortjaw Cisco	Threatened	Threatened	S2	SAR Public Registry	No	Deeper waters of large lakes.	No	Lake Superior is considered outside of the study area.
<i>Ichthyomyzon unicuspis</i>	Silver Lamprey	No Status	Special Concern	S3	Holm et al., 2009	No	Clear water to find fish hosts. Larvae prefer clean stream beds of sand and organic debris. Spawning migration routes must be unrestricted. Spawning occurs in rivers, and adults are found in lakes.	No	Silver Lamprey is found on the northern shores of Lake Huron.

Species		Status in Canada ¹	Status in Ontario ²	S-RANK ³	Information Source ⁴	Observed During Field Studies	Habitat Requirements ⁵	Potential Habitat in Local Study Area	Rationale
Scientific Name	Common Name								
<i>Coregonus kiyi kiyi</i>	Upper Great Lakes Kiyi	Special Concern	Special Concern	S3	SAR Public Registry	No	Clear, cold water environments ranging in depths from 10 meters to 305 meters. Prefer lakes with clay and mud substrate bottoms.	No	Upper Great Lakes Kiyi can be found nearshore in Lake Huron as they move to shallower water depths (50 m) at night. However, they are most abundant at depths of 150 m.
REPTILES AND AMPHIBIANS									
<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	S3	Reptile and Amphibian Atlas	Yes	Small wetlands, ponds, or ditches with slow moving water and abundant vegetation. It hibernates in soft sand or muddy lake, river, or pond bottoms close to shore.	Yes	Reptile and Amphibian Atlas indicates sightings of this species have been recorded within the study area.
VASCULAR PLANTS & LICHENS									
<i>Iris lacustris</i>	Dwarf Lake Iris	Special Concern	Special Concern	S3	SAR Public Registry	No	Grows on alvars, dolostone bedrock shorelines, sand or gravel beach ridges, and in openings in coniferous woodlands.	No	Largest populations occur up to several kilometers from Lake Huron
<i>Leptogium rivulare</i>	Flooded Jellyskin	Threatened	No Status	S3	Ontario SAR Public Registry	No	Requires humid habitats that are calcareous and subject to seasonal flooding. Colonizes on exposed bedrock or flooded lake shorelines that have a low sediment load. Colonizes on trees where there is partial shade and moderate temperatures.	No	Flooded Jellyskin is found mainly between the 45°N and 60°N parallels where the study area is.
ARTHROPODS									
<i>Danaus plexippus</i>	Monarch	Special Concern	Special Concern	S2N, S4B	SAR Public Registry	No	Exist primarily wherever milkweed (<i>Asclepius</i>) and wildflowers (such as Goldenrod, asters, and Purple Loosestrife) exist. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow	Yes	Grasslands are located along the right-of-way in the study area.
<i>Coccinella novemnotata</i>	Nine-spotted Lady Beetle	No Status	Endangered	SH	Ontario SAR Public Registry	No	Agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows, riparian areas and isolated natural areas.	No	The study area includes a mix of deciduous and coniferous forests.

¹ Federal Species at Risk Act

² Species at Risk in Ontario List. (2014, August 11). Ministry of Natural Resources and Forestry. Retrieved September 12, 2014, from <http://www.ontario.ca/environment-and-energy/species-risk-ontario-list>

³ Conservation Ranking

⁴ Various sources

⁵ MNRF Significant Wildlife Habitat Technical Guide Appendix G (MNRF, 2000) Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. 151p.

Status

No Status: Species has not been assessed under the Species at Risk Act.

Special Concern: Species that may become threatened or an endangered species because of a combination of biological characteristics and identified threats.

Threatened: Species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.

Endangered: Species that is facing imminent extirpation or extinction.



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