

**EAST-WEST TIE TRANSMISSION PROJECT
AMENDED ENVIRONMENTAL ASSESSMENT REPORT**

Revision Log

Company	Client Contact	Version	Date Issued	Method of Delivery	Revisions
NextBridge Infrastructure	Corinne Miller	Rev01	September 2018	Electronic	This section was updated to be consistent with the Heritage Impact Assessment (HIA) prepared by Golder Associates Ltd., dated July 13, 2018.

16. CULTURAL HERITAGE RESOURCES

This section describes and summarizes a preliminary screening and assessment of the effects of East-West Tie Transmission Project (the Project) on cultural heritage resources, including built heritage resources and cultural heritage landscapes. As defined in the 2014 *Provincial Policy Statement* (Government of Ontario 2014:39), built heritage resources are “a building, structures, monuments, installations, or any manufactured remnant that contributes to a property’s cultural heritage value or interest as identified by a community, including an Aboriginal community.” A cultural heritage landscape is “a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest as identified by a community, including an Aboriginal [Indigenous] community” (Government of Ontario 2014:40). The area “may involve features such as structures, spaces, archaeological sites, or natural elements that are valued together for their interrelationship, meaning or association” (Government of Ontario 2014:40). Examples of cultural heritage landscapes include heritage conservation districts designated under Part V of the *Ontario Heritage Act*; villages, parks, gardens, battlefields, main streets, and neighbourhoods; cemeteries, railways, viewsheds, natural areas, and industrial complexes of heritage significance; and areas recognized by federal or international designation authorities, such as a National Historic Site or a United Nations Educational Scientific and Cultural Organization (UNESCO) World Heritage Site (Government of Ontario 2014:40).

The Province of Ontario, through the Ministry of Tourism, Culture and Sport (MTCS), has developed a series of products to advise municipalities, organizations, and individuals on heritage protection and conservation. Identifying the presence of cultural heritage resources within a project area is aided by the MTCS (2015) *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist for the Non-Specialist*, while more detailed guidance on other aspects of heritage evaluation and conservation is provided in the *Ontario Heritage Tool Kit* series.

If the potential for cultural heritage resources in a project area is identified when completing the MTCS checklist, further investigation as part of a Cultural Heritage Evaluation Report (CHER) or Heritage Impact Assessment (HIA) is usually required. In both a CHER and HIA, the cultural heritage value or interest of listed properties or newly identified resources is evaluated using *Ontario Regulation 9/06 Criteria for Determining Cultural Heritage Value or Interest* (Government of Ontario 2006). The effects of a development or site alteration on known or newly identified built heritage resources or cultural heritage landscapes are assessed as part of an HIA.

Only potential cultural heritage resources were identified in the cultural heritage resources local study area (LSA) in this assessment (Section 16.4); therefore, the next step was to initiate a CHER. Through field investigations, further archival research, and evaluation using the *O. Reg. 9/06* criteria, the CHER identified properties of cultural heritage value or interest and their heritage attributes. Since the heritage attributes of these properties were predicted to be impacted by the Project, an HIA was initiated. The *Heritage Resources in the Land Use Planning Process* (MTCS 2006) defines an HIA as:

“a study to determine if any cultural resources (including those previously identified and those found as part of the site assessment) are impacted by a specific proposed development or site alteration. It can also demonstrate how the cultural resource will be conserved in the context of redevelopment or site alteration. Mitigative or avoidance measures or alternative development or site alteration approaches may be recommended.”

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The assessment completed to date follows the general approach and concepts described in Section 5. The main steps in the assessment include:

- considering input from Indigenous communities, government representatives and agencies, other communities, property owners, and people or groups interested in the Project during the ongoing consultation and engagement process (Section 16.1);
- identifying information and data sources used in the assessment (Section 16.2);
- identifying and rationale for selection of criteria and indicators for cultural heritage resources (Section 16.3);
- establishing temporal boundaries and study areas for the assessment of effects on these criteria (Section 16.4);
- describing the existing environment (i.e., baseline characterization) and identifying environmentally sensitive features specific to each criterion (Section 16.5);
- identifying potential Project-environment interactions (Section 16.6);
- undertaking the net effects assessment (Section 16.7):
 - identifying potential environmental effects;
 - identifying mitigation measures;
 - predicting the net effects; and
 - characterizing the net effects (i.e., after mitigation) of the Project on environmental criteria (Section 16.8).
- assessing the significance of the net effects (Section 15.9);
- conducting a cumulative effects assessment of the net effects in combination with other past, present, or reasonably foreseeable developments (RFDs) and activities, and assessing significance, if applicable (Section 16.10);
- determining the degree of certainty in the net effects prediction and associated assessment of significance (Section 16.11); and
- identifying follow-up, inspection, and monitoring programs that will be completed during and after construction (Section 15.12).

16.1 Input from Consultation and Engagement

Consultation and engagement for the Project considered Indigenous communities, regulatory agencies, property owners, interest holders, Crown interests and the general public. Consultation activities are described in Section 2 of the amended Environmental Assessment (EA) Report. The draft, final and amended EA Reports were each subject to a public review and comment period. Comments received on the draft EA Report, responses and change log are provided in Appendix 1-III. Comments received on the final EA Report and responses are provided in Appendix 1-IV. The following concerns related to areas of cultural importance and potential cultural heritage resources were raised during consultation and engagement and from comments received on the draft, final and amended EA Reports:

- Ministry of Tourism, Culture and Sport (MTCS) expressed concern that potential downstream effects had not been assessed. Potential downstream effects to marine cultural heritage resources are assessed in Section 16.7.2.2.
- The Township of Terrace Bay identified the Aguasabon River as a valued natural feature of special value to the people of Terrace Bay and surrounding area and Mill Road in the Township of Terrace Bay as a historic corridor. These concerns are discussed in Section 16.5.2.3.6 and 16.5.2.3.3, respectively.
- The Town of Marathon identified Mink Falls as an important tourist site and Port Munro, a former pulpwood storage harbour as a potential cultural heritage resource. These concerns are discussed in Section 16.5.2.3.6 and 16.5.2.3.2, respectively.
- The Town of Marathon noted the Angler Creek World War II Internment camp, where Japanese-Canadian internees and German prisoners of war were detained, and possible cemetery plots located on Angler Creek as a potential cultural heritage resource. This concern is discussed in Section 16.5.2.3.6.
- The Town of Marathon identified the Pic River, used historically for log driving, as a potential cultural heritage resource. This concern is discussed in Section 16.5.2.3.2.
- Important cultural sites identified by Indigenous communities are considered in the Indigenous current use of lands and resources for traditional purposes assessment (Section 17.7).
- MTCS indicated that clarification should be sought from the Ministry of Natural Resources and Forestry (MNRF) to determine whether there are cultural heritage resources within any of the eight forest management units crossed by the project. The MNRF was contacted and asked to verify whether it has identified specific cultural heritage value or interest associated with the eight forest management units, or specific cultural heritage sites in the forest management units. In its email response dated July 9, 2018, the MNRF did not raise any heritage concerns.
- Ministry of Environment and Climate Change (MOECC), Ministry of Natural Resources and Forestry (MNRF), and Métis Nation of Ontario expressed concern that many responses to comments on the draft EA Report were provided in Appendix 1-III of the final EA Report and not integrated into the body of the final EA Report. Suggested changes acknowledged in responses to comments on the draft EA Report but not incorporated into the final EA Report have been incorporated into the amended EA Report where appropriate.

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- MOECC, MNRF and Indigenous communities expressed concern with the pathway screening methodology employed in the draft and final EA Reports. The EA methods have been revised and feedback has been incorporated. The terms “effect pathway” and “assessment endpoint” were removed from the amended EA Report. This revision is reflected throughout this section of the amended EA Report.
- MOECC, MNRF and Indigenous communities expressed concerns about the use of the pathway screening method excluding some potential Project effects from being carried forward to the net effects assessment. All potential Project effects are considered in the net effects assessment and a net effects assessment table was added as Table 16-6 to this section.
- Concerns have been considered and addressed in this section of the amended EA Report. Specific responses to concerns expressed by Indigenous communities are also included in Section 2.2.5 of the amended EA Report and a detailed public and Indigenous consultation and engagement record is provided in Appendices 2-III and 2-IX, respectively.

16.2 Information Sources

Information for the cultural heritage resources baseline was collected from review of the following sources:

- municipal heritage registers from the following municipalities:
 - Municipality of Shuniah;
 - Township of Dorion;
 - Township of Red Rock;
 - Township of Nipigon;
 - Township of Schreiber;
 - Township of Terrace Bay;
 - Town of Marathon;
 - Township of White River; and
 - Municipality of Wawa.
- Ministry of Northern Development and Mines Abandoned Mines Information System (AMIS) database (MNDM 2016);
- *Ontario Heritage Act Register* (Ontario Heritage Trust 2014; Dillon 2015, p. 15 to 16);
- Ontario Heritage Foundation *Online Plaque Guide* (Ontario Heritage Trust 2016a) and *Ontario Places of Worship* inventory (Ontario Heritage Trust 2016b);
- Canadian Register of Historic Places (CRHP) (Parks Canada no date);
- Historic Sites and Monuments Board of Canada *Directory of Federal Heritage Designations* (Parks Canada 2012) and *Directory of Heritage Railway Stations* (Parks Canada 2014);
- Ontario provincial parks inventories;

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- Forest Management Plans for the Lakehead, Black Spruce, Lake Nipigon, Kenogami, White River, Pic River, Big Pic, and Algoma forests;
- archival documents and secondary sources; and
- LiDAR and aerial imagery.

A review of the heritage registers was carried out to identify federally, provincially, and municipally recognized cultural heritage resources within the cultural heritage resources LSA and regional study area (RSA) (Section 16.4). For the purposes of the amended EA report, sufficient information was deemed to be available from the references listed above to assess the potential effects of the Project on cultural heritage resources. A combined CHER and HIA was undertaken to confirm the results of the effects assessment.

16.3 Criteria and Indicators

Criteria are components of the environment that are considered to have economic, social, biological, conservation, aesthetic, or ethical value (Section 5.1). Cultural heritage resources are non-renewable resources with potential spiritual and cultural value and meaning for Canadians, including Indigenous communities, which could be affected by the Project.

Indicators represent attributes of the environment that can be used to characterize changes to criteria in a meaningful way. The indicators for cultural heritage resources are defined as follows:

- **Known cultural heritage resources:** Known or recognized cultural heritage resources are properties or areas that have been qualitatively evaluated using a wide range of information sources and field investigations and found to be of cultural heritage value or interest and are identified, designated, or otherwise protected by a governmental approval agency responsible for heritage. The following are some of the legislative tools available to protect and recognize cultural heritage resources:
 - *Ontario Heritage Act*;
 - *Funeral Burial and Cremation Services Act, 2002*;
 - *Provincial Parks and Conservation Reserves Act, 2006*;
 - *Historic Sites and Monuments Act*;
 - *Canada National Parks Act*;
 - *The Planning Act, R.S.O. 1990, c. P.13*; and
 - *Heritage Railway Stations Protection Act*.

Known cultural heritage resources are listed on municipal, provincial, or federal heritage registries and can be quantitatively measured by the number of resources or properties. The type and location of cultural heritage resources is often included in the information provided on these registries.

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Potential cultural heritage resources: Potential cultural heritage resources include any type of property, landscape, or feature which may be of cultural heritage value or interest, and could be considered by some level of authority as worthy of protection under a relevant heritage protection method, but has not yet been qualitatively evaluated using a wide range of information sources and field investigation or given formal recognition or protection by a governmental approval agency. Potential cultural heritage resources are qualitatively evaluated using the criteria prescribed in *Ontario Regulation 9/06 of the Ontario Heritage Act*, and quantitatively measured by the number of resources or properties, their type, and location.

The criterion and indicators selected for the assessment of Project effects on cultural heritage resources, and the rationale for their selection, are provided in Table 16-1.

Table 16-1: Cultural Heritage Resources Criterion and Indicators

Criterion	Indicators	Measurement of Potential Effects	Data Source(s)	Rationale
Cultural heritage resources	Known cultural heritage resources	<ul style="list-style-type: none"> ■ Potential effects to known cultural heritage resources are measured qualitatively using a wide range of information sources and field investigations and found to be of cultural heritage value or interest and are identified, designated, or otherwise protected by a governmental approval agency responsible for heritage. ■ The potential effect to known cultural heritage resources is measured qualitatively by identifying the number, type and location at baseline, and the Project's effect on the heritage attributes of each identified known cultural heritage resource. The number of known cultural heritage resources potentially affected by the Project is determined quantitatively by mapping known locations and comparing or overlaying with the Project footprint and cultural heritage resources LSA and RSA. 	<ul style="list-style-type: none"> ■ Municipal heritage registers; ■ Ontario Heritage Act Register; ■ Ontario Heritage Foundation <i>Online Plaque Guide</i>; ■ Canadian Register of Historic Places (CRHP); ■ Historic Sites and Monuments Board of Canada <i>Directory of Federal Heritage Designations</i>; ■ Ontario provincial parks inventories; and ■ Forest Management Plans^(a). 	<ul style="list-style-type: none"> ■ Cultural heritage resources are a non-renewable resource that could be affected by Project activities. ■ Cultural heritage resources may have spiritual and cultural value or meaning for Canadians, including Indigenous communities. ■ Cultural heritage resources are protected in Ontario under the <i>Ontario Heritage Act</i> or by the federal government under a variety of acts (e.g., <i>Canada National Parks Act</i>, <i>Heritage Railway Stations Protection Act</i>).

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Table 16-1: Cultural Heritage Resources Criterion and Indicators

Criterion	Indicators	Measurement of Potential Effects	Data Source(s)	Rationale
Cultural heritage resources	Potential cultural heritage resources	<ul style="list-style-type: none"> ■ Potential effects to potential cultural heritage resources qualitatively evaluated using a wide range of information sources and field investigation or given formal recognition or protection by a governmental approval agency. ■ The number of potential cultural heritage resources potentially affected by the Project is determined quantitatively by mapping potential locations and comparing or overlaying with the Project footprint and cultural heritage resources LSA and RSA. 	<ul style="list-style-type: none"> ■ Municipal heritage registers and inventories; ■ Ministry of Northern Development and Mines <i>Abandoned Mines Information System (AMIS)</i>; ■ Ontario provincial parks inventories; ■ Forest Management Plans; ■ archival documents and secondary sources; ■ LiDAR and aerial imagery^(a); and ■ Information provided by communities^(b). 	<ul style="list-style-type: none"> ■ Cultural heritage resources are a non-renewable resource that could be affected by Project activities. ■ Cultural heritage resources may have spiritual and cultural value or meaning for Canadians, including Indigenous communities. ■ Cultural heritage resources are protected in Ontario under the <i>Ontario Heritage Act</i> or by the federal government under a variety of acts (e.g., <i>Canada National Parks Act, Heritage Railway Stations Protection Act</i>).

a) Refer to Section 16.2.

b) Refer to Section 16.1

AMIS = Abandoned Mines Information System; CRHP = Canadian Register of Historic Places; LSA = local study area.

16.4 Assessment Boundaries

16.4.1 Temporal Boundaries

The Project is planned to occur during two phases (refer to Section 5.2.1):

- **construction phase:** the period from the start of construction to the start of operation (approximately two years); and
- **operation phase:** encompasses operation and maintenance activities throughout the life of the Project, which is anticipated to be indefinite.

The assessment of Project effects on cultural heritage resources considers changes that occur during the construction phase. There is no anticipated Project effect during operation since all cultural heritage resources will be identified, and mitigation measures undertaken as required, prior to the construction phase. These periods are sufficient to capture the effects of the Project.

16.4.2 Study Areas

The RSA and a LSA were defined around the Project footprint. The RSA extends approximately 1 km on either side of the preferred right-of-way (ROW) for the transmission corridor. The LSA extends approximately 50 metres (m) from both sides of the proposed Project footprint (i.e., the ROW and related components such as access roads and laydown yards).

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Study areas for the assessment are provided in Table 16-2 and shown in Appendix 16-I in Figure 16-I-1.

Table 16-2: Cultural Heritage Resources Study Areas

Study Area	Area (ha) used in the HIA	Description	Rationale
Project footprint	5,005	The Project footprint is the preferred route ROW, laydown yards, storage yards, construction camps, construction easements and new access roads	Designed to capture the potential direct effects of the footprint of the Project
Cultural heritage resources LSA	16,478	Includes the Project footprint and extends 50 meter (m) from the Project footprint boundary (i.e., preferred route ROW, new and existing access roads, laydown yards, staging areas and construction camps)	The cultural heritage resources LSA was selected to encompass direct and indirect adverse effects on cultural heritage resources that may result from construction activity, site or landscape alteration, or demolition
Cultural heritage resources RSA	123,272	Extends 1 km from the preferred route ROW boundary, 50 m from access roads, and 500 m from the boundary of laydown yards, storage yards, and construction camps. The 50 m study area for access roads only includes those classified as new and improvement/widening outside the 1 km cultural heritage resources RSA	The cultural heritage resources RSA was delineated to gain a broader understanding of Euro-Canadian historical land use in the region and to account for potential refinements to the Project

km = kilometre; LSA = local study area; m = metre; ROW = right-of-way; RSA = regional study area.

16.5 Description of the Existing Environment

This section provides a summary of the existing environment for cultural heritage resources as determined through a baseline desktop study and the HIA.

16.5.1 Baseline Data Collection Methods

As per direction received from MTCS during a teleconference with NextBridge Infrastructure LP (NextBridge) on March 6, 2014, a preliminary screening was completed using the MTCS (2015) *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes: A Checklist for the Non-Specialist* (the MTCS *Checklist*). This identified the baseline conditions for cultural heritage resources, and involved review of previous research; consultation with potential cultural heritage stakeholders; review of municipal, provincial, and federal heritage databases; and analysis of available geospatial data.

Known and potential cultural heritage resources within both the RSA and LSA were identified on the basis of the MTCS *Checklist*. During the preliminary screening, seven potential cultural heritage sites were identified to be at risk of direct impact. These included six mines and quarries, and an internment camp for Japanese-Canadians and German Prisoners of War established during the Second World War known as the 'Angler Internment Camp'. The known or potential cultural heritage resources identified within the LSA were recommended for further evaluation and impact assessment. Based on the findings of the baseline study, an HIA was undertaken. During preparation of the HIA, an eighth cultural heritage resource was identified —the Aguasabon River and Hays Lake near the community of Terrace Bay.

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The cultural heritage evaluation and impact assessment was limited to sites of Euro-Canadian heritage following consultation with MTCS Heritage Planner Joseph Muller on September 22, 2016. First Nations sites and cultural heritage resources were addressed in Section 15 –Archaeological Resources— and Section 17 –Indigenous Current Use of Lands and Resources for Traditional Purposes— in this amended EA Report.

For the HIA, Golder:

- summarized the cultural heritage screening, outlined which known and potential cultural heritage resources required attention, and identified which were determined to fall outside of the Project footprint or for other reasons would not require further cultural heritage study;
- researched archival and published sources relevant to the history and geographic context of the RSA;
- examined aerial photographs, satellite imagery, fly-over video, and the Geographic Information System (GIS) based Abandoned Mine Information System (AMIS) database for evidence of potential cultural heritage resources in the LSA;
- undertook a field investigation to inventory and document known and potential cultural heritage resources identified in the LSA, and to understand the wider landscape context;
- evaluated potential cultural heritage resources for ‘cultural heritage value or interest’ using the criteria prescribed in *Ontario Regulation 9/06 (O. Reg. 9/06)*; and
- assessed the risk of adverse impact to sites of cultural heritage value or interest using MTCS and other guidance.

A number of primary and secondary sources, including historic maps, aerial imagery, photographs, and research articles were accessed from the National Air Photo Library, Library and Archives Canada, Archives of Ontario, and online sources.

The cultural heritage screening and the HIA drew on public consultation and engagement completed, the details of which are outlined in Section 2. Public consultation for the project is documented in Appendices 2-III and 2-IX of this amended EA Report.

Preliminary field reconnaissance of the Project footprint was conducted by helicopter and on foot by Cultural Heritage Specialist Stephen Jarrett from October 25 to 26, 2016. Field investigations of identified sites were carried out by Cultural Heritage Specialist Benjamin Holthof between August 1 and August 3, 2017. This included photographing the sites identified and their setting with a Canon Rebel T3i camera and iPad 2 linked to the Collector for ArcGIS application. Guidance on identifying and evaluating cultural heritage resources was drawn from the MTCS *Ontario Heritage Tool Kit* and the U.S. National Parks Service *National Register Bulletin Guidelines for Identifying, Evaluating and Registering Historic Mining Properties* (Nobel and Spude 1997).

Using historical research, consultation, and field investigations, a number of mine sites, the Angler Internment Camp and the Aguasabon River were evaluated to determine if they met the criteria for cultural heritage value or interest as prescribed in *O. Reg. 9/06*. The findings are discussed in Section 16.5.2.

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16.5.2 Baseline Conditions

The Project generally parallels the north shore of Lake Superior from the City of Thunder Bay to the Municipality of Wawa.

The geology of the LSA includes the Southern Craton and Superior Province (Ontario Geologic Survey 1991), which is primarily granitic or gneissic bedrock, with intrusive areas of less acidic metavolcanic and metasedimentary rock and formations of basalt and other volcanic rocks. Greenstone, siltstone, and shale are also present in the geology, terrain, and soils (Sutcliffe 1991). The LSA is also in the Port Arthur Hills and Abitibi Upland physiographic divisions of the James Region of the Precambrian Canadian Shield (Bostock 2014). The Abitibi Uplands form a rocky landscape scattered with lakes and large areas covered by deposits from glaciation, whereas the Port Arthur Hills around the City of Thunder Bay consist of ridges produced by folded sequences of diabase sills and sedimentary rocks (Thurston 1991). Soils in the area are varied and include glaciolacustrine deposits, flood plains, remnants of terraces, gravel, sand and organic peats.

The Project crosses the Lake Abitibi, Nipigon, Temagami, and Pigeon River ecoregions of the Ontario Shield Ecozone (Crins et al. 2009), which are typified by a moist and cold climate, although Lake Superior has a moderating effect on the temperature and precipitation. The forest throughout the LSA consists of mixed and boreal forest.

Evidence of human occupation in this region begins in the distant Indigenous past and extends into the present day. Provided below is a brief summary of the region's human history with notes about the potential cultural heritage resources associated with these periods. After the background history is presented, this section describes the known cultural heritage resources located along the Project route, as well as potential cultural heritage resources identified during the desktop study.

16.5.2.1 Regional History

16.5.2.1.1 European Exploration and Trade (1600s to circa 1850)

European exploration of northern Ontario in the Lake Superior region began in the 17th century with the French. The first known explorers on the lake were Pierre Esprit Radisson and Médard Chouart, who set off from Quebec in 1658 and returned two years later with “a rich cargo of furs and the knowledge that the best furs could be obtained to the north and west of Superior” (Stuart 2003:16).

As French exploration and trade increased, many Frenchmen married First Nation women, and their children, who became known as Métis, established a unique identity that was both connected to, and distinct from, European and First Nation cultures (Steckley and Cummins 2008).

English interest in the area officially began on May 2, 1670, when the Hudson's Bay Company (HBC) was incorporated by Royal Charter as “The Governor and Company of Adventurers of England trading into Hudson's Bay.” The charter also included a monopoly over trade, particularly for furs, with Indigenous groups in areas where rivers and streams flow into Hudson Bay. This area was called Prince Rupert's Land and included 3.9 million km².

In response, the French built posts between 1687 and 1713 on Lake Superior at what are now the City of Thunder Bay, the Township of Nipigon, and Michipicoten, and openly fought the English for control of the fur trade in northern Ontario (Chisholm and Gutsche 1998). An uneasy peace was established after the signing of the Treaty of Utrecht in 1713, the main goal of which was to end the War of Spanish Succession between Britain and France (Miquelon 2001). As a concession, France agreed to surrender the area around Hudson Bay, including the English trading posts they had annexed (Stuart 2003). After the Seven Years War ended with the Treaty of Paris in 1763, North America was ceded to the British, and the French posts on Lake Superior were abandoned to independent traders.

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Prior to 1900, the fur trade was a driving force in the economic development of northern Ontario (Baldwin 1976). Depleted beaver stocks in southern areas required traders to venture further north and west to procure a plentiful supply of furs (Morse 1979). For traders based in Montreal, the logistical challenges grew as the distances to transport furs and trade items became greater. By 1778, many independent traders had merged into loose unions that would coalesce as the North West Company (NWC) in 1784 (Morse 1979). The HBC entered into direct competition with the NWC on Lake Superior by building trading posts in 1795 (Chisholm and Gutsche 1998). The NWC countered in 1803 by building a new fort called Fort William at its Lake Superior headquarters, in what is now the City of Thunder Bay. Declining fur returns during this time also forced the HBC and NWC to change their trading policies from river mouth trading to establishing permanent posts farther inland (Morse 1979). From the early part of the 1770s until 1821, competition between the HBC and NWC was fierce. With both companies unable to sustain the prolonged and intense competitions, they amalgamated into a single operation under the overall banner of the HBC (Klimko 1994). Extensive trade in northern Ontario continued throughout the 18th and 19th centuries, but gradually the HBC shifted its focus towards western Canada, and abandoned many of the trading posts and forts in northern Ontario.

Because trading posts moved frequently, and some were run by independent merchants, it is difficult to estimate the exact number in a given area. Although some trading posts became permanent settlements, most survive as archaeological sites, owing to their expedient construction and short-lived occupations.

Seven trading posts in six locations were known to operate along the north shore of Lake Superior between the City of Thunder Bay and Michipicoten. From west to east, these include Pointe de Meuron (HBC post, date unknown), Fort Kaministiquia (French post, circa 1678 – later replaced by Fort William), Fort William (NWC post, circa 1804), Red Rock House (HBC post, circa 1820), Fort Camanistigoyan (French post, circa 1678), Fort Pic (NWC post, circa 1790) and Fort Michipicoten (French post, circa 1750) (Voorhis 1930). Mapping of fur trade posts is not comprehensive or accurate; however, descriptions of these trading posts suggest none was located in the vicinity of the Project.

16.5.2.1.2 Euro-Canadian Settlement (circa 1850 to present)

Settlement by Euro-Canadians in northern Ontario for farming, forestry, mining and other forms of resource extraction began around the middle of the 19th century. This was substantially enabled by completion of a railway from Toronto to Collingwood on Georgian Bay in 1855 and construction of a canal at Sault Ste. Marie the same year for marine transport from Lake Huron to Lake Superior (Bray 1984). At first, travel and trade around the north shore of Lake Superior relied on the water routes, but this began to change in the 1880s with the construction of the Canadian Pacific Railway (CPR). By 1884, the CPR finished its route across the north end of the lake. Construction of the railway relied on marine transportation, and small ports were built approximately 100 km apart along the north shore of Lake Superior to deliver supplies for railway construction, leading to the development of small communities and tracks or roads to support the railway. Other rail lines included the Algoma Central Railway, and the Temiskaming and Northern Ontario Railway (Chisholm and Gutsche 1998).

Census records from 1871 list 15,000 people inhabiting northern Ontario, clustered in a few settlements, primarily Bruce Mines and Sault Ste. Marie. By 1911, largely as a result of new railways, the population had increased to 215,000 people scattered over a wide geographical area (Bray 1984). Government policy in the early 20th century drove much of the development of northern Ontario through infrastructure creation and geological surveys. Aviation also played a role after World War I in aiding survey of difficult terrain and supplying remote communities.

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Rail infrastructure, including roads, was difficult to build in northern Ontario due to challenging terrain and environmental conditions. As early as 1912, the Province began to fund roads, bridges and transportation facilities in northern Ontario, and by 1930 the “Nipigon Highway” between Port Arthur and the Township of Nipigon opened (Bagnato and Shragge 1984). The Trans-Canada highway began with federal funding in 1949, but progress was slow, with the section between the Agawa River and the Town of Marathon not completed until 1956. A complete highway across Northern Ontario, and connected to the Municipality of Wawa, was operational by 1960 (Bagnato and Shragge 1984).

Agriculture has aided the development of northern Ontario, although climate and soil conditions limit the region’s capacity to support a viable agricultural economy. The majority of the area around the Project is unsuitable for large-scale agriculture use since the typical soil formation on the Canadian Shield produces sharply undulating terrain with minimal overburden and large areas of exposed bedrock. Despite these challenges, agricultural settlement has occurred on small areas of fertile land close to mining and lumbering centres such as Sault Ste. Marie, the City of Thunder Bay, and on Manitoulin Island (Brozowski et.al. 1984). These farms were vital for supplying lumber and mining industry workers and their horses with an affordable food source.

The Ontario government actively promoted the agricultural potential of the north in the last quarter of the 19th century and attracted a large number of prospective farmers to settle in the region. However, by the Great Depression, the regional agricultural economy was in decline, partly because of wider developments in the industry and also due to the difficulties of farming in the harsh climate (Brozowski et.al. 1984). In 1931, nearly 2.8 million acres of land were under cultivation in northern Ontario, but fifty years later this had dropped to 1.2 million acres, an indication that viable agricultural opportunities were limited.

It was the lumbering and mining industries that propelled population growth during the early and mid-20th century from 215,000 in 1921 to 722,000 in 1961 (Bray 1984:14). The 2011 Canada Census data indicated that the population of northern Ontario was just over 750,000 and clustered in regional centres (Statistics Canada 2011).

16.5.2.1.3 Municipality of Wawa

The community of Wawa is a remote northern Ontario population centre located in the Municipality of Wawa (formerly Township of Michipicoten) within the Algoma District. Located 265 km north of Sault Ste. Marie, the community was home to 2,634 individuals in 2011 (Statistics Canada 2011).

The community of Wawa derives its name from the Ojibwa word for “wild goose,” which was first given to Wawa Lake where the community was established (Municipality of Wawa 2017). Surveyed in 1899, the community began as a mining town based on a gold discovery on the south shore of Lake Wawa two years earlier. The gold rush in Wawa lasted until 1906, with at least nineteen new gold mines developing in the area during the 1920s and 1930s. The gold industry in the area fluctuated throughout the remainder of the 20th century with a declining market in the 1990s prompting the closure of all but one mine, River Gold.

Coincidental with the original gold discovery was finding iron ore deposits in the area (Municipality of Wawa 2017). Francis Hector Clergue began operations at the Helen Mine, Ontario’s first large scale iron ore mine, in 1900. This mine was the largest producer of iron ore in Canada until 1918, and remained operational until 1950. Due to competitive international markets throughout the 1990s, ore mining ceased in the Wawa area in 1998.

For many years, direct access to Wawa was limited to steamboat, air, and the Algoma Central Railway from Hawk Junction to Sault Ste. Marie (Municipality of Wawa 2017). This finally changed in 1960 when a 96.5 km stretch of the Trans-Canada Highway was completed between Agawa River and Wawa; this section was the most expensive Ontario portion of the highway to be constructed. Now easily accessible, the community of Wawa has transformed into a centre for tourism and outdoor recreational activities, which are serviced by motels, stores, service stations, parking areas, paved roads, and other services.

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16.5.2.1.4 Town of Marathon

The Town of Marathon is a remote northern Ontario community located on the Peninsula Harbour of Lake Superior within the Thunder Bay District. Incorporated as a town in 1988, Marathon is presently home to 3,273 individuals (Payne and Welch 2017; Statistics Canada 2016). Key industries in the town include mining, forestry, residential and business services, and residential development.

The Town of Marathon emerged in the early 1880s from CPR plans to establish a rail line along the mountainous north shore of Lake Superior from Heron Bay to Prince Arthur's Landing (MDHSM n.d.; Payne and Welch 2017). In 1883, Peninsula Harbour was selected as a key docking location for men and rail supplies, and a community known by the same name quickly developed in the area. A warehouse and railroad station were erected in the community, followed by several houses and a hotel. At the peak of railway construction, Peninsula Harbour was thought to have a population of approximately 12,000, but this dropped drastically when the railway was complete in 1885. Gazetteer listings from 1895 and 1908 report Peninsula Harbour as a post village with a population of 100, and a store, hotel, and telegraph and express offices being the only commercial enterprises in the area. By 1935, the census of the community was just 23. Not until 1944, when a company called Marathon Corporation built a pulp mill in the area, did the population rise, reaching 2,500 by 1946. The town's name was then changed to Marathon to honour its principal company. Marathon Corporation sold the mill in 1959, after which it changed hands numerous times before being closed in 2009 due to bankruptcy. Following discovery of the Hemlo gold deposit in 1981, two gold mines were opened in the area and the community of Marathon became a mining town, with many other businesses opening in support of this industry. Although industries have diversified in recent years, gold mining remains an important source of employment for the Town of Marathon.

16.5.2.1.5 Township of Terrace Bay

During construction of the CPR in the 1880s, a ballast pit was excavated near the Black River at the site of the present day Township of Terrace Bay (Barry 1984:12). In the early 20th century a yard track and passing track were added next to the mainline and the site became known as Black Siding. A fire ranger may have been stationed at Black Siding from as early as 1897 until the track fire ranger service was discontinued in 1923 (Barry 1984:12). In the 1930s, the Hydro-Electric Power Commission of Ontario (HEPCO) redirected the flow of the Kenogami River from its path north to James Bay, through Long Lake into the Black River and to Lake Superior. The Black River was renamed the Aguasabon River at that time (Barry 1984:12). In 1947, Terrace Bay was made an improvement district and the Longlac Pulp and Paper Company started to build a large pulp mill and a new town at the site (Barry 1984:12). By the end of 1948, 230 houses had been built in the new community. The Aguasabon Generating Station was operational in 1948 (OPG 2018). The mill was completed in 1950 and at this time the population of the town reached 2000 residents (Barry 1984:12). On July 1, 1959 Terrace Bay officially became a municipality (Old Time Trains 2009).

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16.5.2.1.6 Township of Nipigon

The Township of Nipigon is a remote northern Ontario municipality of the Thunder Bay District. Located 98 km northeast of Thunder Bay, the township was home to 1,642 in 2016 (Statistics Canada 2016).

A European presence in Nipigon began in 1679 when Claude Greysolon Dulhut established a trading post at the mouth of the Nipigon River (Township of Nipigon 2017). However, development of the area did not occur until the HBC built the post known as the Red Rock House in 1859 (Arthurs 1984). During the 1860s, the post functioned as a trans-shipment point where boats could unload their cargo for transportation up the Nipigon River. By 1871, the status of Red Rock House was upgraded, and shortly thereafter began period of rapid expansion fueled by renowned fishing and an increase in mining along the northern shore of Lake Superior. When the CPR constructed a station in Nipigon during the 1880s, the trading post blossomed into a village, which by 1895 featured a hotel, three general stores, a church, and telegraph and express offices (Lovell 1895). Nipigon was incorporated as a township in 1909 (Township of Nipigon 2017).

16.5.2.1.7 City of Thunder Bay

Incorporated as a city in 1970 from the amalgamation of the Cities of Fort William and Port Arthur and the adjacent Townships of Neebing and McIntyre, the City of Thunder Bay is located on the west shore of Lake Superior in the District of Thunder Bay, Ontario. The City of Thunder Bay is home to 107,909 people (Statistics Canada 2016), and the key industries include forestry, tourism, agriculture, railcar construction, ship repair, and specialized equipment assembly for the resource-based industries.

Thunder Bay traces its origins to 1679 when the French constructed Fort Caministigoyan beside the Kaministiquia River (City of Thunder Bay 2017; Kemp 2017). However, permanent European settlement did not occur in the area until 1803 when Fort William was constructed. This fort functioned as the centre of the NWC's fur-trading empire until the company amalgamated with the HBC in 1821 and the area declined in importance. By the mid-19th century, settlement of the area was being fueled by the mining industry, with finds of copper, silver and gold proving lucrative to the local population. Development of Fort William continued unchallenged until 1870 when Prince Arthur's Landing (originally known as "the Depot") to the northeast was selected as the origin of the Dawson Road to Fort Garry in the west. As a result, Prince Arthur's Landing outpaced the development of its neighbour because of its better docking facilities and the discovery of silver, but after construction of the CPR line through Fort William in 1875, the two communities developed at a similar rate. The landing was incorporated as the Town of Port Arthur in 1884, with Fort William being incorporated six years later. Both settlements were granted civic charters in 1907, and by 1910, the population of the City of Port Arthur was recorded at 14,900, while 14,000 lived in the City of Fort William (Union Publishing Company 1910). Both cities remained separate entities until 1970 when they amalgamated to form the City of Thunder Bay.

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16.5.2.1.8 Lumber

The lumber industry was pivotal for developing northern Ontario from the mid-19th century to the present day. Lumbering in the area is commonly grouped into three overlapping periods: an initial phase from the 1870s to early 1900s focussed on large white pine and white spruce for the global timber market; a second phase from 1900 onward typified by a shift to spruce for pulp and paper, primarily for newspaper in the eastern United States; and a third phase beginning in the mid-20th century marked by adoption of the combustion engine to power new equipment, revolutionizing many aspects of the industry (Smith 1984).

The first phase of the lumber industry from the 1870s to 1900s focused on white spruce and white pine primarily because of the distances to market. To be profitable, the value of the timber had to outweigh the costs of bringing trees to distant markets, and the large white pine and white spruce trees of northern Ontario met this criterion. Lumberjacks would haul large trees to the rivers with teams of horses and live in semi-permanent camps that included bunkhouses, cookhouses, horse barns, smithies, and storage sheds (Bogue 2007). The remnants of these camps may be present as debris scatters on the surface or ruins.

The second phase to supply the eastern United States with pulp for making newspaper was aided by the easily pulped softwood spruce abundant in northern Ontario. By the 1920s, lumbering in northern Ontario was devoted almost entirely to the pulp and paper industry. Larger, more permanent, and complex mill operations were required for pulping, resulting in long-term investment in the area and a need for a permanent labour force. This, in turn, spurred further settlement in the region.

Mechanization in the third phase of the lumber industry emerged in the mid-20th century with the invention of the chainsaw and increased availability of heavy tracked vehicles. Chainsaws increased productivity in felling trees by approximately 25% over axes and handsaws, and the combination of bulldozer and crane called a “skidder” replaced horses by the 1960s. Roads slowly outpaced waterways as the primary form of transport and also facilitated workers to commute to work and have greater choice in where they lived.

With World War II came renewed demand for resources overseas, but also perceived security risks on the home front. During the war, German prisoners of war (POWs) and Japanese Canadians were detained at camps across the country, including several permanent and temporary camps along the north shore of Lake Superior. Camps at the Township of Red Rock, Neys, and Angler Creek (see section 16.5.2.1.10 below) were seen as so inhospitable that a successful escape was unlikely. Both German POWs and Japanese Canadian internees were put to work in the logging industry at these camps.

16.5.2.1.9 Mine and Quarry

Mining played an important role in northern Ontario’s development and settlement. Early Euro-Canadian mining and quarrying activity in Ontario was a small industry originally focused on local or regional needs. Building materials such as stone, gravel, sand and clay for construction were abundant and quarrying activities for these materials common (Republic of Mining 2010). Mining for metals occurred on a limited scale and some of the earliest mining activities included mining and smelting iron in local deposits in southern Ontario for the manufacture of basic iron tools (Republic of Mining 2010 and Wylie 1986:47-48).

At first, the mineral wealth of the Canadian Shield was exploited intermittently due to several factors including challenges in accessing Ontario’s north, an accessible labour force, technological challenges in separating minerals from ore, the difficulty in finding mineral resources in the dense wilderness and the lack of any support infrastructure. Mine operations had to be entirely self-sufficient and had no local source of labour or food and supplies to draw from (Newell 2011:59). Early mining explorations tended to explore and test for mineral deposits along the shoreline and then wait for a time –often for years— before it was feasible to develop the site (Newell 2011:60).

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Copper mining on the American side of Lake Superior in the 1840s led to official interest in prospecting and developing mining at sites in Ontario. A few copper mines were established at this time, but the one mine that had substantial production was at Bruce Mines (MTCS 1972:146). The development of mining in northern Ontario in the 1840s was a contributing factor to the conclusion of the Robinson Treaty in 1850. Oil and natural gas were discovered in Southwestern Ontario in the 1850s. Large salt deposits were discovered in 1863 (MTCS 1972:147). The development of the Ontario mining industry in the north coincided with the development of the railway, the publication of the Geology of Canada in 1842, the establishment of universities with geology departments and mining engineer training from the 1850s and advances in mining technologies that occurred around the middle to the end of the 19th century.

The latter half of the 19th century saw many small-scale mining developments across Ontario, starting along the south edge of the Canadian Shield and gradually moving north. Large scale mining developments including some large-scale extraction of iron ores began around 1865. Some silver and gold deposits were discovered around the 1870s in northwestern Ontario—including the Silver Islet mine—and opened up surrounding areas for further prospecting but mining activity was limited (MTCS 1972:150-151). In 1890, the Ontario government began supporting mine development through the Bureau of Mines, which also sponsored classes in prospecting and provided some specialized equipment to miners (Gilbert 1984).

Around the end of the 19th century non-precious metals other than iron—which could be found throughout the Province—became important for the first time as mining and processing technologies advanced to make commercial use of these minerals viable. The construction of railways throughout northern Ontario led to more discoveries and opened up the north for further prospecting and mine development. Mines started to become more extensive underground operations and Canada started to become an exporter of minerals (Wylie 1986:49). In the 1880s nickel and copper discoveries in the Sudbury Basin were exploited. In the 1890s significant iron deposits were found around Wawa during a small gold rush in the area. Silver was discovered at Cobalt in 1903. Major finds of gold were discovered at Timiskaming around 1906 and at Red Lake and Central Patricia—in northwestern Ontario—in 1925 (MTCS 1972:154-157). By 1914, Ontario was the leading mining province in the country, accounting for 40% of production and employing 11,000 workers. A boom in demand for minerals during the First World War dropped after the Armistice and growth in the industry slowed during the interwar years (Gilbert 1984).

Small-scale gold mining operations throughout the province underwent a resurgence during the Great Depression of the 1930s due to high prices for gold and low overhead costs. This development revived precious metal mining in some areas and opened some new areas of the province but this resurgence of small scale type of mining operations was brief (MTCS 1972:158). Advances in technology including aircraft to get prospectors to sites quickly and remote sensing technologies such as the magnetometer led to more finds but involved greater expense that gave larger, well-financed mining companies an advantage (Republic of Mining 2010).

Several large iron deposits and many finds of base metal were found and exploited in the 1940s to meet wartime and postwar demands for iron and steel. Exploration for uranium began in earnest during the war but private prospecting for radioactive materials was banned by the government in 1943 due to the strategic use of the material (World Nuclear Association 2018). In 1947, private prospecting was allowed once again and deposits of Uranium were found around Bancroft in the early 1950s and at Elliot Lake in 1953 (World Nuclear Association 2018). The demand for resources continued into the 1950s and 1960s. Investment and mechanization led to larger operations that could exploit deposits more effectively, and could pull new returns from old mines. In the 1970s, the growth rate seen in the previous three decades faltered and competition from other parts of the world redirected investment away from northern Ontario. Mechanization has increased since then and with it has come different labour requirements.

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Mining in Ontario has been constrained by transportation and technological challenges over the course of the last two centuries. The progression of mining in Ontario has followed advances in transportation and technology to get to, find and process the minerals.

16.5.2.1.10 Internment Camps

During the First World War, the Canadian government initially established internment camps to detain civilians considered to be a security risk (Zimmerman 2015). Passing of the *War Measures Act* in 1914 gave the federal government broad powers to arrest, detain, exclude, and deport “enemy aliens” or foreign-born residents of Canada whose citizenship or country of birth was at war with the British Empire. In keeping with British policy at the time, roughly 85,000 individuals of German, Austro-Hungarian, Turkish, and Bulgarian descent were required to register and report regularly to the Canadian Government. Of these individuals, 8,579 men were interned, and twenty-four camps were created across Canada, administered first under the Department of Militia and Defence from 1914 to 1915, then by the Department of Justice from 1915 to 1920. These measures were soon recognized to be largely fueled by wartime hysteria and xenophobia rather than by real security risks, so by 1916 and 1917 the majority of the internees were released on parole if they agreed to remain loyal to the British Empire. The roughly 2,200 men that remained in the camps were primarily prisoners of war (POW), and were detained until the Treaty of Versailles was signed in June 1919; many did not return home until May 1920.

The *War Measures Act* was again invoked at the outbreak of the Second World War. The *Defence of Canada Regulations*, enacted on September 3, 1939 allowed for the suspension of civil liberties, regardless of one’s country of birth, and detaining any individuals suspected of behaving in a prejudicial manner towards public safety or the safety of the state (Zimmerman 2015; Melady 1981). As a result, many of German and Italian descent, as well as members of the Communist Party of Canada were targeted for internment. Unlike the internment practices of the First World War, the intent of this process was to restrict the internment operations to those few suspected troublemakers, rather than targeting entire ethnic groups (Zimmerman 2015). Nevertheless, the later internment of Japanese Canadians strayed drastically from this goal.

The vast majority of Japanese Canadians residing in Canada during the Second World War were either born in Canada or were naturalized citizens (Zimmerman 2015). They supported the Canadian democratic system and were largely unaffected by Japanese propaganda, but after the Japanese attack on the US naval base of Pearl Harbor on December 7, 1941, many Canadians in British Columbia felt that Japanese Canadians were enemy sympathizers. By mid-December 1941, Japanese Canadians, regardless of their citizenship, were required to register with the government. The following year, in February 1942, the entire Japanese Canadian community in BC, under the guise of an evacuation, was uprooted from the coast and sent to inland work camps. Families were split up, with men, women and children distributed among camps in the British Columbia interior. About 750 men who refused to cooperate with the evacuation were sent to Ontario. Following the evacuation, the government confiscated and sold properties belonging to Japanese Canadians, sending a fraction of the funds to their former owners. Many Japanese Canadians remained interned until the end of the war.

When the war had begun, Canadian officials thought they would be responsible for internees that been detained in Canada (Zimmerman 2015). However, as fear and xenophobia grew, the British Government ordered roughly 75,000 enemy aliens living in Britain to be interned, and asked the Canadian government to accept POWs, enemy merchant seamen, and civilian internees. This, it was believed, would free up military personnel, reduce the stress on resources, and mitigate the threat of subversives in the event of a German invasion (Zimmerman 2015; Melady 1981). The Canadian government agreed, and the first internees and POWs began arriving in June 1940. From the commencement of the interment operations in 1939 to the end of war, Canada would host approximately 35,000 detainees. Initially unprepared for the influx, the first internment camps were hastily constructed. Eventually, 26 main internment camps were erected, with numerous smaller installations built to hold prisoners

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employed on farms, in factories, and as loggers. Identified by letter, and then later number designations, the camps were categorized by the specific type of internee they housed: civilian internees; merchant seamen; POW officers; and other ranks of POWs. However, combined camps were not uncommon, and in some cases entire groups of internees were replaced by those of a different designation.

There were three main POW/internment camps along the North Shore of Lake Superior and many temporary work camps. The three main camps included:

- The Angler Internment Camp, also known as Camp X and Camp 101;
- The Neys Internment Camp, also known as Camp W and Camp 100; and
- The Red Rock/Schreiber Internment Camp, also known as Camp R.

16.5.2.2 Known Cultural Heritage Resources in the Local and Regional Study Areas

The following provides a preliminary understanding of known cultural heritage resources in the cultural heritage resources LSA and RSA based on desktop study and only considers resources 40 years or older, per the MTCS checklist.

16.5.2.2.1 Federally Recognized Cultural Heritage Resources

Federally recognized cultural heritage resources are those properties, buildings, and places that have been designated or protected under the *Historic Sites and Monuments Act*, *Canada National Parks Act*, or the *Heritage Railway Stations Protection Act*. Federal heritage designations can include national historic sites, persons and events of national historic significance, heritage railway stations, federal heritage buildings, and heritage lighthouses. Only a small proportion of these are directly administered by Parks Canada, but the Agency provides heritage conservation advice and support whether the asset is privately owned or the responsibility of a provincial or federal department.

Parks Canada manages the CRHP, which is a database of recognized heritage properties. A search of the CRHP database on June 13, 2017, found no recognized sites in the cultural heritage resources LSA or RSA. The closest federally recognized cultural heritage resource is a CPR station in the Town of White River, approximately 1.5 km east of the cultural heritage resources LSA and approximately 1.53 km from an access road to a potential work camp.

The CPR line, constructed in the 1880s, is crossed by the Project at several points and is within 1 km of a large portion of the Project footprint. The railway itself has no heritage status, although the importance of the CPR in the history of Canada is well recognized, and the station in the Town of White River is designated under the federal *Heritage Railway Stations Protection Act*.

There are no known federally recognized cultural heritage resources in the cultural heritage resources LSA or RSA. Potential cultural heritage resources from the initial construction of the railway may be identified during subsequent field investigations.

16.5.2.2.2 Provincially Recognized Properties of Cultural Heritage Value or Interest

Protection and conservation of properties of cultural heritage value or interest in Ontario is primarily achieved under the *Ontario Heritage Act*, which empowers municipalities to recognize and protect built heritage resources and cultural heritage landscapes, although the Minister of Tourism, Culture and Sport also has the authority to designate properties of cultural heritage value or interest. Other provincial acts such as the *Funeral, Burial and Cremation Services Act, 2002* and the *Provincial Parks and Conservation Reserves Act, 2006* also serve to protect cultural heritage resources. Unauthorized disturbance to cemeteries and burial sites is prohibited under the *Funeral,*

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Burial and Cremation Services Act, 2002. The Provincial Parks and Conservation Reserves Act, 2006 sets aside provincial parks as administrative reserves for the purpose of protecting the natural environment within their boundaries. There are seven different classes of parks including wilderness, nature reserve, cultural heritage, natural environment, waterway, recreational, and aquatic. All seven classes of parks can include cultural heritage resources within their boundaries, which are to be protected by implementing administrative controls carried out by each park's staff and the MNRF.

Six provincial parks are located in the cultural heritage resources LSA, with an additional eight parks located in the cultural heritage resources RSA. The locations of provincial parks in the cultural heritage resources LSA and RSA are provided in Table 16-3.

Table 16-3: Location of Provincial Parks in the Cultural Heritage Resources Study Areas

Provincial Park	In Project Footprint	In LSA	In RSA	Distance from Project Footprint (m)
Black Sturgeon River	Yes	Yes	Yes	0 (in Project footprint)
Ruby Lake	Yes	Yes	Yes	0 (in Project footprint)
Gravel River	Yes	Yes	Yes	0 (in Project footprint)
Nimoosh	Yes	Yes	Yes	0 (in Project footprint)
Pukaskwa River	Yes	Yes	Yes	0 (in Project footprint)
Ouimet Canyon	No	No	Yes	420
Kama Hills	No	Yes	Yes	16
White Lake	No	No	Yes	549
Cavern Lake	No	No	Yes	761
Rainbow Falls	No	No	Yes	773
Prairie River Mouth	No	No	Yes	388
Neys	No	No	Yes	270
Red Sucker Point	No	No	Yes	113

LSA = local study area; m = metre; RSA = regional study area.

Management of cultural heritage resources on provincial Crown land is guided by the *Standards and Guidelines for the Conservation of Provincial Heritage Properties* (MTCS 2010). Provincially recognized cultural heritage resources include properties, plaques, and monuments that have been recognized by the provincial government and provincial agencies through the use of registers, plaque programs, monuments, and conservation easements, agreements, and covenants. The MTCS and the Ontario Heritage Trust (OHT), a provincial government agency, maintain a list of these resources, and the OHT also manages the *Ontario Heritage Act* Register, which includes information on properties designated under the *Ontario Heritage Act*.

In 2014, a request was sent to the OHT for information on cultural heritage resources designated under the *Ontario Heritage Act* in the vicinity of the Project. At that time, the OHT stated that no properties were located in the Project area (Dillon 2015).

The only provincially recognized cultural heritage resource in the cultural heritage resources RSA is the Terry Fox Mile Post 3339. This is a commemorative plaque located along Highway 17 east of the City of Thunder Bay that recognizes where Terry Fox ended his Marathon of Hope, and celebrates the 25th anniversary of the Terry Fox Run for Hope (1980 to 2005). Terry Fox Mile Post 3339 is approximately 400 m west of the Project footprint.

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16.5.2.2.3 Municipally Recognized Cultural Heritage Resources

Municipally recognized cultural heritage resources are designated or “listed” properties and cultural heritage landscapes protected under bylaws enabled by Part IV and V of the *Ontario Heritage Act*. Other forms of municipal cultural heritage resources include informally recognized plaques, monuments and parks.

The Project is located in eight municipalities. In 2014, municipal planning departments were contacted to determine if municipally recognized cultural heritage resources were present in the vicinity of the Project (Dillon 2015). At that time, a number of municipalities responded with information on potential cultural heritage resources (Section 16.1) but none of these are formally recognized cultural heritage resources. This concurred with the OHT’s response that no provincially or municipally recognized cultural heritage resources are located in the Project area (Dillon 2015).

16.5.2.2.4 Known Cultural Heritage Resources

The desktop assessment determined that the cultural heritage resources RSA contains a parcel of land with a known cultural heritage resource that is the subject of a municipal, provincial, or federal commemorative or interpretive plaque, specifically the Terry Fox Mile Post 3339 commemorative plaque, located on Highway 17 east of the City of Thunder Bay. This commemorative plaque is neither in the Project footprint nor the cultural heritage resources LSA.

16.5.2.3 Potential Cultural Heritage Resources in the Local and Regional Study Areas

The following provides a preliminary understanding of potential cultural heritage resources in the cultural heritage resources LSA and RSA based on desktop study and only considers resources 40 years or older, per the MTCS checklist.

16.5.2.3.1 Indigenous Community Cultural Heritage Resources

Consultation with Indigenous communities are ongoing and identification of cultural heritage resources will be discussed with communities as part of subsequent investigations and to meet the Duty to Consult as delegated to NextBridge by the Crown (NextBridge 2014). Potential effects of the Project on Indigenous community cultural heritage resources are being considered as part of the Indigenous current use of lands and resources for traditional purposes assessment (Section 17), per discussions with the MTCS (Appendix 2-1).

16.5.2.3.2 Potential Cultural Heritage Resources Associated with Lumbering

Potential cultural heritage resources associated with the lumber industry include former camps, waterway modifications, sawmills, and roadways, but there is no database of lumbering-related cultural heritage resources available for the region (MNR 2007). The MNRF manages cultural heritage resources in provincial Crown forests through its regional Forest Management Plans, as directed by the *Forest Management Guide for Cultural Heritage Values* (MNR 2007).

The MNRF uses its *Forest Management Guide for Cultural Heritage Values* (MNR 2007) to guide its approach to cultural heritage resources in forest management units. The *Forest Management Guide for Cultural Heritage Values* identifies five classes of cultural heritage values that need to be addressed in forest management:

- archaeological sites;
- archaeological potential sites;
- cultural heritage landscapes;
- historical Indigenous values; and
- cemeteries.

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Eight forest management units are crossed by the cultural heritage resources LSA: Lakehead, Black Spruce, Lake Nipigon, Kenogami, White River, Pic River, Big Pic, and Algoma. Four of the eight management plans were created after the *Forest Management Guide for Cultural Heritage Values* was produced and include cultural heritage maps for the Forestry Management Unit. None of these maps show cultural heritage values in the cultural heritage resources RSA; however, the MNRF cautions that sensitive data are not shown on the maps.

The Town of Marathon has identified Port Munro, a former pulpwood storage harbour, and the Pic River, used historically for log driving, as having potential heritage value. Both are outside the cultural heritage resources RSA.

16.5.2.3.3 Potential Cultural Heritage Resources Associated with Transportation

Potential cultural heritage resources related to transportation include the infrastructure itself as well as the quarries, construction camps, and other remnant features that supported the construction of transportation facilities. The most significant, large-scale transportation works in the region are the CPR, the Algoma Central Railway, and Highway 17. The Township of Terrace Bay has identified the Mill Road as a historic road, but this is not in the cultural heritage resources RSA.

Other transportation cultural heritage resources can include canoe routes, trails, canals, and bridges. A large number of formal and informal canoe routes are present along the north shore of Lake Superior and inland along the waterways crossed by the Project. These waterways have been used as the first important transportation corridors across the region by Indigenous communities and Europeans. Outside of provincial parks, canoe routes have minimal formal recognition; however, historic canoe routes often have cultural significance to Indigenous and local communities. Potential canoe routes with cultural heritage value or interest that cross the cultural heritage resources LSA will be determined through consultation with local communities during the CHER. Refer to Section 17 (Indigenous Current Use of Lands and Resources for Traditional Purposes) for an assessment of effects to use of canoe routes for traditional purposes.

16.5.2.3.4 Potential Cultural Heritage Resources Associated with Mining

Potential cultural heritage resources associated with mining include buildings, machines, tramways, roads, dams, and other features. The Ministry of Northern Development and Mines maintains the AMIS, a database of abandoned mine sites that in some cases includes information on potential cultural heritage resources at mining sites. The AMIS database uses point coordinates for most abandoned mine locations, and these can be inaccurate if converted from historical map sources. In addition, mine site operations often cover a large geographic area around the point coordinate and potential resources may be located in the cultural heritage resources LSA even if the AMIS point is a distance from the cultural heritage resources LSA. A large cultural heritage resources RSA was chosen that includes a buffer of approximately 1 km on either side of the preferred route right-of-way (ROW) boundary to address potential mine sites with cultural heritage value or interest that may extend well beyond the point indicated in the AMIS database.

An AMIS database search returned 24 former mines with an unknown date or over 40 years old in the cultural heritage resources RSA, six of which are in the cultural heritage resources LSA. One of these former mines is located in the Project footprint. Details about these former mines, ordered from east to west, are provided in Table 16-4.

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Table 16-4: Pre-1976 Abandoned Mine Locations in the Cultural Heritage Resources Local and Regional Study Areas

Mine Name	Date of Operation	AMIS #	MDI Identifier	Distance to Project Footprint (m)
Local Study Area				
Gananoque Vein Gold Mine	1897 to 1899	AMIS 00874	MDI41N15NW00020	0 (in Project footprint)
Molybdenite Lake Prospect	1905 trenching, 1939 trenching/sampling, 1958, 1964 sampling	AMIS 00870	MDI42C02SW00015	2,438.3
Angler Granite Quarry/ Petrunka	1929 sampled, quarried in 1930s and 1960s	AMIS 03263	MDI42D16SW00030	8.8
Halonon Fluorite Mine	1974 to 1986	AMIS 03162	MDI42D13NE00005	76.6
Mackenzie Quarry	1880s	AMIS 00457	MDI52A10NE00040	35.2
Bishop Lead Occurrence	Unknown date of operation	AMIS 08479	MDI52A15SE00021	890.8
Regional Study Area				
Centennial Mine	Unknown date of operation, vertical and inclined shafts, open cut, trench, and mill	AMIS 00878	MDI41N15NE00004	969.3
Manxman Gold Mine (also known as Normax and Norwalk Gold Mine)	1899 to 1920 mined sporadically, resurveyed in 1960s to 1980s	AMIS 00880	MDI41N15NW00002	201.2
Fred C Shaft	1899 to 1920 mined sporadically, resurveyed in 1960s to 1980s	AMIS 02948	MDI41N15NW00010	880.5
Barton Occurrence	Pre-1923, gold investigated in 1930s	AMIS 00855	MDI41N15NE00083	482.9
Willis Vein	Unknown date of operation, vertical shaft and waste rock	AMIS 00872	MDI41N15NW00003	681.3
Stenabaugh Occurrence	Pre-1927 testing, resurveyed in 1960s to 1980s	AMIS 00871	MDI41N15NW00005	516.1
Northern Eagle (also known as Barite)	Unknown date of operation, trench	AMIS 03175	MDI42D09NE00005	391.6
Ferguson Spectralite Mine	Unknown date of operation	AMIS 95007	None	354.8
Wilkinson Mine	1970s	AMIS 03274	None	214.6
Regional Study Area (cont'd)				
Hannam Prospect	1921 vein discovered, mined in 1950s	AMIS 03202	MDI42D15SE00014	142.5
Fire Mountain	1897 testing, 1913 to 1915 mining	AMIS 03182	MDI42D15SW00027	730.3
Argenteuil Iron Prospect	1900 to 1903	AMIS 03203	MDI42D15SW00030	798.8
Schreiber Pyramid Gold Mine I	1930s Gold Mine, reopened in 1980s	AMIS 03237	MDI42D14SE00043	658.6
Schreiber Pyramid Gold Mine II	1937 Gold Mine	AMIS 03240	MDI42D14SE00046	453.8
Cook Lake	1937 shaft, adit, and structures	AMIS 03249	MDI42D14SE00042	492.3
Thunder Bay Lead Mine	1903 to 1927 exploration and open pit	AMIS 08455	MDI52A15SE00002	711
Ogema Lead Mine	Unknown date of operation	AMIS 08457	MDI52A15SE00006	962.6
Dorion Lead Mine	1888 to 1903	AMIS 08456	MDI52A15SE00003	968.8

AMIS = Abandoned Mines Information System; LSA = local study area; m = metre; MDI Identifier = Mineral Deposit Inventory of Ontario number; RSA = regional study area.

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16.5.2.3.5 Potential Cultural Heritage Resources Associated with Agriculture

Potential cultural heritage resources related to agriculture include farm operation structures such as houses, barns, and outbuildings and landscape features such as field rows, field walls, fences, and tree lines. The majority of the currently active agriculture is along the western end of the Project around the Township of Dorion and unincorporated community of Hurkett.

Minimal agricultural activity is known to have taken place in the cultural heritage resources RSA, and no potential cultural heritage resources related to agriculture have been identified.

16.5.2.3.6 Other Potential Cultural Heritage Resources

The Township of Terrace Bay has identified the Aguasabon River as a valued natural feature, and the Town of Marathon has noted the Angler Creek World War II Internment camp, where Japanese Canadian internee and German prisoners of war were held, and possible cemetery plots located on Angler Creek as potential cultural heritage resources. Mink Falls, an important tourist site, is outside the cultural heritage resources RSA.

Another source of data for potential cultural heritage resources in the cultural heritage resources LSA and RSA is a Geographic Information Systems (GIS) layer of standing buildings maintained by the MNRF as part of the Land Information Ontario (LIO) database. CanACRE, a land acquisition and project development sub-contractor for the Project, has supplemented and confirmed the MNRF LIO standing buildings data using a combination of high resolution orthoimagery and field investigations.

Based on the MNRF LIO data and CanACRE's supplemental investigations, there are approximately 830 buildings in the cultural heritage resources RSA. No date of construction is included in the attribute data for these features. It is assumed that some of these were built prior to 1976, and some may have potential cultural heritage value or interest. Buildings in the cultural heritage resources LSA will be investigated during field work for the CHER and evaluated for their cultural heritage value or interest using the *O. Reg. 9/06* criteria.

A final resource is the potential cultural heritage landscape associated with the Group of Seven artists Lawren Harris, J.E.H. MacDonald, Arthur Lismer, Frederick Varley, Frank Johnston, Franklin Carmichael, and A.Y. Jackson. The boundaries of this landscape or landscapes have not been defined and may extend into the cultural heritage resources RSA. The Town of Marathon is working to develop a Group of Seven Lake Superior water trail, and the Township of Terrace Bay has a Group of Seven Interpretive Signage committee. The Municipality of Wawa has discussed the importance of the Group of Seven for the community, specifically the work of A.Y. Jackson and Lawren Harris. Parks Canada has also developed interpretation materials and media about the Group of Seven tied to the Lake Superior National Marine Conservation Area and Neys Provincial Park. Pic Island, which was painted by Lawren Harris, is specifically referenced in Parks Canada interpretive products.

16.5.2.3.7 Summary of Baseline Conditions

All known and potential cultural heritage resources identified during the EA include:

- The Terry Fox commemorative plaque at Mile Post 3339 on the TransCanada Highway;
- 25 abandoned mine and quarry sites that are over 40 years old (Table 16-4 in the EA);
- Port Munro, a former pulpwood storage harbour, near the Town of Marathon;
- The Pic River;
- The Aguasabon River, in Terrace Bay;

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- Mill Road, in Terrace Bay;
- Mink Falls, east of Neys Provincial Park;
- Canoe routes;
- The Angler Internment Camp;
- Approximately 830 buildings, an unknown number of which are over 40 years old; and
- Cultural Heritage Landscapes related to the Group of Seven.

Mink Falls and Mill Road were identified during consultation and engagement; however, both are outside of the Project RSA and well outside of the area that may be impacted by the Project. Known and potential cultural heritage resources identified during the study, but are not within the LSA and will therefore not be impacted by the project include:

- The Terry Fox commemorative plaque at Mile Post 3339 on the TransCanada Highway;
- 19 of the 25 abandoned mine and quarry sites that are over 40 years old;
- Port Munro;
- The 831 buildings identified; and
- Group of Seven cultural heritage landscapes.

Potential cultural heritage resources in or crossed by the Project in the LSA include:

- The Aguasabon River;
- The Pic River;
- Canoe routes;
- The Angler Internment Camp; and
- Six abandoned mine and quarry sites.

Preliminary consultation by Dillon (2014) identified the Aguasabon River, specifically the Aguasabon Falls and gorge as a significant natural feature and tourist attraction that may have potential cultural heritage value or interest. The falls and gorge are outside of the RSA, but the Aguasabon River and Hays Lake –the impoundment lake behind the Hays Lake control dam in the community of Terrace Bay— is crossed by the Project approximately 6 km north of community of Terrace Bay. Research for this HIA found that the River was altered by power generation projects in the mid-20th century and may have potential cultural heritage value or interest for its connection to power generation and the creation of the Terrace Bay community.

The Pic River was identified during consultation by Dillon (2015) as having potential cultural heritage value or interest associated with logging. There is also a national historic site of Canada –the Pic River Site— that consists of four archaeological sites next to the River approximately 12 km downstream (south) from the LSA and well outside of the area that would be impacted by the Project. No known historic logging sites were identified along

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the River in the RSA or LSA. This was determined through background research, examination of aerial photographs, a flyover of the project footprint by Cultural Heritage Specialist Stephen Jarrett in November 2016 and engagement activities undertaken as part of the planning process. The Pic River in the LSA was determined to have very low potential for cultural heritage value or interest related to logging.

A large number of formal and informal canoe routes were identified as potential cultural heritage resources (refer to Section 16.5.2.3.3). Most canoe routes outside of provincial parks are informal, although any navigable waterway could be an historic and contemporary canoe route. During consultation with communities and First Nations crossed by the Project, no specific canoe routes with known or potential cultural heritage value or interest were identified. Concerns expressed during consultation about canoe routes focused around continued access to canoe routes during construction, potential physical impacts construction could have on portages, and potential impacts to views. Artifacts of cultural heritage value associated with portage sites are likely to be archaeological and have been addressed as part of the archaeological assessment for the Project. Potential impacts to views in areas of concern were avoided or minimized in consultation with the MNR and resulted in changes to the Project footprint (e.g., removing laydown yards and relocating towers near provincial parks). The Construction Environmental Protection Plan (CEPP, Appendix 4-II) outlines mitigation measures to ensure impacts on canoe portage routes will be minimal.

To evaluate the potential cultural heritage resources identified within the LSA, Golder undertook an HIA. Using historical research, consultation, and field investigations, a number of mine sites, the Angler Internment Camp and the Aguasabon River were evaluated to determine if they met the criteria for cultural heritage value or interest as prescribed in *O. Reg. 9/06*. The mine sites, the internment camp and the Aguasabon River are defined geographical areas modified by human activity.

Overall, eight potential cultural heritage resources were identified in the LSA. Six of the potential cultural heritage resource sites were mine or quarry sites, the seventh is the Angler Internment Camp and the eighth is the Aguasabon River and Hays Lake. All eight sites are illustrated on Figure 1 in the HIA attached as Appendix 16-III. These sites include the:

- Angler Camp World War II Internment Camp (1941 to 1946);
- Gananoque Vein Gold Mine (1897 to 1899);
- Molybdenite Lake Prospect (1905 to 1964);
- Angler Granite Quarry/ Petrunka (1929 to 1960s);
- Halonen Fluorite Mine (1974 to 1986);
- Mackenzie Quarry (1880s);
- Bishop Lead Occurrence (unknown date of operation); and
- Aguasabon River.

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Evaluation of these sites using the criteria prescribed in *Ontario Regulation 9/06* determined that:

- The Gananoque Vein Gold Mine and Halonen Fluorite Mine could not be evaluated since the sites could not be found within the Project Local Study Area. It is possible the sites are not in the LSA and/or the sites have been reclaimed by the forest.
- The Molybdenite Lake Prospect and Bishop Lead Occurrence mine sites are not of cultural heritage value or interest since they do not meet any criteria of *O. Reg. 9/06*;
- The Angler/Petrunka and Mackenzie Quarry sites are not of cultural heritage value or interest since they do not meet any criteria of *O. Reg. 9/06*;
- The Angler Internment Camp is of cultural heritage value or interest since it meets six criteria of *O. Reg. 9/06*; and
- The Aguasabon River and Hays Lake is of cultural heritage value or interest since it meets two criteria of *O. Reg. 9/06*.

As a result, it was determined that there was one potential cultural heritage landscape and one potential cultural heritage resource that may be impacted by the project. A summary of these two sites is provided in Table 16-5.

Table 16-5: Potential Cultural Heritage Sites

Cultural Heritage Resource	Location	Heritage Recognition	Description
The Aguasabon River	The Township of Terrace Bay	Potential Cultural Heritage Landscape	The river has cultural heritage value for its connection to the pulp and paper industry as well as hydro power in northern Ontario, representing a culturally modified landscape.
The Angler Internment Camp	Near Neys Provincial Park on the north shore of Lake Superior.	Potential Cultural Heritage Resource	The Angler Creek Internment Camp detained Japanese-Canadian internees and German prisoners of war from 1941-1946.

16.6 Potential Project-Environment Interactions

Potential Project-environment interactions were identified through a review of the Project Description and existing environmental conditions. The linkages between Project components and activities and potential effects to cultural heritage resources are identified in Table 16-6.

Table 16-6: Project-Environment Interactions for Cultural Heritage Resources

Criterion	Indicator	Project Phase		Description of Potential Project-Environment Interaction (Potential Effect)
		Construction (includes access road and ROW preparation, installation, and reclamation activities)	Operation (includes operation and maintenance activities)	
Cultural heritage resources	<ul style="list-style-type: none"> ■ Known cultural heritage resources ■ Potential cultural heritage resources 	✓	–	Alteration, relocation, or demolition of a heritage resource from construction activities
		✓	✓	Alteration, relocation, or demolition of a heritage resource from an increase in public access to heritage resources
		✓	✓	Loss of, or damage to, a heritage resource located downstream from the Project from erosion as a result of increased streamflows.

✓ = A potential Project-environment interaction could result in an environmental or socio-economic effect; _ = no plausible interaction was identified; ROW = right-of-way.

16.7 Potential Effects, Mitigation and Net Effects

This section presents the potential effects, appropriate mitigation measures, and predicted net Project effects for cultural heritage resources.

16.7.1 Measurement of Potential Effects

16.7.1.1 Known Cultural Heritage Resources

Potential effects to known cultural heritage resources are measured qualitatively using a wide range of information sources and field investigations and found to be of cultural heritage value or interest and are identified, designated, or otherwise protected by a governmental approval agency responsible for heritage. The number of known cultural heritage resources potentially affected by the Project is determined quantitatively by mapping known locations and comparing or overlaying with the Project footprint and cultural heritage resources LSA and RSA using a GIS.

16.7.1.2 Potential Cultural Heritage Resources

Potential effects to potential cultural heritage resources qualitatively evaluated using a wide range of information sources and field investigation or given formal recognition or protection by a governmental approval agency. The number of potential cultural heritage resources potentially affected by the Project is determined quantitatively by mapping potential locations and comparing or overlaying with the Project footprint and cultural heritage resources LSA and RSA using a GIS.

16.7.2 Known Cultural Heritage Resources and Potential Cultural Heritage Resources

16.7.2.1 *Alteration, Relocation, or Demolition of a Heritage Resource from Construction Activities*

16.7.2.1.1 Potential Effects

Alteration of the landscape can result in damage or destruction of cultural heritage resources. These alterations can involve partial removal or demolition of known or potential cultural heritage resources, resulting in a loss of tangible elements reflecting events in human history, architectural or technological development, or cultural practices. Activities with the potential to clear areas or cause ground disturbance may affect cultural heritage resources unless appropriate steps are taken in advance to identify and protect the resource, or have it documented by a qualified cultural heritage specialist. Avoidance and measures to protect cultural heritage resources is the preferred conservation approach.

Angler Internment Camp: Project activities will be north and east of the site, though any temporary improvements to the existing ATV trail through the Angler Internment Camp, such as clearing and grubbing, construction of access road infrastructure and/or topsoil stripping or grading, followed by the removal of any improvements as part of the cleanup and reclamation phase of the Project will have a direct adverse impact to the site through disturbance to the trenches, mounds, or archaeological features adjacent to the access road. Since the Project will be located over 200 m to the east of the site, and there are two existing transmission corridors between the site and the Project, there is no risk of indirect impact from shadows, isolation, direct or indirect obstruction of significant views or vistas, nor a change in land use that will adversely affect the site. Views of the existing transmission line and the Project from the site are completely obstructed by thick vegetation. Additionally, no new roads construction is planned as part of the operation phase.

Agusabon River and Hays Lake: The Project crosses the river and lake at a location where an existing transmission line also crosses. The river and lake at this location is a naturalized part of the landscape. With the exception of its enlarged size, there are no tangible heritage attributes of this cultural heritage resource where the Project footprint crosses. Construction of the project will not adversely impact the control dam and generating station that hold back this impoundment lake, nor will the Project have an impact on the historic nature of the site as a source of power generation or logging river.

16.7.2.1.2 Mitigation

In planning the access roads, storage yards, laydown yards, construction camps, transmission line construction, and Project route, NextBridge has taken measures to avoid cultural heritage resources.

Potential effects can be avoided by identifying and avoiding heritage resources prior to construction, and by increasing the awareness of Project personnel about heritage resources in proximity to the Project footprint. All required heritage assessments were conducted and submitted to MTCS for review and comment. The HIA was conducted to identify the specific impacts the Project may have on the heritage attributes of the Angler Camp World War II Internment Camp, the Agusabon River and Hays Lake, and six mine sites in the cultural heritage resources LSA, and to determine if mitigation measures were required to prevent or reduce alteration, relocation, or demolition of these sites. The HIA has been submitted to the MTCS for review and acceptance. The MTCS has reviewed and provided a letter in August 2018 acknowledging the recommendations in the HIA and indicating that it is satisfied that the heritage assessment process and reporting is consistent with applicable requirements (refer to Appendix 16-III). The mitigation recommendations identified in the HIA and specified by the MTCS in the letter will be adhered to.

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The HIA determined that the six mine sites were not of cultural heritage value or interest; therefore, no conservation/ mitigation measures are required for those sites.

Although there is no predicted risk of adverse direct or indirect impact, the following preventative measures are recommended in the HIA for the Angler Internment Camp:

- Avoid the Angler Internment Camp;
 - Prohibit use of the ATV trail west of the existing Hydro One transmission corridor as a temporary access road
- If this section of trail must be used as an access road, the following actions should be prohibited;
 - Improvements beyond basic re-surfacing;
 - Excavation; and
 - Removing existing access road infrastructure.
- If cultural material such as artifacts are found while making improvements to the trail or during use of the temporary access route, implement the Project Discovery of Heritage or Archaeological Resources Contingency Plan.
- Site plan control and communication;
 - The Angler Internment Camp site should be clearly marked on project mapping and communicated to all project personnel for avoidance during construction phases of the Project.
 - If cultural material such as artifacts are found while making improvements to the trail or during use of the temporary access route, enact the Project Discovery of Heritage or Archaeological Resources Contingency Plan.

For the Aguasabon River and Hays Lake, the HIA determined that no conservation/ mitigation measures are required.

NextBridge will be implementing a contingency plan for unexpected discoveries. In the event previously unidentified cultural heritage resources are suspected or encountered, the 'Discovery of Heritage or Archaeological Resources Contingency Plan' in Section 6.4 of the CEPP (Appendix 4-II) outlines steps NextBridge and its Contractors must take in the event previously unidentified heritage resources are suspected or encountered. In the event that previously unidentified heritage resources are suspected or encountered unexpectedly during construction or operation, NextBridge may bring in a resource specialist and contact the regulators (e.g., MTCS, Lakehead Region Conservation Authority, or the municipality), as required. These mitigation measures are expected to minimize the potential effects associated with the loss of, or damage to, a heritage resource. Mitigation measures are summarized in Table 16-7. The effectiveness of mitigation will be evaluated during construction and post-construction, and measures will be modified or enhanced as necessary through adaptive management.

16.7.2.1.3 Net Effect

There is no predicted net effect because the HIA determined that the Project would not have a direct effect on the heritage attributes of the Angler Camp World War II Internment Camp or the Aguasabon River and Hays Lake. The six mine sites in the cultural heritage resources LSA were determined not to be cultural heritage resources. This potential effect (Alteration, relocation, or demolition of a heritage resource) is not carried forward to the net effects characterization (Section 16.8).

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16.7.2.2 *Alteration, Relocation, or Demolition of a Heritage Resource from an Increase in Public Access to Cultural Heritage Resources*

Increased access to the cultural heritage resources can be both positive and negative. Increased access could provide more opportunity for communities and the public to enjoy cultural heritage resources yet increased access could also result in potential negative effects related to repeated usage and damage to cultural heritage resources. However, increased access is not predicted for the cultural heritage resource identified in the HIA, the Angler Camp World War II Internment Camp as the site is remote, covered in thick vegetation, and difficult to access throughout the year.

16.7.2.2.1 Mitigation

The Project design will consider existing roads and trails such that construction of new access roads will be avoided as much as feasible. Temporary access roads will be used for construction, then decommissioned and rehabilitated when not required during operations which will limit long-term access to locations along temporary roads. Additionally, the location of the Angler Camp World War II Internment Camp is remote, and the site covered in thick vegetation.

In the event that previously unidentified heritage or archaeological resources are suspected or encountered unexpectedly during construction and operation, NextBridge may retain a resource specialist and contact regulators (e.g., MTCS, Lakehead Region Conservation Authority, or the municipality), as required. Limiting access to areas outside of the Project footprint is beyond the scope of the Project. Mitigation measures are summarized in Table 16-7. The effectiveness of mitigation will be evaluated during construction and post-construction, and measures will be modified or enhanced as necessary through adaptive management.

16.7.2.2.2 Net Effect

There is no predicted net effect for the Angler Camp World War II Internment Camp cultural heritage resource. As such, this potential effect (Alteration, relocation, or demolition of a heritage resource from an increase in public access to cultural heritage resources) is not carried forward to the net effects characterization (Section 16.8).

16.7.2.3 *Alteration of a Cultural Heritage Resource Located Downstream from the Project from Erosion Resulting from Increased Streamflows*

16.7.2.3.1 Potential Effects

Construction of the ROW, structure foundations, new access roads, and temporary workspaces will result in changes in land cover from treed to bare ground or low-growing grasses and shrubs (ROW and construction easements), and from treed to gravel, paved or roofed surfaces (access roads, construction camps, and laydown yards). These changes in land cover have the potential to increase runoff rates and runoff volumes, eventually increasing streamflows and water levels in receiving water bodies. Cultural heritage resources located downstream of the Project and in the riparian area could potentially be indirectly affected by water erosion from increased streamflows. These effects could also occur during the operation phase of the Project.

16.7.2.3.2 Mitigation

Potential negative indirect effects on cultural heritage resources related to erosion as a result of increased streamflows are reduced by limiting the amount of new disturbance, implementing erosion control measures, and reclaiming disturbed areas at the end of construction, as outlined in Table 16-7. The amount of new access roads required for construction and operation is limited by using existing roads, to the extent practicable. Temporary workspaces will be constructed on existing disturbed areas and/or at reasonably flat locations with stable soil sites, where possible, and a minimum of 30 m away from the ordinary high-water mark of a water body. Interim reclamation will follow as close as possible after decommissioning. Appropriate erosion and sedimentation

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control measures will be installed to reduce potential for increase of streamflows. Mitigation measures are summarized in Table 16-7. The effectiveness of mitigation will be evaluated during construction and post-construction, and measures will be modified or enhanced as necessary through adaptive management.

16.7.2.3.3 Net Effect

There is no predicted net effect for known or potential cultural heritage resources located downstream from the Project (i.e., outside of the Project footprint) since measurable changes are not expected, and if they occur are expected to be localized to the Project footprint, short-term in duration, and infrequent. This potential effect (alteration of a cultural heritage resource located downstream from the project from erosion resulting from increased streamflows) is not carried forward to the net effects characterization (Section 16.8).

16.7.3 Summary of Potential Effects, Mitigation and Net Effects

A summary of the potential effects assessment is provided in Table 16-7, which is based on the assessment discussion and the implementation of mitigation measures identified above and further supplemented in the table below.

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Table 16-7: Summary of Potential Effects, Mitigation and Predicted Net Effects for Cultural Heritage Resources

Criteria	Indicators	Project Component or Activity	Potential Effect	Mitigation	Inspection and Monitoring Details	Net Effect
Cultural heritage resources	Known and potential cultural heritage resources	<p>Project activities during the construction phase, including:</p> <ul style="list-style-type: none"> ■ site access development, site preparation and soil salvage (e.g., surveying and flagging, clearing and grubbing, and topsoil stripping and grading); ■ construction of temporary workspaces; ■ staking of structure and guy anchor locations; ■ assembly and erection of transmission structures; and ■ conductor installation, including cable splicing. 	Alteration, relocation, or demolition of a heritage resource from construction activities	<p>Construction Phase:</p> <p><u>Angler Internment Camp:</u></p> <ul style="list-style-type: none"> ■ Avoid the Angler Internment Camp; <ul style="list-style-type: none"> ■ Prohibit use of the ATV trail west of the existing Hydro One transmission corridor as a temporary access road ■ If this section of trail must be used as an access road, the following actions should be prohibited; <ul style="list-style-type: none"> ■ Improvements beyond basic re-surfacing; ■ Excavation; and ■ Removing existing access road infrastructure. ■ If cultural material such as artifacts are found while making improvements to the trail or during use of the temporary access route, implement the Project Discovery of Heritage or Archaeological Resources Contingency Plan. ■ Site plan control and communication; <ul style="list-style-type: none"> ■ The Angler Internment Camp site should be clearly marked on project mapping and communicated to all project personnel for avoidance during construction phases of the Project. <p><u>Environmentally Sensitive Features Mitigation:</u></p> <ul style="list-style-type: none"> ■ Local, municipal, provincial and federal licences, permits and approvals will be obtained that are necessary for this Project. The Owner, its authorized representatives, contractor(s), and subcontractors, will comply with the conditions as presented to the Owner on permits, approvals, licences, certificates and Project-specific management plans. Inconsistencies between conditions of different licenses, permits, and approvals will be resolved prior to construction of each segment. ■ The Project footprint will be surveyed and marked prior to construction to limit activities to the designated areas of the Project. ■ Clearly mark known site-specific features (e.g., rare plant, wetland, water body, SWH) and associated setbacks as shown on the Environmental Alignment Sheets (refer to Appendix 5-I) and Access and Construction Environmental Maps (refer to Appendix 5-II). ■ The Owner will review protective and mitigative measures with the Contractor. ■ Construction activities associated with the Project is predicted to be confined to the surveyed and marked areas. ■ Project personnel will avoid areas that are flagged or temporarily fenced and abide by restrictions on in/out privileges that are implemented in areas requiring special protection due to environmentally sensitive features. ■ Flagging, signage or other markings will be removed upon construction completion. ■ Use existing roads and trails as identified on the Access and Construction Environmental Maps (refer to Appendix 5-II) and comply with conditions outlined in road use agreements. <p><u>Heritage Resources Mitigation:</u></p> <ul style="list-style-type: none"> ■ Adhere to conditions of the compliance letter from the MTCS for the Project under the <i>Ontario Heritage Act</i> prior to and during construction if necessary. ■ In the event that a previously unidentified heritage or archaeological resources (e.g., arrow heads, modified bone, pottery fragments, fossils) are suspected or encountered unexpectedly during construction, follow the Discovery of Heritage and Archaeological Resources Contingency Plan (refer to Appendix 4-II, Section 7.4). ■ In the event that previously unidentified heritage or archaeological resources (e.g., arrow heads, modified bone, pottery fragments, fossils) are suspected or encountered unexpectedly during construction, the Owner may bring in a resource specialist and contact the regulators (e.g., MTCS, Lakehead Region Conservation Authority, or the municipality), as required. 	<p>Construction Phase:</p> <ul style="list-style-type: none"> ■ The Owner will arrange for pre-construction environmental surveys as required in the approval conditions, or as per federal or provincial requirements. ■ The Owner will monitor the Project Site during construction for incidental sensitive features (e.g., water body, rare plant, rare vegetation community, wildlife species of concern, archaeological resources) that have not been previously identified on the Project Site. ■ The Owner will employ the services of qualified Environmental Inspector(s) to guide implementation, monitor and report on the effectiveness of the construction procedures and mitigation measures for minimizing potential impacts. ■ Periodic monitoring should be conducted during construction to ensure that the Angler Internment Camp is being avoided, and the 'Discovery of Heritage or Archaeological Resources Contingency Plan' in Section 6.4 of the CEPP (Appendix 4-II) should be followed during construction in the area adjacent to the Angler Internment Camp. 	No net effect

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Table 16-7: Summary of Potential Effects, Mitigation and Predicted Net Effects for Cultural Heritage Resources

Criteria	Indicators	Project Component or Activity	Potential Effect	Mitigation	Inspection and Monitoring Details	Net Effect
Cultural heritage resources	Known and potential cultural heritage resources	<p>Project activities during the construction phase, including:</p> <ul style="list-style-type: none"> ■ site access development; ■ decommissioning of temporary infrastructures; and ■ clean-up and reclamation. <p>Project activities during the operation phase:</p> <ul style="list-style-type: none"> ■ maintenance of access roads, transmission line and preferred ROW. 	Alteration, relocation, or demolition of a heritage resource from increased in public access to cultural heritage resources	<p>Construction Phase: <u>Environmentally Sensitive Features Mitigation:</u></p> <ul style="list-style-type: none"> ■ Implement Environmentally Sensitive Features Mitigation listed in the potential effect for "Alteration, relocation, or demolition of a heritage resource from construction activities above. In addition, implement the following measures: ■ Construct upgraded existing and new access roads in consultation with landowners, industrial land users (e.g., forestry, mining) and in compliance with applicable legislation, regulations and requirements identified in permits and authorizations. ■ Temporary access roads will be decommissioned in accordance with regulatory approvals and will follow MNR's <i>Environmental Guidelines for Access Roads and Water Crossings</i> (refer to Appendix 4-II; Appendix H2; MNR 1990). ■ Reclaim temporary access roads after decommissioning by implementing clean-up and reclamation measures in the CEPP (refer to Appendix 4-II; Section 6.9). <p><u>Heritage Resources Mitigation:</u></p> <ul style="list-style-type: none"> ■ Implement Heritage Resources Mitigation listed in the potential effect for "Alteration, relocation, or demolition of a heritage resource from construction activities" above. <p>Operation Phase:</p> <ul style="list-style-type: none"> ■ Existing roads and trails identified in Access and Construction Environmental Maps (refer to Appendix 5-II) will be used. 	<p>Construction Phase:</p> <ul style="list-style-type: none"> ■ The Owner will arrange for pre-construction environmental surveys as required in the approval conditions, or as per federal or provincial requirements. ■ The Owner will employ the services of qualified Environmental Inspector(s) to guide implementation, monitor and report on the effectiveness of the construction procedures and mitigation measures for minimizing potential impacts 	No net effect

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Table 16-7: Summary of Potential Effects, Mitigation and Predicted Net Effects for Cultural Heritage Resources

Criteria	Indicators	Project Component or Activity	Potential Effect	Mitigation	Inspection and Monitoring Details	Net Effect
Cultural heritage resources	Known and potential cultural heritage resources	<p>Project activities during the construction phase, including:</p> <ul style="list-style-type: none"> ■ site access development, site preparation and soil salvage (e.g., surveying and flagging, clearing and grubbing, and topsoil stripping and grading); ■ construction of temporary workspaces; ■ surface water management and erosion control; and ■ decommissioning of temporary infrastructures; and ■ clean-up and reclamation. <p>Project activities during the operation phase, including:</p> <ul style="list-style-type: none"> ■ maintenance of access roads, transmission line, and preferred ROW. 	Alteration of a cultural heritage resource located downstream from the Project from erosion resulting from increased streamflows	<p>Construction Phase: <u>Infrastructure Placement:</u></p> <ul style="list-style-type: none"> ■ Use existing roads and trails as identified on the Access and Construction Environmental Maps (refer to Appendix 5-II) and comply with conditions outlined in road use agreements. ■ Unless approved by the appropriate regulatory agency, all access roads will be set back 30 m from all water bodies, except at water body crossing locations as identified in the crossing lists (i.e., access roads will not cross into the 30 m water body buffer). ■ Temporary workspaces are shown on the Environmental Alignment Sheets (refer to Appendix 5-I) and the Access and Construction Environmental Maps (refer to Appendix 5-II). ■ If additional temporary workspaces are required, identify the workspace location as soon as possible prior to construction of each segment so the Owner can acquire applicable environmental permits and approvals. ■ The additional temporary workspaces should be located within previously disturbed areas, and/or at reasonably flat locations with stable soil, wherever practicable. ■ Locate temporary workspaces outside the 30 m water body buffer, wherever practicable. If Project activities require equipment within the 30 m water body buffer (e.g., line stringing), the Contractor will notify the Owner to obtain the appropriate regulatory approvals. <p><u>Erosion Control Mitigation:</u></p> <ul style="list-style-type: none"> ■ Follow applicable measures from Ontario's <i>Provincial Standards for Temporary Erosion and Sediment Control Measures</i> (refer to Appendix 4-II, Appendix H4; OPSS 805). ■ Install, monitor and manage appropriate erosion and sedimentation controls as outlined in the preliminary Erosion and Sedimentation Control Management Plan (refer to Appendix 4-II, Section 8.1). ■ Temporary erosion control measures must be: <ul style="list-style-type: none"> ■ properly installed; ■ installed before or immediately after initial disturbance; and ■ regularly inspected and properly maintained (e.g., repaired, replaced or supplemented with functional materials) throughout construction until permanent erosion control is established or reclamation is complete. ■ Erosion and sedimentation controls will remain in place until the construction activities are completed and the disturbed area has been stabilized, restored and revegetated. ■ Where vegetation has established, or risk for erosion and sedimentation has been mitigated, remove temporary erosion and sediment control measures. <p><u>Reclamation Mitigation:</u></p> <ul style="list-style-type: none"> ■ Complete clean-up and interim reclamation of the Project Site under non-frozen conditions as soon as possible after decommissioning, when Project schedule allows. <p>Operation Phase:</p> <ul style="list-style-type: none"> ■ Regrade areas with vehicle ruts and erosion gullies to conform to the local topography to maintain drainage patterns. ■ In areas where reseeding is required for erosion control, seeds will be applied in low reseeding rates to encourage the growth of native vegetation. ■ Selectively cut vegetation and restrict grubbing within areas with steep slopes or soils with risk of erosion. ■ Mechanical clearing and other equipment activity will be minimized within the 30 m water body buffer. No turning of equipment, or vehicles within the 30 m water body buffer (i.e. straight in, straight out) to the extent practicable. 	<p>Construction Phase:</p> <ul style="list-style-type: none"> ■ The Owner will appoint qualified Environmental Inspector(s) to guide implementation, monitor and report on the effectiveness of the construction procedures and mitigation measures for minimizing potential impacts. ■ Post-construction environmental monitoring will be conducted after the completion of the construction activities and continue into the operation phase of the Project and will include such activities as examining and documenting the success of reclamation measures. <p>Operation Phase:</p> <ul style="list-style-type: none"> ■ NextBridge will oversee implementation of the environmental management measures described in the OEMP (refer to Appendix 4-III) during operation and maintenance. 	No net effect

CEPP = Construction Environmental Protection Plan; LRCA = Lakehead Region Conservation Authority; m = meter; MTCS = Ministry of Tourism, Culture and Sport; OEMP = Operation Environmental Management Plan; OPSS = Ontario Provincial Standard Specification; ROW = right-of-way; SWH = significant wildlife habitat.

16.8 Net Effects Characterization

No net effects are predicted for cultural heritage resources as a result of the Project (Section 16.7.3), following implementation of mitigation measures in Table 16-7; therefore, no further assessment or characterization of net effects, including assessment of significance, is required.

16.9 Cumulative Effects Assessment

No net effects are predicted for cultural heritage resources as a result of the Project (Section 16.7.1), following implementation of mitigation measures in Table 16-7. Consequently, the cultural heritage resources criterion is not carried forward for assessment of cumulative effects.

16.10 Prediction Confidence in the Assessment

Confidence that there will be no predicted net effects on cultural heritage resources is high, since the mitigation described in the Construction Environmental Protection Plan (CEPP; refer to Appendix 4-II) and the OEMP (refer to Appendix 4-III) is based on accepted and proven best management practices that are well understood and have been applied to transmission line projects throughout North America. This level of confidence is also predicted as high because an HIA was conducted for the Project that follows guidance provided in the MTCS *Ontario Heritage Tool Kit* (MTCS 2006) and incorporated historical research, air photo and LiDAR analysis, field verification, and evaluation for cultural heritage value or interest. The MTCS has reviewed and provided a letter in August 2018 acknowledging the recommendations in the HIA and indicating that it is satisfied that the heritage assessment process and reporting is consistent with applicable requirements (refer to Appendix 16-III). Uncertainty in the assessment has been further reduced by planning adaptive management measures to address unforeseen circumstances should they arise.

16.11 Follow-Up, Inspection, and Monitoring Programs

The objectives of follow-up, inspection, and monitoring programs include:

- Evaluating the effectiveness of mitigation and reclamation, and modifying or enhancing measures as necessary through adaptive management;
- identifying unanticipated potentially adverse effects, including possible accidents and malfunctions; and
- contributing to continual improvement.

Monitoring and post-monitoring activities are described in Section 23 and the CEPP (refer to Appendix 4-II). A summary of the monitoring activities relevant to the protection of the heritage resources are described below:

- Periodic monitoring should be conducted during construction to ensure that the Angler Internment Camp is being avoided, and the 'Discovery of Heritage or Archaeological Resources Contingency Plan' in Section 6.4 of the CEPP (Appendix 4-II) should be followed during construction in the area adjacent to the Angler Internment Camp.
- Archaeological and heritage resources studies will be completed, the archaeological and heritage resource sites identified, and the associated mitigation identified prior to construction.

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- The Owner will monitor the Project Site during construction for incidental sensitive features (e.g., water body, rare plant, rare vegetation community, wildlife species of concern, archaeological resources) that have not been previously identified on the Project Site.
- NextBridge will employ the services of qualified Environmental Inspector(s) to guide implementation, monitor and report on the effectiveness of the construction procedures and mitigation measures for minimizing potential impacts.
- Post-construction environmental monitoring will be conducted after the completion of the construction activities and continue into the operation phase of the Project and will include such activities as examining and documenting the success of reclamation measures.
- NextBridge will oversee implementation of the environmental management measures described in the OEMP (refer to Appendix 4-III) during operation and maintenance.

16.12 Information Passed on to Other Components

Results of the cultural heritage resources assessment were reviewed and incorporated into the following components of the amended EA Report:

- Archaeological Resources (Section 15);
- Indigenous Current Use of Lands and Resources for Traditional Purposes (Section 17); and
- Non-traditional Land and Resource Use (Section 19).