

# Lake Winnipeg East System Improvement (LWESI) Transmission Project

Heritage Resources Technical Report

Northern Lights Heritage Services Inc.



December 2012



## EXECUTIVE SUMMARY

The Lake Winnipeg East System Improvement Transmission Project (the Project) is required to provide system upgrades in the region east of Lake Winnipeg. The Project will serve existing and new load growth, and provide firm transformation and adequate voltage support for the communities located in and around the region. It is expected that this new development will meet the electrical requirements for at least the next 20 years.

The Project includes the construction of a new 115 kiloVolt (kV) transmission line from Powerview-Pine Falls, Manitoba to Manigotagan [Pine Falls–Manigotagan 115 kV Transmission Line (Line PQ95)], approximately 75 kilometers north of Powerview-Pine Falls. The project will require the development of a new 115-66 kV transmission station (Manigotagan Corner Station) west of the intersection of Provincial Road #304 and the Rice River Road, near the Community of Manigotagan. This station will serve as the terminal for the new Line PQ95 as well as the existing 66 kV sub-transmission lines in the Manigotagan area.

This technical report supports the Environmental Assessment Report to meet the licensing requirements of the *Manitoba Environment Act* for a Class II Licence for this project.

Archaeological field investigations were conducted to complete the Heritage Resource Impact Assessment (HRIA) for the Project. There are no existing archaeological sites within the planned development areas of the Project study area; therefore there are no measurable concerns to the Valued Environmental Component Heritage Resources. The potential effects of the Project on Heritage Resources are considered to be minimal at this point. Field studies conducted as part of the HRIA did not reveal any tangible evidence of past occupations.

Five areas of concern were noted, including the Manigotagan, Sandy, Black and O'Hanly rivers and along Pine Creek. The four river crossings were physically inspected for Heritage Resources. These river crossings were deemed as having the highest potential for heritage materials. This determination was based on information from both data acquired from Manitoba Culture, Heritage and Tourism, literature and professional judgment. Without specific and locational information from Aboriginal Traditional Knowledge, the development of mitigation measures was not possible for this resource. If specific information on a spiritual or heritage resource is identified within the scope of the project, then mitigation in the form of avoidance, salvage or other measures will be recommended by the Project archaeologist.

All Heritage Resources and/or human remains are protected by Manitoba's *Heritage Resources Act* (Government of Manitoba 1986) and *Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains* (Government of Manitoba 1987). If Heritage Resources and/or human remains are discovered, work at the location will stop and the Project archaeologist and Manitoba Culture, Heritage and Tourism, Historic Resources Branch, will be contacted immediately.

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**LIST OF ACRONYMS**

ATK	Aboriginal Traditional Knowledge
BP	years before the present
ca.	<i>circa</i>
EA	Environmental Assessment
GHA	Game Hunting Area
HRIA	Heritage Resource Impact Assessment
km	kilometre
kV	kiloVolt
Line PQ95	Pine Falls–Manigotagan 115 kV Transmission Line
LWESI	Lake Winnipeg East System Improvement
m	metre
MCWS	Manitoba Conservation and Water Stewardship
PEP	Public Engagement Program
PR	Provincial Road
ROW	right-of-way
the <i>Act</i>	Manitoba <i>Heritage Resources Act</i>
the Project	Lake Winnipeg East System Improvement Transmission Project
UNESCO	United Nations Educational, Scientific and Cultural Organization
VEC	Valued Environmental Component





# **1 INTRODUCTION**

## **1.1 Project Overview**

The Lake Winnipeg East System Improvement Transmission Project (the Project) is required to provide system upgrades in the region east of Lake Winnipeg. The Project will serve existing and new load growth, and provide firm transformation and adequate voltage support for the communities located in and around the region. It is expected that this new development will meet the electrical requirements for at least the next 20 years.

The Project includes the construction of a new 115 kiloVolt (kV) transmission line from Powerview-Pine Falls, Manitoba to Manigotagan [Pine Falls–Manigotagan 115 kV Transmission Line (Line PQ95)], approximately 75 kilometers (km) north of Powerview-Pine Falls. The project will require the development of a new 115-66 kV transmission station (Manigotagan Corner Station) west of the intersection of Provincial Road (PR) #304 and the Rice River Road, near the Community of Manigotagan. This station will serve as the terminal for the new Line PQ95 as well as the existing 66 kV sub-transmission lines in the Manigotagan area.

This technical report supports the Environmental Assessment (EA) Report to meet the licensing requirements of the *Manitoba Environment Act* for a Class II Licence for this project.

## **1.2 Report Purpose and Outline**

This report provides an EA of the proposed project relating specifically to Heritage Resources. Heritage Resources are considered to be non-renewable resources which provide a tangible cultural link between the past and present. Heritage Resources are protected under Manitoba's *Heritage Resources Act* (the *Act*) (Government of Manitoba 1986) and are defined as:

- a heritage site;
- a heritage object; and
- any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof (Government of Manitoba 1986).

Changes to the physical environment during the construction phase have the potential to cause effects to Heritage Resources. This technical report discusses potential project effects on known and unknown Heritage Resources. Under the *Act*, a Heritage Resource Impact Assessment (HRIA) occurs when it is in the opinion of the minister that Heritage Resources may be affected by development. The *Act* ensures that any Heritage Resources will be protected from the effects of impact caused by development, including adverse or residual effects.

The Heritage Resources Technical Report is organized into nine Sections as follows:

- **Section 1** provides an overview of the Project and the purpose and outline of the Project;
- **Section 2** describes the Project Study Area;
- **Section 3** identifies the methods of data collection and analysis, Valued Environmental Component selection and Aboriginal Traditional Knowledge gathering;
- **Section 4** describes the existing environment of the Project Study Area;
- **Section 5** provides an evaluation of Alternative Routes and infrastructure;
- **Section 6** discusses effects assessment and mitigation;
- **Section 7** provides concluding remarks;
- **Section 8** lists references cited; and
- **Section 9** provides a glossary of terms used in the report.

## **2 PROJECT STUDY AREA**

### **2.1 General Regional Area Description**

The Project Study Area is within an area of approximately 2,112 square kilometres and extends from south of the Community of Powerview-Pine Falls, north to the Community of Manigotagan, and from the eastern boundary of Lake Winnipeg, to approximately 10 km east of PR #304. The Project Study Area was chosen to be of sufficient size to assess any potential project effects on biophysical and socioeconomic components.

The physical environment in which the Project will be constructed is referred to as the Lac Seul uplands (Eco-region 90), part of the Boreal Shield Ecozone. This area is defined as having a gently rolling plain, that consists largely of glacial moraine and lacustrine deposits that are occasionally broken by bedrock outcrops (Environment Canada 1989). Primarily dominated by a poorly-drained lowland, surface deposits are predominately organic with clayey lacustrine sediments underneath (Manitoba Hydro 1993).

Ecologically, the Project Study Area is situated in the Subhumid mid-Boreal ecoclimatic region. This environment typically consists of ridged to hummocky bedrock outcrops covered with discontinuous veneers and blankets of granitic till. The forest cover is dominated by coniferous species with birch and aspen in better drained lowlands (Scott 1997:50). Terrain is generally flat and poorly drained, supporting black spruce (*Picea mariana*) and tamarack (*Larix laricina*) forest patches. In better drained soils along rivers and streams, white spruce (*Picea glauca*), trembling aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera*), and to a lesser extent balsam fir (*Abies balsamea*) are present (Smith et al. 1998).

## **2.2 Project Study Area**

The Project Study Area is located north of Powerview-Pine Falls, Manitoba (Map 1). The scope of the Project was refined by the Site Selection and Environmental Assessment process which identified three Alternative Route options based on technical, ecological, social, and economic factors. The Alternative Route options were identified based on initial input during meetings with some local communities in 2011, technical and cost factors, as well as avoiding bio-physical factors known to be in the region and across the boreal landscape.

The heritage assessment focused on a 100 metre (m) corridor using the centre point of the right-of-way (ROW). The purpose of the arbitrary 100 m corridor was to allow for the inclusion of the transmission ROW (60 m), as well as allowing for potential deviation of the transmission line.

## **3 METHODS**

### **3.1 Data Collection and Analysis**

Standard archaeological field research methods were applied to assess the known Heritage Resources in the Project Study Area and conducted field investigations within the 100 m corridor to determine the presence or absence of Heritage Resources. A desktop study was first carried out that included acquisition of existing heritage site inventories, background research, literature review, Aboriginal Traditional Knowledge (ATK) and professional judgment based on experience and training. Field investigations were conducted by boat and walking survey in areas of accessibility.

Heritage site data were acquired from Manitoba Culture, Heritage and Tourism, Historic Resources Branch. These data were then applied to a 100 m corridor along the Final Preferred Route Project Study Area to determine if any known heritage sites were within the proposed Project Study Area. In 2011 an HRIA took place which examined earlier proposed transmission line route corridors which have since been modified for the Project. That survey did not result in any Heritage Resources being located (Northern Lights Heritage Services 2011).

Aboriginal Traditional Knowledge derived from community-based studies consisted of workshop group interviews along with memory mapping of land use areas. These workshops provided ATK which addressed specific physical and biophysical concerns, and included identification of culture and Heritage Resources. Those areas identified during the workshops as having culture and Heritage Resources were examined in relation to the three Alternative Routes and were used to determine if any heritage resource areas were located within a 100 m corridor of the proposed transmission line.

The desktop study, ATK information and professional judgment identified areas having potential for Heritage Resources. Prior to field investigation, the Preferred Route had been provided to the study team. Those areas of high potential that occur within the 100 m corridor of the Final Preferred Route were ground-truthed for Heritage Resources. Field methods, consisting of pedestrian survey with interval subsurface testing, where possible, served to determine if any buried cultural remains were situated in areas regarded as having heritage potential.

The First Nations and the Northern Affairs Communities in the Project Study Area include Black River First Nation, Hollow Water First Nation, Fort Alexander First Nation and the Communities of Manigotagan and Seymourville.

Based on the desktop study, five areas were identified and investigated along the Final Preferred Route. These included four major water crossings; the Manigotagan River, Black River, Sandy River and O'Hanly River, and a segment of the Final Preferred Route where it travels along Pine Creek was also identified.

All five locations have the potential for Heritage Resources within 50 m of the embankment on either side of the waterbodies. Traditional knowledge indicates that burials and other heritage resource sites are present within the Project Study Area.

Access to the five areas was gained by water craft with the exception of O'Hanly River due to rough waters and dangerous rocks. Inspection of these areas involved subsurface shovel testing for the presence of unknown heritage materials. No heritage materials were observed at the crossings of the Manigotagan, Sandy or Black rivers. The north side of O'Hanly River where the Final Preferred Route will cross was not tested due to low heritage potential, but the north side could not be accessed. Similarly the southern portion where the Final Preferred Route runs along Pine Creek could not be accessed or inspected. A recommendation is made that these two areas be monitored by the project archaeologist during construction for the presence of unknown, buried heritage materials.

### **3.2 Valued Environmental Component Selection**

The EA was focused on Valued Environmental Components (VECs), which are aspects of the natural and socio-economic environment that are particularly notable or valued because of their ecological, scientific, resource, socio-economic, cultural, health, aesthetic, or spiritual importance. To be considered as a VEC, a component must have the potential to be adversely affected by project development or have the potential to have an effect on the Project.

A workshop was held with discipline experts to select VECs for the Project which met one or more of the following criteria:

- identified regulatory requirements;
- consultation with regulatory authorities;
- information derived from published and unpublished data sources;
- information and comment received during the engagement of local communities;
- feedback through the Public Engagement Program (PEP); and
- biophysical and heritage assessment field surveys.

A preliminary list of VECs was proposed, and revised throughout the EA process which balanced biophysical and socioeconomic components, and represented both potential positive and negative effects of the Project.

The VECs selected for Heritage Resources are summarized below.

Heritage Resources are non-renewable resources that are the tangible remains of human activities which have survived through time and which indicate evidence of past human

activities. All Heritage Resources are protected under the Manitoba *Heritage Resources Act* (Government of Manitoba 1986) and as such have been categorized under a single VEC.

All Heritage Resources are protected under Section 12(2) of the *Act* and therefore are considered a VEC regardless of the nature or size of the site. The *Act* also applies to identified and newly discovered resources as a result of a project. Within the VEC of Heritage Resources, burial sites which occur outside of registered cemeteries and found human remains are equally protected by the *Act* and further protected by the *Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains* (Government of Manitoba 1987).

### **3.3 Aboriginal Traditional Knowledge**

Aboriginal Traditional Knowledge was acquired from ATK workshops that consisted of group interviews. Memory mapping of land use areas documented areas of specific kinds of traditional knowledge. These workshops provided ATK which addressed specific biophysical disciplines -, and included identification of culture and Heritage Resources.

Aboriginal Traditional Knowledge served to inform the project of general locations of cultural and Heritage Resources important to the Communities of Black River First Nation, Hollow Water First Nation, Manigotagan and Seymourville that could be adversely effected by the Project. ATK assisted in identifying general areas of potential Heritage Resources along the proposed Alternative Routes and Final Preferred Route. Knowledge of burial areas was provided, but the exact locations were not given. ATK also included areas where events or activities have taken place and are also generally described. The ATK provided thus far has not indicated specific locational information on heritage or cultural sites within the Project Study Area.

## 4 EXISTING ENVIRONMENT

### 4.1 Overview

The archaeological record within the Project Study Area is best understood in the broader geographic region of the East Side of Lake Winnipeg. Over 500 archaeological sites are registered in this larger area; many of the sites are associated with the Anishinaabeg, who reside in the Reserves and small communities within the geographic region.

Previous archaeological investigations indicate a longstanding history of use and occupation within this larger geographic area with dates exceeding 7,000 years ago (Table 1). Artifacts, features and burials representing this time span have been found along the Manigotagan and Winnipeg rivers.

#### 4.1.1 Paleo-Indian Period (ca. 10,000 to 8,000 years ago)

Across North America, cultures developed from several areas beginning approximately 13,000 years ago. Although these cultures flourished and spread across North America, evidence of their presence within the Project Study Area is sparse, if existent at all. This is mostly due to the fact that eastern Manitoba was either under glacial ice, or had just been freed from the ice and the environment was not sustainable for terrestrial life. However, as the climate warmed and the ice retreated, two major post-fluted point Palaeo-Indian cultural developments emerged approximately 10,000 to 8,000 years BP<sup>1</sup>: the Late Palaeo Indian Plano and Archaic. The Late Palaeo Indian Plano Culture developed out of response to a changing subsistence base to smaller herd animals such as bison and caribou. As the Canadian frontier became habitable, Late Palaeo Indian Plano cultures that had emerged out of the earlier Clovis/Folsom Palaeo culture forged paths northwards from the Central and upper Midwest plains onto the Canadian Plains. Shifting seasonal movements in response to the migratory routes of bison and caribou likely account for the gradual dispersal of splinter groups into the northern limits of the Plains. On the east side of Manitoba, there is rare evidence of these groups close to the south end of the Manigotagan River and on the shores of the Little Manigotagan Lake (Buchner 1979).

Concurrent with Plano technological evolution and its radiating northerly movement out of the Plains, Palaeo-Indian groups were also diversifying into a series of discrete archaic cultures east and south of the Plains. This northern time transgression is important as early innovations of Archaic in the southeast United States and eastern seaboard occur at the same time as late persistence of Plano in the north. However, there were technological innovations occurring in the north as well (Northern Lights Heritage Services 2010).

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<sup>1</sup> BP when placed after a number means "Years Before the Present".

**Table 1 Manitoba Chronology Based on Select Technology.**

	Archaeological Period	Technology	
		Container Type	Food Procurement
Post-European Contact Period	Late Historic Period (ca. 130 to 70 years ago)	Porcelain Tableware Earthenware Dinnerware Stoneware Storage Jars Tin Cans	Repeating Rifles Cartridge Breach Loading Shotguns
	Middle Historic Period (ca. 179 to 130 years ago)	Earthenware Dinnerware Stoneware Storage Jars Copper Pots/Kettles	Breach Loading Rifles/Shotguns Percussion Cap Muskets
	Early Historic Period (ca. 360 to 179 years ago)	Copper Pots/Kettles	Flintlock Muskets/Shotguns Projectile Point Types: • Side-notched Metal
Pre-European Contact Period	Late Pre-contact Period (Woodland Tradition) (ca. 2,200 to 360 years ago)	Clay Vessels: Selkirk Clearwater Lake Punctate Duck Bay Punctate Blackduck Laurel	Bow & Arrow Bone harpoons Nets Projectile Point Types: • Side-notched • Eastern and Plains Triangular • Avonlea • Besant/Sonota
	Middle Pre-contact Period (ca. 8,000 to 2,500 years ago)	Fibre Baskets/Bags Animal Viscera/Hide	Atlatl Bone harpoons, Nets Projectile Point Types: • Larter Tanged/Pelican Lake • Duncan/Hanna/McKean • Old Copper • Raddatz • Oxbow
	Paleo-Indian Period (ca. 10,000 to 8,000 years ago)	Fibre Baskets/Bags Animal Viscera/Hide	Spear Point Types Bone harpoons Projectile Point Types: • Agate Basin • Plano

**4.1.2 Archaic Period (ca. 8,000 to 2,500 years ago)**

Archaic is a general term for the time period that followed the Palaeo-Indian occupation. This period marked a diversification in both technology and subsistence patterns that probably occurred in response to changing climatic conditions. Geographically there is a division into Eastern and Western (Desert) traditions. Temporally the divisions are prefixed with early, middle and late. Temporal periods are not exact since research across Manitoba and northwestern Ontario has not produced substantial or absolute evidence of Archaic. This is in part due to poor



organic preservation that inhibits dating of artifacts and the fact that little research has focused on this particular time period; in fact, the level of research for all cultural occupations has been mainly associated with environmental impact assessments for large scale development or graduate student research.

Technological advances during this period were characterized by the appearance of stemmed, notched or barbed broad bladed projectile points. These dart points were smaller than the spear points of the previous Palaeo period and appear to have been used in conjunction with an atlatl (throwing stick). Changing climatic conditions had the effect of people taking note of their existing and changing resource base and adapting both subsistence strategies and settlement patterns to ensure their survival. Seasonal rounds gradually formed and from this distinctive cultural traditions emerged.

#### **4.1.3 Woodland Tradition (ca. 2,500 to 300 years ago)**

In general terms, the emergence of a sequence of subsistence strategies about 2,500 years ago marked the beginning of a life way that continued more or less unchanged until about 100 years ago. The Woodland Tradition ushered in a more generalized subsistence economy and a new set of technologies that were clearly different from the preceding Archaic period.

One of the key markers of this period is the introduction of ceramic vessels. These vessels were free-formed, heat-fired vessels made without the use of a potter's wheel. Utilized for cooking vessels and storage containers for wild rice, berries, nuts and herbs the development of this technology changed the nature of culture and daily life. As an indicator of cultural dynamics, archaeologists have used rim sherds to determine a chronology of when pottery first appeared, how it evolved and the geographical distribution of certain types. These types have been attributed to cultural affiliations that produced certain tool types as well as stylistic indicators on the pottery itself. It is important to note, however, that designations of pottery styles reflect the pottery itself and not the people that produced it. Another important development during this time is the introduction of the bow and arrow. Although introduced a little earlier, the development of the bow and arrow was perfected during the Woodland Tradition and is evidenced in the styles of projectile points found at Woodland sites.

Based on relative and chronometric data, the Woodland Tradition has been divided into two main time frames. These time frames reflect the technology of the pottery as well as other tool types, mainly projectile point styles.

##### **4.1.3.1 Middle Woodland Tradition (ca. 2,500 to 1,200 years ago)**

The Middle Woodland Tradition is characterized by Laurel ceramics, although recent evidence has shed light on the presence of the Elk Lake culture that produced Brainerd ware (Hamilton et al. 2011). These two culture affiliations were dominated during the Middle Woodland Tradition developing around 2500 years ago. The Laurel culture seems to have been distributed over a

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large geographic area from west of Quebec to north central Saskatchewan and south in to Minnesota and Michigan (Rajnovich 2003: ii; Wright 1999: 725). The Elk Lake culture developed out of central Minnesota, south central Manitoba, Ontario and the Dakotas (Hohman-Caine and Goltz 1995; Hamilton et al. 2011).

Typically projectile points of the two cultural affiliations were similar styles: triangular (Laurel triangular) and side-notched (Anderson corner-notched, Whiteshell corner-notched). Projectile points vary in size and are usually of local lithic material. While a variety of hide scrapers are present the most common is the “thumbnail” type.

Despite the similarities of tool assemblages, there is a marked difference in ceramic vessel style attributes and surface decoration. The general form and coiling method of production is similar, however Brainerd ware is produced in a net bag which left diamond shaped impressions on the body. Later surface decorations also included a horizontal cord marking around the vessel. Surface style decorations include five main types: Plain variety; Cord-wrapped object stamped variety; Angled stamp variety; Incised variety; and Reed stamped variety (Hohman-Caine and Goltz 1995). Laurel vessels have a markedly different decoration. Although the body of Laurel ceramics are often smoothed over, surface style decorations near the rim and lip are quite varied and include: Pseudo Scallop shell, Dragged Stamp, Dentate Stamp and even combined techniques (Wright 1967).

#### **4.1.3.2 Late Woodland Tradition (ca. 1,200 to 300 years ago)**

As the Woodland period progressed from middle to late traditions, important changes occurred to ceramic production techniques. Whereas in the Middle Woodland Tradition, ceramic vessels were constructed using a coiling method, the Late Woodland Tradition saw a shift to using a paddle and anvil method of creating vessels. The transition from Middle into the Late Woodland period appears to have been gradual in some areas, abrupt in others and may have its roots in the preceding Laurel and other Middle Woodland Tradition (Dawson 1976; Evans 1961; Koezur & Wright 1976; Lugenbeal 1976; Reid & Ross 1981; Saylor 1989; Steinbring 1980).

Archaeologists generally agree that there are five major styles of Late Woodland ceramics that dominate the assemblage from the East Side of Lake Winnipeg to the Pikangikum/Lac Seul area. These are: Blackduck, Selkirk, Clearwater Lake, Duck Bay and Sandy Lake. The ceramic types within the Project Study Area all exhibit similar manufacture techniques: they are constructed by a lamination process rather than by coiling as with the earlier Laurel and motif is generally applied by means of a cord-wrapped stick. Exterior vessel finishes are often imprinted with the woven pattern of the fiber-bag in which the vessel was molded. Although the general form is similar across all cultural affiliations, surface decorations differ to reflect the differences within the various groups.

While noticeable changes to the ceramic tradition become evident during this time, the remainder of the tool assemblage does not appear to have undergone any radical changes.

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This latter note suggests that the seasonal activities that had evolved over the preceding several thousands of years were effective and sustainable from a subsistence perspective.

#### **4.1.4 Post-European Contact**

Although evidence of Europeans most likely reached groups living in the study area before actual contact was made, obvious technological and cultural changes took place (see Table 1, above). With the introduction of trade goods from Europe, the need to manufacture goods became less and less. Stone tools were replaced with harder, sharper metal implements and fragile earthen pottery was given up for wooden and more solid type containers. This had a huge impact on the life ways of First Nations who existed upon the landscape and as trading posts and historic forts were built, seasonal life ways were abandoned for more sedentary lifestyle with the trading for goods taking precedence.

## **4.2 Aboriginal Traditional Knowledge Process**

An ATK study was undertaken to provide relevant information on local knowledge and land use that were absent from the Project Study Area data record. Data on ATK was gathered during five workshops that were held in the Communities of Hollow Water, Manigotagan, Black River, and Seymourville. Workshops were guided by a series of questions provided by discipline leads. Information was summarized in a series of map biographies on traditional and current land use practices, and interview summaries, and land use maps. Relevant information was integrated into the technical reports which support the EA Report.

Aboriginal Traditional Knowledge gathered during community workshops provided general knowledge regarding cultural land use patterns to the study team disciplines. Aboriginal Traditional Knowledge also assisted in identifying areas of potential Heritage Resources along the Alternative Routes and Final Preferred Route. The general locations of burial sites and the site of a 1950s plane crash were identified, but no specific coordinates could be given.

## **4.3 Potential Sites**

On examining the existing heritage data, no registered archaeological sites fall within either the Alternative Routes or the Final Preferred Route. However, examination of the 100 m corridor centred on each route highlights areas of heritage potential. Four river crossings were flagged as having heritage potential for all routes. Manigotagan River, Black River, Sandy River and O’Hanly River are all waterways that are known to have supported water transportation. The interior headwaters of these rivers are rich in natural resources that have been documented in other traditional knowledge reports and the ATK and archaeological record verifies the area as a major “grub box” (Raven and Petch 1992; Petch 2004, 2005). These were attractive areas for past peoples moving across the landscape as part of their seasonal round. While many areas of river banks are not conducive to long-term settlement, there is the potential for other forms of

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land use such as hunting, trapping, gathering and fishing; all of which have the potential to support an archaeological record. The proximity to Lake Winnipeg and the Winnipeg River to the south created a network of travel routes that are documented in the oral tradition (Petch 2005). The named rivers also provided access to pulp camps that flourished during the 1930s, in which many of the local Aboriginal people participated.

The Manigotagan River is a permanent navigable water course which served as a major route for Pre-European contact people, and later industrial purposes such as barging equipment and labor to the Bissett area during the early days of mineral exploration and mining. Even today, the river is known as a popular destination for outdoor enthusiasts and is a designated Provincial Park. Similarly the Black, Sandy and O'Hanly rivers were deemed to be substantial water ways that did support water transportation into the interior to the pulp cutting camps, for general resource use and possibly cultural purposes.

## **5 EVALUATION OF ALTERNATIVE ROUTES AND INFRASTRUCTURE**

### **5.1 Overview**

The overall route selection process for the Line PQ95 component is described in Chapter 6.0 of the EA Report. Evaluation of the Alternative Routes focuses on a predetermined set of evaluation criteria. The evaluation criteria reflect the importance of known factors that are identified from various perspectives including socio-economic, biophysical, cost and technical. These criteria, as well as valuable feedback obtained from the PEP, became the basis from which to compare and evaluate the Alternative Routes. The section below describes the inputs from the Heritage Resource Perspective.

The Manigotagan Corner Station Site was selected based on engineering and technical criteria. The Final Preferred Station Site has been integrated into the PEP and has received favorable feedback from local community representatives.

The section below describes the inputs for Line PQ95 Alternative Routes and the Manigotagan Corner Station Site from the Heritage Resources perspective.

### **5.2 Route Selection Criteria**

The following factors were used to compare the Alternative Routes, from a Heritage Resources perspective:

- known Heritage Resources as described in the provincial database;
- Heritage Resources described and identified during the ATK workshops; and
- potential for Heritage Resources based on the favourable environmental attributes such as;
  - proximity to potable water; and
  - the number of water crossings each route would traverse.

#### **5.2.1 Alternative Routes**

Evaluation of the Alternative Routes relied on the existing archaeological record and favourable environmental attributes such as proximity to potable water using topographic maps. All Alternative Routes cross the four major waterways identified and therefore have equal potential for disturbance to unknown Heritage Resources (Map 2). ATK contributed to identification of general areas of Heritage Resources. For Route A, three sites were identified through ATK and included unmarked burials, a 1950s plane crash, and historic trail; 17 water crossings were also

noted as having heritage potential (Table 2). For Route B, ATK identified a trapper's cabin, unmarked burials, a 1950s plane crash and 18 water crossings. Finally, Route C included unmarked burials, the 1950s plane crash and 14 water crossings. Based on this assessment, Route C was the preferred option due to less potential effects on cultural resources and water crossings.

**Table 2 Alternative Routes Comparison Summary**

Route	Unmarked Burials	1950s Plane Crash	Trapper's Cabin	Historic Trail	Water Crossings*
A	Y	Y	N	Y	17
B	Y	Y	Y	N	18
C	Y	Y	N	N	14

\* Water crossings are especially important because of the potential effect of tower placement to unknown Heritage Resources and/or unmarked burials.

## 5.2.2 Manigotagan Corner Station and Final Preferred Route

The proposed Manigotagan Corner Station Site does not contain ATK identified areas of Heritage Resources, nor does the area contain significant water crossings. The area defined as the proposed location of the Station was ground-truthed in 2011 during initial investigations and did not reveal evidence of Heritage Resources (NLHS 2011). The proposed station location plans had not been modified and as such, there are no further heritage concerns with the proposed location of the Manigotagan Corner Station.

The Final Preferred Route contains the ATK Heritage Resources 60, 61, and 89. The Final Preferred Route also crosses the four major waterways identified as having potential for disturbance to Heritage Resources. The field investigations of these major rivers did not provide evidence of Heritage Resources.

## **6 EFFECTS ASSESSMENT AND MITIGATION**

### **6.1 Overview**

The effects assessment followed the methods outlined in Chapter 3.0 Table 3.3 of the EA Report. Table 3 provides a summary of the effects assessment.

Based on the site selection process outlined in Chapter 6.0 of the EA Report, a final Preferred Route was selected based on route comparison using several criteria, including Heritage Resources. The Final Preferred Route is a combination of Routes A and B. The Manigotagan Corner Station Site was selected based on engineering and technical criteria. The following effects assessment section was completed on the Final Preferred Route.

The Project is situated within an area of Aboriginal interest that spans at least 8,500 years of general occupation by the ancestors of the First Nations people who inhabit the area today. Workshops with Manigotagan, Black River First Nation, Hollow Water First Nation and Seymourville indicated the presence of unmarked burials, trails, and the remains of a plane. However, the ATK did not provide specific locational information on the identified Heritage Resources.

Through the ATK workshops, communities shared concern that changes to the physical environment, may have an effect on Heritage Resources and the historical relationships with the land that community member's value.

### **6.2 Effects Assessment**

The following section provides an assessment of the potential effects of the project on the Heritage Resources within the Project Study Area. Project components assessed include the proposed transmission line and the proposed station.

Based on existing site data from the Manitoba Culture, Heritage and Tourism, Historic Resources Branch, and literature review including topographic map assessment of the proposed Alternative Routes, four river crossings were identified as well as the southern portion of proposed development along Pine Creek, as having heritage potential.

There are no Provincially-registered archaeological sites within the 100 m corridor of the Alternative Routes. No Heritage Resources were identified or documented during the field investigation of the Final Preferred Route. Confirmation of the ATK-derived information regarding burials and Heritage Resources was not conducted as no accurate geographic coordinates could be provided. The 1950s plane crash site was known to occur outside the route corridor. The results of the heritage assessment indicates that there are no measurable

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concerns to the VEC Heritage Resources. However, given the nature of Heritage Resources that may be buried beneath the surface, there is the potential for unknown Heritage Resources to be unearthed during construction activities.

Increased human traffic along the new transmission ROW may adversely affect unknown Heritage Resources.

Two areas were not fully investigated, the south shore of the O'Hanly River because of unstable shores and inaccessibility and the section of the Final Preferred Route that follows within 50 m of Pine Creek due to land-ownership restrictions.

### **6.3 Proposed Mitigation Measures and Residual Effects**

The best form of mitigation is avoidance; however no heritage resource sites were identified during field investigation. Therefore the potential for unknown archaeological sites being discovered during clearing and construction remains uncertain. While there is low potential based on the investigation, there may be unknown heritage resource sites brought to light during clearing and construction. Since these activities will cause disturbance to the ground surface, on-site construction crews should be made aware of the potential for disturbance to newly found *in situ* Heritage Resources.

Key mitigation measures will involve education and awareness of project and construction workers as to the nature of Heritage Resources and management of any Heritage Resources that may be encountered. A Heritage Resources Protection Plan is recommended to provide infield guidance to construction crews. In the event that previously unknown Heritage Resources are unearthed or exposed during construction, terms within the *Manitoba Heritage Resources Act* (Government of Manitoba 1986) will prevail. In addition, the *Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains* (Government of Manitoba 1987) will be followed should human remains be discovered. The project archaeologist will be contacted and provide instruction. Further, the project archaeologist will arrive on-site to confirm the find and will conduct salvage collection with site documentation. If burials or human remains are encountered all construction in the vicinity must halt and the project archaeologist must be contacted immediately. The *Act* and *Policy Concerning the Reporting, Exhumation and Reburial of Human Remains* will then take precedence.

For those areas that were inaccessible during the field assessment, monitoring of construction by the project archaeologist is recommended.

At this time no residual effects to known Heritage Resources are expected since there were no archaeological sites identified during the HRIA that fall within the Final Preferred Route. However, there is potential for the discovery of unknown Heritage Resources to be impacted through construction. For a summary of residual effects assessment, see Table 3.

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**Table 3 Residual Effects Assessment**

Potential Effect	Project Phase	Key Mitigation Measures	Residual Effect	Significance Criteria
Changes to the physical environment	Construction	Routing to avoid	Damage to unknown heritage site	Direction: Negative Magnitude: Moderate to Large Geographic Extent: Project Footprint Duration: Short Term Reversibility: Reversible Frequency: Infrequent
Loss of traditional lands	Construction and operation	Routing to avoid	Damage to unknown heritage sites	Direction: Negative Magnitude: Moderate to Large Geographic Extent: Project Footprint Duration: Short Term Reversibility: Reversible Frequency: Infrequent
Disturbance of 1950s plane crash	Construction and operation	Heritage Resources Protection Plan	None	Direction: Neutral Magnitude: Negligible Geographic Extent: Regional Duration: Short-term Reversibility: Reversible Frequency: Infrequent
Disturbance of unmarked burial sites	Construction	Heritage Resources Protection Plan	None	Direction: Negative Magnitude: Moderate to Large Geographic Extent: Project Footprint Duration: Short-term Reversibility: Reversible Frequency: Infrequent
Disturbance of historic trail	Construction	Heritage Resources Protection Plan	Relocation of historic trail	Direction: Neutral Magnitude: Negligible Geographic Extent: Local Duration: Short-term Reversibility: Reversible Frequency: Infrequent
Disturbance of unknown Heritage Resources at major river crossings	Construction	Heritage Resources Protection Plan monitoring of construction by the project archaeologist is recommended	Loss of Heritage Resources	Direction: Negative Magnitude: Moderate to Large Geographic Extent: Project Footprint Duration: Short-term Reversibility: Reversible Frequency: Infrequent
Increased Human Traffic disturbing unknown Heritage Resources.	Construction and operation	education and awareness of project and construction workers	Loss of Heritage Resources	Direction: Negative Magnitude: Moderate to High Geographic Extent: Project Footprint Duration: Short-term Reversibility: Reversible Frequency: Sporadic

## **6.4 Interactions with Other Projects**

Based on the available information (Table 4) and in conjunction with the field assessments, the Project is unlikely to disturb Heritage Resources. Due to the localized nature of the potential effects to Heritage Resources (disturbance of unknown sites), there will not be any spatial overlap with other known projects in the area. The potential interactions of the Project with other projects in close proximity will not have any combined effect on Heritage Resources.

## **6.5 Monitoring and Follow-Up**

The area along Pine Creek is considered to have heritage potential. Since access was not possible, a recommendation is made that monitoring of this area by the project archaeologist during construction activities (tower placement) occurs to identify any possible heritage materials that currently are unknown.

Additionally, the south side of O'Hanly River was not accessed for field assessment. A recommendation is made that the project archaeologist be present during construction activities (tower placement) at the river crossing in order to monitor the presence of any buried cultural Heritage Resources.

**Table 4 Other Projects in the Region**

Sector	Project	Description	Location	Status	Timelines
Mining	San Gold Mine Expansion	<ul style="list-style-type: none"> <li>Planned expansion of San Gold's Gold Mine and tailings pond in Bissett, northeast of Project Study Area</li> <li>Production is expected to double</li> </ul>	Northeast of Project Study Area	Ongoing	
	Mineral Exploration	<ul style="list-style-type: none"> <li>The north end of the Project Study area overlaps with many mining claims and exploration activities (e.g. drill holes)</li> <li>Mining claims are held by Golden Pocket Resources, DLW Gold Ventures Inc., Canada Bay Resources Ltd., and San Gold Corp.</li> </ul>	North of Project Study Area	Ongoing/ Planned	
	Quarry Development	<ul style="list-style-type: none"> <li>There are 83 quarry leases within the Project Study Area, several in close proximity to the Project</li> <li>Lease holders include private companies, as well as Manitoba Infrastructure and Transportation (MIT), and the East Side Road Authority</li> <li>Development and expansion of existing and new quarries is likely, particularly for projects such as the East Side Road</li> </ul>	Within the Project Study Area	Ongoing/ Planned	
Forestry	Timber Resource Harvesting	<ul style="list-style-type: none"> <li>Request for Proposal (RFP) to for timber resource harvesting in FML01 by Manitoba Conservation and Water Stewardship (Manitoba Conservation and Water Stewardship [MCWS])</li> <li>A potential respondent to the RFP would be a community and forest industry joint venture being spearheaded by the Manitoba Model Forest (Winnipeg River Integrated Wood and Biomass Project)</li> <li>This would result in an estimated 400 to 450 direct jobs, up to 400,000 m<sup>3</sup> softwood/year and 200,000 m<sup>3</sup> hardwood/year</li> </ul>	Within the Project Study Area	Planned	Within 1 – 3 years
Wildlife	Closure of Licensed and Rights Based Moose Hunting	<ul style="list-style-type: none"> <li>As of January 26, 2012, all licensed hunting in Game Hunting Area (GHA) 26 is closed</li> <li>In addition, moose protection zones in areas of heavy moose concentration areas along roads and rivers are closed to hunting for rights-based peoples</li> <li>Proposed decommissioning of roads by MCWS</li> </ul>	GHA 26 within the Project Study Area	Ongoing/ Planned	2012

**Table 4 Other Projects in the Region (continued)**

Sector	Project	Description	Location	Status	Timelines
Transportation & Communication Infrastructure	East Side Road Authority	<ul style="list-style-type: none"> <li>Construction of a 156 km all season gravel road along the east side of Lake Winnipeg from Provincial Road #304 east of Hollow Water to Berens River First Nation</li> </ul>	North of Project Study Area	Ongoing	2010 - 2014
	Fibre Optic Cable	<ul style="list-style-type: none"> <li>The San Gold Mine in Bissett, and several community members have expressed an interest in fibre optic cable service in the area</li> </ul>	Within and northeast of Project Study Area	Potential	Unknown
Cottage Development	Black River First Nation Cottage Development Initiative	<ul style="list-style-type: none"> <li>Expansion of cottage development within the Black River First Nations territory in conjunction with MCWS</li> <li>Phase I of the project is underway with road development underway for servicing of 50 cottage lots</li> <li>Future phases are planned for an additional 550 additional cottage lots</li> </ul>	Black River First Nation Reserve at the west of the Project Study Area	Ongoing/Planned	Phase I: underway (year 1 of 5) Phase II:- 5 – 10 years
	Hollow Water First Nation Cottage Development Plans	<ul style="list-style-type: none"> <li>Considering cottage development projects with MCWS</li> </ul>	Hollow Water First Nation Reserve at the north end of the Project Study Area	Potential	Unknown
	Sagkeeng First Nation Cottage Development Plans	<ul style="list-style-type: none"> <li>Considering cottage development projects with MCWS</li> </ul>	Sagkeeng First Nation Reserve at the southwest end of the Project Study Area	Potential	Unknown

## 7 CONCLUSIONS

Archaeological field investigations were conducted to complete the HRIA for the Project. There are no existing archaeological sites within the planned development areas of the Project study area; therefore there are no measurable concerns to the VEC Heritage Resources. The potential effects of the Project on Heritage Resources are considered to be minimal at this point. Field studies conducted as part of the HRIA did not reveal any tangible evidence of past occupations.

Five areas of concern were noted, including the Manigotagan, Sandy, Black and O'Hanly rivers as well as along Pine Creek. The four river crossings were physically inspected for Heritage Resources. These river crossings were deemed as having the highest potential for heritage materials. This determination was based on information from both data acquired from Manitoba Culture, Heritage and Tourism, literature and professional judgment. Without specific and locational information from ATK, the development of mitigation measures was not possible for this resource. If specific information on a spiritual or heritage resource is identified within the scope of the project, then mitigation in the form of avoidance, salvage or other measures will be recommended by the project archaeologist.

All Heritage Resources and/or human remains are protected by Manitoba's *Heritage Resources Act* (Government of Manitoba 1986) and *Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains* (Government of Manitoba 1987). If Heritage Resources and/or human remains are discovered, work at the location will stop and the project archaeologist and Manitoba Culture, Heritage and Tourism, Heritage Resources Board, will be contacted immediately.

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## **9 GLOSSARY**

### **Aboriginal Traditional Knowledge (ATK)**

Knowledge, innovations and practices of indigenous and local communities around the world which is developed from experience gained over centuries and adapted to the local culture and environment. ATK is transmitted orally from generation to generation, tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices

### **Grub Box**

This is the term used by Elders and Resource Users to describe the resources that are found within their traditional lands. The land contains all the foods and medicines necessary for survival.



# Lake Winnipeg East System Improvement Transmission Project

## Project Infrastructure

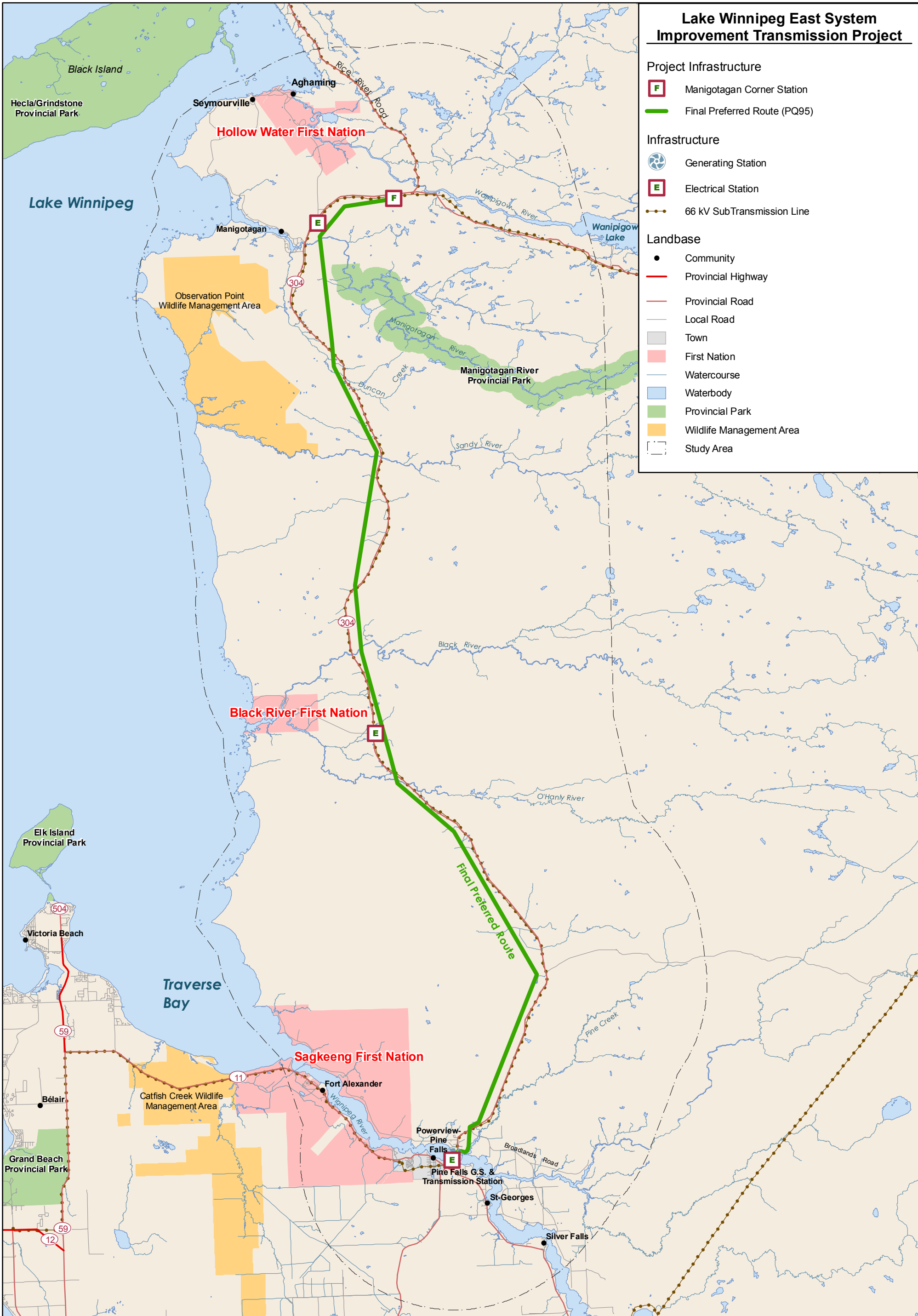
- F Manigotagan Corner Station
- Final Preferred Route (PQ95)

## Infrastructure

- Generating Station
- E Electrical Station
- 66 kV SubTransmission Line

## Landbase

- Community
- Provincial Highway
- Provincial Road
- Local Road
- Town
- First Nation
- Watercourse
- Waterbody
- Provincial Park
- Wildlife Management Area
- Study Area



Coordinate System: UTM Zone 14N NAD83  
 Data Source: MB Hydro, ProvMB, NRCAN  
 Date Created: November 23, 2012

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 1:225,000







## Project Study Area






# Lake Winnipeg East System Improvement Transmission Project

## Project Infrastructure

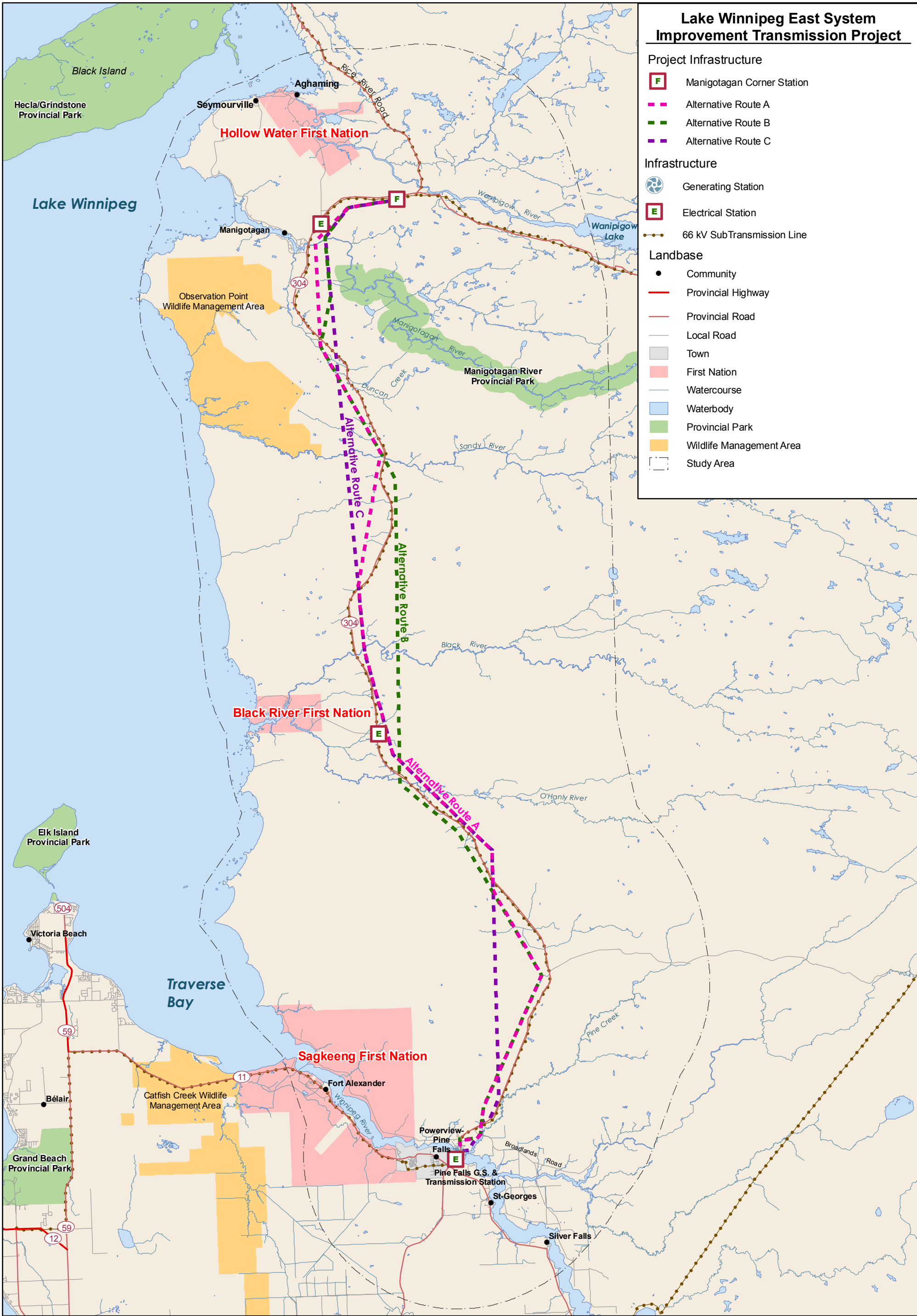
-  Manigotagan Corner Station
-  Alternative Route A
-  Alternative Route B
-  Alternative Route C

## Infrastructure

-  Generating Station
-  Electrical Station
-  66 kV SubTransmission Line

## Landbase

-  Community
-  Provincial Highway
-  Provincial Road
-  Local Road
-  Town
-  First Nation
-  Watercourse
-  Waterbody
-  Provincial Park
-  Wildlife Management Area
-  Study Area



Coordinate System: UTM Zone 14N NAD83  
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## Alternative Routes

