

# *St. Joseph Wind Energy Project – Manitoba*

## *Heritage Resource Desktop Study*

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Prepared For

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## 1.0 Introduction

Hélimax Energy Inc. is currently conducting an Environmental Impact Assessment (EIA) for a potential wind energy project within the St. Joseph area of Manitoba (Figure 1). The St. Joseph Wind Farm Project Lands are located west of the Red River. The Wind Farm will contain more than 100 wind-generated turbines when completed.

A heritage resource impact assessment (HRIA) is required under the Manitoba Environment Act, and Section 12(2) of the *Manitoba Heritage Resources Act* (1986). The HRIA evaluates the effect that a proposed development may have upon physical or cultural heritage resources that are known or thought likely to be present, and recommends ways to mitigate the loss or destruction of those resources. Northern Lights Heritage Services Inc. was contracted by Hélimax Energy Inc. to conduct a heritage resource desk-top study of the proposed project in order to identify and evaluate the occurrence of heritage resource sites within the proposed study area.

The following report provides a history and cultural characterization of the study area which identifies the types of heritage resources found and expected to be found in the area of the St. Joseph Wind Farm Project Lands. It provides a brief analysis of registered Heritage Resource sites and makes several recommendations for follow-up, monitoring and mitigation.

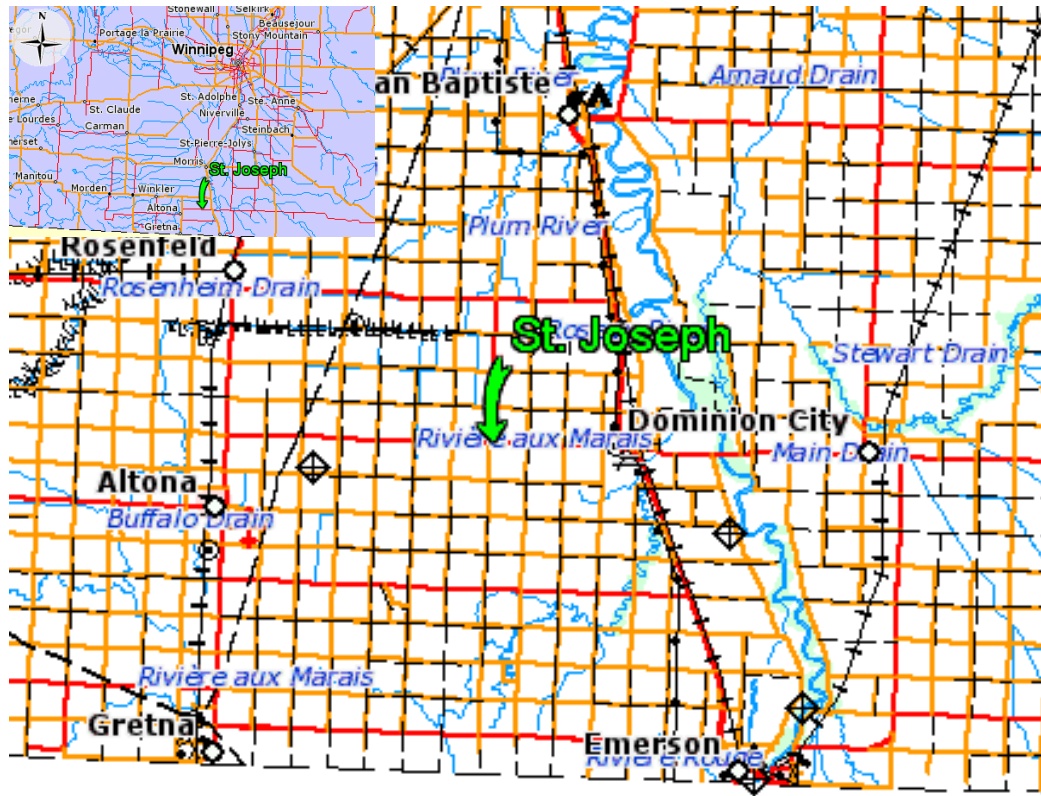


Figure 1. Map of the Study Area in South-Central Manitoba.

## 2.0 Study Area Characterization

### 2.1 Environment

The St. Joseph Wind Farm Project study area is located within the Lake Manitoba Plains Ecoregion 162, (Figure 2) and is characterized by short, warm summers and long, cold winters with continuous snow cover. It is typified by low-relief, underlain by limestone bedrock and covered by smooth, level, poorly drained lacustrine sands, silts, and clays. The predominant vegetation is a mosaic of trembling aspen/oak groves and rough fescue grasslands. Environment Canada describes this ecoregion as follows:

*Wildlife includes significant waterfowl, as well as white-tailed deer, coyote, rabbit, and ground squirrel. Its growing season length, available heat, and precipitation permit the production of corn, spring wheat, and other cereal grains by dryland continuous cropping methods. Oilseeds, hay, and livestock production are more prevalent in the northern section owing to topography and stoniness limitations. Hunting and water-oriented recreation are additional significant uses of land. The major communities include Winnipeg, Portage la Prairie, Emerson, and Dauphin. The population of the ecoregion is approximately 782 100. (Government of Canada-Environment Canada, 2005).*

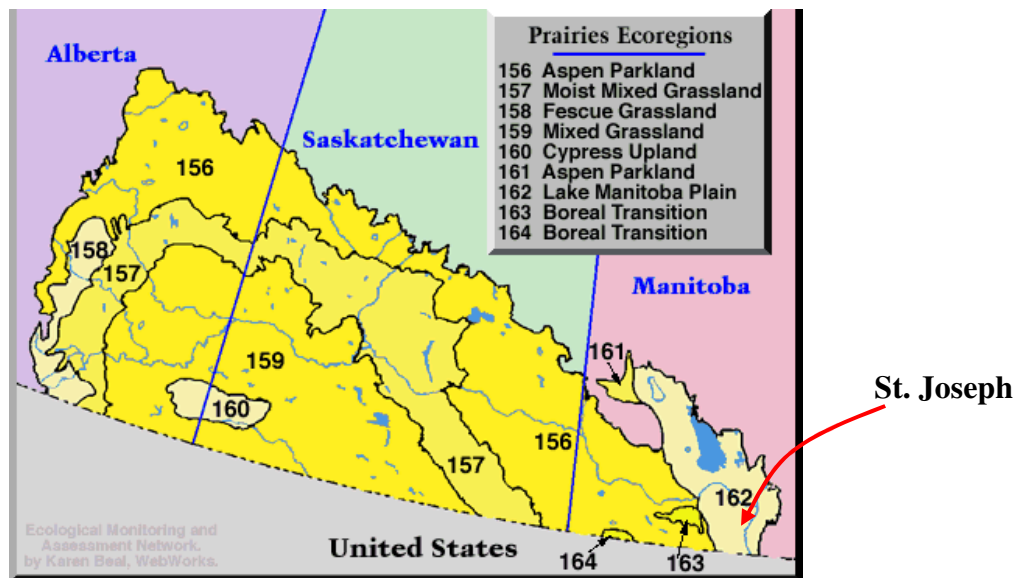


Figure 2. Prairie Ecoregions. Map courtesy of Environment Canada.

## **2.2 Historical Background**

The community of St. Joseph is situated northwest of Emerson. St. Joseph was first known as Mission de la Rivière aux Marais, after the river flowing past Letellier. Archbishop Taché established a parish here in 1877 and named it St. Joseph, after the patron saint of Canada. The area was largely settled by French Canadians from Quebec (Manitoba Conservation 2000). Research indicates that the Francophone settlement originated not from historic Métis but from expatriate Québécois who had previously fled to New England (Lehr 1996).

Prior to its establishment as a settlement the area was known for its rich buffalo resources. A number of Aboriginal trails criss-crossed the study area and this network was later used by European explorers and traders. This area may have first been historically noted by La Vérendrye during his 1738 expedition to the Mandan Indians in North Dakota. The explorer, Alexander Henry, is known to have established his major post at nearby Park River in 1800, sending small detachments to winter at Rivière aux Marais (near St. Joseph) and Hair Hills. (Manitoba Culture, Heritage and Citizenship 1994: 3).

The Boundary Commission Trail extended west from the Red River at the town of Emerson (Fort Dufferin) and was originally used by traders and hunters until the 1870s and 1880s when it was adopted as a route for the North West Mounted Police.

## **2.3 Cultural Chronology of the St. Joseph Wind Farm Project Study Area**

Southern Manitoba is rife with heritage resources dating back as far as 11,500 years ago. Part of the heritage resource desktop study is to document all known heritage resources within the study area. For the St. Joseph Wind Farm Project the immediate study area contains seven heritage sites representing the late historic period (Table 1).

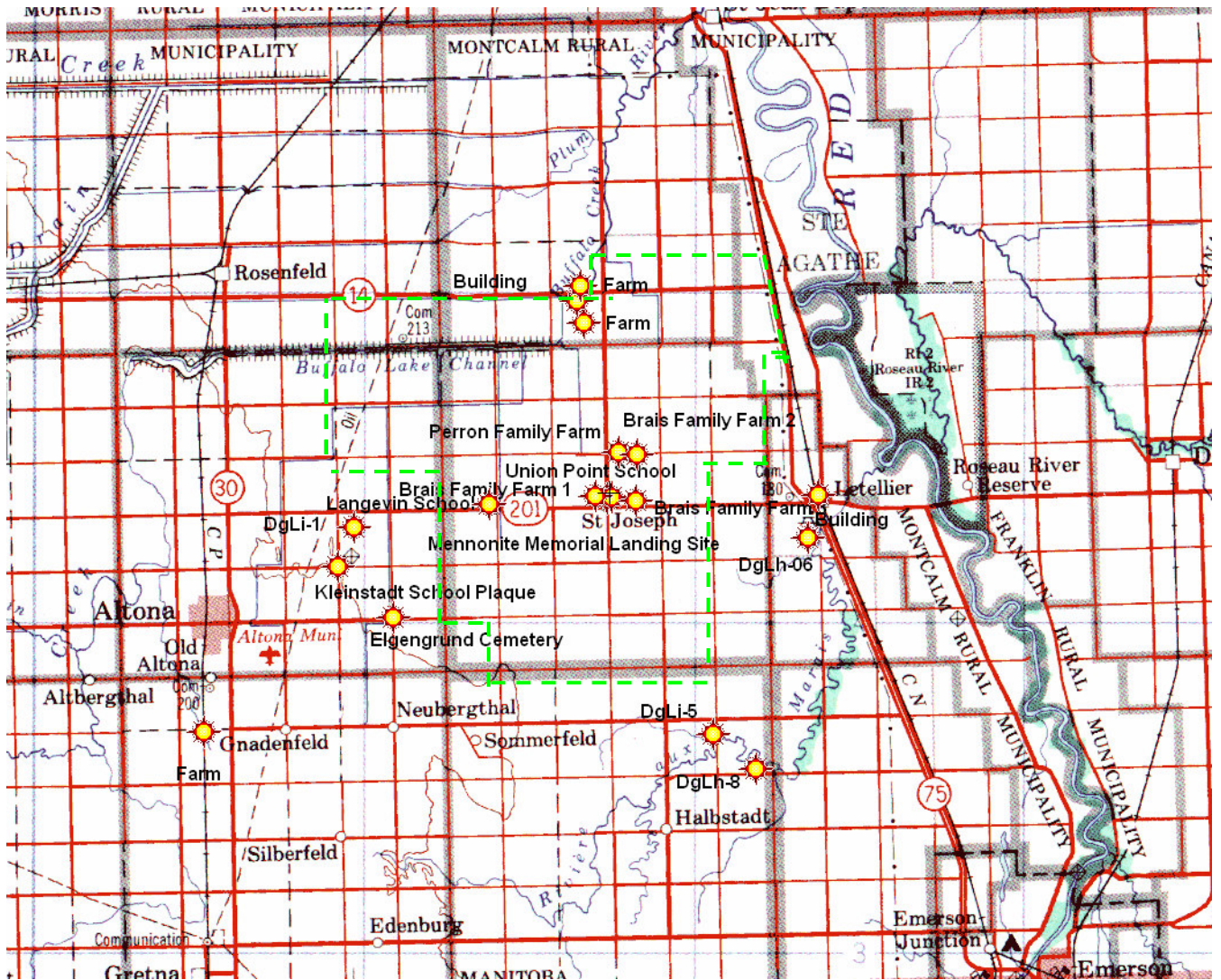
**Table 1. Heritage Sites Within the Boundaries of the St. Joseph Wind Farm Project Lands**

Type of Site	I.D. Number	Site Name	Map Sheet	UTMX	UTMY
Centennial Farm	149	Perron Family Farm	62H/3	617771	5445217
Centennial Farm	930	Brais Family Farm	62H/3	617271	5443917
Centennial Farm	931	Brais Family Farm	62H/3	618071	5445117
Centennial Farm	932	Brais Family Farm	62H/3	618171	5443717
Plaque	2161	Mennonite Memorial Landing Site	62H/3	617371	5443517
Building	7608	Langevin School	62H/3	613871	5443517
Building	7822	Union Point School	62H/3	617471	5443717

No pre-European contact period sites have been registered within the study area. However, several sites that are attributed to the Archaic and Woodland periods (*ca.* 6000 to 350 years ago) are found around the periphery of the wind farm project area, indicating that there may be unrecorded sites present (Table 2). Figure 3 provides the location of 12 registered heritage sites within one section of the St. Joseph Wind Farm Project study area boundary.



<b>Table 2. Heritage Sites Found Within a One Section Vicinity of the St. Joseph Wind Farm Project Lands:</b>						
<b>CENTENNIAL FARMS:</b>						
Centennial ID	Original Date	Purchase Patent	Site Type	MAP_#	UTMX	UTMY
949	1897		Farm	62H/3	620771	5437117
951	10-22-1882	18830927	Farm	62H/3	616671	5449117
952	07-31-1879	18830924	Farm	62H/3	616471	5449817
953	06-20-1878	18830925	Farm	62H/3	616471	5449817
<b>PLAQUES:</b>						
PlaquelD						
632			Kleinstadt School, Former	62H/4	609170	5441717
1659			Eigengrund Cemetery	62H/3	610970	5440217
<b>BUILDINGS:</b>						
BuildingID	Location		CivicAddre		623671	5443717
5016	in Letellier				616671	5449117
7805	approximately 3 miles north of St. Joseph					
<b>ARCHAEOLOGICAL SITES:</b>						
Borden #	Site Name	Cultural Affiliation	Site Type			
DgLh-6	CALDER SITE	BESANT	A.CAMPSITE ; D.KILL SITE	62H/3	623471	5442618
DgLh-8	JANZEN SITE	ARCHAIC - HANNA, PELICAN LAKE; WOODLAND - BLACKDUCK; HISTORIC	A.CAMPSITE	62H/3	621871	5435617
DgLi-1	BRAUN SITE	PROBABLY LATE WOODLAND	A.CAMPSITE	62H/3	609671	5442918
DgLi-5	FRIESEN SITE	BESANT (PROJECTILE POINT)	D.KILL SITE	62H/3	620571	5436618



**Figure 3. Map of the Study Area Indicating the Location of Registered Heritage Resource Sites Within and Adjacent to the study area. Archaeological Sites Are Identified By Borden Numbers The purple star represents an unnamed Centennial Farm located just outside the study area on the east side of the N/S section road.**

### 3.0 Culture History

The last advancement of the Wisconsin glacial sheet occurred *ca.* 23,000 YA completely burying Manitoba underneath several kilometers of ice. Beginning approximately 16,000 years ago, a global warming trend known as the Holocene gradually melted enough of the ice sheet to expose the southern portion of the province (Teller, 1984:25). Pondered meltwater at the base of the retreating glacier formed Glacial Lake Agassiz whose configuration and drainage changed over a period of about 4,000 years. Covering 350,000 square kilometers at its largest extent, Lake Agassiz did not allow for human habitation east of the Manitoba escarpment until about 7500 years ago (Teller, 1984:35). Once the glacial lake had drained plants, animals and humans quickly moved into new areas.

The first peoples of Manitoba entered from the south or west following the retreat of the Wisconsin glacial ice and the ponding of glacial Lake Agassiz, between 11,500 and 11,000 years ago. Based on the artifactual remains, archaeologists have subdivided the ancient past into three cultural periods. These *Pre-European contact Periods* (Early, Middle and Late) are based on the different technologies employed by past peoples and land/resource use patterns. The more recent past, the *Contact Period* defined by European contact of the last 350 years, has also been subdivided into three periods, Early, Middle and Late Historic. The oral histories and legends of the Plains Cree, Ojibwa, and Assiniboine provide valuable detail concerning the lifeways of these more recent Aboriginal cultures. The Historic Period is augmented by written records such as fur trade journals, maps, ethnographic studies which provide important detail regarding the development of the province.

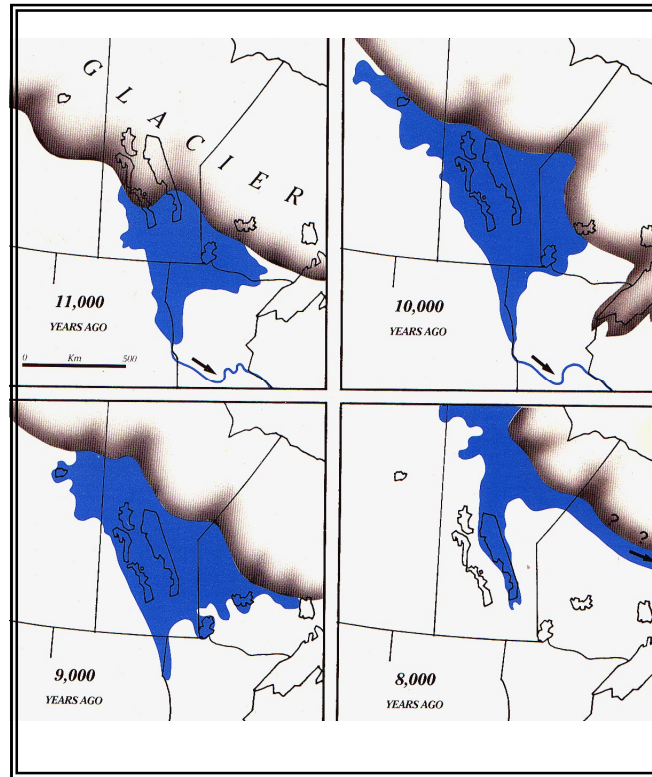


Figure 4. The Configuration of Glacial Lake Agassiz during deglaciation (From Teller, 1984:37).

### 3.1 Precontact Period

#### 3.1.1 Early Pre-European contact Period (11,500 – 7,000 YA)

The first people to occupy Manitoba have their culture origins in the Paleo<sup>1</sup> period of which Clovis, Lindenmeier and Plano complexes form parts. These groups were big game hunters and evidence from excavated sites in the United States and southwestern Manitoba has suggested that they relied primarily on the bison as their main food source (Pettipas 1970:17). The earliest stone projectile point to be discovered in southwestern Manitoba has been identified as Clovis. Only half a dozen Clovis points have been found in Manitoba. Similar to the Clovis culture, the Lindenmeier complex is rarely represented in Manitoba. No evidence of Paleo people has been found in the study area and such sites are unlikely be found.

Later, Plano people (*ca.* 9,000-7,000 YA) used projectile points that were slender lanceolate or stemmed. The types of points include Agate Basin, Alberta, Angostura, Eden,

<sup>1</sup> Paleo: means old or ancient.

Hell Gap, Manitoba, Midland, Milnesand, Scottsbluff and Plainview complexes. Little is known about Plano sites in Manitoba as to date, most artifacts have been surface finds with no associated cultural markers.

### **3.1.2 Middle Pre-European contact Period (7,000 -2500 YA)**

The first of the cultural complexes of the Middle Pre-European contact Period is known as the Logan Creek culture (7,000-5,500 YA). This culture has distinctive large side-notched points and a more diverse diet of plants, animals and shellfish. This change in food resources is considered to be in part a result of a period of global warming known as the Altithermal. This period of higher temperatures caused the region to become more arid than today, turning the entire study area into grasslands that stretched as far north as Grand Rapids, MB.

Climatic stabilization appears to have been a factor in the movement of several plains groups into Manitoba. The Oxbow (5,300-3,000 YA) and McKean (5,000-3,000 YA) were the dominant complexes of this time period. Bison was the preferred dietary staple, supplemented with various other resources. Oxbow people likely moved into Manitoba from the west as the earliest Oxbow discoveries are found west of the Manitoba Escarpment. Although primarily bison hunters, they could have also harvested game adapted to the boreal forest such as caribou, moose and deer. The McKean Complex points are found throughout Manitoba - this wide distribution suggests that these people were highly mobile and adapted easily to the local environment. Similar to the Oxbow people, McKean groups were hunters and gatherers with bison the preferred resource. They also hunted a wide range of large and small game as well as fish and collected an assortment of wild plants for food and medicine. In addition to stone, material such as bone, antler and shell were used to create tools such as awls, needles, hide scrapers and personal adornments.

An eastern influence arrived in the form of the Old Copper culture (5,000-3,000 YA) named because of the association with copper tools and nodules. Approximately 50 Old Copper specimens have been found in the Boreal Forest, Grassland, and Aspen Parkland areas of Southern Manitoba (Pettipas, 1984:66). All of the copper used in the Old Copper culture complex was mined in the Lake Superior Basin. The copper nuggets were probably carried from their source and tools made locally..

The Pelican Lake culture (3,000– 2,000 Years Ago.) is the final group considered to have occupied this region during the Middle Period. As with other groups of this period, the Pelican Lake people were bison hunters who augmented their diet with a wide range of plants and animals. Pelican Lake campsites were often quite large. Tipi ring sites found in the north-western plains indicate seasonal occupation by fairly large groups. The seasonal activities of the Pelican Lake people have been determined to include winter camps in sheltered valleys with major bison drives in the spring and fall (Reeves 1970:162).

### **3.1.3 Late Pre-European contact (2, 500 B.P. to 300 YA)**

The Late Pre-European contact period is identified by new technologies that were adapted to or invented by local groups in response to the changing physical environment and local resources. The lifeways of these people is referred to as the Woodland Tradition (Pettipas, 1996:72). The Woodland people introduced clay pottery in Manitoba and their technologies included the bow and arrow. Archaeologists believe that these new technologies mark the beginning of a changing subsistence economy that made more frequent use of fish and small mammal resources. Woodland sites contain more fish bone and small mammal bone than earlier cultural occupations. Because of the change in subsistence, people appear to have become more sedentary, spending more time at summer locations than they had in the past. The Woodland Tradition is divided into two periods, Initial and Terminal, which are based primarily on distinctive ceramic manufacturing techniques and decoration.

The Initial Woodland period (2,500 – 1,000 YA) is marked by the presence of coiled, clay pottery and is generally referred to as Laurel by archaeologists. Rolled coils of clay were placed on top of each other to form the sides of the vessel. The walls were then pounded with a paddle to thin the sides and increase the vessels height. Decorative incisions such as pseudo-scallop, and dentates along with bosses and punctuates were applied in various combinations to produce numerous designs (Figure 5). Tool technologies include small triangular projectile points, net-sinkers and hammerstones as well as many bone tools and harpoon points. During this period Plains pottery also made its way into the southern reaches of Manitoba. It may be that Besant and Sonota groups (*ca.* 2000-1200 YA) manufactured vessels similar to those found further south in North Dakota.

The Terminal Woodland period (1,200 - 350 YA) marks a transition in pottery style and construction and includes such complexes as Blackduck (1,200 – 350 YA), Selkirk (1,150 – 350 YA), and Clearwater Lake Punctate (900 – 350 YA). The vessels associated with these chronological periods differed from the earlier Laurel styled pots in that they were globular in shape with round bottoms, constricted necks and flared lips. The method of manufacture was by lamination, which possibly consisted of forming the pot inside a woven fabric or mesh bag, leaving a “fabric-impressed” surface finish (Figure 6).

Stylistically, the upper portions of a Blackduck pot are elaborately decorated with a combination of vertical or oblique cord-wrapped stick impressions and occasionally punctates. Clearwater Lake Punctate and Selkirk ceramics are relatively undecorated, usually with only a single row of punctuates or cord-wrap around the rim often serving as the only adornment.



**Figure 5. Typical Initial Woodland Vessel.**



**Figure 6. Typical Late Woodland Vessel.**

In addition to the boreal-dominant ceramic types, Plains vessel manufacture continued to flourish in southern Manitoba.

Another important characteristic of Woodland culture in Southern Manitoba was the practice of burying the deceased beneath earthen mounds. This custom of burying the dead beneath mounds is confined in Western Canada to southern Manitoba (Pettipas, 1996:77). A total of five mounds have been located outside the study area. The Altona mound, Roseau River Mound, Swan Lake Mound, Letellier Mound, and Currie's Landing show the wide distribution of these types of sites within the study area. No mounds have been identified within the study area.

## **3.2 Contact Period**

### **3.2.1 Early Historic Period (1650 -1821 A.D.)**

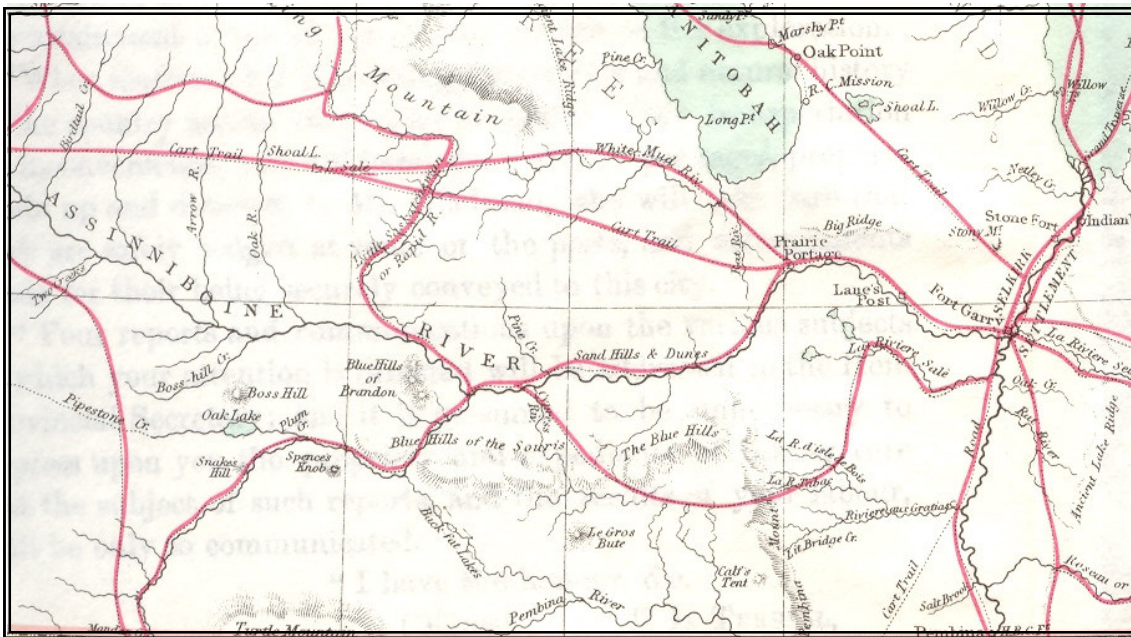
The Assiniboine were a prevalent group in the study area during the Early Historic Period. However both the Ojibwa and Cree frequently moved into the area during the winter months (Ray 1974:22). The first documented European known to have been in the study area was the explorer Pierre Gaultier de Varennes de La Verendrye (Burpee 1927, Hill, 1984:84). La Verendrye has been accredited for setting the stage for the westward expansion of the fur trade, establishing several fur trade forts within the southern half of the province.

### **3.2.2 Middle Historic Period (1821-1870 A.D.)**

By the 1820s and 1830s, the migratory range of the bison had diminished through large-scale commercial hunting, particularly after the organization of the annual cart brigades that originated in the Red River Settlement. The "Hunter's Track" used to access the western plains passed just to the northwest of the study area (Hind 1971:9). The loss of the bison resulted in dependence on a wider range of resources by those First Nation groups that remained in the study area.



In 1857, Henry Youle Hind organized and led an expedition that sought out to examine the country between Lake Superior and the Red River in order to establish an emigrant route and open the land to agriculture. Part of the survey route falls within the study area boundaries. As seen in Hind's map (Figure 7) of his travels in the Red River District in 1857-1858, numerous cart trails and traveling routes were present throughout this portion of the province.



**Figure 7. Section of Henry Y. Hind's map showing travel routes in 1857. Note Pembina Trail near St. Joseph. (Hind 1971).**

The settlement of St. Joseph was nestled between the Pembina and St. Joseph cart trails as shown in Figure 8. The St. Joseph trail led from St. Joseph, North Dakota (now called Valhala) north to Fort Garry, converging with the Pembina trail near present-day Morris, Manitoba (Brehaut, 1972).

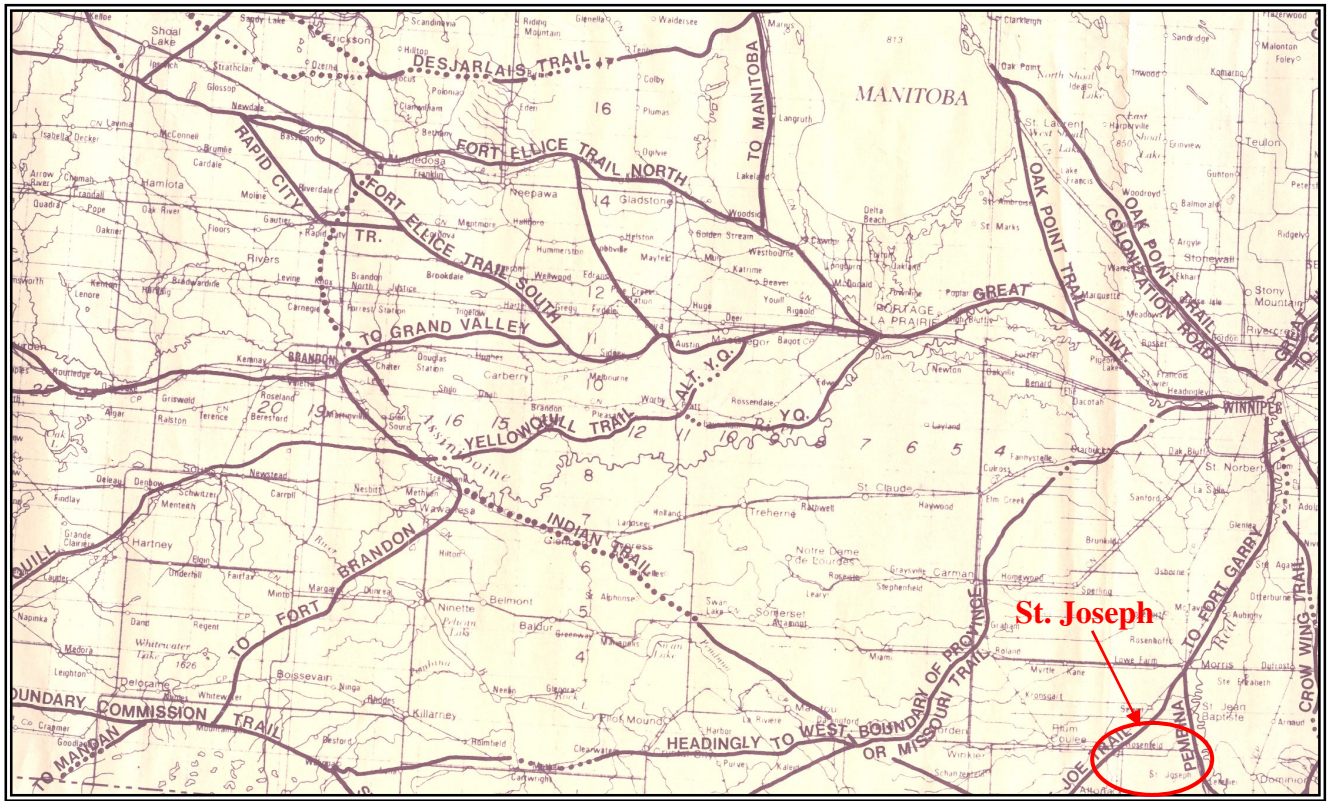


Figure 8. Map of Manitoba Historic Trails (Courtesy of the Historic Resources Branch).

### 3.2.3 Late Historic Period (1870-1930 A.D.)

Treaty 1, signed in 1871, created First Nation reserves in south-eastern Manitoba. The closest reserve to the study area is Roseau River on the east side of the Red River. Other nearby signatories to Treaty 1 are Long Plain (near Portage la Prairie) and Swan Lake (west of St. Joseph).

After Manitoba's entry into confederation in 1870 and the subsequent expansion of the province's borders, Dominion Land surveyors began establishing the 6-mile<sup>2</sup> township grid system. These surveys were completed during the late 1870s and late 1880s.

Following the completion of the land surveys, agricultural lands especially in the southern part of Manitoba were opened to incoming settlers from Ontario, Great Britain and continental Europe. Prior to the construction of the railroad, homesteaders would have accessed the study area on the Boundary Commission Trail, the St. Joseph Trail and the Pembina Trail. The arrival of the Canadian Pacific Railroad in 1880 provided easier access

into the area as well as a conduit for agricultural produce to be shipped to Winnipeg as well as eastern Canada and the United States. Villages and towns were established and, shortly thereafter, the organization of municipal governments.

## 4.0 Analysis

The existing heritage resource inventory identified seven historical sites within the study area. These include four Centennial Farms, one plaque and two buildings. Sites found a distance of 1 section outside the boundary of the study area included four Centennial Farms, two plaques, two buildings and four archaeological sites.

Based on the coordinates provided by the Province of Manitoba Archaeological Inventory for archaeological sites archaeological, site DgLi-5 is located at the southeastern corner of the study area. This site was identified as a “Kill Site”, possibly where bison were slaughtered. Projectile points identified as Besant (*ca.* 2000-1200 YA) were found here. The site was considered to be in poor condition in 1986 and may be completely destroyed due to agricultural activities.

Site DgLi-1 (The Braun Site) was identified in 1986 as a Late Woodland site (*ca.* 1000-350 YA). Site condition was noted to be almost completely destroyed. It is known that Mr. Todd Braun carried out an extensive collection of projectile points over many years in this area and there may be many sites that were never registered with the province. Because of this it is highly likely that additional sites exist within the Wind Farm study area. Further, burial mounds have been identified east, south and west of the study area. Therefore there it is possible that burial mounds/burials could be encountered.

One Centennial Farm (CF 949) is located on the east side of the N/S section road. This site will not be affected by the project, but is noted for future reference.

In addition to the pre-European contact component, the network of historical major trails and a subset of local trails exist. Added to this, are the numerous homesteads that represent the first French settlers and the later Mennonite farmers who established the area.

## 5.0 Recommendations

An acceptable setback or buffer of 300 m from known heritage sites is recommended as the minimal distance between the wind turbines and heritage sites. This will minimize any impacts of known sites. While this is within acceptable limits for construction purposes the potential for soil disturbance due to access roads, staging areas and storage compounds could present some risk to undiscovered sites. It must be kept in mind that because the physical location of most archaeological sites is below ground surface and because minimal archaeological field survey has occurred in this area it is difficult to determine which area may contain heritage resources and which may not.. However, given the many years of agricultural activity throughout this area there is probably less risk of intact sites being disturbed by the construction of a wind turbine farm.

A recommendation is made that prior to construction of turbine structures within 1-km from known archaeological and/or cultural heritage sites that archaeological field survey is considered. This may be requested by the Heritage Resources Branch of the Manitoba Culture Heritage and Tourism as part of the Heritage Resource Impact Assessment (HRIA) (archaeological field investigation). Usually, the archaeological investigations for an HRIA report on the condition of known and existing sites and flag areas of concern. This may or may not be followed up by monitoring of initial field construction at locations that were identified as medium to high risk during the field investigation.

Particular caution should be taken at WTG sites close to the settlement of St. Joseph since several Centennial Farms are located in the vicinity. Here as with other known heritage sites, a buffer of 300 metres should be in place. A further caution is the potential for both pre-European contact and historic burials and abandoned cemeteries to be present. Should human remains be found during any component of the project all work at that location must halt and the Historic Resources Branch called immediately (Province of Manitoba Policy for the Exhumation of Found Human Remains 1987).

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