Stage 1 Archaeological Assessment

Timmins Martelle Heritage Consultants Inc.
Dated: April 2006

Stage 1 Archaeological Assessment
Kingsbridge Wind Power Project Phase II
Ashfield Township
Huron County, Ontario

Submitted to

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and

The Ontario Ministry of Culture

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Archaeological License Number: P064
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Acknowledgements

TMHC acknowledges the assistance of the following individuals:

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Robert von Bitter	***Archaeological Database Coordinator*** Ministry of Culture, Toronto, Ontario
John MacDonald	***Heritage Planner*** Ministry of Culture, London, Ontario

Project Summary

A Stage 1 archaeological assessment was conducted for a series of agricultural properties near the community of Kingsbridge, in Ashfield Township, Huron County, Ontario. The properties are contained within Phase II of the Kingsbridge Wind Power Project. The construction plans include the erection of wind turbines and the building of associated access roads. Our assessment was conducted as part of the preparation of an Environmental Screening Report ("ESR") required under Ontario Regulation 116/01 of the *Environmental Assessment Act.* The purpose of this work was to determine whether there are heritage resources present that might be impacted by the proposed construction and, if so, offer measures for mitigation.

Under the current layout, there are 92 wind turbines proposed for this part of Ashfield Township. However, 23 of these have already been constructed as part of Phase I of this project. The lands impacted by the existing turbines were assessed in previous years and a summary of this work is provided in other reports (TMHC 2004, 2005 a & b, Archaeologix 2004).

The Stage 1 background review indicated that, overall, the study area had high potential for the recovery of precontact aboriginal resources and EuroCanadian, as well as post-contact aboriginal, historic material. Given this, Stage 2 assessment of the proposed wind farm properties will be required prior to construction. To maximize the use of the land for crane and equipment access, it is proposed that all of the ploughed lands within each property be subject to assessment. Unploughed pasture land or hay fields, in addition to winter wheat fields that cannot be assessed due to poor visibility, will have to be examined once the final location of access roads and turbines has been determined. In the case of these properties, ploughing can be restricted to the impact areas only.

The Ministry of Culture is asked to review the information presented in this report and issue a letter concurring with the report's recommendations. This correspondence should be directed to Michael Smith of EPCOR (Edmonton office) and copied to both Ian Callum of Stantec Consulting and Holly Martelle of Timmins Martelle Heritage Consultants Inc.

Stage 1 Archaeological Assessment
Kingsbridge Wind Power Project Phase II
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1.0 PURPOSE

A Stage 1 archaeological assessment was conducted for a series of agricultural properties near the community of Kingsbridge, in Ashfield Township, Huron County, Ontario. The properties are contained within Phase II of the Kingsbridge Wind Power Project. Under the current layout, there are 92 wind turbines proposed for this part of Ashfield Township. However, 23 of these have already been constructed as part of Phase I of this project. The construction plans include the erection of wind turbines and the building of associated access roads. Our assessment was conducted as part of the preparation of an Environmental Screening Report ("ESR") required under Ontario Regulation 116/01 of the *Environmental Assessment Act.* The purpose of this work was to determine whether there are heritage resources present that might be impacted by the proposed construction and, if so, offer measures for mitigation.

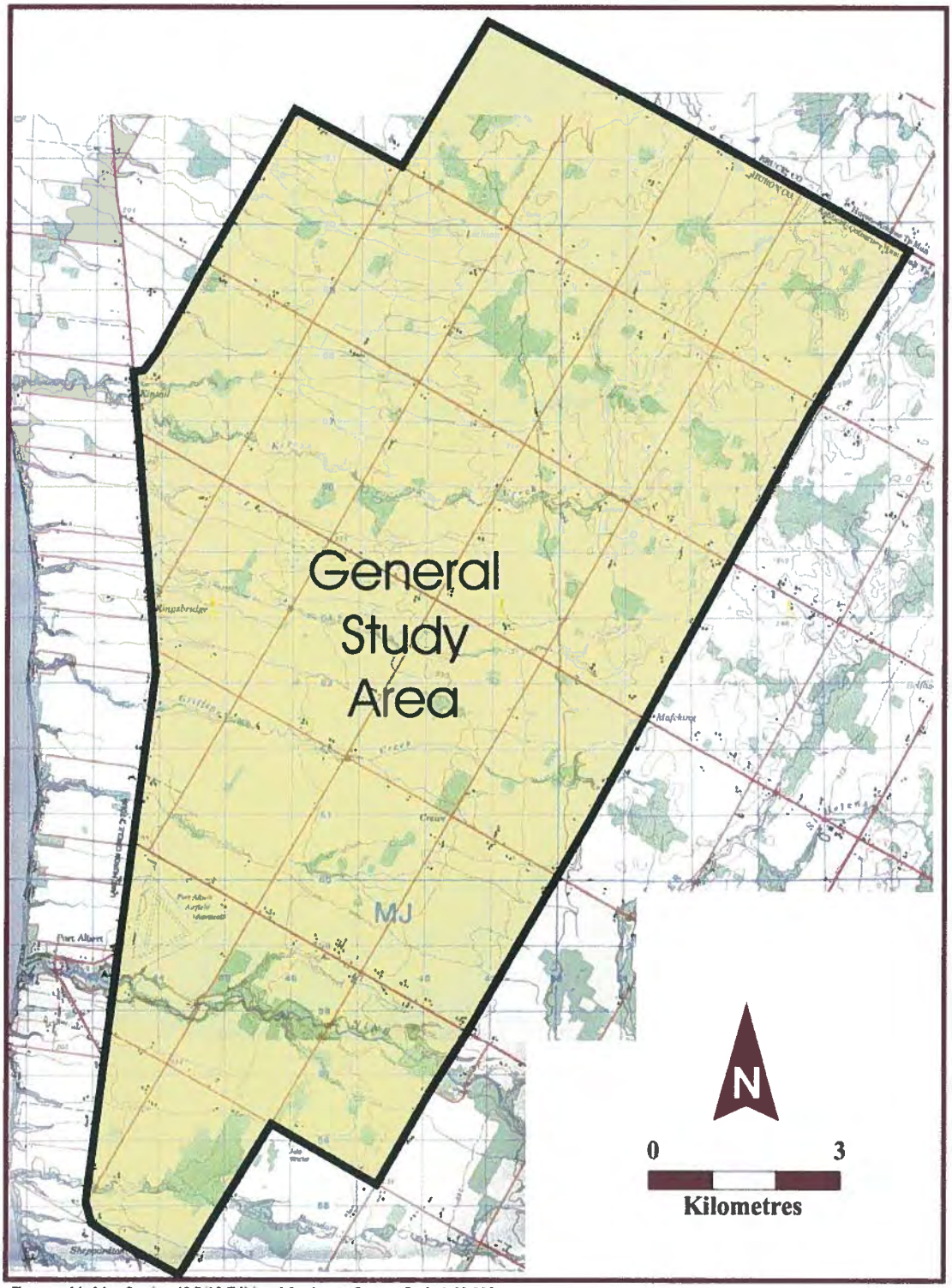
All archaeological consulting activities were performed under the Professional Archaeological License of Dr. Holly Martelle (P064) and in accordance with the *Archaeological Assessment Technical Guidelines* of the Ministry of Culture (MCTR 1993). Permission to proceed with the project and conduct a windshield survey was given by Michael Smith (EPCOR), acting on behalf of the landowners.

2.0 PROJECT BACKGROUND

In the spring of 2004, Timmins Martelle Heritage Consultants Inc. (TMHC) was hired by B.M. Ross and Associates to conduct a Stage 1 and 2 assessment of a series of properties in Ashfield and Colborne Townships. The lands were the focus of the proposed Port Albert Wind Farm project designed and owned by Northern Cross Energy. In the summer of 2004, Northern Cross negotiated the sale of the project and lease agreements to EPCOR Power Development Corporation. TMHC was subsequently retained to complete the archaeological component of the project. In the spring of 2005, the archaeological assessment was completed for the first phase of EPCOR's Kingsbridge Power Project. This saw the construction of over twenty turbines concentrated in both Ashfield and Colborne Townships. The construction of Phase I turbines is nearly completed.

In the summer of 2005, EPCOR began planning for Phase II of the project. This will see the construction of over 60 additional turbines. A preliminary design layout has been devised, although changes are anticipated once the results of the environmental review are received and following consultation with landowners.

Figure 1: Location of the Phase II Properties in Ashfield Township



Topographic Map Section 40 P/13 Edition 6 *Lucknow, Ontario* Scale 1:50,000
Natural Resources Canada 2001

The Kingsbridge Wind Power Project was proposed in response to the Ontario Ministry of Energy's initiative to develop alternative, renewable energy sources. It is one of many such projects that are currently under development for various locales throughout the Province, most of which are situated along the shores of Lakes Erie, Ontario and Huron. It is estimated that a single wind turbine (1 – 2 megawatts) can generate enough energy to supply between 250 and 600 homes (MMAH and MoE 2003). The Kingsbridge turbines will produce some 109,000 MW hours annually, enough to supply approximately 12, 500 households (EPCOR 2004a).

A turbine is essentially a large propeller. Energy is generated when the wind moves the blades of the propeller. Hence, the most critical factor determining the placement of turbines is access to good wind flow. Nevertheless, other criteria, such as proximity to residential areas, electrical transmission lines and bird migration routes, alongside site topography and aesthetics, are also considered (EPCOR 2004b). The land impacts from turbine construction are not extensive (Figure 2). Each turbine rests on a foundation covering an area of approximately 16 metres in diameter. Access to the turbine locales during both construction and post-construction servicing will be provided by small roadways (approximately 5 metres of graveled surface). The turbines will be constructed using large cranes and will be assembled on site. The turbine blades and towers will arrive on site by truck. Thus, the impact areas include not only the turbine and access road footprints, but also crane and machinery travel routes (where they are different from the access roads), as well as material storage areas.

3.0 STAGE 1 ASSESSMENT: ASHFIELD TOWNSHIP PROPERTIES

3.1 Purpose of Background Research

A Stage 1 overview and background study was conducted to gather information about known and potential cultural heritage resources within the general study area. This work included a review of: the physical characteristics of the properties (e.g., soils, topography, drainage), pertinent historic maps, and other relevant documentation and a consideration of the land use history of the area. The Provincial archaeological database was also consulted in order to determine whether there were sites within or in proximity to the proposed turbine locations. The information collected during this background study was used to evaluate the archaeological potential of the properties and devise an appropriate methodology for the Stage 2 field survey.

3.2 Subject Properties: Overview and Physical Setting

The subject properties are all within Ashfield Township and stretch from just north of Sheppardton in the south to Highway 86 (the Bruce-Huron boundary) in the north (Figure 1). Based on the current layout, the individual properties are located on Concessions 2 through 14 (Eastern and Western Division). All of the properties are situated east of Highway 21.

Figure 2: Existing Turbine

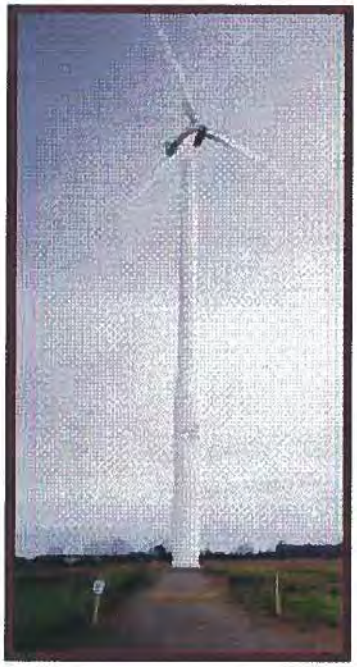
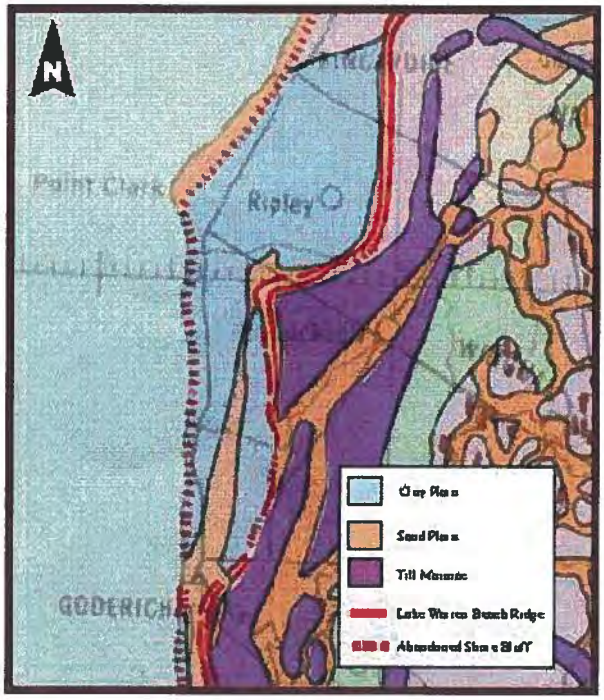


Figure 3: Physiography of the Study Area



For the most part, the properties are agricultural in nature. Some are used for cash cropping and others for hay and pasture. Many of the properties contain residential dwellings and farm operations.

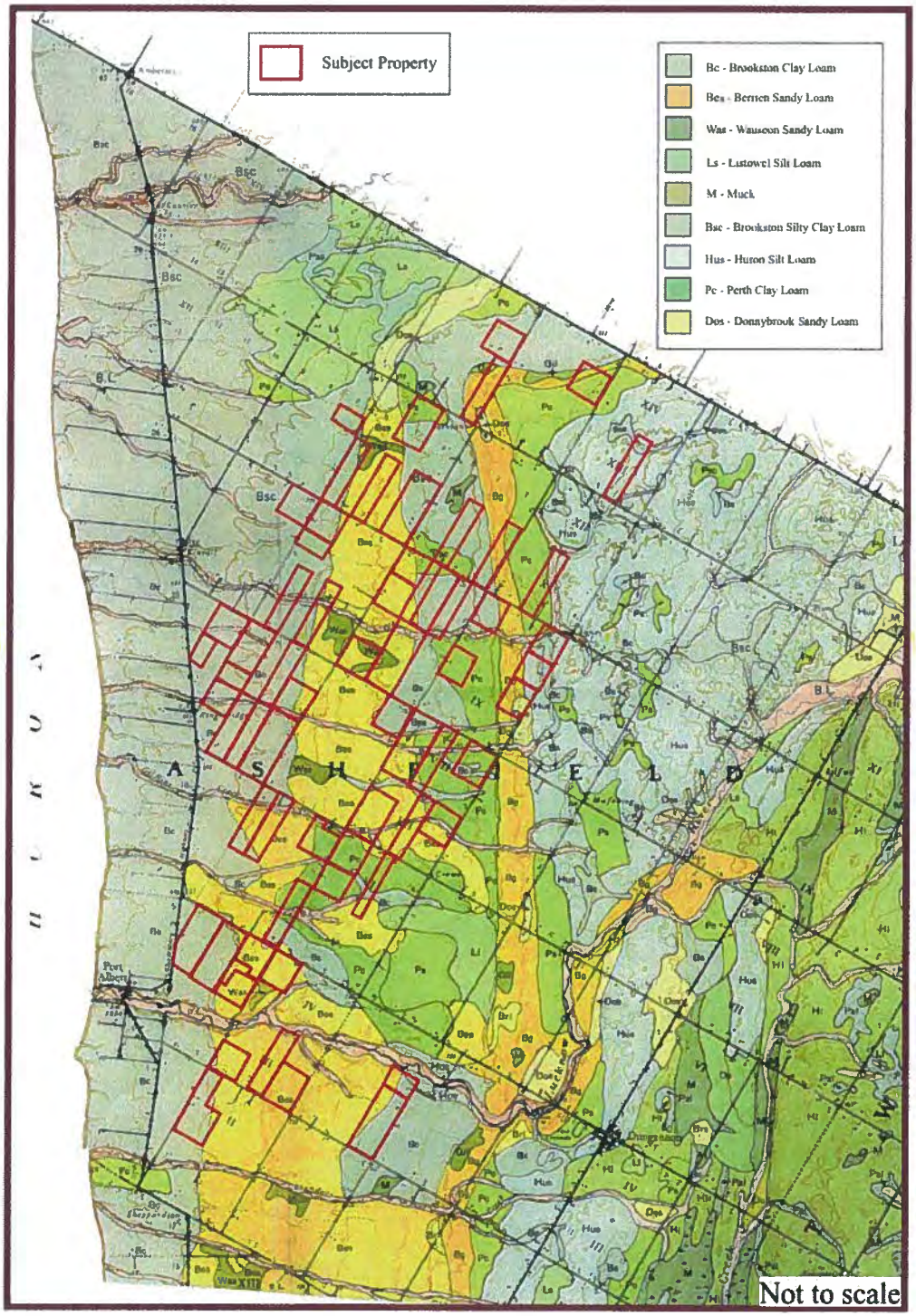
The topography of the area consists of a relatively flat clay plain cut by a series of nearly parallel watercourses that drain into Lake Huron. Many of these watercourses are small, unnamed and often intermittent creeks that, depending on the time of year, are no more than deep ditches (Figure 1). The more prominent watercourses are Griffins Creek that drains the area south of Kingsbridge, Kerrys Creek that drains the area west of Lucknow and drains into Lake Huron near Kintail, Boundary Creek, situated north of Sheppardton, and Nine Mile River that flows into the lake at Port Albert. These creeks create logistical obstacles for farmers, as their crossing is often difficult, either on foot or by machine.

Within the tilled areas there are few notable changes in elevation except where they are intersected by creeks and valleys. The crossings of Nine Mile Creek are particularly scenic given its well developed banks and meandering course. This portion of the Ashfield Township, slightly inland from the Lake Huron shore, falls within the Huron Slope physiographic region, a linear clay plain encompassing some 1,000 square miles bordering the eastern shoreline of Lake Huron, between the current beach and the Wyoming moraine (Chapman and Putnam 1966:263). The clay plain is essentially divided by a narrow band of sand which runs north-south through the study area and more-or-less parallel to the current Lake Huron shoreline (Figures 3-5). The sand deposit is associated with two ancient shorelines of glacial Lake Warren which flank the Wyoming moraine (Chapman and Putnam 1966:263) (Figure 5). The underlying bedrock throughout most of Huron County is limestone and dolomite of the Norfolk formation (Hoffman et al. 1952:15). Between Goderich and Lucknow, limestone bedrock is overlain by subaqueous till plains, divided by outwash plains of former glacial beaches (Hoffman et al. 1952:Figure 4).

The soils within the general study area vary somewhat and reflect the presence of the distinct physiographic features described above (Figure 4). On either side of Highway 21, the soils consist of Brookston clay loam and Brookston silty clay loam, both heavy textured till. The central portion of the study area is dominated by Berrien sandy loam, and Perth clay loam. The latter consists of slightly stony heavy textured till while the former is characterized by stone free sandy outwash materials overlying heavy till. These deposits are broken by small pockets of Wauscon sandy loam, Donnybrook sandy loam, Listowel silt loam and muck. Clay soils resume along the eastern edge of the study area. With the exception of Donnybrook sandy loam, all of these soils have either imperfect or poor natural drainage (Hoffman et al. 1952).

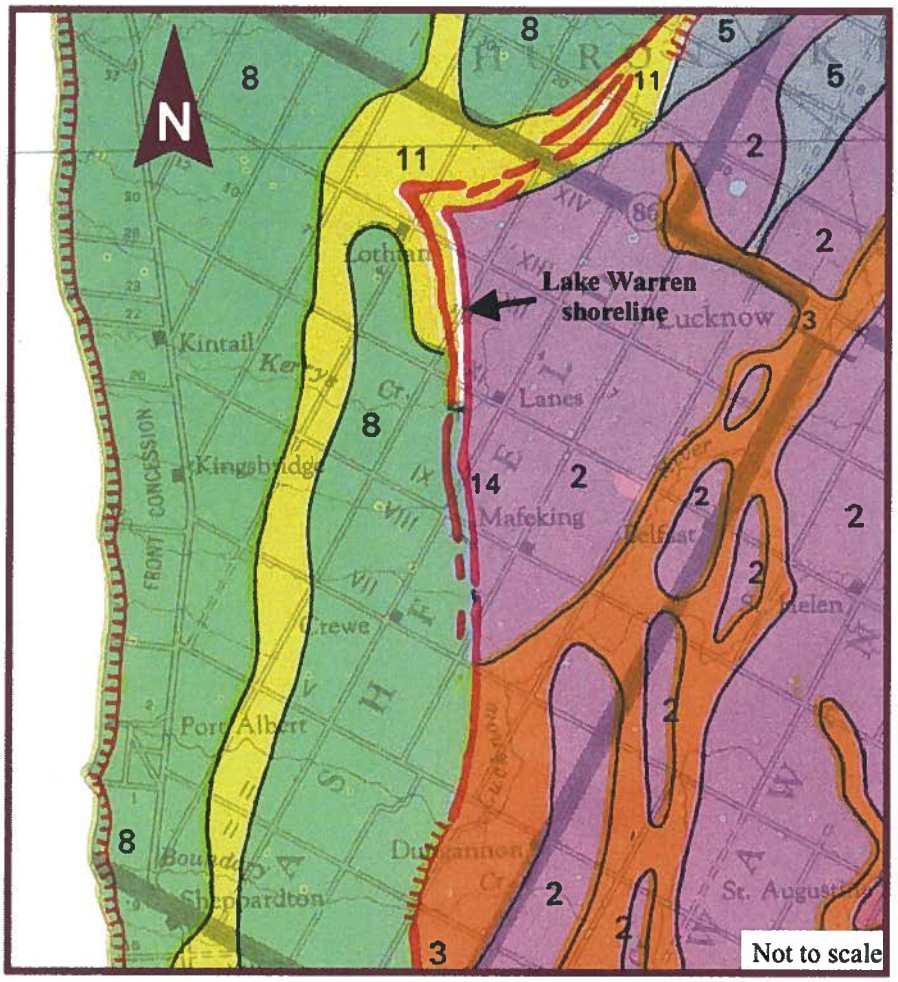
The ancient Lake Warren shorelines (Figure 5) are archaeologically significant landscape features that cross through the northwest corner of the study area, stretching from just north and east of Lothian southward to Nine Mile River.

Figure 4: Soil Map of Ashfield Twp. Showing Location of Subject Properties

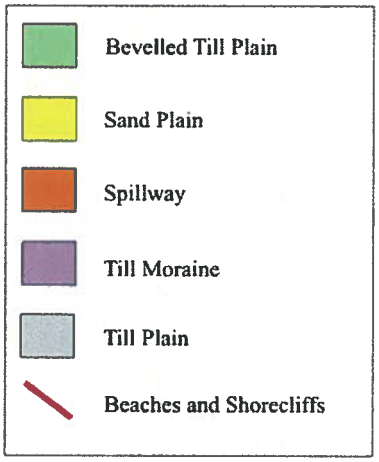


Soil Map of Huron County, North Sheet
Soil Survey Report No. 13
Canada Department of Agriculture and Ontario Agricultural College
1952

Figure 5: Location of the Lake Warren Beach Ridge



Physiography of the Southwest Portion of Southern Ontario
Map 2225, Ontario Department of Mines and Northern Affairs
Ontario Research Foundation. 1972



3.3 Evaluation of Archaeological Potential: Precontact Sites

Very little is known of the early aboriginal occupation of the Port Albert and Kingsbridge areas. This is generally due to the fact that the region has not been intensively investigated, due to a lack of development-driven cultural resource management (crm) projects. While some researchers have characterized this area as an unoccupied "wasteland" or "frontier zone" separating known tribal groups in the historic period, archaeological research has not confirmed the extent of either pre- or post-contact aboriginal occupation. For example, a query of the provincial archaeological sites database demonstrates that there is only one registered site within nearly all of Ashfield Township. The site, AkHj-8, is a find spot of a single Late Archaic Genesee point on Lot 7, Concession 1 in Ashfield Township. The point was found by crews from the London Museum of Archaeology (1987) while conducting a Stage 2 survey of a hydro corridor.

The survey of roughly 1500 acres for Phase I of the Kingsbridge Wind Power Project did not result in the discovery of a significant number of additional sites. Two find spots of aboriginal artifacts were noted on Lot 1, Concession 3, Eastern Division (Archaeologix 2004). A ground stone fragment was collected from the surface near Turbine 9, on Lot 1, Concession 5, Western Division. A small Late Archaic Crawford Knoll site was discovered on the adjacent property (TMHC 2005b). In general, known sites tend to cluster around the major watercourses rather than along smaller tributaries. The fact that the crm and research based projects that have been conducted in the area have not resulted in the documentation of a large number of archaeological sites lends support to previous interpretations. Nevertheless, since there have been few intensive investigations of areas further inland, we still have little knowledge about the extent to which non-lakeshore and interior locales were exploited by aboriginal populations in the past. The survey of nearly 6000 acres during the Phase II project will contribute significantly to our understanding of how aboriginal populations exploited the Ashfield Township interior.

Several factors can be used to assess an area's potential for containing precontact Aboriginal sites. These include the presence of well-drained sandy soils, rolling topography, and proximity to both water and known archaeological sites. On the basis of proximity to several small watercourses and, in a general sense, the Lake Huron lakeshore, all of the Ashfield Township properties show high potential for the recovery of precontact aboriginal archaeological resources. However, the poor drainage of the clay soils may have been a hindrance to both short- and long-term occupation. The Lake Warren shorelines have very high potential given that these are elevated, sandy locales that were preferred camp and village locations.

Table 1 provides an outline of the general cultural chronology for Southern Ontario. It is not yet known how accurately it reflects that of the immediate study area.

Table 1: Cultural Chronology for Southern Ontario

Period			Time Range (circa)	Diagnostic Features	Complexes
Paleoindian	Early		9000 - 8400 B.C.	fluted projectile points	Gainey, Barnes, Crowfield
	Late		8400 - 8000 B.C.	non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Archaic	Early		8000 - 6000 B.C.	serrated, notched, bifurcate base points	Nettling, Bifurcate Base Horizon
	Middle		6000 - 2500 B.C.	stemmed, side & corner notched points	Brewerton, Otter Creek, Stanly/Neville
	Late		2000 - 1800 B.C.	narrow points	Lamoka
			1800 - 1500 B.C.	broad points	Genesee, Adder Orchard, Perkiomen
			1500 - 1100 B.C.	small points	Crawford Knoll
	Terminal		1100 - 950 B.C.	first true cemeteries	Hind
Woodland	Early		950 - 400 B.C.	expanding stemmed points, Vinette pottery	Meadowood
	Middle		400 B.C. - A.D. 500	dentate, pseudo-scallop pottery	Saugeen
	Transitional		A.D. 500 - 900	first corn, cord-wrapped stick pottery	Princess Point
	Late	Early Iroquoian	A.D. 900 - 1300	first villages, corn horticulture, longhouses	Glen Meyer, Pickering
		Middle Iroquoian	A.D. 1300 - 1400	large villages and houses	Uren, Middleport
		Late Iroquoian	A.D. 1400 - 1650	tribal emergence, territoriality	Neutral Iroquois
Contact		Aboriginal	A.D. 1700 - 1875	treaties, mixture of Native & European items	Ojibwa, Odawa populations
		Euro-Canadian	A.D. 1796 - present	English goods, homesteads	European settlment, pioneer life

3.4 Evaluation of Archaeological Potential: Historic Sites

Ashfield Township was given its name by William Hawkins, the Crown surveyor, who drew inspiration from a similarly named village in the County of Suffolk, England (H. Belden 1879). The township was first settled in the late 1830s by English, Irish and Scottish immigrants, many of whom were attracted to Port Albert and its immediate environs as early as 1837. Early records name Andrew McConnell, Jerome Sharpe, and Stephen Martin as the first individuals to settle here, sometime between the years 1837 and 1841 (H. Belden 1879:15). Settlement prior to this time was hindered by the fact that the land was still in the possession of the Ojibway and Saugeen (Scott 1966:185) and did not come under Crown ownership until 1836. While it was the intention of government officials to improve access to Goderich and Huron County through the construction of trail from Wilmot to Goderich in 1828, travel did not improve, even after the trail was replaced by a corduroy road in 1832. Travellers found the road impassable in the winter (Scott 1966:46). By the late 1830s there were only 385 settlers in Huron County (Scott 1966:46). Half a decade later, the County's population grew to 7,190, as Pennsylvania Germans, Scottish crofters, and families from the more poverty stricken areas if the British and Irish countryside fled here in an attempt to start a new life (Scott 1966:52).

The replacement of the cash system with the ten years system of payment in 1848 brought about an increase in the number of settlers to the area, with the first municipal transactions dating prior to this change in 1842. The first election of Council took place in 1850. These developments led also to the founding of other villages and hamlets in the area, the most important being Dungannon, lying east of the present area of interest. The village was so named by William Mallough in 1855 in honour of his native home in County Tyrone, Ireland, and contained a number of businesses including two hotels, carriage shop, steam grist and saw mill, and telegraph office, as well as three churches (H. Belden 1879:15). Many of the earliest communities in the area, including

Dungannon, Port Albert, Lanes and Kingsbridge originated as postal stations. European settlement in Ashfield was, nevertheless, somewhat slow, partially due to the fact that much of the land in the township was not particularly fertile and would have been less attractive to early farmers (Scott 1966:186). Port Albert was a community of early government interest, largely due to the fact that it was an appealing harbour site (Scott 1966:190). However, despite the fact that many early EuroCanadian settlers were drawn to this hamlet, it failed to grow to its full, anticipated potential. This was due in part to the fact that the harbour could not be dredged because the underlying bedrock was too close to the surface (Corkum and Crawford 1986:16).

The location of the Ashfield Township properties on the 1879 map shown in the *Illustrated Historical Atlas of Huron County* is provided in Figure 6. There are structures shown on the majority of lots under study. Some of these are in the location of existing residences and others are not. It should always be recognized, however, that historic maps are not always accurate representations of land use conditions at the time.

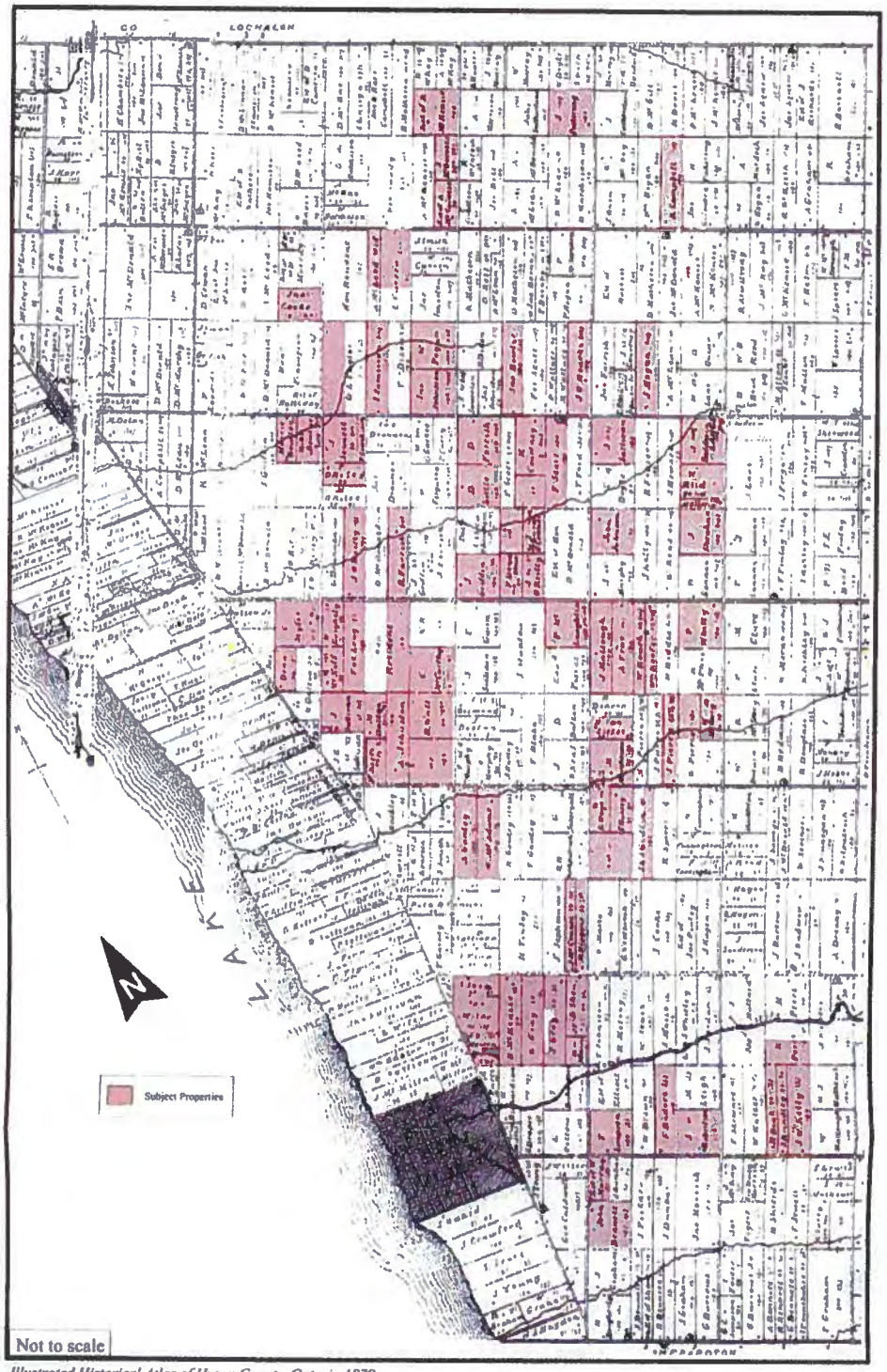
Several factors can be used to assess a property's potential for historic sites. These include presence of well-drained sandy soils, proximity to potable water, transportation routes and points of known historical interest. When these are taken into consideration the Ashfield Township properties show high to moderate potential for the recovery of EuroCanadian archaeological resources. In this case, the primary determinants of potential are proximity to water, given the presence of numerous small creeks, and transportation routes (i.e., Highway 21 and the concession roads).

4.0 SUMMARY & RECOMMENDATIONS

A Stage 1 archaeological assessment was conducted for a series of properties in Ashfield Township in Huron County, Ontario. The properties are within Phase II of the Kingsbridge Wind Power Project. All of the properties show high potential for the recovery of both historic and precontact aboriginal archaeological resources. As such, a Stage 2 assessment will be required prior to construction. The strategy for the Stage 2 investigation should be to survey all of the ploughed portions of these properties, in order to allow for more flexibility in the planning process. This will allow freedom of movement for machines and cranes, as well as flexibility in moving the locations of access roads and turbines. For all unploughed lands (i.e., pasture, no till, tall wheat, hay fields) the impact areas (once finalized) will need to be ploughed to facilitate the Stage 2 survey.

The Ministry of Culture is asked to review the information presented in this report and issue a letter concurring with its recommendations. This correspondence should be directed to Michael Smith of Epcor in Edmonton (fax: 780-412-3243) and copied to both Ian Callum of Stantec Consulting, Guelph (fax: 519-836-2493) and Holly Martelle of Timmins Martelle Heritage Consultants Inc., London.

Figure 6: Location of the Ashfield Township Properties on the 1879 Historic Atlas Map



Illustrated Historical Atlas of Huron County, Ontario 1879
H. Belden & Co.
Ashfield Township Pg. 47

If deeply buried archaeological deposits are identified during construction the Ministry of Culture should be notified immediately at (519) 675-7742. Upon the discovery of human remains during construction, the proponent should immediately contact a representative of Timmins Martelle Heritage Consultants, the Ministry of Culture as well as the Registrar of Cemeteries, Michael D'Mello, in the Cemeteries Regulation Unit of the Ministry of Consumer and Commercial Relations (416) 326-8392.

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2005b *Stage 1 and 2 Archaeological Assessment Kingsbridge Wind Power Project Addendum, Ashfield and Colborne Townships, Huron County, Ontario.* Report on file with the Ministry of Culture, Toronto.