ORIGINAL REPORT

December 18, 2012

ADDITIONAL STAGE 2 ARCHAEOLOGICAL ASSESSMENT

NextEra Energy Canada, ULC Goshen Wind Energy Centre Huron County, Ontario

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Executive Summary

A Stage 2 archaeological assessment was undertaken in order to meet the requirements for an application for a Renewable Energy Approval, as outlined in Ontario Regulation 359/09 Section 22(3) of the *Environmental Protection Act*. It was conducted on behalf of AECOM Canada Ltd. for NextEra Energy Canada, ULC's (NEEC) proposed Goshen Wind Energy Centre (Golder 2012). The study area, which spans approximately 2262.72 hectares, incorporates the laydown and storage areas, a transformer substation, underground electrical collection lines, a transmission line, turbine access roads, three permanent meteorological towers, and an operations and maintenance building. The Goshen Wind Energy Centre includes 72 wind turbines (63 to be constructed) with a total nameplate capacity of 102 megawatts.

The *Green Energy Act* (2009) enabled legislation governing project assessments and approvals to be altered to allow for a more streamlined Renewable Energy Approval (REA) process. Under Section 22(1) of the REA, an archaeological assessment must be conducted if the proponent concludes that engaging in the project may have an impact on archaeological resources. Golder Associates Ltd. (Golder 2012.) previously determined potential for the recovery of pre-contact Aboriginal and historic Euro-Canadian archaeological resources within the study area. Currently, Ontario Regulation 359/09 of the *Environmental Protection Act* governs the REA process for renewable energy projects such as wind, anaerobic digestions, solar and thermal treatment facilities.

The initial phase of Golder's Stage 2 archaeological assessment (Golder 2012b) May 5, 2011 to November 28, 2011 under PIF P218-038-2011 and from January 25, 2012 to September 10, 2012 under PIF P319-016-2012, resulted in the identification of 62 sites: 37 pre-contact Aboriginal, 20 historic Euro-Canadian and five multi-component. Stage 3 archaeological assessments are recommended to further evaluate the cultural heritage value or interest of 33 of these sites.

This second phase of Golder's Stage 2 archaeological assessment was conducted between November 13, 2012 and December 10, 2012. This report presents the results of this additional 2012 Stage 2 archaeological assessment for the NextEra Goshen Wind Energy Centre. A total of approximately 19.5 hectares were assessed according to the Ministry of Tourism, Culture and Sport's 2011 *Standards and Guidelines for Consultant Archaeologists*. A total of one archaeological location was identified during this additional Stage 2 archaeological assessment: Location 63 and isolated pre-contact Aboriginal biface. Despite the intensification of survey intervals no additional artifacts were recovered. Given that the cultural heritage value or interest of the site has been sufficiently documented, **no further archaeological assessment is recommended for Location 63**.

The Ministry of Tourism, Culture and Sport is asked to accept this report into the Ontario Public Register of Archaeological Reports. Additional archaeological assessment is still required; hence the archaeological sites recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed, except by a person holding an archaeological licence.

The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.

Project Personnel

Project Director	Jim Anderson, Principal
Project Manager	Carla Parslow, Ph.D. (P243)
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Acknowledgments

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Ministry of Tourism and Culture	Robert von Bitter, B.A., Shari Prowse, M.A.
Ministry of Natural Resources	Lisa Casselman, Survey Records Clerk

Table of Contents

TABLES

IMAGES

PHOTOS

MAPS

1.0 PROJECT CONTEXT

1.1 Development Context

A Stage 2 archaeological assessment was conducted by Golder on behalf of AECOM Canada Ltd. for NextEra Energy (NEEC) Canada's proposed Goshen Wind Energy Centre. The full Stage 2 study area is located on various lots and concessions in the Geographic Townships of Hay, Stephen and Usborne, now Municipalities of Bluewater and South Huron, Huron County, Ontario (Figure 1; Table 1). The complete Stage 2 study area is approximately 2262.72 hectares in total. Table 1 lists the relevant concessions and lots located within the study area.

The project will be referred to as the Goshen Wind Energy Centre (the Project) and will be located on private lands in the vicinity of the shoreline of Lake Huron. The wind turbine technology proposed for the project is the GE 1.6-100 Wind Turbine and GE 1.56-100 Wind Turbine. With a total nameplate capacity of 102 MW, the project is categorized as a Class 4 facility. Although NextEra is seeking a Renewable Energy Approval (REA) for up to 72 wind turbines, only 63 will be constructed for the Project, as well as associated infrastructure. This includes laydown and storage areas, a transformer substation, underground electrical collection lines, a transmission line, turbine access roads, three permanent meteorological towers, and an operations and maintenance building. Permission to enter the optioned lots within the study area and to remove archaeological resources was given by Mr. Thomas Bird of NEEC. For the purposes of this Stage 2 assessment, the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) were followed. The objectives of the Stage 2 assessment were to document archaeological resources present within the study area, to determine whether any of the resources might be artifacts or archaeological sites with cultural heritage value or interest requiring further assessment, and to provide specific Stage 3 direction for the protection, management, and/or recovery of the identified archaeological resources (Government of Ontario 2011).

Table 1: Properties within the Goshen Wind Energy Centre, Huron County

Geographic Township	Concession	Lot
Hay	Abutting South Boundary	11 to 27
	7	3 to 16
	8	3 to 16
	9	3 to 16
	10	3 to 16
	11	3 to 16
	12	3 to 16
	13	3 to 16
	14	3 to 16
Stephen	Abutting North Boundary	12 to 27
	Abutting on River aux Sables	9 to 19
	1	8 to 19

Geographic Township	Concession	Lot
	2	8 to 23
	3	8 to 23
	4	6 to 23
	5	6 to 23
	6	6 to 23
	7	3 to 23
	8	3 to 23
	9	3 to 23
	10	3 to 23
	11	3 to 23
	12	3 to 23
	13	3 to 23
	14	3 to 23
	15	3 to 20
	16	3 to 20
	17	3 to 20
	18	3 to 15
	19	3 to 10
	20	3 to 10
	21	3 to 10
	22	8 to 18
	Abutting South Boundary	12 to 43
Usborne	Abutting South Eastern Boundary	1 to 15
	Abutting South Side of Thames Road	5 to 27
	1	1 to 15
	2	1 to 20
	3	1 to 20
	4	1 to 18
	5	1 to 18
	6	1 to 18
	7	1 to 18
	8	1 to 18
	9	1 to 18
	10	1 to 18
	11	2 to 18

Geographic Township	Concession	Lot
	12	7 to 18
	13	8 to 18
	14	11 to 18
	15	14 to 18

This assessment was undertaken in order to meet the requirements for an application for a Renewable Energy Approval (REA), as outlined in Ontario Regulation 359/09 Section 22(3) of the *Environmental Protection Act* (Government of Ontario 1990b). The *Green Energy Act* (2009) enabled legislation governing project assessments and approvals to be altered to allow for a more streamlined Renewable Energy Approval (REA) process (Government of Ontario 2009). Under Section 22(1) of the REA, an archaeological assessment must be conducted if the proponent concludes that engaging in the project may have an impact on archaeological resources. Currently, Ontario Regulation 359/09 of the *Environmental Protection Act* governs the REA process for renewable energy projects such as wind, anaerobic digestions, solar and thermal treatment facilities.

Golder Associates Ltd. (Golder 2012a) previously determined the potential for the recovery of pre contact Aboriginal and historic Euro-Canadian archaeological resources within the study area.

The initial phase of Golder's Stage 2 archaeological assessment (Golder 2012b) May 5, 2011 to November 28, 2011 and from January 25, 2012 to September 10, 2012, under PIF P218-038-2011, resulted in the identification of 62 sites: 37 pre-contact Aboriginal, 20 historic Euro-Canadian and five multi-component. Stage 3 archaeological assessments are recommended to further evaluate the cultural heritage value or interest of 33 of these sites.

This second phase of Golder's Stage 2 archaeological assessment was conducted between November 13, 2012 and December 10, 2012 and incorporates work on approximately 19.5 hectares to accommodate changes to access roads. **This reporting presents the results of additional 2012 Stage 2 archaeological assessment for the NextEra Goshen Wind Energy Centre for seven properties.**

For the purposes of this Stage 2 archaeological assessment, the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) were followed. The objectives of the Stage 2 assessment were to document archaeological resources present within the study area, to determine whether any of the resources might be artifacts or archaeological sites with cultural heritage value or interest requiring further assessment, and to provide specific Stage 3 direction for the protection, management and/or recovery of the identified archaeological resources (Government of Ontario 2011

1.1.1 Existing Conditions

The Stage 2 field assessment for the NEEC Goshen Wind Energy Centre was conducted under the PIF P366-017-2012 issued to Erin Wilson, M.A., by the MTCS. This phase of Stage 2 archaeological assessment took place over 5 days from November 13, 2012 and December 10, 2012. Table 2 presents weather conditions for this portion of the Stage 2 survey. At no time were the field or weather conditions detrimental to the recovery of

archaeological material and visibility was excellent. The study area this reporting encompasses is approximately 19.5 hectares and mostly consists of ploughed, well-weathered agricultural fields (19.3 ha) with some small areas of test pit survey along the road ROWs that have archaeological potential or at the edge of woodlots (0.2 ha).

Table 2: Weather Conditions on Parcels Subject to Stage 2 Archaeological Assessment for This Report

Date	Parcel Assessed	Weather
November 22, 2012	GSH2838/GSH2767	Overcast and cold
November 14, 2012	GSH1390	Sunny and cool
November 22, 2012	GSH2767/GSH2838	Sunny, cool to warm
December 4, 2012	GSH2838	Overcast with drizzle
December 7, 2012	GSH1757/GSH1505	Overcast and warm
December 10, 2012	GSH2028/GSH1557	Overcast, cold and wet

1.2 Archaeological Context

1.2.1 The Natural Environment

The study area is situated within four physiographic regions: the Huron Fringe, the Huron Slope, the Horseshoe Moraines and the Stratford Till Plain (Chapman and Putnam 1984:127, 160-161). The Huron Fringe consists mostly of gravel bars and sand dunes that were created by glacial Lake Algonquin and Lake Nipissing (Chapman and Putnam 1984:161). The Huron Slope is clay plain located along the eastern side of Lake Huron. It is modified by a narrow strip of sand and by the twin beaches of glacial Lake Warren which flank the Wyoming Moraine. The land within this region slopes gently upward from 600 feet to 850 or 900 feet above sea level. Soil types vary from clays to loams (Chapman and Putnam 1984:160-161).

The Horseshoe Moraines are characterized by irregular, stony knobs and ridges, which are composed mostly of till with some sand and gravel deposits (kames), pitted sand and gravel terraces, and swampy valley floors. This region is characterized by the well-drained Huron clay loam and varies in elevation from 800 to 1700 feet above sea level (Chapman and Putnam 1984:127). Lastly, the Stratford Till Plain is a broad clay plain within an area of ground moraine that is interrupted by several terminal moraines; the till is uniform throughout the area and consists of a brown calcareous silty clay (Chapman and Putnam 1984:133).

Belden and Company (1879:xix-xx) considered the soils of Usborne to be fertile and productive. The study area includes 14 soils series, the most prevalent of which are: the Perth series (Perth clay loam), the Huron series (Huron clay loam), the Brookston series (Brookston clay loam) and the Berrien Series (Berrien sandy loam). The Perth soils are well suited to growing modern day crops such as beets, corn and cabbage (Hoffman *et al*. 1952:48). Perth clay is described as imperfectly drained and yields even during dry seasons due to the soil's reserve supply of moisture. Huron clay series are susceptible to erosion because of their presence within sloped areas (Hoffman *et al*. 1952:45). Wheat, cereal grains and corn are grown in this area today (Hoffman *et al*. 1952:45). Brookston clay is poorly drained and therefore modern drainage improvements are required in order

for the land to produce good yields (Hoffman *et al*. 1952:49-50). The natural vegetation of Berrien sandy loam includes deciduous and coniferous trees and it is generally used for pasture and woodland (Hoffman et al. 1952:65-67). The Perth, Huron, and Brookston series would have been suitable for pre-contact Aboriginal practices, but not ideal given their poor drainage and susceptibility to erosion.

Figure 1 illustrates the numerous potable water sources associated with the study area. Several small creeks, such as Mud Creek and Black Creek, transect the study area at various locations. The majority of these run east from Lake Huron which is located between one kilometre and 10 kilometres from the western edge of the study area. The Ausable River flows south through the central portion of the study area and turns north again to form the extreme southwestern boundary of the study area. Black Creek is a tributary of the Ausable, joining it in the north-central portion of the study area. Mud Creek runs north and west through the western part of the study area. Fish Creek, flowing through the eastern portion of the study area, is a tributary of the North Thames River.

1.2.2 Previously Known Archaeological Sites and Surveys

Golder (2012a) previously conducted a Stage 1 archaeological assessment for the Goshen study area. In conducting this assessment, Golder archaeologists applied archaeological potential criteria commonly used by the MTCS (Government of Ontario 2011) to determine areas of archaeological potential within the region of study. The archaeological potential for Aboriginal and Euro-Canadian sites was deemed to be moderate to high on these properties. For pre-contact Aboriginal sites, this assessment is based on the presence of nearby potable water sources, level topography, agriculturally suitable soils and known archaeological sites. For post-contact Aboriginal sites this assessment is based on the presence of nearby potable water sources, level topography and historic Euro-Canadian anecdotal evidence. The determination of historic Euro-Canadian archaeological potential is based on documentation indicating occupation from the middle of the 19th century onwards, as well as the presence of historic transportation routes. As a result, Stage 2 archaeological assessment was recommended for potential wind turbine sites and their associated infrastructure for the Goshen Wind Energy Centre.

According to the Archaeological Sites Database (ASDB) (personal communication, Robert von Bitter, June 1, 2012), there are 18 registered archaeological sites located within or within one kilometre of the study area. Table 2 summarizes these sites, while Table 5 provides a general outline of the culture history of Huron County (based on Ellis and Ferris 1990). Fourteen of the previously identified sites are pre-contact Aboriginal, three are multi-component, consisting of both pre-contact Aboriginal and historic Euro-Canadian occupations, and one site is historic Euro-Canadian. At the time of their identification, six of these sites were recommended for further archaeological assessment. These include: the Dawsey Homestead (AhHj-2), the M.T. Johnstone site (AhHk-117), AhHk-118, the Simmons Drain site (AhHk-119), AiHj-2 and the Sarepta Tavern/Post-Office site (AiHj-4). If they are to be impacted by turbine or infrastructure construction, sites AhHj-2, AhHk-117, AhHk-118, AhHk-119, AiHj-2 and AiHj-4 would require further archaeological assessment.

Information concerning specific site locations is protected by provincial policy, and is not fully subject to the Freedom of Information Act. The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MTCS will provide information concerning site

location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

Golder (2012b) conducted the initial Stage 2 field assessment for NEEC Goshen Wind Energy Centre in 2012. During this investigation, a total of 61 sites - 36 pre-contact Aboriginal, 20 historic Euro-Canadian and five multi-component - were identified. These are summarized in Table 4 along with their recommendations for further archaeological assessment. Thirty-three sites are recommended for further evaluation of their cultural heritage value or interest.

Table 3: Previously Registered Archaeological Sites Located within the Greater Limits of the Study Area

Borden Number	Site Name	Site Type	Culture	Licence Year	Found
AhHj-2	Dawsey Homestead	homestead and campsite?	multi-component, Euro-Canadian and pre-contact Aboriginal, Middle Archaic	1987	172 historic Euro-Canadian artifacts, 11 pre-contact Aboriginal artifacts
AhHj-3	-	findspot	pre-contact Aboriginal	1987	1 biface
AiHi-1	-	lithic scatter	pre-contact Aboriginal	1990	diffuse scatter of lithics, 4 loci
AiHi-2	-	campsite?	pre-contact Aboriginal, Late Archaic	1990	10 artifacts per square, lithics, including 4 points and 1 bone fragment
AiHi-3	-	undetermined	pre-contact Aboriginal?	1990	6 artifacts
AiHi-4	-	undetermined	pre-contact Aboriginal	1990	11 lithics
AiHj-2	-	findspot	pre-contact Aboriginal	1987	2 pieces of chipping detritus, 5 metres apart
AiHj-3	-	2 findspots	pre-contact Aboriginal	1985	1 graver, 1 core
AiHj-4	Sarepta Tavern/Post -office	historic commercial	historic Euro-Canadian	1992	large amount of Euro-Canadian artifacts, hand-pump water well
AhHk-100	-	undetermined and campsite	multi-component, Euro-Canadian and pre-contact Aboriginal, Late Archaic	2004	42 historic Euro-Canadian artifacts, 2072 pre-contact Aboriginal artifacts
AhHk-101	-	campsite	pre-contact Aboriginal, Middle Woodland and Late Woodland	2004	1184 artifacts
AhHk-102	-	campsite	pre-contact Aboriginal, Early Archaic and Woodland	2004	573 artifacts
AhHk-103	-	campsite	pre-contact Aboriginal, Late Woodland	2004	1231 artifacts
AhHk-104	-	campsite	pre-contact Aboriginal, Middle Archaic and Late Archaic	2004	1122 artifacts

Borden Number	Site Name	Site Type	Culture	Licence Year	Found
AhHk-105	-	lithic scatter	pre-contact Aboriginal, Late Archaic	2004	919 artifacts
AhHk-109	-	camp	pre-contact Aboriginal, Late Woodland	2004	260 artifacts
AhHk-111	-	undetermined	pre-contact Aboriginal, Early Woodland and Middle Woodland	2004	239 artifacts
AhHk-99	-	scatter	multi-component, Euro-Canadian and pre-contact Aboriginal	2003	2 historic Euro-Canadian artifacts, 1 pre-contact Aboriginal artifact

Table 4: Archaeological Sites Identified by Golder (2012b)

Location	Borden Number	Affiliation	Stage 3 Recommended?
1	---	pre-contact Aboriginal	NO
2	---	pre-contact Aboriginal	NO
3	---	pre-contact Aboriginal	NO
4	---	pre-contact Aboriginal	NO
5	AhHk-139	pre-contact Aboriginal	YES
6	---	pre-contact Aboriginal	NO
7	AhHk-140	historic Euro-Canadian	YES
8	---	pre-contact Aboriginal	NO
9	---	pre-contact Aboriginal	NO
10	---	pre-contact Aboriginal	NO
11	AhHj-4	historic Euro-Canadian	YES
12	---	pre-contact Aboriginal	NO
13	AiHj-10	pre-contact Aboriginal	YES
14	---	pre-contact Aboriginal	NO
15	AiHj-7	pre-contact Aboriginal	YES
16	AhHj-5	historic Euro-Canadian	YES
17	---	pre-contact Aboriginal	NO
18	AiHj-11	pre-contact Aboriginal	YES
19	AiHj-12	Pre-Contact Aboriginal	YES
20	AhHk-141	pre-contact Aboriginal	NO
21	AhHk-142	historic Euro-Canadian	YES
22	---	pre-contact Aboriginal	NO
23	AiHj-13	pre-contact Aboriginal	NO

Location	Borden Number	Affiliation	Stage 3 Recommended?
24	AhHj-7	pre-contact Aboriginal	YES
25	---	pre-contact Aboriginal	NO
26	AiHj-14	pre-contact Aboriginal	NO
27	AhHj-8	pre-contact Aboriginal	YES
28	AhHk-143	historic Euro-Canadian	YES
29	---	pre-contact Aboriginal	NO
30	---	pre-contact Aboriginal	NO
31	AhHk-144	pre-contact Aboriginal	NO
32	---	pre-contact Aboriginal	NO
33	AhHk-145	historic Euro-Canadian	YES
34	AhHj-10	historic Euro-Canadian	YES
35	AhHj-9	pre-contact Aboriginal	NO
36	AhHk-147	historic Euro-Canadian	YES
37	AhHj-11	historic Euro-Canadian	YES
38	AhHk-148	multi-component	YES
39	AhHj-12	multi-component	YES
40	---	pre-contact Aboriginal	NO
41	---	pre-contact Aboriginal	NO
42	---	pre-contact Aboriginal	NO
43	AhHj-13	historic Euro-Canadian	YES
44	AhHj-14	historic Euro-Canadian	YES
45	AhHj-15	historic Euro-Canadian	YES
46	AhHj-16	historic Euro-Canadian	YES
47	AhHj-17	historic Euro-Canadian	YES
48	AhHj-18	historic Euro-Canadian	YES
49	AhHj-19	historic Euro-Canadian	YES
50	AhHj-20	historic Euro-Canadian	YES
51	AhHj-21	pre-contact Aboriginal	YES
52	AhHj-22	pre-contact Aboriginal	NO
53	---	pre-contact Aboriginal	NO
54	AhHj-23	pre-contact Aboriginal	YES
55	AiHj-18	pre-contact Aboriginal	NO
56	AhHj-24	historic Euro-Canadian	YES
57	AhHj-25	historic Euro-Canadian	YES
58	---	pre-contact Aboriginal	NO
59	---	historic Euro-Canadian	NO
60	AhHi-5	historic Euro-Canadian	YES

Location	Borden Number	Affiliation	Stage 3 Recommended?
61	AhHi-6	historic Euro-Canadian	YES
62	AhHi-7	historic Euro-Canadian	YES

Table 5: Cultural Chronology for the Huron County Area (Ellis and Ferris 1990)

Period	Characteristics	Time	Comments
Early Paleo-Indian	Fluted Projectiles	9000 - 8400 B.C.	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 - 8000B.C.	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 - 6000 B.C.	slow population growth
Middle Archaic	Brewerton-like points	6000 - 2500 B.C.	environment similar to present
Late Archaic	Lamoka (narrow points)	2000 - 1800 B.C.	increasing site size
	Broadpoints	1800 - 1500 B.C.	large chipped lithic tools
	Small Points	1500 - 1100B.C.	introduction of bow hunting
Terminal Archaic	Hind Points	1100 - 950 B.C.	emergence of true cemeteries
Early Woodland	Meadowood Points	950 - 400 B.C.	introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 B.C. - A.D.500	increased sedentism
	Princess Point	A.D. 550 - 900	introduction of corn
	Riviere au Vase	A.D. 500 - 800	thin-bodied, low, uncollared and uncastellated vertical to weakly everted rim pottery
Late Woodland	Ontario Iroquoian Tradition		
	Early Ontario Iroquoian	A.D. 900 - 1300	emergence of agricultural villages
	Middle Ontario Iroquoian	A.D. 1300 - 1400	long longhouses (100 metres +)
	Late Ontario Iroquoian	A.D. 1400 - 1650	tribal warfare and displacement
	Western Basin Tradition		
	Younge	A.D. 800 - 1100	intensification of farming, heterogeneous vessel forms, sizes, and decorative motifs
	Springwells	A.D. 1100-1400	intensification of settlement, collared, castellated, and decorated rim vessels
	Wolf	A.D. 1400 -1550/1600	Parker festooned pottery vessels
Contact Aboriginal	various Algonkian Groups	A.D. 1700 - 1875	early written records and treaties
Historic	Euro-Canadian	A.D. 1796 - present	European settlement

Generally, the pre-contact Aboriginal presence in much of southern Ontario reflects occupation by Iroquoian groups. However, the Middle Woodland Saugeen Complex, including the Donaldson site, known best from locations just north of Huron County in the Saugeen River valley, is often interpreted as ancestral Algonkian (Fiedel 1999). Combined with the presence of Algonkian-speaking groups in the area at the time of European contact, this evidence argues for the occupation of Huron County by Algonkian-speaking peoples for over a millennium.

Dating somewhat later than the Donaldson site, Wright (1974:303) argued that the palisaded Late Woodland Nodwell village in Bruce County demonstrated Huron immigration to the area. More recently, however, Rankin (2000) suggested that the Nodwell village represents a short-lived sedentary farming experiment by hunter-gatherers, probably indigenous Algonkians, who may have been ancestral to the Odawa (see also Warrick 2008:159). French missionaries indicated relatively close ties between the Odawa and the Huron-Petun (Fox 1990; cf. Feest and Feest 1978:773). It therefore appears, based on ethnohistoric evidence, that there is potential to identify both ancestral Algonkian and Iroquoian sites in the study area.

Archaeological potential for pre-contact Aboriginal archaeological sites is established by determining the likelihood that archaeological resources may be present on a subject property. Golder archaeologists applied archaeological potential criteria commonly used by the MTCS (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography and the general topographic variability of the area.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. Finally, extensive land disturbance can eradicate archaeological potential.

In archaeological potential modeling, a distance to water criterion of 300 metres is generally employed. The closest potable water sources are the Ausable River, Little Ausable River, Mud Creek, Black Creek, and Lake Huron (Figure 1). Lake Huron is approximately one to 10 kilometres to the west of the study area, and was likely frequently visited by pre-contact Aboriginal peoples.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The area surrounding the region of interest is mainly glacial till with predominantly clay soils (Chapman and Putnam 1984). These areas of glacial till have been called Horseshoe Moraines (Hagerty and Kingston 1992:11). The soils of the study area consist of Huron Brookston silt loam characterized by moderately well to imperfect drainage (Hagerty and Kingston 1992: Sheet 1). Spring drainage is relatively slow, delaying warming of the soil and restricting root growth (Hagerty and Kingston 1992:52). As such, these soils benefit from tile drainage “to reach their capability for common field crops” (Hagerty and Kingston 1992:52; cf. Brock 1972:586). These soils, therefore, can be considered relatively unsuitable for pre-contact Aboriginal agriculture and do not contribute to the archaeological potential for pre-contact Aboriginal sites.

The study area falls within a climatic region which is slightly cooler, slightly wetter, and providing slightly fewer frost-free days than the surrounding areas of Middlesex County, nearer the shores of Lake Huron and Lake Erie (Hagerty and Kingston 1992:16). This may have presented risks for pre-contact Aboriginal gathering and agriculture.

The MTCS also views the presence of previously registered archaeological resources as a prime indicator of archaeological potential. As was noted above, 18 archaeological sites, 17 of which have pre-contact Aboriginal components, have previously been registered within the study area, indicating that this portion of the province was intensively used by pre-contact Aboriginal peoples. Additionally, 36 pre-contact sites were recorded during the Stage 2 archaeological assessment.

With regards to resources, glacial till chert can be found in the moraines of the area (Chapman and Putnam 1984) and relatively high quality Kettle Point chert occurs to the west between Kettle Point and Ipperwash. Currently, Kettle Point chert occurs as submerged outcrops extending for approximately 1350 metres into Lake Huron. Secondary deposits of Kettle Point chert have also been reported in Essex County and in the Ausable Basin (Eley and von Bitter 1989; Fox 2009:362). Natural resources, such as game, fish, and wild berries, were also plentiful in this region during the pre-contact period (Brock 1972:586; North Middlesex Historical Society 2010a). When this information is considered in light of the proximity of the study area to the Ausable River and its tributaries, which functioned as potable water sources as well as transportation routes, the potential for pre-contact Aboriginal archaeological resources within the study area was judged to be moderate-to-high.

1.2.3 Recent Reports

Golder (2012a and b) recently conducted a Stage 1 and a Stage 2 archaeological assessment for the Goshen Wind Energy Centre. The Stage 1 is entitled *Stage 1 Archaeological Assessment, NextEra Energy Canada, ULC, Goshen Wind Energy Centre, Various Lots and Concessions, Geographic Townships of Hay, Stephen and Usborne, now Municipalities of Bluewater and South Huron, Huron County, Ontario* (Golder 2012a) produced by Golder on June 26, 2012 under PIF numbers P001-608-2010 and P218-278-2011. The Stage 2 is entitled *Stage 2 Archaeological Assessment, NextEra Energy Canada, ULC, Goshen Wind Energy Centre, Various Lots and Concessions, Geographic Townships of Hay, Stephen and Usborne, now Municipalities of Bluewater and South Huron, Huron County, Ontario* (Golder 2012b) produced by Golder on June 26, 2012 under PIF numbers P218-038-2011 and P319-016-2012

Background research and archaeological assessments for four additional wind farms near the study area has also been in progress over the past three years. These projects include NextEra Energy Canada, ULC's: Bluewater Wind Energy Centre (north of the study area), Jericho Wind Energy Centre (southwest of the study area), Adelaide Wind Energy Centre (south of the study area), and Bornish Wind Energy Centre (south of the study area). Further, archaeological assessment has also been conducted on the Parkhill Point of Interconnect lands, south of the study area, which will connect the Bornish, Adelaide, and Jericho Wind Energy Centres' lands with the hydro grid. Table 6 summarizes the documents that have been produced for these projects to date.

Table 6: Summary of Other NextEra Energy Canada, ULC, Wind Energy Project near the Study Area Documents

Document	Date of Production	PIF Number
Stage 1 Archaeological Assessment: NextEra Energy Canada, ULC, Bluewater Wind Energy Centre, Huron County, Ontario	February 13, 2012	P001-609-2010
Stage 2 Archaeological Assessment: NextEra Energy Canada, ULC, Bluewater Wind Energy Centre, Huron County, Ontario	March 23, 2012	P218-040-2011 and P319-017-2012

Document	Date of Production	PIF Number
Stage 1 Archaeological Assessment: NextEra Energy Canada, ULC, Jericho Wind Energy Centre, Lambton and Middlesex Counties, Ontario	October 2012	P001-607-2010
Stage 2 Archaeological Assessment: NextEra Energy Canada, ULC, Jericho Wind Energy Centre, Lambton and Middlesex Counties, Ontario	November 2012	P218-039-2011
Stage 1 Archaeological Assessment, Air Energy TCI Adelaide Wind Farm Various Lots, Concession 1 to 5 N.E.R. and 1 to 4 S.E.R., Geographic Township of Adelaide, Middlesex County, Ontario	April 2009	P001-422-2008
Stage 2 Archaeological Assessment, NextEra Adelaide Wind Farm, Various Lots, Concession 1 to 5 N.E.R. and 1 to 4 S.E.R., Geo. Township of Adelaide, Middlesex County, Ontario	March 2010	P001-452-2008, P001-526-2009, and P084-197-2010
Stage 3 Archaeological Assessment, NextEra Adelaide Wind Farm, Various Lots, Concession 1 to 5 N.E.R. and 1 to 4 S.E.R., Geo. Township of Adelaide, Middlesex County, Ontario	April 2010	P084-220-2009, P084-221-2009 and P084-198-2010
Stage 2 Archaeological Assessment, NextEra Adelaide Wind Energy Centre, Various Lots, Concessions 1 to 5 N.E.R. and 1 to 4 S.E.R., Geographic Township of Adelaide, Middlesex County, Ontario	April 10, 2012	P218-096-2011 and P319-015-2012
Stage 2 Archaeological Assessment, NextEra Adelaide Wind Energy Centre, Additional Field Work, Various Lots, Concessions 1 to 5 N.E.R. and 1 to 4 S.E.R., Geographic Township of Adelaide and Concessions 9 to 13 W.C.R., Geographic Township of West Williams, Middlesex County, Ontario	July 26, 2012	P218-277-2012
Stage 1 Archaeological Assessment: Canadian Greenpower Wind Project, Counties of Huron, Middlesex and Lambton, Ontario	May 2009	P057-456-2008
Stage 2 Property Assessment (June 2009 Field Season): Bornish Wind Farm Project Environmental Assessment, East Williams, West Williams, and Adelaide Townships, Middlesex County, Ontario	October 2009	P057-534-2009
Stage 2 Archaeological Assessment (Property Assessment): Bornish Wind Farm Project, East Williams, West Williams, and Adelaide Townships, Middlesex County, Ontario	March 2011	P057-534-2009
Stage 2 Archaeological Assessment, NextEra Bornish Wind Energy Centre, Municipality of North Middlesex, Middlesex County, Ontario	April 18, 2012	P218-097-2011 and P319-013-2012
Stage 2 Archaeological Assessment, NextEra Bornish Wind Energy Centre, Additional Fieldwork, Various Lots and Concessions, Municipality of North Middlesex, Middlesex County, Ontario	June 27, 2012	P218-276-2012
Stages 1 and 2 Archaeological Assessment, Parkhill Point of Interconnect, Various Lots and Concessions, Geographic Townships of East Williams and West Williams now	February 7, 2012	P319-018-2012

Document	Date of Production	PIF Number
Municipality of North Middlesex, Middlesex County, Ontario		
Stages 1 and 2 Archaeological Assessment, Parkhill Point of Interconnect – Additional Lands, Part of Lot 18, Concession 17 E.C.R., Geographic Township of East Williams, now Municipality of North Middlesex, Middlesex County, Ontario	July 11, 2012	P319-020-2012
Stage 3 Archaeological Assessment, Parkhill Point of Interconnect, Various Lots and Concessioins, Geographic Townships of East Williams and West Williams now Municipality of North Middlesex, Middlesex County, Ontario	November 2012	

Finally, two other archaeological assessments have been conducted within 50 metres of the study area during the past decade (Robert von Bitter, personal communication, June 1, 2012 and May 18, 2012). The first is a Stage 1 and 2 archaeological assessment for the Exeter Sewer System Expansion. It was entitled *Archaeological Assessment (Stages 1-2), Exeter Sewer System Expansion Class EA, Town of Exeter, Municipality of South Huron, Huron County, Ontario, (*Archaeologix 2003). The second report is a Stage 2 archaeological assessment for the Lake Huron Transmission Main Twinning Project. It was entitled *REVISED: Stage 2 Archaeological Assessment (Partial) Class Environmental Assessment, Lake Huron Primary Water Supply System, Lake Huron Transmission Main Twinning Project* and was produced by Timmins Martelle Heritage Consultants Inc. in 2012.

1.3 Historical Context

1.3.1 Post-contact Aboriginal Archaeological Resources and Surveys

The post-contact Aboriginal occupation of Southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking peoples by the New York State Iroquois and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Schmalz 1991). The nature of their settlement size, population distribution and material culture shifted as European settlers encroached upon their territory. However, Ferris (2009:114) notes, that despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought.” As such, First Nations groups have left behind archaeologically significant resources throughout Southern Ontario which shows continuity with past peoples, even if this information was not recorded by Euro-Canadians.

It has been presumed that before 1690 Huron County was solely occupied by Iroquoians. Both the archaeological and historic records suggest, however, that Algonquian speaking groups also had a presence in the area. Ferris (1999:119-120) pointed out the potential misuse of the term “Huron” to describe Late Woodland sites in both Huron and Bruce counties. Koenig (2005:61-61) more recently noted, however, that some researchers insist that the ancestors of the Algonkian speaking First Nations that are now occupying the shores of Lake Huron and the Bruce Peninsula, only arrived in the mid-1800s. Their relocation to this area from the U.S. was historically documented and associated with the establishment of reserves (Surtees 1971:48).

However, in southwestern Ontario, members of the Three Fires Confederacy (i.e. Chippewa, Ottawa and Potawatomi) began immigrating to this area from Ohio and Michigan in the late 1700s (Feest and Feest 1978:778-779). As was noted above, archaeological sites in Huron County point to much earlier settlement by ancestral Algonkians during the Middle and Late Woodland periods.

The study area first appears in the historic record when the Ojibwa and Chippewa First Nations entered into Treaty No. 27 ½. This:

> *being an agreement made at Amherstburg in the Western district of the Province of Upper Canada on the 26th of April, 1825, between James Givens, Esquire, Superintendent of Indian Affairs, on behalf of His Majesty King George the Fourth and the Chiefs and Principal Men of the part of the Chippewa Nation of Indians, inhabiting and claiming the tract of land . . . . Wawanosh Township in the County of Huron was named after Way-way-nosh the principal Chief of the Band making this Treaty.*
>
> (Morris 1943:26-27)

Treaty No. 27 ½ was subsequently confirmed on July 10, 1827 as Treaty No. 29 with only a minor change in the legal description of the boundaries of the land surrender (Morris 1943:27). While it is difficult to delineate treaty boundaries today, Figure 2 provides an approximate outline of the limits of Treaty Number 27 ½. Despite the noted historic presence of Aboriginal groups within this county, archaeological evidence of their occupation remains to be identified.

Historical Euro-Canadian records also mention that while the Huron Tract was being surveyed, First Nations guides were often employed because of their knowledge of the land. These historical sources claim that First Nations communities often travelled through Huron County for hunting and gathering but never stayed very long [Hay Township Book Committee (HTBC) 1996:3]. They also were known to help settlers clear their land and open roads and aid in advising women on medicines for the sick (HTBC 1996:3). Additionally, there is further documentation of groups along the Ausable River just to the west of the study area. In 1833, Presbyterian minister, Reverend J. Carruthers, met with a local First Nations group led by Omeok. Further, there are oral histories of two battles that had previously been fought between Aboriginal communities within the area (Mack 1992:244-245).

Due to the proximity of the study area to the Ausable River watershed, which functioned as a potable water source and transportation route, the potential for post-contact Aboriginal archaeological resources was judged to be moderate to high.

1.3.2 Historic Euro-Canadian Archaeological Resources and Archaeological Potential

The criteria used by the MTCS to determine potential for historic Euro-Canadian archaeological sites includes the presence of: previously identified archaeological sites; particular resource-specific features that would have attracted past subsistence or extractive uses; areas of initial, non-Aboriginal settlement; early historic transportation routes; elevated topography; and properties designated under the Ontario Heritage Act (Government of Ontario 2011).

The Euro-Canadian creation and settlement of Huron County was largely due to the Canada Company (itself formed in 1824) purchasing a large parcel of land known as the Huron Tract and preparing it for settlement by British settlers. The townships of Hay and Stephen in Huron County were both included in the Huron Tract purchase. The Huron Tract was mostly surveyed by Deputy Provincial Surveyor John McDonald on behalf of the Canada Company. All three townships within the study area were surveyed by John McDonald in the 1830s and are discussed separately below.

1.3.2.1 Hay Township

Hay Township was one of nine townships that were initially part of the Huron Tract and that would become a portion of present-day Huron County (Scott 1966:140). John McDonald (McDonald 1835a) surveyed the majority of Hay Township (Figure 3) in 100-acre lots, where the concession roads and side roads are one and one quarter miles apart (HTBC 1996:6). The only exception to the 100-acre lot survey is the Lake Range Concessions East and West (HTBC 1996:6). The Canada Company soon realized after their purchase of land in Hay Township that it was rather difficult to clear and settle on these properties. They then decided to lease the land for five or ten year periods, to immigrants who had little or no money (HTBC 1996:4).

The first wave of Euro-Canadian settlement began with the arrival of British families in 1833. The first two settlers were John C. Hillock (or Hullock) and Andrew McConnell (HTBC 1996:21). The second stage was the settlement of French-Canadians. This occurred in the 1840s after French-Canadian loggers who had temporarily come to Hay Township for work in the 1830s returned with their families to settle (Scott 1966:58). This group was best known for its settlement at St. Josephs (Scott 1966:58). The third stage was the arrival of German immigrants in the 1850s. They mostly settled along the eastern and western borders of the township (HTBC 1996:30).

A good resource for identifying potential historic Euro-Canadian archaeological sites in Hay Township is the 1879 *Illustrated Historical Atlas of the County of Huron* (Belden 1879). The Hay Township map provides both the names of the landowners and the majority of structures on these properties during the last half of the 19th century (Figure 3). In addition to houses, the structures noted include brickyards, cemeteries, churches, hotels, manufactories, mills and schools. Table 7 lists those lots that hold a structure other than a house, along with the name of the owner. Even though locations are only approximate on these maps, they do indicate the potential for the identification of significant archaeological historic remains that could be impacted within the study area. Typically these locations no longer exhibit any visible evidence of their former structure and if they are to be impacted by a wind turbine placement the location would need to be archaeologically assessed to see if there are any archaeological remains.

Table 7: Historic Properties with Potentially Significant Structures According to the 1879 Map of Hay Township in the Illustrated Historical Atlas of the County of Huron

Structure	Lot	Concession	Status
Blacksmith	12	8	No longer standing
School House	8	9	No longer standing
Saw Mill	12	9	No longer standing

Structure	Lot	Concession	Status
Saw Mill	12	9	No longer standing
Cemetery	13	9	Still existing
Church	5	10	No longer standing
Blacksmith	7	10	No longer standing
Church	8 and 9	10	No longer standing
Cemetery	8 and 9	10	Still existing
School House	6	12	Still standing
Cemetery	9	12	Still existing
School House	18	13	No longer standing, in its place is the Zurich United Church and Cemetery as well as St. Boniface Cemetery
Church	15	15	No longer standing
School House	18	15	1897 School House at location now
Saw Mill	33	SB	No longer standing
Saw Mill	12	Lake Road East	No longer standing

1.3.2.2 Stephen Township

Stephen Township (Figure 4) was one of nine townships that were initially part of the Huron Tract and that would become a portion of present-day Huron County (Scott 1966:140). The township was surveyed by John McDonald in 1837 using the 1000-acre section system (McDonald 1835a). The Ausable River hindered settlement in the western portion of the study area until Euro-Canadian settlers interfered with its natural course (Scott 1966:178-179). The soil of this area was generally very sandy and not ideal for farming. It did, however, support numerous pine trees, which in turn attracted many French Canadian lumbermen to the area (Scott 1966:179). After the land was cleared, farming gained a foothold; it remains the main land use within the area today. The first known settler in the township was James Willis (and his wife) who arrived in 1831 (Scott 1966:181). There were many small and a few larger communities established throughout the township over the years. Those that are within the study area will be discussed in greater detail below.

A good resource for identifying potential historic Euro-Canadian archaeological sites in Stephen Township is the 1879 *Illustrated Historical Atlas of the County of Huron* (Belden 1879). The Stephen Township map provides both the names of the landowners and the majority of structures on these properties during the last half of the 19th century (Figure 4). In addition to houses, the structures noted include brickyards, cemeteries, churches, hotels, manufactories, mills and schools. Table 8 lists those lots that hold a structure other than a house, along with the name of the owner. Even though locations are only approximate on these maps, they do indicate the potential for the identification of significant archaeological historic remains that could be impacted within the study area. Typically these locations no longer exhibit any visible evidence of their former structure and if they are to be impacted by a wind turbine placement the location would need to be archaeologically assessed to see if there are any archaeological remains.

Table 8: Historic Properties with Potentially Significant Structures According to the 1879 *Illustrated Historical Atlas of the County of Huron*

Structure	Lot	Concession	Status
Saw Mill	6	8	No longer standing
Church	8	8	No longer standing, plaque at location
Church	20	8	No longer standing
School House	21	8	No longer standing
Cemetery	21	8	No longer remains
School House	11	11	No longer standing
School House	20	14	1885 S.E.C. No.11 at location
Saw Mill	3	14	No longer standing
Saw Mill	11	16	No longer standing
School House	7	17	No longer standing
School House	6	21	No longer standing
Saw Mill	13	22	No longer standing
Casselmans Hall	13	22	No longer standing
Saw Mill	25	North Boundary	No longer standing
Church	1	Sable	No longer standing
Church	24	South Boundary	Still standing
Cemetery	24	South Boundary	Existing
Church	40	South Boundary	Newer church in its place

1.3.2.3 Usborne Township

Usborne Township with its irregular shape was a challenge to survey for the Canada Company surveyors (Belden and Co. 1879:xx; Scott 1966:141; Figure 5). The township has been called “one of the fairest sections” of Ontario (Belden and Co. 1879:xxi). Usborne was one of nine townships that were initially part of the Huron Tract and that would become a portion of present-day Huron County (Scott 1966:140). The township was named for Henry Usborne, an early director of the Canada Company, who was later also influential in the Canadian lumber industry (Ontario GenWeb 2012; Scott 1966:166). Usborne was united with Stephen and Hay Townships, also former Canada Company lands that remained within Huron County, and did not become fully independent until 1852 (Scott 1966:162, 168; cf. Belden and Co. 1979:xx). Prior to 1845, the township was very small and inhabited by less than 300 people. Wheat, turnips, oats, potatoes, peas and hay were the main crops and sheep, pigs and cows were the primary livestock kept (Ontario GenWeb 2012).

The first Euro-Canadian settlement in Usborne occurred south of Exeter along the London Road (Scott 1966:62). William May from England arrived in 1832 and was followed by Thomas Lamb, who settled approximately five kilometres north of Exeter (Belden and Co. 1979:xx). Other settlers began to occupy the Exeter area around this time as well (Wooden 1973:3-4). The hamlet of Devon, approximately five kilometres south of Exeter, developed after John Balkwill from Devonshire, England encouraged a small community to immigrate to Huron

County (Ontario GenWeb 2012; Scott 1966:62, 167). Balkwill was William May's brother-in-law (Scott 1966:167). Balkwill cleared four acres of land along the London Road in 1831, approximately two kilometres south of Exeter, but did not settle; instead he returned to England to persuade his friends and relatives to join him (Scott 1966:62). The resulting influx into the hamlet of Devon occurred between 1833 and 1835 (Ontario GenWeb 2012). The Balkwill house was also known as the Devonshire Inn (Wooden 1973:4). As of 1835, a relative of Balkwill was listed as a constable and agent for the Canada Company for the township (Scott 1966:62, 167; cf. Ontario GenWeb 2012).

A good resource for identifying potential historic Euro-Canadian archaeological sites in Usborne Township is the 1879 *Illustrated Historical Atlas of the County of Huron* (Belden and Co. 1879). The Usborne Township map provides both the names of the landowners and the majority of structures as they were located on properties in the last half of the 19th century (Figure 5). In addition to houses, the structures noted include brickyards, cemeteries, churches, hotels, manufactories, mills and schools. Not all are clearly labelled on the map. Table 9 lists those lots that hold a structure other than a house. Even though locations are only approximate on these maps, they do give an idea of potential for significant archaeological historic remains that could be impacted within the study area. Typically these locations no longer exhibit any visible evidence of their former structure and if they are to be impacted by wind turbine placement, the location would need to be archaeologically assessed to see if there are any archaeological remains.

Table 9: Historic Properties with Potentially Significant Structures According to the 1879 Map of Usborne Township in the *Illustrated Historical Atlas of the County of Huron*

Structure	Lot	Concession	Status
School House	17	3	No longer standing, S.S. No. 5 1901 in its place
Cemetery	16	2	No longer existing, plaque at location
Church and Cemetery	5	3	No longer standing, Eden Church closed 1910, plaque at location
School House	6	3	No longer standing
Church	10	Abutting South Side of Thames Road	No longer standing, foundation possibly visible
Church	10	7	No longer standing
Cemetery	10 and 10	6 and 7	Existing
School House	10	8	No longer standing, S.S. No. 6 1919 in its place
Church	1	8	Still standing, Zion United Church, addition to front 1956
Church	9	10	No longer standing
Church	16	12	No longer standing
School House	15	12	No longer standing
Church and Cemetery	5	Abutting South East Boundary	No longer standing

1.3.3 Summary

Euro-Canadian settlement extends back to the early 19th century within the study area. Each of the townships – Hay, Stephen and Usborne – retains evidence for the historic 19th century road grid and lot system. Larger settlements such as Grand Bend and Exeter, although outside the study area, are still vibrant communities today. Numerous communities within the study area were established in the middle of the 19th century, but have become smaller over time as families relocated to other areas. Their abandoned structures must be carefully considered as they may be significant archaeological resources.

Due to the proximity of the study area to the Ausable River watershed, which functioned as a potable water source and as a transportation route, reference to the establishment of several homesteads, the proximity of the study area to several historic communities, including Dashwood, Grand Bend, Shipka, Khiva, Crediton, Greenway, Corbett, and Mount Carmel, and historic transportation routes, the potential for historic Euro-Canadian resources was judged to be moderate to high.

2.0 FIELD METHODS

Approximately 99.08% of the project area for this report to be impacted by the wind farm development was subject to pedestrian survey, while the remaining 0.92 % was subject to test pitting. During The Stage 2 field assessment for the NEEC Goshen Wind Energy Centre was conducted under the PIF 366-017-2012 issued to Erin Wilson, M.A., by the MTCS. This phase of Stage 2 archaeological assessment took place over 5 days from November 13, 2012 and December 10, 2012. Table 2 presents weather conditions for this portion of the Stage 2 survey. At no time were the field or weather conditions detrimental to the recovery of archaeological material and visibility was excellent. The study area this reporting encompasses is approximately 19.5 hectares and mostly consists of ploughed, well-weathered agricultural fields.

The Goshen Wind Energy Centre study area is characterized as ploughed and well-weathered agricultural fields (Photos 1 - 4, and 8 - 10), and grassy/ unploughed pasture (Photos 5 - 7). As per the *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6, Standard 1a, Government of Ontario 2011), Photos 1 to 10 illustrate a representative sample of parts of the study area that confirm conditions met the requirements for Stage 2 archaeological assessment. Photo locations and photograph directions are provided in Figure 6.

The Stage 2 archaeological assessment was conducted using pedestrian survey at five-metre intervals in the agricultural fields (Photos 1, 2, and 8 through 10) and test pit survey at five-metre intervals in the grassy and pasture lands that have not undergone ploughing in the last one to two decades (Photo 3, 5, and 7. Each test pit was approximately 30 centimetres in diameter and excavated five centimetres into sterile subsoil (Photos 4 and 6), and was examined for stratigraphy, cultural features, or evidence of fill. All soil matrix was screened through six millimetre mesh hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pit.

When archaeological resources were identified, the pedestrian survey transect was decreased to a one metre interval and spanned a minimal 20 metre radius around the artifact. This approach established if the artifact was an isolated find or if it was part of a larger artifact scatter. If the artifact was part of a large scatter, the one metre interval was continued until the full extent of the scatter was defined. Should test pits yielded archaeological material, eight additional test pits would be excavated within a five metre radius of the original positive test pit and a 1 x 1 metre test unit would be placed on top of this positive test pit in order to determine the extent of the site (Government of Ontario 2011).

All formal and diagnostic artifact types were collected and a UTM reading was taken using a Trimble Recon handheld GPS unit with a Holux GR-271 CF GPS Receiver, using the North American Datum (NAD) 83, with a minimal accuracy of two metres; or a Garmin eTrex Legend handheld GPS unit using the North American Datum (NAD) 83, with a minimal accuracy of five metres. UTM coordinates were recorded for a total of one archaeological site. This is presented in Supplement B. Figure 6 illustrates the Stage 2 field assessment methods while Supplement A illustrates the Stage 2 field assessment methods and results for the study area.

3.0 STAGE 2 RECORD OF FINDS

The Stage 2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 9 below and the Stage 2 archaeological assessment results are discussed here. Golder's Additional Stage 2 survey of the proposed Goshen Wind Energy Centre properties identified a total of one pre-contact Aboriginal location. Supplement A, which illustrates the Stage 2 survey methods and results, and Supplement B, which lists the UTM coordinates for this location, are included as supplementary documents to this report.

Table 10: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
Field Notes	Golder offices in London and Mississauga	In original field book and photocopied in project file
Hand Drawn Maps	Golder offices in London and Mississauga	In original field book and photocopied in project file
Maps Provided by Client	Golder offices in London and Mississauga	Hard and digital copies in project file
Digital Photographs	Golder offices in Mississauga	Stored digitally in project file

All of the material culture collected during the NEEC Goshen Wind Energy Centre Stage 2 survey is contained in one bag. This bag will be temporarily housed at Golder's Mississauga office until formal arrangements can be made for their transfer to an MTCS collections facility.

3.1 Location 63

The Stage 2 test pit survey of the proposed wind energy components on property GSH2767 (Supplement A: Figure 6-02), resulted in the identification of Location 63. This pre-contact Aboriginal site, identified on December 10, 2012, consists of a single Kettle Point chert biface (Plate 1). As detailed in Section 2.0, survey intervals were intensified to one metre for a 20 metre radius surrounding this find, but no additional artifacts were identified.

3.1.1 Artifact Catalogue

Table 10 presents the Stage 2 artifact catalogue for Location 1.

Table 11: Location 63 Artifact Catalogue

Cat. #	Context	Depth	Artifact	Freq.	Comments
1	surface collection	0 cm	biface	1	Kettle Point chert

4.0 ANALYSIS AND CONCLUSIONS

The Additional Stage 2 archaeological assessment of the Goshen Wind Energy Centre resulted in the identification of 1 pre-contact Aboriginal archaeological site, Location 63. An analysis of the location is provided below, indicating whether further assessment is recommended for each site. At the end of this section, a preliminary indication is provided as to whether this site may require Stage 4 archaeological assessment.

4.1 Location 63

Location 63 consists of a single pre-contact Aboriginal lithic biface. This biface is manufactured from Kettle Point chert, and is temporally non-diagnostic except for the fact that it was produced by pre-contact Aboriginal people. The archaeological survey conducted has resulted in the documentation of a spatially discrete pre-contact Aboriginal location and adds to the body of knowledge concerning land use by pre-contact Aboriginal peoples in Ontario. However, given the limited size of the artifact collection, the cultural heritage value or interest of the site is considered to be sufficiently documented.

4.2 Preliminary Indication of Sites Possibly Requiring Stage 4 Archaeological Assessment

This preliminary indication of whether this site could eventually be recommended for Stage 4 archaeological assessment is required under the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) Section 7.8.3 Standard 2c. Given that the site consists of an isolated, non-diagnostive biface manufactured from Kettle Point chert, no recommendation for Stage 4 archaeological assessment is made.

5.0 RECOMMENDATIONS

The Stage 2 archaeological assessment of the NEEC Goshen Wind Energy Centre resulted in the identification of 1 pre-contact Aboriginal archaeological site. Recommendations for this location are found below.

5.1 Location 63

The Stage 2 assessment of Location 63 resulted in the recovery of one pre-contact Aboriginal biface. Despite the intensification of survey intervals no additional artifacts were recovered. Given that the cultural heritage value or interest of the site has been sufficiently documented, **no further archaeological assessment is recommended for Location 63**.

5.2 Summary

The above recommendation determined that Location 63 does not require further Stage 3 assessment. This site has been sufficiently documented.

The Ministry of Tourism, Culture and Sport is asked to accept this report into the Ontario Public Register of Archaeological Reports. Additional archaeological assessment is still required; hence the archaeological sites recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed, except by a person holding an archaeological licence.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ontario Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, R.S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

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8.0 IMAGES

Plate 1: Locations 63, Pre-Contact Aboriginal biface, actual size

Photo 1: Stage 2, pedestrian survey field conditiona, survey cooridor from east part of corridor, facing west, GSH2838, November 13, 2012.

Photo 2: Stage 2, pedestrian survey at five metre intervals, facing east, to end of corridor GSH2767, November 13, 2012.

Photo 3: Stage 2, pedestrian survey at five metre intervals, facing northeast, GSH1390, December 10, 2012.

Photo 4: Stage 2, test pit survey at five metre intervals, facing northwest, GSH1493, December 7, 2012.

Photo 5: Stage 2, test pit survey at five metre intervals, facing east, GSH2767, November 22, 2012.

Photo 6: Stage 2, excavated test pit, facing down, GSH2767, November 22, 2012.

Photo 7: Stage 2, test pit survey at five metre intervals, facing east, GSH2838, December 4, 2012.

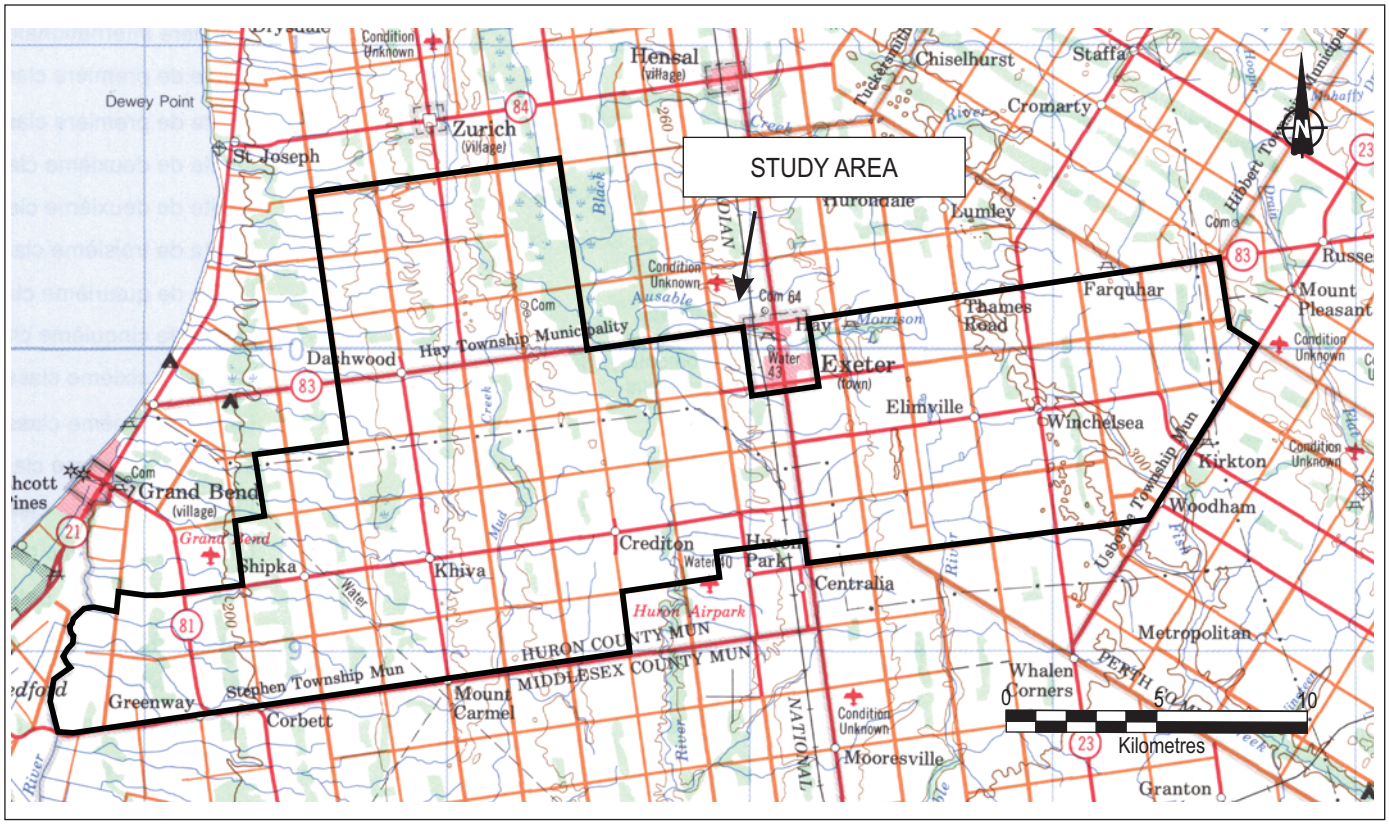
Photo 8: Stage 2, pedestrian survey at five metre intervals, facing north, GSH1505, December 7, 2012.

Photo 9: Stage 2, pedestrian survey at five metre intervals, facing northeast, GSH2028, December 10, 2012.

Photo 10: Stage 2, pedestrian survey at five metre intervals, facing east, GSH1757, December 10, 2012.

9.0 MAPS

All maps will follow on succeeding pages.



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STUDY AREA

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NOTES

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ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 2 ARCHAEOLOGICAL ASSESSMENT
GOSHEN WIND ENERGY CENTRE
HURON COUNTY, ONTARIO

TITLE

LOCATION OF THE STUDY AREA

Golder Associates

PROJECT No.	10-1151-0201-2000-2200		FILE No. 1011510201-2000-2200-R01001
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CADD	SWJM	MAY 15/12	
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FIGURE 1

LEGEND

Treaty Boundary

Approximate Location of Study Area

Treaty No. 381, Volume 3 (May 9th, 1781): Mississauga and Chippewa
Crawford's Purchase (Oct. 9th, 1783): Algonquin and Iroquois
Crawford's Purchase (Oct. 9th, 1783): Mississauga
Crawford's Purchases (1784, 1787, 1788): Mississauga
John Collins' Purchase (1785): Chippewa
Treaty No. 2 (May 19th, 1790): Odawa, Chippewa, Pottawatomi, and Huron
Treaty No. 3 (Dec. 2nd, 1792): Mississauga
Haldimand Tract: from the Crown to the Mohawk (1793)
Tyendinaga: from the Crown to the Mohawk (1793)
Treaty No. 3¼ (Oct. 24th, 1795): from the Crown to Joseph Brant
Treaty No. 5 (May 22nd, 1798): Chippewa
Treaty No. 6 (Sep. 7th, 1796): Chippewa
Treaty No. 7 (Sep. 7th, 1796): Chippewa
Treaty No. 13 (Aug. 1st, 1805): Mississauga
Treaty No. 13A (Aug. 2nd, 1805): Mississauga
Treaty No. 16 (Nov. 18th, 1815): Chippewa
Treaty No. 18 (Oct. 17th, 1818): Chippewa
Treaty No. 19 (Oct. 28th, 1818): Chippewa
Treaty No. 20 (Nov. 5th, 1818): Chippewa
Treaty No. 21 (Mar. 9th, 1819): Chippewa
Treaty No. 27 (May 31st, 1819): Mississauga
Treaty No. 27½ (Apr. 25th, 1825): Ojibwa and Chippewa
Treaty No. 35 (Aug. 13th, 1833): Wyandot or Huron
Treaty No. 45 (Aug. 9th, 1836): Chippewa and Odawa
Treaty No. 45½ (Aug. 9th, 1836): Saugeen
Treaty No. 57 (Jun. 1st, 1847): Iroquois of St. Regis
Treaty No. 61, Robinson Treaty (Sep. 9th, 1850): Ojibwa
Treaty No. 72 (Oct. 30th, 1854): Chippewa
Treaty No. 82 (Feb. 9th, 1857): Chippewa
Williams Treaty (Oct. 31st and Nov. 15th, 1923): Chippewa and Mississauga
Williams Treaty (Oct. 31st, 1923): Chippewa

NOTES

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REFERENCE

1. Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
2. Treaty Boundary - Approximate Treaty Boundary was created by Golder Associates Ltd. Jan. 2009.
MORRIS, J.L. 1943. Indians Of Ontario. Reprinted 1964. Department Of Lands And Forests, Toronto.
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GOSHEN WIND ENERGY CENTRE
HURON COUNTY, ONTARIO

TITLE
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Golder Associates

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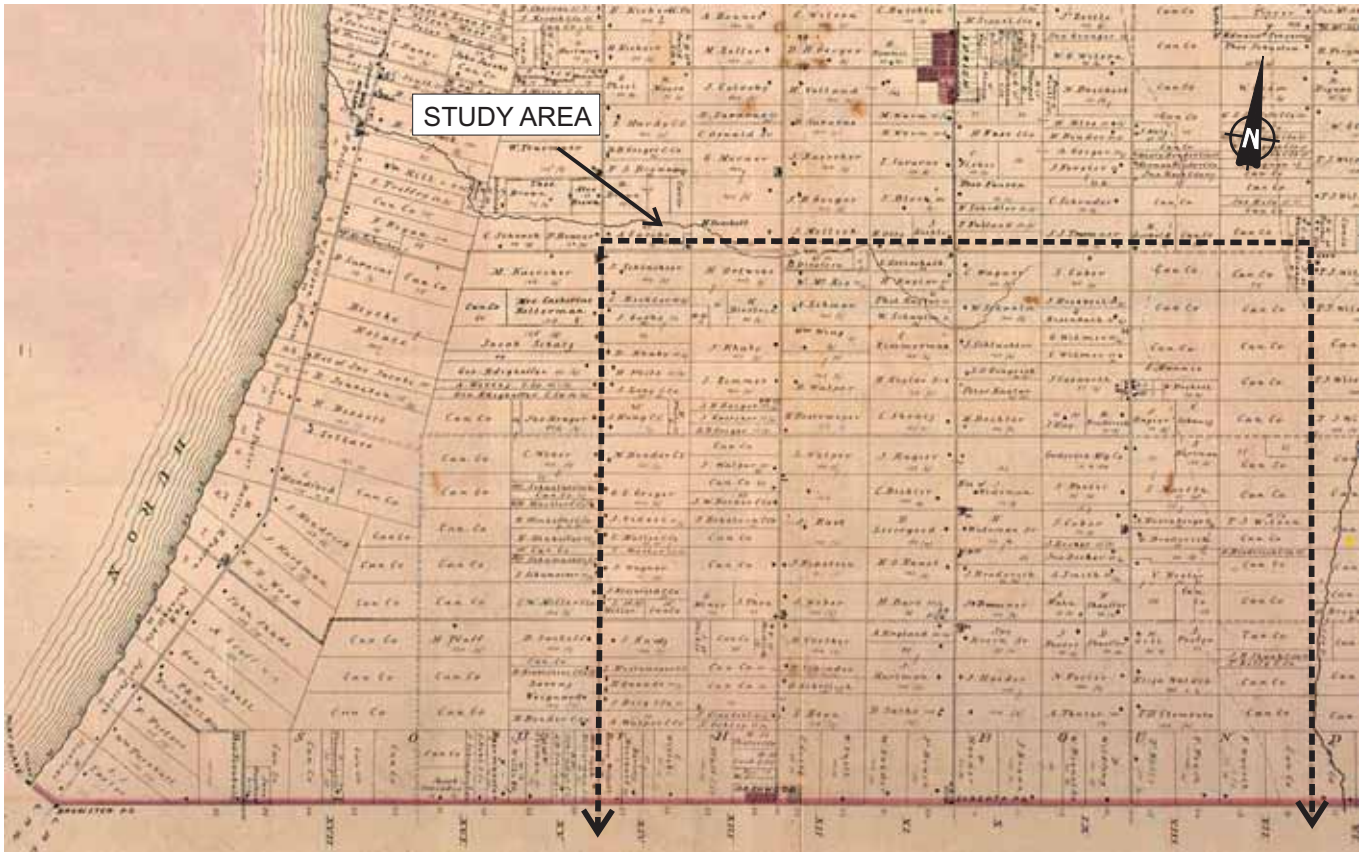

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TITLE **A PORTION OF THE STUDY AREA ON A PORTION OF THE 1879 MAP OF HAY TOWNSHIP**

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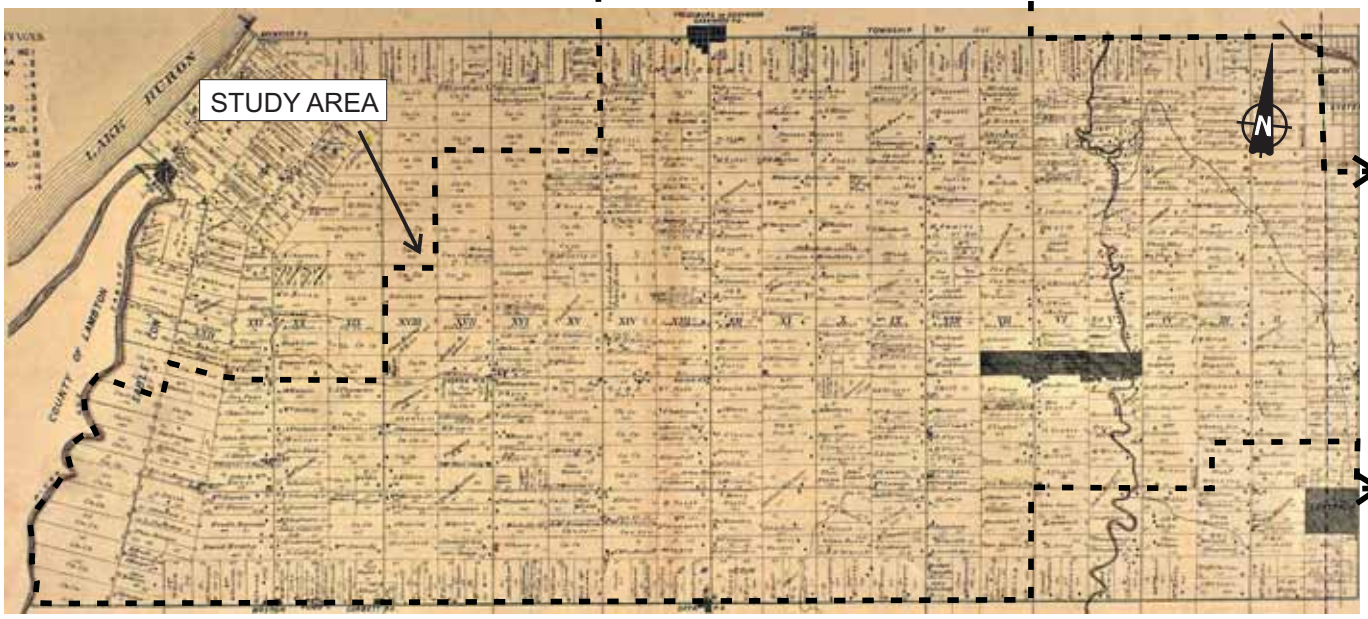

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GOSHEN WIND ENERGY CENTRE
HURON COUNTY, ONTARIO

TITLE
A PORTION OF THE STUDY AREA ON A PORTION OF THE 1879 MAP OF STEPHEN TOWNSHIP

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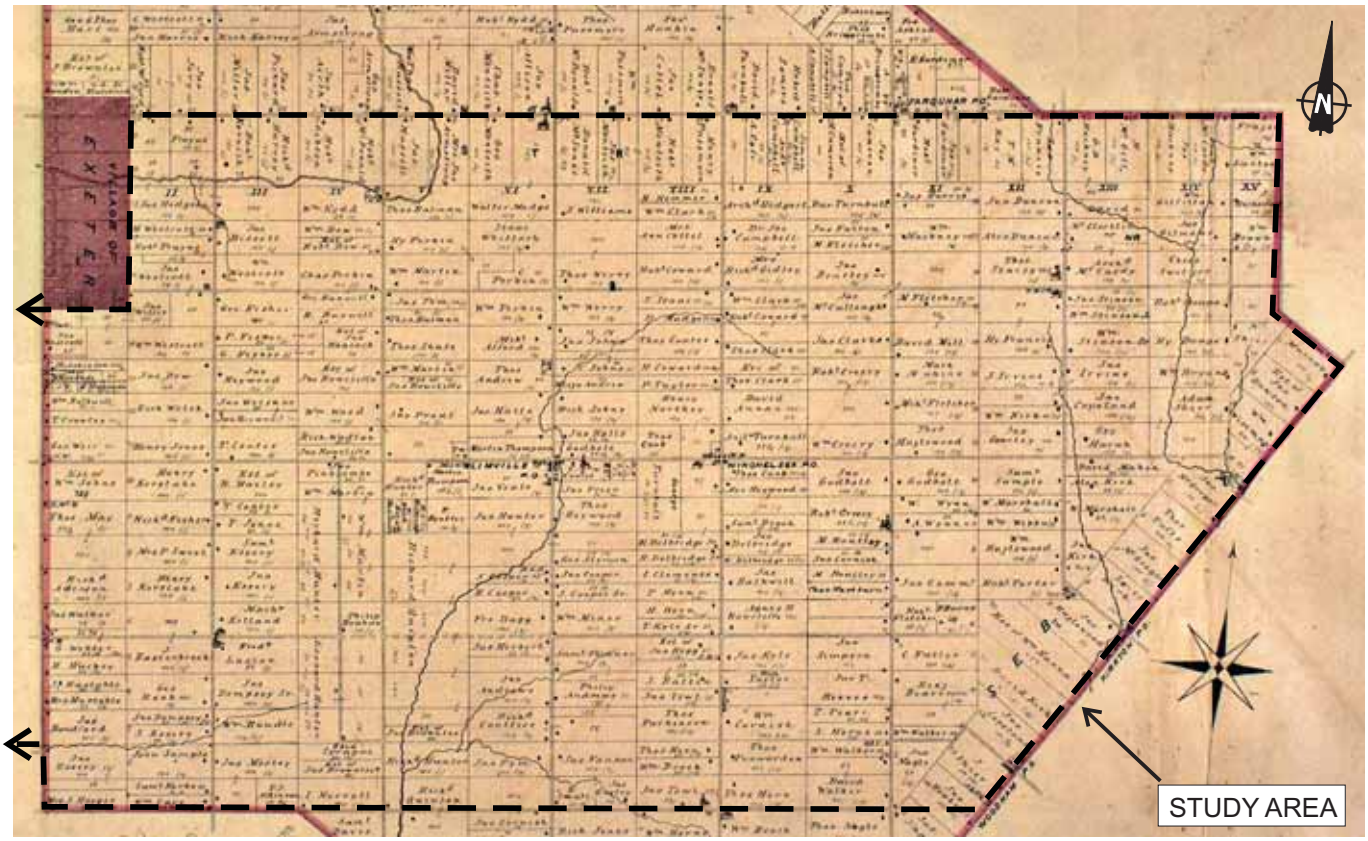

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TITLE
A PORTION OF THE STUDY AREA ON A PORTION OF THE 1879 MAP OF USBORNE TOWNSHIP

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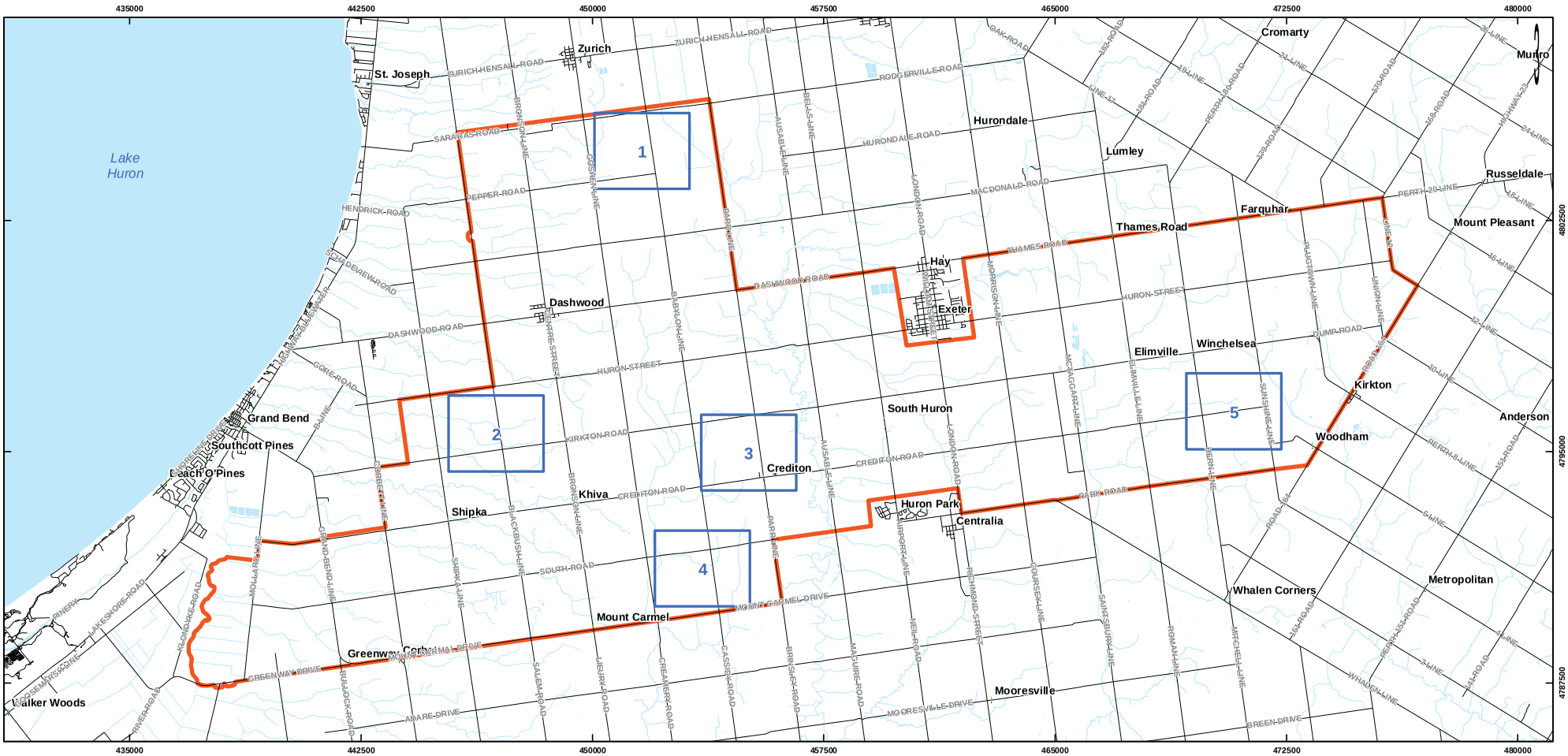

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- Study Area
- Map Extent

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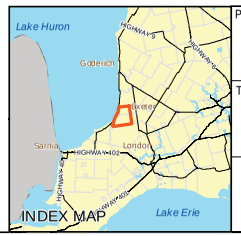

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STAGE 2 ARCHAEOLOGICAL ASSESSMENT
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HURON COUNTY, ONTARIO

TITLE
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Mississauga, Ontario

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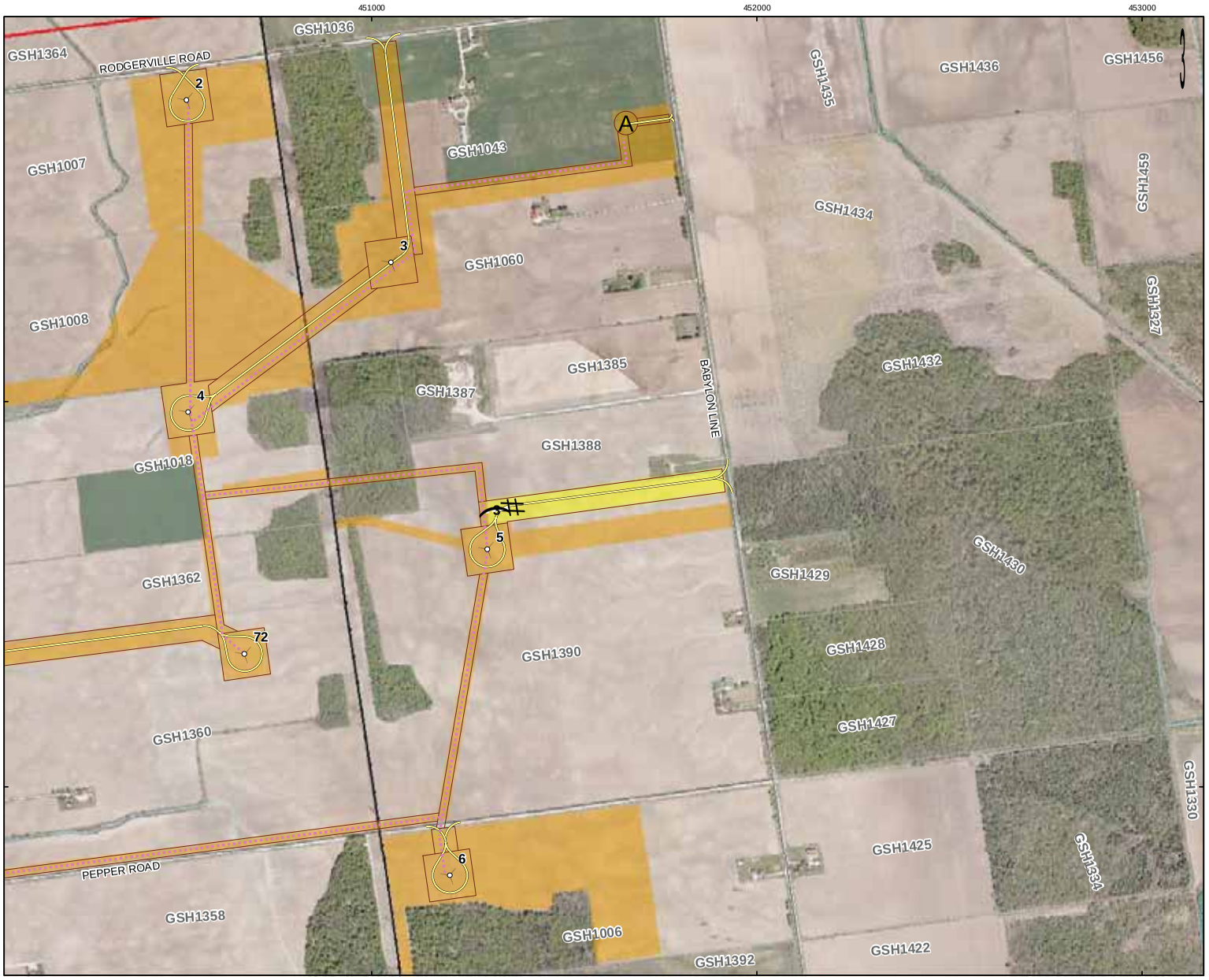

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- Construction Disturbance Area
- Utility Line
- Roads
- Railways
- Watercourse
- Substation\Laydown Area
- Land Parcel
- Waterbody
- Wetland
- Project Area
- Stage 2 Pedestrian Survey at 5m Intervals (This Report)
- Stage 2 Test Pit Survey at 5m Intervals (This Report)
- Stage 2 Previously Assessed
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HURON COUNTY, ONTARIO

TITLE: STAGE 2 SURVEY METHODS

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Mississauga, Ontario

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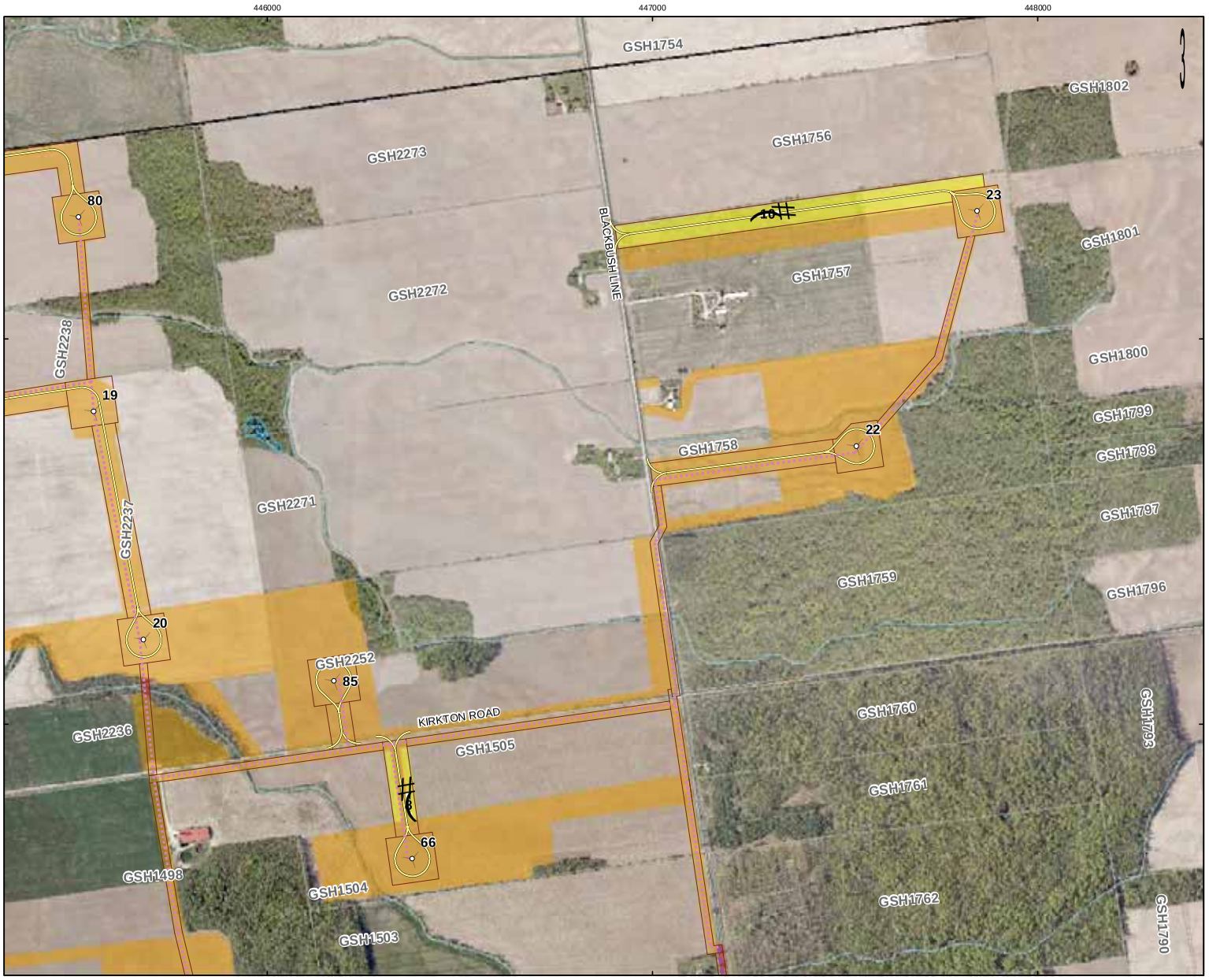

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- Stage 2 Test Pit Survey at 5m Intervals (This Report)
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GOSHEN WIND ENERGY CENTRE
HURON COUNTY, ONTARIO

TITLE: STAGE 2 SURVEY METHODS

Golder Associates
Mississauga, Ontario

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REVIEW	CP	17 Dec. 2012		

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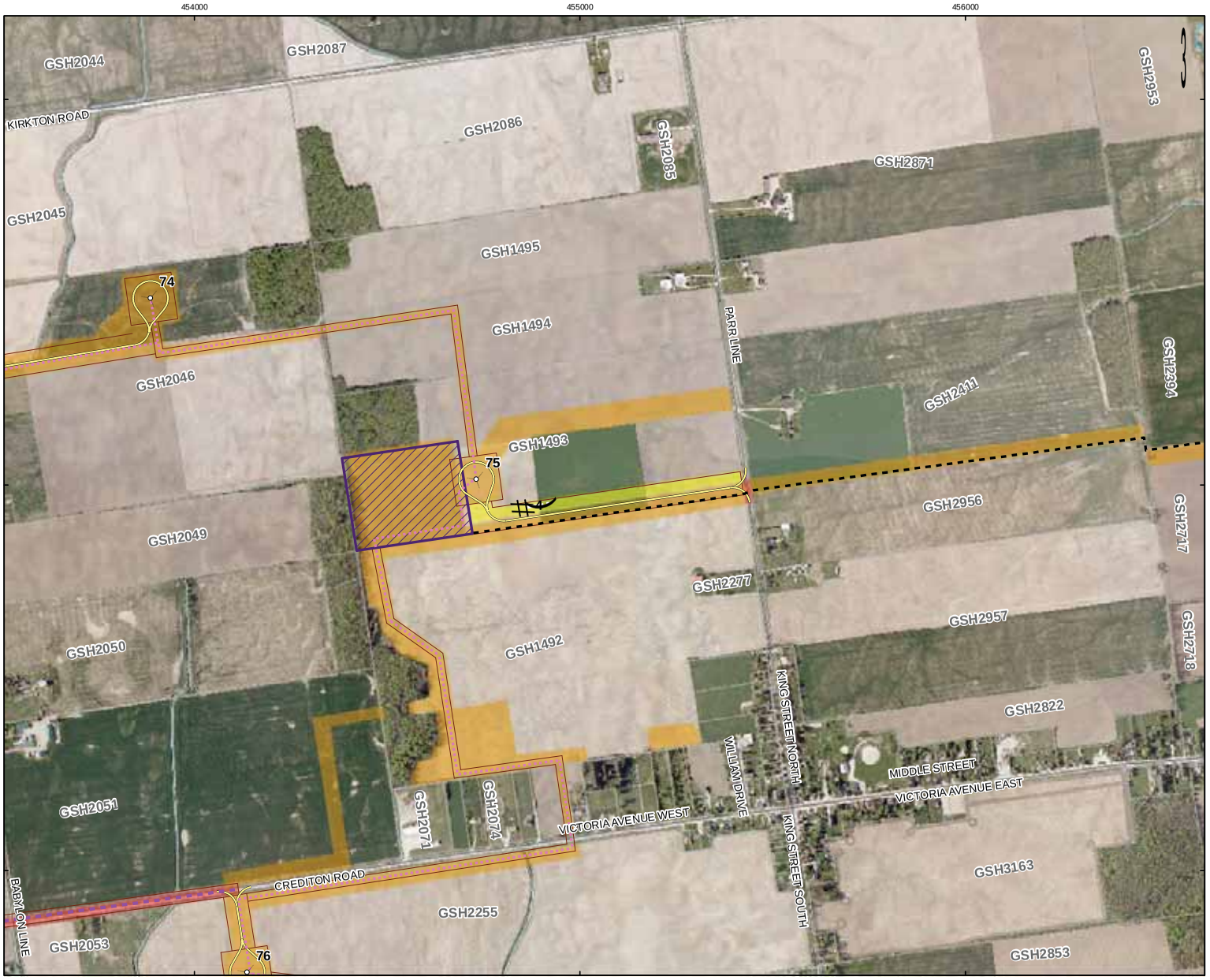

LEGEND

- Photographic Direction
- Turbine Layout
- MET Location
- Transmission Line
- Collector Cable - Private Land
- Collector Cable - Right of Way
- Access Road
- Construction Disturbance Area
- Utility Line
- Roads
- Railways
- Watercourse
- Substation\Laydown Area
- Land Parcel
- Waterbody
- Wetland
- Project Area
- Stage 2 Pedestrian Survey at 5m Intervals (This Report)
- Stage 2 Test Pit Survey at 5m Intervals (This Report)
- Stage 2 Previously Assessed
- Disturbed Area - Not Assessed

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
Produced by Golder Associates Ltd under licence from
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Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17N

100 50 0 100 200 300 400
Scale 1:10,000 Metres

PROJECT STAGE 2 ARCHAEOLOGICAL ASSESSMENT
GOSHEN WIND ENERGY CENTRE
HURON COUNTY, ONTARIO

TITLE
STAGE 2 SURVEY METHODS

Golder Associates
Mississauga, Ontario

PROJECT NO. 10-1151-0201			SCALE AS SHOWN	REV. 0.0
DESIGN	JMC	2 Aug. 2012		
GIS	BC	17 Dec. 2012		
CHECK	SN-S	17 Dec. 2012		
REVIEW	CP	17 Dec. 2012		

FIGURE 6-03

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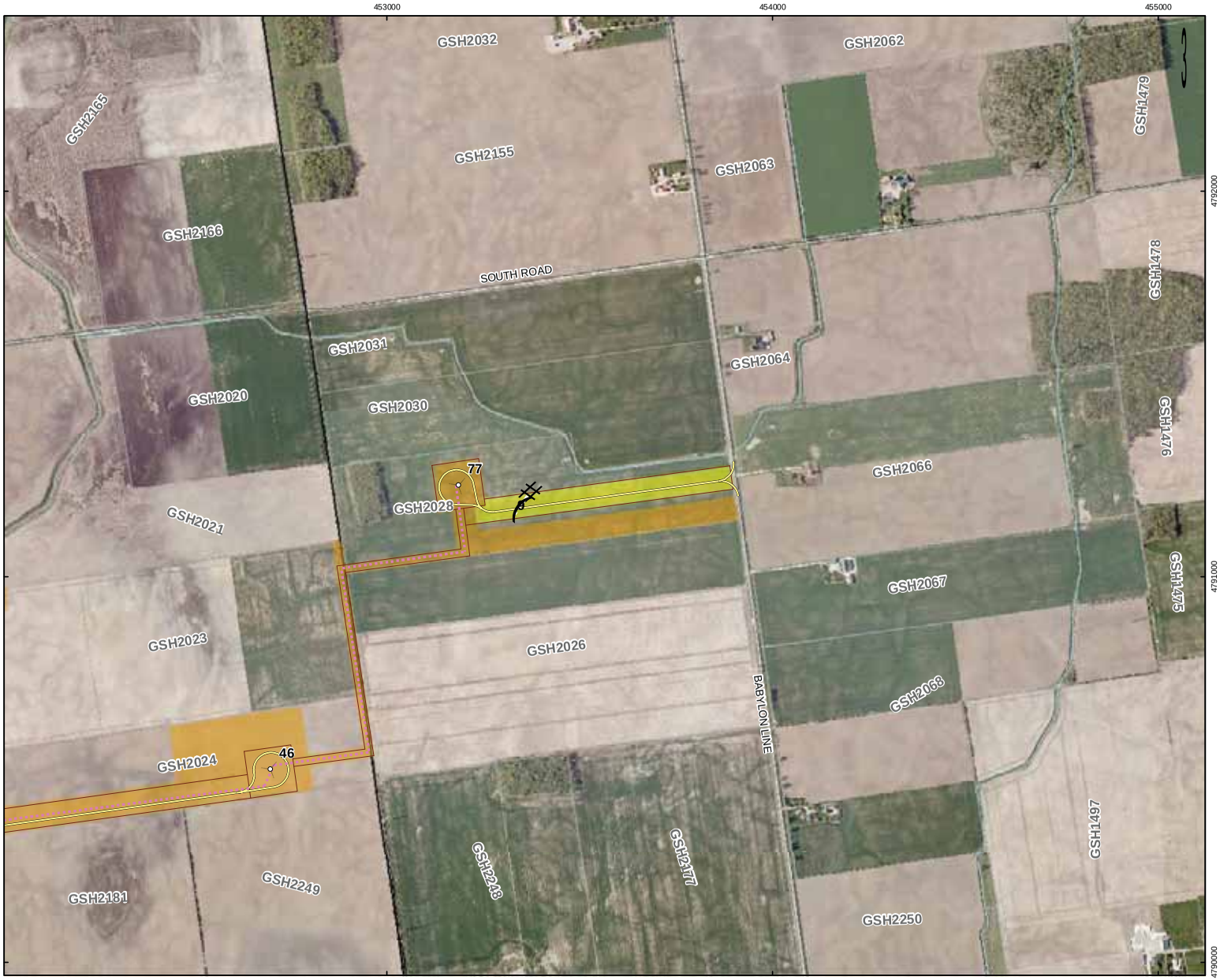

LEGEND

- Photographic Direction
- Turbine Layout
- MET Location
- Transmission Line
- Collector Cable - Private Land
- Collector Cable - Right of Way
- Access Road
- Construction Disturbance Area
- Utility Line
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- Wetland
- Project Area
- Stage 2 Pedestrian Survey at 5m Intervals (This Report)
- Stage 2 Test Pit Survey at 5m Intervals (This Report)
- Stage 2 Previously Assessed
- Disturbed Area - Not Assessed

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
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100 50 0 100 200 300 400
Scale 1:10,000 Metres

PROJECT STAGE 2 ARCHAEOLOGICAL ASSESSMENT
GOSHEN WIND ENERGY CENTRE
HURON COUNTY, ONTARIO

TITLE
STAGE 2 SURVEY METHODS

Golder Associates
Mississauga, Ontario

PROJECT NO. 10-1151-0201			SCALE AS SHOWN	REV. 0.0
DESIGN	JMC	2 Aug. 2012	FIGURE 6-04
GIS	BC	17 Dec. 2012	
CHECK	SN-S	17 Dec. 2012	
REVIEW	CP	17 Dec. 2012	

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LEGEND

- Photographic Direction
- Turbine Layout
- MET Location
- Transmission Line
- Collector Cable - Private Land
- Collector Cable - Right of Way
- Access Road
- Construction Disturbance Area
- Utility Line
- Roads
- Railways
- Watercourse
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- Project Area
- Stage 2 Pedestrian Survey at 5m Intervals (This Report)
- Stage 2 Test Pit Survey at 5m Intervals (This Report)
- Stage 2 Previously Assessed
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REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
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Scale 1:10,000 Metres

PROJECT STAGE 2 ARCHAEOLOGICAL ASSESSMENT
GOSHEN WIND ENERGY CENTRE
HURON COUNTY, ONTARIO

TITLE
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PROJECT NO. 10-1151-0201			SCALE AS SHOWN	REV. 0.0
DESIGN	JMC	2 Aug. 2012		
GIS	BC	17 Dec. 2012		
CHECK	SN-S	17 Dec. 2012		
REVIEW	CP	17 Dec. 2012		

FIGURE 6-05

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10.0 IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Golder has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the archaeological profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

This report has been prepared for the specific site, design objective, developments and purpose described to Golder, by AECOM Canada Ltd... The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

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Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project.

Special risks occur whenever archaeological investigations are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain archaeological resources. The sampling strategies incorporated in this study comply with those identified in the Ministry of Tourism and Culture's 1993 *Archaeological Assessment Technical Guidelines (Stages 1-3 & Reporting Format)*, but whenever possible the 2011 Ministry of Tourism and Culture's *Standards and Guidelines for Consultant Archaeologists* were employed as best practices.

Report Signature Page

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EW/CAP/gf

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