



June 2011 FINAL

HERITAGE ASSESSMENT REPORT VERSION 3

NextEra Energy Canada, ULC
Summerhaven Wind Energy Centre
Application for a Renewable Energy Approval
Regional Municipality of Haldimand-Norfolk
Haldimand and Norfolk Counties, Ontario

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REPORT

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Inventory of Cultural Features at the Project Location

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1.0 INTRODUCTION

This Heritage Assessment Report (the Report) has been prepared to provide information to the public, Aboriginal communities, municipalities and local authorities regarding the proposed Summerhaven Wind Energy Centre (the Project). The Report is a required component of an Application for a Renewable Energy Approval (REA application) under Ontario Regulation (O.Reg.) 359/09¹ made under the *Environmental Protection Act (EPA)*.

Additional information about the Project can currently be found in the Construction Plan Report (Golder, 2011a), Design and Operations Report (Golder, 2011b), Decommissioning Plan Report (Golder, 2011c), and Project Description Report (Golder, 2011d). As it is broadly applicable to all of the REA Reports, and to avoid redundancy, the Site Plan diagram has been provided as a stand-alone document (the Site Plan Report).

Technical studies associated with the REA Application requirements were initiated in 2007 and extended into 2010. Additional information about the Project and results of technical studies and assessments of negative environmental effects are available in the following reports:

- Wind Turbine Specifications Report (Golder, 2011e);
- Natural Heritage Report (Golder, 2011f);
- Stage 1 Archaeological Assessment Report (Golder, 2010a);
- Heritage Assessment Report (this Report);
- Noise Study Report (Golder, 2011g);
- Water Assessment Report (Golder, 2011h);
- Site Plan Report (Golder, 2011i); and
- Consultation Report (Golder, 2011j).

Stage 2, Stage 3 and Stage 4 Archaeological Assessment Reports are not required as part of the REA Application for this Project (Ministry of Energy and Infrastructure, 2010) and are typically not publically available documents due to the confidential nature of the content. Stage 2, Stage 3 and Stage 4 Archaeological Assessment Reports will however be made available to the Ministry of Tourism and Culture (MTC) for review and their issuance of a Comment Letter in advance of construction, and hard copies of this information will be provided to First Nations communities with an interest in the Project, as identified by the Director, and as agreed to by individual First Nations communities.

¹ As amended by O. Reg. 521/10 which came into force on January 1, 2011.



1.1 Project Summary

The Project consists of the site preparation, construction, operation, and decommissioning of 59 wind turbine generators with a total installed nameplate capacity of 131.04 MW. The Project will be owned and operated by NextEra Energy Canada, ULC (NextEra Energy Canada) and will be located in the vicinity of Nanticoke, Haldimand County, Ontario (Figure 1). The Project lifespan from obtaining the REA Approval to the end of Decommissioning is estimated to be 27 years.

Turbine towers will be constructed on a concrete foundation. Underground and overhead cables will interconnect individual turbines and eventually connect to the substation (see Site Plan Report). The operation of the wind turbines will be monitored remotely from a Project operations building located near the substation. Once tested and commissioned, the turbines will require scheduled visits for maintenance during the Operations Phase. Maintenance will include complete inspection of the turbine's components and the tower, functionality testing, replacement of worn parts, bolt tightening and lubrication of moving parts. Routine preventative maintenance activities will be completed as per manufacturer requirements.

The Study Area (Figure 1) encompasses approximately 16,572 hectares of privately owned land parcels. Land use is predominantly cash-crop agriculture (e.g., farming for corn, soybeans, wheat), although some areas are pasture (predominantly for cattle) and several wooded areas are present. Selkirk Provincial Park and Haldimand Conservation Area are located along the shore of Lake Erie south of the Project Area. The Grand River runs northeast of the Project Area and an Imperial Oil refinery is directly southwest.

The location of the Project was predicated by interest expressed by local landowners. Haldimand County is also attractive for wind development due to its proximity to Lake Erie, which results in favourable wind conditions for power production.

G:\Projects\2010\10-1151-0035_NextEra\Naticoke\Wind\GIS\MapDocs\Draft\Report\ProjectDescription\ProjectLocationMap.mxd



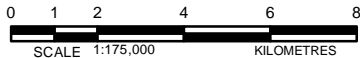
LEGEND

- Community
- Highway
- Major Road
- Local Road
- Water
- Project Area
- Project Location
- Wooded Area
- Haldimand Tract
- Provincial Park
- Conservation Area
- Municipal Boundary



REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2008.4
 Produced by Golder Associates Ltd under licence from
 Ontario Ministry of Natural Resources, © Queens Printer 2009
 Projection: UTM Datum: NAD 83 Coordinate System: UTM Zone 17



PROJECT		Summerhaven Wind Energy Centre		
TITLE		PROJECT AREA		
<p>Golder Associates Mississauga, Ontario</p>	PROJECT NO.	10-1151-0035	SCALE AS SHOWN	REV.
	DESIGN	PP	7 Apr. 2010	
	GIS	BC	26 Sep. 2010	
	CHECK	PP	26 Sep. 2010	
	REVIEW	JW	26 Sep. 2010	
			FIGURE: 1	



2.0 METHODOLOGY

For the purposes of this Heritage Assessment Report the term **Study Area** is used to reference the specified area of land that surrounds the Project (Figure 1) and **Project Location** refers to the participating parcels within the Study Area where project components are proposed to be located. The limits of the Study Area were determined during the early stages of the project in order to encompass a 300 m buffer from the edge of all proposed project components. This buffer was extended to the nearest roads and at a few locations to the nearest lot lines in order to allow for flexibility and potential changes in layout as the project progressed (Figure 1).

Project Components are defined as all infrastructure related to the wind farm layout, including the wind turbines, access roads, service roads, substations, transmission lines, and collector cables. Generally, project components could impact the study area during their construction through the potential disturbance of heritage resources. In this report, aboveground collector cables are not considered as project components in a number of cases since they will be located on municipal land using existing hydro poles. These aboveground collector cables will not incur any additional impacts, as evidenced by the fact that these cables will run in front of non-participating parcels as well as participating parcels and only the municipality will be consulted regarding the placement of these cables. This consideration regarding aboveground collector cables will be highlighted below in the specific instances where they arise.

2.1 Study Process

For this Heritage Assessment Report Golder Associates undertook the following tasks:

- the production of a land use history of the Study Area through the use of historical archival research and a review of historic mapping;
- the identification of protected properties, built heritage resources and cultural heritage landscapes through a windshield survey, public consultation and background research;
- the creation of an inventory of all built heritage resources at the Project Location dating to greater than 40 years; and,
- an evaluation of the inventory of built heritage resources according to Ontario Regulation 9/06 *Criteria for Determining Cultural Heritage Value or Interest* to determine their significance.

The Heritage Assessment was based on a researched land use history of the study area. This research provided a framework within which to evaluate the relevance of historic structures and landscapes. Field surveys were conducted on June 24, July 7, July 9, September 8 and September 18, 2010. Given that the potential wind turbines and associated infrastructure are to be localized on chosen participating parcels within the study area (Project Location), the cultural features that are located on those parcels were photographed and evaluated according to Ontario Regulation 9/06. This material appears in Section 4.0. Access to the properties was not available as part of this work and all identification was undertaken from public road allowances.



2.2 Regulatory Framework

In 2009, the Government of Ontario passed the *Green Energy and Green Economy Act* as a method of integrating more renewable energy into the Province's power grid and increasing energy conservation and sustainability (Government of Ontario, 2009; MOE, 2009). Regulation 359/09 of the *Environmental Protection Act* (EPA) defines the requirements for a proposed Renewable Energy project to achieve Renewable Energy Approval (REA). The Regulation integrates requirements under the *Environmental Assessment Act* within a new regulation under the EPA. This Built Heritage and Cultural Landscape Study for the proposed Summerhaven Wind Energy Centre was undertaken in order to meet the REA requirements as outlined in Ontario Regulation 359/09, which is part of the EPA.

This assessment addresses built heritage and cultural heritage landscape resources as required by Reg. 359/09 under part V.0.1 of the *Environmental Assessment Act*; the *Provincial Policy Statement*; *Ontario Regulation 9/06* under the *Ontario Heritage Act*; and the County of Haldimand *Official Plan*. Following are the specific sections of these documents that pertain to cultural heritage.

2.2.1 Ontario Regulation 359/09

Under Reg. 359/09, a heritage resource

means real property that is of cultural heritage value or interest and may include a building, structure, landscape or other feature of real property.

Under section 19(1) of Reg. 359/09, a proponent of a proposed renewable energy project must determine whether the project location is on a protected property, which includes:

- A property that is the subject of an agreement, covenant or easement entered into under clause 10 (1) (b) of the *Ontario Heritage Act*.
- A property in respect of which a notice of intention to designate the property to be of cultural heritage value or interest has been given in accordance with section 29 of the *Ontario Heritage Act*.
- A property designated by a municipal by-law made under section 29 of the *Ontario Heritage Act* as a property of cultural heritage value or interest.
- A property designated by order of the Minister of Tourism and Culture made under section 34.5 of the *Ontario Heritage Act* as a property of cultural heritage value or interest of provincial significance.
- A property in respect of which a notice of intention to designate the property as property of cultural heritage value or interest of provincial significance has been given in accordance with section 34.6 of the *Ontario Heritage Act*.
- A property that is the subject of an easement or a covenant entered into under section 37 of the *Ontario Heritage Act*.



- A property that is part of an area designated by a municipal by-law made under section 41 of the *Ontario Heritage Act* as a heritage conservation district.
- A property designated as a historic site under Regulation 880 of the Revised Regulations of Ontario, 1990 (Historic Sites) made under the *Ontario Heritage Act*.

Under section 20(1) of Reg. 359/09, a proponent of a proposed renewable energy project must also consider whether engaging in the project may have an impact on a heritage resource at the property location not listed in section 19(1) or a property listed in section 19(1) that abuts the parcel of land on which the property location is situated.

If the resulting answer is that the proposed renewable energy project may have an impact on a heritage resource as documented in section 19(1) and 20(1), according to section 23(1) of Reg. 359/09 the proponent shall:

- (a) *conduct a heritage assessment consisting of,*
 - i) *an evaluation of whether there are any heritage resources at the project location, applying the criteria set out in Ontario Regulation 9/06 (Criteria for Determining Cultural Heritage Value or Interest) made under the Ontario Heritage Act, and*
 - ii) *if any heritage resources are identified as a result of the evaluation under subclause (i), an evaluation of any impact of the renewable energy project on the heritage resources and proposed measures to avoid, eliminate or mitigate the impact, which may include a heritage conservation plan;*

The Heritage Assessment report as well as any written comments provided by the Ministry of Tourism and Culture in respect of the heritage assessment will be submitted as part of an application for the issue of a renewable energy approval.

2.2.2 Ontario Regulation 9/06 made under the Ontario Heritage Act

The criteria for determining cultural heritage value or interest are outlined under Regulation 9/06 as follows:

1. (1) The criteria set out in subsection (2) are prescribed for the purposes of clause 29 (1) (a) of the Act. O. Reg. 9/06, s. 1 (1).
- (2) A property may be designated under section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:
 1. The property has design value or physical value because it,
 - i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,
 - ii. displays a high degree of craftsmanship or artistic merit, or
 - iii. demonstrates a high degree of technical or scientific achievement.



2. The property has historical value or associative value because it,
 - i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,
 - ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or
 - iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.
3. The property has contextual value because it,
 - i. is important in defining, maintaining or supporting the character of an area,
 - ii. is physically, functionally, visually or historically linked to its surroundings, or
 - iii. is a landmark. O. Reg. 9/06, s. 1 (2).

2.2.3 The Provincial Policy Statement

Section 2.6.1 of the Provincial Policy Statement (PPS) requires that

Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

Section 2.6.3 of the PPS specifies the circumstances under which development or site alteration may be permitted and discusses mitigative measures:

Development and site alteration may be permitted on adjacent lands to protected heritage property where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

Mitigative measures and/or alternative development approaches may be required in order to conserve the heritage attributes of the protected heritage property affected by the adjacent development or site alteration.

The PPS defines “built heritage resources” as

...one or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community. These resources may be identified through designation or heritage conservation easement under the Ontario Heritage Act, or listed by local, provincial or federal jurisdictions.

The PPS defines “conserved” as

...the identification, protection, use and/or management of cultural heritage and archaeological resources in such a way that their heritage values, attributes and integrity are retained. This may be addressed through a conservation plan or heritage impact assessment.



The PPS defines “cultural heritage landscape” as

...a defined geographical area of heritage significance which has been modified by human activities and is valued by a community. It involves a grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive from that of its constituent elements or parts. Examples may include, but are not limited to, heritage conservation districts designated under the Ontario Heritage Act; and villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, railways and industrial complexes of cultural heritage value.

Regarding cultural heritage and archaeology, the PPS defines “significant” as

resources that are valued for the important contribution they make to our understanding of the history of a place, an event, or a people.

2.2.4 The Haldimand County Official Plan

Within the Policy Framework of the Haldimand County Official Plan, Section F (1) states that

Haldimand County values its local heritage and will continue to preserve to the greatest extent possible the cultural and heritage assets. A Strategic Plan will be prepared that will establish standards and guidelines for identifying, designating and preserving cultural heritage resources. As well, the Plan will enable the undertaking of various initiatives including cultural mapping and/or cultural inventories to increase heritage awareness.

2.3 Public Consultation and Recognition

Attempts were made to contact the Haldimand County Heritage Committee and it was discovered that it is no longer in existence. Heritage in Haldimand County is now formally organized as part of the Community Development and Partnerships Program. Anne Unyi, who was formerly involved with the Heritage Committee, and is now the Curator of the Edinburgh Square Museum in Cayuga, was contacted regarding properties designated by Heritage Haldimand. Anne Unyi provided Golder with a listing of properties designated by Heritage Haldimand under the *Ontario Heritage Act* and an inventory of properties that were listed as having potential heritage significance prior to 1991. As identified from the list provided by Unyi, there are four designated properties located in the Study Area. These properties are discussed in greater detail in Section 4.1. There are no properties designated under the *Ontario Heritage Act* located within the Project Location. There is one home from the inventory of potentially important properties that is located within the Project Location and is discussed further in Section 4.2.



Dana Stavinga, the curator of the Wilson McDonald Memorial School Museum, and Cheryl MacDonald, a local author and historian, met with Golder on September 8, 2010 at the Wilson McDonald Memorial School Museum which is located west of Selkirk, just outside the Study Area. Stavinga and MacDonald provided Golder with invaluable knowledge pertaining to the local history of the area.

Catherine Stidsen and Sheila Moffatt-Koczka, trustees of the Cottonwood Mansion Museum, met with Golder on September 18, 2010. Golder was provided with a tour of the mansion, literature pertaining to the mansion and an opportunity to take photographs of the property. Cottonwood Mansion is discussed in greater detail in Section 4.1.

Karen Richardson, archivist of the Haldimand County Museum and Archives, located in Cayuga, aided Golder with the retrieval and interpretation of archived documents and publications.

Bill Fletcher, owner of the property where the designated Hoover Log House is located, and Nancy Feerman, a member of the Hoover family and local historian were interviewed by Golder over the telephone in September and December 2010. The Hoover Log House is discussed in greater detail in Section 4.1.



3.0 HISTORICAL SUMMARY

3.1 Physical Setting

The study area is located in Haldimand County, in the townships of Walpole and Rainham. The area covers various lots in two townships as outlined in Table 1.

Table 1: Properties within the Study Area

County	Geographic Township	Concession	Lot
Haldimand	Walpole	4	7 to 14 and 22 to 24
		5	2 to 24
		6	part of 2 and 3 to 24
		7	5 to 24
		8	7 to 11
	Rainham	1	parts of 1-19
		2	2 to 19
		3	part of 1 and 2 to 19
		4	1 to 16
		5	1 to 14
		6	1 to 11
		7	1 to 8

The study area is located within the physiographic region known as the Haldimand Clay Plain. It lies between the Niagara Escarpment and Lake Erie, an area of approximately 1350 square miles. The region is characterized by heavy-textured clay and clay loam soils.

The soils are often unevenly or imperfectly drained. Within the townships of the study area the soil depth is an average of eight inches to one foot, with clay subsoil. The soil contains very little sand or gravel, but may have rock or stone. The soils are part of a deep drift deposit that rests on lime and sandstone foundations. The southern portion of the clay plain, in which the study area is located, tends to display less relief in the landscape than the northern portion. The level lake plains result in a relatively flat topography with few rolling hills, and a gentle slope towards the lake (Chapman and Putnam, 1984; Ontario Agricultural Commission, 1880).

Historic records for Haldimand County indicate that the lands closest to the Lake Erie shoreline (Concessions 1 and 2) were marsh and overrun by scrub and bush. Further inland and north of Concessions 1 and 2 the land would have provided excellent agricultural lands for pioneer farmers.



The watercourses of Nanticoke Creek, Sandusk Creek, Stoney Creek and Hemlock Creek run through the study area draining directly into Lake Erie. They are relatively narrow and shallow creeks, with low, broad banks often covered in scrub brush. A section of the study area borders on Lake Erie, facing the scalloped limestone shore (Chapman and Putnam, 1984; Ontario Agricultural Commission, 1880).

3.2 Land Use History

3.2.1 First Nations Occupation

Prior to the formation of the county and townships, the area appears in the historic record as part of Treaty Number 3 made between the First Nation Mississauga group and the British. This treaty was made with the Mississauga First Nation on:

7th December, 1792, though purchased as early as 1784. This purchase in 1784 was to procure for that part of the Six Nation Indians coming into Canada a permanent abode.

The area included in this Treaty is, Lincoln County excepting Niagara Township; Saltfleet, Binbrook, Barton, Glanford and Ancaster Townships, in Wentworth County; Brantford, Onondaga, Tusc[aro]ra, Oakland and Burford Township in Brant County; East and West Oxford, North and South Norwich, and Dereham Townships in Oxford County; North Dorchester Township in Middlesex County; South Dorchester, Malahide and Bayham Townships in Elgin County; all Norfolk and Haldimand Counties; [and] Pelham, Wainfleet, Thorold, Cumberland and Humberstone Townships in Welland County

(Morris, 1943: 17-18)

Additionally, the northeastern portion of the Study Area closely borders the Haldimand Tract, also known as the 1795 Crown Grant to the Six Nations (Figure 3). Regarding this tract, Frederick Haldimand proclaimed:

Whereas His Majesty having been pleased to direct that in consideration of the early attachment to His cause manifested by the Mohawk Indians and of the loss of their settlement which they thereby sustained that a convenient tract of land under His protection should be chosen as a safe and comfortable retreat for them and other Six Nations who have either lost their settlements within the Territory of the American States or wish to retire from them to the British. I have at the earnest desire of many of these His Majesty's faithful allies purchased a tract of land from the Indians situated between the Lakes Ontario, Erie and Huron, and I do hereby in His Majesty's name authorize and permit the said Mohawk Nation and such others of the Six Nations Indians as wish to settle in that quarter and to take possession of and settle upon the banks of the river commonly called Ouse or Grand River, running into Lake Erie, allotting to them for that purpose six miles deep from each side of the river...which them and their prosperity are to enjoy forever.

(Canada, 1891: 251)



Additional First Nations history of the Study Area and its environs has been documented in the Stage 1 Archaeological Assessment (Golder Associates Ltd., 2010g). It is not apparent that First Nations activities and presence have influenced the character of the modern cultural landscape (as far as can be discerned through vegetation patterns, earthworks, knowledge of their sacred sites, etc.) nor have they left tangible, above ground material features (earthworks, etc.). The aboriginal presence in the study area is assumed at this time to be the matter of archaeology.

3.2.2 Original Survey and Early Settlement

The Study Area is located in the current County of Haldimand in the Townships of Walpole and Rainham. By 1792 the County system replaced the previous district administrative structure for Upper Canada. Nineteen counties were initially established, and more were added in 1800. It was in this year that Haldimand County was created, separated from Norfolk County (Middleton and Landon, 1927). Although the county was established in 1800, the townships were surveyed at different rates. Haldimand County was named after Sir Frederick Haldimand, a British Military officer and Governor of Quebec in the 18th century. Historically, Haldimand was divided into ten townships.

Settlement in Haldimand County began long before the surveys of the townships had been officially completed. Early surveys of Walpole and Rainham townships were reportedly underway as early as 1795. The official surveys were not completed however until the 19th century, when they assumed the initial road and lot patterns.

The earliest surveys were undertaken in order to grant land to the United Empire Loyalists who sought refuge following the American Revolution. The Loyalists traveled to Upper Canada through Buffalo, New York and settled throughout the Niagara Peninsula and westward along Lake Erie. The first areas settled in the present Haldimand County were those on major watercourses such as the Grand River, west of the study area, and along the Lake Erie shoreline (MacDonald, 2004). The majority of the early settlement in what later became Haldimand County was concentrated within the Haldimand Tract prior to the War of 1812. However, some early settlement activity also occurred in the Townships of Walpole, Rainham, North Cayuga and South Cayuga. Rainham and Walpole were originally part of Norfolk County.

Rainham Township was surveyed in 1829 by Samuel Smith, using the double front survey system (Figure 2). This produced rows of five 100 acre lots between sideroads. The lots backed on to each other so that each lot faced onto a concession road. The Rainham 1829 survey map does not include the location of Clergy Reserves. Examination of the study area as depicted on the original township map does not reveal any squatters recorded prior to the initial township survey.

The area of Walpole Township was first surveyed in 1780 by Thomas Walsh (Brueton, 1967:7). Walpole was described as an area of unbroken forest with large areas of swampy land. Due to the wet conditions, by 1833 the original survey markers had either rotted or were covered by undergrowth. In order to increase settlement in Walpole, the township inhabitants petitioned the Lieutenant-Governor to have the township re-surveyed (Brueton, 1967:10). This petition was denied. The single front sectional system was used to survey Walpole Township, which created a grid of five narrow 200 acre lots between sideroads. The concession roads therefore bordered both the front and rear of the lots.



The original township map, which was completed by Thomas Walsh, had numerous additions made to it over the years, from the early 19th century until 1911 (Figure 3). The names of lot occupants indicated on the map appear to have been added once settlers moved into the area and in some cases names on various lots have been overwritten with the names of later landowners. Also of interest are lands that were marked with a blue watercolour oval; these lands were originally designated as Clergy Reserves. This meant that all proceeds from the Crown Patent went in support of the Protestant clergy, usually the Anglican Church. However, all Clergy Reserve lands were secularized by 1854 (Fahey, 2010). Close examination of the study area as depicted on the original township map does not reveal any squatters recorded prior to the initial township survey in the area.

The first long-term settlers of Walpole and Rainham Townships were the Hoovers, a Swiss Mennonite family who emigrated from Pennsylvania between 1791 and 1793, fleeing the American Revolution. The Hoovers were not technically British Loyalists, but their religion forbade their involvement in such conflict. Jacob Hoover and his sons Abraham, Benjamin, Christian, Daniel and David occupied several hundred acres of land near the lakeshore, just south of the current village of Selkirk. The Hoovers played an important role in the development of the Townships. Benjamin Hoover was appointed pathmaster in 1817, responsible for clearing and maintaining the early Rainham Road between Stoney Creek and the Indian Line. The first grist and saw mill in the township was constructed in 1802 at Stoney Creek, on property belonging to Christian Hoover (H.R. Page and Company, 1877/9). Despite their early presence in the Townships, the Hoover properties are not recorded on the original survey maps for Rainham or Walpole Townships (Figures 2 and 3). The late 19th century historical atlas maps (H.R. Page and Company, 1877/9) depict several properties belonging to the surviving Hoovers and their descendants in both Rainham and Walpole Townships (Figures 4 and 5).

Despite the presence of First Nations and early settlers along the Grand River and Lake Erie, non-First Nations inland settlement in the county came more slowly. Haldimand was not within a close distance to the administrative centres at Niagara-on-the-Lake and Toronto (York). Major roadways had not been established, or were in such bad shape they were almost unusable. Nonetheless, as the county opened up, and further official surveys were undertaken between the 1820s and 1840s, the second wave of settlement occurred. Many settlers came to Haldimand from Great Britain. In the wake of the Napoleonic wars, many British soldiers were left unemployed and so they emigrated in the pursuit of a new life in Upper Canada. The Industrial Revolution had brought jobs to Great Britain, but some sought to escape the harsh working environment and cramped living conditions. Years later, the Potato Famine forced much of the Irish population to emigrate to Canada, in hopes of survival. A number of German settlers also found their way to Rainham Township, and across the county. Within 20 to 25 years of the township surveys, both Rainham and Walpole townships had been completely settled, with one half to three quarters of the population living in first class brick or frame structures (MacDonald, 2004; Ontario Agricultural Commission, 1880).



REFERENCE

DRAWING BASED ON
 Smith, Samuel
 1829 *A Map of Rainham*. Map B6. On file with the Ministry of
 Natural Resources Crown Land Survey Records Office,
 Peterborough, Ontario.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ
 IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT		HERITAGE ASSESSMENT REPORT SUMMERHAVEN WIND ENERGY CENTRE HALDIMAND COUNTY, ONTARIO	
TITLE		A PORTION OF THE 1829 MAP OF RAINHAM TOWNSHIP	
PROJECT No.	10-1151-0035	FILE No.	1011510035-50000-R01002
CADD	AL	AUG 10/10	SCALE NOT TO SCALE REV.
CHECK			FIGURE 2





STUDY AREA

REFERENCE

DRAWING BASED ON
Walsh, Thomas
n.d. *Walpole Township*. Map 20. On file with the Ministry of
Natural Resources Crown Land Survey Records Office,
Peterborough, Ontario.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ
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ALL LOCATIONS ARE APPROXIMATE.

PROJECT		HERITAGE ASSESSMENT REPORT SUMMERHAVEN WIND ENERGY CENTRE HALDIMAND COUNTY, ONTARIO	
TITLE		A PORTION OF THE EARLY SURVEY MAP OF WALPOLE TOWNSHIP	
PROJECT No.	10-1151-0035	FILE No.	1011510035-50000-R01003
CADD	AL	AUG 9/10	SCALE NOT TO SCALE REV.
CHECK			FIGURE 3






REFERENCE

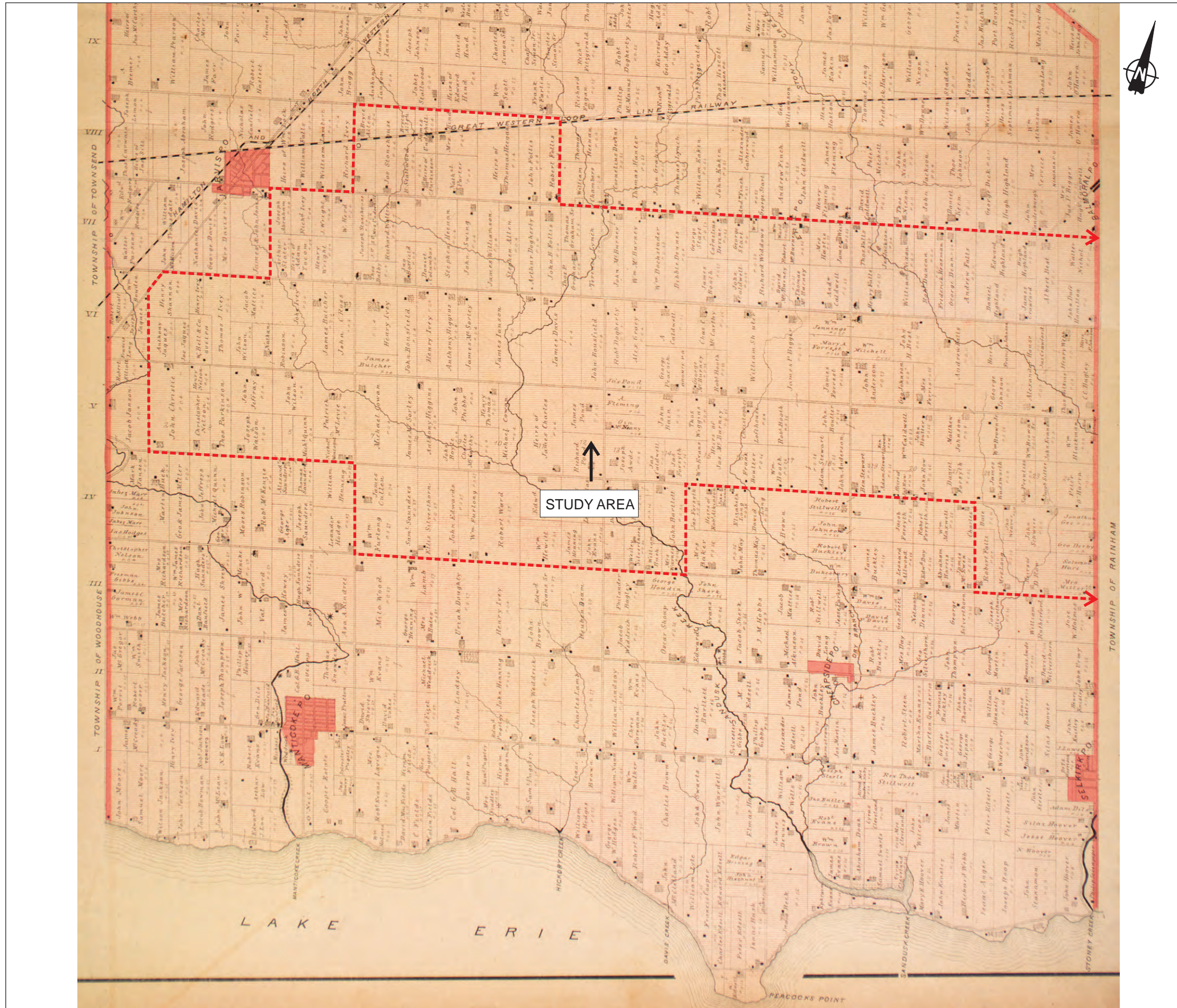
DRAWING BASED ON
 Page, H.R. and Company
 1877/9 *Illustrated Historical Atlas of Haldimand and Norfolk County*. 1997 reprint. Edited by Edward Phelps.
 Wilson's Publishing Company, Peterborough.

NOTES

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PROJECT		HERITAGE ASSESSMENT REPORT SUMMERHAVEN WIND ENERGY CENTRE HALDIMAND COUNTY, ONTARIO	
TITLE		A PORTION OF THE 1877/9 MAP OF RAINHAM TOWNSHIP	
PROJECT No.		10-1151-0035	FILE No. 1011510035-50000-R01004
CADD		AL	AUG 6/10
CHECK			
		SCALE NOT TO SCALE REV.	
		FIGURE 4	



REFERENCE

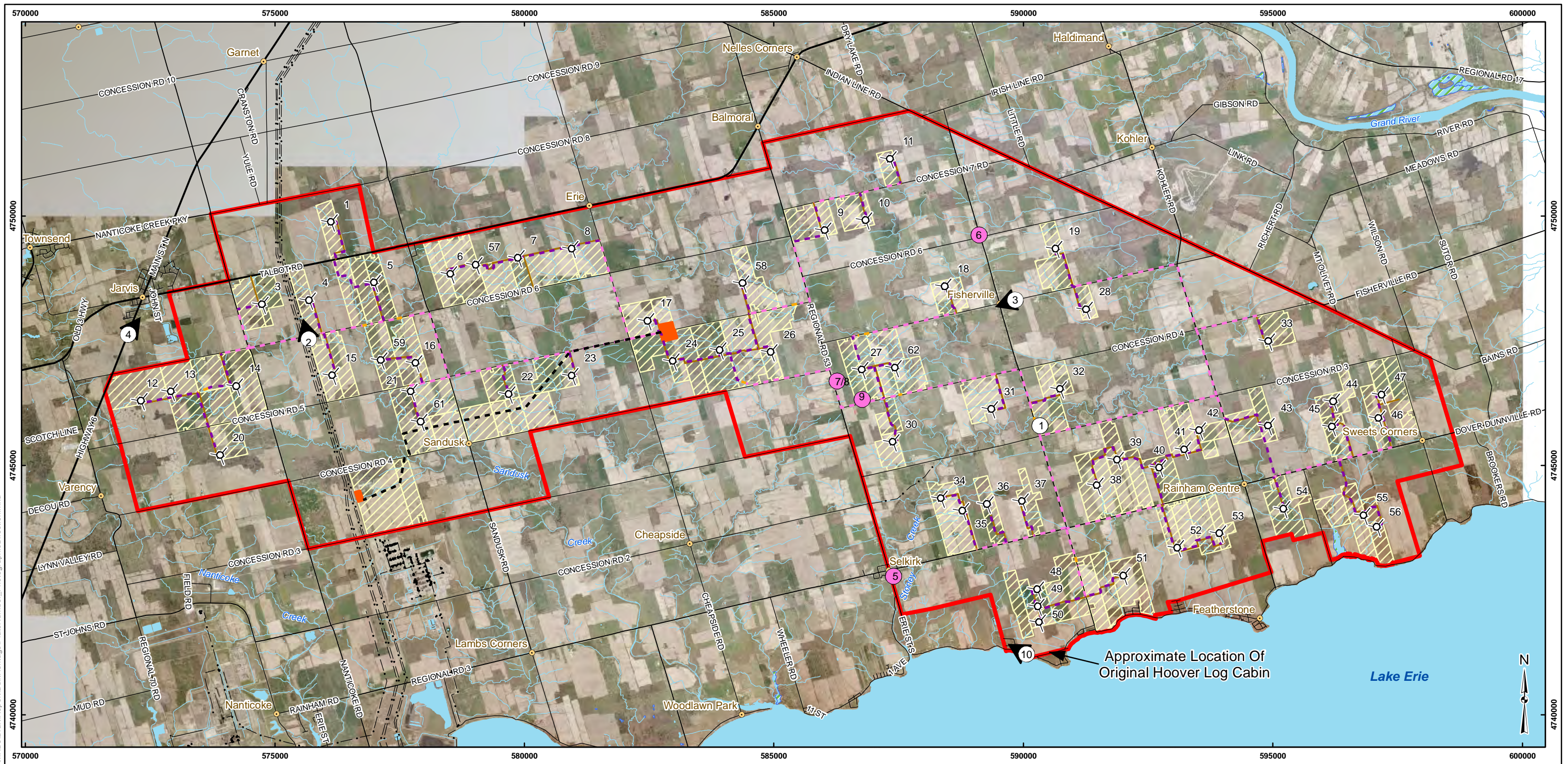
DRAWING BASED ON
 Page, H.R. and Company
1877/9 Illustrated Historical Atlas of Haldimand and Norfolk County. 1997 reprint. Edited by Edward Phelps.
 Wilson's Publishing Company, Peterborough.

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 ALL LOCATIONS ARE APPROXIMATE.

PROJECT		HERITAGE ASSESSMENT REPORT SUMMERHAVEN WIND ENERGY CENTRE HALDIMAND COUNTY, ONTARIO	
TITLE		A PORTION OF THE 1877/9 MAP OF WALPOLE TOWNSHIP	
PROJECT No.	10-1151-0035	FILE No.	1011510035-50000-R0105
CADD	AL	AUG 6/10	SCALE NOT TO SCALE REV.
CHECK			FIGURE 5



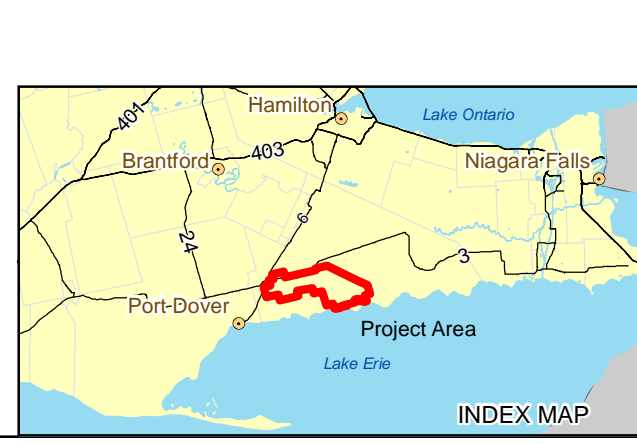


LEGEND

- Plate Number and Photographic Direction
- Plate Number of Designated Property
- Plate Number
- Turbine Location
- Community
- Utility Line
- Highway
- Regional Road
- Local Road
- Overhead Cable
- Underground Cable - Directional Drilled
- Underground Cable - Trenched
- Transmission Line
- Watercourse
- Wetland
- Waterbody
- Project Area
- Substation / Switchyard / Project Building
- Access Road
- Optioned Lots

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2008.4
 Produced by Golder Associates Ltd under licence from Ontario Ministry of Natural Resources, © Queens Printer 2010
 Projection: UTM Datum: NAD 83 Coordinate System: UTM Zone 17



0 1 2 4
SCALE 1:75,000 KILOMETERS

PROJECT
Summerhaven Wind Energy Centre

TITLE
PLATE NUMBER AND PHOTOGRAPHIC DIRECTION

PROJECT NO.	10-1151-0035	SCALE AS SHOWN	REV.
DESIGN	JR 27 Aug. 2010		
GIS	BC 23 Sep. 2010		
CHECK	PP 23 Sep. 2010		
REVIEW			

FIGURE 6

Golder Associates
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G:\Projects\2010\10-1151-0035_NextEraNanticoke\Wind\GIS\MXDs\Draft\Report\Built\Heritage\Plate\Number_Photos\PhotographicDirection.mxd



3.2.3 Agriculture

The earliest settlers of the County began growing corn they had obtained from the First Nations inhabitants. The nearest mills were located in Niagara and Hamilton and so processing the grain into flour was done by hand. The grains were treated and ground by a pestle in a hollowed out tree stump. By the early 1800s mills were being constructed in the county, though many still had to travel a great distance to reach them. As more mills appeared and transportation routes increased, wheat evolved to be the County's primary crop. Roughly a fifth of the acreage in Rainham and Walpole Townships was given to fall wheat by the 1880s. Rainham Township grew some spring wheat, with the crop taking up one eighth of the township's acreage (Ontario Agricultural Commission, 1881; MacDonald, 2004).

Walpole Township also dedicated one fifth of its acreage to barley, and one tenth to Oats. Rainham grew less Barley, with the crop on one twelfth of the Township's acreage, but slightly more oats, planted on one eighth of the total acreage. Other crops, such as corn, rye, peas, potatoes and strawberries were also grown, though to a lesser extent. Hay fields made up another fifth of each Township's acreage. Rainham Township also allotted one fifth of its acreage to pasture, and Walpole one tenth. In 1881, Walpole Township had three cheese factories. Rainham Township did not have any specialized agricultural industries. In both townships, there was a substantial livestock population; in the 1850s, livestock in Haldimand County outnumbered residents (Ontario Agricultural Commission, 1881; MacDonald, 2004).

By the 1980s, the agricultural practices had come full circle; corn was again the primary crop covering 22% of the County's farmland (Chapman and Putnam, 1984). By this time, however, corn was not grown for sustenance, but as a cash crop. Presently, much of the land is devoted to cash crops of corn, soybeans and some wheat, as well as hayfields and pasture. Today there are a variety of types of farms in operation in Rainham and Walpole Townships including cash crop, dairy, poultry, beef, goat and swine.

3.2.4 Industry

The earliest industries of Haldimand County were those that provided daily necessities for life in rural areas. Soon after they began clearing land and building roads, settlers began constructing mills. Saw and grist mills were constructed on rivers and creeks with a strong enough current to power the mill. One of the earliest mills in Rainham Township was built by the Hoovers in 1802, at Stoney Creek. By 1897 three mills were in operation within the study area on Stoney Creek and Hemlock Creek. One mill, located on Concession 1, was not located at a watercourse and would likely have been constructed after the 1870s when steam engines were available (H.R. Page and Company, 1877/9). No remnants of the mills were evident at the time of the site visits.

Nearly every town or settlement contained at least one blacksmith, whose trade was crucial to facilitating agriculture. Blacksmiths also created tools and materials used to build roads. Saddlers and wagon makers were also common small-scale industries in the County. Fisherville, Rainham Centre and Selkirk were all listed to have between one and three blacksmiths or wagon makers in 1867 (H.R. Page and Company, 1877/9; Gazetteer and Directory of the Counties of Haldimand and Brant, 1867).



Other industries, such as brickyards, factories and lumberyards were operating by the late 1870s near Jarvis. Two brickyards were located just outside of the Study Area, west of the town. They likely supplied most of the bricks to re-build Jarvis after a fire destroyed much of the town in 1873. Most of the brick buildings in and around Jarvis are a light red colour, due to the composition of the area's clay. A stone quarry and brickyard were also located on Rainham Road, on Lot 18, west of Rainham Centre (H.R. Page and Company, 1877/9).

The report of the Ontario Agricultural Commission mentioned three cheese factories in Walpole Township, one near Jarvis at Highway 3 and Nanticoke Road. The factory began making cheese but later focused on butter making (Bructon, 1967). The operating dates for this factory are unknown. Selkirk also had a cheese factory in 1891 (Yesterdays' News, 1999). It is not known if the location of the former factory fell within the study area.

After the discovery of oil in Enniskillen Township in 1857, the search for the invaluable resource spread across the province. In 1861, wells were drilled near Selkirk, and oil was discovered. However, by the time the wells had been dug, the prices of oil had dropped so much that setting up pumps would not have been profitable. A few years later, the prices of oil rose again and by 1865 newspapers were reporting that two companies were prepared to drill near Jarvis and Selkirk. The oil business in Haldimand County never really took off and instead, the focus shifted to natural gas, which was plentiful in the region. The presence of oil and natural gas go together and several landowners in the area have private oil wells located on their properties (Plate 1).

In 1888, explorations for natural gas were underway in Haldimand County. It was first struck outside of Dunnville. Much of the early industry was centered around Dunnville, Cayuga and the Grand River, but by 1910 it was noted that Rainham and Walpole Townships were rich sources as well (Selkirk 1792-1985, 1985). Over the course of the 20th century, gas wells were dug throughout the townships and still exist today.



Plate 1: Example of typical private oil well, located on a property at the Project Location



Electric power in Haldimand County was established at various times. Some towns were beginning to acquire electricity by the 1880s. Water power generators were some of the first means of providing electricity for a town, but this option was only available to certain areas with a significant watercourse. Power outages would often occur when a mill became jammed with debris. Larger, wealthier municipalities were able to switch to electric power before smaller post office towns and hamlets. Streetlights were often electrified first, before individual residences. Up until the 1900s, most electricity was provided by private companies. In 1907 the Ontario Hydroelectric Company was created and many municipalities switched to using this service. The utility was owned by the province, and generated power at Niagara Falls. Jarvis, which is located just outside the Study Area, did not obtain hydro electric power until 1924. It is not known when other communities within the Study Area began using electricity (*Yesterdays' News*, 2003). A hydro corridor runs through the western portion of the study area, near Jarvis, between Nanticoke Road and Sandusk Road (Plate 2).



Plate 2: Hydro corridor as it transects the Study Area.

3.2.5 Urban Places

Four towns, villages or hamlets were, or still are, located within or partially within the limits of the Study Area, including Fisherville, Rainham Centre, Selkirk and Sweets Corners. In addition, the town of Jarvis is located just outside the northwest corner of the Study Area and has therefore been included in this overview.