Ministry of Tourism, Culture and Sport

Confirmation Letter

January 4, 2013

Ministry of Tourism, Culture and Sport

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Ontario

January 4, 2013

Colin Varley
Stantec Consulting Ltd.
2781 Lancaster Road,
Ottawa, Ontario
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RE: Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, *"Niagara Region Wind Farm, Various Lots, Concessions 1-6 Gainsborough Township, Concessions 7-10 Clinton Township, Regional Municipality of Niagara and Various Lots, Moulton Township, Haldimand County, Ontario*", Dated December 4, 2012, Received by MTCS Toronto Office on December 6, 2012, MTCS Project Information Form Number P002-263-2011, MTCS File Number 26EA078

Dear Mr. Varley:

The above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18 has been entered into the Ontario Public Register of Archaeological Reports without technical review.[1]

Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register. [2]

Should you require further information, please do not hesitate to send your inquiry to ArchaeologyReports@Ontario.ca.

cc. Darren Croghan, Niagara Region Wind Corporation
Doris Dumais, Ministry of the Environment

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[1] *This letter constitutes the Ministry of Tourism, Culture and Sport's written comments where required pursuant to section 22 of O. Reg. 359/09, as amended (Renewable Energy Approvals under the Environmental Protection Act), regarding the archaeological assessment undertaken for the above-captioned project. Depending on the study area and scope of work of the archaeological assessment as detailed in the report, further archaeological assessment reports may be required to complete the archaeological assessment for the project under O. Reg. 359/09. In that event Ministry comments pursuant to section 22 of O. Reg. 359/09 will be required for any such additional reports.*

[2] *In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.*

Stage 1 Archaeological Assessment

FINAL REPORT - Original Niagara Region Wind Farm Stage 1 Archaeological Assessment, Various Lots, Concessions 1-6 Gainsborough Township, Concessions 7-10 Clinton Township, Regional Municipality of Niagara and Various Lots, Moulton Township, Haldimand County

Prepared for:

Niagara Region Wind Corporation

277 Lakeshore Road East, Suite 211
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Prepared by:

Colin Varley, M.A., R.P.A. P002

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File No. 160950269

December 4, 2012

CIF # P002-263-2011

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Niagara Region Wind Corporation (NRWC) to prepare a Renewable Energy Approval (REA) Application for the Niagara Region Wind Farm (the Project), as required under *Ontario Regulation 359/09 – Renewable Energy Approvals under Part V.0.1 of the Environmental Protection Act* (O.Reg. 359/09).

Niagara Region Wind Corporation (NRWC) is proposing to develop, construct, and operate the 230 megawatt (MW) Niagara Region Wind Farm (the Project) in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province. The Project is located in Southern Ontario within the Townships of West Lincoln and Wainfleet and the Town of Lincoln in the Regional Municipality of Niagara and Moulton Township in Haldimand County.

The Project Study Area is generally bounded by: Castor Gainsborough Road to the West; the Queen Elizabeth Way to the North; the north shore of Lake Erie to the South and Balfour Street to the East.

As part of the proposed Project a Stage 1 Archaeological Assessment (AA) was required in support of environmental permitting for the project. This Stage 1 AA has been conducted in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* prepared by the Ministry of Tourism, Culture and Sport (MTCS).

Based on a review of aerial imagery, existing archaeological potential maps, information regarding registered archaeological sites in the vicinity, local physiography and topography, Census returns, 19th century maps of the project area and soil integrity, the majority of the Project Area is considered to have elevated potential for the presence of previously unknown archaeological resources of both prehistoric and historic disposition.

Given the elevated archaeological potential for both prehistoric and historic period archaeological resources within the Study Area it is recommended that any lands which are planned to be disturbed for development activity (including construction laydowns, temporary storage areas, etc.) undergo Stage 2 Archaeological Assessment prior to any ground disturbances.

If archaeological resources are identified during the Stage 2 study, further archaeological assessment and stages of work may be required but can be completed during the development process. A REA approval could be issued based on the Stage 2 assessment, but would include a requirement for future assessment work as a condition of the REA approval.

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Project Personnel

Project Director	Colin Varley, M.A., R.P.A. (P002)
Archival Research	Stephen Jarrett, M.A. Christienne Uchiyama, M.A. (P376)
Report	Christienne Uchiyama, M.A. Colin Varley, M.A., R.P.A. Sarah Rogers, B.Sc. (Hons.), G.Dip.

1.0 Introduction

Stantec Consulting Ltd. (Stantec) was retained by Niagara Region Wind Corporation (NRWC). to prepare a Renewable Energy Approval (REA) Application, as required under Ontario Regulation 359/09 – Renewable Energy Approvals under Part V.0.1 of the Environmental Protection Act (O.Reg. 359/09). According to subsection 6.(3) of O.Reg. 359/09, the Project is classified as a Class 4 Wind Facility and will follow the requirements identified in O.Reg.359/09 for such a facility.

This Stage 1 Archaeological Assessment (AA) is one component of the REA Application for the Project and has been prepared in accordance with the application guidelines.

The Project was initiated during the pre-submission phase of the development process. This Stage 1 AA has been conducted in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* prepared by the Ministry of Tourism, Culture and Sport (MTCS).

2.0 Project Context

2.1 DEVELOPMENT CONTEXT

Niagara Region Wind Corporation (NRWC) is proposing to develop, construct, and operate the 230 Megawatt (MW) Niagara Region Wind Farm (the Project) within the Townships of West Lincoln and Wainfleet and the Town of Lincoln within the Niagara Region and within Haldimand County in Southern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province. Project infrastructure such as collector lines and transmission lines will be sited along the boundaries of the Township of Pelham and Town of Grimsby, but will be sited outside of these municipalities on the opposite side of the road. The Project Study Area is shown in Figure 1.

The basic components of the Project include 77 wind turbine generators (80 potential locations identified) each with a rated capacity of approximately 3.0 MW for a maximum installed nameplate capacity of 230 MW. An overhead and/or underground collection system connects each turbine to one of two transformer substations along a series of 34.5 kilovolt (kV) lines.

Turbines are grouped into nine collector circuits that bring power (and data via fibre optic lines) to one of the transformer substations. Voltage is stepped up from 34.5kV to 115kV at each transformer substation by means of a 100 MVA base rated transformer with two stages of cooling (via fans). A 115kV transmission line transports power from each of the two transformer substations north to the tap-in location where the Project is connected to the Hydro One Networks Inc. (HONI) owned transmission line, south of the Queen Elizabeth Way (QEW) in Lincoln. Power generated from this Project will be conveyed along the existing HONI transmission line to the Beach Transformer Station in Hamilton.

Alternate transmission and collector lines routes have been identified and assessed to provide options during detailed design, the final selection of which route to follow will be confirmed following the consultation process, agency review and detailed design.

Other Project components include access roads, associated culverts at swales and waterbody crossings, and an operations and maintenance building. Temporary components during construction may include temporary laydown areas (for storage and staging areas at each turbine location), crane pads or mats, staging areas along access roads, delivery truck turnaround areas, central construction laydown areas and crane paths. All project components are illustrated on Figure 1.

2.1.1 O.Reg. 359/09 Requirements

This Stage 1 Archaeological Assessment (AA) has been conducted in accordance with O.Reg. 359/09, s. 20, 21 and 22. Section 20 states that:

20. (1) A person who proposes to engage in a renewable energy project shall consider whether engaging in the project may have an impact on any of the following,

1. An archaeological resource at the project location.

Section 21(2) requires that the proponent shall,

(a) contact the Ministry of Culture to determine whether the project location is,

(i) within 250 metres of an archaeological resource that is set out by the Ministry in records it maintains, of

(ii) on property designated as an archaeological site under Regulation 875 of the Revised Regulations of Ontario, 1990 (Archaeological Sites) made under the Ontario Heritage Act; and

(b) contact the clerk of each local municipality and upper-tier municipality in which the project location is situated to determine whether the project location is in an area that has been identified on a municipal archaeological plan.

Section 2.3 of this report satisfies the requirements outlined under Section 21(2).

This Stage 1 AA is being conducted as a result of obligations under O.Reg.359/09, s.22, which applies if,

(a) As a result of the consideration mentioned in subsection 20 (1), the person concludes that engaging in the renewable energy project may have an impact on an archaeological resource described in paragraph 1 of subsection 20 (1); or

(b) The person concludes, after complying with section 21, that the project location is situated as described in subclause 21(2)(a)(i) and (ii) or clause 21(2)(b).

As per Section 22(2), this report has been conducted by a consultant archaeologist as defined by Ontario Regulation 8/06 (Licences under Part VI of the Act – Excluding Marine Archaeological Sites) made under the *Ontario Heritage Act*. (O.Reg.359/09, s.22(4)).

In order to satisfy O.Reg.359/09, s.22(2)(b), this Stage 1 Archaeological Assessment must be submitted to the Ministry of Tourism, Culture and Sport (MTCSS) for review. Furthermore, comments provided by the MTCSS must be included in the REA submission as per O.Reg.359/09, s.22(3)(a), which states:

22.(3) As part of an application for the issue of a renewable energy approval, a person to whom this section applies shall submit,

(a) written comments provided by the Ministry of Culture in respect of the archaeological assessment conducted under clause (2)(a).

2.2 PROJECT LOCATION

In accordance with O. Reg. 359/09, the "Project Location" includes all land and buildings/structures associated with the Project and any air space in which the Project will occupy. This includes structures such as turbines, access roads and power lines as well as any temporary work areas (the 'constructible area' for the Project) which are required to be utilized during the construction of the Project.

The "Project Study Area" was established to scope the siting of the proposed wind turbines, collector lines, access roads and temporary work areas. Similarly, the "Interconnector Study Area" was established to scope the location of the proposed 115kV transmission line, transformer substations and tap-in location. These two terms are intended to assist with background data collection and consultation, however have no formal definition or application under O.Reg. 359/09. Figure 1 identifies both Study Areas, which include portions of the Townships of West Lincoln and Wainfleet and the Towns of Grimsby and Lincoln within the Niagara Region and within Haldimand County in Southern Ontario.

For the purposes of the REA reports, the "Zone of Investigation" includes all land, air and water within 120 metres of the "Project Location" where site investigations are required and were completed in accordance with O.Reg. 359/09.

2.2.1 Study Area

The Project will be located on privately owned lands and within municipal Rights of Way (RoW). The legal description of the parcels of land that will be used for the Project will be provided as part of the REA application.

The Project will be located within the Townships of West Lincoln and Wainfleet and the Town of Lincoln within the Regional Municipality of Niagara and in Moulton Township, Haldimand County in Southern Ontario. The Project Study Area covers approximately 50,900 ha and is generally bounded by Castor Gainsborough Road to the West; the Queen Elizabeth Way to the North; the north shore of Lake Erie to the South; and Balfour Street to the East (Figure 1).

Settlements in the general vicinity of the Project include Saint Anns, Silverdale, Rosendene, Bismark, Boyle, Fenwick, Vaughn, Echo, Perry, Becketts Bridge, Wellandport, Mount Carmel, Forks Road, Lowbanks, Willow Bay, Beamsville, Smithville and Grimsby. The Study Area is primarily rural agricultural with small settlements scattered throughout the landscape, with more urban land uses located in the north along the south shore of Lake Ontario. Many woodlands and wetlands occur throughout the Study Area, which includes portions of the Niagara

Escarpment and Greenbelt Areas. Short Hills Provincial Park is located to the east of the Project Study Area and Rock Point Provincial Park is located to the south.

The Study Area is located in the Haldimand Clay Plain physiographic region, a large region that occupies the majority of the Niagara Peninsula south of the Niagara Escarpment down to Lake Erie. It is a region of approximately 1,350 square miles characterized by recessional moraines in the northern part, deep river valley in the middle, and flat and low lying ground in the south (Chapman and Putnam, 1984).

The vast majority of the surficial geology of the Study Area is silty heavy clay loam till and alluvial deposits in flood plains spanning the length of region's waterways. In the historic Lincoln County the dominant soil series is Haldimand clay loam with small pockets of Lincoln clay till, predominately along waterways (Wicklund and Mathews, 1963). The surficial geology in the historic Welland County is similar, although Berrien and Wauseon series sandy loam soils are also found within the Study Area (Presant and Kingston, 1989). In Haldimand County the silty clay loam tills, such as the Gobles and Kelvin series of soils, are characterized by poor to imperfect drainage (Presant and Acton, 1984).

2.3 HISTORICAL CONTEXT

2.3.1 Archaeological Culture History of Southern Ontario

The following summary of the prehistoric occupation of Southern Ontario (see Table 1 for chronological chart) is based on syntheses in Archaeologix (2008), Ellis and Ferris (1990) and Jacques Whitford (2008).

The first identified human occupation of Ontario begins just after the end of the Wisconsin Glacial period. The first human settlement can be traced back 11,000 years, when this area was settled by Native groups that had been living to the south of the emerging Great Lakes. This initial occupation is referred to as the "Palaeo-Indian" archaeological culture.

Early Palaeo-Indian (EPI) (11,000-10,400 BP) settlement patterns suggest that small groups followed a pattern of seasonal mobility extending over large territories. Many (although by no means all) of the EPI sites were located on former beach ridges associated with Lake Algonquin, the post-glacial lake occupying the Lake Huron/Georgian Bay basin, and it is likely that the vegetative cover of these areas would have consisted of open spruce parkland, given the cool climatic conditions. Sites tend to be located on well-drained loamy soils on elevations in the landscape, such as knolls. The fact that artifact assemblages of EPI sites are composed exclusively of stone skews our understanding of general resource extraction and use patterns. The taking of large game, such as caribou, mastodon and mammoth, appears to be of central importance to the sustenance of these early inhabitants. Moreover, EPI site location often appears to be located in areas which would have intersected with migratory caribou herds.

The Late Palaeo-Indian (LPI) period (10,400-10,000 BP) is poorly understood compared to the EPI, the result of less research focus than the EPI. As the climate warmed the spruce parkland was gradually replaced and the vegetation of Southern Ontario began to be dominated by

closed coniferous forests. As a result many of the large game species that had been hunted in the EPI period either moved north with the more open vegetation, or became extinct. Like the EPI, LPI peoples covered large territories as they moved around to exploit different resources.

Table 1: Southern Ontario Prehistoric Cultural Chronology, Years Before Present (BP)

ARCHAEOLOGICAL PERIOD	TIME	CHARACTERISTICS
Early Palaeo-Indian	11,000–10,400 BP	caribou and extinct Pleistocene mammal hunters, small camps
Late Palaeo-Indian	10,400–10,000 BP	smaller but more numerous sites
Early Archaic	10,000-8,000 BP	slow population growth, emergence of woodworking industry, development of specialised tools
Middle Archaic	8,000–4,500 BP	environment similar to present, fishing becomes important component of subsistence, wide trade networks for exotic goods
Late Archaic	4,500-3,100 BP	increasing site size, large chipped lithic tools, introduction of bow hunting
Terminal Archaic	3,100-2,950 BP	emergence of true cemeteries with inclusion of exotic trade goods
Early Woodland	2,950-2,400 BP	introduction of pottery, continuation of Terminal Archaic settlement and subsistence patterns
Middle Woodland	2,400-1,400 BP	increased sedentism, larger settlements in spring and summer, dispersed smaller settlement in fall and winter, some elaborate mortuary ceremonialism
Transitional Woodland	1,400-1,100 BP	incipient agriculture in some locations, seasonal hunting & gathering
Late Woodland (Early Iroquoian)	1,100-700 BP	limited agriculture, development of small village settlement, small communal longhouses
Late Woodland (Middle Iroquoian)	700-600 BP	shift to agriculture as major component of subsistence, larger villages with large longhouses, increasing political complexity
Late Woodland (Late Iroquoian)	600- 350 BP	very large villages with smaller houses, politically allied regional populations, increasing trading network

The transition from the Palaeo-Indian period to the Archaic archaeological culture of Ontario prehistory is evidenced in the archaeological record by the development of new tool technologies, the result of using an increasing number of resources as compared to peoples from earlier archaeological cultures, and developing a broader based series of tools to more intensively exploit those resources. During the Early Archaic period (10,000-8,000 BP), the jack and red pine forests that characterized the LPI environment were replaced by white pine dominated forests, with some deciduous elements. Early Archaic projectile points differ from Palaeo-Indian forms most notably by the presence of side and corner notching on their bases. A ground stone tool industry, including celts and axes, also emerges, indicating woodworking to be an important component of the technological development of Archaic peoples. Although there may have been some reduction in the degree of seasonal movement, it is still likely that population density during the Early Archaic was low, and band territories large.

The development of a more diversified tool technology continued into the Middle Archaic period (8,000 -4,500 BP). The presence of grooved stone net-sinkers suggests an increase in the importance of fishing in subsistence activities. Another new tool, the bannerstone, also made its first appearance during this period. Bannerstones are ground stone weights that served as a counterbalance for "atlatls" or spear-throwers, again indicating the emergence of a new technology. The increased reliance on local, often poor quality chert resources for chipped stone tools suggests that in the Middle Archaic groups inhabited smaller territories that often did not encompass a source of high quality raw material. In these instances lower quality materials which had been glacially deposited in local tills and river gravels were used.

This reduction in territory size appears to have been the result of gradual region-wide population growth, which forced a reorganization of subsistence practices, as more people had to be supported from the resources of a smaller area. Stone tools especially designed for the preparation of wild plant foods suggest that subsistence catchment was being widened and new resources being more intensively exploited. A major development of the later part of the Middle Archaic period was the initiation of long distance trade. In particular, native copper tools manufactured from sources near Lake Superior were being widely traded.

The trend towards decreased territory size and a broadening subsistence base continued during the Late Archaic (4,500-2,900 BP). Late Archaic sites are far more numerous than either Early or Middle Archaic sites. It appears that the increase in numbers of sites at least partly represents an increase in population. However, around 4,500 BP water levels in the Great Lakes began to take their modern form, rising from lower levels in the Early and Middle Archaic periods. It is likely that the relative paucity of earlier Archaic sites is due to their being inundated under the rising lake levels.

The appearance of the first true cemeteries occurs during the Late Archaic. Prior to this period, individuals were interred close to the location where they died. However, with the advent of the Late Archaic and local cemeteries individuals who died at a distance from the cemetery would be returned for final burial at the group cemetery, often resulting in disarticulated skeletons, occasionally missing minor bone elements (e.g. finger bones). The emergence of local group cemeteries has been interpreted as being a response to both increased population densities and competition between local groups for access to resources as cemeteries would have provided symbolic claims over a local territory and its resources.

Increased territoriality and more limited movement are also consistent with the development of distinct local styles of projectile points. The trade networks which began in the Middle Archaic expand during this period, and begin to include marine shell artifacts (such as beads and gorgets) from as far away as the Mid-Atlantic coast. These marine shell artifacts and native copper implements show up as grave goods, indicating the value of the items. Other artifacts such as polished stone pipes and slate gorgets also appear on Late Archaic sites. One of the more unusual of the Late Archaic artifacts is the "birdstone", a small, bird-like effigy usually manufactured from green banded slate.

The Early Woodland period (2,900-2,200 BP) is distinguished from the Late Archaic period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples. The first pots were very crudely constructed, thick walled, and friable. It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil. These vessels were not easily portable, and individual pots must not have enjoyed a long use life. There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that these poorly constructed, undecorated vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of this limited ceramic technology, the life-ways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have "pop-eyes" which protrude from the sides of their heads. Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic period continue in use. However, the Early Woodland variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance. The trade networks which were established in the Middle and Late Archaic also continued to function, although there does not appear to have been as much traffic in marine shell during the Early Woodland period. These trade items were included in increasingly sophisticated burial ceremonies, some of which involved construction of burial mounds.

In terms of settlement and subsistence patterns, the Middle Woodland (2,200-1,100 BP) provides a major point of departure from the Archaic and Early Woodland periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish were becoming an even more important part of the diet. Middle Woodland vessels are often heavily decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

It is also at the beginning of the Middle Woodland period that rich, densely occupied sites appear along the margins of major rivers and lakes. While these areas had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was occupied off and on for as long as several hundred years. Because this is the case, rich deposits of artifacts often accumulated. Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on over the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited. This shift towards a greater degree of sedentism continues the trend witnessed from at least Middle Archaic times, and provides a prelude to the developments that follow during the Late Woodland period.

The relatively brief period of the Transitional Woodland period is marked by the acquisition of cultivar plants species, such as maize and squash, from communities living south of the Great Lakes. The appearance of these plants began a transition to food production, which consequently led to a much reduced need to acquire naturally occurring food resources. Sites were thus occupied for longer periods and by larger numbers of people. Sites of the Transitional Woodland in the Hamilton and Niagara Peninsula area are part of the Princess Point Complex, named after the Princess Point site in Cootes Paradise, at the west end of Burlington Bay on Lake Ontario.

The Late Woodland period in southern Ontario is associated with societies referred to as the Ontario Iroquois Tradition. This period is often divided into three temporal components; Early, Middle and Late Iroquoian (Table 1).

Early Iroquoian peoples continued to practice similar subsistence and settlement patterns as the Transitional Woodland. Villages tended to be small, with small longhouse dwellings that housed either nuclear or, with increasingly, extended families. Smaller camps and hamlets associated with villages served as temporary bases from which wild plant and game resources were acquired. Horticulture appears to have been for the most part a supplement to wild foods, rather than a staple.

The Middle Iroquoian period marks the point at which a fully developed horticultural system (based on corn, bean, and squash) emerged, and at which point cultivars became the staple food source. In this period villages become much larger than in the Early Iroquoian period, and longhouses also become much larger, housing multiple, though related, nuclear families. Food production through horticulture resulted in the abandonment of seasonal mobility that had characterized aboriginal life for millennia. Hunting, fishing, and gathering of wild food activities continued to occur at satellite camps. However, for the most part most Iroquoian people inhabited large, sometimes fortified villages throughout southern Ontario.

The Late Iroquoian period in the Niagara Peninsula, along the north shore of Lake Erie and at the western end of Lake Ontario is marked by the emergence of the Neutral Iroquoians, one of several discrete groups that emerge from the Middle Iroquoian period. Neutral settlements include large villages of several longhouses and a number of associated smaller satellite villages (hamlets), seasonally occupied sites with only one or two small “cabins” (usually associated with working horticultural fields), and camps for specialized extractive activities such as hunting and fishing.

Discrete clusters of politically allied Neutral villages have been identified from the late prehistoric and early historic period. The Project Area is situated in close proximity to the Lower Grand River cluster, located on both sides of the Grand River above and below the Town of Cayuga, the Upper Twenty Mile Creek cluster to the west and the Grimsby cluster to the north

2.3.2 Historic Period Occupation

2.3.2.1 Niagara Region

The earliest written record of the Niagara Peninsula dates to an account of Niagara Falls published in 1604. The account had been written by Samuel de Champlain and was based on the stories of First Nations populations he encountered during his first trip to what is now Canada in 1603 (de Volpi, 1966). Etienne BrûIé may have visited the Niagara Region as early as 1611, but it was not until 1615 that Champlain, personally, explored Lake Ontario. The Niagara River between Lake Ontario and Lake Erie was outlined in the 1632 *Les Voyages de la Nouvelle France Occidentale, Dicte Canada, Faits par le Sr. De Champlain* (de Volpi, 1966). In 1678 Father Jean Louis Hennepin sketched the Falls (de Volpi, 1966). The sketch was reproduced in 1697 in Father Hennepin's *Nouvelle découverte d'un très grand pays situé dans l'Amerique, entre le Nouveau Mexique et la mer glaciale* (Plate 1). An illustration, showing a ladder ascending the Falls, accompanied a story in a 1751 edition of The Gentleman's Magazine (Plate 2). Although French explorers, missionaries and traders would continue to pass through the area during the 17th and 18th centuries, no concerted effort was made by the French to settle the region, although a series of forts, blockhouses and fortified trading posts were constructed near present-day Youngstown, New York at the mouth of Niagara River, including: Fort Conti, 1678-1679 (destroyed by fire); Fort De Nonville, 1687-1688 (abandoned); and Fort Niagara, 1726 (captured by British forces in 1759) (Porter, 1896).

The stone fort at Niagara was enlarged to its present-day size around 1755 in response to increased tension in the region between the French and British. The fort was captured by the British following a 19-day siege led by Sir William Johnson (Porter, 1896). When writing about Fort Niagara and the Niagara Pennisula in his 1770 *A General History of the British Empire in America*, John Huddlestone wrote that, "Niagara is without exception the most important post in America and secures a greater number of communications, through a more extensive country, than perhaps any other pass in the world" (Wynne, 1770). When the Province of Quebec was divided into Upper and Lower Canada in 1791, Lieutenant-Governor John Graves Simcoe chose Niagara as the first seat of government for Upper Canada (1792 until 1794) and began surveying the region to accommodate settlement (de Volpi, 1966).

During the War of 1812, the Niagara Peninsula was the setting for a number of pivotal battles, including those at Queenston Heights, Fort George, Chippewa, Fort Niagara, and Lundy's Lane. Owing to its close proximity to the United States, the region was one of the first settled as a result of the war by United Empire Loyalists (UELs), German mercenaries, Pennsylvania German settlers, First Nations, and those wishing to take advantage of generous land grants and low tax rates aimed at stimulating settlement along the Canadian-United States border.

The Welland Canal, built between 1824 and 1830, provided a gateway between Lake Ontario and Lake Erie and established the Niagara Peninsula as an economic and commercial centre, particularly given the superior agricultural conditions in the area.

2.3.2.2 Caistor Township, Lincoln County

Lieutenant Governor John Graves Simcoe issued a proclamation in 1792 dividing Upper Canada into nineteen counties. Lincoln County was one of these original nineteen (Lincoln County Council, 1956). Each of the townships in Lincoln County were given the names of British towns in Lincoln County, England. Lincoln County was established through a Provincial Act in 1798 which stated that, "the township of Clinton, Grimsby, Saltfleet, Barton, Ancaster, Glanford, Binbrook, Gainsborough and Caistor, do form and constitute the first riding of the County of Lincoln…" (Lincoln County Council, 1956).

The topography in Caistor Township is generally characterised by gently rolling hills, primary watercourses such as Twenty Mile Creek, the Chippewa River (now Welland River), and a network of smaller watercourses with fertile floodplains. Prior to European survey and settlement, Caistor was crossed by numerous trails and portage routes, some of which have evolved into modern roadways (Lincoln County Council, 1956). The first settler in Caistor Township was, by many accounts, an escaped slave by the name of Diamond who had travelled up the Chippewa River to settle along its shore in Concession 1 in 1778 (Lincoln County Council, 1956). In 1782, Henry Dochstader, a UEL from New York, was granted Lots 2, 3, and 4, Concession 1 and "bought out the improvements" attributed to Diamond. A number of UELs settled in Caistor in the 1790s, including members of the Lymburner, Merritt, Dean, and Killins families. By 1817 24 families, totaling 156 residents, had settled in Caistor (Lincoln County Council, 1956).

Early settlers in Caistor Township made use of the established trails and portage routes to carry provisions. The first saw mill was constructed in Lot 6, Concession 2 along the Chippewa River by John Lymburner in 1799 and the first log schoolhouse was constructed in Lot 2, Concession 1 in 1816 (Lincoln County Council, 1956). Small communities such as Caistorville slowly developed over the 19th and 20th centuries; however, swaths of forest and undeveloped land can still be found throughout the township.

The historical Township of Caistor was amalgamated with the Townships of South Grimsby and Gainsborough on January 1, 1970 to become the Township of West Lincoln (Township of West Lincoln, 2012).

2.3.2.3 Clinton Township, Lincoln County

Clinton Township grew quickly as a result of incentives to settle in Upper Canada at the end of the 18th century. By 1800, at least 66 families were living in Clinton Township (Lincoln County Council, 1956). Among the earliest settlers in the area was Jacob Beam, a UEL and member of Butler's Rangers. It was after Jacob Beam that Beamsville, established as a police village only three years after the founding of Lincoln County, was named. As a UEL, Jacob Beam was originally granted 400 acres of land in Clinton Township and an additional 500 acres in Grimsby Township (Lincoln County Council, 1956). The homesteads of two early settlers, the Book and Teeter families, may be located in optioned parcels based on information provided in Page's 1876 Illustrated Atlas of the Counties of Lincoln and Welland (Table 2).

Table 2: Early Settlers in Clinton Township

Settler Name	Date of Settlement	Matching Names from Page (1876) within Proposed locations	Township	Lot(s)	Conc.
Book	1788-89	Clark, John, and William Book	Clinton	14-16	9, 10
Teeter	1788-89	Albert I. Teeter	Clinton	20, 21	9

Agricultural land in Clinton Township is fertile, being comprised on nutrient rich sandy loam soils. Excellent agricultural conditions, coupled with the township's advantageous location along the Niagara Escarpment, along the south shore of Lake Ontario made the area attractive to early settlement. By 1876 there were 600 residents, a court, Free Mason's lodge, Orange Hall, wine factory and a bell factory as well as numerous specialists including a tinsmith, druggist and doctor in the Village of Beamsville alone (Page, 1876).

2.3.2.4 Gainsborough Township, Lincoln County

The historic Township of Gainsborough, now part of amalgamated West Lincoln Township, was historically the largest township in the County of Lincoln. The township is characterised by rolling topography and contains two primary watercourses, the Chippewa River and Twenty Mile Creek.

John Dochstader was the first European settler to arrive in Gainsborough in 1783. Dochstader settled on Lots 1 and 2, along Concessions 1 and 2. The surrounding land was settled in the following years by members of the Heaslip, Henry, Hodges, Reese, Comfort, Gee, and Hutt families, among others (Lincoln County Council, 1956). Schoolhouses were constructed near Gee bridge and in St. Ann's prior to 1800 and the first log church was constructed on Lot 13, Concession 6 in 1799. Although settlement of Gainsborough Township was slower than others in the region due to its "inland" location, several small communities developed in the 18th and 19th century which still survive today, including: St. Ann's, Wellandport, and Bismark.

The community of St. Ann's was originally founded as Snyder's Mills in the 1790s. The settlement was named after Adam Snyder, who arrived from New Jersey in 1793 and within a year had erected a grist mill and a saw mill along the Twenty Mile Creek. An inn and trading post were constructed at St. Ann's by Adam Mingle in 1816. The name St. Ann's is said to derive from the reputation of Ann Freas, Snyder's wife, as a benevolent and welcoming woman (Lincoln County Council, 1956).

Bismark developed at the crossroads of Highway 20 and Highway 57 during the 19th century. It was once a busy market centre and the location of the township hall (Lincoln County Council, 1956).

Wellandport was settled around 1795 along a narrow strip of land between Beaver Creek and Chippewa River. The settlement is located at the present-day intersection of Highway 57 and Canboro Road. By 1820, several hotels, mills and distilleries had been constructed at Wellandport to support the community which was developing there as a result of the increasing

use of the two rivers for the transportation of lumber and other goods (Lincoln County Council, 1956). Page's 1876 map of Gainsborough Township illustrates the level of development within and around optioned properties by the second half of the 19th century (Figures 2a through 2d).

In general, land-use in Gainsborough Township remains largely agricultural. The homesteads of 17 early settlers may be located with optioned parcels of land based on information provided in Page's 1876 *Illustrated Atlas of the Counties of Lincoln and Welland* (Table 3). Among these early settlers were the Heaslip, Snyder, Lane, Gee, Johnson, Kennedy, and Dils families.

Table 3: Early Settlers in Gainsborough Township

Settler Name	Date of Settlement	Matching Names from 1876 within Proposed locations	Township	Lot(s)	Conc.
Heaslip	1782	Leonard Heaslip	Gainsborough	11,12	1
Heaslip	1782	J.L. Heaslip, M. Heaslip	Gainsborough	13,14	4
Synder	1793-4	Jason Synder	Gainsborough	17	5
Synder	1793-4	George Synder	Gainsborough	23	6
Synder	1793-4	Rob. Synder	Gainsborough	8	2
Synder	1793-4	John Synder	Gainsborough	12	1
Lane	1793-4	N.N. Lane	Gainsborough	11	6
Lane	1793-4	Mrs. R. Lane	Gainsborough	15	3
Gee	1793-4	Abraham Gee Estate	Gainsborough	16	3
Gee	1793-4	Jacob Gee	Gainsborough	21,22	4
Gee	1793-4	C. Gee	Gainsborough	6	3
Gee	1793-4	Ezra Gee (on present-day Gee Road)	Gainsborough	20	3
Johnson	1793-4	Nathan Johnson	Gainsborough	3	5
Kennedy	1793-4	Samuel Kennedy	Gainsborough	22	5
Kennedy	1793-4	John Kennedy	Gainsborough	21	5
Kennedy	1793-4	Jacob Kennedy	Gainsborough	25,26	1
Peter Dils	1796	J.C. Dils	Gainsborough	8	1

2.3.2.5 Grimsby Township, Lincoln County

The first European settlers arrived in Grimsby Township in 1787-1788. By 1833, the township was sufficiently settled and developed to justify its division into South Grimsby and North Grimsby Townships along the Niagara escarpment, which cuts through the middle of the township from the east to the west. The settlements of Smithville and Grimsby, in South Grismby and North Grimsby Townships, respectively, were established in the 1780s. Grimbsy Township was in the home of John Green, in Grimsby Township, that the first municipal council meeting in Upper Canada was held on April 5, 1790 (Lincoln County Council, 1956).

Prior to the War of 1812 the Village of Grimsby was known as The Forty. The Forty was originally established around 1790 as settlers such as Robert Nelles, John Green and John

Beamer began constructing mills along the Forty Mile Creek. By 1812, Grismby was the site of two schools, one church, several stores and two distilleries. The Battle of Stoney Creek took place east of the settlement on June 8, 1813.

After the War of 1812 both Grimsby and Smithville continued to develop. By 1876 Grimsby had a population of over six hundred inhabitants, with four churches, three schools, a fruit canning factory, a brewery and numerous mills and stores. Smithville had a population of over seven hundred inhabitants, with five churches, two pump factories, a shingle factory, and several stores (Lincoln County Council, 1956).

2.3.2.6 Wainfleet Township, Lincoln County

Wainfleet Township is characterised by poorly drained, often marshy land and, as a result, was one of the slowest in Lincoln County to be settled (Wainfleet Historical Society, 1992). Among the first settlers in Wainfleet Township was David Morgan, who arrived from Pennsylvania during the American Revolution. Other early settlers included William Fares, Jacob Minor, Henry Zavitz, Abram Kinnaird, and Lawrence Furry, the founder of the community of Lowbanks (Sidey *et.al.,* 1887). The construction of the Feeder Canal between 1824 and 1829 further connected Wainfleet Township with neighbouring communities, but more importantly contributed to the drainage of the surrounding area (Wainfleet Historical Society, 1992). Page's 1876 map of Wainfleet Township illustrates the level of development within and around optioned properties by the second half of the 19th century (Figure 3).

2.3.2.7 Haldimand County

Haldimand County is located within the Haldimand Tract, an area six miles on either side of the Grand River, from its headwaters to Lake Erie which was granted to the Six Nations in 1784. In 1792, Norfolk County was established from lands within the Haldimand Tract. Haldimand County, named after Sir Frederick Haldimand, was established as its own county in 1800 (Brueton, 1967). One of the oldest settlements in Moulton Township is Lowbanks which was founded in 1772 by Lawrence Furry, originally from Pennsylavania (Paisley, 1967).

The County was officially opened for settlement by the Crown in 1832 but settlement was slow due to heavily forested and often swampy lands. The Feeder Canal, built between 1824 and 1829, is one of the most notable man-made features in Moulton Township. It connects the Grand River at Dunnville in the west to the Welland Canal in Welland in the east. During the 19th century, regular freights along the Feeder Canal made it an important route for the transportation of timber and cordwood (Paisley, 1967). Page's 1876 map of Moulton Township illustrates the level of development within and around optioned properties by the second half of the 19th century (Figure 4).

2.4 ARCHAEOLOGICAL CONTEXT

There are at present one hundred and sixty six (166) registered archaeological sites within a 1 km radius of the Study Area (MTCS, 2011b; Appendix A). Of these 166 sites, three (3) sites date to the Palaeo-Indian period, thirty two (32) sites date to the Archaic period and twenty one (21) sites date to the Woodland period. Another thirteen (13) date to the Euro-Canadian period, of which one is a Post-Contact First Nations site. One hundred and two (102) of the registered archaeological sites are of an indeterminate cultural affiliation (MTCS, 2011b). One late Woodland period ossuary is located within the Study Area, but not within constructible locations. The Study Area is not located within any municipal archaeology plans (DeFields, 2012 pers. comm.; Eichenbaum, 2012 pers. comm.; Langley, 2012 pers. comm.; Simon, 2012 pers. comm.; Kolasa, 2012 pers. comm.; and Arcaro, 2012 pers. comm.).

The vast majority of the sites within the Study Area were identified by archaeologists as a result of the Environmental Assessment (EA) process for development projects between 1984 and present. Three archaeological surveys were undertaken by D. Strothers in 1974, W. Fox in 1980 and C. Ellis of McMaster University in 1977 (MTCS, 2011b).

Between 1984 and 2000, two surveys accounted for the majority of the archaeological sites recorded in the Study Area. The first was undertaken by Robert Pearce of the Museum of Indian Archaeology for the Ontario Waste Management Corporation in the historic Gainsborough Township. The second was undertaken by Robert Mayer for his work on a variety of subdivisions throughout the project area. Since the turn of the millennium, work has been conducted by a wide variety of archaeologists over the entire Study Area (MTCS, 2011b; Appendix A).

The prevalence of previously recorded archaeological sites throughout the Study Area demonstrate the area's potential for the recovery of archaeological materials on all sites with soil integrity. The entire region has been intensively used by prehistoric peoples in part due to the fact several well known sources of high quality tool stone occur within, or very close to, the Study Area. These tool sources include Haldimand and Onondaga cherts to the south and west, and Ancaster and Niagara cherts, to the northwest and northeast, respectively (Fox, 2009).

Overall conditions within the Study Area are excellent for both prehistoric and historic period occupation (Appendix A). Prehistoric peoples had access to a wide variety of econiches for the harvesting of plant, fish and animal resources. Historic peoples encountered fertile, well-watered soils upon which to settle. In addition, the topography of the area is advantageous for transportation due to its proximity to both Lake Erie and Ontario and the numerous watercourses throughout the region.

3.0 Analysis and Conclusions

The assessment of archaeological potential for the Study Area considered both prehistoric and historic period resources. Archaeological potential modelling for prehistoric era sites is based largely on the identification of landscape features which are either known to have attracted past habitation or land use, or which appear to have potential for attracting human use. These features include: navigable rivers and lakes; confluences of watercourses; smaller sources of potable water; ridges or knolls that overlook areas of resource potential; outcrops of high-quality stone for tool making; and, most importantly, combinations of these features. In general it has been demonstrated that areas within 200-300 m of watercourses, or other significant bodies of water (ASI, 1990; Cox, 1989), and in particular those areas with multiple water sources (Young et al., 1995), are considered to be of elevated archaeological potential.

Patterns of land use by historic Euro-Canadians to some extent mirror those of the prehistoric period. This is not surprising, since the same general needs must be met, i.e., proximity to potable water, access to natural resources, and a level, well drained habitation site. On the other hand, the Euro-Canadian conversion of both fertile and more marginal land for agricultural purposes, the development of non-water travel routes, the exploitation of different resources such as subsurface mineral deposits, and other differences in land use patterns make potential modeling of Euro-Canadian and other non-Aboriginal historic sites somewhat less reliable. Fortunately, these sites are more visible than their prehistoric counterparts, which helps offset this lower level of predictive reliability.

Areas of archaeological potential are largely determined by a limited number of criteria generally accepted as being of importance in human land-use, and thus in the deposition of materials that eventually result in archaeological sites. In order to demonstrate the widespread archaeological potential of the Study Area a map of the Study Area has been populated with buffer zones for various elements that elevate archaeological potential as determined by criteria set out by the MTCS (see also Finalyson, 2009). The resulting maps, Figures 5a through 5f, show that most of the Study Area exhibits characteristics that are consistent with elevated archaeological potential. Specific criteria upon which the map was based are shown in Appendix B.

In general, archaeological modeling of the area would consider all parts of the study area to have high potential for the discovery of archaeological resources. The proximity of many major topographical features, including the Grand River, Welland River (formerly Chippewa River), Niagara Falls, Lake Ontario and Lake Erie, and the Niagara Escarpment, to the Project is of considerable interest for both prehistoric and historic period archaeology. From archaeological work already conducted in the area and historic research conducted for this project the potential that archaeological resources of integrity exist within the project area has been determined to be very high (Appendix B).

Based on the generally favourable environmental conditions of the Study Area and the high number of known, registered archaeological sites all of the Study Area, with the exception of already disturbed areas such as paved roads and existing buildings, is considered to have very high potential for the presence of as yet undiscovered archaeological resources.

4.0 Recommendations

It is Stantec's professional opinion that the majority of the Study Area demonstrates high potential for the presence of significant archaeological deposits of integrity (Figures 5a through 5f). It should be anticipated for Project component siting exercises that Stage 2 Archaeological Assessment will be required for all locations of Project-related infrastructure construction, including all turbine pads, access roads, underground cable links, construction offices, laydown areas and temporary storage areas and any other areas where soil disturbances into and below the topsoil may occur.

Stage 2 archaeological survey generally takes one of two forms: pedestrian survey and test pit excavation survey Pedestrian survey, the preferred methodology, requires that the area to be surveyed be ploughed as if the ground were to be cultivated and allowed to weather through one hard or several light rainfalls. After weathering the ground is walked at a slow pace and the locations of artifacts recorded using a Geographic Positioning System (GPS). During a pedestrian survey only diagnostic artifacts are collected; all others are left *in situ*.

The following standards will apply, as appropriate, for Stage 2 AA pedestrian survey:

- Actively or recently cultivated agricultural land must be assessed by pedestrian survey;
- Land to be surveyed must be recently ploughed. Use of chisel ploughs is not acceptable. In heavy clay soils ensure furrows are disked after ploughing to break them up further;
- Land to be surveyed must be weathered by one heavy rainfall or several light rains;
- Ensure that ploughing is deep enough to provide total topsoil exposure, but not deeper than previous ploughing;
- At least 80% of the ploughed ground surface must be visible. If surface visibility is below 80% (e.g., due to crop stubble, weeds, young crop growth), ensure the land is re-ploughed before surveying;
- Space survey transects at maximum intervals of 5 m;
- When archaeological resources are found, decrease survey transects to 1 m intervals over a minimum of a 20 m radius around the find to determine whether it is an isolated find or part of a larger scatter. Continue working outward until the full extent of the surface scatter has been defined. Record the location of the resources using a GPS;
- Collect all formal artifact types and diagnostic categories. For 19th century archaeological sites, collect all refined ceramic sherds (or, for larger sites collect a sufficient sample to form the basis for accurate dating).

If ploughing is not technically feasible in some locations due to the nature and extent of existing ground cover or other conditions, Stage 2 assessment will need to be completed using a test pit excavation strategy. In this instance standard archaeological test pits of 30 x 30 cm or greater are excavated and all excavated soils passed through screens of 6 mm mesh. During test pit survey all artifacts encountered are retained. In either case the survey interval will be at no more than 5 m. During Stage 2 assessment all field activities will be recorded using a GPS.

The following the following standards will apply, as appropriate, for Stage 2 AA test pit survey:

- Test pit survey only on terrain where ploughing is not possible or viable, such as:
  - wooded areas;
  - pasture with high rock content;
  - abandoned farmland with heavy brush and weed growth;
  - orchards and vineyards that cannot be strip-ploughed (planted in rows 5 m apart or less), gardens, parkland or lawns;
  - properties where existing landscaping or infrastructure would be damaged;
  - narrow (10 m or less) linear survey corridors (e.g., water or gas pipelines, road widening). This includes situations where there are planned impacts 10 m or less beyond the previously impacted limits on both sides of an existing linear corridor (e.g., two linear survey corridors on either side of an existing roadway);
- Space test pits at maximum intervals of 5 m (400 test pits per hectare) in areas less than 300 m from any feature of archaeological potential;
- Space test pits at maximum intervals of 10 m (100 test pits per hectare) in areas more than 300 m from any feature of archaeological potential;
- When positive test pits are encountered:
  - Continue test pit excavation on the survey grid to determine whether there are further positive test pits. This may produce sufficient archaeological resources to meet the criteria for making a recommendation to carry out a Stage 3 assessment;
  - If insufficient archaeological resources are found through continued survey on the grid to meet the criteria for continuing to Stage 3, intensify survey coverage around the positive test pit at 2.5 m interval to determine whether a recommendation for a Stage 3 assessment can be supported.
- Test pit to within 1 m of built structures (both intact and ruins), or until test pits show evidence of recent ground disturbance;
- Ensure that test pits are at least 30 cm in diameter;
- Excavate each test pit, by hand, into the first 5 cm of subsoil and examine the pit for stratigraphy, cultural features, or evidence of fill;
- Screen soil through mesh no greater than 6 mm;
- Collect all artifacts according to their associated test pit; and,
- Backfill all test pits unless instructed not to by the landowner.

5.0 Advice on Compliance with Legislation

This report is submitted to the 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 O.18. Ontario. 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 Study Area have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport 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 archaeological 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, 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.

6.0 Closure

This report has been prepared for the sole benefit of Niagara Region Wind Corporation (NRWC) and may not be used without the express written consent of Stantec Consulting Ltd and NRWC. Any use which a third party makes of this report is the responsibility of such third party.

We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

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7.2 PERSONAL COMMUNICATION

Arcaro, Jordan. Deputy Clerk, Town of Pelham. Phone and email, July and August, 2012.

DeFields, Danielle. Integrated Community Planning Department, Niagara Region. Voicemail July 26, 2012.

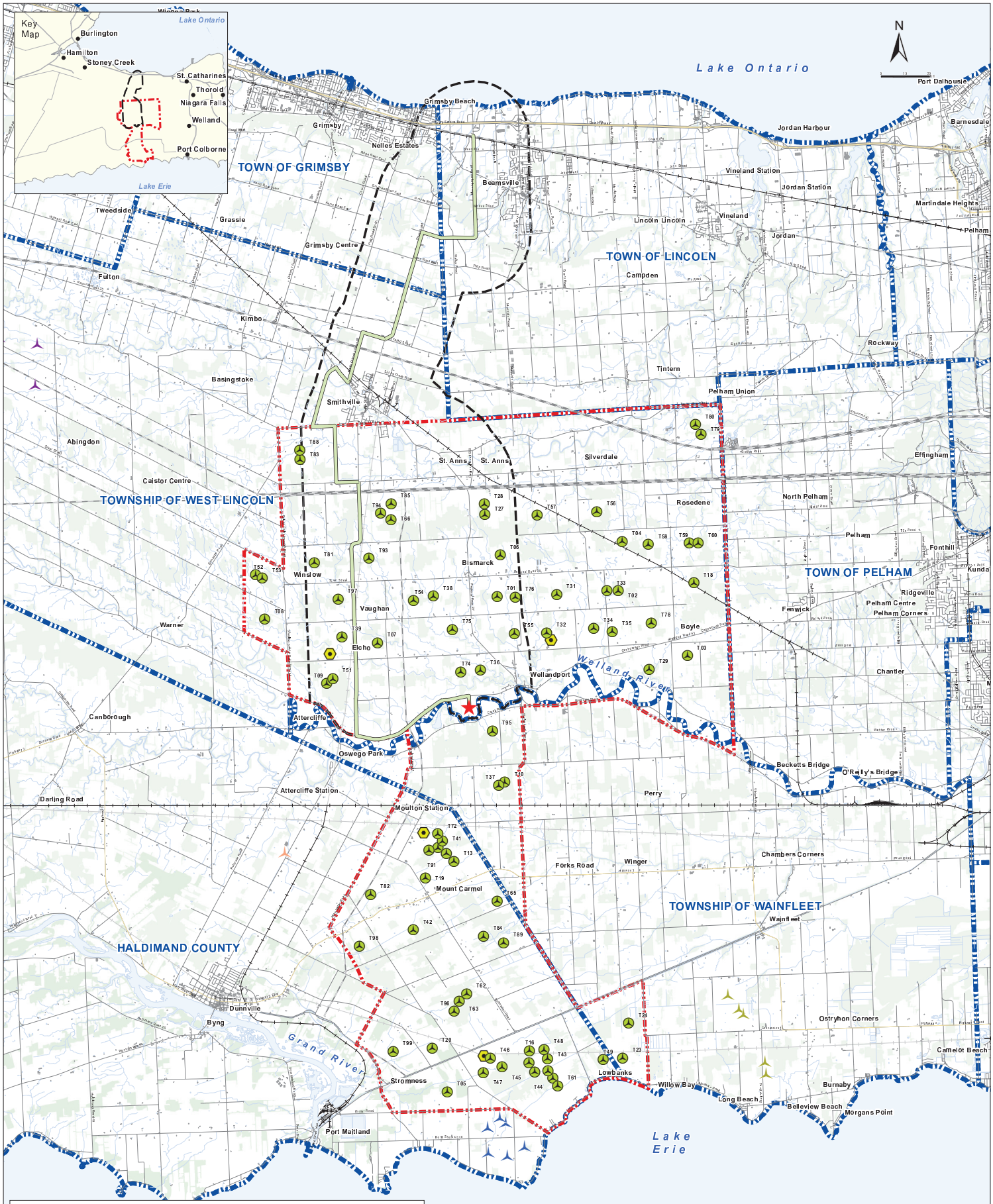
Eichenbaum, Evelyn. Clerk, Haldimand County. Phone conversation with C. Uchiyama July 24, 2012.

Kolasa, William. Director of Corporate Services/Clerk, Township of Lincoln. Email August 23, 2012.

Langley, Carolyn. Clerk, Township of West Lincoln. Email July 24, 2012.

Simon, Nancy. Administrator, Town of Grimsby. Phone conversation with C. Uchiyama July 24, 2012.

8.0 Maps



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2012.
3. This figure illustrates the proposed location of the turbines, substation and transmission line, as included in the Draft Site Plan Report. The final Project Location, including all turbines, access roads, collector lines, transmission line, substation and construction area, will be identified and described in the final draft Renewable Energy Approval reports, which will be provided for public review at least 60 days in advance of the final public meeting.

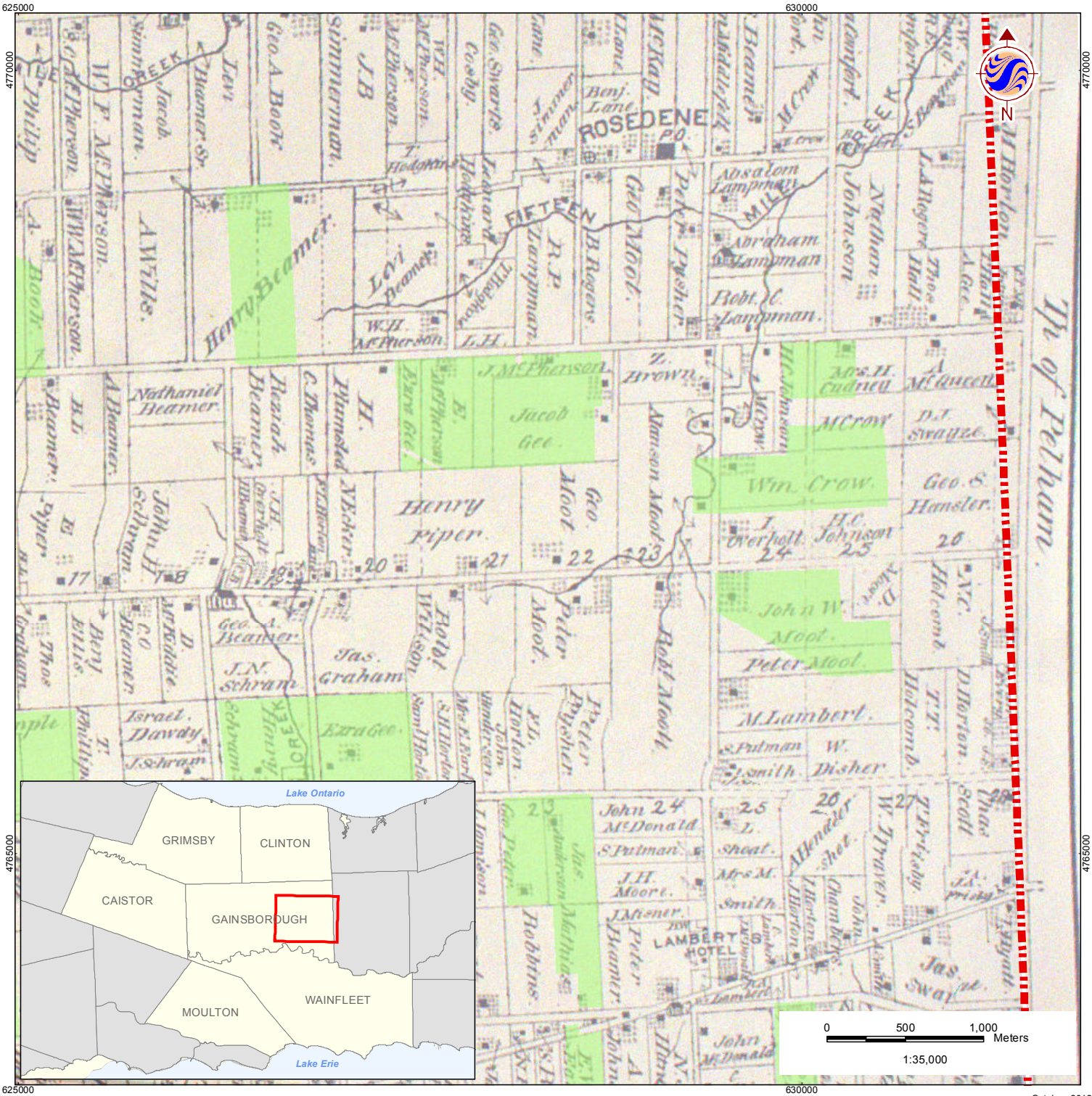
Location of Study Area

Figure No. 1

Stantec

nrwc

October, 2012



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October, 2012
Project No. 160950269

Legend

- Interconnector Study Area
- Project Study Area
- Participating Property

Notes

1. Coordinate System: North American 1983 UTM Zone 17N).
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3. Historic Maps: Moulton Twp: Page, H.R., 1879. Illustrated historical atlas of the county of Haldimand, Ont.. Toronto: H.R. Page & Co. Sherbrooke, Wainfleet, Gainsborough, Grimsby & Clinton Twps: Page, H.R., 1876. Illustrated historical atlas of the counties of Lincoln and Welland, Ont. Toronto: H.R. Page & Co..

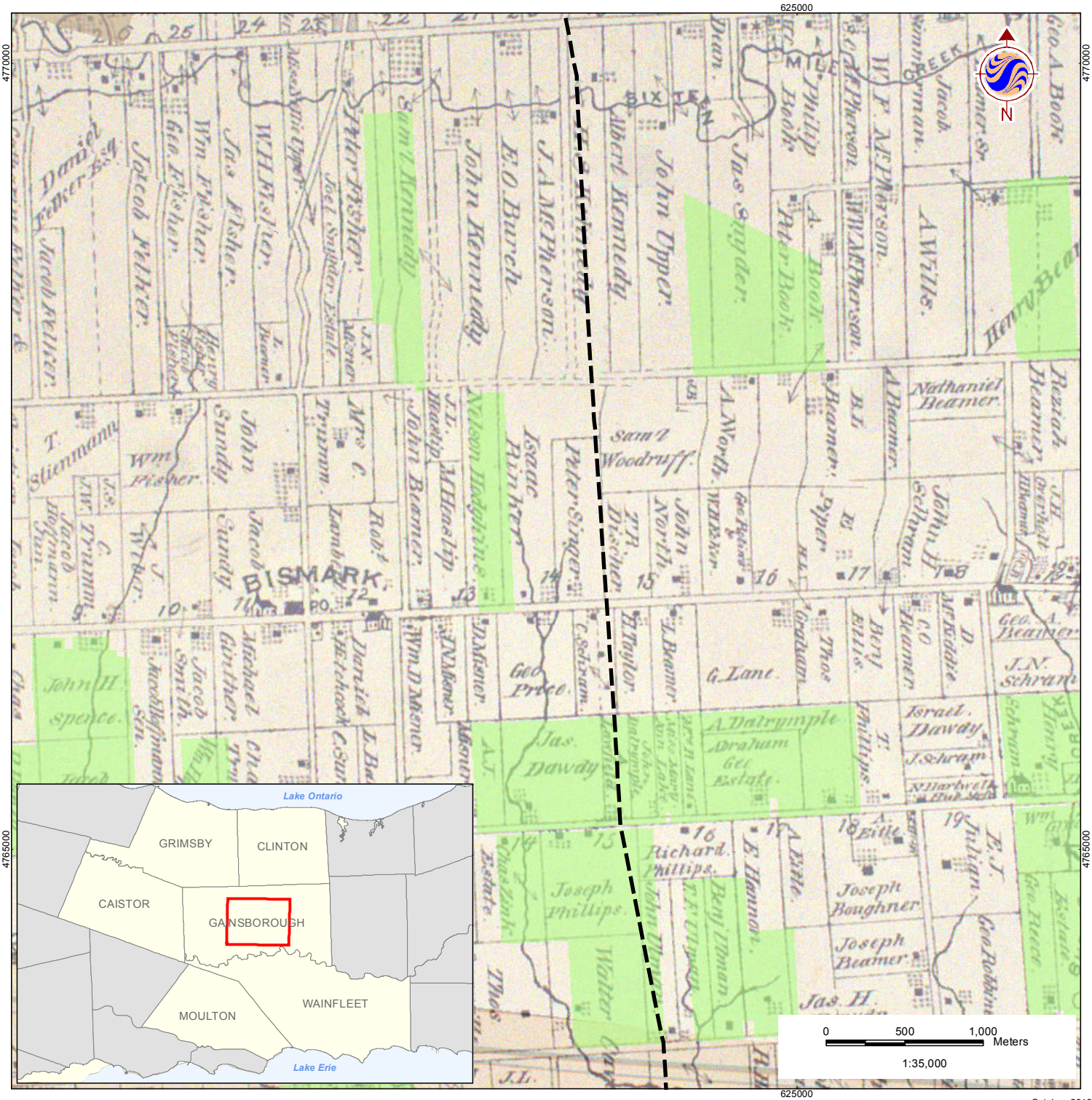
Client
Niagra Region Wind Farm
Heritage Impact Assessment Report

Figure No.
2A

Title

HISTORIC MAPPING OVERLAID BY PARTICIPATING PROPERTIES - GAINSBOROUGH TOWNSHIP NORTHEAST

Stantec



Tuesday, October 25, 2011 7:44:29 AM
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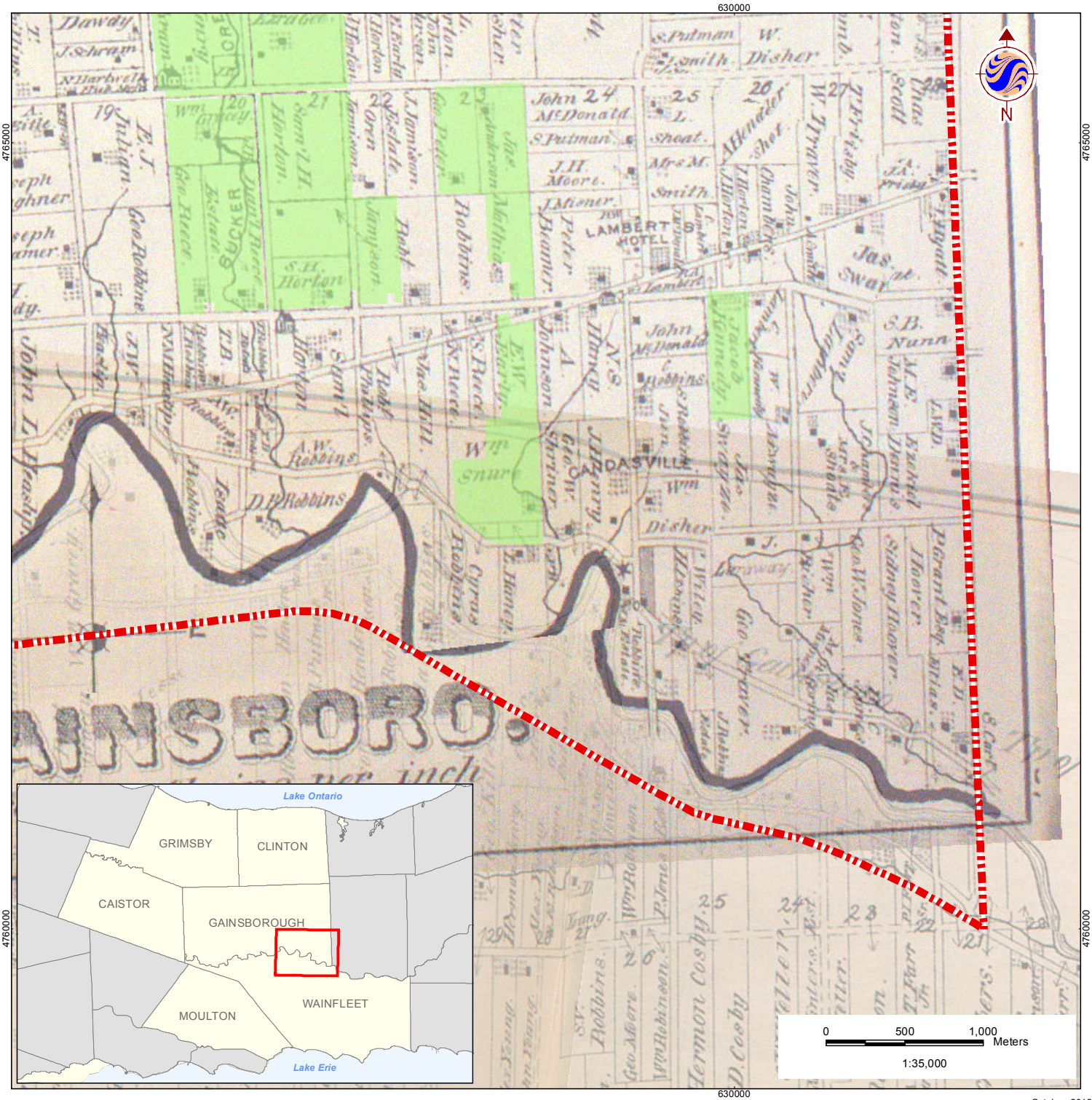
Client
Niagra Region Wind Farm
Heritage Impact Assessment Report

Figure No.
2B

Title

HISTORIC MAPPING OVERLAID BY PARTICIPATING PROPERTIES - GAINSBOROUGH TOWNSHIP NORTHWEST

Stantec



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October, 2012
Project No. 160950269

Legend

- Interconnector Study Area
- Project Study Area
- Participating Property

Notes

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Figure No.
2C

Title

HISTORIC MAPPING OVERLAID BY PARTICIPATING PROPERTIES - GAINSBOROUGH TOWNSHIP SOUTHEAST

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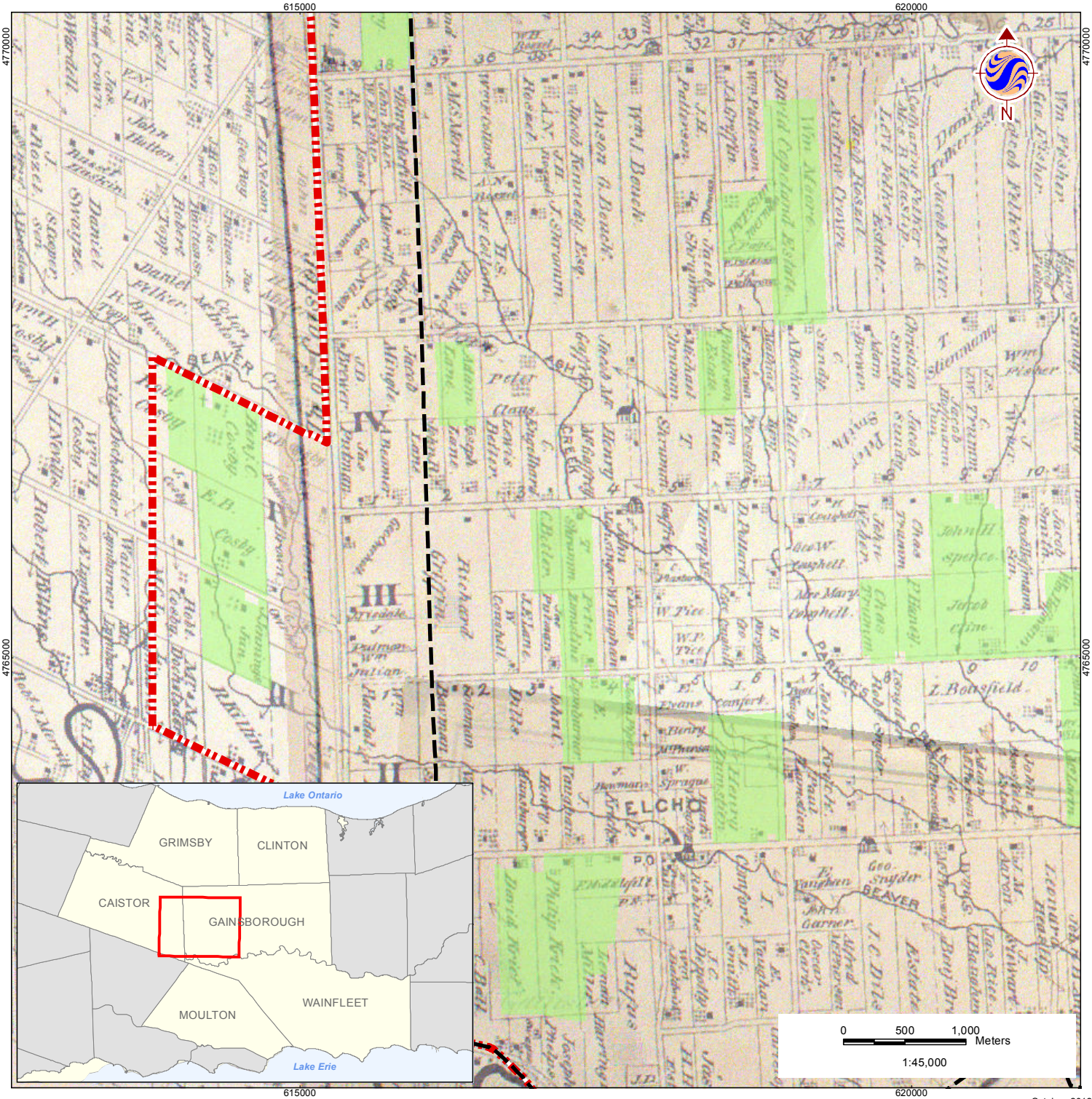

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October, 2012
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Legend

- Interconnector Study Area
- Project Study Area
- Participating Property

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Figure No.
2D

Title

HISTORIC MAPPING OVERLAID BY PARTICIPATING PROPERTIES - GAINSBOROUGH TOWNSHIP SOUTHWEST

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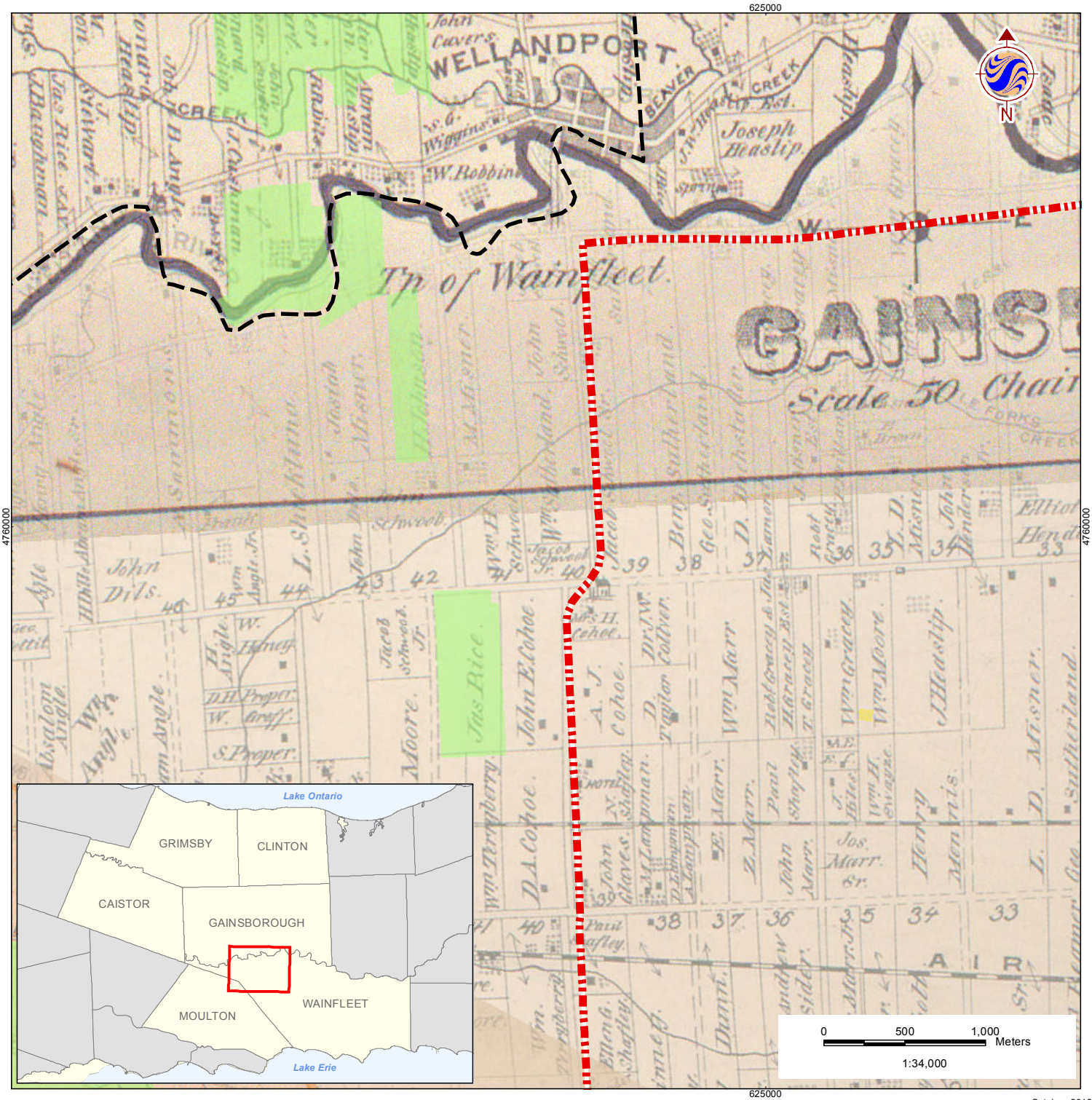

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Legend

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Figure No.
3

Title

HISTORIC MAPPING OVERLAID BY PARTICIPATING PROPERTIES - WAINFLEET TOWNSHIP

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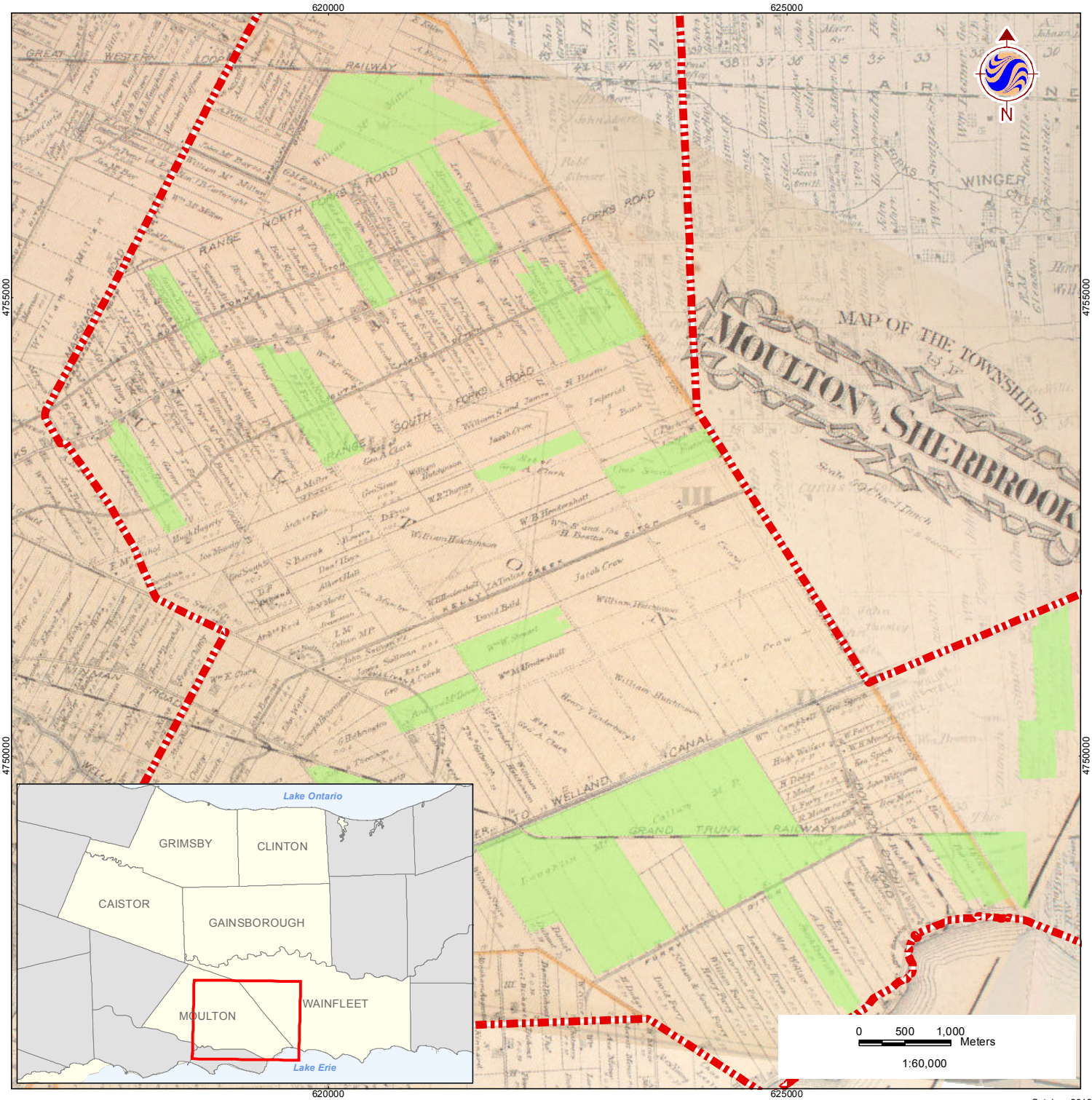

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October, 2012
Project No. 160950269

Legend

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- Project Study Area
- Participating Property

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Figure No.

4

Title

HISTORIC MAPPING OVERLAID BY PARTICIPATING PROPERTIES - MOULTON TOWNSHIP

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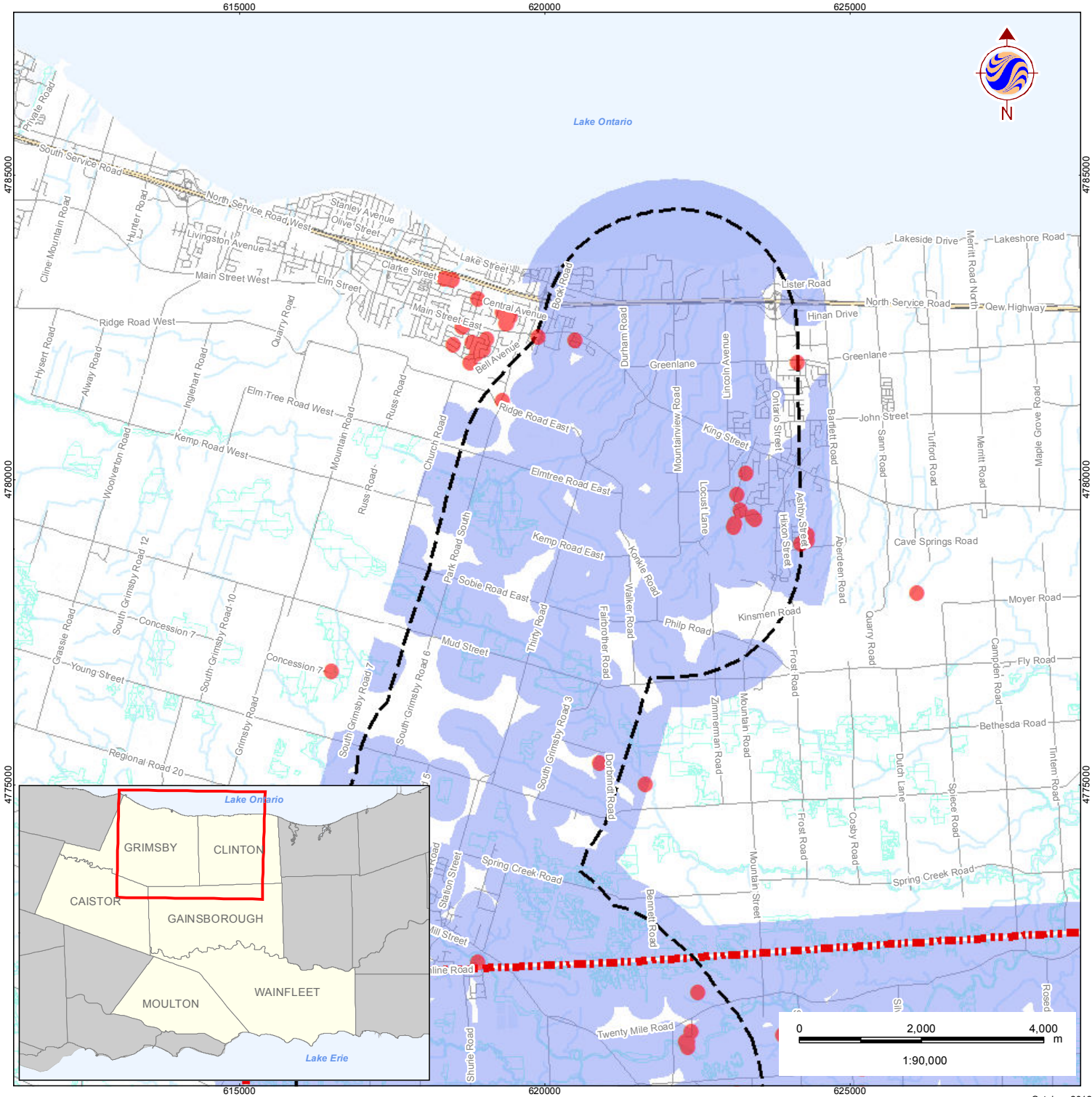

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October, 2012
Project No. 160950269

Legend

- Registered Archaeological Site
- Prehistoric Archaeological Potential
- Interconnector Study Area
- Project Study Area
- Watercourse
- Wetland

Notes

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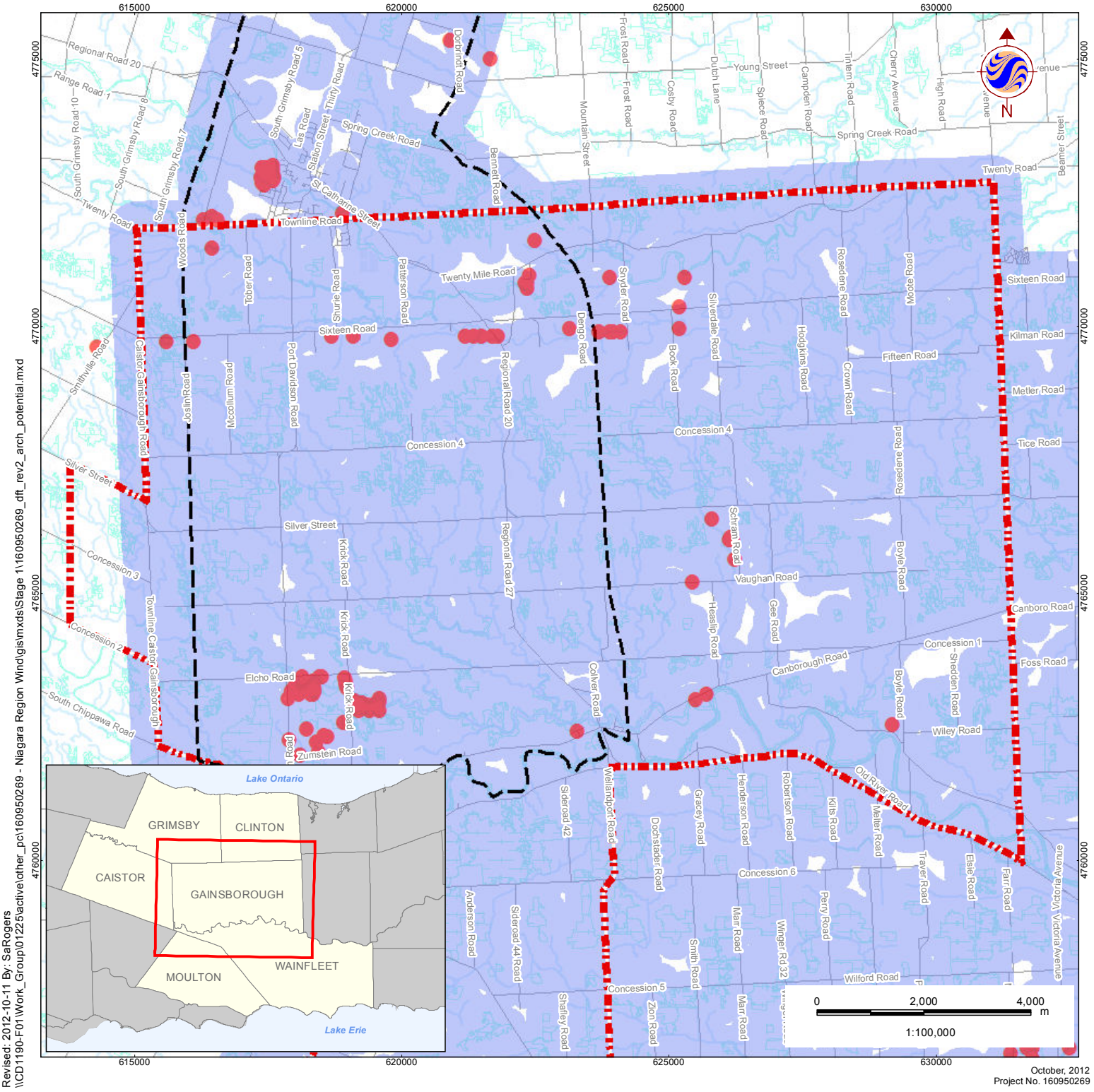
Figure No.

5A

Title

Standard 300m Buffers Around Features of Prehistoric Archaeological Potential Project Study Area - North

Stantec



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October, 2012
Project No. 160950269

Legend

- Registered Archaeological Site
- Prehistoric Archaeological Potential
- Interconnector Study Area
- Project Study Area
- Watercourse
- Wetland

Notes

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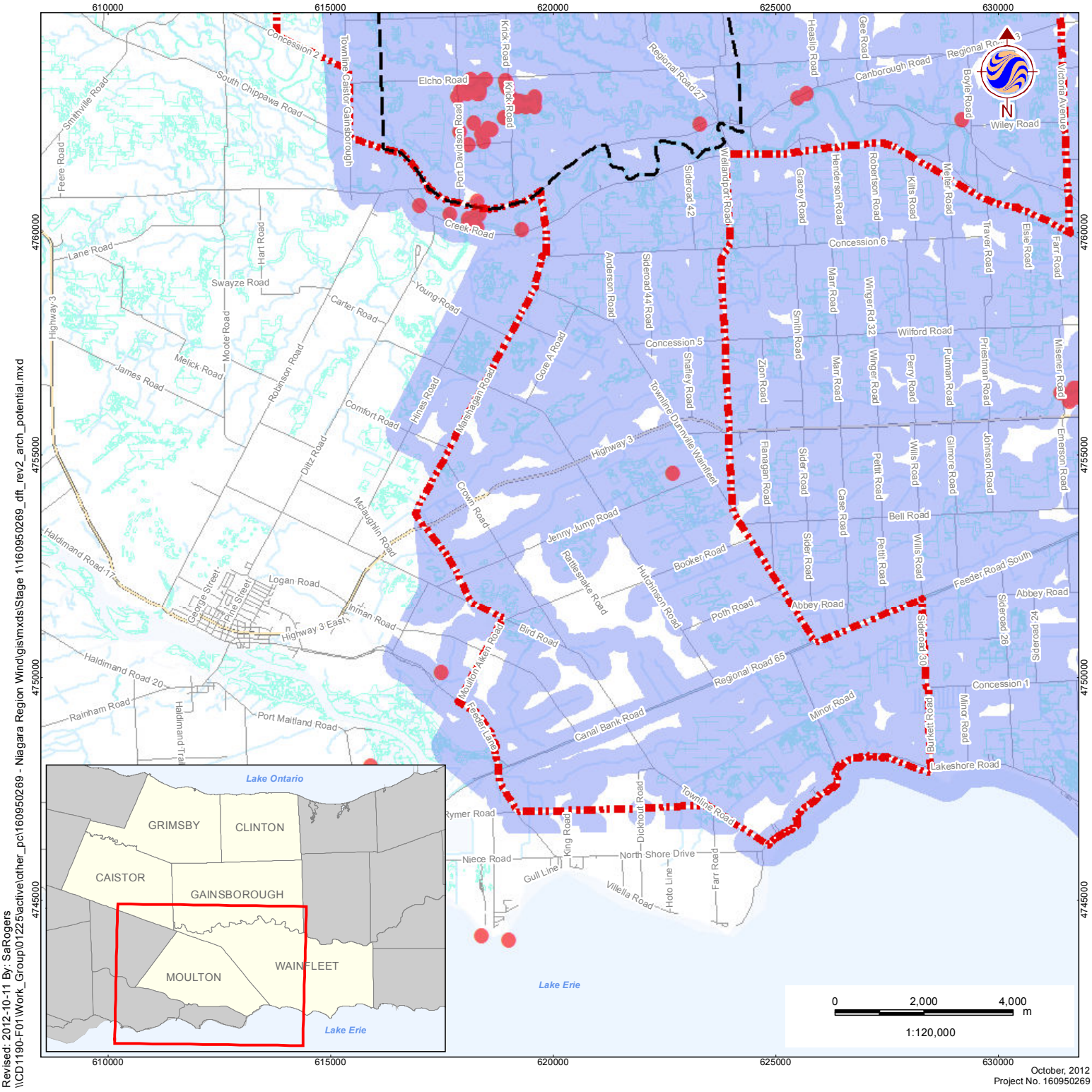
Figure No.

5B

Title

Standard 300m Buffers Around Features of Prehistoric Archaeological Potential Project Study Area - Central

Stantec



Revised: 2012-10-11 By: SaRogers
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October, 2012
Project No. 160950269

Legend

- Registered Archaeological Site
- Prehistoric Archaeological Potential
- Interconnector Study Area
- Project Study Area
- Watercourse
- Wetland

Notes

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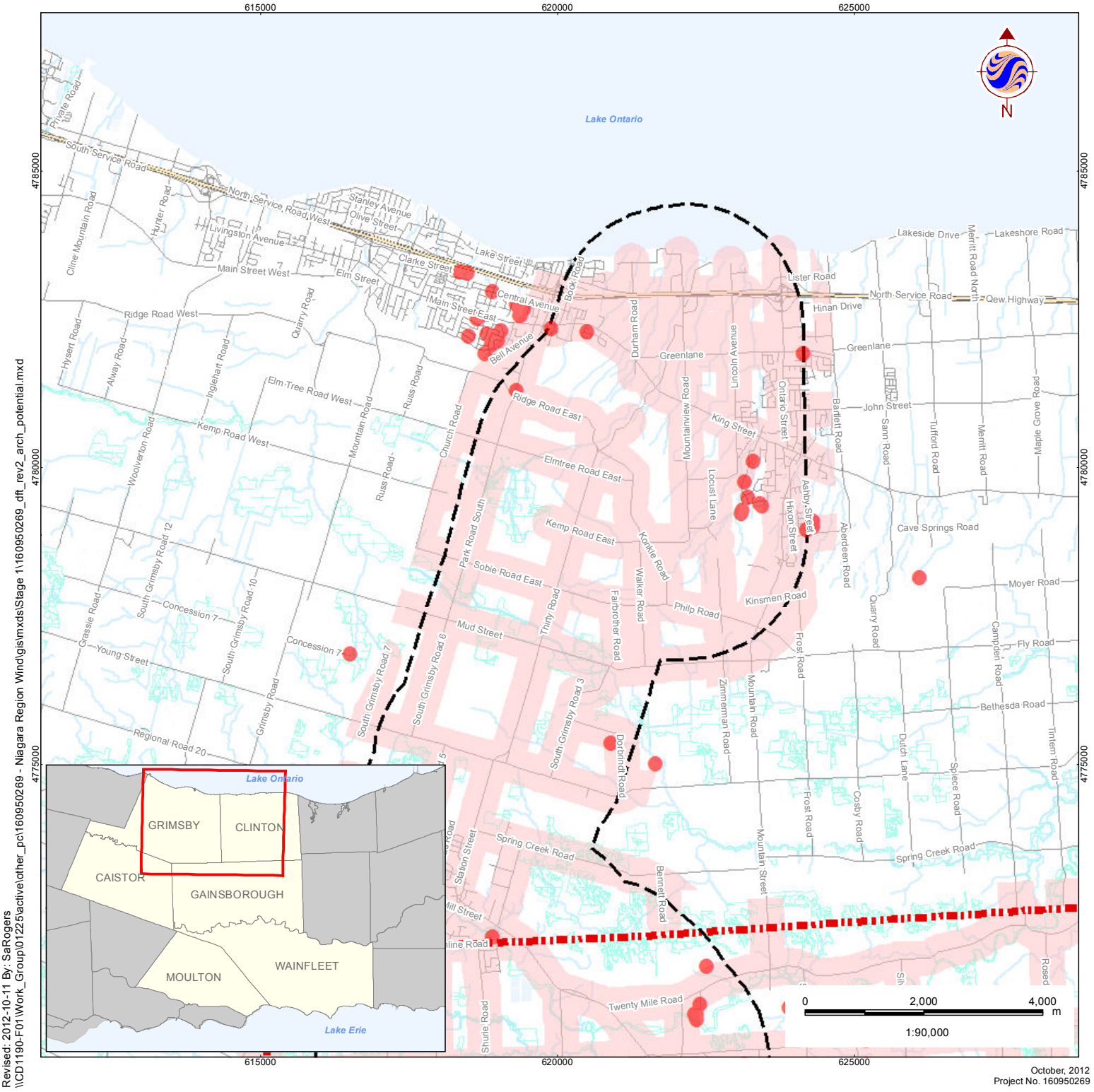
Figure No.

5C

Title

Standard 300m Buffers Around Features of Prehistoric Archaeological Potential Project Study Area - South

Stantec



Revised: 2012-10-11 By: SaRogers
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October, 2012
Project No. 160950269

Legend

- Registered Archaeological Site
- Historic Archaeological Potential
- Interconnector Study Area
- Project Study Area
- Watercourse
- Wetland

Notes

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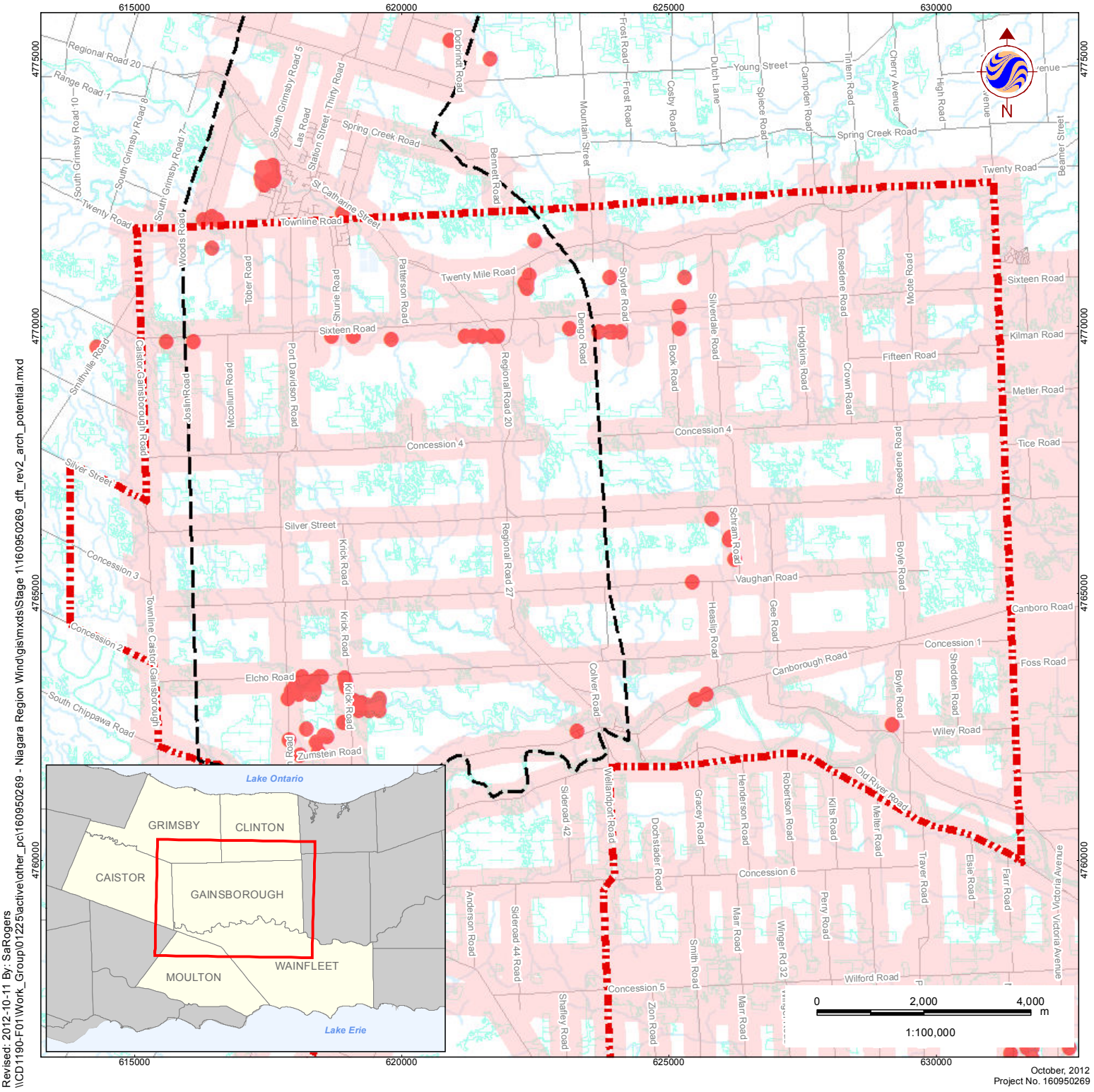
Figure No.
5D

Title

Standard 300m Buffers Around Features of Historic Archaeological Potential Project Study Area - North

Stantec



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October, 2012
Project No. 160950269

Legend

- Registered Archaeological Site
- Historic Archaeological Potential
- Interconnector Study Area
- Project Study Area
- Watercourse
- Wetland

Notes

1. Coordinate System: North American 1983 UTM Zone 17N).
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Figure No.

5E

Title

Standard 300m Buffers Around Features of Historic Archaeological Potential Project Study Area - Central

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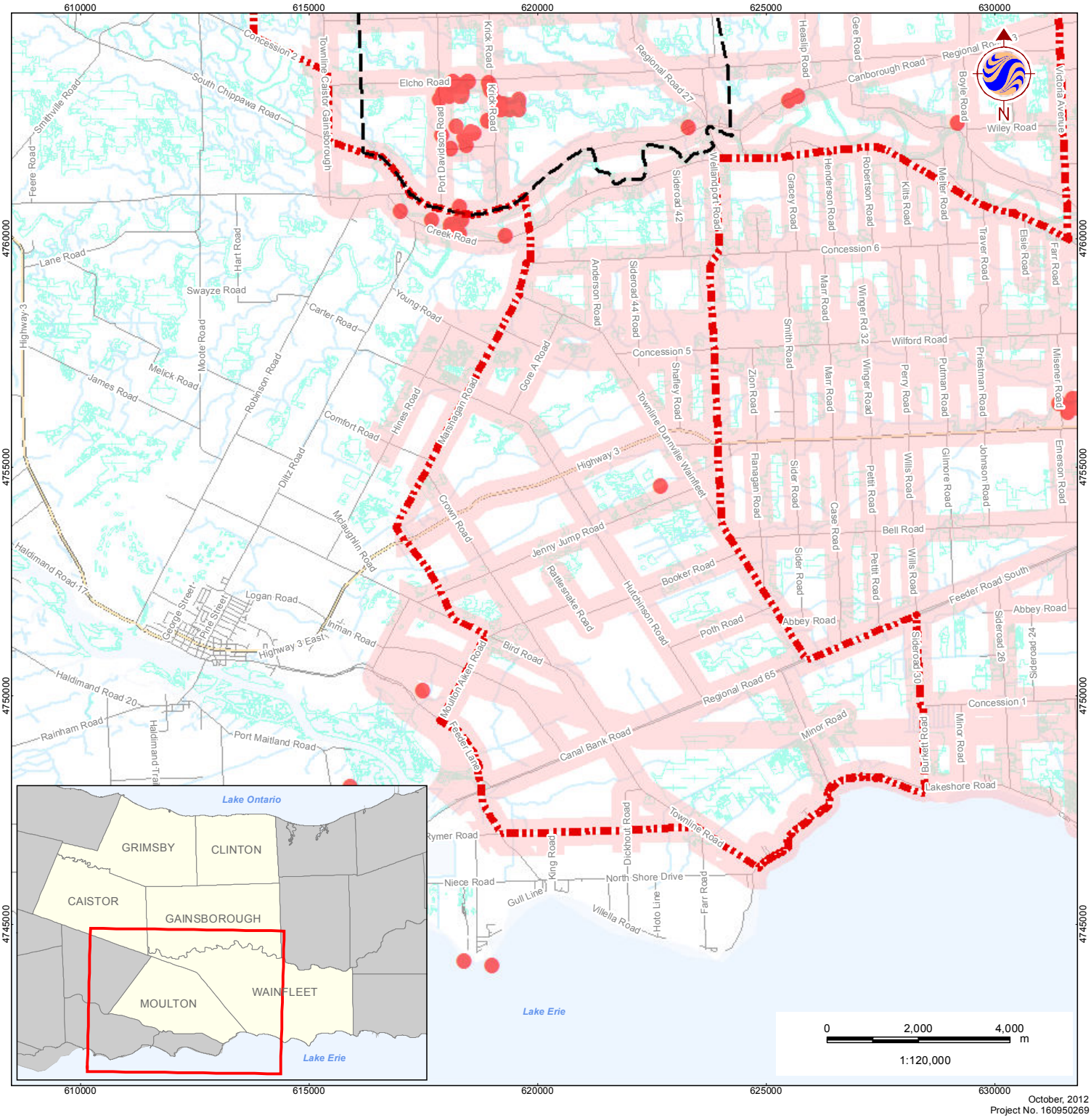

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October, 2012
Project No. 160950269

Legend

- Registered Archaeological Site
- Historic Archaeological Potential
- Interconnector Study Area
- Project Study Area
- Watercourse
- Wetland

Notes

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Figure No.

5F

Title

Standard 300m Buffers Around Features of Historic Archaeological Potential Project Study Area - South

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9.0 Images

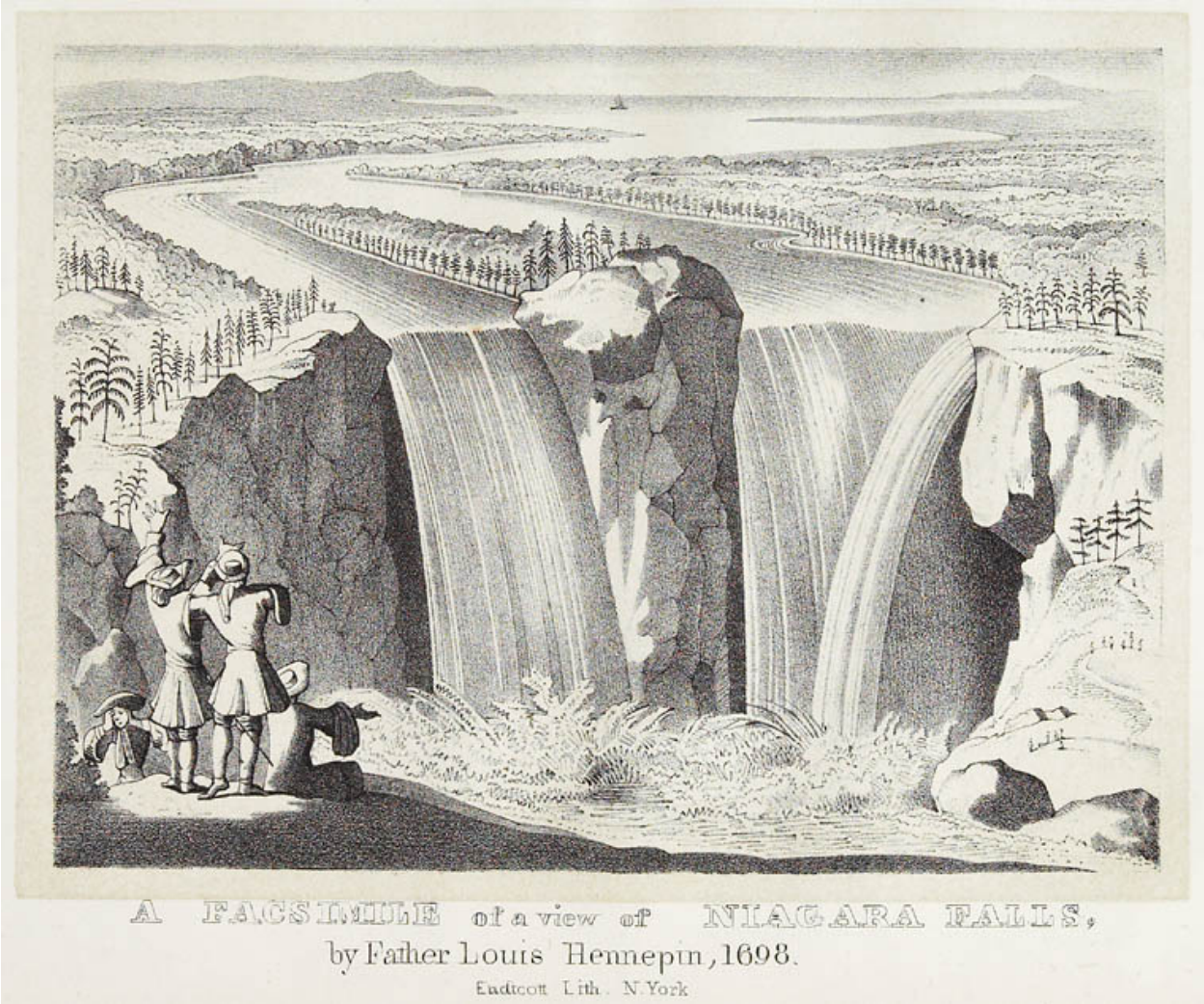

Plate 1: Father Jean Louis Hennepin's View of Niagara Falls, 1698

Plate 2: View of Niagara Falls from The Gentleman's Magazine, 1751

Appendix A

List of Registered Archaeological Sites Within the Study Area

#	Site	Culture
1	AfGv-29	A
2	AfGv-28	A
3	AfGv-27	NR
4	AfGv-64	NR
5	AfGv-63	NR
6	AfGv-66	NR
7	AfGv-67	NR
8	AfGv-70	EW
9	AgGu-29	EC
10	AgGu-5	LW
11	AgGu-8	UD
12	AgGu-9	UD
13	AgGu-22	EW,MW,LW,LA
14	AgGu-44	EA, LA
15	AgGu-45	EW, MW, LA
16	AgGu-48	EC, EW, MW
17	AgGu-49	UD
18	AgGu-50	MA, EW, MW, EC
19	AgGu-51	UD
20	AgGu-52	W
21	AgGu-53	UD
22	AgGu-54	EA
23	AgGu-55	UD
24	AgGu-46	MA
25	AgGu-47	UD
26	AgGu-23	LA
27	AgGu-56	LA, EW, LW, PC
28	AgGu-57	UD
29	AgGu-61	LA
30	AgGu-62	EC
31	AgGu-58	UD
32	AgGu-59	UD
33	AgGu-60	MA
34	AgGu-69	MA
35	AgGu-24	UD
36	AgGu-25	LA
37	AgGu-26	LA
38	AgGu-27	UD
39	AgGu-28	EA
40	AgGu-43	UD
41	AgGu-67	LPI,EA, MA
42	AgGu-68	MA
43	AgGv-2	LW
44	AgGu-32	UD

TOTAL SITES/COMPONENTS

Palaeo-Indian (PI, EPI, LPI)	3
Archaic (A, LA, MA, EA)	32
Woodland (W, EW, MW, LW)	22
Euro-Canadian (EC)	12
Post-Contact (PC)	1
Undetermined (UD)	102
Not recorded (NR)	6
TOTAL	178

Researchers

- Williamson, ASI 1988-1992, 2000-2009
- R Mayer, R Griffin-Short 1991-96
- C Ellis, McMaster 1977
- RJ Pearce, MIA,LMA 1984-85, 2001-2006
- W Parkins 1985-87
- D Stothers 1974
- W Fox, 1980
- P Wooley, 2003-5
- H Martelle, 2005
- D Poulton, 1997
- R Mayer, Mayer Heritage Con.2004-05
- J Wilson, Archaeologix 2001-2002

45	AgGu-135	LPI, A
46	AgGu-139	UD
47	AgGu-141	UD
48	AgGv-7	EC
49	AgGu-134	LPI, A
50	AgGv-10	UD
51	AgGv-11	LW
52	AgGv-8	UD
53	AgGv-13	UD
54	AgGv-14	UD
55	AgGv-9	UD
56	AgGv-16	UD
57	AgGv-17	UD
58	AgGv-12	EC
59	AgGv-19	UD
60	AgGv-15	UD
61	AgGu-142	UD
62	AgGu-143	UD
63	AgGv-21	UD
64	AgGv-20	UD
65	AgGv-25	UD
66	AgGv-26	A
67	AgGv-27	EW, MW
68	AgGv-22	UD
69	AgGv-18	LW
70	AgGv-29	LA
71	AgGv-31	UD
72	AgGv-32	UD
73	AgGv-28	W
74	AgGv-34	UD
75	AgGv-35	EC
76	AgGv-36	UD
77	AgGv-37	UD
78	AgGv-38	UD
79	AgGv-39	LA
80	AgGv-40	UD
81	AgGv-41	UD
82	AgGv-33	W
83	AgGv-42	UD
84	AgGv-44	UD
85	AgGv-45	UD
86	AgGv-50	UD
87	AgGv-43	UD
88	AgGv-30	UD
89	AgGv-23	UD
90	AgGv-24	UD
91	AgGu-144	EC

TOTAL SITES/COMPONENTS	
Palaeo-Indian (PI, EPI, LPI)	3
Archaic (A, LA, MA, EA)	32
Woodland (W, EW, MW, LW)	22
Euro-Canadian (EC)	12
Post-Contact (PC)	1
Undetermined (UD)	102
Not recorded (NR)	6
TOTAL	178

Researchers

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- W Parkins 1985-87
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- P Wooley, 2003-5
- H Martelle, 2005
- D Poulton, 1997
- R Mayer, Mayer Heritage Con.2004-05
- J Wilson, Archaeologix 2001-2002

92	AgGu-145	UD
93	AgGv-54	UD
94	AgGv-52	LA, LW
95	AgGv-55	EA
96	AgGv-61	UD
97	AgGv-62	UD
98	AgGv-66	EA
99	AgGv-67	EA
100	AgGv-68	UD
101	AgGv-69	LA
102	AgGv-65	UD
103	AgGv-71	UD
104	AgGv-70	LW
105	AgGv-73	UD
106	AgGv-74	EW
107	AgGv-75	UD
108	AgGv-76	UD
109	AgGv-72	EA
110	AgGv-86	LA
111	AgGv-87	UD
112	AgGv-88	UD
113	AgGv-89	EC
114	AgGv-56	UD
115	AgGv-100	EC, UD
116	AgGv-77	UD
117	AgGv-101	UD
118	AgGv-105	UD
119	AgGv-106	UD
120	AgGv-108	UD
121	AgGv-109	UD
122	AgGv-107	UD
123	AhGv-2	NR
124	AgGv-104	UD
125	AgGv-57	UD
126	AhGv-14	UD
127	AgGv-58	LA
128	AhGv-16	UD
129	AhGv-8	EC
130	AhGv-6	UD
131	AgGv-59	UD
132	AhGu-4	UD
133	AhGv-19	UD
134	AhGv-26	UD
135	AhGv-27	UD
136	AhGv-28	UD
137	AhGv-29	UD
138	AhGv-24	MW, LW

TOTAL SITES/COMPONENTS

Palaeo-Indian (PI, EPI, LPI)	3
Archaic (A, LA, MA, EA)	32
Woodland (W, EW, MW, LW)	22
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- D Stothers 1974
- W Fox, 1980
- P Wooley, 2003-5
- H Martelle, 2005
- D Poulton, 1997
- R Mayer, Mayer Heritage Con.2004-05
- J Wilson, Archaeologix 2001-2002

TOTAL SITES/COMPONENTS

139	AhGv-30	UD
140	AhGv-36	UD
141	AhGv-38	UD
142	AhGv-39	UD
143	AhGv-40	UD
144	AhGv-41	UD
145	AhGv-42	UD
146	AgGu-65	UD
147	AgGu-66	UD
148	AgGu-173	UD
149	AgGu-174	UD
150	AgGu-175	UD
151	AgGv-4	UD
152	AgGv-5	UD
153	AhGv-37	UD
154	AhGv-18	UD
155	AhGv-15	UD
156	AhGv-17	UD
157	AhGv-25	LA
158	AgGv-60	UD
159	AgGu-147	UD
160	AgGu-140	EA
161	AgGu-63	LW
162	AgGv-3	UD
163	AgGu-64	LW
164	AgGv-6	UD
165	AgGu-3	LW
166	AfGu-49	NR

Palaeo-Indian (PI, EPI, LPI)	3
Archaic (A, LA, MA, EA)	32
Woodland (W, EW, MW, LW)	22
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H Martelle, 2005
D Poulton, 1997
R Mayer, Mayer Heritage Con.2004-05
J Wilson, Archaeologix 2001-2002

Appendix B

Archaeological Potential Determination Checklist

Archaeological Potential Determination Checklist					
	Feature of Archaeological Potential	**Yes**	**No**	**Not Available**	**Comment**
1	Known archaeological sites within 250 m?	✓			If Yes, potential determined
PHYSICAL FEATURES					
2	Is there water on or near the property?	✓			
2a	Primary water source within 300m	✓			If Yes, potential determined
2b	Secondary water source within 200m	✓			If Yes, potential determined
2c	Past water source within 300m	✓			If Yes, potential determined
3	Elevated topography	✓			If yes, and Yes for any of 4-9, potential determined
4	Pockets of sandy soil in a clay or rocky area	✓			If yes, and Yes for any of 3, 5-9, potential determined
5	Distinctive land formations	✓			If yes, and Yes for any of 3-4, 6-9, potential determined
HISTORIC USE FEATURES					
6	Associated with food or scarce resource harvest areas			✓	If yes, and Yes for any of 3-5, 7-9, potential determined
7	Indications of early historic settlement	✓			If yes, and Yes for any of 3-6, 8-9, potential determined
8	Associated with historic transportation route	✓			If yes, and Yes for any of 3-7 or 9, potential determined
9	Contains property designated under the Ontario Heritage Act				If yes, and Yes for any of 3-8, potential determined
APPLICATION SPECIFIC INFORMATION					
10	Local knowledge				If Yes, potential determined
11	Recent (post-1960) disturbance (confirmed extensive and intensive)				If Yes, no potential

Summary:

- If Yes to any of 1, 2a-c, or 10 — Archaeological Potential is **confirmed**
- If Yes to two or more of 3-9 — Archaeological Potential is **confirmed**
- If Yes to 11 or No to 1-10 — **Low** Archaeological Potential is confirmed

Based on example in Ontario Ministry of Culture *Standards and Guidelines for Consultant Archaeologists, final draft, August 2006, Unit 1C-Stage 1*