



**FINAL REPORT**  
**Amherst Island Wind Energy**  
**Project, Stage 2 Archaeological**  
**Assessment, Various lots, South**  
**Shore Concession, North Shore**  
**Concession, Concessions 1 – 3,**  
**Amherst Island; and Lot 19,**  
**Concession 1; part of Lots 16-26,**  
**Concession 1; part of Lots 16-27,**  
**Broken Front, Township of**  
**Ernestown, Loyalist County, ON**

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October 12, 2012

PIF # P002-243-2011 and P002-284-2012

## **Stantec**

Amherst Island Wind Energy Project, Stage 2 Archaeological Assessment, Various lots, South Shore Concession, North Shore Concession, Concessions 1 – 3, Amherst Island; and Lot 19, Concession 1; part of Lots 16-26, Concession 1; part of Lots 16-27, Broken Front, Township of Ernestown, Loyalist County, ON

## **Executive Summary**

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Stantec Consulting Ltd. (Stantec) was retained by Windlectric 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.

As part of the proposed Project a Stage 2 Archaeological Assessment (AA) was required in support of environmental permitting. Given the elevated archaeological potential for both prehistoric and historic period archaeological resources within the Study Area it was 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.

Seven (7) archaeological sites have been identified which meet criteria for further assessment and have been recommended to proceed to Stage 3 AA. There are an additional four (4) isolated findspots identified and recorded for which the cultural heritage and value of the site has been sufficiently addressed at the Stage 2 AA and have not been recommended for further work.

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## 1.0 Introduction

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Stantec Consulting Ltd. (Stantec) was retained by Windlectric 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.

The Stage 2 Archaeological Assessment (AA) was conducted in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* prepared by the Ontario Ministry of Tourism and Culture (MTC) (MTCS, 2011a).

## 2.0 Project Context

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### 2.1 DEVELOPMENT CONTEXT

#### 2.1.1 Project Description

Windlectric Inc. (the Proponent or Windlectric) is proposing to develop, construct, and operate the 56 - 75 megawatt (MW) Amherst Island Wind Energy Project (the Project) within Loyalist Township (the Township) in the County of Lennox and Addington (the County) in eastern Ontario, in response to the Government of Ontario's initiative to promote the development of renewable electricity in the province.

The basic components of the proposed Project include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under REA. The layout includes 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The number of wind turbines will be dependent upon final selection of the model of the wind turbine most appropriate to the proposed Project. The proposed Project will also include a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a transmission line, truck turnaround areas, a submarine cable, an operations and maintenance building, permanent dock, a substation, a switching station, an un-serviced storage shed, one connection point to the existing electrical system, cable vault areas, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Temporary components during construction may include staging areas for the turbines, access roads, met tower(s), collector lines and transmission line as well as crane paths, a temporary dock, site office(s), batch plant, central staging areas, and associated watercourse crossings. The electrical power line collector system would transport the electricity generated from each turbine to the substation, along the submarine cable to the mainland and then to a

switching station located near to an existing Hydro One Networks Inc. (HONI) 115 kV transmission line.

The Proponent has elected to assess and seek approval for some alternative Project configurations. The Renewable Energy Approval (REA) application process will consider:

- two alternative mainland transmission line routes;
- two alternative switching station locations and corresponding point of common coupling with the HONI line;
- three alternative mainland temporary dock locations along the mainland;
- a submarine cable with three alternative submarine cable routes near the mainland;
- three alternative mainland submarine cable landing locations and corresponding cable vault locations;
- up to three alternative met tower locations; and,
- up to four potential locations for an operations and maintenance building.

Final selection of the sites to be used would be based on the results of consultation activities, detailed design / engineering work, and the conditions experienced during construction.

### **2.1.2 O.Reg.359/09**

The Renewable Energy Approvals Regulation (O.Reg.359/09) was issued under *Part V.0.1 of the Environmental Protection Act* (2009). The Regulation outlines specific requirements for the approval of renewable energy projects. Certain sections of O.Reg.359/09 pertain to archaeological resources.

Section 20(1) of O.Reg.359/09 states:

*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.*

This assessment has been prepared as per Section 22(2) which ensures that:

*(a) an archaeological assessment is conducted by a consultant archaeologist; and*

*(b) an archaeological assessment report is prepared by the consultant archaeologist mentioned in clause (a) and submitted to the Ministry of Culture. O. Reg. 359/09, s. 22 (2).*

The Stage 1 Archaeological Assessment was completed in the pre-submission phase of the Project. All field examination of the Project area was completed from public roads and no properties were required to be accessed during this stage of the assessment.



### 2.1.3 Study Area

The Project Study Area includes Amherst Island, an approximately 3-15 km wide corridor stretching between the Island and the mainland where the submarine cable is proposed. The mainland portion of the Project Study Area stretches from the mainland shoreline, north of the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m East of Jim Snow Drive to the East (Figure 2). 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 is composed of approximately 6643 ha (appr. 16400 acres) of developed and agricultural land, comprising the entirety of Amherst Island in the County of Lennox and Addington and approximately 410 ha (appr. 1000 acres) on the mainland (Figures 1 and 2). The majority of land use is agricultural with some pockets of undeveloped and wooded areas throughout. As the Project Study Area includes an area that constitutes an entire inhabited island, there are small hamlets and settlements to be found as well.

The Project Study Area is located in the Napanee Plain physiographic region, encompassing a geographic area of approximately 700 square miles around the Town of Napanee. The Napanee Plain is characterized by a flat to undulating plain of Limestone with Clay deposits to the south and a small amount of long, thin Drumlins (Chapman and Putnam 1984).

The majority of the surficial geology of the Project Study Area is Napanee Clay, a calcareous, stone-free clay characterized by poor drainage (Figure 3). Also present in large pockets are Farmington Loam, a shallow till over limestone bedrock characterized by good drainage and Lansdowne Clay, a stone-free clay characterized by imperfect drainage. The soil is often shallow above the bedrock and in some locations of the Stage 2 AA survey bedrock was visible immediately below topsoil. There are also small pockets of Muck and Peat, which are organic soils with poor to very poor drainage (Gillespie *et al.*, 1963).

The major topographic feature of the area is Lake Ontario, which borders the island part Project Study Area on all sides and the mainland part to the south. There are numerous secondary watercourses running throughout the entirety of the Project Study Area (Figures 1 and 2).

## 2.2 HISTORICAL CONTEXT

The following historical overview is based on that found in the Stage 1 AA report for the project (Stantec 2012). Originally part of the historic Midland District, the Counties of Lennox and Addington were created as part of the United Counties of Frontenac, Lennox and Addington by the 1792 decree of Governor John Graves Simcoe. In 1864, there was a further separation leading to what are now the two counties of Frontenac and of Lennox and Addington. Unlike other historic counties with multiple names, Lennox and Addington only ever existed as separate entities on paper and never needed to be united. The townships were named for Charles Lennox and Henry Addington, both members the British aristocracy and parliament.

The original settlers of the Lennox and Addington area were United Empire Loyalists (UEL), fleeing a post-Revolution United States for the relative safety of Canada in and around 1784.

Prior to their arrival most of the land remained in wilderness and, as it had never been surveyed, little was known about its condition. The large numbers of Loyalists fleeing America for Nova Scotia and New Brunswick eventually caused a land shortage that forced the British to look for other areas to open. Thus, the north shore of Lake Ontario, from Kingston westward, was quickly surveyed and land allotments distributed (Herrington, 1915). Initial land grants were for 200 acres per person with larger allotments given to those who had actively fought for the Crown in the Revolutionary War. Each applicant drew a number that corresponded with a certain parcel of land in one of the five 'Towns' laid out. It was their responsibility to clear and cultivate the land (Herrington, 1913).

The first European claimant of Amherst Island (historically Isle de Tonti/Ile Tonti) was the French explorer Robert de la Salle (La Salle) who named it for his lieutenant Henri de Tonti. Prior to that, it had been known by its Aboriginal name Kaouenesgo. De la Salle was a key figure in opening up the Lake Ontario region for trade. He set up Fort Frontenac at what is now Kingston, to capitalize on the fur trade and included Amherst Island in his seigniori as a seat of control of water access to the Bay of Quinte.

In 1792, Amherst Island was designated as part of the historic County of Ontario. It consisted of the islands of the St. Lawrence River, and existed until 1800 when the county was dissolved and the islands attached to their respective counties on the north shore of Lake Ontario (Herrington, 1913). The islands were not initially included in the UEL land grants, and were to remain in the hands of First Nations, but when it was noted that the major ones, including Amherst, were essentially the size of townships, they were reallocated to European settlement.

In 1796, the western half of the island was granted to Sir John Johnson, a Loyalist Brigadier General and leader of the King's Royal Regiment of New York, with the eastern half being granted to him at a later date. Johnson, an American-born aristocrat, was forced to abandon a sizable estate when he fled to Canada with his followers and tenants. After the war he was appointed by Governor Frederick Haldimand to supervise the settling along the St. Lawrence and Bay of Quinte. He was regarded by the Loyalist settlers in the region as their leader and was a front runner for first Governor of Upper Canada which he lost to John Graves Simcoe. Johnson was also appointed Inspector of Indian Affairs and championed their causes, even putting stop to certain proposed practices by the British government when he felt that they were detrimental to Native interests). Johnson never settled on the island but instead left his son to act as his agent. The island as an entire holding subsequently changed hands a number of times, including one memorable account whereby the sister of Johnson, a Maria Bowes, lost it in a game of cards to the Earl of Mountcashel, whose later financial troubles forced its seizure by the Sherriff in 1857.

By 1803, the northern shore of the island had begun to be settled and, over the next few decades, the population steadily climbed until by the early 1840s there were over 2000 inhabitants. As a popular stop over and harbour for boats travelling Lake Ontario between Kingston and parts west the island flourished but, like many marine settlements, with the advent of rail and road travel, floundered as its importance waned. Walling's 1860 Map shows the extent to which Amherst Island had already been settled, particularly the north shore, and the already established settlements of Emerald and Stella. Virtually all of the lots on the island are shown as occupied on the map. The map also shows two churches on the island and one school, located halfway between the two settlements.

Meacham's 1878 Map shows in greater detail the further development of the island, with at least four churches of different denominations, including one Catholic church established to accommodate the large wave of Irish immigration to the island mid-century (Burleigh, 1980). Two cemeteries are depicted at either end of the north shore of the island and there were three schools, including one serving the southern shore. Also evident are the shipping docks and a Post Office associated with the hamlet of Emerald, as well as a store and blacksmiths in both Emerald and Stella. There is also a note regarding a sulphur spring on the eastern outskirts of Emerald.

Meacham's map also shows that the mainland portion of the Project Study Area was also fully settled and that the majority of the homes in the mainland Project Study Area were located immediately alongside the road to Kingston. No public buildings or businesses are indicated within the limits of the mainland Project Study Area.

### **2.3 ARCHAEOLOGICAL CONTEXT**

There are presently no registered prehistoric period archaeological sites or components within the Project Study Area (MTCS, 2011b). The lack of existing prehistoric period sites is likely a result of limited archaeological survey on the island, rather than a paucity of archaeological resources being present. Overall conditions in the Project Study Area would have been very favourable for prehistoric occupation, including access to a wide variety of niches for the harvesting of plant, fish and animal resources, and access to major transportation routes, such as the Trent River and the Cataraqui River, along the Lake Ontario shoreline.

There is at present one registered historic period archaeological site within a 1 km radius the Project Study Area (MTCS, 2011b). This site is the shipwreck of the schooner William Jamieson, Borden designation BaGe-4.

This site is the shipwreck of the schooner William Jamieson, Borden designation BaGe-4. This wreck was registered into the Ontario Sites Database at the MTCS in 1995 by Jonathan Moore of Parks Canada. The wreck was originally identified by recreational scuba divers in the early 1960's but never entered into the official archaeological record. The wreck is situated approximately 300 m west of the North tip of Barry Point on Amherst Island. The wreck is upright and the hull is intact. It is situated at a depth of approximately 75 feet on a level and silty lake bottom; this site has extensive mussel infestation.

The William Jamieson was a two masted schooner built in 1878 at Mill Point, Ontario and was lost off Barry Point on May 15, 1923 (Kohl, 1997). The vessel was owned and crewed by Captain W. Savage and Mate P. McManus, both of Picton, Ontario. The balance of her crew consisted of Philip Haskell, Richard Woodward and a Mrs. Tierney. The William Jamieson left Oswego heading to Picton carrying a cargo of 250 tons of coal. The vessel was caught up in storm south of Amherst Island and made her way through the Upper Gap in an effort to find safe harbor. However, the storm had weakened the seams of the vessel allowing water to fill her hold (Kohl, 1997). The ingress of water was slow enough to allow the crew to beach the vessel on the north shore of Amherst Island, allowing enough time for the crew to jump ashore. Despite the efforts of the crew to secure the vessel on the beach, it slowly slid back into the deeper water offshore.

The wreck was discovered in 1963 by recreational scuba divers from the Aqua Fins Scuba Club in Kingston, Ontario. As there was no standing legislation at the time to protect the wreck, the

divers collected numerous artifacts including the ships bell, compass and numerous examples of crockery (Kohl, 1997). These artifacts are now said to be in the possession of the descendants of the crew of the ship (Kohl, 1997).

The lack of terrestrial historic period archaeological resources is again likely the result of a lack of archaeological survey on the island.

The Stage 1 AA of the Project Study Area identified that almost all of the proposed Project components were located in areas of elevated archaeological potential and it was recommended that all areas which would be newly disturbed by proposed Project construction undergo Stage 2 AA.

### **3.0 Stage 2 Field Methods**

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Permission to access the various Project properties was secured from individual landowners by the proponent and fieldwork was conducted on December 1, 2, 7, 8, 13 and 14, 2011 under PIF P002-243-2011 and on April 25, 26, 27, 30, May 1, 14, and September 5 and 20, 2012 under PIF P002-284-2012.

Field assessment followed standard procedures as outlined in the 2011 *Standards and Guidelines for Consultant Archaeologists* prepared by the MTC (MTCS, 2011a). All Stage 2 AA survey was completed under weather and light conditions that permitted good visibility. All pedestrian survey was completed on recently ploughed lands with greater than 80% visibility of the ground surface at 5 m intervals (or less). Ploughing of the fields was deep enough to provide total subsoil exposure. Ploughed fields were allowed to weather through several rainfalls prior to pedestrian survey. When artifacts were encountered survey interval was reduced to 1 m intervals and intensified for an area of minimum 20 x 20 m from either the individual artifact or from the center of the initial scatter encountered until the full extent of the site was determined. All diagnostic or formal tools encountered during the survey were collected. No archaeological resources were documented through test pit excavation and no survey intensification as per Section 2.1.3 of the 2011 *Standards and Guidelines for Consultant Archaeologists* was required.

Almost all of the work on the Amherst Island portion of the Stage 2 AA was completed using pedestrian survey of ploughed and weathered fields. There were only seven small areas which required test pit survey due to the inability to plough. The total pedestrian survey area on the island was approximately 192 ha (99% of the overall total). The total test pit area survey was approximately 2 ha.

The survey area for individual turbine pads and laydown areas varied considerably and the area for each component is identified in Table 1 and Section 4 of this report. Ploughed area for access roads was approximately 20-25 m wide and for connector lines approximately 10 m wide.

Recording of archaeological site locations for the 2011 and 2012 Stage 2 AA was conducted using a handheld Garmin GPS75 or Garmin Etrex20 Geographic Position System (GPS) device. All GPS co-ordinates in this study were located in the UTM grid 17T and were recorded using

the North American Datum (NAD) 83 datum. The method of correction for GPS co-ordinates was 3D Differential GPS (DGPS).

**Table 1: Location, Survey Strategy and Results of Stage 2 AA By Survey Area**

Survey Location	Location (Lot, Concession, Township)	Survey Methodology	Total Area Surveyed (ha)	Archaeology Sites Recorded
S12, S28, S33	Lots 16-19, South Shore Concession, Amherst	Pedestrian, 5 m intervals, test pit, 5 m intervals	8.3	BbGd-56
S30, S26, S18, S13	Lots 12 and 13, North Shore Concession and Lot 12, South Shore Concession, Amherst	Pedestrian, 5 m intervals, test pit, 5 m intervals	13	none
S07, S14	Lots 8 and 9, South Shore Concession, Amherst	Pedestrian, 5 m intervals	7.4	none
S15, S24	Lot 5, North Shore Concession, Amherst	Pedestrian, 5 m intervals	13.8	none
S37, S27, S02	Lots 1 through 6, South Shore Concession, Amherst	Pedestrian, 5 m intervals	11.2	none
S19, S21, S36	Lots 79-81 Third Concession, Amherst	Pedestrian, 5 m intervals	13.8	none
S11, S03, S09	Lots 71-73, Third Concession, Amherst	Pedestrian, 5 m intervals	9.7	none
S17, S10	in Lots 61 , 62, 65, Second Concession, Amherst	Pedestrian, 5 m intervals	12.4	none
S32, S08	Lot 60, Second Concession, Amherst	Pedestrian, 5 m intervals, test pit, 5 m intervals	9.4	none
S25, S35, S23, S16, S05, S20, S34	Lots 51-58, 2nd Concession Road, Amherst	Pedestrian, 5 m intervals	28	BaGe-5, BaGe-6, BaGe-7, IF #1
S31	Lot 29, First Concession, Amherst	Pedestrian, 5 m intervals	1.7	none
S22	Lot 25, First Concession, Amherst	Pedestrian, 5 m intervals	4.9	none
S04	Lot 21, First Concession, Amherst	Pedestrian, 5 m intervals	4.5	none
S01, S29	Lots 16 and 17, First Concession, Amherst	Pedestrian, 5 m intervals	7.2	IF #2
S06, Substation, O&M, Laydown and Storage Area	Lots 33-36, Second Concession, Amherst	Pedestrian, 5 m intervals	26	IF #3
O&M Building Locaitons	in Lot 49, Second Concession, Lot 1 North Shore Concession and Lot 16, North Shore Concession, Amherst	Pedestrian, 5 m intervals	1.7	none
Dock and Cable Landing, Amherst Island	Lot 35, First Concession, Amherst	Pedestrian, 5 m intervals, test pit, 5 m intervals	3.2	none
Dock Mainland	Lot 21, Broken Front, Ernestown	Test pit, 5 m intervals	0.5	none
Cable Landing and Laydown/Temporary Storage, Mainland	Lots 23-25, Broken Front, Ernestown	Pedestrian, 5 m intervals, test pit, 5 m intervals	6.5	BbGe-29, BbGe-30, BbGe-31, IF#4
Laydown (Bombardier Property)	Lot 26, Concession 1, Ernestown	Pedestrian, 5 m intervals	12	none

**Total 195.2**

All diagnostic or formal tools were collected during the Stage 2 AA. Formal tools collected during the field survey were given specific numeric designations by tool type (e.g. Point)

Archaeological resources that meet the definition of artifact and archaeological site under the *Ontario Heritage Act* and the criteria listed in Section 2.2 of the 2011 *Standards and Guidelines for Consultant Archaeologists* will require Stage 3 archaeological assessment. Archaeological resources that do not require Stage 3 assessment either lack cultural heritage value or interest and, therefore, do not meet the definition of an artifact and archaeological site under the *Ontario Heritage Act* or their cultural heritage value or interest has been sufficiently assessed and documented in Stage 2. As outlined in the 2011 *Standards and Guidelines for Consultant Archaeologists* at least one of the following criteria should be met in order for an archaeological site to require a Stage 3 assessment:

- Pre-contact archaeological resources containing diagnostic artifacts or a concentration of artifacts (or both):
  - In pedestrian survey, finding within a 10 x 10 metre area:
    - at least one diagnostic artifact or fire-cracked rock in addition to two or more non-diagnostic artifacts; or
  - In test pit survey, within a 10 m x 10 m area:
    - at least one diagnostic artifact from combined test pit and test unit excavations; or
    - at least five non-diagnostic artifacts from combined test pit and test unit excavations.
- Single examples of archaeological resources of special interest:
  - Aboriginal ceramics;
  - Exotic or period-specific cherts; and
  - An isolated Palaeo-Indian or Early Archaic diagnostic artifact;
- Post-contact archaeological sites containing at least 20 artifacts that date the period of use to before 1900;
- 20<sup>th</sup> century archaeological sites where background documentation or archaeological features indicate possible cultural heritage value or interest;
- The presence of human remains.

The 2011 *Standards and Guidelines for Consultant Archaeologists* do allow for some flexibility to recommend Stage 3 assessment for archaeological sites that do not meet these criteria above based on the professional judgment of the consultant archaeologist. Therefore, in one case an isolated projectile point that does not date to either the Palaeo-Indian or Early Archaic periods was recommended for Stage 3 assessment as it represents the only unequivocal registered pre-contact artifact in an otherwise blank archaeological landscape. Similarly a portion of a possible ground slate gorget or bannerstone has also been recommended for Stage 3 AA due to its relative scarcity in the archaeological record of Eastern Ontario.

Borden numbers were requested from the Ministry of Tourism, Culture and Sport for only those archaeological sites documented that meet criteria as defined in Section 7.12 of the 2011 *Standards and Guidelines for Consultant Archaeologists*. These criteria are not the same as those used to determine if Stage 3 assessment is required for an archaeological site documented during a Stage 2 assessment. Borden numbers are an alpha-numeric numbering

system for archaeological sites that is used throughout Canada. A Borden Block is composed of four letters, two major (UPPER CASE) and two minor (lower case), each letter of which represents a major and minor subdivision within the block. In the case of site BbGd-56, for instance, **B** is the major South-North locator. Each major block represents 2 degrees of Latitude from south to north (using letters A - U); **b** is the minor South-North Locator, with each minor block representing 10 minutes of Latitude from south to north (using letters a-l). **G** is the major East-West Locator, with each major block representing 4 degrees of longitude from east to west (letters A - W); **d** is the minor East-West Locator, with each minor block representing 10 minutes of longitude from east to west (letters a - x). Within each of these blocks sites are numbered consecutively as they are registered, and each site gets a unique number. In the case of site BbGd-56 this is the 56<sup>th</sup> site found within Borden block BbGd.

## 4.0 Record of Finds

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The documentary record generated in the field during the Stage 2 AA includes: field notes, photographs, GPS point and tracks. This information is housed at the Stantec office in Ottawa. The total collection of artifacts collected from the Stage 2 AA occupies one standard 38 x 20 x 25 cm (15 x 12 x 10 inch) Bankers Box. Artifacts and other records associated with the Stage 2 AA will be curated at the Stantec office in Ottawa, Ontario.

The Stage 2 AA completed by Stantec in 2012 resulted in the identification and recording of three pre-contact period artifacts. The pre-contact period artifacts recovered during the Stage 2 AA include an isolated Late Archaic Lamoka-type projectile point (BbGd-56), an isolated flake of lithic debitage from secondary reduction of tool making stone, and a possible ground slate gorget or bannerstone fragment. The flaked lithic artifacts recovered are of Onondaga chert (Ely and von Bitter, 1989; Fox, 2009).

*Secondary reduction* occurs when a primary blank is reduced through the removal of material from both sides of the piece, referred to as bifacial thinning. The product of this work, the secondary blank, can be used as a tool itself, or can be further refined into more formal tools. Flakes produced in this stage of reduction show some flake scarring (the marks left when flakes are removed from a piece of stone), have reduced striking platforms (the spot where percussion is applied to remove the flake), have no, or very little, cortex, and are less blocky.

Based on the 2011 *Standards and Guidelines for Consultant Archaeologists* Stantec has identified a total of seven (7) site locations that will require Stage 3 Archaeological Assessment (Table 2). A further four (4) isolated findspots which did not meet the criteria for a Stage 3 archaeological assessment were also documented during the Stage 2 AA.

Descriptions of fieldwork and results below are arranged by connected turbine groups, generally based on their connectedness by common access roads.

**Table 2: Archaeological Sites Recommended For Further Assessment**

AIWP Site #	Location	Borden #	# Artifacts Collected	Cultural Period	Site Dimensions (m)		Site Area (m <sup>2</sup> )
					N-S	E-W	
1	Collector Line, West of S34	BaGe-5	47	19th century historic	10	45	450
2	S23 and S16 Access Road	BaGe-6	36	Early to mid-19th century historic	20	20	400
3	S25 Access Road	BaGe-7	30	19th century historic	35	25	875
4	S28 Pad	BbGd-56	1	Late Archaic, c. 4500-3800 BP	5	5	25
5	Mainland Cable Landing, Central Option	BbGe-29	30	19th century historic	40	50	2000
6	Mainland Cable Landing, West Option	BbGe-30	30	19th century historic	15	20	300
7	Mainland Cable Landing, Central Option	BbGe-31	1	Indeterminate	5	5	25

**4.1 S12, S28, S33**

The access road and pads for Turbines S12, S28 and S33 are located in Lots 16-19, South Shore Concession and along the road allowance between the North Shore Concession and South Shore Concession, Amherst Island (Figure 4; Photo 2). These are the easternmost components of the Project. There are two access roads common to the three turbines and smaller access roads connecting the three pads. All three pads and all of the access roads, with the exception of the one running from Lower 40 Foot Road to S28, were surveyed on December 14, 2011 using a pedestrian survey methodology. The topography of this area is relatively level for the entire surveyed area, with the exception of a gentle down slope as the access road meets up with the South Shore Road. The access road along the unopened road allowance that runs from Lower 40 Foot Road to S28 was tested using a combination of pedestrian and test pit excavation survey on September 5, 2012. The total pad area surveyed for the three turbines was 5.8 ha (S12-1.6 ha; S28-2.4 ha; S33-1.8 ha). Total access road pedestrian surveyed was 2.1 ha and by test pit survey 0.4 ha. Total survey area was 8.3 ha.

There is one site requiring Stage 3 AA on S28. No other archaeological resources were identified during either the pedestrian or test pit survey for these turbines.

**4.1.1 S28 Site**

**4.1.1.1 AIWP Site #4 (BbGd-56)**

AIWP Site #4 (BbGd-56) is composed of one projectile point (Plate 1; Appendix A). The projectile point is a Late Archaic period Lamoka type point. Lamoka points are associated with



the Late Archaic Narrowpoint tradition that dates to c 4500-3800 Years Before Present (B.P.). The point appears to be complete. The artifact was located near the north end of the S28 pad.

Although the isolated projectile point does not meet specific criteria for requiring Stage 3 AA, the 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 2.2, Guideline 2) allows for the recommendation that a site move to Stage 3 even if it does not meet normal criteria. In this case the projectile point represents the only registered pre-contact archaeological resource on the island and any further information would enhance our knowledge and understanding of the pre-contact occupation of Amherst Island and Stage 3 AA of the site is recommended.

#### **4.2 S30, S26, S18, S13**

The access road and pads for the four turbines S30, S26, S18, S13 are located in Lots 12 and 13, North Shore Concession and Lot 12, South Shore Concession, Amherst Island (Figure 4). There is one access road common to all four turbines that as its take-off along Front Road, immediately west of Marshall 40 Foot Road. The access road parallels Marshall 40 Foot Road up to the road allowance between the North Shore and South Shore Concessions. The pads and access road were initially surveyed on December 1, 2011. A minor adjustment to the location of collector lines was surveyed on May 1, 2012. The topography of this area is level or gently undulating for the entire surveyed area. The total area surveyed for the pads was 9.1 ha (S13- 2.7 ha; S18 – 2.2 ha; S26 – 2.0 ha; S30 -2.2 ha) and for the access roads and collector lines was 3.9 ha, a total of 13 ha. A small area of approximately 0.05 ha that was inaccessible to the plough at the start of the access road was surveyed using a test pit excavation methodology.

There were no archaeological resources recorded on this turbine group.

#### **4.3 S07, S14**

The access road and pad for S07 and S14 are located in Lots 8 and 9, South Shore Concession, Amherst (Figure 4). There is one access road associated the two turbine pads. Both pad and access road were surveyed on December 13, 2011. The topography of this area is generally level for the entire surveyed area, with a slight down slope at the south end of the access road where it meets South Shore Road. The entire area was surveyed using a pedestrian survey methodology and encompassed an area of 5.1 ha for the pads (S07 – 2.3 ha; S14 – 2.8 ha) and 2.3 ha for the access road, for a total of 7.4 ha.

There were no archaeological resources recorded on this turbine group.

#### **4.4 S15, S24**

The access roads and pad for S15 and S24 are located in Lot 5, North Shore Concession, Amherst (Figures 4 and 5). There is one access road associated with the turbines, which has its take-off from Front Road. The location of the turbines was initially surveyed on December 1, 2011. Subsequent Project redesign moved the location of the turbines and these new locations were surveyed on April 30, 2012. The total area surveyed for the pads was approximately 11.6 ha, twice for each pad (S15 – 3.0 ha; S25 – 1.3 ha) and a third pad in the initial design that was

subsequently dropped. The access road encompassed an area of 1.2 ha. All 13.8 ha were surveyed entirely through pedestrian survey.

There were no archaeological resources recorded on this turbine group.

#### **4.5 S37, S27, S02**

These three turbines are connected by a single access road that has its take-off at Stella 40 Foot Road. The turbines and access road are located in Lots 1 through 6, South Shore Concession, Amherst (Figure 6). There is also a connector line that runs south through Lot 6 from turbine S02 to the South Shore Road. All portions of the turbine group were surveyed using a pedestrian survey methodology. The total area surveyed for the pads is 6.9 ha (S02 - 1.8 ha; S27 - 1.8 ha; S37 - 3.3 ha), plus an additional 1.8 ha for a turnaround to the west of S02. The access road survey area was larger than typical between S27 and S37, a width of 45 m. The total area surveyed for the access road was approximately 1.7 ha. The collector line incorporated a further 0.8 ha, including a turning area at the south end of the connector. Total survey area for this group was 11.2 ha. Survey was conducted on December 7 and 8, 2011 and on April 27, 2012 for an extension to S02. The survey area is generally level, except for pad S37 which has a rolling topography and the last 175 m of the connector line, which has a gentle down slope to the road.

There were no archaeological resources recorded on this turbine group.

#### **4.6 S19, S21, S36**

The access road and turbine pads associated with this group are located on Lots 79-81 Third Concession, Amherst (Figure 6). The access road take-off is located at the west side of Stella 40 Foot Road, as is the route of a collector line. Turbine S36 and the access road from S36 to S21 were surveyed on December 2, 2011. Turbine S19, its associated laydown and the remaining access road and collector were surveyed on December 7, 2011. During December of 2011 the site for S21 was under several inches of water and could not be ploughed for pedestrian survey (Photo 9). S21 was ploughed in the spring of 2012 and surveyed on April 25, 2012. Total turbine and laydown area surveyed is 11.5 ha (S19 - 3.5 ha; S21 - 2.1 ha; S36 - 3.8ha; Laydown - 2.1 ha). Access road and collector survey area incorporated a further 2.3 ha, for a total survey area of 13.8 ha. All survey was completed through pedestrian survey of ploughed fields. The terrain from Stella 40 Foot Road across to S21 is composed of rolling topography. S21 is located at the bottom of a moderate slope. From S21 west to S36 the ground is level.

There were no archaeological resources recorded on this turbine group.

#### **4.7 S11, S03, S09**

These three turbine pads and associated access road are located in Lots 71-73, Third Concession, Amherst (Figure 7). At the north end, extending north from S03, there is a connector line that meets up with turbines located in the Quinte Pasture. The collector line is also located in Lot 57, Second Concession, Amherst. All areas of this turbine group were

surveyed using a pedestrian survey methodology. Survey of this turbine ground occurred on April 26, 2012. The total turbine pad area surveyed was 6.2 ha (S03 – 1.4 ha; S09 – 3.3 ha; S11 – 1.5 ha). Access road and collector line incorporated a further 3.5 ha of survey. The total area surveyed for the turbine group was 9.7 ha. The terrain for this turbine group was generally level except for some gently rolling ground near S03. Ground near the north end of the connector was poorly drained, which was characteristic of the Quinte Pasture area in general.

There were no archaeological resources recorded on this turbine group.

#### **4.8 S17, S10**

This turbine group is composed of the two turbine pads, a third pad that was surveyed but for which project redesign has removed the proposed turbine, the access road, a collector line and a storage/laydown area (Figure 7). With the exception of the laydown all the components are located on the east side of Art McGinns Road, in Lots 61 and 62, Second Concession, Amherst. The laydown is located in Lot 65, Second Concession, Amherst. All components with the exception of the laydown were surveyed on December 8, 2011. The laydown was surveyed on April 30, 2012. All areas were ploughed for survey with the exception of a portion immediately north of S17 where there is a stream and low, wet area on its margins (Photos 10 and 11). Due to the wet conditions this area could not be surveyed by either test pit or pedestrian survey. The total area surveyed for turbine pads was approximately 7.7 ha (S17 – 3.5 ha; S10 – 1.4 ha; MET Tower – 2.8 ha). The laydown area on the west side of Al McGinns Road incorporated a further 2.8 ha. The access road and connector lines added another 1.9 ha for a total survey area of 12.4 ha of survey area.

Overall the topography is generally level. There is a gentle down slope from approximately midway on turbine S17 north to the stream, and a short but steeper slope from 2<sup>nd</sup> Concession Road south along the collector for approximately 100 m until the grade levels off.

There were no archaeological resources recorded on this turbine group.

#### **4.9 S32, S08**

The access road and pads for this turbine group are located in Lot 60, Second Concession, Amherst, with access from the south side of 2<sup>nd</sup> Concession Road (Figure 7). This turbine group consists of two turbine pads, an access road south to the pads and an access road that cuts east-west across the property in order to avoid the corner at 2<sup>nd</sup> Concession Road and Al McGinns Road. A component laydown area was also surveyed. Pedestrian survey of the ploughed portions of this group occurred on December 8, 2011. The east-west cross access road is located along a sharp slope and area of shallow bedrock and required test pit survey, which occurred on April 30 and May 14, 2012 (Photos 12 and 13). The total pedestrian survey area includes 7.8 ha of pad area (S08 – 3.2 ha; S32 – 2.3 ha; component laydown area – 2.3 ha) and 0.8 ha for the combined access road and collector line. The total test pit survey area included approximately 0.8 ha surveyed at 5 m intervals. Total area surveyed for this group was 9.4 ha.

With the exception of the sloped area immediately south of the 2<sup>nd</sup> Concession road, the survey area was generally level and all areas of the Project area were surveyed as ploughing occurred right up to the edge of the narrow drainage channel north of S32.

There were no archaeological resources recorded on this turbine group.

#### **4.10 S25, S35, S23, S16, S05, S20 (QUINTE PASTURE) AND S34**

This turbine group incorporates all of the turbines located in the Quinte Pasture and a turbine on private land east of the Quinte Pasture and several connector lines and access roads (Figures 6 and 7). The turbine group is located in Lots 51-58, 2<sup>nd</sup> Concession Road, Amherst. The components were first surveyed on December 13, 2011. Adjustments to the layout of some of the turbines and collectors required a second round of survey on April 27, 2012. In total 15.6 ha of turbine area was surveyed using a pedestrian survey methodology (S25 – 1.2 ha; S05 – 2.8 ha; S16 – 1.2 ha; S20 – 1.5 ha; S23 – 1.5 ha; S34 – 5.3 ha; and S35 – 2.1 ha). Approximately another 10.5 ha of access road or combined access road and collector line were surveyed. Another 1.9 ha of collector line only were also surveyed. In total this turbine group accounts for 28.0 ha of Project area. All survey in this area was completed through pedestrian survey. One portion of the connector line that runs north from S20 to 2<sup>nd</sup> Concession Road could not be surveyed as it is a poorly drained area that was very wet. Approximately 70 m of the connector line could not be surveyed (Photos 14 and 15).

At the east and north edges of the turbine group, including S34 and S20 and where the access roads and collectors meet or run along 2<sup>nd</sup> Concession Road, the ground is generally level and well drained. Most of the remainder of the Project area for this group, however, is located in generally imperfectly drained soils such that water pooled in between the ploughed furrows which were surveyed. Although the wet ground did not impede visibility during the pedestrian survey (with the one exception already noted) it did moderate the level of archaeological potential that this portion of the Project Study Area had been considered to demonstrate.

Despite the generally less than ideal ground conditions of most of the turbine group area, however, there were three sites and one isolated findspot located within the survey area. The three sites are all 19<sup>th</sup> century historic period surface scatters. The isolated findspot is a whetstone that also appears to be of 19<sup>th</sup> or 20<sup>th</sup> century origin.

##### **4.10.1 Quinte Pasture Sites**

###### **4.10.1.1 AIWP #1 (BaGe-5)**

AIWP #1 (BaGe-5) is composed of 47 historic period artifacts, largely sherds of refined earthenware dishwares and bottle glass (Appendix A). Also recovered were 10 pieces of window glass, two nails, and some examples of smoking pipe stems. The site is located on the collector line immediately south of 2<sup>nd</sup> Concession Road, west of the Access Road to S34 and covers an area approximately 45 m long by the 10 m width of the survey area. It is highly likely that the site continues south of the collector line into the field .

Although most of the artifacts are not securely dateable, those that suggest a date of the mid-19<sup>th</sup> century. Although the items were assuredly deposited after their date of manufacture and could have been re-used and curated for decades the early 19<sup>th</sup> century date of some of these fragile artifacts suggest the mid-19<sup>th</sup> century period.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

#### **4.10.1.2 AIWP #2 (BaGe-6)**

AIWP #2 (BaGe-6) is composed of 36 collected historic period artifacts, most of which are pieces of refined earthenware dishwares (Appendix A). The site is located near the junction of the 2<sup>nd</sup> Concession Road and the north end of the S23 and S16 Access Road and covers an area of approximately 20 m x 20 m. Again, just slightly less than half of the artifacts are securely dateable, but those that do provide dates indicate a mid-19<sup>th</sup> century occupation. Even the artifacts that are not reliably dateable almost assuredly pre-date 1900.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

#### **4.10.1.3 AIWP #3 (BaGe-7)**

AIWP #2 (BaGe-6) is composed of 30 collected historic period artifacts, most of which are pieces of refined earthenware dishwares (Appendix A). The site is located near the junction of the 2<sup>nd</sup> Concession Road and the north end of the S25 Access Road and covers an area of approximately 35 m x 25 m. Although only 10 of the artifacts are securely dateable, these indicate an early 19<sup>th</sup> century occupation period. The remaining artifacts that are not reliably dateable are also likely to date to the pre-1900 period.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

### **4.10.2 Quinte Pasture Isolated Findspots**

#### **4.10.2.1 Isolated Findspot #1**

Isolated Findspot #1 is composed of a whetstone found on the collector line between S16 and S05. The artifact measures 112 mm x 32 mm x 18 mm and has extensive cutting and scratching along its longitudinal edges which indicate that implements have been sharpened by dragging their edges along the stone. Although whetstones are known in both pre-contact and historic period contexts this particular artifact appears to have been made of stone that was cut and polished along four edges, indicating a historic period artifact.

The single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

#### **4.11 S31**

S31 is composed solely of a single turbine pad located in Lot 29, First Concession, Amherst (Figure 5). Access to the turbine pad will be off of the existing Kerr Point Road. The entire turbine pad was surveyed on December 2, 2011 using a pedestrian survey methodology. The total pad area surveyed was 1.7 ha. The overall topography of the pad is level and the ground was well drained. For the 2012 field season some extra land at the junction of the access road and 2<sup>nd</sup> Concession road were asked to be surveyed to allow for a turning radius but the ground was previously ditched, low and wet and could not be assessed (Photo 16).

There were no archaeological resources recorded on this turbine.

#### **4.12 S22**

S22 is composed of a single turbine pad and access road, located in Lot 25, First Concession, Amherst (Figures 5 and 7). The access road to the turbine pad will take-off from the 2<sup>nd</sup> Concession Road. The entire turbine pad and most of the access road was surveyed on December 2, 2011 using a pedestrian survey methodology. A small part of the access road, approximately 55 m from the start of the road where it will meet the 2<sup>nd</sup> Concession Road, was a poorly drained area characterised by dogwood and willow and could not be ploughed for pedestrian survey or surveyed using test pits as the ground was sodden (Photos 17 and 18). The total pad area surveyed was 3.3 ha. The overall topography of the pad is level and the ground was well drained. The combined access road and collector line incorporated a further 1.6 ha of surveyed area.

There were no archaeological resources recorded on this turbine.

#### **4.13 S04**

S04 is composed of a single turbine pad and access road, located in Lot 21, First Concession, Amherst (Figure 7). The access road to the turbine pad will take-off from the 2<sup>nd</sup> Concession Road. The entire turbine pad and most of the access road were surveyed on December 2, 2011 using a pedestrian survey methodology. A portion of the access road, approximately 100 m in length, was not ploughed and could not be test pit surveyed as it is a forested area of poorly drained soil (Photos 18 and 19). The total pad area surveyed was 2.8 ha. The overall topography of the pad is level and the ground was well drained. The combined access road and collector line incorporated a further 1.7 ha of surveyed area. The access road area south of the forested wetland was surveyed to a width of 45 m.

There were no archaeological resources recorded on this turbine.

#### **4.14 S01, S29**

These two turbine pads and associated access roads are located in Lots 16 and 17, First Concession, Amherst (Figure 7). The access road to the turbine pads will take-off from the 2<sup>nd</sup> Concession Road. The turbine pads and access road were surveyed on December 7, 2011 using a pedestrian survey methodology. The topography for the area is generally level from the 2<sup>nd</sup> Concession Road up to the S01 pad area, and the soil generally well drained. There the topsoil is very shallow above the small ridge on which the pad is located and bedrock was visible in the bottom of the plough furrows (Photo 21). The pad slopes gently to the north, where the access road turns east to meet the S29 pad. Just past the S01 pad the soil becomes deeper with subsoil evident, rather than the bedrock. The remainder of the access road and S29 pad are level and well drained. The total area surveyed included 5.3 ha of turbine pad (S01- - 2.0 ha; S29 – 3.3 ha) and 1.9 ha of access road.

A single piece of possibly chipped stone lithic was recovered from the access road to S01.

##### **4.14.1 S01, S29 Isolated Finds (IF)**

###### **4.14.1.1 Isolated Find #2**

IF #2 is a single piece of lithic debitage found approximately midway along the access road from the 2<sup>nd</sup> Concession Road to S01. The flake is of Onondaga chert and shows characteristics consistent with secondary flaking. Despite intensification at 1 m intervals for an area of 20 x 20 m no other material was found. The artifact is of indeterminate age or cultural affiliation. The single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

#### **4.15 S06, SUBSTATION, OPERATION AND MAINTENANCE BUILDING LOCATION (O&M), LAYDOWN AND STORAGE AREA**

This combined group comprises several different Project components in an area north of 2<sup>nd</sup> Concession Road, west of Stella 40 Foot Road and south of Front Road, occupying parts of Lots 33-36, Second Concession, Amherst (Figure 5). The complex incorporates an area of approximately 25 ha of ploughed ground that was pedestrian surveyed and an area of approximately 0.45 ha of ground that required test pit survey due to the presence of extremely shallow and exposed bedrock between the substation location and the laydown and storage area (Photos 22 and 23). The S06 access road will follow an existing access road for most of its length. There is also approximately 800 m of collector line that will run from the substation toward Front Road and the Amherst Island cable landfall and temporary dock area. This part of the Project was surveyed on December 8 and 14, 2011 and on April 26, 2012.

In general the topography of the area is gently sloped to the north and south from a high ridge located at the north end of the laydown and storage area. There is a distinct drop along a second ridge located approximately halfway between the upper ridge and 2<sup>nd</sup> Concession Road. At the west side of that ridge there were three unploughed areas where there was exposed bedrock that had limited ploughing even for crops.

A single isolated find was documented in the laydown/temporary storage area.

#### **4.15.1 S06, Substation, O&M, Laydown and Storage Area Isolated Finds**

##### **4.15.1.1 Isolated Find #3**

IF #3 is composed of a single 1907 Canadian 5 cent piece. The coin dates to the latter part of the reign King Edward VII. Despite intensification no further artifacts were located. The coin has a diameter of 15 mm, slightly smaller than a modern dime. The date of deposition of the coin is impossible to determine since coins continue to be used after new minting occur for new monarchs. Coins of the modern 5 cent piece were not issued until 1922.

The single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

#### **4.16 OPERATION AND MIANTENANCE BUILDING LOCATIONS**

Three other potential O&M Building locations were surveyed as part of the Project. These potential building sites are located in Lot 49, Second Concession, Lot 1 North Shore Concession and Lot 16, North Shore Concession, Amherst (Figures 4 and 5). Each building area measured 75 m x 75 m and had a short access associated. All three of the potential O&M building locations were surveyed using a pedestrian survey methodology.

To the north of one of the proposed O&M locations, at the junction of Stella 40 Foot and 2<sup>nd</sup> Concession Roads pedestrian survey was completed on an area on the south-west corner to allow for expansion of the roadway for trucks to turn (Photo 24)

There were no archaeological resources recorded at any of the O&M locations or in the corner expansion.

#### **4.17 DOCK AND CABLE LANDING, AMHERST ISLAND**

The site of the temporary dock and the cable landfall on Amherst Island is located in Lot 35, First Concession, Amherst, immediately along the shoreline and on the south side of Front Road (Figure 5). This area incorporates approximately 3 ha of ploughed ground that was pedestrian surveyed and another 0.2 ha of land immediately along the shoreline that could not be ploughed due to exposed or shallowly buried bedrock and was surveyed using test pit methodology (Photos 5, 25 and 26). The topography is gently sloped from the road down to the shoreline. The soil is much darker than was typically encountered and appears to have been much improved. At the lower reaches of the ploughed area some bedrock was noted.

There were no archaeological resources recorded at the dock/cable landfall site.

#### **4.18 DOCK, MAINLAND**

The proposed location of the dock on the mainland side is a small piece of land south of Bath road in Lot 21, Broken Front, Ernestown Township (Figure 8). Part of the property was the location of the earlier Bath Road, before the curve was straightened. Due to the very small area and existing ground disturbances it was not feasible to plough the area for Stage 2 pedestrian



survey and assessment of the property was completed using a test pit excavation methodology (Photo 27). The property was assessed on May 14, 2012. The property incorporates approximately 0.5 ha. A total of 35 test pits were excavated in this area. Much of the ground was disturbed from previous road construction activities.

There were no archaeological resources recorded at the mainland dock site.

#### **4.19 CABLE LANDING AND LAYDOWN AREA, MAINLAND**

Locations for three proposed cable landfalls and a laydown/temporary storage area are proposed for land along either side of Bath Road (Highway 33) in Lots 23-25, Broken Front, Ernestown (Figure 8). The area is a mix of industrial and fallow land. While there have been several disturbances in the industrial land footprint north of Bath Road there was also approximately 4.9 ha of land that could not be confirmed to have been previously disturbed and was ploughable and could be assessed using a pedestrian survey methodology (Photo 28). A part of the area could not be ploughed due the presence of existing below grade infrastructure (Photo 29). However, this area had clearly been previously disturbed and the archaeological potential of that specific area had been removed. A further 0.11 ha were also assessed using test pit excavation in a treed area (Figure 8; Photo 30). These areas were assessed on September 20, 2012.

On the south side of Bath Road there were three areas that were ploughed for assessment using pedestrian survey (Photos 31 and 32). Two other areas were slated to be assessed using test pit methodology. One area assessed was composed of a treed area around a standing house (Photo 33). The other area assessed was a strip of grassed area between the paved driveway (Photo 34) and sloped, rocky shoreline that was not assessed (Photo 35).

A total of three sites and one isolated find were documented on the south side of Bath Road.

##### **4.19.1 Cable Landing and Laydown Area Mainland, Sites**

###### **4.19.1.1 AIWP #5 (BbGe-29)**

AIWP #5 (BbGe-29) is composed of 30 collected historic period artifacts, most of which are pieces of refined earthenware dishwares (Plate 2; Appendix A). These collected artifacts were a representative sample of the approximately 100 or more artifacts that were exposed on the surface, as per Section 2.1.1, Standard 8 of the 2011 *Standards and Guideline for Consultant Archaeologists*. There were also noted several modern era (C.1940s and after) artifacts mixed in with the 19<sup>th</sup> century material and it appears that the location has been used for refuse deposition over a long period of time. The site is located in the south-west corner of the central cable landing area and covers an area of approximately 40 m x 50 m. Although only some of the artifacts are securely dateable, many indicate an early 19<sup>th</sup> century occupation period. Many of the remaining artifacts that are not reliably dateable are also likely to date to the pre-1900 period. Two artifacts collected do date to the very late 19<sup>th</sup> or early 20<sup>th</sup> centuries

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

#### **4.19.1.2 AIWP #6 (BbGe-30)**

AIWP #6 (BbGe-30) is composed of 30 collected historic period artifacts, most of which are pieces of refined earthenware dishwares and bottles located in the ploughed area immediately north of the standing 19<sup>th</sup> century house at the west cable landing area (Plate 3; Appendix A). The site covers an area of approximately 20 m x 15 m. The location of the site suggests that refuse was thrown from the window or door into a midden (refuse pile) located immediately at the back of the house. Such middens are often referred to as kitchen middens as the organic and non-organic refuse from food preparation and clean-up would be tossed out together into a pile that would be composted.

The collected artifacts are a representative sample of the approximately several dozen or more artifacts that were exposed on the surface, as per Section 2.1.1, Standard 8 of the 2011 *Standards and Guideline for Consultant Archaeologists*. There were also noted several modern era artifacts mixed in with the 19<sup>th</sup> century material, including a glass “Pond’s” bottle that explicitly states “Made in 1935”. Although only some of the artifacts are securely dateable, many indicate an early 19<sup>th</sup> century occupation period. Many of the remaining artifacts that are not reliably dateable are also likely to date to the pre-1900 period.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

#### **4.19.1.3 AIWP #7 (BbGe-31)**

AIWP #7 (BbGe-31) is composed of a single broken fragment of a ground slate tool, located in the north-east part of the central cable landing area (Plate 4; Appendix A). The artifact is roughly triangular in shape, with ground beveled edges narrowing down to a point. The artifact is broken and without either associated artifacts or more of the ground slate artifact it is difficult to tell whether this is a historic period item or a pre-contact period bannerstone fragment.

Bannerstones are largely associated with the Middle and Late Archaic periods (c. 8,000-3,000 BP) and are thought to be weights for spear throwers or possibly a type of noise-maker. Bannerstones are often shaped with a thick central section and two “ears” that assume various styles, including triangular shapes.

Although the isolated artifact does not meet specific criteria for requiring Stage 3 AA, the 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 2.2, Guideline 2) allows for the recommendation that a site move to Stage 3 even if it does not meet normal criteria. In this case the possibility that this artifact could be associated with an Archaic period occupation and the paucity of registered pre-contact archaeological resource in the vicinity of the project indicate that any further information would enhance our knowledge and understanding of the pre-contact occupation of the local area

### **4.19.2 Cable Landing and Laydown Area Mainland, Isolated Finds**

#### **4.19.2.1 Isolated Findspot #4**

IF #4 is composed of a single 1806 King George III penny. The artifact was located in the north-west corner of the central cable landing area (Plate 2; Appendix A). Although the coin is heavily corroded there is still sufficient visible detail to securely date the coin to the 1806 issue, based on the narrow area between the base of the seated “Britannia” figure and the bottom of the coin which is only found on the 1806 coin issue. The coin is known to be a penny based on its diameter of 34 mm.

Although the coin has an early 19<sup>th</sup> century date the single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

#### **4.20 LAYDOWN AREA, CRUICKSHANK PROPERTY**

Property located in Lot 26, Concession 1, Ernestown east of Jim Snow Road and north of Taylor- Kidd Road has also been proposed for one of the laydown/temporary storage area and switchyard (Figure 8). The property is previously cultivated land measuring 12 ha in size. The property was assessed on April 25, 2012. The property was ploughed to allow for assessment using a pedestrian survey methodology (Photo 36). A small area on the north-east part of the property could not be assessed as it was a wet area along the margins of a small stream that runs across the north end of the east side of the property (Photo 37).

There were no archaeological resources recorded at the Cruickshank property laydown.

## **5.0 Analysis and Conclusions**

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Stage 2 AA of the Project to date has resulted in the documentation of 11 archaeological resources, including 5 archaeological sites and 2 isolated findspots which have been registered with the MTCS and have been assigned Borden numbers. An additional 4 isolated findspots did not receive Borden numbers have also been documented.

### **5.1 SITES RECOMMENDED STAGE 3 ARCHAEOLOGICAL ASSESSMENT**

Stage 2 AA of the Project to date has resulted in the documentation of 7 registered archaeological sites which will require further archaeological assessment (Table 5). At minimum all 7 sites will require Stage 3 AA in order to determine the extent of each archaeological resource, and to further refine our understanding of the age, cultural association and cultural heritage value of the sites. Stage 3 AA will also determine what appropriate mitigation options, such as avoidance or excavation, are available at each site location. Based on current calculations of site area it is anticipated that Stage 3 AA of the 7 sites will encompass an area of approximately 4075 square metres, or 0.4 ha.

**Table 5: Archaeological Sites Recommended For Further Assessment**

AIWP Site #	Location	Borden #	# Artifacts Collected	Cultural Period	Site Dimensions (m)		Site Area (m <sup>2</sup> )
					N-S	E-W	
1	Collector Line, West of S34	BaGe-5	47	19th century historic	10	45	450
2	S23 and S16 Access Road	BaGe-6	36	Early to mid 19th century historic	20	20	400
3	S25 Access Road	BaGe-7	30	19th century historic	35	25	875
4	S28 Pad	BbGd-56	1	Late Archaic, c. 4500-3800 BP	5	5	25
5	Mainland Cable Landing, Central Option	BbGe-29	30	19th century historic	40	50	2000
6	Mainland Cable Landing, West Option	BbGe-30	30	19th century historic	15	20	300
7	Mainland Cable Landing, Central Option	BbGe-31	1	Indeterminate	5	5	25

**5.1.1 AIWP #1 (BaGe-5)**

AIWP #1 (BaGe-5) is composed of 47 historic period artifacts, largely sherds of refined earthenware dishwares and bottle glass (Appendix A). Also recovered were 10 pieces of window glass, two nails, and some examples of smoking pipe stems. The site is located on the collector line immediately south of 2<sup>nd</sup> Concession Road, east of the Access Road to S34 and covers an area approximately 45 m long by the 10 m width of the survey area. It is highly likely that the site continues south of the collector line into the field .

Although most of the artifacts are not securely dateable, those that are suggest a date of the mid-19<sup>th</sup> century. Although the items were assuredly deposited after their date of manufacture and could have been re-used and curated for decades the early 19<sup>th</sup> century date of some of these fragile artifacts suggest the mid-19<sup>th</sup> century period.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

**5.1.2 AIWP #2 (BaGe-6)**

AIWP #2 (BaGe-6) is composed of 36 collected historic period artifacts, most of which are pieces of refined earthenware dishwares (Appendix A). The site is located near the junction of the 2<sup>nd</sup> Concession Road and the north end of the S23 and S16 Access Road and covers an area of approximately 20 m x 20 m . Again, just slightly less than half of the artifacts are

securely dateable, but those that do provide dates indicate a mid-19<sup>th</sup> century occupation. Even the artifacts that are not reliably dateable almost assuredly pre-date 1900.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

### **5.1.3 AIWP #3 (BaGe-7)**

AIWP #2 (BaGe-6) is composed of 30 collected historic period artifacts, most of which are pieces of refined earthenware dishwares (Appendix A). The site is located near the junction of the 2<sup>nd</sup> Concession Road and the north end of the S25 Access Road and covers an area of approximately 35 m x 25 m. Although only 10 of the artifacts are securely dateable, these indicate an early 19<sup>th</sup> century occupation period. The remaining artifacts that are not reliably dateable are also likely to date to the pre-1900 period.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

### **5.1.4 AIWP Site #4 (BbGd-56)**

AIWP Site #4 (BbGd-56) is composed of one projectile point (Appendix A). The projectile point is a Late Archaic period Lamoka type point. Lamoka points are associated with the Late Archaic Narrowpoint tradition that dates to c 4500-3800 Years Before Present (B.P.). The point appears to be complete. The artifact was located near the north end of the S28 pad.

Although the isolated projectile point does not meet specific criteria for requiring Stage 3 AA, the 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 2.2, Guideline 2) allows for the recommendation that a site move to Stage 3 even if it does not meet normal criteria. In this case the projectile point represents the only registered pre-contact archaeological resource on the island and any further information would enhance our knowledge and understanding of the pre-contact occupation of Amherst Island and Stage 3 AA of the site is recommended.

### **5.1.5 AIWP #5 (BbGe-29)**

AIWP #5 (BbGe-29) is composed of 30 collected historic period artifacts, most of which are pieces of refined earthenware dishwares (Appendix A). These collected artifacts were a representative sample of the approximately 100 or more artifacts that were exposed on the surface, as per Section 2.1.1, Standard 8 of the 2011 *Standards and Guideline for Consultant Archaeologists*. There were also noted several modern era (C.1940s and after) artifacts mixed in with the 19<sup>th</sup> century material and it appears that the location has been used for refuse deposition over a long period of time. The site is located in the south-west corner of the central cable landing area and covers an area of approximately 40 m x 50 m. Although only some of the artifacts are securely dateable, many indicate an early 19<sup>th</sup> century occupation period. Many of the remaining artifacts that are not reliably dateable are also likely to date to the pre-1900 period. Two artifacts collected do date to the very late 19<sup>th</sup> or early 20<sup>th</sup> centuries

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

#### **5.1.6 AIWP #6 (BbGe-30)**

AIWP #6 (BbGe-30) is composed of 30 collected historic period artifacts, most of which are pieces of refined earthenware dishwares and bottles located in the ploughed area immediately north of the standing 19<sup>th</sup> century house at the west cable landing area (Appendix A). The site covers an area of approximately 20 m x 15 m. The location of the site suggests that refuse was thrown from the window or door into a midden (refuse pile) located immediately at the back of the house. Such middens are often referred to as kitchen middens as the organic and non-organic refuse from food preparation and clean-up would be tossed out together into a pile that would be composted.

The collected artifacts are a representative sample of the approximately several dozen or more artifacts that were exposed on the surface, as per Section 2.1.1, Standard 8 of the 2011 *Standards and Guideline for Consultant Archaeologists*. There were also noted several modern era artifacts mixed in with the 19<sup>th</sup> century material, including a glass “Pond’s” bottle that explicitly states “Made in 1935”. Although only some of the artifacts are securely dateable, many indicate an early 19<sup>th</sup> century occupation period. Many of the remaining artifacts that are not reliably dateable are also likely to date to the pre-1900 period.

This site meets the criteria for Stage 3 assessment as it consists of a post contact site containing at least 20 artifacts that date the period of use to before 1900 (Section 2.2, Standard 1.c).

#### **5.1.7 AIWP #7 (BbGe-31)**

AIWP #7 (BbGe-31) is composed of a single broken fragment of a ground slate tool, located in the north-east part of the central cable landing area (Appendix A). The artifact is roughly triangular in shape, with ground beveled edges narrowing down to a point. The artifact is broken and without either associated artifacts or more of the ground slate artifact it is difficult to tell whether this is a historic period item or a pre-contact period bannerstone fragment.

Bannerstones are largely associated with the Middle and Late Archaic periods (c. 8,000-3,000 BP) and are thought to be weights for spear throwers or possibly a type of noise-maker. Bannerstones are often shaped with a thick central section and two “ears” that assume various stules, including triangular shapes.

Although the isolated artifact does not meet specific criteria for requiring Stage 3 AA, the 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 2.2, Guideline 2) allows for the recommendation that a site move to Stage 3 even if it does not meet normal criteria. In this case the possibility that this artifact could be associated with an Archaic period occupation and the paucity of registered pre-contact archaeological resource in the vicinity of the project indicate that any further information would enhance our knowledge and understanding of the pre-contact occupation of the local area

## 5.2 RESOURCES NOT RECOMMENDED STAGE 3 ARCHAEOLOGICAL ASSESSMENT

A total of 4 isolated findspots, a stone field clearing feature and a modern refuse pile that did not receive a Borden number were also documented at Project components during the Stage 2 AA (Table 6). These resources do not meet the criteria for Cultural Heritage Value or Interest as per Section 2.2 of the 2011 *Standards and Guideline for Consultant Archaeologists*. None of these resources require further archaeological assessment. Details regarding all identified artifacts can be found in the Artifact Catalogue in Appendix A.

**Table 6: Archaeological Sites Not Recommended For Further Assessment**

AIWP Site #	Location	Borden #	# Artifacts Collected	Cultural Period
IF#1	Collector Between S16 and S05	n/a	1	19th century historic, whetstone
IF#2	S01 Access Road	n/a	1	Indeterminate pre-contact secondary reduction flake
IF#3	O&M and Laydown	n/a	1	1907 Canadian 5 cent piece
IF#4	Central Mainland Cable Landing	n/a	1	Early 19th century historic, 1806 penny

### 5.2.1 Isolated Findspot #1

Isolated Findspot #1 is composed of a whetstone found on the collector line between S16 and S05. The artifact measures 112 mm x 32 mm x 18 mm and has extensive cutting and scratching along its longitudinal edges which indicate that implements have been sharpened by dragging their edges along the stone. Although whetstones are known in both pre-contact and historic period contexts this particular artifact appears to have been made of stone that was cut and polished along four edges, indicating a historic period artifact.

The single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

### 5.2.2 Isolated Find #2

IF #2 is a single piece of lithic debitage found approximately midway along the access road from the 2<sup>nd</sup> Concession Road to S01. The flake is of Onondaga chert and shows characteristics consistent with secondary flaking. Despite intensification at 1 m intervals for an area of 20 x 20 m no other material was found. The artifact is of indeterminate age or cultural affiliation. The single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

### 5.2.3 Isolated Find #3

IF #3 is composed of a single 1907 Canadian 5 cent piece. The coin dates to the latter part of the reign King Edward VII. Despite intensification no further artifacts were located. The coin has a diameter of 15 mm, slightly smaller than a modern dime. The date of deposition of the coin is impossible to determine since coins continue to be used after new minting occur for new monarchs. Coins of the modern 5 cent piece were not issued until 1922.

The single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

### 5.2.4 Isolated Findspot #4

IF #4 is composed of a single 1806 King George III penny. The artifact was located in the north-west corner of the central cable landing area. Although the coin is heavily corroded there is still sufficient visible detail to securely date the coin to the 1806 issue, based on the narrow area between the base of the seated “Britannia” figure and the bottom of the coin which is only found on the 1806 coin issue. The coin is known to be a penny based on its diameter of 34 mm.

Although the coin has an early 19<sup>th</sup> century date the single artifact does not meet minimum criteria for a Stage 3 assessment and, as such, its cultural heritage value and interest can be considered sufficiently documented and assessed at Stage 2.

## 6.0 Recommendations for Further Work

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Stage 3 AA (the Archaeological Site Assessment) of the 7 identified sites must be conducted according to the 2011 *Standards and Guidelines for Consultant Archaeologists*. The following standards for Stage 3 AA work apply:

- Before carrying out fieldwork, review all relevant reports of previous fieldwork on the archaeological site or for that property;
- Carry out the archaeological site assessment when weather and lighting conditions permit good visibility of all parts of the archaeological site. Do not carry out the archaeological site assessment when weather and lighting conditions (e.g., snow cover, frozen ground, excessive rain or drought, heavy fog) reduce the ability to identify and document any part of the archaeological site;
- Using GPS record the locations of the following:
  - a central fixed point within the archaeological site
  - a permanent datum that can be tied to a development map; and
- Provide representative photographs of all field conditions (e.g., ploughed field, pasture or woodlot, disturbances).

For each site located using pedestrian survey methodology the Stage 3 AA will be composed of two elements: 1) a Controlled Surface Pick-up (CSP) of artifacts on the surface of ploughed fields and 2) test unit excavation. A CSP is a detailed survey of the ground surface in open fields that allows for precise recording of artifact locations and the collection of a representative



sample of artifacts, including non-diagnostic artifacts. The following standards for Stage 3 AA CSP will apply:

- If ground surface visibility has decreased in the time between the Stage 2 survey and the Stage 3 CSP, ensure that the site area is re-cultivated and weathered;
- Accurately map the location of all artifacts on the ground surface using a total station, transit and tape, stadia rod, or GPS unit. Record and catalogue artifacts by their mapped location, recording any relevant information (e.g., spatial relationship of diagnostics, artifact concentration areas). Tie this map to the general site GPS readings by recording a central point in the scatter;
- For very large and dense surface scatters, conduct a full CSP by grid units (maximum 5 m by 5 m units) over the archaeological site. Record and catalogue artifacts with their grid unit designation.
- Ensure that decisions regarding the type and number of artifacts collected strike a balance between gathering enough artifacts to document the archaeological site and leaving enough in place to relocate the site if required (e.g., to conduct further assessment, define a protected area or conduct excavation);
- Collect all formal artifact types and diagnostic categories, including, for 19th century archaeological sites, all refined ceramic sherds; and
- Collect a representative sample of non-diagnostic artifacts, taking into consideration the archaeological site type, type and frequency of non-diagnostic artifacts, and the likelihood that further fieldwork will be required.

Based on the results of the Stage 2 AA, use of a grid unit CSP is not anticipated to be required at any of the identified sites.

The second component of the Stage 3 AA, test unit excavation, will be required at all identified archaeological sites. The purpose of the test unit excavation is to document the extent of buried artifacts, cultural features, soil stratigraphy and structures and to recover a representative sample of artifacts from across the archaeological site. The interval of the Stage 3 AA grid (of either 5 m or 10 m intervals) will be dependent on the age, type and nature of each identified site. Specific guidelines for this interval are provided in the 2011 *Standards and Guidelines for Consultant Archaeologists*. The following standards for Stage 3 AA test unit excavation will apply:

- Excavate by 1 m square units;
- To determine the placement of test units, establish a grid on the site based on the permanent datum to at least the accuracy of transit and tape measurements. Placing test units in unmeasured, estimated locations is not acceptable;
- Excavate test units by hand. Do not use heavy machinery (e.g., gas-powered augers, backhoes) except to remove sterile or recent fill covering confirmed, deeply buried or sealed archaeological sites;
- Excavate test units by systematic levels (stratigraphic or standardized);
- Excavate test units into the first 5 cm of subsoil, unless excavation uncovers a cultural feature;
- If test unit excavation uncovers a cultural feature, do not excavate into feature fill. Instead:
  - Record the exposed plan of the feature.
  - Place geotextile fabric over the unit floor and backfill the unit;
- Screen all excavated soil through mesh with an aperture of no greater than 6 mm; and

- Unless otherwise specified collect and retain all artifacts. Record and catalogue them by their corresponding grid unit designation.

Based on the results of the Stage 2 AA there are no sites that will require any special conditions during test unit excavation.

With Aboriginal archaeological sites being documented through the Stage 2 AA it is expected that engagement with First Nations in subsequent Stage 3 will continue. Ongoing Aboriginal consultation will be part of the overall Project development, for archaeological resources and for other environmental components, and is a requirement of the 2011 *Standards and Guideline for Consultant Archaeologists*. It is recommended that Aboriginal Engagement be carried out as required by the Standards and Guidelines and as outlined in the bulletin *Engaging Aboriginal Communities in Archaeology*.

## 7.0 Advice on Compliance with Legislation

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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.

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

## **Stantec**

Amherst Island Wind Energy Project, Stage 2 Archaeological Assessment, Various lots, South Shore Concession, North Shore Concession, Concessions 1 – 3, Amherst Island; and Lot 19, Concession 1; part of Lots 16-26, Concession 1; part of Lots 16-27, Broken Front, Township of Ernestown, Loyalist County, ON

## **8.0 Closure**

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This report has been prepared for the sole benefit of Windlectric Inc. and may not be used without the express written consent of Stantec Consulting Ltd and Windlectric Inc.. 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.

### **STANTEC CONSULTING LTD**

#### **Signed Original on File**

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## **Stantec**

Amherst Island Wind Energy Project, Stage 2 Archaeological Assessment, Various lots, South Shore Concession, North Shore Concession, Concessions 1 – 3, Amherst Island; and Lot 19, Concession 1; part of Lots 16-26, Concession 1; part of Lots 16-27, Broken Front, Township of Ernestown, Loyalist County, ON

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Amherst Island Wind Energy Project, Stage 2 Archaeological Assessment, Various lots, South Shore Concession, North Shore Concession, Concessions 1 – 3, Amherst Island; and Lot 19, Concession 1; part of Lots 16-26, Concession 1; part of Lots 16-27, Broken Front, Township of Ernestown, Loyalist County, ON

## **10.0 Maps**

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**Legend**

-  Project Study Area
-  Railway
-  Watercourse

**Notes**

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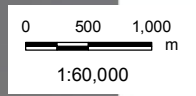
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160960595

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AMHERST ISLAND WIND ENERGY PROJECT**

Figure No.  
**1**

Title  
**Site Location**







### Legend

**Project Components**

- Project Study Area
- 120m Zone of Investigation
- Turbine
- Met Tower (Potential Location)
- Substation (Potential Location)
- Collector Lines
- Access Road
- Submarine Cable Path
- Laydown Area and Crane Pad
- Potential Culvert Location
- Point of Common Coupling
- Mainland Cable Vault (Potential Location)
- Island Cable Vault
- Turbine Blade Tips
- Constructible Area
- Mainland Dock (Potential Location)
- Island Dock
- Batch Plant (Potential Location)
- Site Office (Potential Location)
- Storage Shed
- Operation and Maintenance Building (Potential Location)

**TransmissionLine**

- Mainland Option 1
- Mainland Option 2
- Island Transmission Line

**Land Use**

- Central Staging Area
- Switching Station (Potential Location)

**Existing Features**

- Road
- Unopened Road Allowance
- Railway
- Watercourse

### Notes

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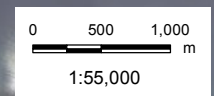
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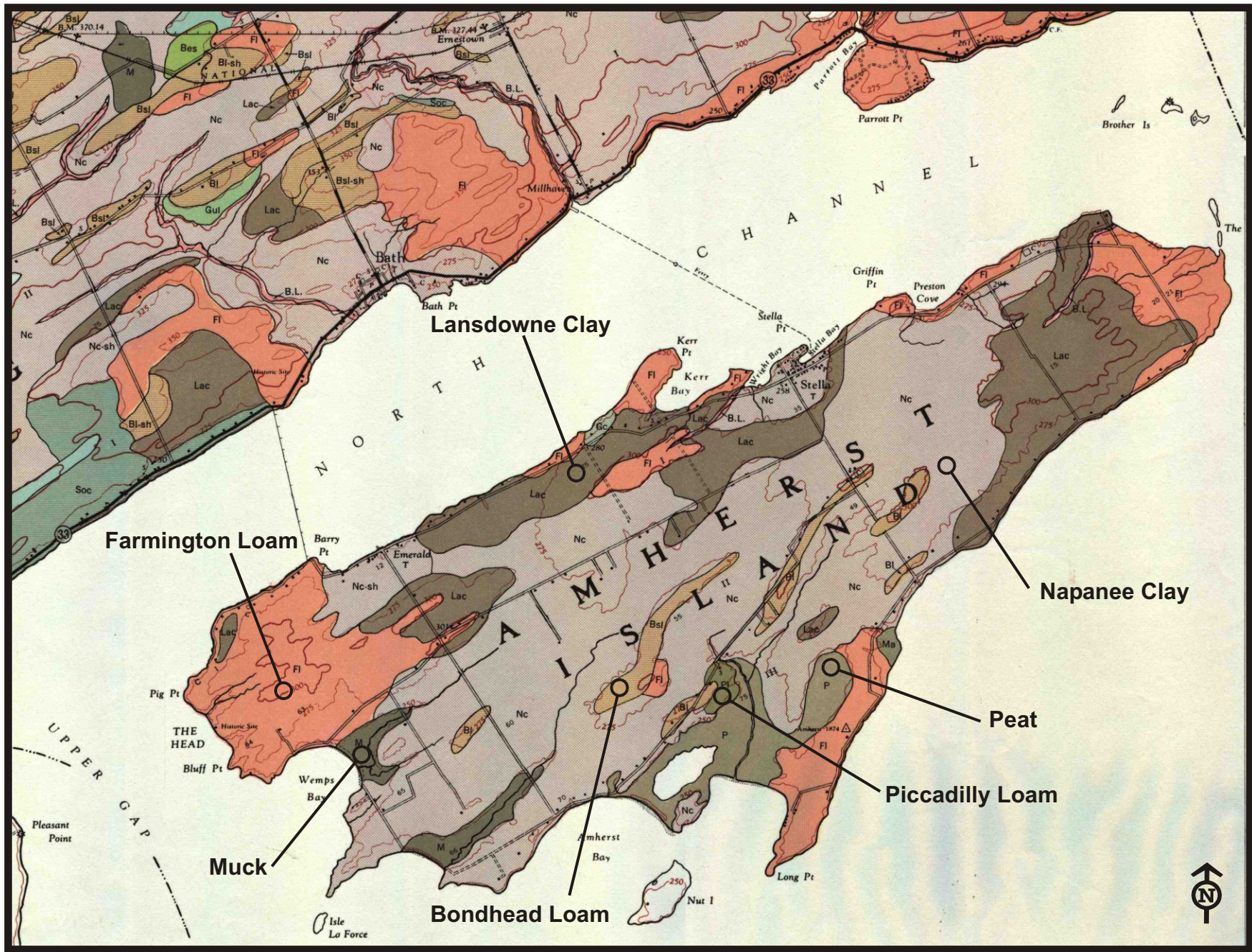
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Figure No.  
**2**

---

Title  
**Site Plan**





**Figure 3 - Soil Types In and Near the Project Area**

(Source: Gillespie et al., 1963)



### Legend

- Study Area
- 120m Zone of Investigation
- Project Components**
  - Turbine
  - Met Tower
  - Access Road
  - Collector Lines
  - Laydown Area and Crane Path
  - Submarine Cable Path
  - Dock Footprint
  - Laydown and Storage Area (Potential Location)
  - Operation and Maintenance Building (Potential Location)
  - Shed
  - Turbine Blade Tips
  - Substation (Potential Location)
  - Potential Culvert Location
  - Point of Common Coupling
- Transmission Lines**
  - Overhead - Option 1
  - Underground - Option 1
  - Overhead - Option 2
  - Underground - Option 2
- Land Use**
  - Laydown, Storage, Parking & Office
  - Optional Cable Landing
  - Proposed Rail and Unloading Crane Pad
  - Proposed Switching Station
- Existing Features**
  - Road
  - Unopened Road Allowance
  - Railway
  - Watercourse
  - Property Line
- Ploughed Areas**
  - Ploughed for Pedestrian Survey
  - Test Pit Survey

- ### Notes
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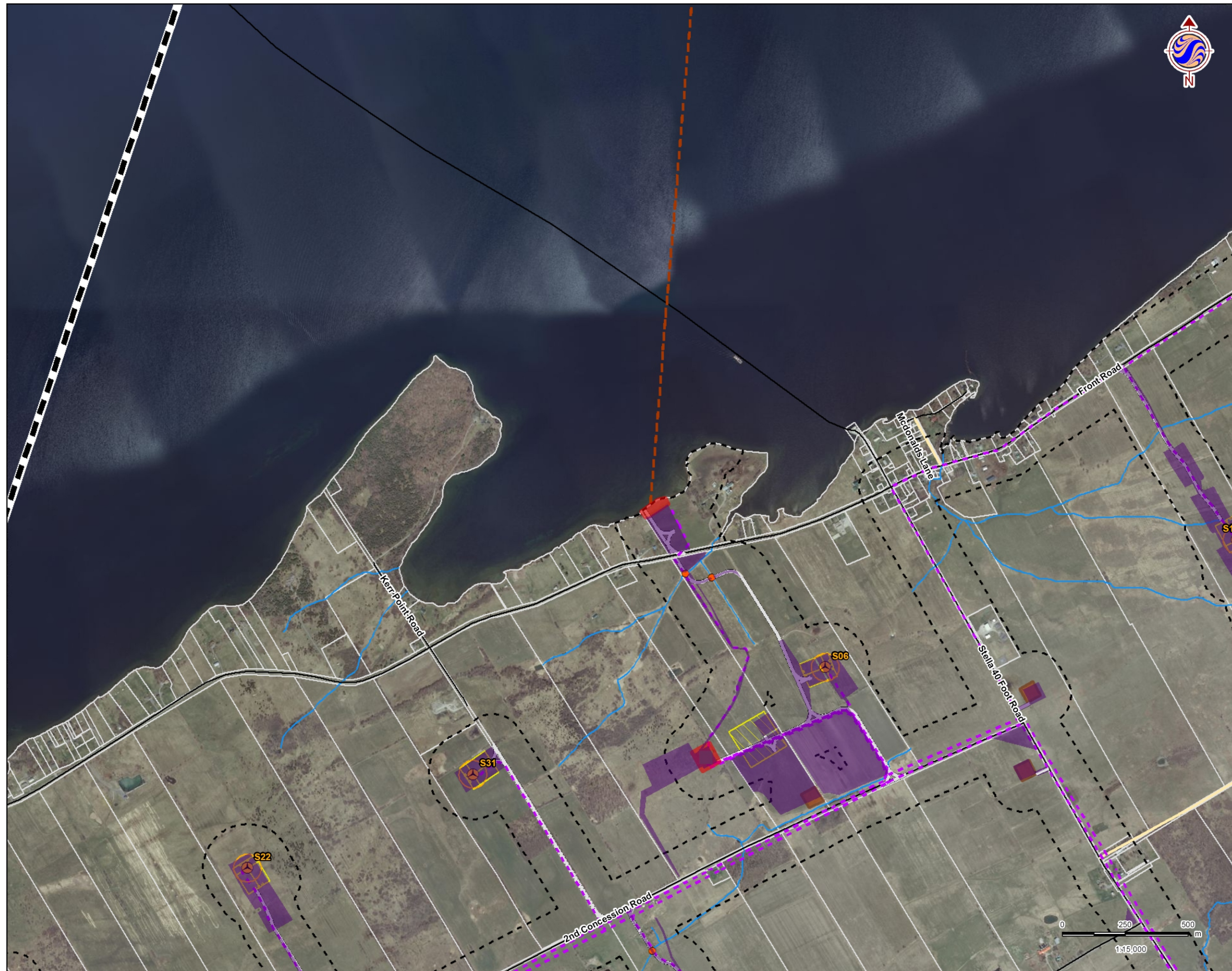


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Figure No. 4

Title  
**Location of Stage 2 AA Testing (Eastern Portion)**



### Legend

- Study Area
- 120m Zone of Investigation
- Project Components**
  - Turbine
  - Met Tower
  - Access Road
  - Collector Lines
  - Laydown Area and Crane Path
  - Submarine Cable Path
  - Dock Footprint
  - Laydown and Storage Area (Potential Location)
  - Operation and Maintenance Building (Potential Location)
  - Shed
  - Turbine Blade Tips
  - Substation (Potential Location)
  - Potential Culvert Location
  - Point of Common Coupling
- Transmission Lines**
  - Overhead - Option 1
  - Underground - Option 1
  - Overhead - Option 2
  - Underground - Option 2
- Land Use**
  - Laydown, Storage, Parking & Office
  - Optional Cable Landing
  - Proposed Rail and Unloading Crane Pad
  - Proposed Switching Station
- Existing Features**
  - Road
  - Unopened Road Allowance
  - Railway
  - Watercourse
  - Property Line
- Ploughed Areas**
  - Ploughed for Pedestrian Survey
  - Test Pit Survey

- ### Notes
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Figure No.  
5

Title  
**Location of Stage 2 AA Testing  
(Central-North Portion)**



### Legend

- Study Area
- 120m Zone of Investigation
- Project Components**
  - Turbine
  - Met Tower
  - Access Road
  - Collector Lines
  - Laydown Area and Crane Path
  - Submarine Cable Path
  - Dock Footprint
  - Laydown and Storage Area (Potential Location)
  - Operation and Maintenance Building (Potential Location)
  - Shed
  - Turbine Blade Tips
  - Substation (Potential Location)
  - Potential Culvert Location
  - Point of Common Coupling
- Transmission Lines**
  - Overhead - Option 1
  - Underground - Option 1
  - Overhead - Option 2
  - Underground - Option 2
- Land Use**
  - Laydown, Storage, Parking & Office
  - Optional Cable Landing
  - Proposed Rail and Unloading Crane Pad
  - Proposed Switching Station
- Existing Features**
  - Road
  - Unopened Road Allowance
  - Railway
  - Watercourse
  - Property Line
- Ploughed Areas**
  - Ploughed for Pedestrian Survey
  - Test Pit Survey

- ### Notes
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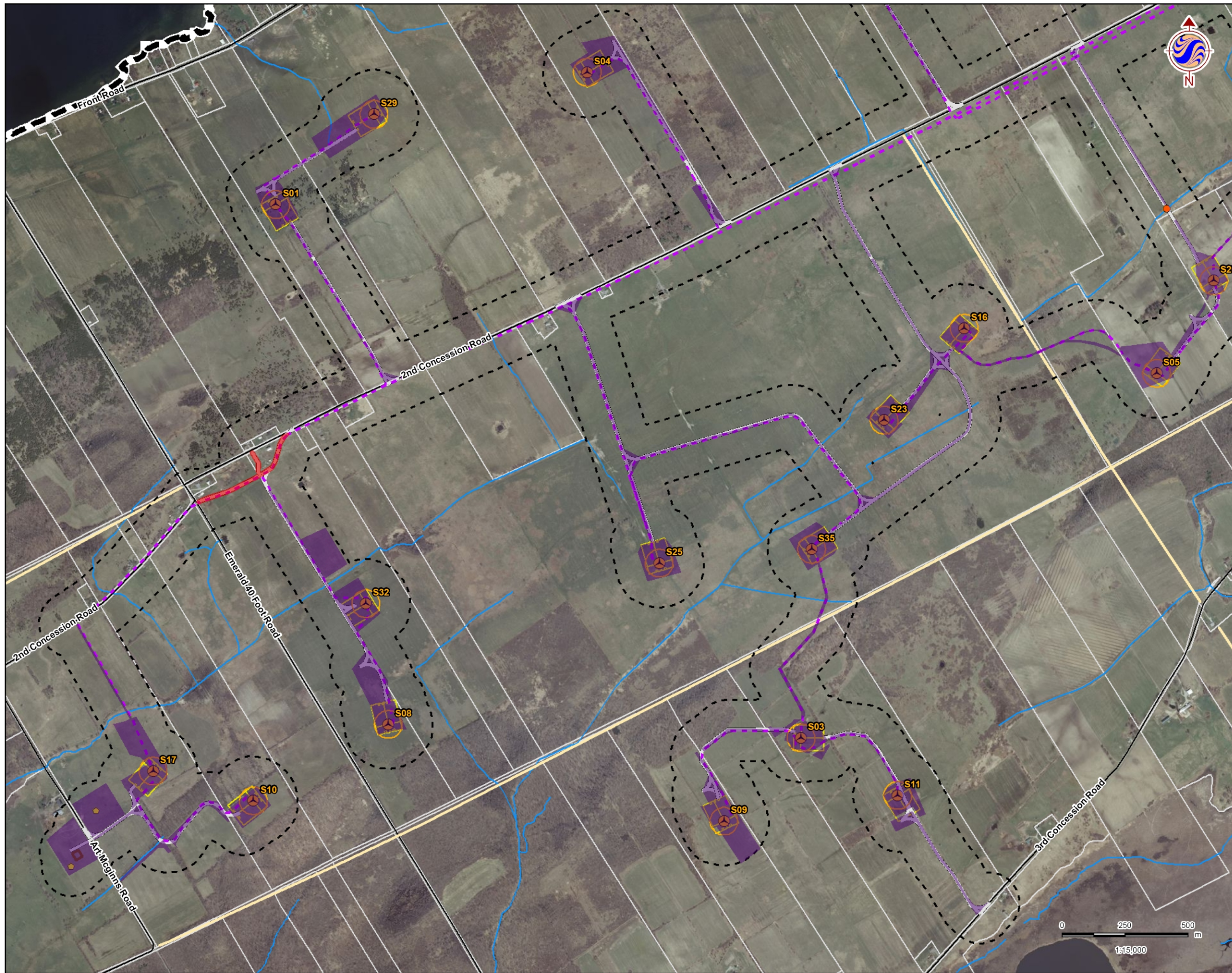
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Figure No.  
6

Title  
**Locations of Stage 2 AA Testing  
(Central-South Portion)**





### Legend

- Study Area**
  - Study Area
  - 120m Zone of Investigation
- Project Components**
  - Turbine
  - Met Tower
  - Access Road
  - Collector Lines
  - Laydown Area and Crane Path
  - Submarine Cable Path
  - Dock Footprint
  - Laydown and Storage Area (Potential Location)
  - Operation and Maintenance Building (Potential Location)
  - Shed
  - Turbine Blade Tips
  - Substation (Potential Location)
  - Potential Culvert Location
  - Point of Common Coupling
- Transmission Lines**
  - Overhead - Option 1
  - Underground - Option 1
  - Overhead - Option 2
  - Underground - Option 2
- Land Use**
  - Laydown, Storage, Parking & Office
  - Optional Cable Landing
  - Proposed Rail and Unloading Crane Pad
  - Proposed Switching Station
- Existing Features**
  - Road
  - Unopened Road Allowance
  - Railway
  - Watercourse
  - Property Line
- Ploughed Areas**
  - Ploughed for Pedestrian Survey
  - Test Pit Survey

- ### Notes
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Figure No.  
7

Title  
**Location of Stage 2 AA Testing  
(Central Portion)**



**Legend**

- Study Area
- 120m Zone of Investigation
- Project Components**
- Turbine
- Met Tower
- Access Road
- Collector Lines
- Laydown Area and Crane Path
- Submarine Cable Path
- Dock Footprint
- Laydown and Storage Area (Potential Location)
- Operation and Maintenance Building (Potential Location)
- Shed
- Turbine Blade Tips
- Substation (Potential Location)
- Potential Culvert Location
- Point of Common Coupling
- Transmission Lines**
- Overhead - Option 1
- Underground - Option 1
- Overhead - Option 2
- Underground - Option 2
- Land Use**
- Laydown, Storage, Parking & Office
- Optional Cable Landing
- Proposed Rail and Unloading Crane Pad
- Proposed Switching Station
- Existing Features**
- Road
- Unopened Road Allowance
- Railway
- Watercourse
- Property Line
- Ploughed Areas**
- Ploughed for Pedestrian Survey
- Test Pit Survey

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Figure No.  
**8**

Title  
**Location of Stage 2 AA Testing (Mainland Portion)**

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Revised: 2012-10-24 By: pworsell

## **Stantec**

Amherst Island Wind Energy Project, Stage 2 Archaeological Assessment, Various lots, South Shore Concession, North Shore Concession, Concessions 1 – 3, Amherst Island; and Lot 19, Concession 1; part of Lots 16-26, Concession 1; part of Lots 16-27, Broken Front, Township of Ernestown, Loyalist County, ON

## **11.0 Images**

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Photo 1 Starting Survey of Access Road to S15 and S24, From Front Road, Looking South.



Photo 2 Pedestrian Survey, S28 Pad, Looking North



Photo 3 Pedestrian Survey Soil Conditions, S26, Looking East to Road



Photo 4 Surveying Access Road to S17, Looking South From 2nd Concession Road



Photo 5 Survey Area For Temporary Dock Area, Looking North From Front Road to Lake Ontario



Photo 6 Surveying Ploughed Field in S09, Looking South-East



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Photo 7 Ploughed Field Conditions, S05, Looking North



Photo 8 Excavating Test Pits Along Access Road From Lower 40 Foot Road To S28



Photo 9 Standing Water at Pad 21, December 2011, Facing North-East



Photo 10 Looking East Along Stream Channel From Art McGinns Road



Photo 11 Unsurveyable Wet Area Along Access Road to S17



Photo 12 Looking East Across Test Pit Survey Area, Temporary Road At S12



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Photo 13 Excavating Test Pits Along Access Road, South of 2nd Concession, Looking South



Photo 14 Standing Water in Wet Area Along Access Road in Quinte Pasture Turbines



Photo 15 Wet Area, Quinte Pasture Area



Photo 16 Standing Water in Turn Expansion, Dump Road



Photo 17 Wet Area at Start of Access Road to S22, North Side of 2nd Concession Road



Photo 18 Looking South to 2nd Concession Road From Wet Area at Start of S22 Access Road



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Photo 19 Water Tolerant Willow Patch, Along Access Road to S04



Photo 20 Wet Soil in Forested Area Along S04 Access Road



Photo 21 Shallowly Buried Bedrock at S01



Photo 22 Bedrock at Surface of Test Pit Area, Substation Area



Photo 23 Excavating Test Pits at Substation Area



Photo 24 Pedestrian Survey of Ploughed Corner Expansion, Stella 40 Foot and 2nd Concession Roads



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Photo 25 Surficial Bedrock Along Beachfront at Amherst Island Temporary Dock and Cable Landing



Photo 26 Test Pit Survey Along Shoreline at Amherst Island Temporary Dock and Cable Landing



Photo 27 Test Pit Survey Along Shoreline at Mainland Dock Area



Photo 28 Pedestrian Survey of Central Ploughed Field, Invista Property, Facing South-East



Photo 29 Underground Utility Access in Central Ploughed Area; Previously Disturbed



Photo 30 Test Pit Survey, West of Guard House, Looking West



Photo 31 Surveying Centre Area on South Side of Highway 33, Facing North-West



Photo 32 Pedestrian Survey on Ploughed Area on North Side of House



Photo 33 Front Lawn of House, Test Pit Survey Area, Facing North-East



Photo 34 Excavating Test Pits Along Grass Strip Between Driveway and Lake Ontario



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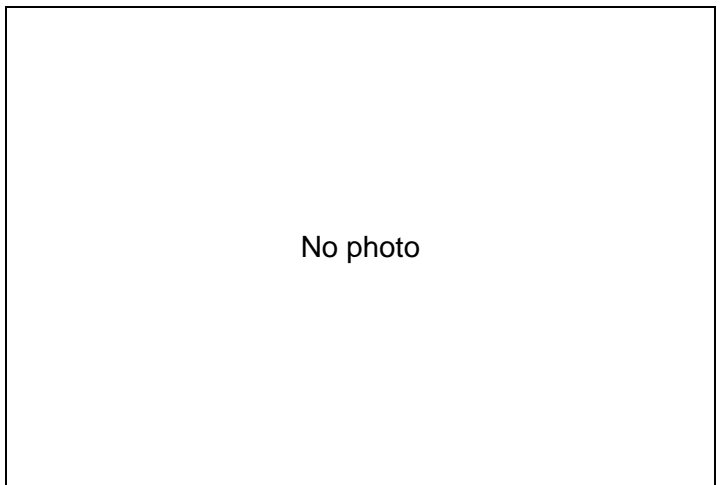
Photo 35 Typical Non-Surveyable Shoreline Conditions at Cable Landing Area



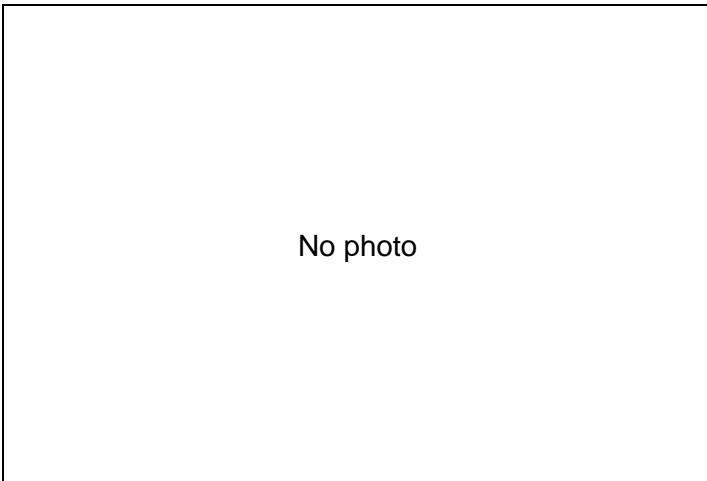
Photo 36 Ploughed Pedestrian Survey Area, Cruickshank Property, Facing South



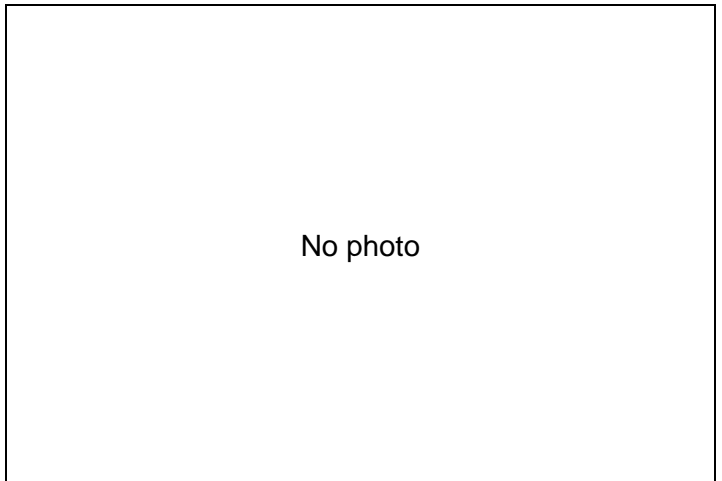
Photo 37 Unsurveyed Wet Area near North-East Corner of Cruickshank Property



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