



Samsung Renewable Energy Inc. and
Pattern Energy

7A Stage 1 Archaeological
Assessment Report

For
South Kent Wind Project

**Stage 1 Archaeological Assessment
(Background Study and Property Inspection)**

**South Kent Wind Project
Municipality of Chatham-Kent, Ontario**

Prepared for:

Hatch Ltd.
4342 Queen Street, Suite 500
Niagara Falls, ON L2E 7J7
Tel: 905-374-0701
Fax: 905-374-1157

Archaeological Licence P264 (Katie Bryant)
MTC PIF P264-120-2010
ASI File 10EA-380

December 2010



Archaeological Services Inc.

528 Bathurst St.
Toronto, Ontario
Canada, M5S 2P9

T 416-966-1069

F 416-966-9723

info@iASI.to/www.iASI.to

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(Background Study and Property Inspection)
South Kent Wind Project, Municipality of Chatham-Kent, Ontario**

EXECUTIVE SUMMARY

Archaeological Services Inc. (ASI) was contracted by Hatch Ltd., Niagara Falls, to conduct a Stage 1 Archaeological Assessment (Background Study and Property Inspection) for the South Kent Wind Project, Municipality of Chatham-Kent, Ontario. The Stage 1 assessment is conducted as part of Ontario Regulation 359/09 within the Renewable Energy Approvals process under Part V.O.1 of the *Environmental Protection Act*. The project comprises 127 wind turbine locations with their associated access roads and related electrical infrastructure (turbine layout dated November 3, 2010; access road layout dated November 17, 2010; electrical circuit layout dated December 3, 2010). The project includes a series of previously assembled land controls, and Stage 1 assessment reports were previously submitted for two of the projects now subsumed under the South Kent Wind Project: the former Kent Centre Wind Farm Project (ASI 2009: CIF P057-539-2009) (now South Kent – Part 1) and the Merlin-Quinn Wind Farm Project (Jacques Whitford 2008: CIF P002-131-2008). The project facilities are situated in Romney, East Tilbury, Raleigh, Harwich, and Howard Townships, all formerly of Kent County.

A study area was defined comprising lands in the general vicinity of the proposed project facilities. This study area includes large portions of Romney, East Tilbury, Raleigh, Harwich, and Howard Townships. The Stage 1 background study determined that 49 archaeological sites have been previously registered within a kilometre of the general project area, three of which are within 300 m of proposed facilities. A review of the geography and local nineteenth century land use of the study area suggests that there is potential for the identification of Aboriginal and historic archaeological sites.

A field review determined that most of the study area lands are agricultural and generally undisturbed. However, it is proposed that some of the electrical circuits will be installed in existing road rights-of-way and in an existing rail bed, and there is no potential for sites where these areas are disturbed.

In general, the evaluation of archaeological site potential supports the findings of the background research that the study area includes lands with potential for archaeological sites.

In light of these results, additional archaeological assessment is required under O. Reg. 359/09, s. 22:

1. No Stage 2 Archaeological Assessment (Property Assessment) is recommended for the former Michigan Central Railway rail bed, comprised of aggregate fill. (Circuits and a service road are proposed atop the rail bed);

2. A property inspection of impacted road ROWs is recommended in advance of the Stage 2 Archaeological Assessment (Property Assessment) to identify and document visibly disturbed sections. No Stage 2 assessment of the disturbed locations is recommended. Stage 2 assessment should be conducted where undisturbed ROWs may be impacted. This work will be done in accordance with the MTC *Standards and Guidelines for Consultant Archaeologists*;
3. All remaining locations of proposed construction impact (*e.g.* turbine sites, access roads, circuits, and turn-arounds) must be subjected to a Stage 2 Archaeological Assessment (Property Assessment) in accordance with the MTC *Standards and Guidelines for Consultant Archaeologists*; and
4. Should design changes (subsequent to the turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010) or temporary workspace requirements result in the inclusion of previously unassessed lands where there is potential for sites, these lands should be subjected to a Stage 2 Archaeological Assessment (Property Assessment) to determine if cultural remains are present.

**ARCHAEOLOGICAL SERVICES INC.
ENVIRONMENTAL ASSESSMENT DIVISION**

PROJECT PERSONNEL

<i>Senior Project Manager:</i>	Robert Pihl, MA, CAHP [MTC license P057] <i>Partner and Senior Archaeologist, Manager, Environmental Assessment Division</i>
<i>Project Director (licensee):</i>	Katie Bryant, MA [MTC license P264] <i>Senior Archaeologist</i>
<i>Project Coordinator:</i>	Sarah Jagelewski, Hon. BA <i>Research Archaeologist</i>
<i>Project Manager/Archaeologist:</i>	Deborah Pihl, BA [MTC license R130] <i>Staff Archaeologist</i>
<i>Report Preparation:</i>	Deborah Pihl
<i>Graphics Preparation:</i>	Blake Williams, MLitt. [MTC licence R344] <i>GIS/CAD Technician</i>
<i>Report Reviewer:</i>	Robert Pihl

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1.0 INTRODUCTION

Archaeological Services Inc. (ASI) was contracted by Hatch Ltd., Niagara Falls, to conduct a Stage 1 Archaeological Assessment (Background Study and Property Inspection) for the South Kent Wind Project, Municipality of Chatham-Kent, Ontario (Figure 1). Hatch is applying for a Renewable Energy Approval under Ontario Regulation 359/09 of Part V.0.1 of the *Environmental Protection Act*. The project comprises 127 wind turbine locations with their associated access roads and related electrical infrastructure assembled under a series of land controls. The proposed facilities are situated in five townships, all formerly in Kent County: Romney, East Tilbury, Raleigh, Harwich, and Howard.

Authorization to carry out the activities necessary for the completion of the Stage 1 Archaeological Assessment Background Study and Property Inspection) was granted to ASI by Hatch on November 22, 2010.

The objectives of the Stage 1 Archaeological Assessment are:

- To fulfill the requirements of O. Reg. 359/09, s. 20-22;
- To provide information about the geography, history, previous archaeological fieldwork and current land condition of the study area;
- To evaluate in detail the archaeological potential of the overall study area which can be used, if necessary, to support a recommendation for Stage 2 survey for all or parts of the property; and
- To recommend appropriate strategies for Stage 2 survey, if necessary (MTC 2010: s. 1, p. 1).

2.0 STAGE 1 BACKGROUND STUDY

Under O. Reg. 359/09, s. 20 (1), item 1 and s. 21, the project must determine if there will be an impact to an archaeological resource, and then carry out an archaeological assessment under s. 22. The assessment will be conducted in accordance with the *Ontario Heritage Act* (2005) and the Ministry of Tourism and Culture¹ (MTC) 2010 *Standards and Guidelines for Consultant Archaeologists*. A Stage 1 Archaeological Assessment background study conducts detailed documentary research to provide a record of the archaeological and land use history and present conditions in the study area. Specifically, the background study provides information about previous archaeological fieldwork, geography and history, and current land condition in the study area. A study area was defined comprising lands in the general vicinity of the proposed project facilities. This study area includes large portions of the Townships of Romney, East Tilbury, Raleigh, Harwich, and Howard, in the Municipality of Chatham-Kent (Figure 1).

The present project comprises a number of projects initiated by various proponents. The Stage 1 assessment reports previously compiled for two of the projects encompass most of the present project study area (Figure 1). The former Kent Center Wind Farm Project (now identified as the South Kent Wind

¹ In January 2010, the Government of the Province of Ontario re-organized several of its ministries, and the new Ministry of Tourism and Culture was formed from the former Ministry of Culture and the Ministry of Tourism.



Project – Part 1) included lands to the south of Highway 401 (ASI 2009; CIF P-057-539-2009). The Merlin-Quinn Wind Farm (now included in the current project identified as South Kent Wind Project – Part 2) included lands to the east of Tilbury (Jacques Whitford 2008; CIF P002-131-2008). The present report comprises updated information on the two previous Stage 1 study areas as well as additional lands, all now comprising the South Kent Wind Project study area.

2.1 Site Potential Criteria

The MTC's *Standards and Guidelines for Consultant Archaeologists* stipulates a number of characteristics that indicate potential for archaeological sites (2010: s 1.3.1):

- geographic features such as elevated topography, pockets of well-drained sandy soil, distinctive land formations, resource areas, and natural water sources;
- previously identified archaeological sites;
- property designated or listed as a landmark;
- property identified by local informants as historically or archaeologically significant;
- areas of Euro-Canadian settlement;
- early historical transportation routes; and
- registered or designated historical properties.

Conversely, no or low potential for archaeological sites may be associated with any of the following:

- extensive and deep disturbance (MTC 2010: s. 1.3.2); or
- permanently wet areas, exposed bedrock, or steep slopes (2010: s. 2.1).

Each of these criteria will be examined and their distributions mapped to provide the basis for comparison with existing conditions at the various proposed facility locations.

2.2 Geography

Geographic characteristics that may positively correlate with potential for archaeological sites include elevated topography (eskers, drumlins, large knolls, plateaus), pockets of well-drained sandy soil, (especially near areas of heavy soil or rocky ground), distinctive land formations that might have been special or spiritual places (such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases). Resource areas, including food or medicinal plants (migratory routes, spawning areas, prairie) and scarce raw materials (quartz, copper, ochre, or outcrops of chert) are also considered characteristics that indicate archaeological potential (MTC 2010: s. 1.3.1).



The study area is situated largely in the St. Clair Clay Plains physiographic region of southern Ontario. The St. Clair Clay Plains comprise several clay plains overlying limestone bedrock, till plains and till moraines. Most of the study area is on the Essex Clay Plain sub-region, an imperfectly drained, flat area of clay overlying till, situated between the basins of Lake Erie and Lake St. Clair. The clay plain is largely characterized by diamicton surficial sediments (Figure 2). The typical Brookston clay soil is dark and gleisolic, with poor drainage (Figure 3). For much of the area, the early land surveyors indicate that the poorly drained soils were most often covered by a swamp forest of black ash, while a beech maple forest predominated on the better drained locations. Smaller areas of other associations were also noted, including hickory and oak along Middle Line, and open marsh, north of Blenheim. Although scattered low sandy knolls occur on the clay, drainage on the thin layer of lighter soils is imperfect due to the underlying clay (Chapman and Putnam 1984: 147–149). Never-the-less, in level terrain, there is potential for sites on even low rises or at the edges of small stream valleys where soil drainage is enhanced.

In the vicinity of Blenheim, there are smaller areas of some physiographic variation. The Blenheim Moraine sub-region extends in a southwest-northeast direction through the town of Blenheim. To the west of Blenheim a well-defined morainic ridge is present, but to the east, in the study area, the moraine is not a prominent topographic feature. Never-the-less, moraine is very apparent in the patterns of soil texture and drainage east of Blenheim (Figures 2 and 3). Ridges of mixed sand and gravel form the north and south margins, with mixed drainage between the ridges. The records of the early land surveyors indicate oak forest on the moraine ridges (Finlay 1978). There is potential for archaeological sites on the ridges since they comprise modest topographic features with better soil drainage than the surrounding level clay plain.

The south margin of the clay plain, between the moraine and the marshy shore of Rondeau Harbour, exhibits more gently rolling terrain. There, in contrast to other areas of the clay plain, the soil is heavy but well-drained (Haldimand loam) (Figure 3).

To the north of Blenheim, the north margin of the study area coincides with the southern margin of the Bothwell Sand Plain. Along the Sand Plain margin lighter soils such as Brookston sandy loam, Berrien sandy loam, and Beverly loam are thin, and soil drainage is imperfect due to the underlying clay (Figures 3 and 4).

While most of the poorly drained lands would not have been particularly attractive to pre-contact or early historic inhabitants, there is potential for sites in the better drained locales. These pockets as well as the areas of inland or shoreline marsh may also have supported plant and animal resources not found elsewhere in the general area.

2.3 Water Sources

Distance from water has been one of the most commonly used variables for predictive modeling of site location. MTC's standards and guidelines (2010: s. 1.3.1) stipulate that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp



or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

The northwest two thirds of the study area are within the Lake St. Clair drainage, drained by Baptiste Creek, Jeannettes Creek, McGregor Creek and numerous other tributaries of the Thames River (Figure 3). On the south edge, the Lake Erie drainage basin includes a narrow margin of the level lands along the lakeshore at the west end of the study area. Toward the east the lakeshore terrain becomes more rolling, and the Lake Erie tributaries are more entrenched, extending six to seven kilometres inland. Large wet-lands occur along the north shore of Rondeau Harbour.

Many of the watercourses in the study area are natural. Because much of the study area comprises poorly drained soils and level terrain, extensive systems of ditches were excavated in the nineteenth and twentieth centuries to enhance soil drainage and enable these lands to be farmed. These ditching projects were initiated prior to 1880, and appear on the 1881 historic maps (*cf.* Figure 5). And, where small or ephemeral natural watercourses occur, most have been channelized, probably with some changes in the water course locations. Some of the mapped linear stream courses are obviously recognizable as artificial, and the non-natural character of additional water courses will be confirmed during Stage 2 fieldwork. Where water sources are artificial, the vicinities can be regarded as being distant from water, without associated potential for pre-contact or early historic sites. Indeed, it may be argued that there is probably little potential for early historic or pre-contact Aboriginal sites in such locations due to ground conditions that were formerly wet for most of the year, thus necessitating the excavation of the ditches.

The study area also includes relict beach ridges or shorecliffs in several locations. The most extensive is a meandering and ephemeral beach line within the north margin of the study area. Another beach line occurs along the level lakeshore bluff in the western part of the study area. The beach lines are visible on the surficial geology mapping as patches of sandy soils (Figure 2). While the beach lines offer little to distinguish them from the surrounding clay plain, due to a lack of adequate soil drainage (Figure 3) and a lack of topographic definition, they are by definition, areas of possible archaeological potential.

2.4 Previous Archaeological Research

In order that an inventory of archaeological resources could be compiled for the study area, three sources of information were consulted: the site record forms for registered sites housed at the MTC, published and unpublished documentary sources, and the files of ASI.

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTC. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The study area under review is located in the Borden Blocks *AbHl*, *AcHl*, *AbHm*, *AcHm*, *AbHn*, *AcHn*, and *AaHo*.

According to the OASD (email communication, Robert von Bitter, MTC Data Coordinator, November 30, 2010) forty-nine (49) archaeological sites have been previously registered within one kilometre of the South



Kent Wind Project study area (Figure 4, Table 1). Three of the sites are situated within 300 m of proposed facilities (turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010).

Table 1: List of registered sites within 1 km of South Kent Wind Project study area

Borden #	Site Name	Temporal/Cultural Affiliation	Site Type	Recomm's	Researcher
AaHn-2	--	Historic	Undetermined	NFW	TMHC 2007
AaHn-3	--	Historic	Undetermined	NFW	
AbHl-10	Rondeau Bay 2	Early Woodland	Campsite		D Carey 1980
AbHl-11	Rondeau Bay 3	Early Woodland	Campsite		D Carey 1980
AbHm-8	T30 Turbine	Late Archaic Late (early) Woodland	Campsite, lithic scatter	FW	CRMG 2009
AbHm-11	T40 Access Road	Pre-contact	Isolated find	NFW	CRMG 2009
AbHm-12	T44 Turbine	Pre-contact	Isolated find	NFW	CRMG 2009
AbHm-14	--	Historic	Dump		ASI 2009
AbHn-15	BME Cemetery	Historic	Cemetery		K Smardz 1998
AbHn-1	Centre Road 1	Historic	Homestead		I Kenyon 1982
AbHn-2	Centre Road 2	Historic	Homestead		I Kenyon 1982
AbHn-3	Middle Road 1	Historic	Residence		I Kenyon 1982
AbHn-4	Middle Road 2	Historic	Residence		I Kenyon 1982
AbHn-6	Drew 1	Late Archaic, Early Woodland	Undetermined		L Drew 1997
AbHn-7	Drew 2	Early to Late Archaic	Undetermined		L Drew 1997
AbHn-8	Drew 3	Early Archaic, Early Woodland	Undetermined		L Drew 1997
AbHn-9	Vandale 1	Late Archaic	Undetermined		L Drew 1997
AbHn-10	Smoulder's 1	Middle & Late Archaic	Lithic Scatter Undeterm		L Drew 1997
AbHn-11	Smoulder's 2	Late Woodland Historic	Lithic scatter Undetermined		L Drew 1997
AbHn-12	Smoulder's 3	Late Archaic, Early Woodland	Lithic scatter, undetermined		L. Drew 1997
AbHn-13	Smoulder's 4	Early & Middle Woodland	Lithic Scatter, undetermined		L Drew 1997
AbHn-14	Drew 4	Pre-contact	Lithic scatter		L Drew 1997
AbHn-15	BME Cemetery	Historic	Cemetery		K Smardz 1998
AbHn-17	First Union Church Cemetery	Historic	Cemetery		W Allen 2004
AbHn-19	Raleigh Substation Precontact	Late Archaic	Camp site	FW	CRMG 2009
AbHn-20	T25 Turbine Precontact	Pre-contact	Camp site	FW	CRMG 2009
AbHn-21	Sommerville	Contradictory data			CRMG 2009
AbHn-22	Burns	Historic	Farmstead		CRMG 2009
AbHn-25	P. McKeon	Pre-contact	Campsite	FW	CRMG 2009
AbHn-26	T24 Precontact	Late Archaic	Isolated find	NFW	CRMG 2009
AbHn-27	T26 Precontact IF	Pre-contact	Isolated find	NFW	CRMG 2009



Borden #	Site Name	Temporal/Cultural Affiliation	Site Type	Recomm's	Researcher
AkHk-2	Morpeth	Archaic, Late Woodland?	Campsite, burial		Fox 1977
AcHk-3	Morpeth South	Archaic, Woodland	Campsite		D Carey 1978
AcHk-4	Morpeth "A"	Archaic, Woodland	Campsite, manufacturing centre		D Carey 1978
AcHk-5	Morpeth "D"	Middle Archaic, Late Woodland	Campsite, manufacturing centre		D Carey
AcHl-6	Morpeth "B"	Middle Archaic to Late Woodland	Campsite, manufacturing centre		D Carey 1978
AcHl-7	Morpeth 5	Early Woodland	Campsite		D Carey 1980
AcHl-8	Morpeth 6	Early Woodland	Campsite		D Carey 1980
AcHl-9	Rondeau Bay 1	Late Woodland	Campsite		D Carey 1980
AcHm-12	Molson	Undetermined	Undetermined		G Foster 1980
AcHm-19	Loews 1	Undetermined	Undetermined		G Foster 1980
AcHm-20	Loews 2	Undetermined	Undetermined		G Foster 1980
AcHm-21	Richardson	Undetermined	Undetermined		G Foster 1980
AcHm-22	Durfy 1	Archaic	Lithic Scatter		G Foster 1980
AcHm-23	Durfy 2	Archaic	Lithic Scatter		G Foster 1980
AcHm-24	Durfy 3	Pre-contact	Campsite		G Foster 1980
AcHm-25	Jenner	Undetermined	Undetermined		G Foster 1980
AcHm-26	Hellerman	Undetermined	Undetermined		G Foster 1980
AbHm-27	Stewart 1	Undetermined	Undetermined		CRMG 2009

Bolded sites – within 300 m of proposed project facilities

ASI – Archaeological Services Inc., CRMG – Cultural Resource Management Group, TMHC - Timmins Martelle Heritage Consultants Inc., MCC – Ministry of Communication & Culture (now MTC), MHCI – Mayer Heritage Consultant Incorporated; MIA – Museum of Indian Archaeology (now London Museum of Archaeology)
NFW – no further work; FW – further work.

The 49 sites within one kilometre of the study area include 64 components of varying temporal affiliation: 12 historic, 44 pre-contact Aboriginal, and 8 unspecified (Table 2). Most of the sites of unspecified age were registered by G. Foster in 1980, in the course of his research investigations along McGregor Creek. Although the creek intersects the study area only in the vicinity of the Pinehurst Substation, numerous tributaries drain the northeast portion of the study area. The historic sites include cemeteries as well as homesteads, and Euro-Canadian as well as Afro-Canadian sites, particularly in the vicinity of North Buxton.

The presence of the pre-contact sites indicates Aboriginal settlement in the vicinity since the Early Archaic Period. Prior to 2000, most of the registered sites were identified in the course of a few research investigations and a few small assessments in the advance of development. In the last 5 years, however, with the advent of wind farm projects in the area, a number of additional sites have been registered by Stage 2 assessments conducted in advance of development (ASI 2009, TMHC 2006, Jacques Whitford 2009). Several sites were recently identified during wind project investigations to the south of the study area and have yet to be registered with the MTC (ASI 2010); none are within a kilometre of the study area. The pre-contact Aboriginal sites within the general vicinity include small camp or activity sites as well as isolated finds. Most of the isolated finds do not appear to be associated with physiographic features or indeed with any water source. However, the small pre-contact sites, with only one exception (AbHm-8), are associated with small rises on the otherwise level and poorly drained lands. Most but not all of the sites

are also associated with small streams. Thus, it appears prudent to defer the identification of areas of no or low potential (*i.e.* distant from water and historic features), pending field inspection of each location to identify any low elevation rises that may be present.

Table 2: Summary of registered sites within 1 km of the South Kent Wind Project study area

Temporal Affiliation		Components	Sites
Historic		12	11
Pre-contact		44	30
	Unspecified	7	
	Archaic- Unspecified Period	5	
	Early Archaic	2	
	Middle Archaic	4	
	Late Archaic	9	
	Woodland – Unspecified Period	2	
	Early Woodland	8	
	Middle Woodland	2	
	Late Woodland	5	
Pre-contact and Historic			1
Unspecified		8	8
Total Components		64	
Total Sites			49

2.5 Land-Use History

2.5.1 Township Survey and Settlement

The MTC's standards and guidelines stipulate that areas of early Euro-Canadian military or pioneer settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries, are considered to have archaeological potential (2010: s. 1.3.1). There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historic landmark or site, and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations are also considered to have archaeological potential.

Settlement in this area began around 1790 when the French turned over to the British the lands between the Thames River and Lake Erie. One of the earliest roads in the area was the Talbot Trail, laid out around 1811 (Cook 2009: Historical Plaques of Ontario – Elgin County Plaque #6). Settlers, many of them United Empire Loyalists, began to settle on the better drained lands in the east part of the study area, along the lakeshore, and north of the study area along the Thames River. As the five townships were surveyed and a road system was laid out, settlement began to focus on major transportation routes such as the Middle Road, Drake Road, and Communications Road.



The first railway lines in southwestern Ontario were completed in 1843 and ran from London to Windsor, via Chatham, and these lines were north of the study area. Rail lines through the study area came several decades later. The Michigan Central line, extending southwest from Ridgetown through Charing Cross, was constructed in 1873 and twinned in 1902. The Lake Erie & Detroit line from Ridgetown through Blenheim was laid in 1893. A north-south line connecting Chatham to Erieau on the lake shore was completed in 1883 by the Erie & Huron Railroad. An electric line built in 1908 linked Chatham to Erie Beach but by 1930 had been abandoned (Andreae 1997: 126-131). More recently, much of the twinned line has been abandoned.

Portions of Tilbury East and Romney Townships comprise the west end of the study area. A few settlers are known to have arrived in 1833, probably by way of the Talbot Trail, but settlement was very slow until township surveys had been initiated and the Middle Road laid out in 1840. By 1866-7, only 345 families resided in East Tilbury Township, most along the Middle Road or the lake front. Although most of the study area lands had been purchased by 1876, no buildings are illustrated on the 1876 Shackleton & McIntosh mapping, and many may have been absentee owners. Small nineteenth century villages and crossroad communities in the study area include Valetta, Tilbury East, Fletcher, and Merlin (Figures 5 and 6).

Many of Raleigh Township's early settlers arrived between 1816-17 from the British Isles and other parts of Canada and the Maritime provinces. Township surveys were completed around 1825, although the survey had been initiated decades earlier. The first known municipal records date to 1817. The first post office was opened on October 6, 1831 at a settlement called Erius, which no longer exists. When the railway made its appearance in 1874, it opened large new areas to clearing and settlement (Mika 1983: 274-276). By the end of the nineteenth century, a number of villages and crossroad communities had developed in the study area including North Buxton (Figure 7), Fletcher, Charing Cross, Buxton, Merlin, and Dealtown (Figure 8).

Survey of Harwich Township was initiated in 1798, and eventually three surveys were conducted from three different directions. As a result, the same lot and concession numbers appear three times (Mika 1981:246-248). Within the township, several villages and crossroad communities of varying sizes had developed within the study area by the end of the nineteenth century, including Harwich Centre, and Weldon's Cross (Figure 9).

Howard Township was first settled by United Empire Loyalists at the end of the eighteenth century. Scots from Utica, New York and clans direct from Scotland also formed a large portion of the immigration. Municipal records show that local government was inaugurated by 1843 (Mika 1981:308-310). Nineteenth century township communities included Weldon's Cross, West Troy, and Morpeth (Figure 10).

The Fugitive Slave Act, passed in 1850, increased the numbers of freedom-seekers arriving in the Windsor and Sandwich area via the Underground Railroad (Hill 1981:32, 53). The majority of these freedom-seekers settled in Essex and Kent Counties, and the Buxton National Historic Site serves as a memorial for the fugitives of the American system of slavery in the pre-Civil War years.

The Elgin Settlement, or as it was more commonly referred to, the Buxton Settlement, is one of four settlements set up for former slaves. The Elgin Settlement was founded in 1849 when Reverend William King and an association, known as the Elgin Association with abolitionist principles, purchased 4,300 acres,



which were made available to fugitive or freed slaves that were looking for opportunities for a better life. For many runaway slaves, the Buxton settlement was the final stop on the Underground Railroad. The settlement lands were approximately 6 miles in length and 3 miles in width, with North Buxton at the north end and Buxton in the centre at the Middle Road intersection (Figure 7). Farms were to be 50 acres in size, each with a house, 33 feet from the road, fronted by a picket fence. The houses were to follow prescribed dimensions of 18 by 24 feet, with a height of 12 feet (Sexsmith 1914: 40).

2.5.2 Historic Map Review

For the Euro-Canadian period, the majority of early nineteenth-century farmsteads (*i.e.*, those which are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth-century maps) are likely to be captured by the basic proximity to the water model outlined for pre-contact sites since these occupations were subject to similar environmental constraints. An added factor, however, is the development of the network of concession roads and railroads through the course of the nineteenth century. These transportation routes frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 m of an early settlement road, such as the majority of concession roads within the study area, are also considered to have potential for the presence of Euro-Canadian archaeological sites. The location of the farmsteads illustrated on the 1881 H. Belden atlas suggests that in the study area farmsteads tended to be situated along the road, rather than set back from the road.

The historical atlas maps (Belden 1881) were examined to determine the potential for the presence of historical archaeological remains within the study area during the nineteenth century (Figures 5-6, and 8-10). While these maps do indicate residences and businesses, they only identify subscribers, and some townships were not well subscribed. Never-the-less, it should be noted that the illustrated farmsteads indicate a preference for location along the road frontages, rather than being at a greater distance from the road.

2.6 Cemeteries

Of special significance and sensitivity are sites of human burial. These sites must be treated in accordance with the *Ontario Cemeteries Act*. It should be noted that burials may occur in settlement sites (either within or between houses, or on the margins of the settlement compound), or even in “isolated” locations that are apparently unrelated to any other site. The occurrence of such interments on settlement sites can rarely be predicted in advance of their actual discovery through excavation, unless previous investigations of the site have resulted in the recovery of human bone and/or a suite of diagnostic/unusual artifacts. While cemeteries and burials are often associated with areas of archaeological potential, predictive modelling cannot reliably account for all possible burial locations due to the complex cultural and ideological considerations that may be involved in the selection of burial sites.

While isolated and incidental burials of the Late Woodland Western Basin Tradition are known from the wider area, their locations are difficult to predict (Murphy and Ferris 1990). Of particular concern are the large multiple interment cemeteries that are also characteristic of the Western Basin Tradition. The cemeteries may be in man-made mounds or in natural rises but were not always so placed. The



characteristics of Western Basin cemetery locations or their association with settlements have not been well defined.

A listing of registered and unregistered historic Kent County cemeteries has been compiled by the Kent Branch Ontario Genealogical Society (OGS), and those that might be within the study area are compiled in Table 3. Cemetery locations that are indicated on the 1881 Belden atlas mapping (Figures 5-6 and 8-10), and on the NTS mapping (Figure 1) are marked on project mapping (Figure 11). These locations are included in Table 3 and correlated, where possible, with the OGS listing as well as with several registered archaeological cemetery sites. In addition to the known cemetery locations, there are numerous named cemeteries for which no locations are specified or ambiguous locations are cited (Table 3) and probably numerous other unidentified family plots.

Table 3: Historic cemeteries in the South Kent Wind Project study area

Ontario Genealogical Society Name	Loc'n	Belden 1881 Location (Fig 11)	NTS Location (Fig 11)	Comments
Tilbury East Twp				
Carr	SMR, Lot 20	Church SMR, Lot 21		near Turbine 077
Malott	SMR, Lot 27			
Rosedale	Con 7, Lot 21			near Turbine P081
St. Charles RC	Con 13, Lot 16		Con 13, Lot 16	
Stewart	SMR, Lot 9		NMR, Lot 9	
Victoria	Con 15, Lot 3		Con 15, Lot 3	
Unregistered cemeteries: Grieve Pre-Victoria				
Romney Twp				
Heward (Romney Pioneer)	STR, Lot 183		STR, Lot 183	
Jackson Shanks				east of AaHn-3
Raleigh Twp				
Abandoned 7 th Line (7 th Line Baptist)	Con 7A, Lot 7	Church Con 7A, Lot 7	Con 7A, Lot 7	opposite side of road from circuit
Baptist Memorial (Busy Bee Memorial, N Buxton Memorial)	Con 8, N Buxton		Con 8, Lot 9	
British Meth. Episcopal (N Buxton Comm'ty Ch)	Con 8, N Buxton		Con 8, Lot 10	AbHn-15
Buxton (South)	Con 11, Lot 8			
Freeman	Con 12, Lot 11			AbHn-17 First Union Church
Merlin (Doyle)	Con 11, Lot 1		Con 11, Lot 2	
St. Patricks's RC	Con 9, Lot 3	Church Con 9, Lot 2	Con 9, Lot 2	
Unregistered cemeteries: Anti Slavery Baptish Ch Methodist Church	unspecified			



Ontario Geneological Society Name	Loc'n	Belden 1881 Location (Fig 11)	NTS Location (Fig 11)	Comments
Rowe Family 2 nd Baptist Church Shadd Farm Sheply Family St. Joseph's Church				
Howard Twp				
Campbell Lenover Morpeth (Smith) St. Michael's RC Shrewburg Unidentified Unregistered cemeteries: Carey Howard Bridge Marsh Farm	Con 6, Lot 6 L1, 1 mile E of HH Townline [?] NTR, Lot 9 [sic] Con 8, Lot 3 TLR, Lot 7 unspecified	NTR, Lot 91 TLR, Lot 7 NTR, Lot 17	Con 6, Lot 6 NTR, Lot 91 Con 8, Lot 3 TLR, Lot 7 NTR, Lot 17	
Harwich Twp				
Abandoned (field) Bethel McBrayne Newcombe Taff VanHorne undetermined Unregistered cemeteries: Burying Ground Field Homes McIntyre John McMillan Stone Northwood Patrick's Map Presbyterian Burial Ground Reid's? Reynolds Shrewsbury Community Smith St. Anthony RC Traxler Burying Grd (Carey) Tyler UP Church	Con 1, Lot 19 Con 1, Lot 19 HH Townline [?] Con 7, Lot 22 HH Townline [?] Con 2, Lot 14 Con 2, Lot 17 unspecified	Con 7, Lot 20/21 Con 3, Lot 17	Con 7, Lot 20	

[?] indeterminate location



2.7 Landmarks

One designated landmark is present in the study area. The Buxton Settlement & SS No. 13 Raleigh Schoolhouse (museum) in North Buxton, Raleigh Township has been designated as a National Historic Site. The schoolhouse is estimated to have been constructed in 1861.

2.8 Site Potential Evaluation

An informal model of site potential was created using the MTC criteria discussed in the preceding sections. Archaeological potential is presumed when one or more features of archaeological potential are present. The MTC's standards and guidelines indicate that there is assumed potential for archaeological sites on lands:

- within 300 m of previously identified archaeological sites, natural water sources, and areas of early historic settlement;
- within 100 m of early historic transportation routes sites; and
- on locales that are elevated, pockets of well-drained sandy soil, or designated or listed landmarks, (MTC 2010, s. 1.4.1: 6-7) including cemeteries.

GIS mapping for the study area was produced in order to map the areas of archaeological potential in relation to the proposed facility locations (turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010). Where any of the attributes are present, the area is highlighted in pink (Figure 11). Turbine numbers are indicated on Figure 12.

Scattered areas of thin sandy soils occur south of Chatham (Figure 2), but these lands are generally poorly to imperfectly drained due to the underlying clay (Figure 3). There is the potential for sites on locales where the lighter soils are adequately drained, and locations such as low rises or entrenched streams would be identified during field survey. No facilities coincide with the two isolated patches of well-drained soils.

In three locales, the proposed facilities are within 300 m of registered sites. AbHn-15 is the BME cemetery and which is also adjacent to the Buxton National Historic Site. Neither will be impacted by the proposed installation of circuit lines and a service road atop the nearby abandoned rail bed. AcHl-7 and AcHl-8, the Morpeth 5 and 6 sites, are Early Woodland campsites. They are situated in the extreme southeast part of the study area, within a kilometre of the lake in an area where the undulating terrain is dissected by numerous streams. One of the sites is in the vicinity of the circuit along the east side of McKinlay Road, and the other is in the vicinity of Turbine 103.

Based on the proximity to early Euro-Canadian settlements and early settlement roads, it may be concluded that there is potential for the recovery of historic cultural material over much of the study area (Figures 5-6, 8-10). The study area was lightly settled in the first half of the nineteenth century, and completely settled by the end of that century. The historic atlases were not well subscribed in most townships, and, although not



indicated on the atlas mapping, it is expected that by 1881 almost the entire study area would have been settled.

A few of the proposed facilities (numbers refer to the turbine and/or their associated access roads) are in the vicinity of illustrated 1881 features. These facilities are less than 300 m from the illustrated features and are on the same side of historic roads:

- East Tilbury Township – P077;
- Raleigh Township – Railside TS, P115, and P111;
- Harwich Township – P004, and P120; and
- Howard Township – P001, P010, and P093.

Most of the existing roads in the study area coincide with historic road routes. However, over the years, road improvements have been made: fill has been added to elevate the road bed and roadside ditches have been excavated. As a result, most of the road margins are visibly disturbed. There are, however, some roads that have only been minimally improved, and the potential for sites persists in these ROWs. Because access roads connect to the roads and most of the circuit lines will be sited within existing road ROWs, much of the proposed layout comprises facilities that lie within 100 m of historic roads. Field inspection of the affected ROWs should be conducted to determine sections that are visibly disturbed.

A number of the circuits will be installed in the abandoned rail bed of the historic Michigan Central Rail line, constructed in 1873 and twinned in 1902. The rail bed is comprised of aggregate fill and is entirely disturbed. Additionally, some turbines and access roads are within 100 m of the rail line, but these facilities will not impinge on the rail ROW. Where circuits will tunnel under the rail ROW, they will tunnel at a depth of approximately 1 m and affect an area approximately 25 cm in diameter (K. Wherry, Hatch Energy, personal communication, December 14, 2010). Much of the overlying soils can be presumed to have been previously disturbed and heavily compacted by the rail bed construction, by subsequent twinning and rail bed improvements. No assessment is warranted for the tunneled circuits.

Cemeteries are of particular concern, as they cannot be detected by normal Stage 2 survey methods. Recognition of sandy rises is important, as possible locations of pre-contact Western Basin Tradition cemeteries. Known or possible historic cemetery locations, both specific (*i.e.* mapped) and general (*i.e.* identified by lot), were compared with the proposed project layout. In two locations, turbines and access roads may be situated in the vicinity of known cemeteries. Turbine P081 in East Tilbury Township is in the same lot as that cited for the Rosedale Cemetery. Finally, Turbine P077, also in East Tilbury, is situated near the Carr Cemetery. The two North Buxton Cemeteries, while within 200 m of the circuits, will not be impacted by installation of the circuits within the nearby disturbed elevated rail bed. Previously undocumented historic cemeteries may also be encountered. Any impact in the immediate vicinity of an historic cemetery may require additional investigation to determine whether any unmarked burials are present in the area of impact.

Field verification is required to determine if any of the designated lands have no or low archaeological potential. This would be characterized by:



- extensive and deep disturbance (2010: s. 1.3.2); or
- permanently wet areas, exposed bedrock, or steep slopes (2010: s. 2.1).

One designated national historic site is present, but no facilities will impact its vicinity.

3.0 PROPERTY INSPECTION

A property inspection of the proposed facility locations in the South Kent Wind Project study area was conducted by Deborah Pihl (R130), ASI, on November 23, 2010, in order to compare the assessment of archaeological site potential as determined during the background study to the existing conditions. In particular, the inspection can make a preliminary assessment of the degree to which development and landscape alterations may have affected site potential. Weather conditions during the November field assessment were sunny and cool, with good visibility. Photo-documentation can be found in Section 6.0.

The study area consists of rural landscape which has been largely cleared of forest cover and is currently in use largely for cash crops. The terrain generally varies from level (Plate 16) to gently undulating (Plate 5). To the north and northeast of Shrewsbury, an area of undulating terrain includes a number of small streams (Plate 2), but elsewhere, such areas are quite localized.

The south edge of the study area fronts on Lake Erie. The largest stream, MacGregor Creek, only intersects the northern extension of the study area near the Pinehurst Substation. The other streams are small and many have been channelized (Plates 1 and 5). In some areas, large ditches have also been excavated to facilitate drainage on the level, heavy, poorly drained soils (Plate 8). Where the topography is more undulating, the streams may occupy shallow valleys (Plate 6).

With the exception of the small northward extension in the vicinity of the Pinehurst Substation, the study area is south of Highway 401. Most of the roads in the area are part of the historic network of settlement roads. Most are graveled, but have been improved to better withstand the rigors of the poorly drained soil substrate. Roadbeds of county as well as township roads are generally wide and well-elevated, and ditches of varying size border one or both sides (Plates 12 and 14). Beyond the roadbed the ROW width is normally not more than 1-3 m in width, with buried utilities and pole lines often present as well. The proposed circuits in the existing road ROW may be installed underground, on poles, or on existing poles. The field review determined that in most locations, the road ROW where the circuits are to be located is visibly disturbed (see photos), but some ROWs are relatively undisturbed (Plate 10) and should be tested if impact is anticipated.

The proposed layout includes a series of circuits, as well as an adjacent service road, within a railway ROW. The proposed facilities will be installed in the rail bed of the former double-tracked Michigan Central Line (Plate 8). The rail line is partially abandoned with a single line of track remaining active only to the west of Fargo Road. The aggregate rail bed was built up to a height of approximately 2 m above most of the surrounding terrain. Since abandonment, most of the unused tracks have been lifted, and over most of the section east of Communications Road, the top metre of aggregate has been reclaimed (Plates 3 and 4). As a result, the circuits will be installed in rail bed aggregate measuring 1-2 m in depth (Plates 11 and 13), with almost no potential for impact to archaeological resources with the exception of two locations:



- At the almost level crossing at Charing Cross Road, the rail bed may include minimal fill (Plate 9); and
- At Fargo Road where two rail lines intersect, the vicinity should be investigated for railway-related sites, possibly atop the rail bed or adjacent to it, within the abandoned ROW to the east of the crossing (Plate 7).

Many nineteenth century farmsteads remain, although on a number of farmsteads some or all of the original structures have been replaced. The wind turbines will not be situated in the vicinity of residences, although access roads and circuits may be located nearby.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The Stage 1 Archaeological Assessment was completed to assist with the development of the South Kent Wind Project, Municipality of Chatham-Kent, Ontario. The project comprises 127 wind turbine locations with their associated access roads and related electrical infrastructure to connect with the Chatham Transmission Station (turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010).

The archaeological assessment determined that 49 archaeological sites have been previously registered within a kilometre of the South Kent Wind Project study, three of which may be within 300 m of proposed facilities. A review of the geography and local nineteenth century land use of the study area suggested that it has potential for the identification of Aboriginal and Euro-Canadian archaeological sites. Field review determined that most of the ROWs and the entire rail bed where circuit installations are proposed have been disturbed by previous improvements.

In general, the property inspection supports the findings of the background study that the study area includes archaeological site potential.

In light of these results, additional archaeological assessment is required under O. Reg 359/09, s. 22:

1. No Stage 2 Archaeological Assessment (Property Assessment) is recommended for the former Michigan Central Railway rail bed comprised of aggregate fill. (Circuits and a service road are proposed atop the rail bed);
2. A property inspection of impacted road ROWs is recommended in advance of the Stage 2 Archaeological Assessment (Property Assessment) to identify and document visibly disturbed sections. No Stage 2 archaeological assessment of the disturbed locations is recommended. Stage 2 assessment should be conducted where undisturbed ROWs will be impacted. This work will be done in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*;
3. All remaining locations of proposed construction impact (e.g. turbine sites, access roads, circuits, and turn-arounds) must be subjected to Stage 2 Archaeological Assessment (Property Assessment) in accordance with the *MTC Standards and Guidelines for Consultant Archaeologists*; and



4. Should design changes (subsequent to the turbine layout dated November 3, 2010; access road layout dated November 17, 2010; and electrical circuit layout dated December 3, 2010) or temporary workspace requirements result in the inclusion of previously unassessed lands where there is potential for sites, these lands should be subjected to Stage 2 Archaeological Assessment (Property Assessment) to determine if cultural remains are present.

ASI advises compliance with the following legislation:

- This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 1990, c 0.18. The report is reviewed to ensure that the licensed consultant archaeologist has met the terms and conditions of their archaeological license, and that the archaeological fieldwork and report recommendations ensure the conservation, preservation and protection of the cultural heritage of Ontario;
- 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 sec. 48 (1) of the *Ontario Heritage Act*;
- The *Cemeteries Act* requires that any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Small Business and Consumer Services; and
- 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 license.

The documentation related to this archaeological assessment will be curated by Archaeological Services Inc. until such a time that arrangements for their ultimate transfer to Her Majesty the Queen in right of Ontario, or other public institution, can be made to the satisfaction of the project owner(s), the Ontario Ministry of Tourism and Culture, and any other legitimate interest groups.



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6.0 PHOTOGRAPHY



Plate 1: View to southwest along elevated Birk Line road bed. Intersecting stream has been channelized.



Plate 2: View to south, undulating terrain east of Blenheim.



Plate 3: View to southwest along rail ROW at Mull Road crossing. To west aggregate was removed.



Plate 4: View to west at rail ROW at Mull Road crossing. Approximately 1 m aggregate layer removed.



Plate 5: View to northwest, elevated road bed of Harwich Road rises in local terrain undulations.



Plate 6: View to northwest along Hoffman Road. After creek crossing, road rises on low valley wall.





Plate 7: View to east along rail ROW at Fargo Road crossing. Railway buildings & small siding on abandoned ROW just east of rail crossing.



Plate 8: View to southwest along Horton Line. Large roadside ditch and elevated road bed.



Plate 9: View to southwest along rail ROW at Charing Cross Road crossing. West of crossing is almost level.



Plate 10: View to southwest along 9th Line. Much of the minimally improved ROW appears undisturbed.



Plate 11: View to east at 9th Line crossing. Note 2 m high elevated rail bed and surrounding flat terrain.

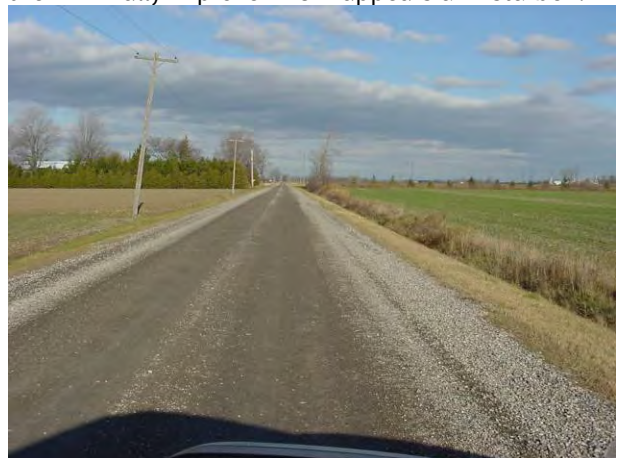


Plate 12: View to northeast along 7th Line. Elevated road bed and narrow visually disturbed road margins.





Plate 13: View to east at 7th Line crossing. Note 2 m high elevated rail bed.



Plate 14: View to north along County Road 14 (Port Road). Elevated roadbed & roadside ditching in level terrain.



Plate 15: View to northeast along elevated roadbed of Gleeson Line. Channelized stream follows road for several hundred metres.



Plate 16: View to southeast along McKinlay Road from rail crossing. Note level terrain, elevated roadbed, road side ditching and field drain exit.



APPENDIX A: FIGURES



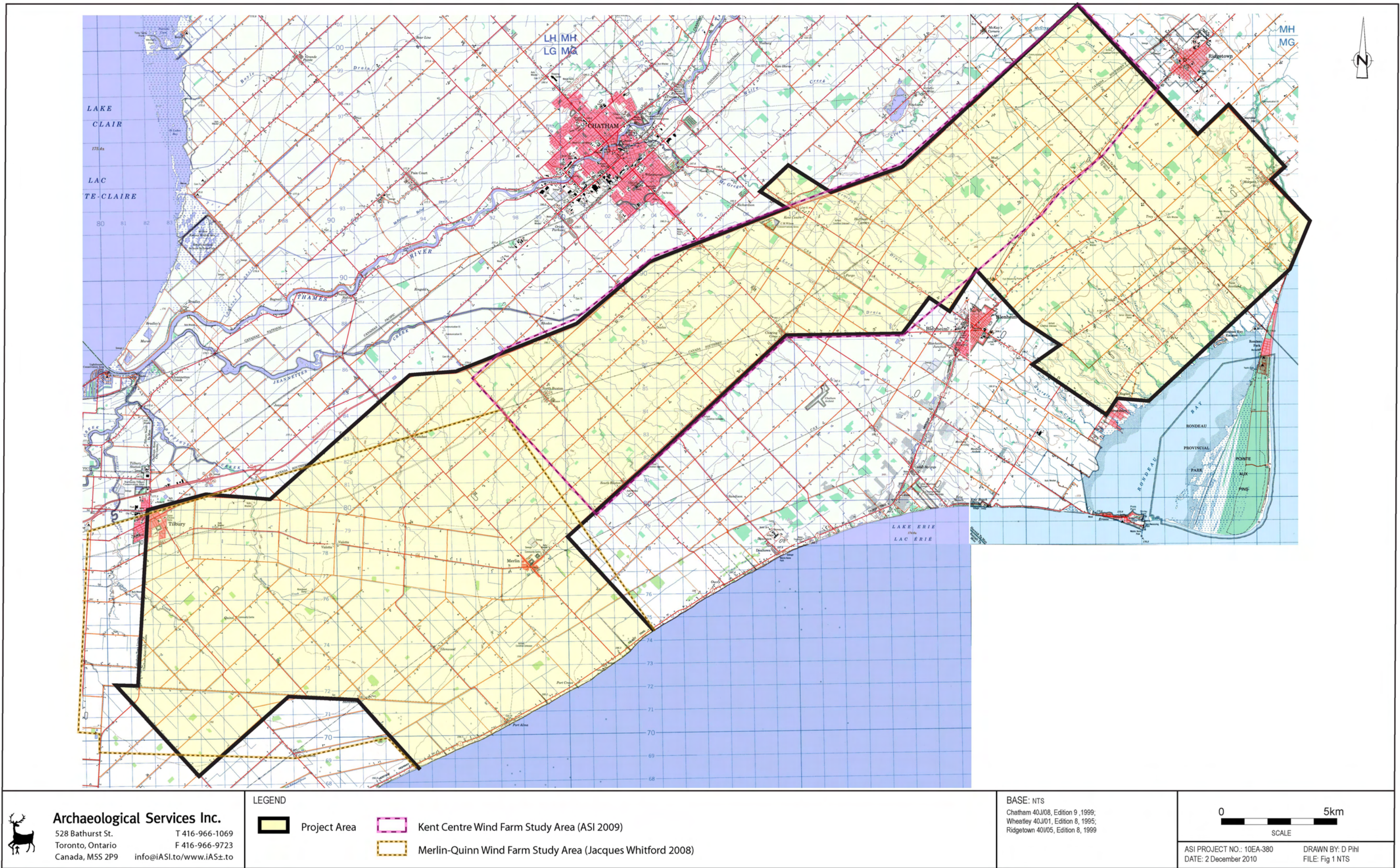


Figure 1: Location of South Kent Wind Project

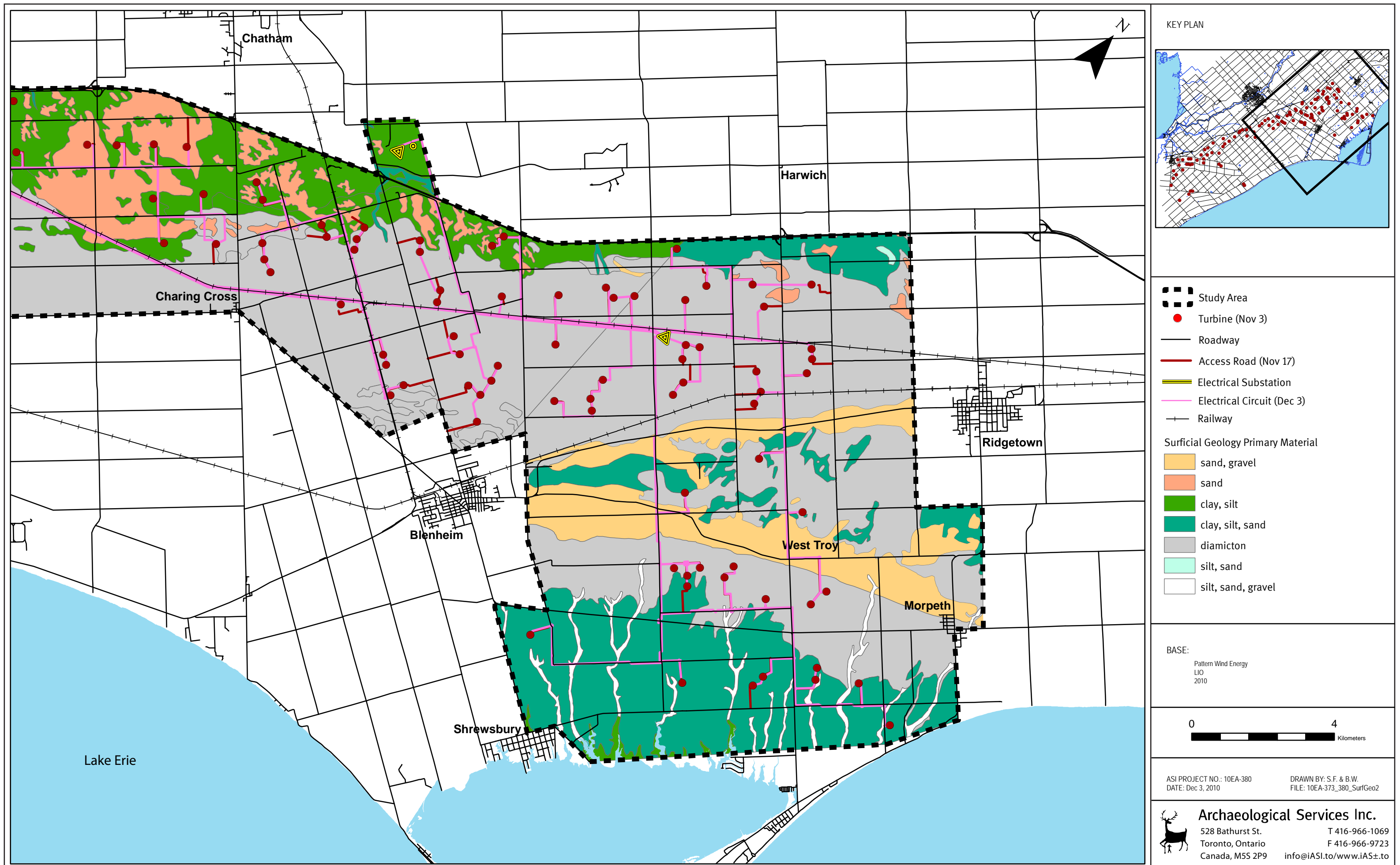


Figure 2-East: South Kent Wind Project - Surficial Geology Primary Material

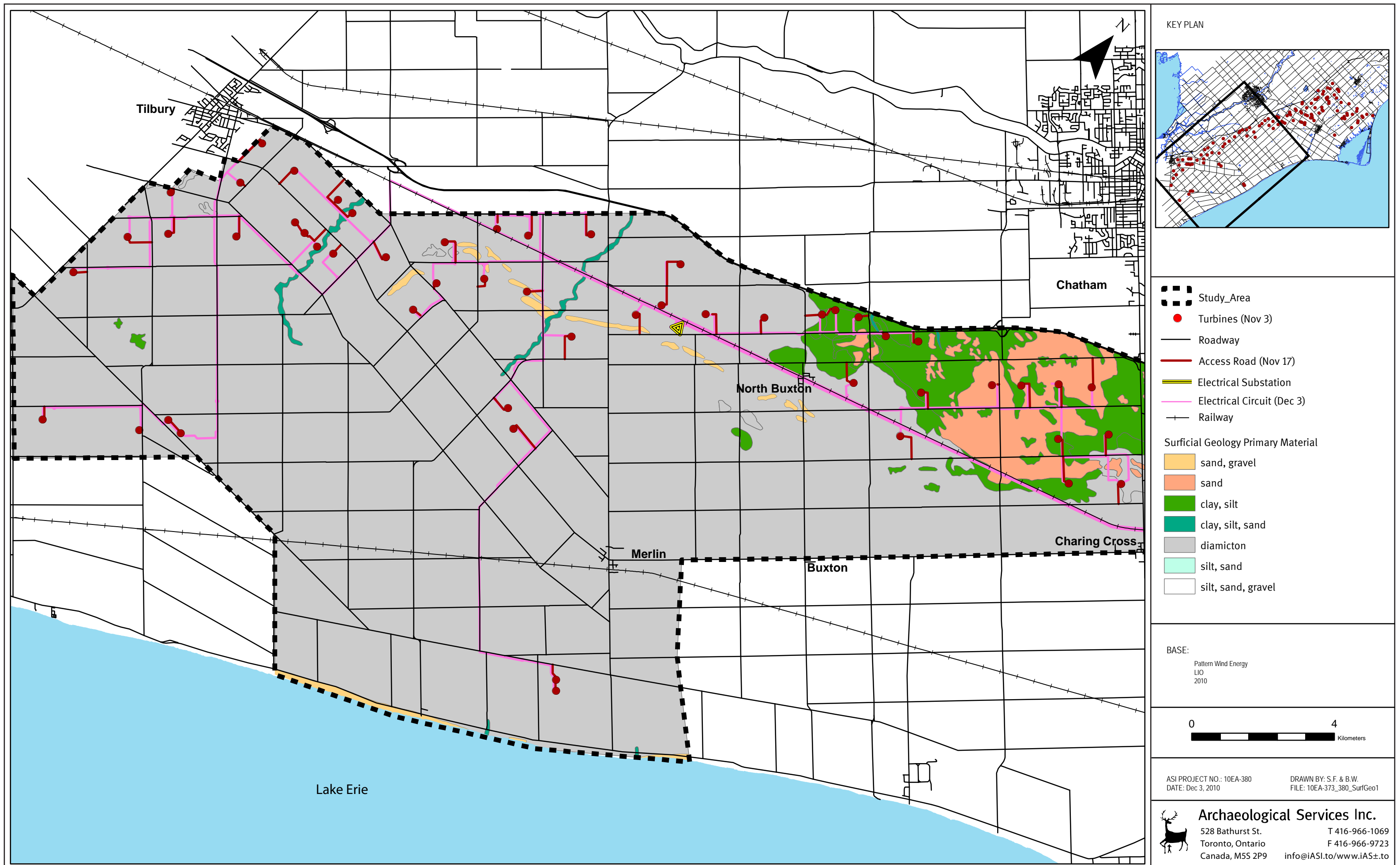


Figure 2- West: South Kent Wind Project - Surficial Geology Primary Material

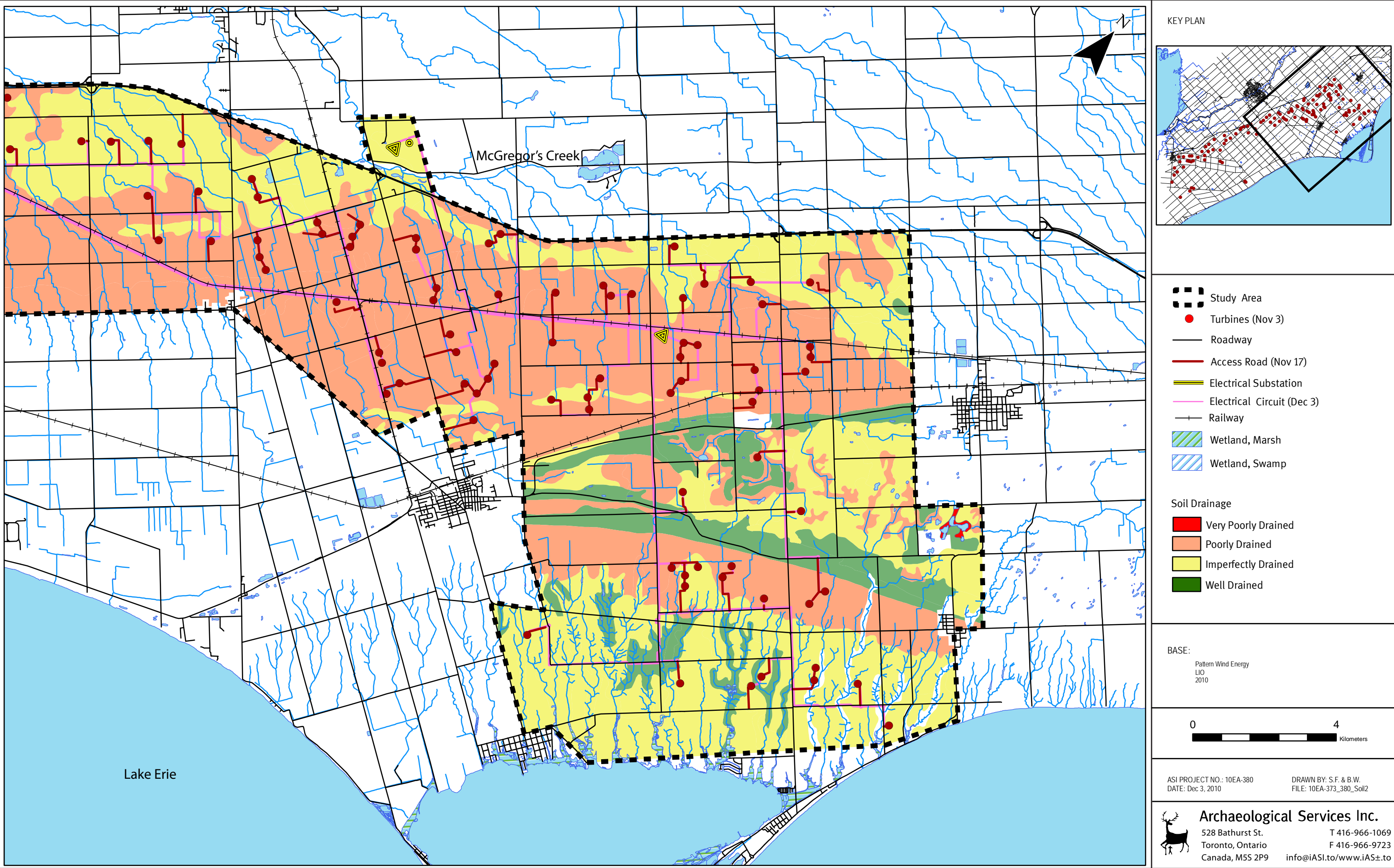


Figure 3-East: South Kent Wind Project - Soil Drainage and Water Sources

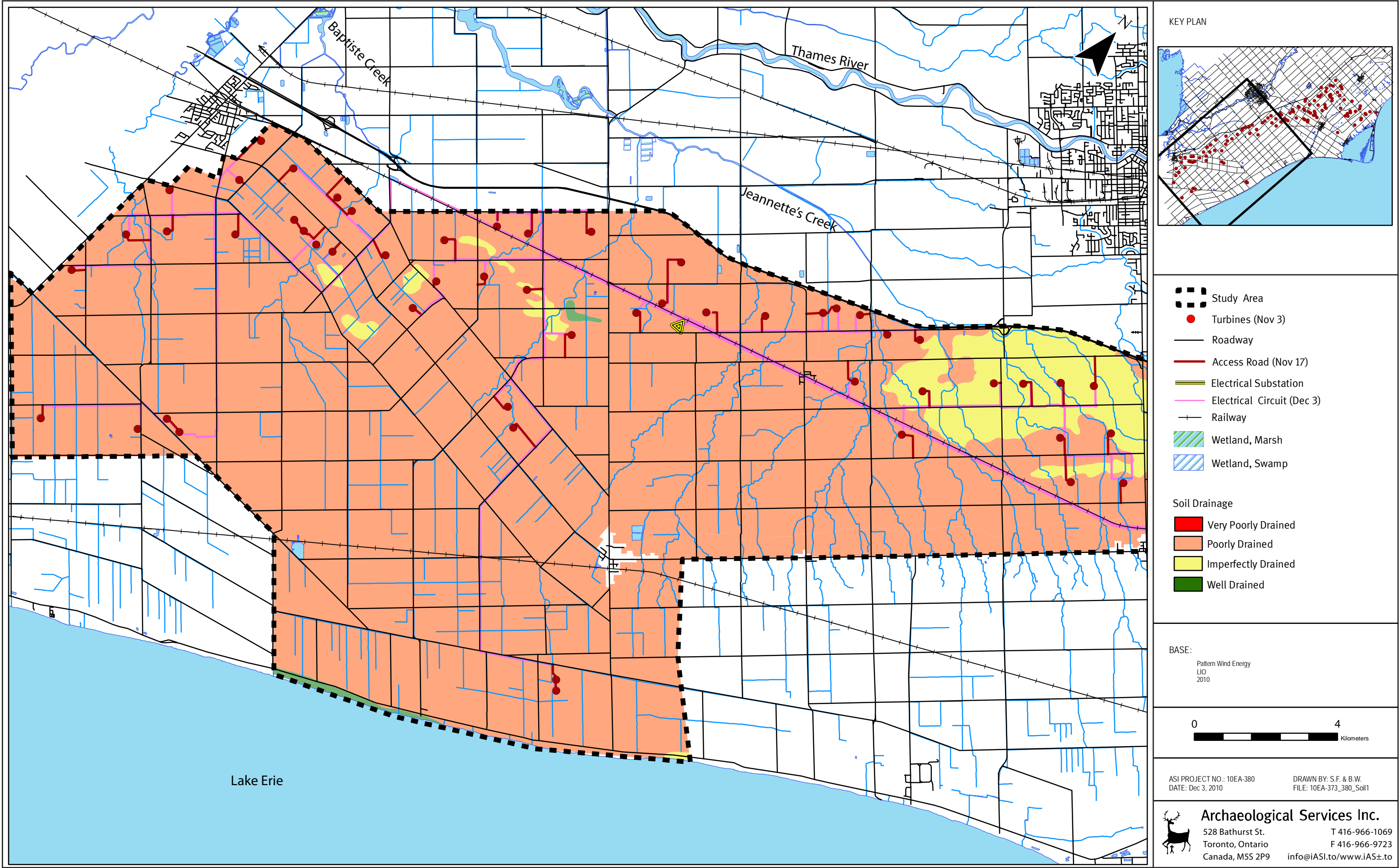


Figure 3-West: South Kent Wind Project - Soil Drainage and Water Sources

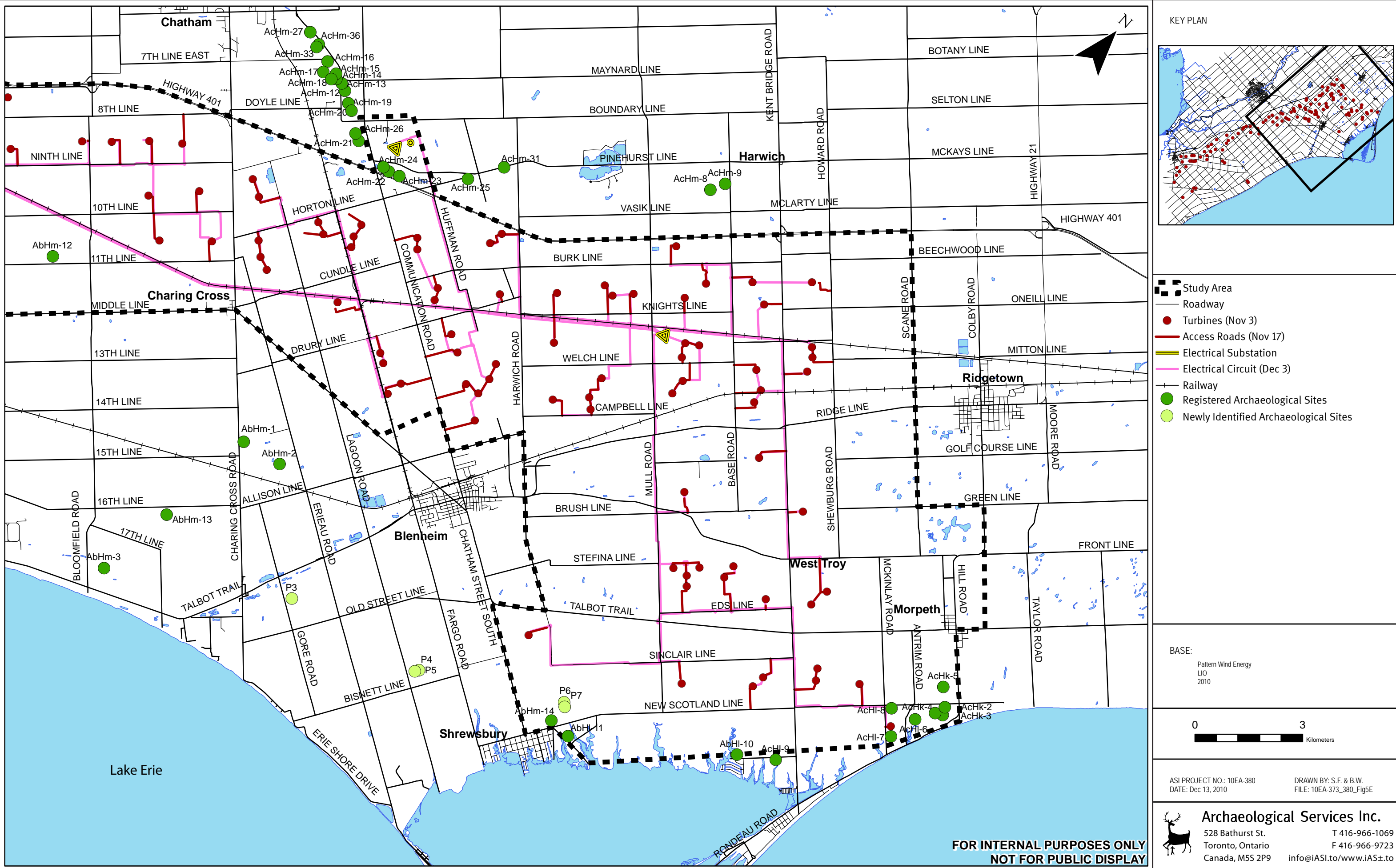


Figure 4-East: South Kent Wind Project - Registered Archaeological Sites

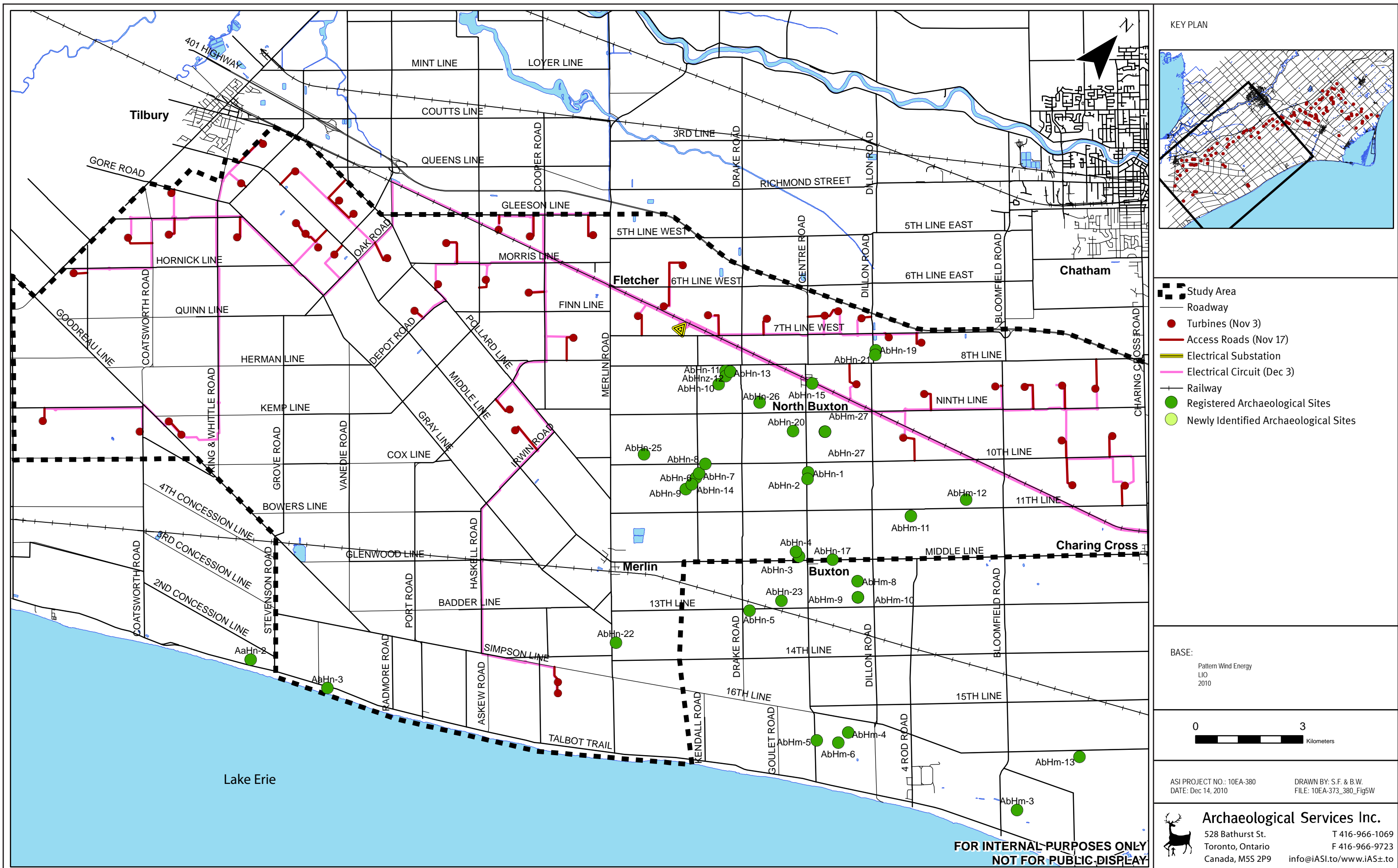


Figure 4-West: South Kent Wind Project - Registered Archaeological Sites



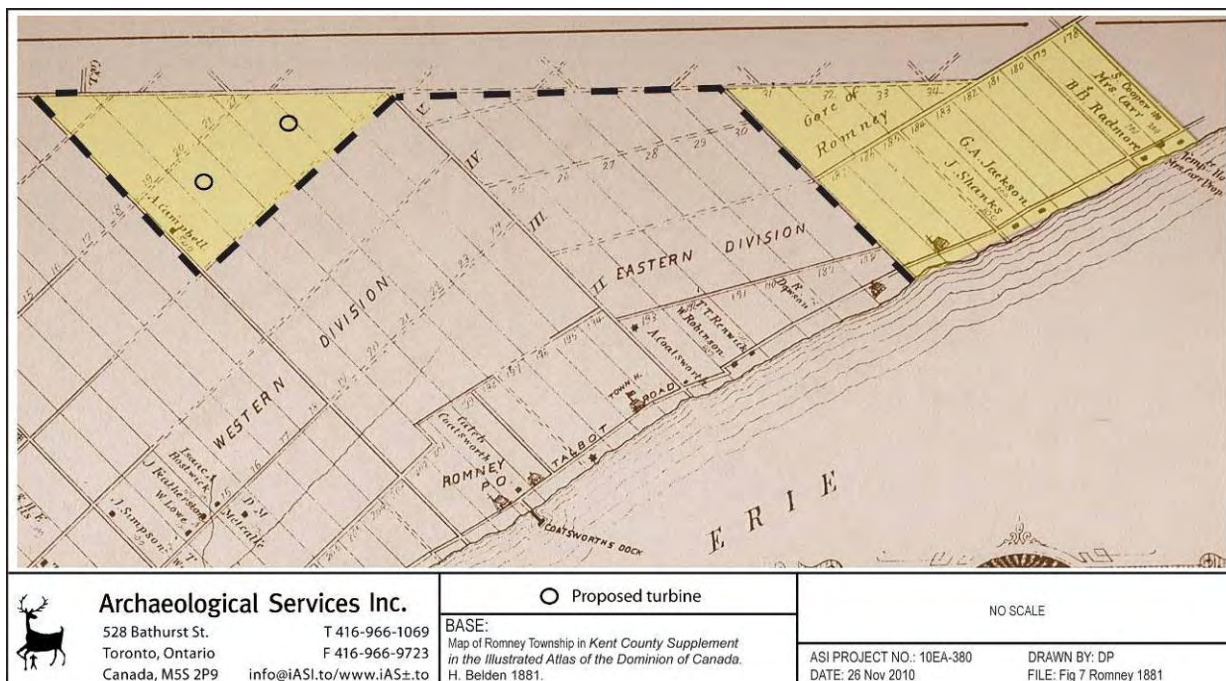


Figure 6: South Kent Wind Project overlaid on portion of Romney Township 1881 (H. Belden)



Figure 7: Plan of Elgin Settlement ca. 1860
(Library and Archives Canada R4402-O-1-E)

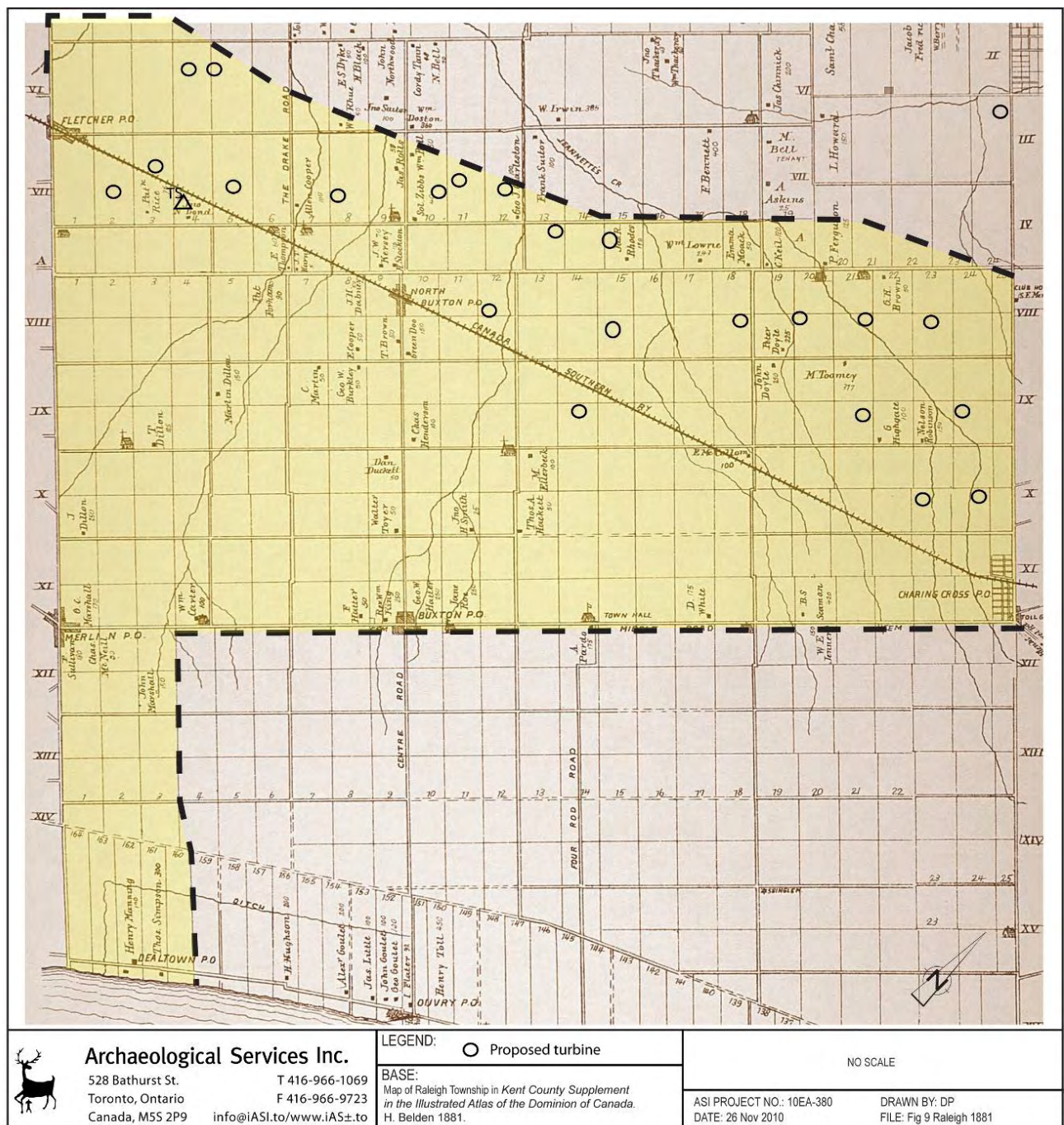


Figure 8: South Kent Wind Project overlaid on portion of Raleigh Township 1881 (H. Belden)

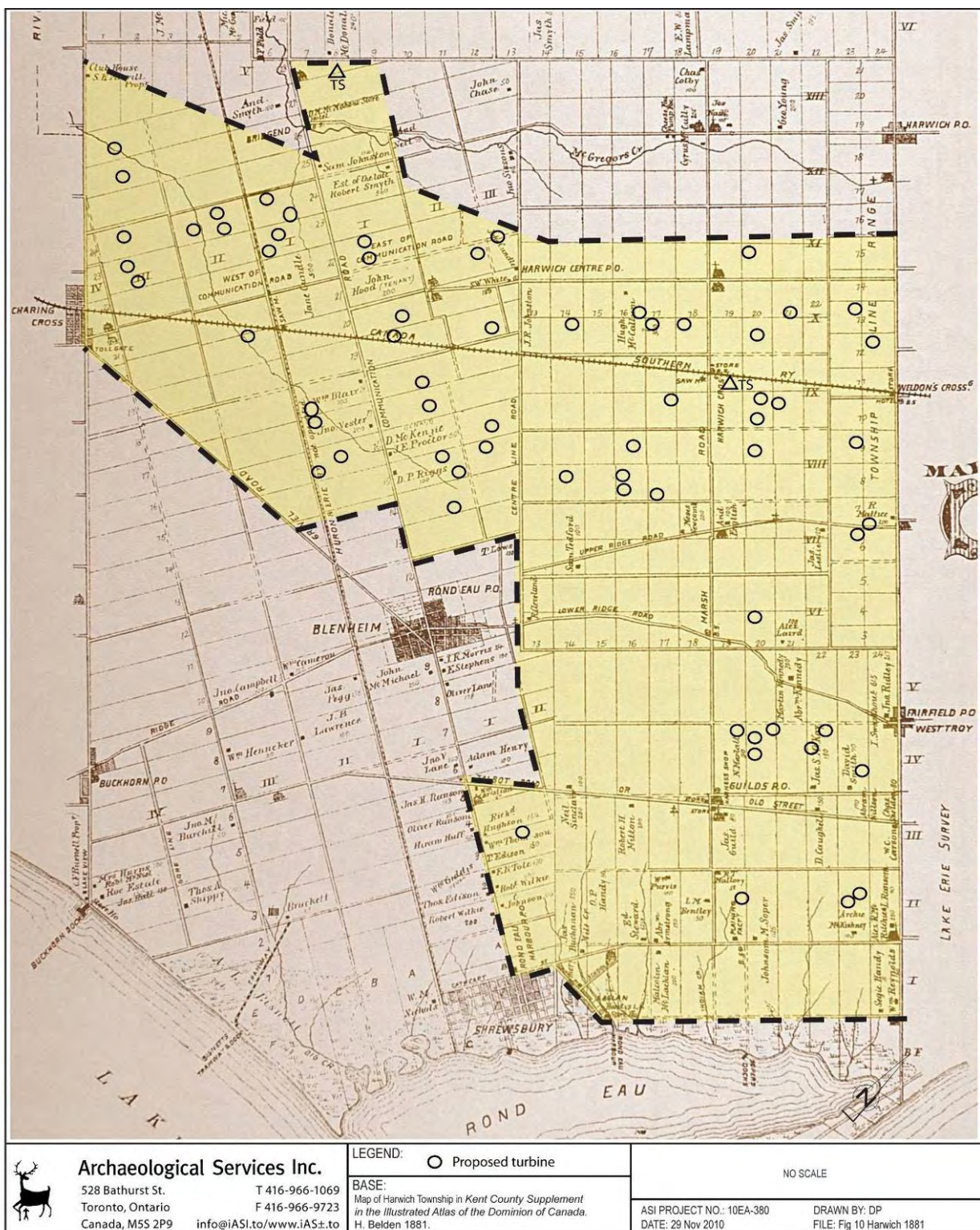


Figure 9: South Kent Wind Project overlaid on portion of Harwich Township 1881 (H. Belden)



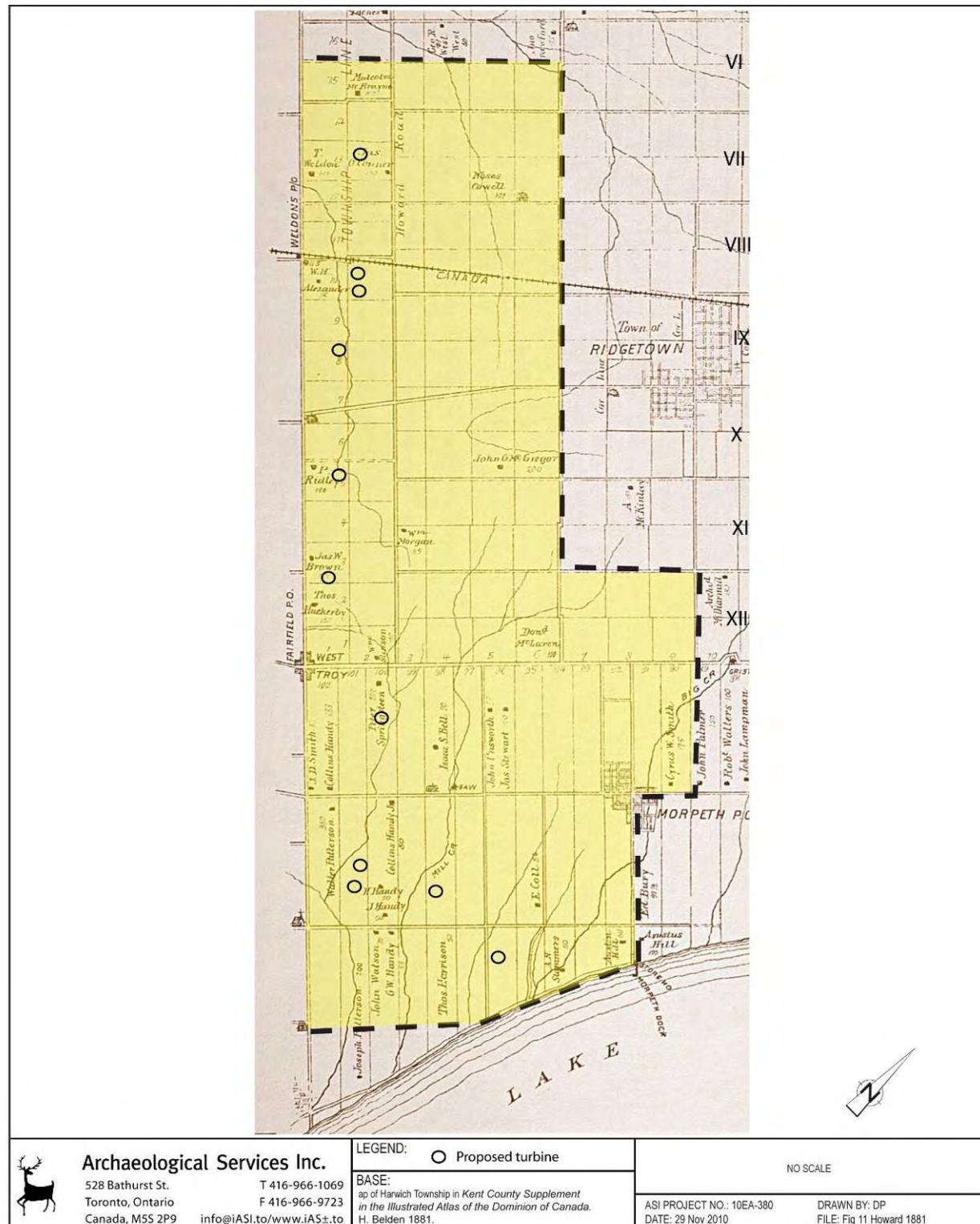


Figure 10: South Kent Wind Project overlaid on portion of Howard Township 1881 (H. Belden)

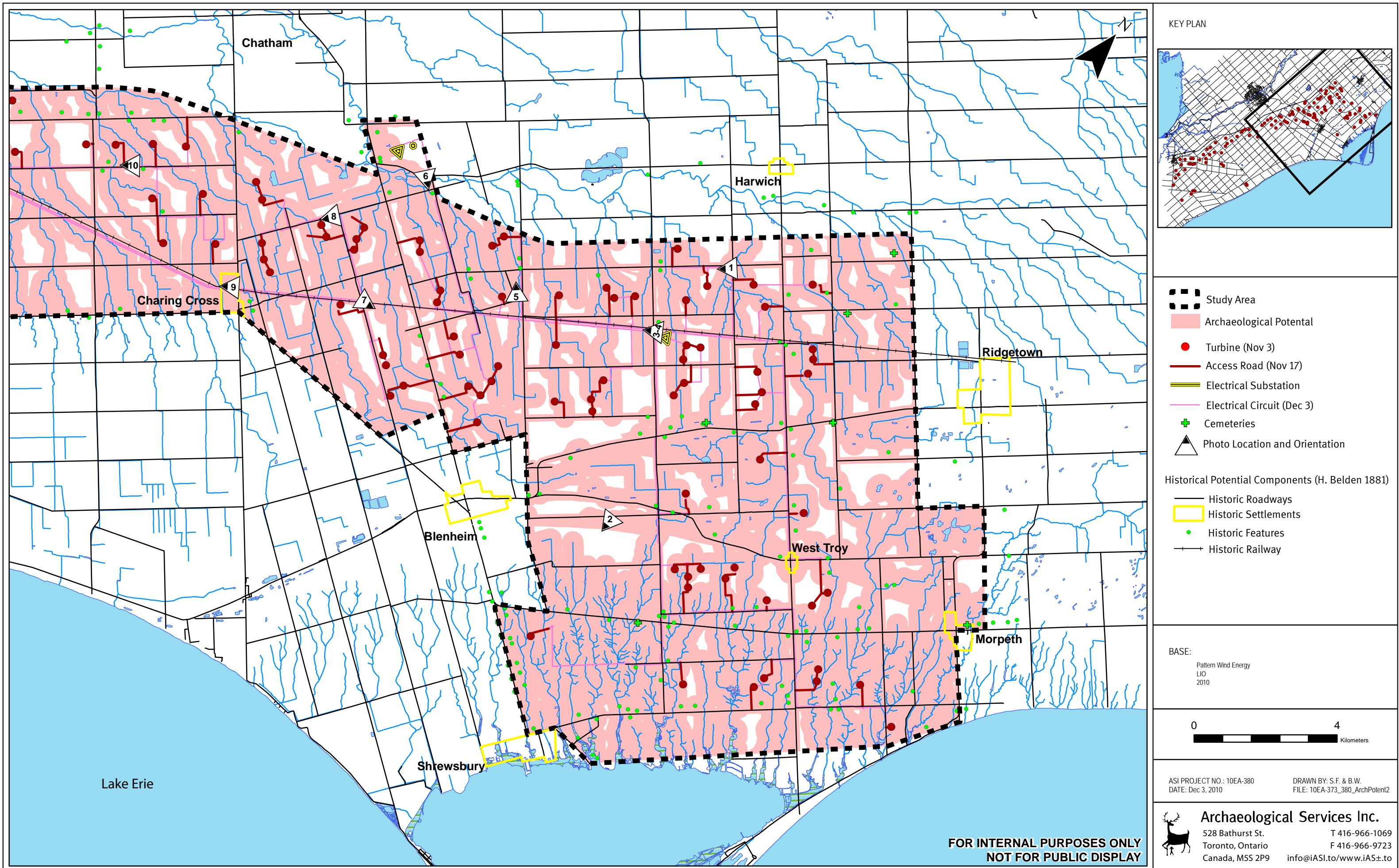


Figure 11 - East: Composite Archaeological Potential

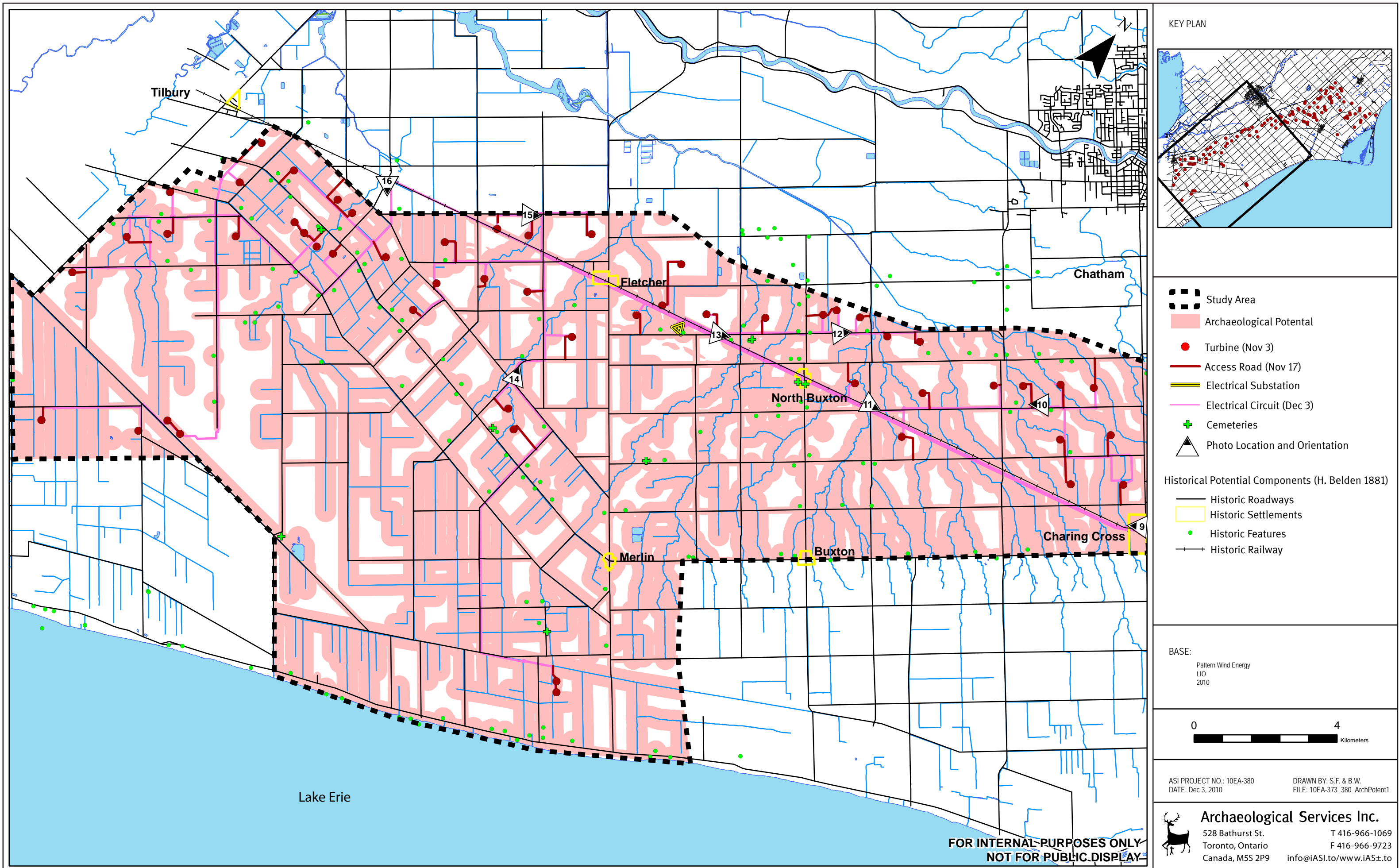


Figure 11 - West: Composite Archaeological Potential

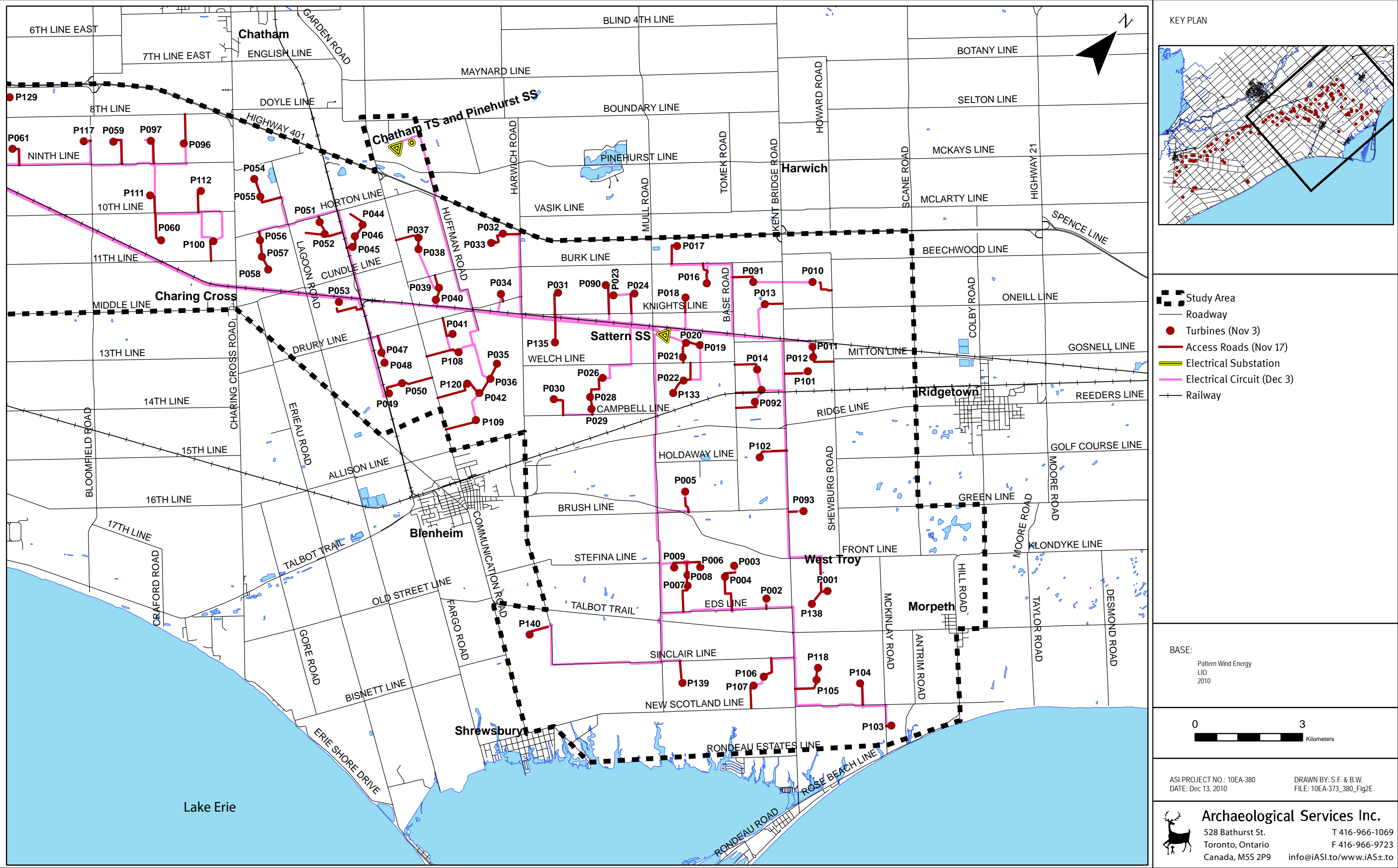
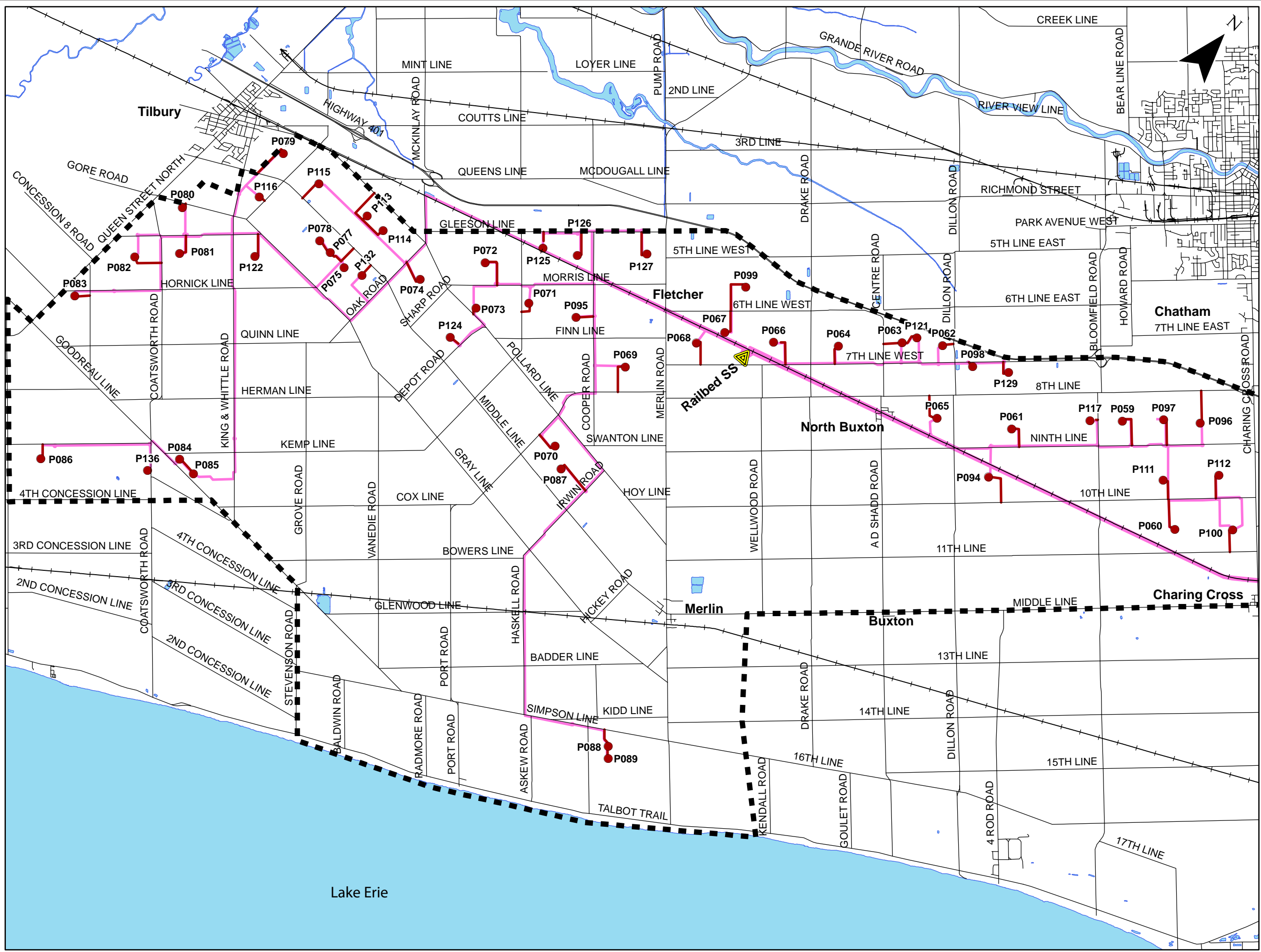


Figure 12-East: South Kent Wind Project - Layout



KEY PLAN

- Study Area
- Roadway
- Turbines (Nov 3)
- Access Roads (Nov 17)
- Electrical Substation
- Electrical Circuit (Dec 3)
- Railway

BASE:

Pattern Wind Energy
LIO
2010

0 3
Kilometers

ASI PROJECT NO.: 10EA-380
DATE: Dec 13, 2010

DRAWN BY: S.F. & B.W.
FILE: 10EA-373_380_Fig2W

Archaeological Services Inc.
528 Bathurst St.
Toronto, Ontario
Canada, M5S 2P9

T 416-966-1069
F 416-966-9723
info@iASI.to/www.iAS±.to

Figure 12-West: South Kent Wind Project - Layout