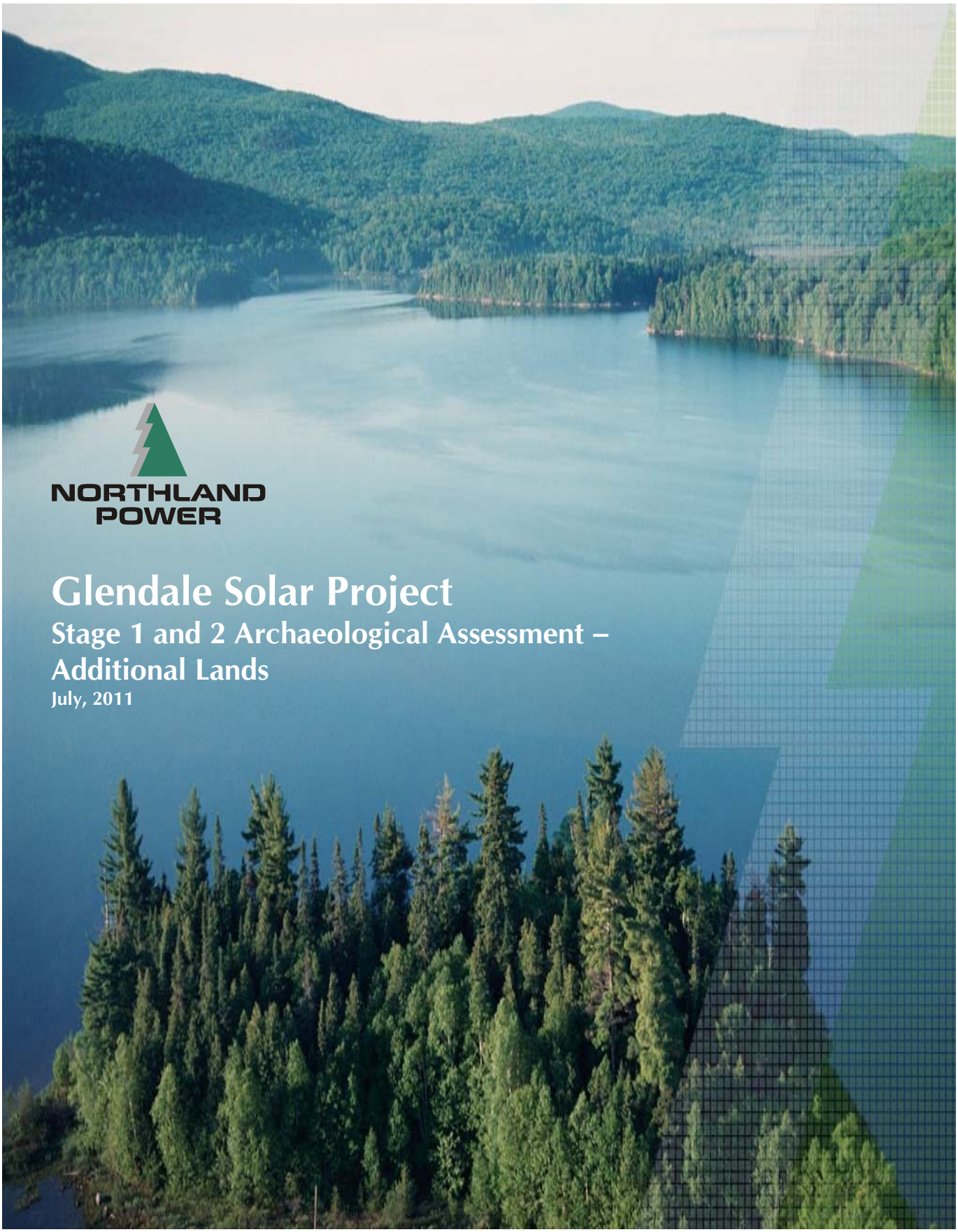

NORTHLAND POWER

Glendale Solar Project

Stage 1 and 2 Archaeological Assessment – Additional Lands

July, 2011

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Stage 1 and 2 Archaeological Assessment
Glendale Solar Project – Additional Lands
FIT –FAH1BFV
Township of South Glengarry
United Counties of Stormont, Dundas and Glengarry

Prepared for
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The Ontario Ministry of Tourism and Culture

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PIF #P007-324-2011 and #P007-325-2011

21 July 2011

Revised Report

Executive Summary

In June 2011, ARA carried out Stage 1 and 2 archaeological assessments of lands with the potential to be impacted by the proposed Glendale Solar Project Additional Lands in the Township of Charlottenburg, Ontario. The work was carried out under MTC licence #P007, PIF #P007-324-2011 and #P007-325-2011, and was completed under contract to Hatch Ltd. in advance of a REA application.

An area adjacent to the project lands – comprising the original Glendale Solar Project design - was subjected to Stage 1 and 2 archaeological assessments by ARA in May, 2010 under MTC licence #P007, PIF #P007-245-2010. In 2011, these lands were expanded by 9 acres which were subsequently subjected to a Stage 1 archaeological assessment under MTC licence #P007, PIF #P007-324-2011. In accordance with Section 1.0 the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011:13-23), the results of the Stage 1 assessment were achieved through detailed documentary research of the archaeological and land use history of each study area, coupled with the application of archaeological potential modeling.

The results of the Stage 1 assessment indicated that the majority of the study area had clear potential for Pre-Contact and Euro-Canadian era archaeological sites. Local features with archaeological potential included multiple secondary water sources as well as the historically-significant St. Lawrence River. ARA concluded that all project lands with archaeological potential warranted a Stage 2 property survey.

In June 2011, ARA carried out a Stage 2 archaeological assessment of the study area under MTC licence #P007, PIF #P007-325-2011. Legal permission to enter project lands and engage in all necessary fieldwork activities was granted by the property owner. The property survey, completed under optimal conditions, did not result in the discovery of any archaeological materials of cultural heritage value or interest (CHVI).

Based on these findings, ARA feels that no further archaeological study of the subject lands would be productive. It is recommended that the additional Glendale project lands be released from further archaeological concerns. A *Letter of Review and Acceptance into the Provincial Register of Reports* is requested, as provided for in Section 65.1 of the *Ontario Heritage Act*.

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Glossary of Abbreviations

ARA – Archaeological Research Associates Ltd.
CHVI – Cultural Heritage Value or Interest
FIT – Feed-in-Tariff
PIF – Project Information Form
MTC – Ministry of Tourism and Culture
OASD – Ontario Archaeological Sites Database
REA – Renewable Energy Approval

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- Robert Von Bitter, Archaeological Data Coordinator, MTC.
- Tom Hockin, Northland Power

1.0 Project Context

1.1 Development Context

Under a contract awarded by Hatch Ltd. in August 2010, ARA carried out Stage 1 and 2 archaeological assessments of lands with the potential to be impacted by the proposed Glendale Solar Project Additional Lands (FIT-FAH1BFV) in the Township of Charlottenburg, Ontario.

The study area is a 9 acre parcel of land, located on Lot 15, Concession 5 in the Township of South Glengarry, United Counties of Stormont, Dundas and Glengarry, Ontario (Maps 1–4). It is located approximately 450 m east of Headline Road (County Road 44) and 600 m north of Country Road 19.

The proponent has secured a 10-MW project to sell power to the Ontario Power Authority (OPA) under the FIT program, and is preparing an REA application in accordance with Ontario Regulation 359/09 under Part v.0.1 of the *Environmental Protection Act.* The proposed project would entail the installation of between 45,000–55,000 solar panels, 20 inverters, multiple support structures, underground cables, a distribution line and a single access road.

The original Glendale Solar Project lands were assessed in May, 2010 under MTC Licence #P007, PIF#P007-245-2010. On January 10, 2011, the proponent received written comments confirming that the report and its recommendations were accepted by MTC (MTC File No. HD00503). Following this, an additional 9 acre parcel of land was added to the project design.

In June 2011, these additional lands were subjected to Stage 1 assessment under MTC licence #P007, PIF #P007-324-2011. The Stage 2 assessment was conducted in June 2011 under MTC licence #P007, PIF #P007-325-2011. This work was governed by the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Legal permission to enter project lands and engage in all necessary fieldwork activities was granted by the property owner.

The Stage 1 and 2 assessments were carried out in order to:

- Provide information concerning the study area's geography, history and current land condition;
- Determine the presence of known archaeological sites in the study area;
- Evaluate in detail the study area's archaeological potential;
- Empirically document all archaeological resources on the property;
- Determine whether the property contains resources requiring further assessment; and
- Recommend appropriate Stage 3 assessment strategies for these sites if identified.

These assessments were conducted in accordance with the provisions of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18. All notes, photographs and records pertaining to this work are housed in a secure company storage facility located at 97 Gatewood Road, City of Kitchener, Ontario. The MTC is asked to review the results and recommendations presented in this report.

1.2 Historical Context

After a century of archaeological work in Ontario, scholarly understanding of the historic usage of lands along the St. Lawrence River has become fairly well-developed. What follows is a detailed summary of the archaeological cultures that have settled in the vicinity of the study area over the past 11,000 years; from the earliest Palaeo-Indian hunters to the most recent Euro-Canadian farmers.

1.2.1 Palaeo-Indian Period

The first documented evidence of occupation in southern Ontario dates to around 9000 BC, after the retreat of the Wisconsinan glaciers and the formation of Lake Algonquin, Early Lake Erie and Early Lake Ontario (Karrow and Warner 1990; Jackson et al. 2000:416-419). At that time, small Palaeo-Indian bands moved into the region, leading mobile lives based on the communal hunting of large game and the collection of plant-based food resources (Ellis and Deller 1990:38; MCL 2005:34). Current understanding suggests that Palaeo-Indian peoples ranged over very wide territories in order to live sustainably in a post-glacial environment with low biotic productivity. This environment changed considerably over the course of the period, developing from sub-arctic spruce forests to a boreal forest dominated by pine (Ellis and Deller 1990:52-54, 60).

An Early Palaeo-Indian period (ca. 9000-8500 BC) and a Late Palaeo-Indian period (ca. 8500-8000 BC) are discernable amongst the lithic spear and dart points. Early points are characterized by grooves or 'flutes' near the base while the later examples lack such fluting. All types would have been used to hunt caribou and other 'big game'. Archaeological sites from both time-periods typically served as small campsites or 'way-stations' (occasionally with hearths or fire-pits), where tool manufacture/maintenance and hide processing would have taken place. For the most part, these sites tend to be small (less than 200 sq. m) and ephemeral (Ellis and Deller 1990:51-52, 60-62). Many parts of the Palaeo-Indian lifeway remain unknown.

1.2.2 Archaic Period

Beginning around 8000 BC, the biotic productivity of the environment began to increase as the climate warmed and southern Ontario was colonized by deciduous forests. This caused the fauna of the area to change as well, and ancient peoples developed new forms of tools and alternate hunting practices to better exploit both animal and plant-based food sources. These new archaeological cultures are referred to as 'Archaic'. Thousands of years of gradual change in stone tool styles allows for the recognition of Early (8000-6000 BC), Middle (6000-3000 BC) and Late Archaic periods (3000-900 BC) (MCL 2005:34).

The Early and Middle Archaic periods are characterized by substantial increases in the number of archaeological sites and a growing diversity amongst stone tool types and exploited raw materials. Notable changes in Archaic assemblages include a shift to notched or stemmed projectile points, a growing prominence of net-sinkers (notched pebbles) and an increased reliance on artifacts like bone fish hooks and harpoons. In addition to these smaller items, archaeologists also begin to find evidence of more massive wood working tools such as ground stone axes and chisels (Ellis et al. 1990:65-67). Towards the end of the Middle Archaic (ca. 3500

BC), the archaeological evidence suggests that populations were 1) increasing in size, 2) paying more attention to ritual activities, 3) engaging in long distance exchange (e.g. in items such as copper) and 4) becoming less mobile (Ellis et al. 1990:93; MCL 2005:34). Late Archaic peoples typically made use of shoreline/riverine sites located in rich environmental zones during the spring, summer and early fall, and moved further inland to deer hunting and fruit-gathering sites during late fall and winter (Ellis et al. 1990:114).

During the Late Archaic these developments continued, and new types of projectile points appear along with the first true cemeteries. Excavations of burials from this time-frame indicate that human remains were often cremated and interred with numerous grave goods, including items such as projectile points, stone tools, red ochre, materials for fire-making kits, copper beads, bracelets, beaver incisors, and bear maxilla masks (Ellis et al. 1990:115-117). Interestingly, these true cemeteries may have been established in an attempt to solidify territorial claims, linking a given band or collection of bands to a specific geographic location.

From the tools unearthed at Archaic period sites it is clear that these people had an encyclopaedic understanding of the environment that they inhabited. The number and density of the sites that have been found suggest that the environment was exploited in a successful and sustainable way over a considerable period of time. The success of Archaic lifeways is attested to by clear evidence of steady population increases over time. Eventually, these increases set the stage for the final period of Pre-Contact occupation – the Woodland Period (Ellis et al. 1990:120).

1.2.3 Early and Middle Woodland Periods

The beginning of the Woodland period is primarily distinguished from the earlier Archaic by the widespread appearance of pottery. Although this difference stands out prominently amongst the archaeological remains, it is widely believed that hunting and gathering remained the primary subsistence strategy throughout the Early Woodland period (900–400 BC) and well into the Middle Woodland period (400 BC–AD 600). In addition to adopting ceramics, communities also grew in size during this period and participated in developed and widespread trade relations (Spence et al. 1990; MCL 2005:34).

Two distinct regional traditions developed in the vicinity of the study area during the Early Woodland period: 1) the Meadowood complex, located in southern Ontario, southern Quebec and western New York; and 2) the Middlesex complex, located primarily in New York, New England and along the St. Lawrence River. Peoples associated with both of these archaeological complexes would have made use of the local area during the 1st millennium BC.

The Meadowood archaeological culture (900–400 BC) is characterized by distinctive Meadowood preforms, side-notched Meadowood points and Vinette 1 ceramics (thick and crude handmade pottery with cord-marked decoration). Meadowood peoples are believed to have been organized in bands of roughly 35 people, and some of the best documented sites are fall camps geared towards the hunting of deer and the gathering of nuts (Spence et al. 1990:128–137).

Evidence of the Middlesex archaeological culture (450–50 BC) originates primarily from burial mounds and the associated grave goods found within. The artifactual assemblage is characterized by blocked-end tubes (long and slender tubes made of ground and polished Ohio ‘firestone’,

possibly used as pipes) and a variety of large bifacially worked items (e.g. long leaf-shaped blades, long stemmed blades, etc). On the whole, Middlesex archaeological remains share many similarities to the Adena and Hopewell complexes from southern Ohio, likely resulting from the exchange of ideas and materials. Scholars believe that as our understanding of Middlesex 'culture' grows, it will become increasingly apparent that the remains represent a mortuary tradition shared by numerous distinct hunter-gatherer groups, rather than any unified cultural group (Spence et al. 1990:138-142).

Ceramic traditions continued to develop during the subsequent Middle Woodland period, and three distinct archaeological cultures emerged in southern Ontario: 'Point Peninsula' north and northeast of Lake Ontario, 'Couture' near Lake St. Clair and 'Saugeen' in the rest of southwestern Ontario (Map 5). These cultures all shared a similar method of decorating pottery, using either dentate or pseudo-scallop shell stamp impressions, but they differed in terms of preferred vessel shape, zones of decoration and surface finish (Spence et al. 1990:142–43).

The Point Peninsula complex (400 BC–AD 900) extended through south-central and eastern Ontario, southern Quebec, western and northern New York and north-western Vermont. It is characterized mainly by small camp sites and seasonal village sites that would have been repeatedly used over the years. Point Peninsula material culture is distinguished by the use of Vinette 2 ceramics (coil constructed pottery with dentate or pseudo-scallop decoration) and influences from northern Ontario and the Hopewell area to the south (Spence et al. 1990:157-158). Hopewellian influence, for example, can be seen in the continued use burial mounds (e.g. the Serpent Mounds near Peterborough) until ca. AD 400 (Wright 1972:44-51).

During the transition between the Middle and Late Woodland periods (AD 600-900), the first rudimentary evidence of maize (corn) horticulture appears in southern Ontario. Based on the available archaeological evidence, which comes primarily from the vicinity of the Grand and Credit Rivers, this pivotal development was not particularly widespread (Fox 1990:171, Figure 6.1). The adoption of maize horticulture instead appears to be linked to the emergence of the Princess Point complex, whose material remains include decorated ceramics (combining cord roughening, impressed lines and punctuate designs), triangular projectile points, T-based drills, steatite and ceramic pipes, and ground stone chisels and adzes (Fox 1990:174-188). The distinctive artifacts and horticultural practices of Princess Point peoples have led to the suggestion that they were directly ancestral to the later Iroquoian-speaking populations of southern Ontario (Warrick 2000:427).

Although Princess Point sites are absent in the immediate vicinity of the study area, a regional variant has been identified near Cornwall at the Ault Park site (Map 6). Although the pottery from Ault Park shares many similarities with Princess Point sites to the west, there are clear differences indicative of a level of continuity with the earlier Point Peninsula complex (Fox 1990:183-186).

1.2.4 Late Woodland Period

In the Late Woodland period (ca. AD 900–1600), maize horticulture spread beyond the Grand and Credit River areas, allowing for population increases which in turn led to larger settlement sizes, higher settlement density and increased social complexity among the peoples involved.

These developments are believed to be linked to the spread of Iroquoian-speaking populations in the area; ancestors of the historically-documented Huron, Neutral, St. Lawrence Iroquois and Haudenosaunee Nations. Other parts of southern Ontario, including the Georgian Bay littoral, the Bruce Peninsula and the vicinity of Lake St. Clair, were inhabited by Algonkian-speaking peoples, who were much less agriculturally-oriented. Late Woodland archaeological remains from the greater vicinity of the study area show three major stages of cultural development prior to European contact: 'Early Iroquoian', 'Middle Iroquoian' and 'Late Iroquoian' (Williamson 1990; Dodd et al. 1990; Lennox and Fitzgerald 1990).

Early Iroquoians (AD 900–1300) lived in small villages (ca. 0.4 ha) of between 75 and 200 people, and each settlement consisted of four or five longhouses up to 15 m in length. The houses contained central hearths and pits for storing maize (which made up 20-30% of their diet), and the people produced distinctive pottery with decorative incised rims (Warrick 2000:434–438). The best attested Early Iroquoian culture in the local area is the Glen Meyer complex, which is characterized by well-made and thin-walled pottery, ceramic pipes, gaming discs, and a variety of stone, bone, shell and copper artifacts (Williamson 1990:295–304).

Over the next century (AD 1300–1400), Middle Iroquoian culture became dominant in southern Ontario, and distinct 'Uren' and 'Middleport' stages of development have been identified. Both houses and villages dramatically increased in size during this time; longhouses grew from 28 m to 33 m, settlements expanded from 1.0 to 1.2 ha and populations swelled from 500 to 600 people. Middle Iroquoian villages were also better planned, suggesting emerging clan organization, and most seem to have been occupied for perhaps 30 years prior to abandonment (Dodd et al. 1990:356–359; Warrick 2000:439–446).

During the Late Iroquoian period (AD 1400–1600), the phase just prior to widespread European contact, it becomes possible to differentiate between the archaeologically-represented groups that would become the Huron, Neutral and St. Lawrence Iroquois. The study area itself lies within the territorial boundaries of the St. Lawrence Iroquois, who appear to have been organized into six primary regional groups/clusters. Specifically, the study area falls within the Upper St. Lawrence River cluster near Prescott, Ontario (Map 7). The sites in this area consist of either large inland villages (1.6 to 3.25 ha in size) or small multi-purpose campsites located along the St. Lawrence River and other waterways (e.g. fishing stations). On the whole, St. Lawrence Iroquois material culture is similar to other Late Woodland Iroquoian groups. It is characterized by finely manufactured and decorated ceramics (with circular punctuates, chevron designs, high collars and pinched bases), a lack of chipped lithic tools and a wide variety of bone and antler artifacts. Many of the village sites also exhibit evidence of expansion associated with a large population increase or influx (Jamieson 1990:385-402).

1.2.5 Early Contact

1.2.5.1 European Explorers

In 1534, Jacques Cartier became the first European to travel the St. Lawrence River. At that time, he encountered 300 St. Lawrence Iroquoians at the tip of the Gaspé Peninsula. Cartier travelled further up the St. Lawrence River the following year, and he found two permanent settlements at

the present locations of Quebec City and Montreal. Cartier's accounts of these people are the only records of the St. Lawrence Iroquois at the time of European contact (Jamieson 1990:385).

When Samuel de Champlain came to the St. Lawrence in 1603, the St. Lawrence Iroquois had disappeared and the land was occupied by Algonkian-speaking Anishinabeg peoples. The disappearance of the St. Lawrence Iroquois has been attributed to the introduction of European disease and warfare with other Aboriginal groups. It has also been suggested that the St. Lawrence Iroquois were attacked and dispersed by the Five Nations Iroquois. The St. Lawrence Iroquois refugees proceeded to join with Huron and Anishinabeg populations; a large influx at Huron villages in the Trent Valley is suggested by the prevalence of St. Lawrence Iroquoian pottery in newly expanded habitation areas (Jamieson 1990:403).

The first European to venture deeper into what would become southern Ontario was Étienne Brûlé, who was sent by Samuel de Champlain in the summer of 1610 to accomplish three goals: 1) to consolidate an emerging friendship between the French and the First Nations, 2) to learn their languages, and 3) to better understand their unfamiliar customs. Other Europeans would subsequently be sent by the French to train as interpreters. These men became c*oureurs de bois*, "living Indian-style ... on the margins of French society" (Gervais 2004:182). Such 'woodsmen' played an essential role in all later communications with the First Nations.

Champlain himself made two trips to Ontario: in 1613, he journeyed up the Ottawa River searching for the North Sea, and in 1615-1616, he travelled up the Mattawa River and descended to Lake Nipissing and Lake Huron to explore Huronia (Gervais 2004:182–185). The First Nations encountered by Champlain in southern Ontario were quite diverse, including prominent Iroquoian-speaking peoples such as the Wendat (Huron), the Petun (Tobacco) and '*la nation neutre*' (the Neutrals) in addition to many bands of the Algonkian-speaking Anishinabeg ('Original-Peoples'). Champlain's map of *Nouvelle France* from 1632 reveals all that he learned about the area (Map 8). Although the distribution of the Great Lakes is clearly an abstraction, the lack of settled groups 'north' of the St. Lawrence River is clear. It is likely that Anishinabeg bands moved into the area following the fall of the St. Lawrence Iroquois.

1.2.5.2 Trading Contacts and Conflict

The first half of the 17th century saw a marked increase in trading contacts between the First Nations and European colonists. Archaeologically, these burgeoning relations are clearly manifested in the widespread appearance of items of European manufacture by AD 1630, including artifacts such as red and turquoise glass beads, scissors, drinking glasses, keys, coins, firearms, ladles and medallions. At Neutral Nation sites, for example, many artifacts such as projectile points and scrapers began to be manufactured from brass, copper and iron scrap, and some European-made implements completely replaced more traditional tools (Lennox and Fitzgerald 1990:432–437).

Nicholas Sanson's *Le Canada, ou Nouvelle France* (1656) provides an excellent representation of southern Ontario at this time of heightened contact (Map 9). Several Algonquin bands can be seen in the vicinity of the study area, including the *Tonthataronon* and *Otchiahen*.

This increased contact had the disastrous consequence of introducing European diseases into First Nations communities. These progressed from localized outbreaks to much more widespread epidemics (Warrick 2000:457; MCL 2005:35). Archaeological evidence of disease-related population reduction appears amongst settled agricultural communities (e.g. the Neutral Nation) in the form of reduced longhouse sizes, the growth of multi-ossuary cemeteries and the loss of traditional craft knowledge and production skills (Lennox and Fitzgerald 1990:432–433). The impact of disease on the mobile Anishinabeg (e.g. Algonquin bands) is more difficult to ascertain.

1.2.5.3 Five Nations Invasion

These trading contacts eventually led to increasing factionalism and tension between the First Nations as different groups vied for control of the lucrative fur trade, itself a subject of competition between the French and British. In what would become southern Ontario, the Wendat and the Petun, along with their Anishinabeg trading partners, allied themselves with the French. In what would become New York State, the League of the Haudenosaunee (the Five Nations Iroquois at that time) allied themselves with the British. The latter alliance was largely related to Champlain's involvement in Anishinabeg and Wendat attacks against Haudenosaunee strongholds in 1609 and 1615, which engendered enmity against the French (Lajeunesse 1960:xxix).

Interposed between the belligerents, the Neutral Nation declined to align itself with either the French or the British. Tensions boiled over in 1649. In a situation likely exacerbated by epidemics brought by the Europeans and the decimation of the Aboriginal population, the Five Nations invaded southern Ontario. The Haudenosaunee directed their assaults against the Neutrals in 1650 and 1651, taking multiple frontier villages (one with over 1,600 men) and numerous captives (Coyne 1895:18).

The advance of the Iroquois led to demise of the Neutral Nation as a distinct cultural entity and the dispersal of the Wendat and Petun Nations (Lennox and Fitzgerald 1990:456, Ramsden 1990:384). The remnants of the affected groups formed new communities outside of the disputed area, settling in Quebec (the modern-day community of Wendake), in the area of Michilimackinac and near Lake St. Clair (where they were known as the Wyandot). Many were likely adopted into the League of the Haudenosaunee (Ramsden 1990:384). After the invasion, southern Ontario remained an underpopulated wilderness for several generations. This rich hunting ground was exploited by the Haudenosaunee/Five Nations for its furs, which were traded to the Dutch and the English (Smith 1987:19).

Due to their mutually violent history, the Haudenosaunee did not permit French explorers and missionaries to travel directly into southern Ontario for much of the 17th century. Instead, they had to journey up the Ottawa River to Lake Nipissing and then paddle down the French River into Georgian Bay (Lajeunesse 1960:xxix). New France was consequently slow to develop in southern Ontario, at least until the fall of several Iroquoian strongholds in 1666 and the opening of the St. Lawrence and Lake Ontario route to the interior (Lajeunesse 1960:xxxii).

1.2.6 The Euro-Canadian Era

1.2.6.1 Anishinabeg Influx

The fortunes of the Five Nations began to change in the 1690s as disease and casualties from battles with the French took a toll on the formerly-robust group (Smith 1987:19). On July 19, 1701, the Iroquois ceded lands in southern Ontario to King William III with the provision that they could still hunt freely in the territory (Coyne 1895:28). However, this agreement appears to have lacked any sort of binding formality. According to the traditions of the Algonkian-speaking Anishinabeg, Ojibway bands soon expanded into southern Ontario in an effort to trade directly with the French and the English (Smith 1987:19). This led to a series of battles involving the Haudenosaunee and the Ojibway, in which the latter were more successful (Coyne 1895:28).

Haudenosaunee populations subsequently withdrew into New York State, and Anishinabeg bands moved into southern Ontario. Many of these were mistakenly lumped together by the immigrating Europeans under the generalized designations of 'Chippewa/Ojibway', 'Northern Iroquois' and 'Mississauga'. 'Mississauga' quickly became a term applied to many Algonkian-speaking people around Lake Erie and Lake Ontario (Smith 1987:19).

These bands are known to have taken advantage of the competition between the English and French over the fur trade, and they were consequently well-supplied with European goods. The Mississaugas, for example, traded primarily with the French, and received "everything from buttons, shirts, ribbons to combs, knives, looking glasses, and axes" (Smith 1987:22). The British, on the other hand, were well-rooted in New York State and enjoyed mutually beneficial relations with the Haudenosaunee.

Throughout the 1700s (and into the early 1800s), Anishinabeg peoples hunted, fished, gardened and camped along the rivers, floodplains and forests of southern Ontario (Warrick 2005:2). However, their 'footprint' was exceedingly light, and associated archaeological sites are both rare and difficult to detect. Henry Popple's *A Map of the British Empire in America* (1733) shows the First Nations destroyed by the Iroquois in the mid-17th century, and also demonstrates the ephemeral impact of the mobile Anishinabeg and their lack of settlements in the 18th century (Map 10).

1.2.6.2 European and Aboriginal Relations

The late 17th and early 18th centuries bore witness to the growth and spread of the fur trade across all of what would become the Province of Ontario. The French, for example, established and maintained several trading posts across northern Ontario and the Upper Great Lakes, offering many enticements to attract fur traders from the First Nations. Even further north, Britain's Hudson Bay Company dominated the fur trade. This company struggled militarily with the French for control of this trade until 1763, and many naval and land battles were fought on Hudson Bay and James Bay (Ray 2011). These developments resulted in an ever-increasing level of contact between European traders and local Aboriginal communities.

As the number of European men living in Ontario increased, so too did the frequency of their relations with Aboriginal women. Male employees and former employees of French and British companies began to establish families with these women, a process which resulted in the ethnogenesis of a distinct Aboriginal people: the Métis. Comprised of the descendants of those born from such relations (and subsequent intermarriage), the Métis emerged as a distinct Aboriginal people during the 1700s. Métis settlements developed along freighting waterways and watersheds, and were tightly linked to the spread and growth of the fur trade. These settlements were part of larger regional communities, connected by "the highly mobile lifestyle of the Métis, the fur trade network, seasonal rounds, extensive kinship connections and a shared collective history and identity" (MNO 2011).

In 1754, hostilities over trade and the territorial ambitions of the French and the British led to the Seven Years' War (often called the French and Indian War in North America), in which many Anishinabeg bands fought on behalf of the French. After the French surrender in 1760, they adapted their trading relationships accordingly, and formed a new alliance with the British (Smith 1987:22).

During the late 18th century, the face of what would become Ontario began to change at an extraordinary pace. Following the American Revolutionary War (1775–1783), waves of United Empire Loyalists came to settle in the Province of Quebec, and the First Nations began to feel considerable population pressure. In addition to sparking the slow death of the fur trade, this influx caused the Crown to seek out property for those who had been displaced by the conflict. The Anishinabeg were left with little to exchange for European goods, aside from their land.

1.2.6.3 British Colonialism

With the establishment of absolute British control came a new era of land acquisition and organized settlement. In the *Royal Proclamation* of 1763, which followed the Treaty of Paris, the British government recognized the title of the First Nations to the land they occupied. In essence, the 'right of soil' had to be purchased by the Crown prior to European settlement (Lajeunesse 1960:cix). Numerous treaties and land surrenders were accordingly arranged by the Crown, and great swaths of territory were acquired from the 'Mississaugas', 'Northern Iroquois' and other First Nations (Map 11). These first purchases established a pattern "for the subsequent extinction of Indian title" (Gentilcore and Head 1984:78).

The first land purchases in the area took place along the shores of Lake Ontario and Lake Erie, as well as in the immediate 'back country'. Such acquisitions began in August 1764, when a strip of land along the Niagara River was surrendered by Six Nations, Chippewa and Mississauga chiefs (NRC 2010a). Although many similar territories were purchased by the Crown in subsequent decades, it was only with the conclusion of the American Revolutionary War in 1783 and the wholesale displacement of United Empire Loyalists that the British began to feel a pressing need for additional land.

In response to this need, the Governor of Canada Sir Frederick Haldimand, sent Captain William Crawford to the Bay of Quinte and the St. Lawrence River to obtain legal titles to areas that would be opened for settlement. On October 9, 1783, Crawford finalized the negotiations with

several Mississauga chiefs, and lands from "Toniato or Onagara River (on the St. Lawrence River) to a river in the Bay of Quinte within eight leagues of the bottom of the Bay including all the islands, extending back from the lake so far as a man can travel in a day" were exchanged for guns, gunpowder, 12 laced hats and red cloth (NRC 2010a). These 'Crawford Purchases' set the stage for European settlement along the north shore of the St. Lawrence River.

Major Holland began surveying these lands in 1784, and due to the urgency of settlement for those "strong in British principles," the newly established townships were not even named - but assigned numbers instead (Leavitt 1879:17). The westernmost surveyed territory was originally called Township No. 8 (Elizabethtown), while the easternmost was Township No. 1 (Charlottenburg). This numbering system was somewhat erroneous, as the easternmost Township of Lancaster (the Sunken Township) was also part of the original survey but was otherwise omitted due to the fact that its lands had "no value" (Leavitt 1879:17).

These new lands were granted to Loyalists "in partial recompense for the losses sustained in adhering to the old flag" and to provide a "bulwark against the spread of republicanism in North America" for the Crown (Leavitt 1879:17). The extent of the grants varied according to rank: field-officers received 5,000 acres; captains, 3,000 acres; junior officers (subalterns), 2,000 acres; and privates, 200 acres.

For the most part, the precise location of the granted land was determined by chance. Lots were numbered on small slips of paper and placed in a hat, and each soldier made his draw and claimed his new land (Carter 1905:37-38; McKenzie 1967:9). Every private, in addition to receiving 200 acres, was also granted 50 additional acres for his wife and each child. Each child, in turn, was entitled to a grant of 200 acres when they turned 21. Through this arrangement, the majority of the inland townships (e.g. Mountain and Winchester) ended up in the possession of the descendants of the United Empire Loyalist soldiers (Carter 1905:38).

The initial settlement of the St. Lawrence River took place under the direction of Sir John Johnson, whose regiment (the King's Royal Rangers) was granted land in the first five townships west of Montreal. The next three townships, including Edwardsburgh and Matilda, were set aside for Major Edward Jessup's regiment (the Loyal Rangers), while a third group went farther west (McKenzie 1967:7). The study area itself falls within the boundaries of Township No. 5 (later named the Township of Matilda in the County of Dundas) and Township No. 6 (later named the Township of Edwardsburgh in the County of Grenville).

On July 24, 1788, the Governor General of Quebec, Sir Guy Carleton, Baron of Dorchester, divided Upper Canada into four administrative districts: Hesse, Nassau, Mecklenburg and Lunenburg. The government then set about creating land boards to facilitate further settlement in each district. In December 1791, the Parliament of Great Britain's *Constitutional Act* created the Provinces of Upper Canada and Lower Canada from the former Province of Quebec, and Colonel John Graves Simcoe was made its first Lieutenant-Governor. Simcoe became responsible for governing the new province, directing its settlement and establishing a constitutional government modelled after that of Britain (Coyne 1895:33). In 1792, the Upper Canadian legislature incorporated the Western, Home, Midland and Eastern Districts from the former Districts of the Province of Quebec.

Simcoe initiated several schemes to populate and protect the newly-created province, employing a settlement strategy that relied upon the creation of shoreline communities with effective transportation links connecting them. These communities, inevitably, would be composed of lands obtained from the First Nations, and many more purchases were subsequently arranged. A total of 19 counties were established in 1792, including previously settled lands, new lands open for settlement and lands not yet acquired by the Crown. These counties stretched from Essex in the west to Glengarry in the east (Archives of Ontario 2009). The vicinity of the study area became part of the newly incorporated Glenngarry County in the District of Lunenburg (Map 12).

1.2.7 Glengarry County

As local population levels increased in southern Ontario, smaller administrative units became desirable and the larger districts began to be broken down. New districts were accordingly established, and in 1798 historic Glengarry County was formed from part of the Lunenburg District (Archives of Ontario 2009).

The most easterly in Ontario, Glengarry County fronts on the St. Lawrence River and Lake St. Francis to the southeast, The Quebec counties of Soulanges and Vendreuil to the east, Prescott County to the north and Stormont county to the west. Historic Glengarry comprised six of the original eight Royal Townships of Upper Canada: Lancaster, Charlottenburg, Cornwall, Osnabruck, Williamsburgh and Matilda. A few years later, each was then subdivided - forming a total of 12 individual townships which formed the basis of the new counties of Glengarry, Stormont and Dundas (Archives of Ontario 2009). The study area in Charlottenburg became part of Glengarry County at that time, in addition to the townships of Lancaster, Kenyon and Lochiel (Map 13).

With the *Municipal Act* of 1850, Glengarry County became part of the United Counties of Stormont, Dundas and Glengarry for judicial and municipal purposes (Archives of Ontario 2009).

The first settlers of Glengarry County were primarily United Empire Loyalists who left the United States following the American Revolution in approximately 1784 (Glengarry County Genweb 2009). In anticipation of their arrival, Governor General Haldimand ordered new townships to be laid out along the St. Lawrence River. Samuel Holland, the Surveyor General for Canada, was tasked with this responsibility. Holland delegated the work to several surveyors, one of whom, Patrick McNiff, surveyed what would become Glengarry County in 1784 (MacGillivray & Ross 1979:6). This original territory also included modern-day Prescott County, which became a separate county in 1800.

That same year, settlers began arriving in the county - primarily coming from Scotland. Those choosing to settle in Charlottenburg included the Macdonells, the McLennans, Charles Rose, John Hay and Benjamin Glassford. In 1794, a second wave of migration into the area occurred with the arrival of 40 families from Scotland, which included the McLeods, McGillivrays, McCuaigs, McIntoshes, Campbells, Cams and Frasers (Glengarry County Genweb 2009). Many of these families settled in Lochiel. By the early 19th century the population of Glengarry County was almost exclusively Scottish (Glengarry County Genweb 2009). Over the following years,

however, a shortage of land in neighbouring Quebec initiated a wave of migration into Glengarry – bringing the French-Canadian population to approximately equal that of the settled Scots (Glengarry County Genweb 2009).

The development of the county was aided by its position on the direct route between Toronto and Montreal. This ensured that people would be passing through at all times of the year and that roads were necessary (MacGillivray & Ross 1979:283). The Grand Trunk Railway linking Brockville to Montreal was established in 1855 with a stop in Lancaster; in 1856, it was expanded to Toronto (Glengarry County Genweb 2009) (Map 14). Next, the Canada Atlantic Line was completed in 1882, followed by the addition of the Stormont and Glengarry line in 1914. This final railroad offered a total of 19 stations across the county, connecting Cornwall with the main CPR line.

The United Counties still continue to function today, although numerous changes have taken place in terms of their internal township organization; for instance, Glengarry County was divided into North Glengarry and South Glengarry in 1998. The population of the region has remained remarkably stable over the past centuries; from a total population of 22, 447 recorded in 1891, as of 2006 the population had only grown to 23,515 (Glengarry County 2010; MacGillivray & Ross 1979:2). Today, the county comprises 288,688 acres.

1.2.8 The Township of Charlottenburg

In historic times, the Township of Charlottenburg was bounded on the north by the Township of Kenyon, on the northwest by the Township of Lochiel, on the east by the Township of Lancaster and on the west by the Township of Cornwall. It was named after Charlotte of Mecklenburg-Strelitz, Queen Consort of King Richard III - and was one of the first Royal townships to be surveyed by Patrick McNiff in 1784 (MacGillivray 1979:6).

Historical land records categorize the study area as “Indian Land Reservation,” given to the First Nations of St. Regis. However, while this land was set aside for the Aboriginal group, no formal deed or grant was given to them and, for their purposes, the land was unsuitable for hunting or settlement. Accordingly, they began leasing the land to settlers instead (McGillivray & Ross 1979: 24-26). In 1809, the Indian Lands were resurveyed by Jeremiah McCarthy (MacGillivray 1979: 24-26).

Like the bulk of historic Glengarry County, Charlottenburg too was first settled predominantly by United Empire Loyalists. A 1784 report indicated that the Township was home to 36 men, 15 women and 39 children (South Glengarry History: n.d.). Two years later, approximately 500 Scottish settlers made their homes in Charlottenburg (South Glengarry Township 2010; Lankan 2010). Fur-traders of the North West Company also settled here during the late 18th Century and early 19th Century (Lankan 2010).

Throughout the 19th Century, the agricultural, forestry and potash industries were dominant in the township. Further commercial prosperity hit Charlottenburg in 1855 after a Grand Trunk Railway station opened (Lankan 2010). The main historic thoroughfare at this time was the Matilda Road, which ran north from Matilda/Iroquois along the St. Lawrence River, was graded and planked by 1852 (MacGillivray & Ross 1979).

As the 1800s came to an end, the town had become famous for its cheese making and for buggy manufacture (Lankan 2010). By the mid-19th century, over 6,500 acres of the township's lands were under cultivation. At this time, there were three saw mills within the township - which had a population was 2,535 (Smith 1846:113).

The principal inland settlements within the historic township of Charlottenburg were the communities of Avondale and Williamstown. Smaller communities included Bainsville, Bridge End, Brown House Corner, Camerons Point, Cashions Glen, Curry Hill, Dalhousie Mills, Glen Brook, Glen Falloch, Glen Nevis, Glen Norman, Glenroy, Glen Walter, Green Valley, Lancaster, Martintown, Munroes Mills, North Branch and St. Raphaels.

1.2.9 Lot 15, Concession 5

The study area falls within Lot 15, Concession 5 of the Township of Charlottenburg (Maps 15–16). The original Crown patent holders of this lot dating to the period of 1849-1851, were B. Clark, John MacKay and John Cain; the western half was owned by B. Clark and the eastern half by John MacKay. A small southern strip was owned by John Cain (Belden & Co. 1879). In 1897, the McKay family deeded their land to the Cain's, who continued to own the land until at least 2005. The southern 50 acres of the Cain land, however, were deeded to the Grant family (Millard Grant and Sons Farm Inc.) in 1959.

1.3 Archaeological Context

1.3.1 Natural Environment

Environmental factors play a substantial role in shaping ancient land-use and site selection processes, particularly in small Pre-Contact societies with non-complex, subsistence-oriented economies. In order to accurately reconstruct the historic land usage of the study area, the following five features of the local natural environment must be considered: 1) forests; 2) drainage systems; 3) climatic conditions; 4) physiography; and 5) soil types.

The local environment of the study area lies within the Great Lakes-St. Lawrence Forest, which is a transitional zone between the southern Deciduous Forest and the northern Boreal Forest. Vegetation here consists of a mixture of coniferous and deciduous trees, as well as many species of ferns, fungi, shrubs and mosses. The most prominent conifers are eastern white pine, red pine, eastern hemlock and white cedar, while deciduous trees are best represented by yellow birch, sugar and red maple, basswood and red oak. Other species more commonly occurring in the north are also present, including white and black spruce, jack pine, aspen and white birch (MNR 2011). Relatively little of the original forest cover remains standing today, as early Euro-Canadian settlers conducted large-scale clearing operations to prepare the land for agricultural exploitation.

In Pre-Contact times, these dense forests would have been particularly bountiful. It is believed that the First Nations of the Great Lakes region exploited close to 500 plant species for food, beverages, food flavourings, medicines, smoking, building materials, fibres, dyes and basketry (Mason 1981:59–60). Furthermore, this diverse vegetation would have served as both home and

food for a wide range of game animals, including white tailed deer, turkey, passenger pigeon, cottontail rabbit, elk, muskrat and beaver (Mason 1981:60). Accordingly, it is clear that access to certain types of vegetation played an important role in the site selection processes employed by Pre-Contact peoples.

The local environment of the study area lies within the Great Lakes-St. Lawrence Forest. The Great Lakes-St. Lawrence Forest is a transitional zone between the southern deciduous forest and coniferous boreal forest. Vegetation here consists of a mixture of coniferous trees, such as eastern white pine, red pine, eastern hemlock and white cedar, and deciduous trees, such as yellow birch, sugar and red maple basswood and red oak (MNR 2009). In the upper Great Lakes region it is believed that the First Nations used some 500 plant species as food, food flavourings, drinks, medicines, building materials, fibres, dyes, and basketry (Mason 1981: 59). As such, it is clear that vegetation played an important role in the site selection processes employed by pre-Contact Aboriginal groups. Furthermore, this vegetation served as home and food for a wide range of game animals such as white tailed deer, turkey, passenger pigeon, cottontail rabbit, elk, muskrat, and beaver (Ibid:60).

The subject lands lie within the Upper St. Lawrence - Raisin River watershed. Several water sources are located in the vicinity of the study area, including an unnamed permanent stream 90 m to the east and another 625 m so the southwest. There are also wetland areas 1.5 km to the northwest. The Glen Falloch Drain, an artificial flow, is located approximately 400 m north of study area. A beaver pond, what appeared to be a dry creek bed and 5 small swampy areas were also noted in abutting properties previously surveyed during ARA's 2010 Stage 1 and 2 Assessment of the original Glendale Solar Project lands.

The study area is located within the Eastern Ontario climatic region of southern Ontario. The mean annual temperature is 5.8 ºC and annual precipitation levels range between 715 and 980 mm per year. The area's proximity to the St. Lawrence River moderates the temperature and affects annual precipitation levels (Richards et al. 1949:27–28; Matthews and Richards 1952:24–25). On the whole, this climate is well suited for the common grain and forage crops grown during the Euro-Canadian period.

Physiographically, the study area is located in the Glengarry Till Plain. It is a region of low relief forming the drainage divide between the St Lawrence and the Ottawa basin (Chapman and Putnam 1984: Map). Within the Township of Charlottenburg, the till plain is buried beneath medium to fine water-laid deposits - likely from the recession of the Champlain Sea (Matthews and Richards 1952:47). The landscape is undulating to rolling, consisting of morainic ridges and well-formed drumlins with clay flats and swamps (Ibid: 201). The soils of the area include Muck, Bottom Land, Grenville Loam, and Matilda Loam (Matthews, Richards & Wicklund 1957:Map).

In sum, the natural environment of the study area possesses a number of environmental characteristics which would have made it attractive to both Pre-Contact and Euro-Canadian peoples. The abundant water sources traversing the study area would have attracted a wide variety of game animals, and consequently, early hunters. The primarily well-drained soils would have been ideal for the maize horticulture of Middle to Late Woodland peoples and the mixed agriculture practiced by later Euro-Canadian populations. Finally, the relative proximity of the

study area to the St. Lawrence River would also have influenced its settlement and land-use history. Such major waterways functioned as the principal transportation routes through the extensive forests of Pre- and Post-Contact southern Ontario.

1.3.2 Previous Archaeological Work

During ARA's 2010 Stage 1-2 Assessment of the original Glendale Solar Project Lands, an archival search was conducted using the MTC's Ontario Archaeological Database in order to determine the presence of any registered heritage resources which might be located on or within a 2 km radius of the study area. It was found that there were no registered sites within these limits at that time. During the Stage 2 Assessment of the abutting original Glendale Solar Project Lands conducted in July, 2010, ARA located 4 findspots yielding archaeological material (Table 1). These results attest to the widespread Euro-Canadian occupation of the study area throughout the 19th century.

Table 1: Findspots Located during ARA's Stage 1-2 Archaeological Assessment of Abutting Glendale Lands (PIF# P007-245-2010)

Findspot	Cultural Affiliation	Date	Findspot Description	Materials Identified
1	Euro-Canadian	Mid to late 19th Century	10 x 10 m historic scatter, , consisting of 50+ surface artifacts	Glass, ceramics, shell button, plastic button and metal machine part
2	Euro-Canadian	Early to late 19th Century	25 x 25 m historic scatter, consisting of 150+ surface artifacts associated with former homestead	Ceramics, a large bell, a buckle, nails, clock hardware, brick fragments, container glass and window glass
3	Euro-Canadian	Early to mid 19th Century	10 x 15 m historic scatter, consisting of 35 artifacts	Ceramic, glass and a Jew's harp
4	Euro-Canadian	Undetermined	25 x 25 m historic scatter, consisting of 25+ artifacts	Ceramics and pharmaceutical glass

1.4 Stage 1 Background Summary

The Stage 1 assessment of the proposed Glendale Solar Project Additional Land study area entailed a rigorous examination of the study area's geography, history, archaeology and current land condition. This study was accomplished through the use of archival, historical, academic and professional publication sources. Dating back to the Palaeo-Indian era approximately 11,000 years ago, the region comprises a complex chronology of Pre-Contact and Euro-Canadian histories. The study area property itself is dateable to 1849 when it was owned by B. Clark, John MacKay and John Cain. Since then, the study area has been used continuously as farmland through to present day.

As detailed above, the natural environment of the study area would have been attractive to both Pre-Contact and Euro-Canadian peoples as a result of proximity to multiple water sources - including the St. Lawrence River which was likely an important factor in the development of trade - as well as possessing well drained soils which would have been idea for both maize horticulture and mixed agriculture.

While there are relatively few archival records supporting the high archaeological and historical potential of this study area, previous work by ARA in an abutting property did determine the area to have been occupied throughout Euro-Canadian times. The relative scarcity of earlier archaeological remains in the area may be the result of the scarcity of archaeological investigation in the area.

2.0 Stage 1 Analysis & Conclusions

In addition to relevant historical sources and the results of past excavations and surveys, the archaeological potential of a property can be assessed using its soils, hydrology and landforms as considerations. Young et al. note that, "either the number of streams and/or stream order is always a significant factor in the positive prediction of site presence" (1995:23). They further note that certain types of landforms, such as moraines, seem to have been favoured by different groups throughout prehistory (Young et al. 1995:33). According to several researchers, such as Janusas (1988:1), "the location of early settlements tended to be dominated by the proximity to reliable and potable water resources." Site potential modeling studies (Peters 1986; Pihl 1986) have found that most prehistoric archaeological sites are located within 300 m of either extant water sources or former bodies of water, such as post-glacial lakes.

While many of these studies do not go into detail as to the basis for this pattern, Young et al. (1995) suggest that the presence of streams would have been a significant attractor for a host of plant, game and fish species, encouraging localized human exploitation and settlement. Additionally, lands in close proximity to streams and other water courses were highly valued for the access they provided to transportation and communication routes. Primary water sources (e.g. lakes, rivers, streams and creeks) and secondary water sources (e.g. intermittent streams and creeks, springs, marshes and swamps) are therefore of pivotal importance for identifying archaeological potential (MTC 2011:17).

Section 1.3.1 of the *Standards and Guidelines for Consultant Archaeologists* emphasizes the following six features/characteristics as being additional indicators of positive potential for Pre-Contact archaeological materials:1) features associated with extinct water sources (glacial lake shorelines, relic river channels, shorelines of drained lakes, etc); 2) the presence of pockets of well-drained soils (for habitation and agriculture); 3) elevated topography (e.g. drumlins, eskers, moraines, knolls, etc.); 4) distinctive landforms that may have been utilized as spiritual sites (waterfalls, rocky outcrops, caverns, promontories, etc.); 5) proximity to valued raw materials (quartz, ochre, copper, chert outcrops, medicinal flora, etc); and 6) accessibility of plant and animal food sources (spawning areas, migratory routes, prairie lands, etc.) (MTC 2011:17-18).

Conversely, it must be understood that non-habitational sites (e.g. burials, lithic quarries, kill sites, etc.) may be located anywhere. Potential modeling appears to break down when it comes to

these idiosyncratic sites, many of which have more significance than their habitational counterparts due to their relative rarity. The Stage 1 archaeological assessment practices outlined in Section 1 of the *Standards and Guidelines for Consultant Archaeologist* ensure that these important sites are not missed in southern Ontario, as no property can be exempted from further archaeological work unless it has been inspected and demonstrated to have no archaeological potential (MTC 2011:13-23).

With the development of integrated 'complex' economies in the Euro-Canadian era (i.e. the Early and Late Historic Period), settlement tended to become less dependent upon local resource procurement/production and more tied to wider economic networks. As such, proximity to transportation routes (roads, canals, etc) became the most significant predictor of site location, especially for Euro-Canadian populations. In the early Euro-Canadian era (pre-1850), when transport by water was the norm, sites tended to be situated along major rivers and creeks – the 'highways' of their day. With the opening of the interior of the Province of Ontario to settlement after about 1850, sites tended to be more commonly located along historically-surveyed roads. Section 1.3.1 of the *Standards and Guidelines for Consultant Archaeologists* recognizes trails, passes, roads, railways and portage routes as examples of such early historical transportation routes (MTC 2011:18).

In addition to transportation routes, Section 1.3.1 of the *Standards and Guidelines for Consultant Archaeologists* emphasizes three other indicators of positive potential for Euro-Canadian archaeological materials:1) areas of early settlement (military outposts, pioneer homesteads or cabins, early wharfs or dock complexes, pioneer churches, early cemeteries, etc.); 2) properties listed on a municipal register, designated under the *Ontario Heritage Act* or otherwise categorized as a federal, provincial or municipal historic landmark/site; and 3) properties identified with possible archaeological sites, historical events, activities or occupations, as identified by local histories or informants (MTC 2011:18).

Based on the location, drainage and topography of the subject lands and the application of land-use modelling, it seems clear that the Stage 1 study area would, in its pristine state, have clear potential for the presence of Pre-Contact and Euro-Canadian era archaeological sites. Indicators of archaeological potential include numerous secondary water sources (e.g. two permanent unnamed streams), proximity to the St. Lawrence River and long history of documented Euro-Canadian settlement in the area. Additionally, the fact that Belden's *Illustrated Historical Atlas of the Counties of Stormont, Dundas, and Glengarry* (1879) shows a structure present on Lot 15, Concession 5 (Map 16) strongly suggests the study area possesses high potential for Euro-Canadian archaeological sites.

3.0 Stage 1 Recommendations

In sum, the entirety of the study area has the potential to yield sites which span Ontario's entire archaeological history. A Stage 2 property survey is therefore clearly warranted for all project lands with archaeological potential to be directly impacted by the project.

4.0 Stage 2 Field Methods

As the entire study area was composed of land recently under cultivation, it was assessed using the pedestrian survey method. Section 2.1.1 of the *Standards and Guidelines for Consulting Archaeologists* provides clear requirements for the condition of such lands prior to the commencement of fieldwork: all fields must be recently ploughed; all soils must be well-weathered; and at least 80% of the ploughed ground surface must be visible (MTC 2011:30). These conditions were met during the pedestrian survey component of the Stage 2 assessment (Image 1).

Following the standard strategy for pedestrian survey outlined in Section 2.1.1, ARA crewmembers traversed the study area along parallel transects established at 5 m intervals, yielding 20 survey transects per hectare (Plates 2–3). If archaeological materials were encountered in the course of the pedestrian survey, the transect interval would be closed to 1 m and a close inspection of the ground would be conducted for 20 m in all directions. All diagnostic artifacts and a representative sample of non-diagnostic artifacts would then be collected for analysis. All remaining artifacts would be left *in situ* until a proper Stage 3 Controlled Surface Pick-up (CSP) could be carried out.

Artifacts that may indicate the presence of significant cultural deposits include bone, charcoal, lithics (stone tools and refuse generated by their production and use), ceramics, glass and metal. Archaeological features such as pits, foundations and other non-portable remains may also be detected during a Stage 2 property survey. Any archaeological materials with potential CHVI are flagged, mapped, photographed and collected for further analysis, whether associated with Pre-Contact Aboriginal groups or Post-Contact First Nations, Métis and Euro-Canadian populations. Artifact locations are recorded on topographic maps, in field notes and at +/- 2 m accuracy on a Garmin eTrex Legend, WAAS-enabled, GPS handheld unit (using the UTM17 NAD83 coordinate system).

All project lands within the study area were assessed according to this method. Section 2.1 of the *Standards and Guidelines for Consultant Archaeologists* states that only those areas that are permanently wet, consist of exposed bedrock and/or have slopes greater than 20° can be considered exempt from requiring archaeological assessment (MTC 2011:28). As part of its business practice, ARA makes every effort to survey these areas where possible.

Any field data collected as part of the Stage 2 archaeological assessment was removed with the permission of the property owner. Were any artifacts recovered, they would be sent to 97 Gatewood Road in the City of Kitchener for processing, cataloguing, analysis and curation. Project photographs, mapping materials and field notes are stored at the same facility.

4.1.1 Property Conditions

The Stage 2 property survey of the proposed Glendale Solar Project Addition Lands was conducted June 15, 2011. Legal permission to enter project lands and engage in all necessary fieldwork activities was granted by the property owner. Key personnel involved during the assessment were P.J. Racher, Project Director; C.E. Gohm, Project Manager; A.W. Ray, Field Director; R. Hughes, assistant Field Director; and two additional crew members. Field conditions

were excellent, with mainly sunny skies, well-weathered soils, and excellent visibility.

5.0 Record of Finds

The entirety of study area lands identified as having archaeological potential in the Stage 1 were fully assessed (Map 17). The pedestrian survey of the agricultural lands (100% of the study area) did not yield any archaeological finds. As such, no additional evaluation is required.

Table 2: Stage 2 Documentary Record Inventory

Field Documents	Total	Nature	Location
Photographs	35	Digital; depicting field conditions and assessment strategy	On server at 97 Gatewood Road, Kitchener; Folder P007-325-2100
Field Notes	3	Digital and hard copy	In file and on server at 97 Gatewood Road, Kitchener; Folder P007-325-2100
Maps	2	Digital and hard copy	In file and on server at 97 Gatewood Road, Kitchener; Folder P007-325-2100

6.0 Stage 2 Analysis & Conclusions

The Stage 2 archaeological assessment of the additional the proposed Glendale Solar Project Additional Lands (FIT –FAH1BFV) was completed in June 2011. The Stage 2 property survey, conducted under MTC licence #P007, PIF #P007-225-2011, did not yield any archaeological sites.

7.0 Recommendations

Based on these findings, ARA feels that no further archaeological study of the subject lands would be productive. It is recommended that these lands be released from further archaeological concerns. A *Letter of Review and Acceptance into the Provincial Register of Reports* is requested, as provided for in Section 65.1 of the *Ontario Heritage Act*.

8.0 Advice on compliance with legislation

Section 7.5.9 of the *Standards and Guidelines for Consultant Archaeologists* requires that the following information be provided for the benefit of the proponent and approval authority in the land use planning and development process (MTC 2011:126-127):

- 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*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licenced 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 licenced 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 licenced 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.

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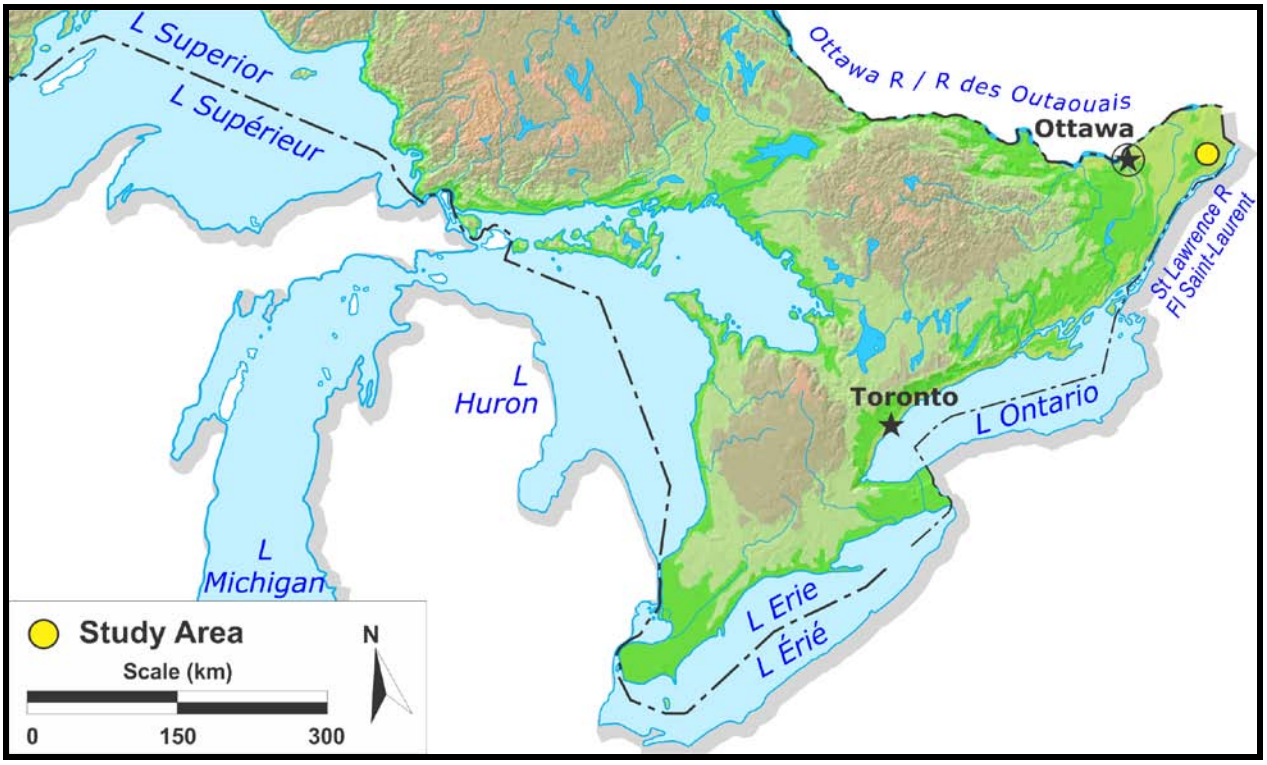
10.0 Images

Image 1: View of Soil Conditions
(Photo Taken on June 15, 2011)

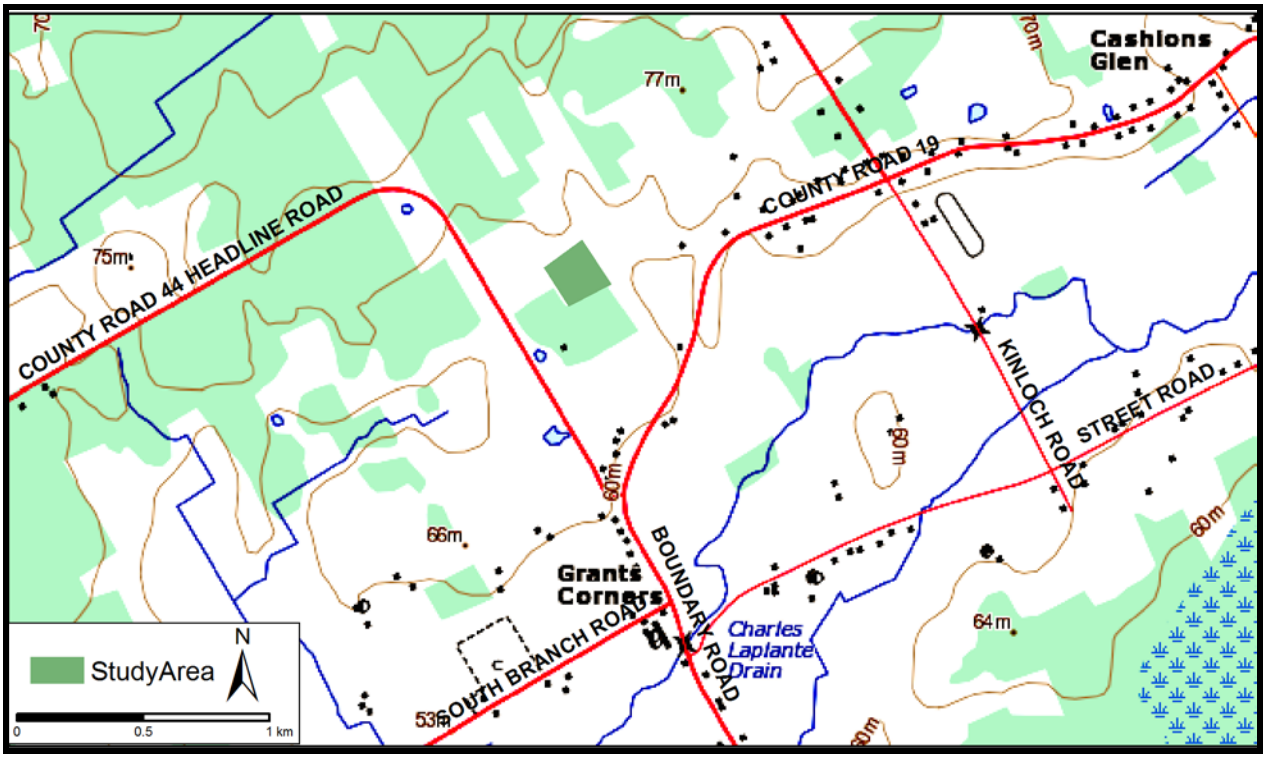
Image 2: View of Crewmembers conducting Pedestrian Survey at 5 m Intervals
(Photo Taken on June 15, 2011; Facing Northwest)

Image 3: View of Crewmembers conducting Pedestrian Survey at 5 m Intervals
(Photo Taken on June 15, 2011; Facing Northwest)

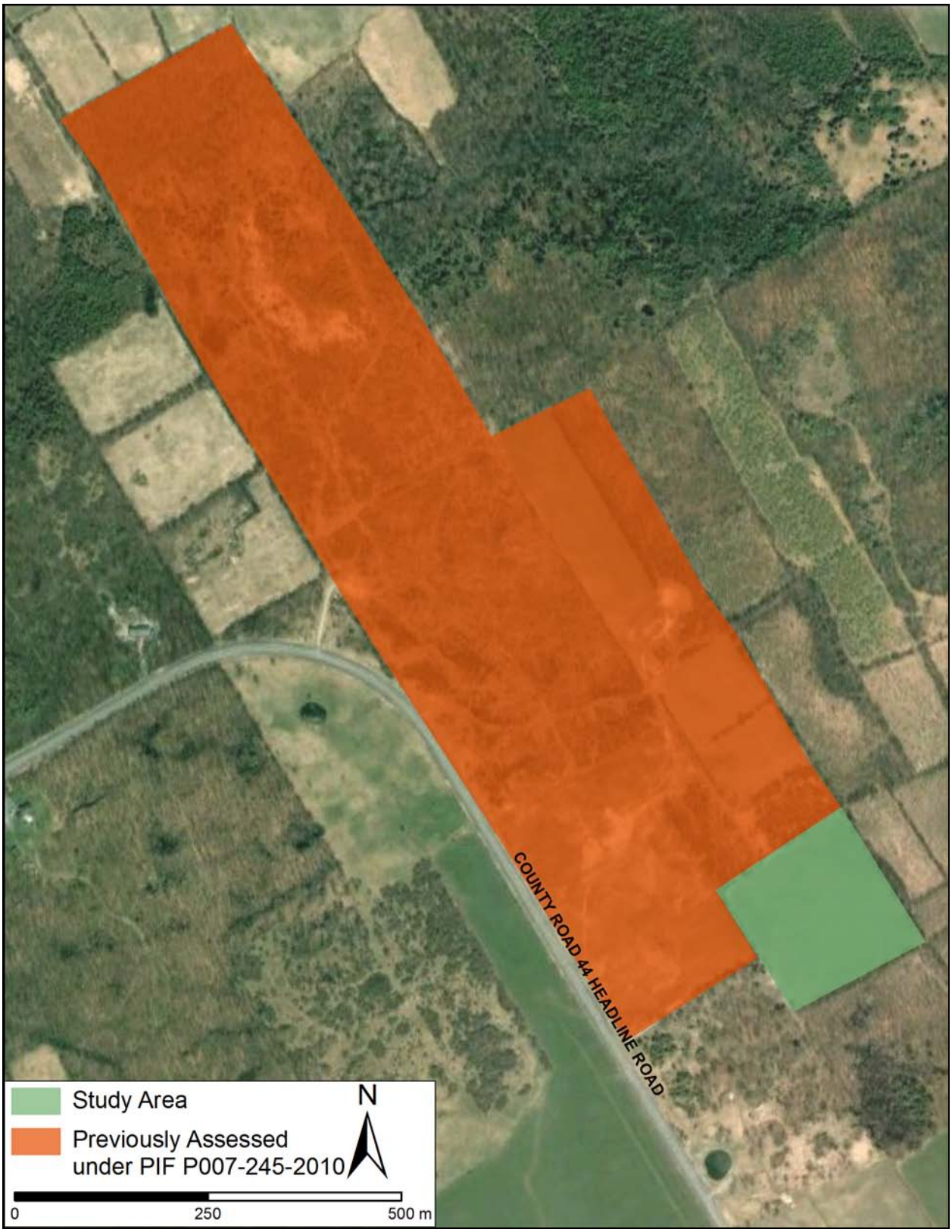
11.0 Maps



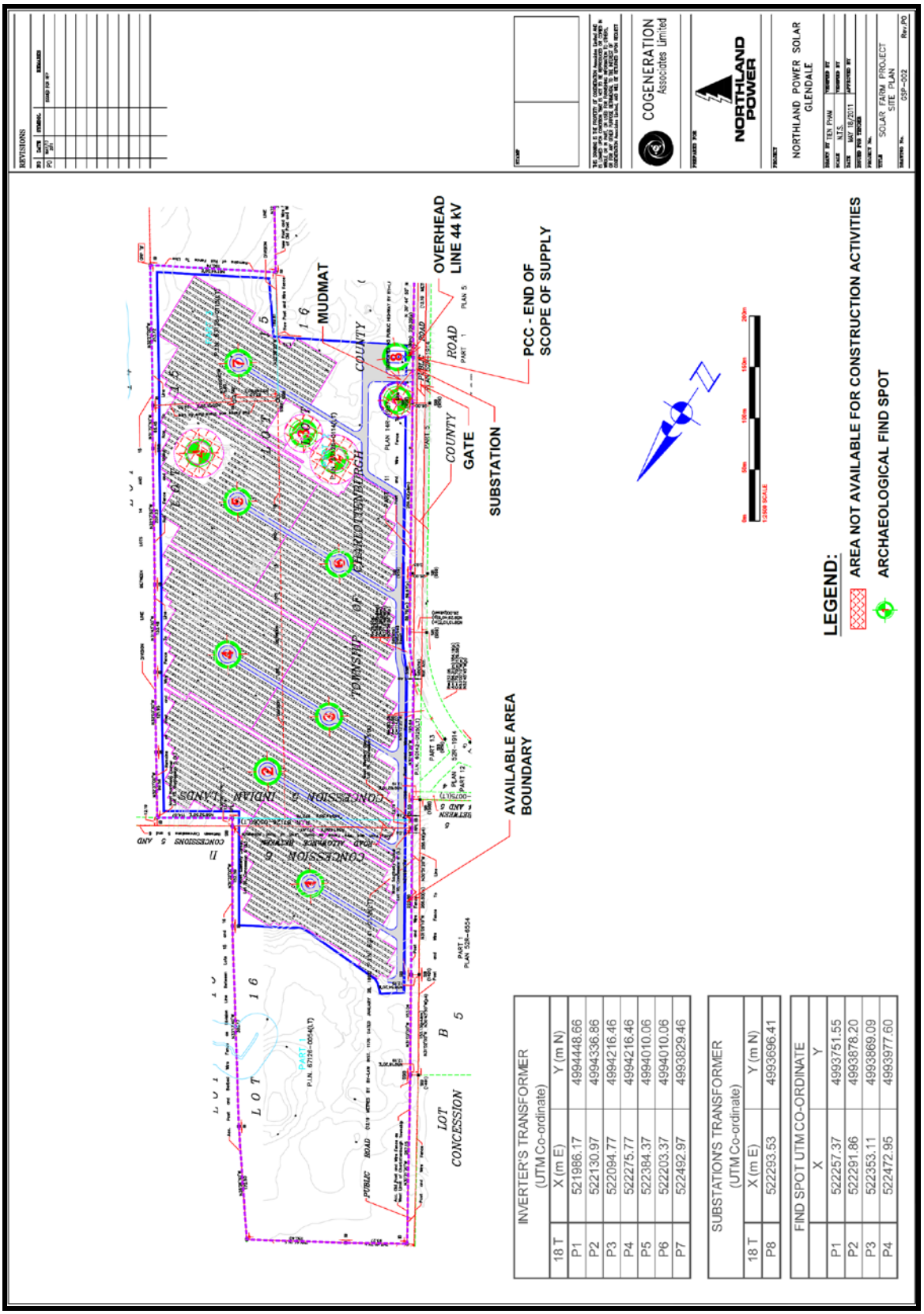
Map 1: Location of the Study Area in the Province of Ontario (NRC 2004)



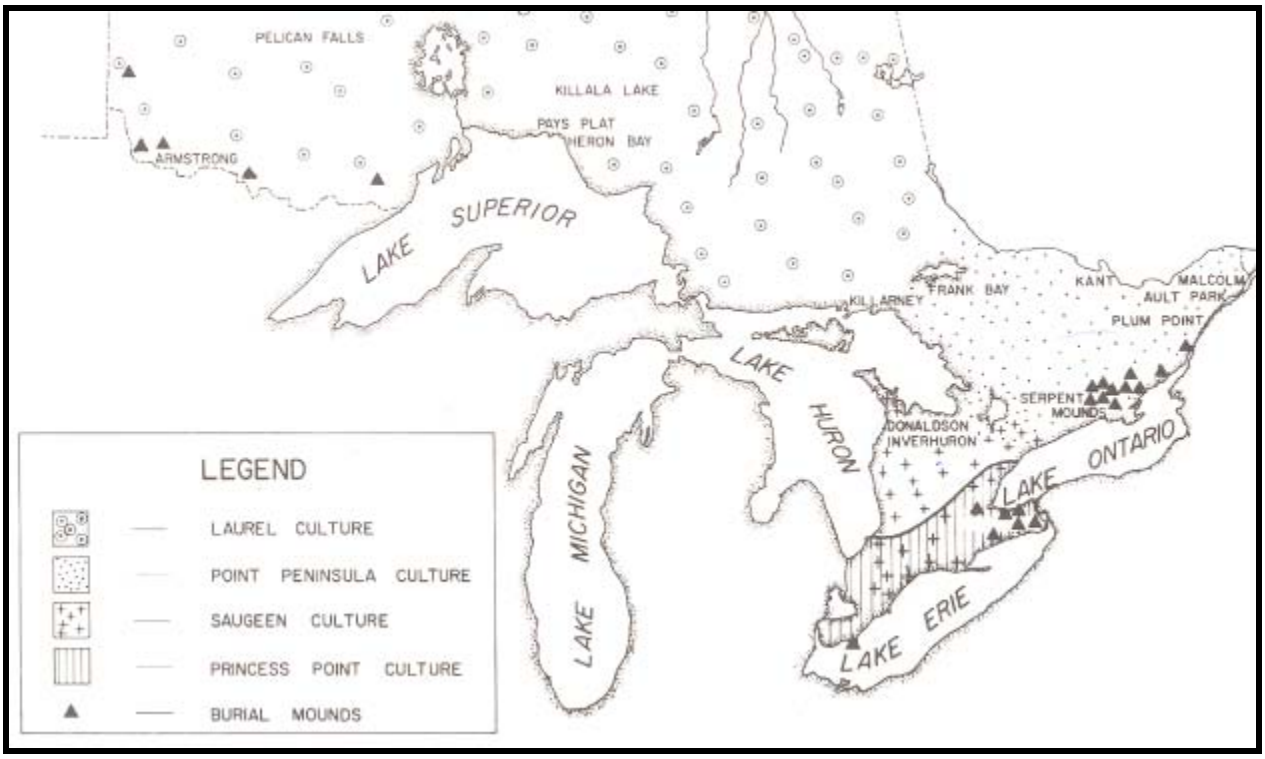
Map 2: Location of the Study Area in the Township of Charlottenburg (NRC 2010b)



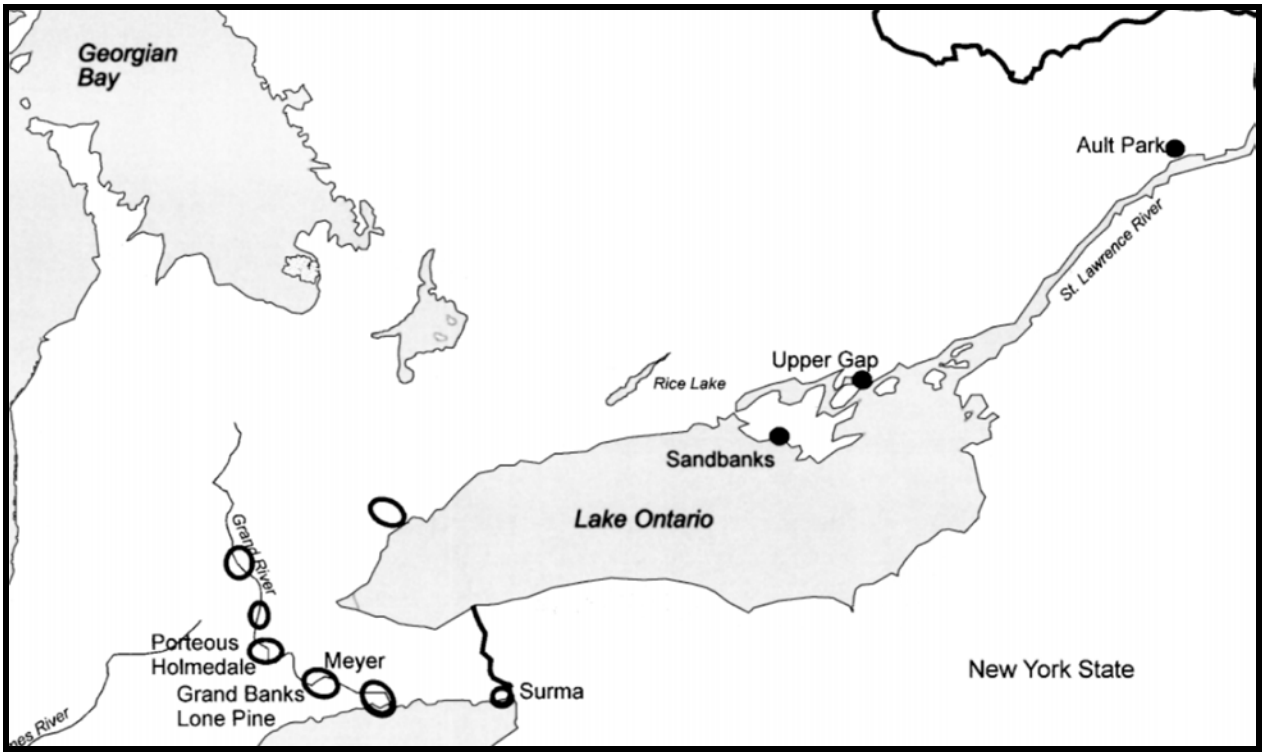
Map 3: Plan of the Project Lands, Showing all Areas of Archaeological Assessment
(Google Earth 2011)



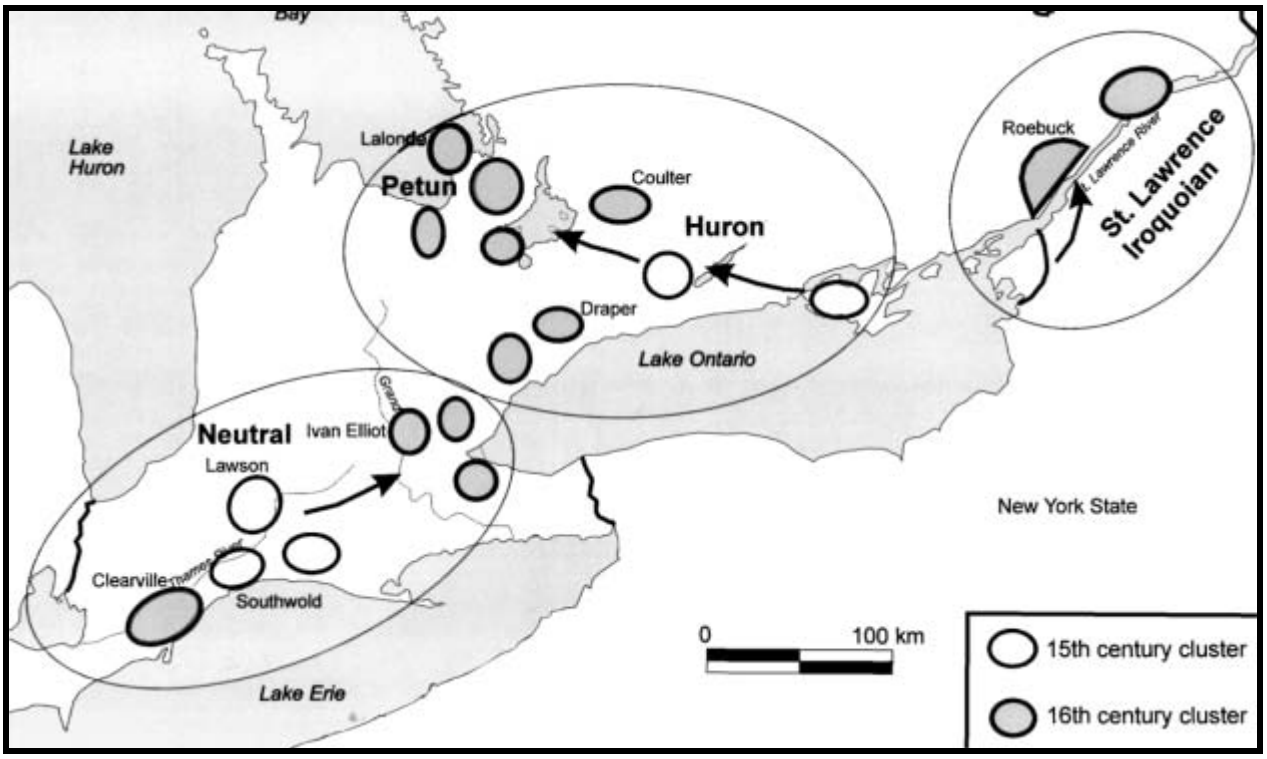
Map 4: Glendale Solar Project Site Plan
(Provided by Northland Power)



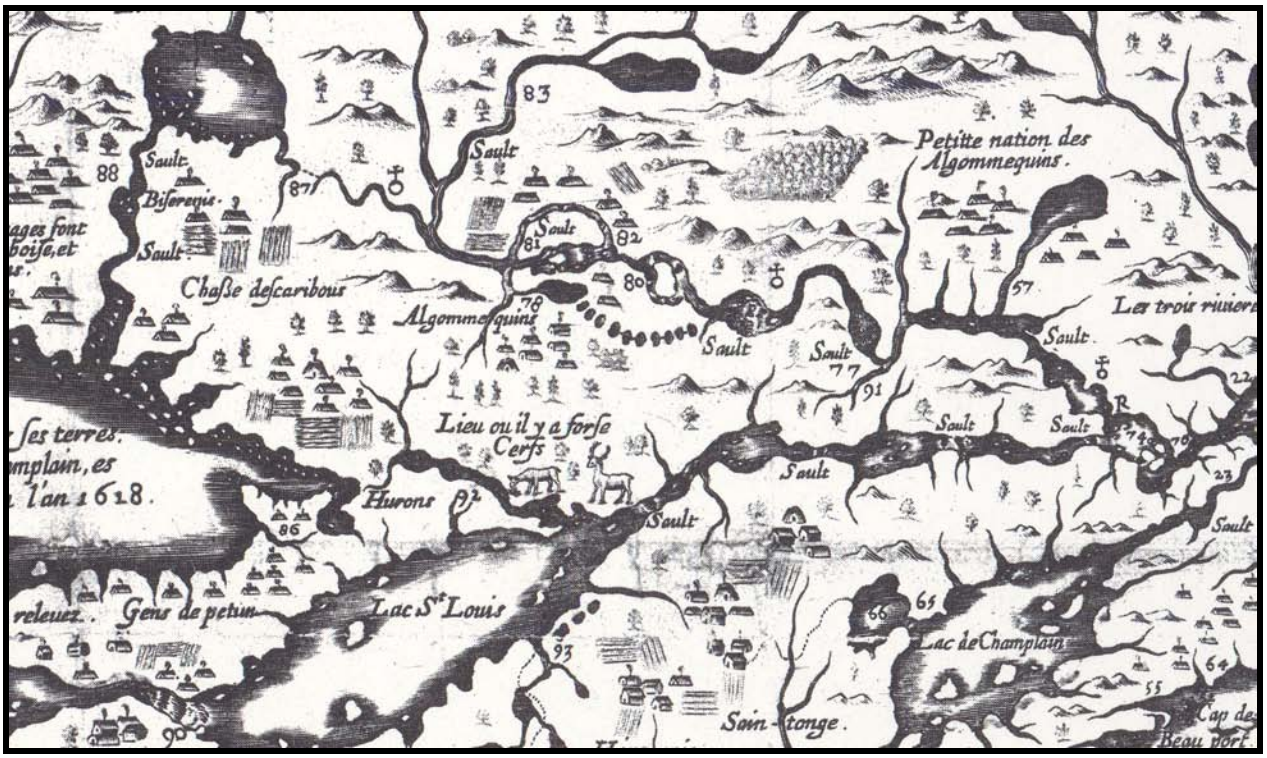
Map 5: Map of Middle Woodland Period Complexes
(Wright 1972:Map 4)



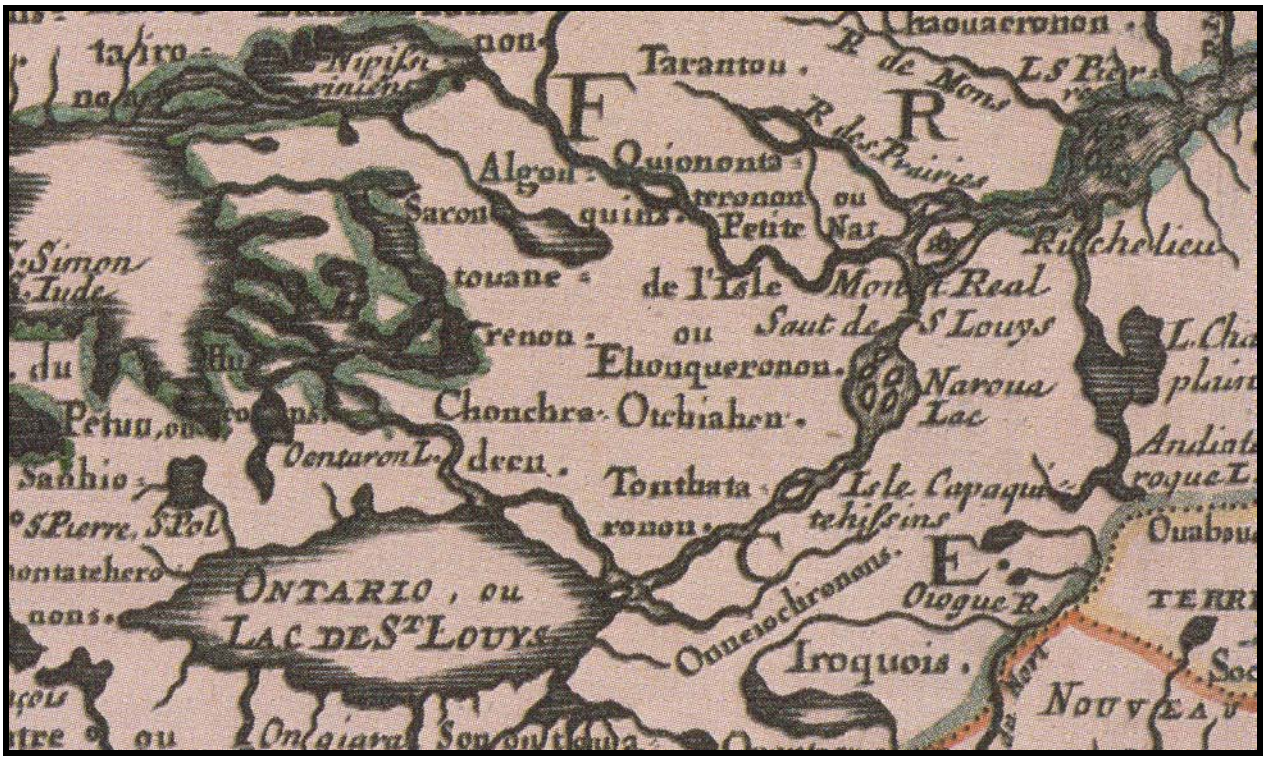
Map 6: Princess Point Site Clusters in Southern Ontario
(Warrick 2000:Fig. 3)



Map 7: Pre-Contact Iroquoian Site Clusters
(Warrick 2000:Fig. 10)



Map 8: Detail from S. de Champlain's *Carte de la Nouvelle France* (1632)
(Gentilcore and Head 1984:Map 1.2)

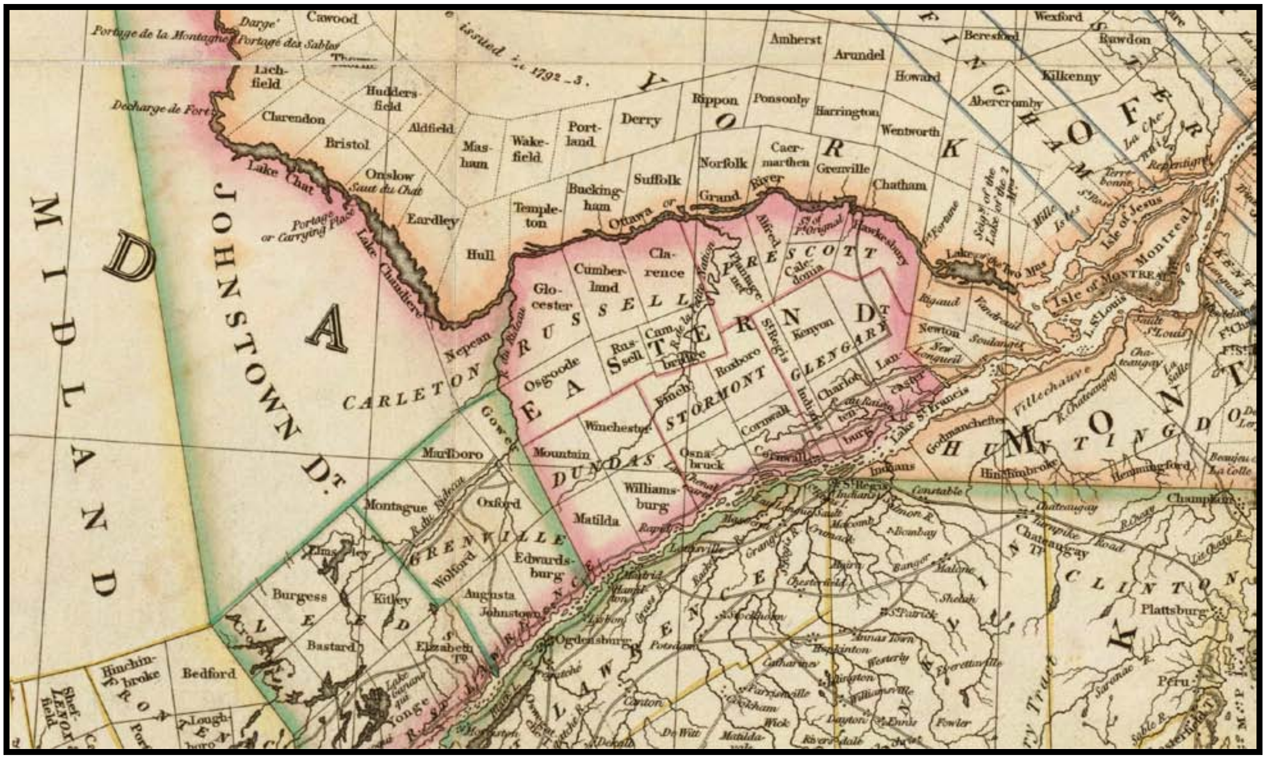


Map 9: Detail of N. Sanson's *Le Canada, ou Nouvelle France* (1656)
(Gentilcore and Head 1984:Map 1.10)

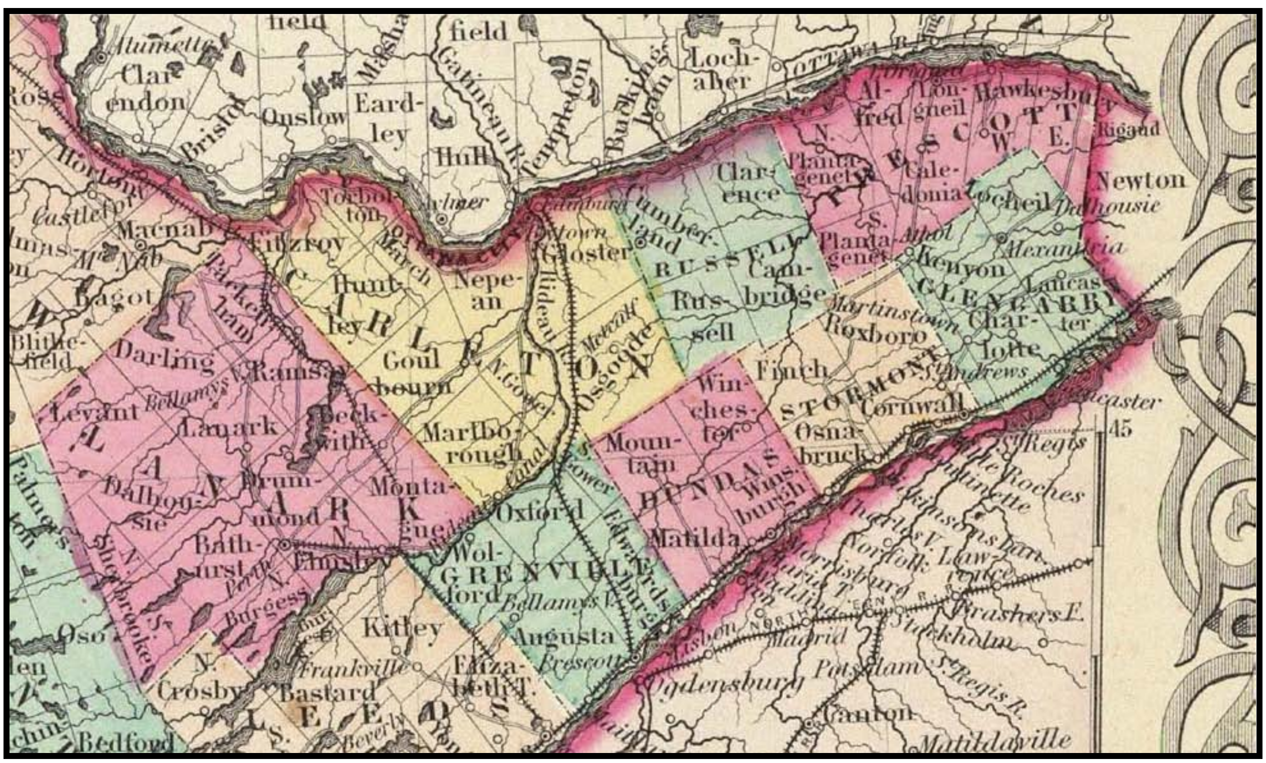
Map 10: Detail of H. Popple's *A Map of the British Empire in America* (1733)
(Cartography Associates 2009)

Map 11: Detail of Sayer and Bennett's *General Map of the Middle British Colonies in America* (1776)
(Cartography Associates 2009)

Map 12: Detail of D.W. Smyth's *A Map of the Province of Upper Canada* (1800)
(Cartography Associates 2009)

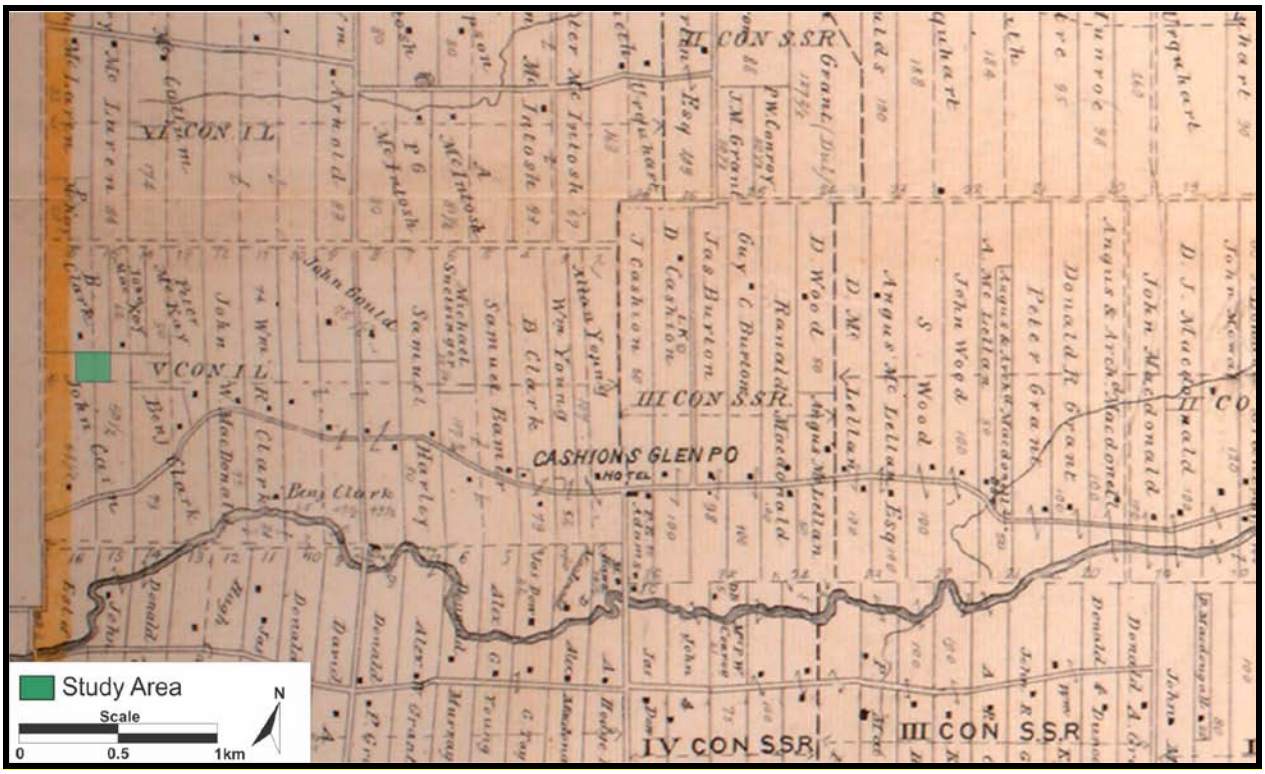


Map 13: Detail from J. Purdy's *A Map of Cabotia* (1814)
(Cartography Associates 2009)



Map 14: Detail from G.W. Colton's *Canada West or Upper Canada* (1856)
(Cartography Associates 2009)

Map 15: The Township of Matilda from Belden & Co.'s *Illustrated Historical Atlas of the Counties of Stormont, Dundas and Glengarry, Ontario* (1879)
(McGill University 2001)



Map 16: Detail of Belden's *Illustrated Historical Atlas of the Counties of Stormont, Dundas, and Glengarry* (1879)

Map 17: Study Area in Detail, Showing Property Survey Methods and Results