December 13, 2018

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Bostwick Road Realignment and Bradley Avenue Intersection Environmental Assessment Study
Lots 72 to 76, Concession ETR
Lots 37 and 38, Concession 2, and Lot 24, Concession 3
Former Township of Westminster
Now City of London, Ontario

Submitted to:
Mr. Henry Huotari, P.Eng.
Senior Project Manager, Principal
Parsons
1069 Wellington Road South, Suite 214
London, Ontario
N6E 2H6

PIF Number: P457-0025-2016

Licensee: Lafe Meicenheimer, M.A. (P457)

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Executive Summary

Golder Associates Ltd. ("Golder") was contracted by Parsons, on behalf of the Corporation of the City of London ("the City"), to conduct a Stage 1 Archaeological Assessment in support of the required Municipal Class Environmental Assessment (EA) study for the proposed realignment of Bostwick Road, including its intersection with Bradley Avenue. The Study Area for the EA, which measures approximately 80.5 hectares in size, is located on Part of Lots 72 to 76, Concession East of Talbot Road (ETR), Lots 37 and 38, Concession 2, and Lot 24, Concession 3, in the former Township of Westminster, now City of London, Middlesex County, Ontario. It extends from just north of the future Bradley Avenue extension to just west of Wonderland Road, including a section of the Bradley Avenue extension to the east, and a section of Pack Road to the west. The EA study is being performed to assist with identifying the potential future realignment of Bostwick Road, and the final alignment of an extension to Bradley Avenue. The Stage 1 Archaeological Assessment was conducted to meet the standard requirements of the Environmental Assessment Act (Government of Ontario 1990a), and the Ontario Heritage Act (Government of Ontario 1990b).

Golder applied archaeological potential criteria commonly used by the MTCS to determine the presence of archaeological potential within the Study Area. The Study Area was determined to exhibit potential for pre-contact Indigenous archaeological sites due to; the presence of 29 pre-contact Indigenous archaeological sites within a 1 km radius; the well-drained soils identified across the extent of the Study Area; and the natural potable water source of the unnamed stream flowing through the eastern portion of the Study Area. The Study Area was also determined to exhibit potential for Euro-Canadian archaeological sites due to documentation indicating occupation in the vicinity from the early 19th century onwards, as well as the presence of eight historical Euro-Canadian archaeological sites identified within a 1 km radius.

Based on the results of the background research, the Study Area was concluded to possess archaeological potential and is recommended for Stage 2 archaeological assessment. Once a design plan for the proposed realignment of Bostwick Road, including its intersection with Bradley Avenue, has been completed, Stage 2 archaeological assessment will be required within the project limits prior to construction. This will include all sections within the proposed new right-of-way (ROW), as well as any staging areas or storage areas required for construction (see Section 3.0 for Recommendations).

The Ontario Ministry of Tourism, Culture and Sport is asked to review the results and recommendations presented herein, accept this report into the Provincial Register of archaeological reports and issue a standard letter of compliance with the Ministry’s 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licencing.
Project Personnel

Project Director
Hugh Daechsel, M.A., Principal, Senior Archaeologist

Project Manager
Michael Teal, M.A., Project Archaeologist

Licensed Archaeologist
Lafe Meicenheimer, M.A. (P457), Staff Archaeologist

Report Production
Shannen Stronge, M.A., Project Coordinator
Lafe Meicenheimer, M.A., Staff Archaeologist
Liz Yildiz, Environmental Group Administrator

Senior Review
Hugh Daechsel, M.A., Principal, Senior Archaeologist

Acknowledgments

Proponent Contact
Mr. Henry Huotari, P.Eng., Parsons

Previous Archaeological Research
Mr. Jim Keron
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1.0 PROJECT CONTEXT

1.1 Development Context

Golder Associates Ltd. ("Golder") was contracted by Parsons, on behalf of the Corporation of the City of London ("the City"), to conduct a Stage 1 Archaeological Assessment in support of the required Municipal Class Environmental Assessment (EA) study for the proposed realignment of Bostwick Road, including its intersection with Bradley Avenue. The Study Area for the EA, which measures approximately 80.5 hectares in size, is located on Part of Lots 72 to 76, Concession East of Talbot Road (ETR), Lots 37 and 38, Concession 2, and Lot 24, Concession 3, in the former Township of Westminster, now City of London, Middlesex County, Ontario. It extends from just north of the future Bradley Avenue extension to just west of Wonderland Road, including a section of the Bradley Avenue extension to the east, and a section of Pack Road to the west. The EA study is being completed to assist with identifying the potential future realignment of Bostwick Road, and the final alignment of an extension to Bradley Avenue. The Stage 1 Archaeological Assessment was conducted to meet the standard requirements of the Environmental Assessment Act (Government of Ontario 1990a), and the Ontario Heritage Act (Government of Ontario 1990b).

According to the City of London Archaeological Master Plan, the Study Area has areas of archaeological potential (Map 2), and as such must undergo an archaeological assessment according to established provincial standards (Wilson and Horne 1995:89-90). This assessment must be conducted by an archaeologist licensed under the Ontario Heritage Act.

1.2 Objectives

The objectives of a Stage 1 assessment, as outlined by the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), are as follows:

- To provide information about the Study Area’s geography, history, previous archaeological fieldwork and current land conditions;
- To evaluate in detail the Study Area’s archaeological potential; and,
- To recommend appropriate strategies for Stage 2 assessment for all or parts of the property, if required.

1.3 Historical Context

The study is situated in an area of Ontario that exhibits evidence an extended period of human settlement dating back at least 11,000 years (Map 3). To provide context to the following sections of this report, the nature of this settlement is summarized below beginning with the pre-contact Indigenous period as it relates to the London area in general. This is followed by a summary of the historical Euro-Canadian period for the London Township in general and the Study Area in particular.
1.3.1 Pre-Contact Indigenous Period

Table 1 provides a general outline of the pre- and post-contact culture history for Middlesex County, drawn from Ellis and Ferris (1990).

Table 1: Cultural Chronology for Middlesex County

<table>
<thead>
<tr>
<th>Period</th>
<th>Characteristics</th>
<th>Time</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Paleo</td>
<td>Fluted Projectiles</td>
<td>9000 - 8400 B.C.</td>
<td>spruce parkland/caribou hunters</td>
</tr>
<tr>
<td>Late Paleo</td>
<td>Hi-Lo Projectiles</td>
<td>8400 - 8000 B.C.</td>
<td>smaller but more numerous sites</td>
</tr>
<tr>
<td>Early Archaic</td>
<td>Kirk and Bifurcate Base Points</td>
<td>8000 - 6000 B.C.</td>
<td>slow population growth</td>
</tr>
<tr>
<td>Middle Archaic</td>
<td>Brewerton-like points</td>
<td>6000 - 2500 B.C.</td>
<td>environment similar to present</td>
</tr>
<tr>
<td>Late Archaic</td>
<td>Narrow Points</td>
<td>2000 - 1800 B.C.</td>
<td>increasing site size</td>
</tr>
<tr>
<td></td>
<td>Broad Points</td>
<td>1800 - 1500 B.C.</td>
<td>large chipped lithic tools</td>
</tr>
<tr>
<td></td>
<td>Small Points</td>
<td>1500 - 1100 B.C.</td>
<td>introduction of bow hunting</td>
</tr>
<tr>
<td>Terminal Archaic</td>
<td>Hind Points</td>
<td>1100 - 950 B.C.</td>
<td>emergence of true cemeteries</td>
</tr>
<tr>
<td>Early Woodland</td>
<td>Meadowood Points</td>
<td>950 - 400 B.C.</td>
<td>introduction of pottery</td>
</tr>
<tr>
<td>Middle Woodland</td>
<td>Dentate/Pseudo-Scallop Pottery</td>
<td>400 B.C. - A.D. 500</td>
<td>increased sedentism</td>
</tr>
<tr>
<td></td>
<td>Princess Point</td>
<td>A.D. 550 – 900</td>
<td>introduction of corn</td>
</tr>
<tr>
<td>Ontario Iroquoian Late Woodland</td>
<td>Early Ontario Iroquoian</td>
<td>A.D. 900 – 1300</td>
<td>emergence of agricultural villages</td>
</tr>
<tr>
<td></td>
<td>Middle Ontario Iroquoian</td>
<td>A.D. 1300 – 1400</td>
<td>long longhouses (100m +)</td>
</tr>
<tr>
<td></td>
<td>Late Ontario Iroquoian</td>
<td>A.D. 1400 – 1650</td>
<td>tribal warfare and displacement</td>
</tr>
<tr>
<td>Western Basin Late Woodland</td>
<td>Riviere au Vase</td>
<td>A.D. 500-900</td>
<td>introduction of corn</td>
</tr>
<tr>
<td></td>
<td>Young Phase</td>
<td>A.D. 900-1200</td>
<td>dense storage pits, proto-settlements</td>
</tr>
<tr>
<td></td>
<td>Springwell Phase</td>
<td>A.D. 1200-1400</td>
<td>emergence of agricultural villages</td>
</tr>
<tr>
<td></td>
<td>Wolf Phase</td>
<td>A.D. 1400-1550</td>
<td>palisaded villages, tribal warfare and displacement</td>
</tr>
<tr>
<td>Contact Indigenous</td>
<td>Various Algonquian Groups</td>
<td>A.D. 1700 – 1875</td>
<td>early written records and treaties</td>
</tr>
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<td>Euro-Canadian</td>
<td>A.D. 1796 – present</td>
<td>European settlement</td>
</tr>
</tbody>
</table>

1.3.1.1 Paleo Period

The first human occupation of the London area, known as the Paleo Period, begins just after the end of the Wisconsin Glacial Period. Although there was a complex series of ice retreats and advances which played a large
role in shaping the local London topography, southwestern Ontario was finally ice free by 12,500 years ago. The first human settlement can be traced back 11,000 years, when this area was settled by Native groups that had been living south of the Great Lakes.

Our current understanding of Early Paleo settlement patterns suggest that small bands, that consisted of probably no more than 25-35 individuals, followed a pattern of seasonal mobility extending over large territories. One of the most thoroughly studied of these groups followed a seasonal round that extended from as far south as Chatham to the Horseshoe Valley north of Barrie. Early Paleo sites tend to be located in elevated locations on well-drained loamy soils. Many of the known sites were located on former beach ridges associated with Lake Algonquin, the post-glacial lake occupying the Lake Huron/Georgian Bay basin.

There are a few extremely large Early Paleo sites, such as one located close to Parkhill, Ontario, which covered as much as six hectares. It appears that these sites were formed when the same general locations were occupied for short periods of time over the course of many years. Given their placement in locations conducive to the interception of migratory mammals such as caribou, it has been suggested that they may represent communal hunting camps. There are also smaller Early Paleo camps scattered throughout the interior of southwestern Ontario, usually situated adjacent to wetlands.

The most recent research suggests that population densities were very low during the Early Paleo Period, with all of southwestern Ontario being occupied by perhaps only 100 to 200 people (Ellis and Deller 1990:54). Because this is the case, Early Paleo sites are exceedingly rare, and within the limits of London only four locations are known. Three of these sites are isolated find spots of the distinctive fluted points or channel flakes, while one site, located near Dingman Creek, represents a rare occupation area with a good deal of potential for contributing to our knowledge of this period. To date, all of the known Early Paleo sites in Middlesex are located south of the Main and South branches of the Thames River.

While the Late Paleo Period (8400-8000 B.C.) is more recent, it has been less well researched, and is consequently more poorly understood. By this time the environment of southwestern Ontario was coming to be dominated by closed coniferous forests with some minor deciduous elements. It seems that many of the large game species that had been hunted in the early part of the Paleo Period had either moved further north, or as in the case of the mastodons and mammoths, become extinct.

During the late Paleo Period people continued to cover large territories as they moved about in response to seasonal resource fluctuations. On a province wide basis Late Paleo projectile points are far more common than Early Paleo materials, suggesting a relative increase in population.

The end of the Paleo Period was heralded by numerous technological and cultural innovations that appeared throughout the Archaic Period. These innovations may be best explained in relation to the dynamic nature of the post-glacial environment and region-wide population increases.

1.3.1.2 Archaic Period

During the Early Archaic Period (8000-6000 B.C.), the jack and red pine forests that characterized the Late Paleo environment were replaced by forests dominated by white pine with some associated deciduous trees (Ellis, Kenyon and Spence 1990:68-69). One of the more notable changes in the Early Archaic Period is the appearance of side and corner-notched projectile points. Other significant innovations include the introduction of ground stone
tools such as celts and axes, suggesting the beginnings of a simple woodworking industry. The presence of these often large and not easily portable tools suggests there may have been some reduction in the degree of seasonal movement, although it is still suspected that population densities were quite low, and band territories large.

During the Middle Archaic Period (6000-2500 B.C.) the trend to more diverse toolkits continued, as the presence of netsinkers suggest that fishing was becoming an important aspect of the subsistence economy. It was also at this time that "bannerstones" were first manufactured. Bannerstones are carefully crafted ground stone devices that served as a counterbalance for "atlatls" or spear-throwers.

Another characteristic of the Middle Archaic is an increased reliance on local, often poor quality chert resources for the manufacturing of projectile points. It seems that during earlier periods, when groups occupied large territories, it was possible for them to visit a primary outcrop of high quality chert at least once during their seasonal round. However, during the Middle Archaic, groups inhabited smaller territories that often did not encompass a source of high quality raw material. In these instances lower quality materials which had been deposited by the glaciers in the local till and river gravels were utilized.

This reduction in territory size was probably the result of gradual region-wide population growth which led to the infilling of the landscape. This process resulted in a reorganization of Native subsistence practices, as more people had to rely on resources from smaller areas. During the latter part of the Middle Archaic, technological innovations such as fish weirs have been documented as well as stone tools especially designed for the preparation of wild plant foods.

It is also during the latter part of the Middle Archaic Period that long distance trade routes began to develop, spanning the northeastern part of the continent. In particular, native copper tools manufactured from a source located northwest of Lake Superior were being widely traded (Ellis, Kenyon and Spence 1990:66). By 3500 B.C. the local environment had stabilized in a near modern form (Ellis, Kenyon and Spence 1990:69).

During the Late Archaic (2500-950 B.C.) the trend towards decreased territory size and a broadening subsistence base continued. Late Archaic sites are far more numerous than either Early or Middle Archaic sites, and it seems that the local population had definitely expanded. It is during the Late Archaic that the first true cemeteries appear. Before this time individuals were interred close to the location where they died. During the Late Archaic, if an individual died while his or her group happened to be at some distance from their group cemetery, the bones would be kept until they could be placed in the cemetery. Consequently, it is not unusual to find disarticulated skeletons, or even skeletons lacking minor elements such as fingers, toes or ribs, in Late Archaic burial pits.

The appearance of cemeteries during the Late Archaic has been interpreted as a response to increased population densities and competition between local groups for access to resources. It is argued that cemeteries would have provided strong symbolic claims over a local territory and its resources. These cemeteries are often located on heights of well-drained sandy/gravel soils adjacent to major watercourses such as the Thames River.

This suggestion of increased territoriality is also consistent with the regionalized variation present in Late Archaic projectile point styles. It was during the Late Archaic that distinct local styles of projectile points appear. Also during the Late Archaic the trade networks which had been established during the Middle Archaic continued to flourish. Native copper from northern Ontario and marine shell artifacts from as far away as the Mid-Atlantic coast are frequently encountered as grave goods. Other artifacts such as polished stone pipes and banded slate gorgets also appear on Late Archaic sites. One of the more unusual and interesting of the Late Archaic artifacts is the
“birdstone”. Birdstones are small, bird-like effigies usually manufactured from green banded slate. While the function of these artifacts is presently poorly understood, they are especially common in the London area.

1.3.1.3 Woodland Period

The Early Woodland Period (950-400 B.C.) is distinguished from the Late Archaic Period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples. The first pots were very crudely constructed, thick walled, and friable. It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil (Spence, Pihl and Murphy 1990:137).

These vessels were not easily portable, and individual pots must not have sustained a long use life. There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that these poorly constructed, undecorated vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of this rather limited ceramic technology, the life-ways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic Period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have “pop-eyes” which protrude from the sides of their heads. Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic Period continue in use. However, the Early Woodland variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance.

The trade networks which were established in the Middle and Late Archaic also continued to function, although there does not appear to have been as much traffic in marine shell during the Early Woodland Period. During the last 200 years of the Early Woodland Period, projectile points manufactured from high quality raw materials from the American Midwest begin to appear on sites in the London area.

In terms of settlement and subsistence patterns, the Middle Woodland (400 B.C.-900 A.D.) provides a major point of departure from the Archaic and Early Woodland Periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish became an even more important part of the diet. This is especially true in the nearby London area, where some Middle Woodland sites have produced literally thousands of bones from spring spawning species such as walleye and sucker. In addition, Middle Woodland peoples relied much more extensively on ceramic technology. Middle Woodland vessels are often garishly decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

It is also at the beginning of the Middle Woodland Period that rich, densely occupied sites appear on the valley floor of major rivers. While the Thames River floodplain had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was repeatedly occupied over several hundred years. Because this is the case, rich deposits of artifacts often accumulated.

Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on over the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited.
This shift towards a greater degree of sedentism continues the trend witnessed from at least Middle Archaic times, and provides a prelude to the developments that follow during the Late Woodland Period.

The Late Woodland Period began with a shift in settlement and subsistence patterns involving an increasing reliance on corn horticulture (Fox 1990:185; Smith 1990; Williamson 1990:312). Corn may have been introduced into southwestern Ontario from the American Midwest as early as 600 A.D. However, it did not become a dietary staple until at least three to four hundred years later.

The first agricultural villages in southwestern Ontario date to the 10th century A.D. Unlike the riverine base camps of the Middle Woodland Period, these sites are located in the uplands, on well-drained sandy soils. Categorized as "Early Ontario Iroquoian" (900-1300 A.D.), many archaeologists believe that it is possible to trace a direct line from the Iroquoian groups which inhabited southwestern Ontario at the time of first European contact, to these early villagers.

Village sites dating between 900 and 1300 A.D., share many attributes with the historically reported Iroquoian sites, including the presence of longhouses and sometimes palisades. However, these early longhouses were actually not all that large, averaging only 12.4 m in length (Dodd et al. 1990:349; Williamson 1990:304-305). It is also quite common to find the outlines of overlapping house structures, suggesting that these villages were occupied long enough to necessitate re-building. The Jesuits reported that the Huron moved their villages once every 10-15 years, when the nearby soils had been depleted by farming and conveniently collected firewood grew scarce (Pearce 2010). It seems likely that Early Ontario Iroquoians occupied their villages for considerably longer, as they relied less heavily on corn than did later groups, and their villages were much smaller, placing less demand on nearby resources.

Judging by the presence of carbonized corn kernels and cob fragments recovered from sub-floor storage pits, agriculture was becoming a vital part of the Early Ontario Iroquoian economy. However, it had not reached the level of importance it would in the Middle and Late Ontario Iroquoian Periods. There is ample evidence to suggest that more traditional resources continued to be exploited, and comprised a large part of the subsistence economy. Seasonally occupied special purpose sites relating to deer procurement, nut collection, and fishing activities, have all been identified. While beans are known to have been cultivated later in the Late Woodland Period, they have yet to be identified on Early Ontario Iroquoian sites. There are 20 sites which have been assigned to the Early Ontario Iroquoian Period within the City of London. None of these sites are located within the limits of the Study Area.

The Middle Ontario Iroquoian Period (1300-1400 A.D.) witnessed several interesting developments in terms of settlement patterns and artifact assemblages. Changes in ceramic styles have been carefully documented, allowing the placement of sites in the first or second half of this 100-year period. Moreover, villages, which averaged approximately 0.6 hectares in extent during the Early Ontario Iroquoian Period, now consistently range between one and two hectares.

House lengths also change dramatically, more than doubling to an average of 30 m, while houses of up to 45 m have been documented. This radical increase in longhouse length has been variously interpreted. The simplest possibility is that increased house length is the result of a gradual, natural increase in population (Dodd et al. 1990:323, 350, 357; Smith 1990). However, this does not account for the sudden shift in longhouse lengths around 1300 A.D. Other possible explanations involve changes in economic and socio-political organization (Dodd et al. 1990:323).
1990:357). One suggestion is that during the Middle Ontario Iroquoian Period small villages were amalgamating to form larger communities for mutual defense (Dodd et al. 1990:357).

If this was the case, the more successful military leaders may have been able to absorb some of the smaller family groups into their households, thereby requiring longer structures. This hypothesis draws support from the fact that some sites had up to seven rows of palisades, indicating at least an occasional need for strong defensive measures. There are, however, other Middle Ontario Iroquoian villages which had no palisades present (Dodd et al. 1990). More research is required to evaluate these competing interpretations.

The lay-out of houses within villages also changes dramatically by 1300 A.D. During the Early Ontario Iroquoian Period villages were haphazardly planned at best, with houses oriented in various directions. During the Middle Ontario Iroquoian Period villages are organized into two or more discrete groups of tightly spaced, parallel aligned, longhouses.

It has been suggested that this change in village organization may indicate the initial development of the clans which were a characteristic of the historically known Iroquoian peoples (Dodd et al. 1990:358). There are three documented Middle Ontario Iroquoian sites in London, all of which are located along the western edge of the City in Byron and Oakridge.

Initially at least, the Late Ontario Iroquoian Period (1400-1650 A.D.) continues many of the trends which have been documented for the proceeding century. For instance, between 1400 and 1450 A.D. house lengths continued to grow, reaching an average length of 62 m. One longhouse excavated on a site southwest of Kitchener stretched an incredible 123 m (Lennox and Fitzgerald 1990:444-445). After 1450 A.D., house lengths begin to decrease, with houses dating between 1500-1580 A.D. averaging only 30 m in length.

Why house lengths decrease after 1450 A.D. is poorly understood, although it is believed that the even shorter houses witnessed on historic period sites can be at least partially attributed to the population reductions associated with the introduction of European diseases such as smallpox (Lennox and Fitzgerald 1990:405, 410).

Village size also continued to expand throughout the Late Ontario Iroquoian Period, with many of the larger villages showing signs of periodic expansions. The Late Middle Ontario Iroquoian Period and the first century of the Late Ontario Iroquoian Period was a time of village amalgamation. One large village situated just north of Toronto has been shown to have expanded on no fewer than five occasions. These large villages were often heavily defended with numerous rows of wooden palisades, suggesting that defence may have been one of the rationales for smaller groups banding together.

Late Ontario Iroquoian village expansion has been clearly documented in the London area. The ongoing excavations at the Lawson site, a large Late Iroquoian village located on the grounds of the Museum of Ontario Archaeology, has shown that the original village had expanded by at least twenty percent to accommodate the construction of nine additional longhouses (Anderson 2009).

The London area was densely occupied by the Late Ontario Iroquoians until approximately 1525 A.D.

The Ontario Iroquoian and Western Basin are two archaeological traditions that characterize pre-contact Indigenous communities living in the Middlesex County area of southwestern Ontario from about A.D. 500 to 1650. Peoples of the Western Basin Tradition lived throughout the southwestern-most portion of the province, from the
present-day Sarnia/Windsor area to about London. Iroquoian peoples, on the other hand, appear to have lived from the present-day Chatham area east to Toronto.

Each of these traditions are divided into distinct temporal phases (see Table 1) defined by material cultural attributes, and settlement and subsistence patterns that exhibit a shift towards larger and more permanent villages due to an increasing reliance on cultivated plants such as corn, beans, squash, sunflower, and tobacco (Dodd et al. 1990; Foreman 2011; Fox 1990; Lennox and Fitzgerald 1990; Murphy and Ferris 1990).

After 1525 A.D. communities of pre-contact Indigenous of the Late Ontario Iroquoian Period who had formerly lived throughout southwestern Ontario as far west as the Chatham area moved further east to the Hamilton area. During the late 1600s and early 1700s, the French explorers and missionaries reported a large population of Iroquoian peoples clustered around the western end of Lake Ontario. They called these people the "Neutral", because they were not involved in the ongoing wars between the Huron and the League Iroquois located in upper New York State.

It has been satisfactorily demonstrated that the Late Ontario Iroquoian communities which were located in southwestern Ontario as far west as the Chatham area were ancestral to at least some of the Neutral Nation groups (Lennox and Fitzgerald 1990; Smith 1990:283). For this reason the Late Ontario Iroquoian groups which occupied southwestern Ontario prior to the arrival of the French are often identified as "Prehistoric Neutral". They occupied a large area extending along the Grand River and throughout the Niagara Peninsula as far east as Fort Erie and Niagara Falls (Lennox and Fitzgerald 1990:448).

1.3.2 Post-Contact Indigenous Period

The post-contact Indigenous occupation of Southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking peoples, such as the Huron and closely related Petun, by the New York State Iroquois and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Schmalz 1991). The nature of their settlement size, population distribution, and material culture shifted as European settlers encroached upon their territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought” (Ferris 2009:114). First Nation peoples of Southern Ontario have left behind archaeologically significant resources throughout Southern Ontario which show continuity with past peoples, even if they have not been recorded in historical Euro-Canadian documentation. The Study Area is located in an area that first entered the Euro-Canadian historical record as part of Treaty No. 2, which:

... was made with the O[dawa], Chippew[a], Pottawatom[i] and Huro[n] May 19th, 1790, portions of which nations had established themselves on the Detroit River all of whom had been driven by the Iroquois from the northern and eastern parts of the Province, from the Detroit River easterly to Catfish Creek and south of the river La Tranche [Thames River] and Chenail Ecarte, and contains Essex County except Anderdon Township and Part of West Sandwich; Kent County except Zone Township, and Gores of Camden and Chatham; Elgin County except Bayham Township and parts of South Dorchester and Malahide. In Middlesex County, Dell[a]ware and Westminster Townships and part of North Dorchester [are included]. Morris 1943:17
1.3.3 **Historical Euro-Canadian Period**

Following the Toronto Purchase of 1787, today’s southern Ontario was divided into four political districts — Lunenburg, Mechlenburg, Nassau, and Hesse— that were all within the old Province of Quebec. These became part of the Province of Upper Canada in 1791, and renamed the Eastern, Midland, Home, and Western Districts, respectively. The Study Area was within the former Hesse District, then later the Home District, which originally included all the lands lying to the west of a line running north from Long Point on Lake Erie. Each district was further subdivided into counties and townships; the Study Area was originally part of the County of Middlesex and Westminster Township.

1.3.3.1 **Westminster Township**

In 1791, Colonel John Graves Simcoe became the first Lieutenant-Governor of the newly formed Province of Upper Canada. Simcoe was particularly concerned about the threat of American expansion northward and their ability to cross at Detroit into the area known as the Western District (DWTH 2006:32). It was believed that the best way to defend the land was to populate the area; therefore, in 1793, Simcoe ordered the lands of the Thames River basin to be surveyed for habitation. Surveying and settlement of the Middlesex County area was arranged by Colonel Thomas Talbot, who had been granted a 618,000 acre tract of land along the north shore of Lake Erie. He arranged for his settlement to be surveyed into various townships with networks of roads and concessions that were divided into 200 acre lots.

Westminster Township, in particular, was surveyed in three different segments (DWTH 2006:33-34). The first segment along the North Branch of the Talbot Road (NBTR) was surveyed according to the single front survey system by Deputy Provincial Surveyor Simon T. Z. Watson in 1809. The second segment, which included Concessions A, B, 1 and 2, was also surveyed according to the single front survey system by Deputy Provincial Surveyor Watson and Deputy Surveyor John Bostwick in 1810. The remainder of the township (Concessions 3 to 9 and the Gore Concession between the NBTR and Delaware Township) was surveyed according to the double front survey system by Colonel Mahlon Burwell and John Bostwick in 1820.

The first land patents for Westminster Township were issued as early as 1812 (Brock and Moon 1972). Settlement in the area began in the southwest corner of the township along NBTR. This was followed by later settlements along Commissioners Road, with the southeast portion of the township being settled last (Wilson and Horne 1995). By 1817, the township contained 107 houses and 428 people, and the first meeting of the Westminster Council was held. Two school houses, one grist mill and one saw mill were the only public buildings present in the township at this time (Brock and Moon 1972:566). By 1842, the population had grown to 3,376 and four grist and two saw mills were operations in the township (Smith 1846). By 1850, the population had grown to 4,525 residents, and the industries present included three grist mills, two carding machines, and a fulling mill (Brock and Moon 1972:566). The London and Port Stanley Railway line, which runs north-south through the township, was fully operational by 1856 (Brock and Moon 1972:566). Several small hamlets also developed within the township, including Byron, Lambeth, Hall Mills, Pond Mills, and Glanworth; these communities were settled over the course of the 19th century (Brock and Moon 1972:577-581). Residents were undoubtedly attracted to the fertile soils and plethora of natural resources (e.g., rivers and streams, game animals, fish, fruit trees, limestone) that the area boasted (H.R. Page and Co. 1878).
1.3.3.2     Study Area Specific Historical Context

Prior to its annexation by the City of London in 1961, the Study Area for the present project fell within Part of Lots 72 to 76, Concession East of Talbot Road (ETR), Lots 37 and 38, Concession 2, and Lot 24, Concession 3, in the former Township of Westminster, Middlesex County, Ontario. The early survey maps of Westminster Township produced by Mahlon Burwell in 1820 (Map 4) and John Bostwick in 1821 (Map 5) indicate that all of the lots within the Study Area at the time were unoccupied. Tremaine’s Map of the County of Middlesex (Map 6) indicates that by 1862, all of the lots within the Study Area had been settled. This map also depicts at least one dwelling located within the limits of the Study Area on the northwest corner of Lot 24, Concession 3, which was owned by G. Routledge. This structure, which was later acquired by James Davey, is also depicted on the 1878 map of Westminster Township contained in the Illustrated Historical Atlas of Middlesex County (Map 7), in addition to at least two additional structures within the limits of the Study Area, including: one located on the portion of Lot 38, Concession 2 in close proximity to the bend in Bostwick Road, owned by someone with the initials F. C. W.; and, one located along the western edge of Lot 38, Concession 2, to the south of Pack Road, owned by John Pincombe. It is presently unclear how long each of these individuals occupied their respective lots during the 19th century.

A topographical map of the area produced in 1919 (Map 8; Department of National Defense 1919) indicates that the structure located on the property owned by John Pincombe in 1878 was of brick construction. The structures owned by James Davey and the individual with initials F. C. W. did not appear on the topographical map, suggesting that they were removed sometime between 1878 and 1919. The topographical map also depicts three new structures, including: a frame house on the southeastern quarter of Lot 76, ETR Concession; a brick house located on the northwest quarter of Lot 24, Concession 3, to the east of Wharncliffe Road South, in close proximity to present day Exeter Road; and, a frame house on the northwest corner of Lot 24, Concession 3, to the west of Wharncliffe Road South. It is presently unclear when these structures were constructed or who would have occupied them.

1.4     Archaeological Context

1.4.1     Study Area Overview

The Study Area that is the subject of the present assessment is located within a mixed agricultural and commercial use area in the southwesterly portion of the City of London. It extends from just north of the future Bradley Avenue extension to just west of Wonderland Road, including a section of the Bradley Avenue extension to the east, and a section of Pack Road to the west. Since a property inspection was not performed as part of this Stage 1 background study, a general overview of the land uses within the limits of the Stage 1 Study Area was compiled by inspecting topographical maps (Natural Resources Canada 1999) and aerial imagery from 2014, accessible through the City of London’s CityMap tool.

In general, the land use within the Study Area is primarily devoted to agricultural purposes; the majority of the land has been cleared with only a few minor wooded and/or overgrown areas occurring to the east of Bostwick Road. At least four of the agricultural properties contain residential areas with various associated buildings (e.g., barns, sheds) located in close proximity to the concession or side roads, including: 6092 Pack Road located on the north side of Pack Road to the west of Bostwick Road; 3645 Bostwick Road located on the west side of Bostwick Road, approximately 420 south of Pack Road; 1959 Wharncliffe Road South located on the northwest side of Wharncliffe Road South and southwest of Bostwick Road; and, 17 Exeter Road located on the south side of Exeter Road and...
east of Wharncliffe Road South. These residential areas also typically contain driveways, manicured lawns, and overgrown areas.

Commercial properties also occur within the Study Area limits on the north and south sides of the intersection between Bostwick Road and Wharncliffe Road South. The area located on the north side of the intersection at 1891 Wharncliffe Road South is comprised of an office building, with a metal garage and various associated outbuildings located across the property. On the south side of the intersection are three separate commercial buildings and an associated garage located on what appears to be a paved lot with access points from both Bostwick Road and Wharncliffe Road South.

The remainder of the Study Area includes Thornicroft Drain (a tributary of Dingman Creek), which meanders primarily through the eastern portion of the Study Area, and the paved surfaces and associated shoulders and municipal drainage ditches of Pack Road, Bostwick Road, Wharncliffe Road South, and Exeter Road.

Thus, it appears that the Study Area predominantly consists of agricultural fields, with some minor wooded and/or overgrown areas, municipal ROWs, manicured lawns, and areas with no to low archaeological potential (i.e., water courses, previously disturbed areas).

1.4.2 The Natural Environment

The Study Area is situated within the “Mount Elgin Ridges” physiographic region (Chapman and Putnam 1984: 144-146).

*Between the Thames Valley and the Norfolk sand plain lies a succession of ridges and vales which are called the Mount Elgin Ridges….South of the Westminster and St. Thomas Moraines the country drains to Lake Erie by means of the tributaries of Kettle, Catfish and Otter Creeks….The two major landform components of this region provide obviously contrasting soils. The ridges are well drained while imperfect and even poor drainage characterize the hollows. The ridges are formed from clay till similar to that of the Wyoming Moraine and the Stratford plain.*

Chapman and Putnam 1984:145

The localized topography of the Study Area varies from nearly level to very gently sloping with elevations ranging from 265 to 275 m above sea level. The soils within the northern portion of the Study Area are comprised of silt loam, loam, and very fine sandy loam of the well to imperfectly drained Brant soil series. The soils within the southern portion of the Study Area are largely comprised of very fine sandy loam, fine sand, and fine sandy loam of the well-drained Wattford soil series, with a small patch of the well-drained Bennington silt loam to loam soil series occurring at the southwest corner. The bedrock deposits in the vicinity date to the Middle Devonian Period and consist of the Hamilton Group and Dundee Formations (Hewitt 1972). Selkirk chert, a moderate quality raw material, outcrops from the Dundee formation from the embouchure of the Grand River along the north shore of Lake Erie, and as far west as the Chatham area (Eley and von Bitter 1989; Fox 2009).

The Study Area lies within the Mixed-wood Plains ecozone of Ontario (The Canadian Atlas Online 2016). Although largely altered by recent human activity, this ecozone once supported a wide variety of deciduous trees, such as various species of ash, birch, chestnut, hickory, oak, and walnut, as well as a variety of birds and small to large
land mammals, such as raccoon, red fox, white tailed deer, and black bear. Smith (1850:90) confirms that the timber present in the vicinity of Westminster Township during the first half of the 19th century included oak, beech, maple and chestnut, among other varieties.

Drainage of the Study Area is provided by the Dingman Creek subwatershed, which is approximately 170 km² in size and accounts for roughly 5% of the Upper Thames River watershed system (UTRCA 2012). The closest water source is Thornicroft Drain (a tributary of Dingman Creek), which generally flows in a southerly direction through the eastern portion of the Study Area. This drain eventually empties into Dingman Creek approximately 2.2 km south of the Study Area.

1.4.3 Previous Archaeological Research

A search of the Ontario Archaeological Sites Database (OASD) indicated that there are 39 pre-contact Indigenous, two historical Euro-Canadian, and eight unknown registered archaeological sites located within a 1 km radius of the Study Area (MTCS 2016) (Table 2); 10 of these sites are located within 300 m of the Study Area, including four sites (AfHh-65, AfHh-67, AfHh-69, and AfHh-390) that are located within the limits of the present Study Area.

Table 2: Sites Recorded within 1 km Radius of Study Area

<table>
<thead>
<tr>
<th>Borden #</th>
<th>Site Name</th>
<th>Time Period</th>
<th>Site Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>AfHh-11</td>
<td>Dale</td>
<td>Woodland</td>
<td>Hamlet</td>
</tr>
<tr>
<td>AfHh-24</td>
<td>Pincombe 2</td>
<td>Woodland</td>
<td>Camp/campsite; hamlet</td>
</tr>
<tr>
<td>AfHh-25</td>
<td></td>
<td>Other</td>
<td>Camp/campsite</td>
</tr>
<tr>
<td>AfHh-26</td>
<td>Pincombe 3</td>
<td>Paleo-Indian, Late; Post-Contact</td>
<td>Camp/campsite</td>
</tr>
<tr>
<td>AfHh-27</td>
<td>Pincombe 1</td>
<td>Woodland, Late</td>
<td>Camp/campsite; village</td>
</tr>
<tr>
<td>AfHh-30</td>
<td>Pincombe 4</td>
<td>Other</td>
<td>Camp/campsite</td>
</tr>
<tr>
<td>AfHh-31</td>
<td></td>
<td>Woodland, Early</td>
<td>Camp/campsite</td>
</tr>
<tr>
<td>AfHh-32</td>
<td></td>
<td>Woodland</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-33</td>
<td></td>
<td>Woodland</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-34</td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>AfHh-43</td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>AfHh-65</td>
<td>Cassandra</td>
<td>Woodland, Late</td>
<td>Hamlet; midden; village</td>
</tr>
<tr>
<td>AfHh-66</td>
<td>Matthew william</td>
<td>Woodland, late</td>
<td>Hamlet</td>
</tr>
<tr>
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<td>Little willow</td>
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</tr>
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<td>AfHh-68</td>
<td>Missing</td>
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<td>Other: camp/campsite; workshop</td>
</tr>
<tr>
<td>AfHh-69</td>
<td>Marna</td>
<td>Woodland, Late</td>
<td>Hamlet</td>
</tr>
<tr>
<td>AfHh-70</td>
<td>Grant</td>
<td>Woodland, Late</td>
<td>Other: camp/campsite; hamlet; workshop</td>
</tr>
<tr>
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<td>Pincombe 5</td>
<td>Woodland, Late</td>
<td>Other: camp/campsite</td>
</tr>
<tr>
<td>AfHh-72</td>
<td>Pincombe 6</td>
<td>Woodland, Late</td>
<td>Cabin; hamlet</td>
</tr>
<tr>
<td>Borden #</td>
<td>Site Name</td>
<td>Time Period</td>
<td>Site Type</td>
</tr>
<tr>
<td>---------</td>
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<td>-------------------------------</td>
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<td>Hamlet</td>
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<tr>
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<td>Corvette</td>
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<td></td>
</tr>
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<td>Cabin; midden</td>
</tr>
<tr>
<td>AfHh-217</td>
<td>Alice</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>AfHh-227</td>
<td>Field of Dreams</td>
<td>Archaic, Late; Archaic, Late</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-240</td>
<td>Winder southdale 1</td>
<td>Pre-contact</td>
<td>Camp/campsite</td>
</tr>
<tr>
<td>AfHh-252</td>
<td>Talbot 1</td>
<td>Post-Contact</td>
<td>Homestead</td>
</tr>
<tr>
<td>AfHh-253</td>
<td>Talbot 2</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-255</td>
<td>Talbot 4</td>
<td>Woodland, Late</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-256</td>
<td>Talbot 5</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-257</td>
<td>Talbot 6</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-261</td>
<td>Talbot 10</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-262</td>
<td>Talbot 11</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-263</td>
<td>Talbot 12</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-264</td>
<td>Talbot 13</td>
<td>Post-Contact</td>
<td>Homestead</td>
</tr>
<tr>
<td>AfHh-265</td>
<td>Talbot 14</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-266</td>
<td>Talbot 15</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-267</td>
<td>Talbot 16</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-268</td>
<td>Talbot 17</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-269</td>
<td>Talbot 18</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-270</td>
<td>Talbot 19</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-271</td>
<td>Talbot 20</td>
<td>Woodland, Late</td>
<td>Scatter</td>
</tr>
<tr>
<td>AfHh-272</td>
<td>Talbot 21</td>
<td>Woodland, Late</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-274</td>
<td>Talbot 23</td>
<td>Archaic, Late</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-278</td>
<td>Talbot 24</td>
<td>Pre-Contact</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-286</td>
<td>Worldwide pitch'n putt</td>
<td>Pre-contact</td>
<td>Findspot</td>
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<tr>
<td>AfHh-328</td>
<td>-</td>
<td>Archaic, Early</td>
<td>Findspot</td>
</tr>
<tr>
<td>AfHh-390</td>
<td>Bear</td>
<td>N/A</td>
<td></td>
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<td>Rufus</td>
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<td>Findspot</td>
</tr>
<tr>
<td>AfHh-418</td>
<td>Pincomb</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Based on information gathered from Site Record Forms and Site Update Forms accessed through the OASD, it appears that there have been several previous archaeological assessments that have occurred within the limits of the present Study Area.
In 1981, James Keron performed a survey that included the ploughed field portion of Loc 76, Concession East of Talbot Road at the northwest corner of Bostwick Road and Pack Road. During this survey, he relocated the Dale Site (AfHh-11), recovering several pottery sherds and a small amount of lithic debitage. This site is thought to extend into the woods north of it and was interpreted as a small Neutral Iroquoian hamlet (Keron 1983).

In 1983, James Keron performed an archaeological survey of accessible areas within 100 m of Thornicroft Drain, which flows through the eastern portion of the present Study Area (Keron 1984). This survey resulted in the identification of six pre-contact Indigenous archaeological sites (AfHh-65 to AfHh-70), primarily dating to the Late Woodland Period; three of these sites, Cassandra (AfHh-65), Little Willow (AfHh-67), and Marna (AfHh-69), are located within the limits of the present Study Area. The archaeological survey of the Cassandra site (AfHh-65) produced a combination of lithic artifacts, fire-cracked rocks, and pottery fragments from an area measuring approximately 50 m by 100 m. A total of 116 artifacts were collected from the site, including: one Middleport Triangular projectile point fragment, four bifaces, three cores, seven utilized flakes, 85 pieces of lithic debitage, one unfinished celts, one chisel, 13 pottery fragments, and one pipe fragment. The site was interpreted as a hamlet or small village dating to the Middle to Late Ontario Iroquoian Late Woodland Period (ca. 1300 to 1500 A.D.), and was concluded to have further cultural heritage value or interest. The archaeological survey of the Little Willow site (AfHh-67) produced two pieces of lithic debitage, one core, and one end scraper. The site was interpreted as a possible work station associated with one of the local Iroquoian hamlets and was concluded to have further cultural heritage value or interest. The archaeological survey of the Marna site (AfHh-69) produced a scatter of lithic artifacts and fire-cracked rocks from an area that measured approximately 25 m by 40 m. A total of 37 artifacts were collected from the site, including: two Nanticoke Notched projectile points, one biface, four cores, two utilized flakes, 26 pieces of lithic debitage, one celts, and one pipe stem. The site was interpreted as a Late Woodland Period hamlet (ca. 1400 to 1500 A.D.), and was concluded to have further cultural heritage value or interest.

In 1998, James Keron performed an additional archaeological assessment of the Cassandra site (AfHh-69), which involved a controlled surface collection at 5 m intervals (Personal communication, June 6, 2016). This assessment resulted in the identification of three separate midden areas, producing a combined assemblage of seven bifacial artifacts (two Nanticoke projectile points, two projectile point tips, one triangular projectile point preform, one stemmed or corner notched projectile point, and one biface), one scraper, three wedges, seven cores, 152 pieces of lithic debitage, nine pottery fragments, and six fragments of bone and shell. The site continued to be interpreted as a hamlet or small village dating to the Middle to Late Ontario Iroquoian Late Woodland Period (ca. 1300 to 1500 A.D.) with further cultural heritage value or interest.

A third assessment involved a pedestrian survey at 5 m intervals of a portion of Lot 74, Concession ETR performed by Paul James Clifford O'Neal in 2002, which resulted in the identification of a findspot registered as the Bear site (AfHh-390). Aside from a note that the site has no further cultural heritage value or interest, it was not possible to provide any additional information about this site, or the assessment that led to its discovery, since several of the data fields for this site were left blank in the OASD. This portion of Lot 74, Concession ETR was also surveyed in 2015 by Bluestone Research Inc. This survey did not recover any archaeological material (Bluestone 2015).

In 2002, Paul James Clifford O'Neal also performed a Stage 1-2 assessment of a portion of Lot 73, Concession ETR for the construction of the Forest City Community Church. This assessment resulted in the recovery of a single Late Archaic projectile point, registered as the Rufus Site (AfHh-391) (O'Neal 2002).
In 2008, Archaeologix Inc. conducted a Stage 1-2 assessment on a large portion of Lot 73, Concession ETR adjacent to the Forest City Community Church Property to the south. This assessment consisted of pedestrian survey at 5 m intervals and did not result in the recovery of any archaeological material. (Archaeologix 2008).

Finally, Golder Associates Ltd. conducted a Stage 1-2 assessment of a portion of Lot 72, Concession ETR consisting of pedestrian survey at 5 m intervals and test pit survey at 5 m intervals. This assessment resulted in the discovery of one site, Location 1 (AfHh-397), an historical Euro-Canadian site dating to the early- to late-19th Century. This site was recommended for Stage 3 assessment (Golder 2013). Bluestone Research Inc. conducted Stage 3 and 4 assessments for Location 1 (AfHh-397) in 2015, recovering several thousand mid- to late-19th Century Euro-Canadian artifacts. As the site no longer exists in the ground, there are no further archaeological concerns for the site (Bluestone 2016a and 2016b).

To the best of our knowledge, no additional archaeological assessments have been conducted within 50 m of the Study Area.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the Freedom of Information Act. The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. For this reason, maps and data that provide information on archaeological site locations are provided as supplementary documentation and do not form part of this public report.

The Ministry of Tourism, Culture and Sport (MTCS) will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

2.0 FIELD METHODS

Publicly accessible portions of the Study Area, such as municipal right of ways and parking lots, were visually inspected as part of the Stage 1 assessment on October 4, 2017 and December 13, 2018 under archaeological consulting license P457, issued to Lafe Meicenheimer by the MTCS (PIF# P457-0025-2018).

The inspection was undertaken to gain first-hand knowledge of the Study Area, to determine if there were any areas of disturbance that would affect archaeological potential, and to determine what survey strategies would be appropriate for a Stage 2 assessment, should it be required. Rebecca Parry (R1013), delegated licensed field supervisor for Golder, assumed responsibility of undertaking the archaeological fieldwork within the Study Area as per Section 12 of the MTCS 2013 Terms and Conditions for Archaeological Licences, issued in accordance with clause 48(4)(d) of the Ontario Heritage Act (Government of Ontario 1990b).

These areas were systematically inspected to confirm if features of archaeological potential were present and if there were any areas of deep and extensive disturbance, which would have removed archaeological potential. As stated in Section 1.4.2 of the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011:22), a property may only be exempt from Stage 2 assessment once deep and extensive ground disturbance has been confirmed through a property inspection.
The weather on the days of the inspection was overcast to mostly sunny, permitting good visibility of land features and contributing to no reduction in the chance of observing features of archaeological potential. Field notes and photographs of the property were taken during the inspection. The photograph locations and directions can be seen on Map 9.

3.0 ANALYSIS AND CONCLUSIONS

3.1 Assessing Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a property. In accordance with the MTCS’s 2011 Standards and Guidelines for Consultant Archaeologists the following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites;
- Water sources:
  - Primary water sources (lakes, rivers, streams, creeks);
  - Secondary water sources (intermittent streams and creeks; springs; marshes; swamps);
  - Features indicating past water sources (e.g. glacial lake shorelines indicated by the presence of raised gravel, sand, or beach ridges; relic river or stream channels indicated by clear dip or swale in the topography; shorelines of drained lakes or marshes; and cobble beaches);
  - Accessible or inaccessible shoreline (e.g. high bluffs, swamps or marsh fields by the edge of a lake; sandbars stretching into marsh);
- Elevated topography (eskers, drumlins, large knolls, plateaux);
- 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 (there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings);
- Resource areas including:
  - Food or medicinal plants;
  - Scarce raw minerals (e.g. quartz, copper, ochre or outcrops of chert);
  - Early Euro-Canadian industry (fur trade, mining, logging);
- Areas of Euro-Canadian settlement; and
- Early historical transportation routes.

In recommending a Stage 2 property survey based on determining archaeological potential for a Study Area, the MTCS stipulates the following:
No areas within 300 m of a previously identified site; water sources; areas of early Euro-Canadian Settlement; or locations identified through local knowledge or informants can be recommended for exemption from further assessment;

- No areas within 100 m of early transportation routes can be recommended for exemption from further assessment; and

- No areas within the property containing an elevated topography; pockets of well-drained sandy soil; distinctive land formations; or resource areas can be recommended for exemption from further assessment.

3.1.1 Potential for Pre-Contact Indigenous and Euro-Canadian Archaeological Resources

Based on the criteria outlined in Section 3.1 above, the Study Area was determined to have archaeological potential for both pre-contact Indigenous and historical Euro-Canadian sites. This determination is based on the identification of 49 previously registered archaeological sites within a 1 km radius of the Study Area, including two Late Woodland Period sites (AfHh-65 and AfHh-69), one pre-contact Indigenous work station (AfHh-67), and one indeterminate site (AfHh-391) located within the Study Area itself, the location of the Thornicroft Drain (a tributary of Dingman Creek) flowing through the eastern portion of the Study Area, the presence of well-drained soils across the extent of the Study Area, and the fact that the Study Area is located in a portion of Westminster Township with a history of Euro-Canadian occupation dating back to as early as the 1830s. In addition, historical research has suggested that all of the historical lots on which the Study Area is located were consistently occupied from at least the mid- to late 19th century. This conclusion is consistent with the City of London Archaeological Master Plan, which indicates that portions of the Study Area exhibit archaeological potential (Wilson and Horne 1995:89-90).

3.1.2 Features Indicating the Removal of Archaeological Potential

As stated in Section 1.3.2 of the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011:18), archaeological potential can be determined to be removed either entirely or in part when background research and property inspection confirm extensive and deep land alterations that have severely damaged the integrity of any archaeological resources that may be present. Types of disturbance that remove archaeological potential may include: quarrying; major landscaping involving grading below topsoil; building footprints; and sewage and infrastructure development.

As discussed in Section 1.4.1 above, aerial imagery of the Study Area from 2014 illustrated the presence of several roads and associated gravel shoulders and municipal drainage ditches traversing the Study Area. The construction of these features, as well as any other built structures (e.g., houses, outbuildings, commercial buildings), would have likely resulted in extensive land disturbance that would have removed any archaeological potential associated with these portions of the Study Area; however, the full extent of this disturbance is not known at the present time. As a result, any previously disturbed areas identified within the areas to be impacted by the proposed project will require documentation, but will not require Stage 2 archaeological assessment as they possess low to no archaeological potential.
3.2 Conclusions

Golder applied archaeological potential criteria commonly used by the MTCS to determine the presence of archaeological potential within the Study Area. The Study Area was determined to exhibit potential for pre-contact Indigenous archaeological sites due to the presence of 29 pre-contact Indigenous archaeological sites within a 1 km radius, including two Late Woodland Iroquoian sites and one pre-contact Indigenous work station within the limits of the Study Area, the well-drained soils identified across the extent of the Study Area, and Thornicroft Drain (a tributary of Dingman Creek) flowing through the eastern portion of the Study Area. The Study Area was also determined to exhibit potential for Euro-Canadian archaeological sites due to documentation indicating occupation in the vicinity from the early 19th Century onwards, as well as the presence of eight historical Euro-Canadian archaeological sites identified within a 1 km radius.

Several portions of the Study Area were found to have been previously subject to archaeological assessments. Furthermore, areas of previous disturbance were identified, including portions of Bostwick Road, Pack Road, Wharncliffe Road, and Exeter Road, as well as several commercial areas located at the intersection of Wharncliffe Road and Bostwick Road/Exeter Road and a commercial area at the west end of the proposed Bradley Avenue extension (see Map 9; Images 1-7).

4.0 RECOMMENDATIONS

Based on the results of the background research, the portions of the Study Area not previously subject to archaeological assessment or disturbance were concluded to possess archaeological potential and are therefore recommended for Stage 2 archaeological assessment (Map 9). Once a design plan for the proposed realignment of Bostwick Road, including its intersection with Bradley Avenue, has been completed, Stage 2 archaeological assessment will be required within the project limits prior to construction. This will include all sections within the proposed new right-of-way (ROW), as well as any staging areas or storage areas required for construction. The following methods are recommended for the Stage 2 property survey:

- A Stage 2 archaeological assessment will be conducted by a licenced archaeologist using the pedestrian survey method at 5 m intervals in all portions of the Study Area that will be impacted by the proposed project and where ploughing is possible (e.g., agricultural fields). This assessment will occur when the agricultural fields have been recently ploughed, weathered, and exhibit at least 80% surface visibility;

- A Stage 2 archaeological assessment will be conducted by a licenced archaeologist using the test pit survey method at 5 m intervals in all portions of the Study Area that will be impacted by the proposed project and where ploughing is not possible (e.g., wood lots, overgrown areas, manicured lawns);

- Sites AfHh-65, AfHh-67, and AfHh-69 are currently located approximately 250 m east-southeast, 400 m southeast, and 670 m southeast, respectively, of the intersection between Bostwick Road and Pack Road (see Tile 1 of the Supplementary Documentation). It is recommended that these sites be relocated and documented if they are within the limits of the proposed Bostwick Road realignment, including its intersection with Bradley Avenue, or within any area required for the proposed project.

- Permanently wet areas, areas of steep slope (>20°), and areas of previous disturbance (e.g., road ROWs, buildings) identified within all portions of the Study Area that will be impacted by the proposed project are to
be mapped and photo-documented, but are not recommended for Stage 2 archaeological assessment as they possess low to no archaeological potential; and,

- The Stage 2 archaeological assessment will follow the requirements set out in the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

The Ontario Ministry of Tourism, Culture and Sport is asked to review the results and recommendations presented herein, accept this report into the Provincial Register of archaeological reports and issue a standard letter of compliance with the Ministry’s 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licencing.

### 5.0 ADVICE ON COMPLIANCE WITH 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*, R.S.O. 1990, c 0.18 (Government of Ontario 1990b). 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 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 regards to alterations to archaeological sites by the proposed development.

It is an offence under Section 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alterations to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological reports referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990b).

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990b).

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence (Government of Ontario 1990b).
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Department of National Defense


Dodd, Christine F., Dana R. Poulton, Paul A. Lennox, David G. Smith and Gary A. Warrick


Eley, Betty E. and Peter H. von Bitter


Ellis, Chris J. and D. Brian Deller


Ellis, Chris J., Ian T. Kenyon and Michael W. Spence

Ellis, Chris J. and Neal Ferris (editors)


Ferris, Neal


Foreman, Lindsay Judith


Fox, William A.


Golder Associates Ltd.


Government of Ontario


Hewitt, D.F.


Keron, James


Lennox, Paul A. and William R. Fitzgerald


Ministry of Tourism, Culture and Sport

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7.0 IMAGES

Image 1: Previously disturbed area; Bostwick Road; facing southeast, October 4, 2017.

Image 2: Previously disturbed area; Bostwick Road; facing southeast, October 4, 2017.
Image 3: Previously disturbed area; Pack Road; facing west, October 4, 2017.

Image 5: Previously disturbed area; Bostwick Road and Wharncliffe Road, commercial area; facing west, October 4, 2017.
Image 6: Previously disturbed area; Bostwick Road and Wharncliffe Road, commercial area; facing west, December 13, 2018.

Image 7: Previously disturbed area; Proposed Bradley Avenue extension, commercial area; facing northeast, October 4, 2017.
8.0 MAPS

All maps follow on the succeeding pages.
LEGEND

APPROXIMATE LOCATION OF STUDY CORRIDOR

REFERENCE

BURWELL MAHLON. 1820. PART OF WESTMINSTER. MAP B11. SURVEY RECORD NUMBER 2317. ARCHIVES OF ONTARIO, TORONTO.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.
ALL LOCATIONS ARE APPROXIMATE.
LEGEND

- APPROXIMATE LOCATION OF STUDY CORRIDOR

REFERENCE

BOSTWICK JOHN, 1821, WESTMINSTER DISTRICT OF LONDON. MAP B12. SURVEY RECORD 2319. ARCHIVES OF ONTARIO, TORONTO

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT. ALL LOCATIONS ARE APPROXIMATE.
LEGEND

APPROXIMATE LOCATION OF STUDY CORRIDOR

REFERENCE

TREMAINE GEORGE R., 1862. TREMAINE’S MAP OF THE COUNTY OF MIDDLESEX. GEORGE C. TREMAINE., TORONTO

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT. ALL LOCATIONS ARE APPROXIMATE.
LEGEND

- APPROXIMATE LOCATION OF STUDY CORRIDOR

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LEGEND

APPROXIMATE LOCATION OF STUDY CORRIDOR

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NOTES

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APPROXIMATE LOCATION OF STUDY CORRIDOR

PHOTOGRAPH LOCATION, VIEWING DIRECTION, AND PLATE NUMBER

AREA RECOMMENDED FOR STAGE 2 ARCHAEOLOGICAL ASSESSMENT

AREA PREVIOUSLY ASSESSED; NO FURTHER WORK RECOMMENDED

PREVIOUSLY DISTURBED; NO FURTHER WORK RECOMMENDED

REFERENCE


NOTES

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ALL LOCATIONS ARE APPROXIMATE ONLY.

STAGE 1 ARCHAEOLOGICAL ASSESSMENT, EA STUDY OF BOSTICK ROAD, INCLUDING BRADLEY AVENUE INTERSECTION, LOTS 72 TO 76, CONCESSION E, LOTS 37 AND 38, CONCESSION 2, AND LOT 29, CONCESSION 3, FORMERLY TOWNSHIP OF WESTMINSTER, NOW CITY OF LONDON, MIDDLESEX COUNTY, ONTARIO.

AREA RECOMMENDED FOR STAGE 2 ARCHAEOLOGICAL ASSESSMENT

PROJECT #: 164174
DATE: 03/2020 TO 01/2022
SCALE: 1:2,500

MAP 9
golden Associates
9.0 IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Golder has prepared this report in a manner consistent with the level of care and skill ordinary exercised by members of the archaeological profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

This report has been prepared for the specific site, design objective, developments and purpose described to Golder by Mr. Henry Huotari of Parsons. The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

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Special risks occur whenever archaeological investigations are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain archaeological resources. The sampling strategies incorporated in this study comply with those identified in the Ministry of Tourism and Culture’s Standards and Guidelines for Consultants Archaeologists (Government of Ontario 2011).
10.0 CLOSURE

GOLDER ASSOCIATES LTD.

Michael Teal, M.A.
Project Archaeologist

Carla Parslow, Ph.D.
Associate, Senior Archaeologist

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