Original Report on Archaeological Assessment (Stages 1 & 2) Northgate Land Corp. & Erbsville Kartway Lands Conservation Drive, Part of Lot 28, German Company Tract Geographic Township of Waterloo, City of Waterloo, Regional Municipality of Waterloo, Ontario

submitted to

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Executive Summary

As part of the development approval process a Stage 1 and 2 archaeological assessment was conducted as part of the presubmission process for a future 55.8 hectare housing development identified as Northgate Land Corp. and Erbsville Kartway Lands, on Conservation Drive. The property is located on Part of Lot 28, German Company Tract, in the Geographic Township of Waterloo, City of Waterloo, Regional Municipality of Waterloo, Ontario.

Stage 1 background research determined that most of the subject property has high potential for the recovery of both Aboriginal and Euro-Canadian archaeological resources. The study area is comprised of agricultural field surrounding forest and marshland, and there is a manicured lawn with a go-kart track and residential home. Much of this land is well-drained and suitable for human habitation. Two sources of water, Beaver Creek and Laurel Creek, transect the subject property. These creeks are surrounded by marsh, a secondary water source and resource extraction area. The subject property is located in close proximity to historically significant transportation routes, specifically Conservation Drive to the north and Beaver Creek Road to the east. Historic atlas maps indicate the property was 300 metres east of the historic limits of the settlement of Erbsville. A Lutheran church dating to 1852 is located 500 metres to the northwest of the subject property. Although no sites have been observed within the study area, seven sites have been recorded on nearby lands, two of which are located within 250 metres of the subject property. The Regional Municipality of Waterloo's Archaeological Facilities Master Plan also indicates that the land within this development has high archaeological potential.

Fifty-five percent of the study area is actively cultivated agricultural field. This portion of the study area was assessed using the Stage 2 pedestrian survey method. Ten percent of the study area is manicured lawn with a fenced cart racing track, a picnic area, a miniature golf course, a miniature race track, and an existing house. This portion of the property could not be ploughed because of potential damage to existing landscaping and infrastructure and because a plough could not access the lot, therefore Stage 2 assessment was conducted using the test pit survey method.

The grassed area to the south of the go-kart track was test pitted at a five-metre interval, and test pits showed no signs of disturbance. The picnic area and lawn surrounding the residential home were begun at a five-metre interval, however, test pits determined that the soil in these sections had been subject to extensive disturbance and test pits were widened to a ten-metre interval to confirm disturbance was present throughout the picnic area and house lawn.

Within the manicured lawn area, a number of disturbances were noted, including a paved/gravel access driveway and parking lot, a miniature golf course , a miniature cart track, a paved go-kart track with bridges and viewing stands. In addition, there is a shed and a concession stand to the south of the track. A residential home, with a shed, a gravel driveway, and a paved driveway is located at the north end of the manicured lawn area.

Throughout the go-kart track area there was a great deal of disturbance visible on the lawn surrounding the paved tracks, including subsoil visible on the surface, and patches of asphalt and gravel visible in the grass. Visual inspection of the go-kart track indicated that soil in this area was likely disturbed during construction of the track. Discretionary test pits placed in key locations throughout the track area confirmed this disturbance.

Permanently wet marshland surrounding Beaver Creek and Laurel Creek accounts for ten percent of the subject property. These areas were not recommended for Stage 2 assessment due to low archaeological potential.

Woodlot surrounding portions of Beaver Creek account for twenty-five percent of the subject property and still retain archaeological potential. The woodlot was not subject to Stage 2 assessment as it located within a development setback area. The development setback area has been formally prohibited from development and should be exempt from Stage 2 assessment. As per Section 7.8.1 Standard 1e(i, ii, iii, iv, v) of the *Standards and Guidelines for Consultant Archaeologists* supplementary documents are required for areas formally prohibited from development and exempt from Stage 2 assessment, but which have been identified through Stage 1assessment as having archaeological potential. As appropriate supporting documentation has not been received from the proponent and the approval authority as of the writing of this report, a Stage 2 assessment is recommended for the woodlot. The woodlot cannot be accessed by plough, and therefore meets the condition of terrain where ploughing is not possible or viable, as per Section 2.1.2 Standard 1. Stage 2 assessment through test pit survey at a 5 metre interval is required.

Six archaeological sites were identified during the Stage 1 and 2 assessment, including four Euro-Canadian findspots, one Euro-Canadian domestic debris artifact scatter and one Aboriginal findspot. The cultural heritage value or interest of all six of these sites has been sufficiently assessed at Stage 2 and, therefore, Stage 3 is not recommended at any of these sites. Based on these results and the Ministry of Tourism, Culture and Sport *Standards and Guidelines for Consultant Archaeologist,* it is recommended that no further archaeological assessment of the property is required.

Every reasonable effort was made to define all locations with archaeological resources on the property. However, if deeply buried archaeological material is found during construction, the Ontario Ministry of Tourism, Culture and Sport and Mayer Archaeological Consultants (519-637-6200) should be notified immediately.

The *Cemeteries Act,* R.S.O. 1990c.C.4 and the *Funeral, Burial and Cremation Services Act,* 2002.S.O.2002.c33 (when proclaimed in force) require that any person discovering human remains must notify the appropriate municipal police, the local coroner, and the Registrar of Cemeteries and the Ministry of Consumer Services.

This archaeological assessment was conducted in order to fulfill a standard condition of development approval. Subject to acceptance of the results and approval of the recommendations, the Ontario Ministry of Tourism, Culture and Sport is requested to deem this report compliant with ministry requirements for archaeological fieldwork and reporting and to issue a letter accepting this report into the Ontario Public Register of Archaeological Reports.

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- ***David W. Aston, MSc., MCIP, RPP,*** MHBC Planning, Urban Design & Landscape Architecture
- ***Robert von Bitter***, Archaeological Data Co-ordinator, Ontario Ministry of Tourism, Culture and Sport

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Project Context

Development Context

The *Planning Act, R.S.O. 1990*, establishes that the protection of features of archaeological interest is a matter of provincial concern. Mayer Archaeological Consultants was contracted by , MHBC Planning, Urban Design & Landscape Architecture to conduct an archaeological resource assessment. This archaeological assessment includes a Stage 1 background study and a Stage 2 property assessment. This assessment was carried out as part of the presubmission process for a future 55.8 hectare housing development identified as Northgate Land Corp. and Erbsville Kartway Lands, on Conservation Drive. The property is located on Part of Lot 28, German Company Tract, in the Geographic Township of Waterloo, City of Waterloo, Regional Municipality of Waterloo, Ontario (Map 1).

The Grand River Conservation Authority has indicated that wetlands and woodlots surrounding two watercourses on the property and a 30 metre buffer surrounding these areas cannot be developed (see Maps 5 & 6); however the entire subject property was subject to archaeological assessment including both the developable and non-developable lands.

The Regional Municipality of Waterloo maintains an Archaeological Facilities Master Plan to be used as part of their development review process (Regional Municipality of Waterloo, 1989). Where land development applications are submitted for properties that are adjacent to, or on, known archaeological sites or where any portion of the subject lands are located within an area of archaeological potential, as identified in the Archaeological Facilities Master Plan, an archaeological resource assessment must be undertaken to determine an appropriate method to protect and manage the resource. The land within this severance application was identified as having archaeological potential and an archaeological resource assessment was required as part of this development (R.M. of Waterloo, 1989: Figure 15).

The objective of a Stage 1 background study is to provide information about the subject property's geography, history, previous archaeological fieldwork and current land condition. A Stage 1 study evaluates the property's archaeological potential in order to recommend appropriate strategies for the Stage 2 survey.

The objective of a Stage 2 property assessment is to document all archaeological resources present on the property and to make a determination about whether these resources, if present, have cultural heritage value or interest. Archaeological resources consist of artifacts (Aboriginal stone tools, pottery and subsistence remains as well as Euro-Canadian objects), subsurface settlement patterns and cultural features (post moulds, trash pits, privies, and wells), and sites (temporary camps and special purpose activity areas, plus more permanent settlements such as villages, homesteads, grist mills and industrial structures). If any archaeological resources are present with cultural heritage value or interest, a Stage 2 survey will determine

whether these resources require further assessment and, if necessary, recommend appropriate Stage 3 strategies for identified archaeological sites.

The assessment was conducted under the project management of Kristy O'Neal, under Professional License P066. The fieldwork was completed under the direction of Kristy O'Neal. The Ontario Ministry of Tourism Culture and Sport assigned project information number P066-0241-2015 to this project on May 19th, 2015. The licensee of Mayer Archaeological Consultants received permission from David W. Aston of MHBC Planning, Urban Design & Landscape Architects to access the property and to conduct all required archaeological fieldwork activities for the Stage 1 and 2 property assessment. The property was accessed on November 30th, and December 3rd, 4th, 7th, 8th, 9th, 10th and 11th, 2015.

All fieldwork and reporting was completed using the 2011 Ontario Ministry of Tourism, Culture and Sport *Standards and Guidelines for Consultant Archaeologists.* This report documents the research, the field methods and results, and the conclusions and recommendations based on the Stage 1 and 2 archaeological assessment. All documents, records, and artifacts recovered will be curated at the offices of Mayer Archaeological Consultants, in accordance with subsection 66(1) of the Heritage Act.

Historical Context

Background Research

Stage 1 background research was conducted in order to determine the potential for finding and identifying archaeological resources including sites within the current study area and to determine the necessity of conducting a Stage 2 survey. This is done by reviewing geographic, archaeological and historical data for the property and the surrounding area. The background research was conducted in order to:

- amass all of the readily available information on any previous archaeological surveys in the area;
- determine the locations of any registered and unregistered sites within and around the study area; and
- develop an historical framework for assigning levels of potential significance to any new sites discovered during fieldwork.

A Cultural Chronology for Southwestern Ontario

Over their thousands of years of occupation in the general region, Aboriginal people have left behind, to a greater or lesser degree, physical evidence of their lifeway activities and settlements at many locations. Based upon a published synthesis of Aboriginal cultural occupations (Wright 1968), Table 1 is a general outline of the cultural history of southwestern Ontario that is applicable to the study area. Ellis and Ferris (1990) provide greater detail of the distinctive characteristics of each time period and cultural group.

It is likely that Ontario was occupied soon after the retreat of the Ice Age glaciers. The earliest known human occupation in the area was during the Paleo-Indian period (*circa* 9,000 to

7500 B.C.) wherein small groups of nomadic peoples hunted big game such as caribou in a cool sub-arctic climate. Sites are typically found near glacial features such as the shorelines of glacial lakes or kettle ponds. These people were few in number and their small, temporary campsites are relatively rare. Paleo-Indian sites are recognized by the presence of distinctive artifacts such as fluted projectile points, beaked scrapers and gravers and by the preference for light coloured cherts, such as Collingwood chert. The Paleo-Indian Period is divided into two sub-periods, Early Paleo-Indian and Late Paleo-Indian.

People during the Archaic period (*circa* 7800 to 500 B.C.) were still primarily nomadic hunters but they adapted to a more temperate climate. The Archaic period is characterized by the appearance of ground stone tools, notched or stemmed projectile points. The Archaic Period is divided into three sub-periods, Early, Middle and Late Archaic. During the Archaic Period, groups began to establish territorial settlements and introduce burial ceremonialism. There is a marked increase in the number and size of sites, especially during the Late Archaic period.

The Woodland period is distinguished by the introduction of pottery vessels for storage and cooking. Sites of the Woodland period (*circa* 1000 B.C. to A.D. 1650) are usually the most numerous because the population levels in southwestern Ontario had significantly increased. The Woodland Period is also marked by the establishment of complex long distance trading networks. The Woodland Period is divided into three sub-periods, Early, Middle and Late Woodland.

During the Late Woodland Period, there is increasing sedentarism and the establishment of horticulture, a reliance on tribal warfare, and the introduction of semi-permanent villages with large protective palisades. The Late Woodland period also envelops the emergence of Iroquoian tribes and confederacies.

The historic period (A.D. 1650 to 1900) begins with the arrival of Euro-Canadian groups. While North America had been visited by Europeans on an increasing scale since the end of the 15th century, it was not until the voyages of Jacques Cartier in the 1530s that Europeans visited Ontario Iroquoians in their home territories. Sites of this period document European exploration, trade, and the displacement and devastation of native groups caused by warfare and infectious disease. The most common sites of this period include Euro-Canadian homesteads, industries, churches, schools and cemeteries.

Historic Waterloo County was named for the Battle of Waterloo (Carter, 1984b). The first settlers were Joseph Schoerg and Samuel Betzner with bought land in the 1800s (Mika & Mika, 1983). Its county seat was Berlin (now Kitchener).

Waterloo Township was once one of the largest townships in southwestern Ontario. The township was named to commemorate the British victory over Napoleon at Waterloo (Mika & Carter, 1984b). It was also one of the earliest settled townships. In 1798 Joseph Brant sold the land to Richard Beasley, James Wilson and Jean Baptiste Rosseaux, who by 1800 were selling land to German immigrants (Mika & Mika, 1983). The township was first surveyed in 1806 by Augustus Jones, and in order to not interfere with previously established settlers, the new lots were laid out in an irregular manner (Moyer, 1971).

The first substantial settlement within Waterloo Township was the city of Waterloo, founded by Abraham Erb from Pennsylvania, who built a sawmill there in 1806 (Mika & Mika, 1983). Most of the town's early settlers were Mennonites of German descent. By 1851, Waterloo only had a population of 250, but the establishment of stagecoach lines made transportation easier and brought new settlers to the area, and by 1876 Waterloo had a population of over 2000 (H. Parsell & Co., 1881).

Table 1: General Cultural Chronology for Southwestern Ontario

PERIOD	SUBDIVISION I	SUBDIVISION II	YEARS BEFORE PRESENT	COMMENTS
PALEO-INDIAN	Early Paleo-Indian	Fluted Point Horizon	12,000-10,500	big game hunters
	Late Paleo-Indian	Holcombe & Hi-Lo Horizons	10,500-9,500	small nomadic groups
ARCHAIC	Early Archaic	Side Notched Horizon	10,000-9,700	nomadic hunters and gatherers
		Corner-Notched Horizon	9,700-8,900	
		Bifurcate Horizon	8,900-8,000	
	Middle Archaic	Middle Archaic I/Stemmed Horizon	8,000-5,500	territorial settlements
		Middle Archaic II	5,500-4,500	polished ground stone tools
	Late Archaic	Narrow Point Horizon	4,500-3,500	
		Broad Point Horizon	4,000-3,500	
		Small Point Horizon (including Haldimand Complex and Glacial Kame Complex)	3,500-2,800	burial ceremonialism
WOODLAND	Early Woodland	Meadowood Complex	2,900-2,400	introduction of pottery
		Middlesex Complex	2,500-2,000	
	Middle Woodland	SW Ontario: Saugeen	2,300-1,500	long distance trade networks
		Western Basin: Couture	2,300-1,500	
	Transitional Woodland	SW Ontario:		
		Princess Point	1,500/1,400-1,200	incipient agriculture
		Western Basin:		
		Riviere au Vase	1500/1400-1200/1100	
	Late Woodland: Ontario Iroquois Tradition	Early: Glen Meyer	1200/100-750/700	transition to village life
		Middle I: Uren	720/700-710/670	large villages with palisades
		Middle II: Middleport	710/670-670/600	wide distribution of ceramic styles
		Late: Neutral	600-450	
	Late Woodland: Western Basin Tradition	Younge Phase	1200/1100-800	
		Springwells Phase	800-600	
		Wolf Phase	600-450	
HISTORIC	SW Ontario Iroquois	Historic Neutral	450-350	tribal warfare
	European Contact	Initial Contact	380-300	tribal displacement
		European Settlement	200 >	European settlement
		First Nations Resettlement	200 >	

(Compiled from Adams, 1994, Ellis *et al.*, 1990, Wright, 1968*)*

The nearest historic town was Erbsville, 300 metres to the west of the subject property. Historically, Erbsville was five miles to the northwest of Waterloo. A post office was established in Erbsville on February 1st, 1863, and in 1885 the town had a population of 25 (Carter, 1984a).

Historically, the subject property was located within part of Lot 28, German Land Tract in the Geographic Township of Waterloo, Waterloo County. Historical atlases and other archival sources were reviewed to determine if these sources depict any nineteenth-century Euro-Canadian settlement features that may represent potential historical archaeological sites within the property. Map 2 represents the Euro-Canadian settlement in and around the current study area in 1861. Tremaine's 1861 map of the County of Waterloo identifies three owners for the subject property. The west half of the property was owned by "Balthazar Schnarr", the east half by "Henry Schnarr", and a small area to the west of Beaver Creek was owned by "R.S." No structures are shown on or near the subject property. The town of Erbsville is shown to the west of the subject property.

Map 3 represents the Euro-Canadian settlement in and around the current study area in 1881. H. Parsell & Co.'s 1881 map of Waterloo Township in the *Illustrated Historical Atlas of Waterloo County* does not indicate an owner for the subject property. In addition, no structures are shown within the subject property limits.

The absence of structures on these maps, however, does not necessarily mean that one or more structures were not present at that time, earlier or later. Not all features of interest were mapped systematically on the Ontario series of historical maps and atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Given that the property fronts Conservation Drive and Beaver Creek Road, two historic concession roads, there is the potential of encountering nineteenth-century historical sites within the subject property, depending on the degree of recent land disturbances.

Approximately 500 metres to the northwest of the subject property is an historic church, St. Paul's Evangelical Lutheran Church, as shown on Map 3. St. Paul's was founded in 1852 by Reverend Franz Adam Peifer. The church building currently on the property was built in 1877. Services at the church were conducted in German from its inception until 1939 (Waterloo Region Generations, 2016). The church is not associated with a cemetery.

In the nineteenth and early twentieth century the study area and surrounding land were primarily used for agricultural purposes, where fields could be cultivated. Large portions of the land on and surrounding the subject property are wet and marshlike and were not suitable for agriculture. Within the central portion of the subject property, there is a large woodlot with wet and marshy areas throughout that is surrounded by agricultural field. Beaver Creek runs through this woodlot. A similar marshy woodlot runs along the west edge of the subject property, with Laurel Creek running through it.

Over the last century, much of the land surrounding the subject property has largely remained in agricultural use, where land was suitable, with little residential growth. However, a trailer park has been developed to the east of the subject property, and there is a large newly constructed church and parking lot to the north. Along the west edge of the subject property, a 6.5 hectare area has been previously developed for the Erbsville Kartway, which has a go-kart track, a miniature golf course, with a concession stand, parking lot, gravel access lane and picnic area. There is a residential house located at the north end of the Kartway.

Archaeological Context

Natural Environment

The study area is located within the Waterloo Hills physiographic region (Chapman and Putnam, 1984). This region is largely composed of sandy hills, including ridges of sandy till, kames and kame moraines. The *Soils of Waterloo County* (Presant & Wicklund, 1971) indicates that there are three types of soils within the subject property (see Map 4). On the east and west sides of the subject property the soil is Burford-Fox loam to sandy loam, which is made up of coarse and medium textured soils formed on outwash and shallow lacustrine deposits. The soil is characterized by gentle slopes and variable drainage. Beaver Creek runs through the centre of the subject property. The soil surrounding this creek is Bennington-Bookton sandy loam over clay. This soil is made up of coarse to medium textured soil, between 30 and 90 centimetres deep, overlying fine textured till and lacustrine deposits. This soil is characterized by gentle slopes and variable drainage. To the west of Beaver Creek the soil is Brant-Waterloo loam. This soil is moderately coarse and medium textured soils formed on lacustrine deposits. The soil is characterized by gentle slopes and variable drainage.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. The nearest water sources are Beaver Creek and Laurel Creek, both on the subject property. Beaver Creek is located centrally within the subject property, running northwest to southeast. Beaver Creek is a tributary of Laurel Creek, which runs along the west edge of the subject property. Laurel Creek also runs just to the south of the subject property and is as close as 25 metres from the south edge of the study area. Laurel Creek runs from the Laurel Creek Reservoir, located 350 metres to the southeast.

Map 1 provides the location of the study area on a 1:50000-scale topographic map. During the dates of fieldwork, which were November 30th, and December 3rd, 4th, 7th, 8th, 9th, 10th and 11th, 2015, the study area currently consists mainly of a ploughed agricultural field. Beaver Creek transects the field, and it is surrounded by woodlot that has low wet areas throughout. These wooded areas are within a development setback limit (see Map 6). Along the west edge of the subject property is a 6.5 hectare area consisting of a go-kart track, with associated buildings, parking lot and concession stands, a miniature golf course, a residential house, and a picnic area. To the west of the go-kart track is marshy development setback area with Laurel Creek running through it.

The land to the north of the subject property is largely still agricultural, with a wooded/wet area surrounding Beaver Creek. There is a large church and parking lot to the north. A trailer park is situated to the east of the subject property. To the south, most of the land is forest and wetland surrounding Laurel Creek. There is a small long-established residential area to the southeast along Beaver Creek Road. Immediately to the west is forest and wetland associated with Laurel Creek, and beyond that is the town of Erbsville.

Previous Archaeological Investigations

To determine if any previous assessments have yielded archaeological sites, either within or surrounding the current study area, two main sources were consulted. These include the Ontario Archaeological Sites Database, which is maintained by the Ontario Ministry of Tourism, Culture and Sport, and the collection of reports and archives at Mayer Archaeological Consultants.

The Ministry of Tourism and Culture Archaeological Database Coordinator (von Bitter June 10, 2015) indicated that there are no previously registered archaeological sites within the current study area. However, there are seven registered sites located within 1,000 metres of the study area. The registered sites are presented in Table 2. Included in the registered sites are six Aboriginal findspots and one Euro-Canadian site of unknown type. One of the Aboriginal sites dates to the Late Archaic period. None of the seven sites have further cultural heritage value or interest.

Table 2: Registered Archaeological Sites within 1,000 metres of the Study Area.

REG. #	*NAME*	*TYPE*	*CULTURAL AFFILIATION*	*DISTANCE TO STUDY AREA*	*STATUS*
AiHd-47	Sugarbush 1	findspot	Aboriginal	290 m	no further fieldwork
AiHd-48	Sugarbush 2	unknown	Euro-Canadian	240 m	no further fieldwork
AiHd-49	Sugarbush 3	findspot	Aboriginal	290 m	no further fieldwork
AiHd-63	Trillium North 7	findspot	Aboriginal	220 m	no further fieldwork
AiHd-64	Trillium North 8	findspot	Late Archaic	640 m	no further fieldwork
AiHd-78	Waterloo Chase I	findspot	Aboriginal	725 m	no further fieldwork
AiHd-79	Waterloo Chase II	findspot	Aboriginal	780 m	no further fieldwork

No archaeological reports detailing previous archaeological fieldwork within 50 metres of the study area have been filed with the Ministry of Tourism, Culture and Sport (von Bitter, 2015).

Potential for Archaeological Resources

Archaeological potential is defined as the likelihood of finding archaeological sites within a study area. For planning purposes, determining archaeological potential provides a preliminary indication that significant sites mi ght be found within the study area, and consequently, that it may be necessary to allocate time and resources for archaeological survey and mitigation.

The framework for assigning levels of potential archaeological significance is drawn from provincial guidelines found in the *Standards and Guidelines for Consultant Archaeologists* (Ontario Ministry of Tourism, Culture and Sport 2011, Sections 1.3.1 and 1.3.2). The following are features or characteristics that can indicate archaeological potential:

- previously identified archaeological sites
- water sources (It is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees.).
    - primary water sources (e.g. lakes, rivers, streams, creeks)
    - secondary water sources (e.g. intermittent streams and creeks, springs, marshes, swamps)
    - features indicating past water sources (e.g. glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches)

    - accessible or inaccessible shoreline (e.g. high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)

- elevated topography (e.g. eskers, drumlins, large knolls, plateaus)

- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground

- distinctive land formation 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 (e.g. migratory routes, spawning areas, prairie)
    - scarce raw materials (e.g. quartz, copper, ochre or outcrops of chert)
    - early Euro-Canadian industry (e.g. fur trade, logging, prospecting, mining)

- areas of early Euro-Canadian settlement. These include places of early military or pioneer settlement (e.g. pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and cemeteries. There may be commemorative markers of their history, such as local provincial, or federal monuments or heritage parks

- early historical transportation routes (e.g. trails, passes, roads, railways, portages)

- property listed on a municipal register or designated under the *Ontario Heritage Act* or that is in a federal, provincial or municipal historic landmark site

- property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations

Archaeological potential can be determined not to be present for either the entire property or parts of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. This is commonly referred to as “disturbed” or “disturbance” and may include:

- quarrying

- major landscaping involving grading below topsoil

- building footprints

- sewage and infrastructure development

- activities such as agricultural cultivation, gardening, minor grading and landscaping do not necessarily affect archaeological potential.

Several factors can be used to assess the potential for recovery of Euro-Canadian archaeological resources on a property. The study area is comprised of well drained land, suitable for human habitation. It is also located in close proximity to historically significant transportation routes, specifically Conservation Drive to the north and Beaver Creek Road to the east. Historic atlas maps indicate the property was 300 metres east of the historic limits of the

settlement of Erbsville. A Lutheran church dating to 1852 is located 500 metres to the northwest of the subject property. Although no Euro-Canadian sites have been observed within the study area, one Euro-Canadian site has been recorded on nearby lands, approximately 240 metres from the subject property (see Table 2). This site, AiHd-48, is a Euro-Canadian site of unknown function.

Several factors can be used to assess the potential for recovery of Aboriginal archaeological resources on a property. The study area is largely comprised of well-drained land that is suitable for human habitation. Beaver Creek and Laurel creek both transect the study area. Both of these creeks are surrounded by marsh, a secondary water source and resource extraction area. Although no Aboriginal sites have previously been observed within the study area, six Aboriginal sites have been recorded on nearby lands, all of which are findspots (see Table 2). One of these sites, AiHd-63, an Aboriginal findspot, is located approximately 220 metres from the subject property.

The Regional Municipality of Waterloo's Archaeological Facilities Master Plan indicates that the land within this development has high archaeological potential, and therefore will require an archaeological assessment (R.M. of Waterloo, 1989).

Given the above, background archival research indicates that all previously undisturbed and well-drained portions of the subject property exhibit high potential for the discovery of both pre/post-contact Aboriginal and Euro-Canadian archaeological resources therefore, a Stage 2 archaeological assessment is required.

Areas that have been disturbed by modern activities, both extensive and intensive, have low potential for the recovery of archaeological resources. Several areas of disturbance were noted on the property, including a paved/gravel access driveway and parking lot, a 30 by 35 metre miniature golf course , a 30 by 20 metre miniature cart track, a paved go-kart track, with bridges and viewing stands. There are two buildings associated with the go-kart track; a 32 by 22 metre T-shaped shed and a 10 by 10 metre concession stand. As well, there is a 13 by 22 metre residential home with a number of disturbed/inaccessible areas, including a 3 by 3 metre shed, a paved driveway, and a gravel driveway.

Permanently wet areas, such as marsh or swamp, and areas of steeply sloping topography have low potential for the recovery of any archaeological resources. 3.5hectares of the subject property along the west edge is permanently wet, including Laurel Creek and surrounding marshland. Beaver Creek transects the centre of the property, surrounded partially by woodlot and partially by marshland. There are also pockets of permanently wet marshland within the woodlot. The marshy areas surrounding Beaver Creek account for 2.0 hectares of the subject property.

Stage 1 research indicates that the woodlot surrounding Beaver Creek appears undisturbed and well drained and therefore has archaeological potential. However, the woodlot, accounting for 16 hectares of the subject property, was not subject to a Stage 2 property assessment as per instructions by the proponent as it has been formally prohibited from development and is therefore exempt from Stage 2 assessment. As per Section 7.8.1 Standard 1e(i, ii, iii, iv, v) of the *Standards and Guidelines for Consultant Archaeologists* supplementary documents are required for areas formally prohibited from development and exempt from Stage 2 assessment, but which have been identified through Stage 1assessment as having archaeological potential. As appropriate supporting documentation has not been received from the proponent and the approval authority as of the writing of this report, a Stage 2 assessment is recommended for the woodlot.

Field Methods

The Stage 2 general survey employed both the standard pedestrian transect method and the standard shovel test pit method for the property assessment. The subject property is 55.8 hectares in size. The Stage 2 property assessment was conducted on November 30th, and December 3rd, 4th, 7th, 8th, 9th, 10th and 11th, 2015. Weather conditions for each day of the survey are presented in Table 3. There were no conditions detrimental to the recovery of artifacts. As such, it is confirmed that the assessment met Section 2.1 Standard 3 of the *Standards and Guidelines for Consultant Archaeologists* regarding weather.

Table 3: Weather Conditions during the Stage 2 Survey

DATE	METHOD OF SURVEY	WEATHER
November 30th, 2015	pedestrian survey at 5m interval	2ºC, mostly sunny
December 3rd, 2015	pedestrian survey at 5m interval	6ºC, mostly cloudy
December 4th, 2015	pedestrian survey at 5m interval	4ºC, cloudy
December 7th, 2015	pedestrian survey at 5m interval	6ºC, foggy to overcast
December 8th, 2015	test pit survey at 5m interval	5ºC, overcast
December 9th, 2015	test pit survey at 5m interval	10ºC, mostly cloudy
December 10th, 2015	test pit survey at 5m interval	8ºC, mostly cloudy
December 11th, 2015	pedestrian survey at 5m interval test pit survey at 5m interval	10ºC, mostly sunny

Approximately 55 percent of the subject property is an actively cultivated agricultural field. Therefore it must be subject to Stage 2 property assessment using the pedestrian survey method, as per Section 2.1.1 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists.* The Stage 2 general survey in the ploughed portion of the property employed the standard pedestrian transect method at a five-metre interval. This technique involves walking across the entire field in parallel rows, surveying the ground surface for artifacts (see Images 1 to 8).

Direction was provided to the contractor undertaking the ploughing to plough deep enough to provide total topsoil exposure, but not deep enough that previous ploughing, as per Section 2.1.1, Standard 4. The field was ploughed in early November, 2015. The field had been well-weathered by one heavy rain and several light rains. Ground visibility conditions were excellent with little to no field debris and 90 to 95 percent visibility (see Images 1 to 8). As such, the pedestrian survey met Section 2.1.1 in terms of field preparation and visibility

All artifacts found during the Stage 1 and 2 property assessment were observed within the ploughed field. All artifacts were collected. As per Section 2.1.3 Standard 1 and 2 a of the *Standards and Guidelines for Consultant Archaeologists,* any artifacts recovered triggered an intensified survey. This survey was completed at a 1-metre interval within a 20-metre radius of each findspot. The intensive survey was continued until the full extent of the surface scatter was defined. Each site location was mapped and its position was recorded using a Global Positioning System (Garmin Etrex) with an accuracy of better than 7 metres. All sites are located within Universal Transverse Mercator Zone 17. North American Datum 1983 was used. No method of correction was used and there were no conditions that may have affected the accuracy of the GPS readings. Locations of the site datum and fixed reference land marks were also taken. There was nothing that affected the accuracy of the readings. Location of the site datums and fixed reference land marks were also taken. GPS information is provided in supplementary documents accompanying this report.

Approximately 10 percent of the study area was manicured lawn with a fenced cart racing track and picnic area, a miniature golf course, a miniature race track, and an existing house and lawn (see Images 9 to 22). This portion of the property could not be ploughed because of potential damage to existing landscaping and infrastructure and because a plough could not access the lot, meeting the requirements of Section 2.1.2 Standard 1e, that ploughing or cultivation is not viable.

Much of the manicured lawn area (seven percent of the entire study area) has been previously disturbed or was inaccessible for Stage 2 assessment. Disturbance includes a paved/gravel access driveway and parking area (see Images 11, 17, 18), a 30 by 35 metre miniature golf course (see Image 10, 13), a 30 by 20 metre miniature cart track (see Image 14), and a paved go-kart track, with bridges and viewing stands (see Images 15, 16, 32). There are two buildings associated with the go-kart track that are located to the south of the track. They include a 32 by 22 metre T-shaped shed and a 10 metre by 10 metre concession stand (see Images 17, 18).

To the north of the track, there is a small grassed picnic area (see Images 19, 20). At the north end of the lawn area is a residential home with a number of disturbed/inaccessible areas (see Images 20 to 22). The house measures 13 by 22 metres and there is a 3 by 3 metre shed to the south of the house. There is a paved driveway and a gravel driveway that are also considered inaccessible for assessment.

The grassed area to the south of the go-kart track was test pitted at a five-metre interval (see Maps 5 to 8). This grassed area accounts for one percent of the total subject property. Each test pit was 30 centimetres in diameter and was dug to at least five centimetres into the subsoil, which varied from 15 to 30 centimetres below the surface (see Image 23). Test pits were examined for stratigraphy, cultural features and fill. There was no sign of disturbance evident in the soil. Test pitting was conducted to within one metre of nearby disturbances, including the parking lot to the north, the miniature golf course to the east and the miniature race track to the west. All soil was screened through 6 millimetre mesh to maximize the potential for artifact recovery. Appropriate photographic documentation was taken and all test pits were backfilled upon completion.

The picnic area and lawn surrounding the residential home were begun at a five-metre interval, however, after the first few test pits were completed it was quickly determined that the soil in these sections had been subject to extensive disturbance (see Images 24, 25). The test pits were widened to a ten-metre interval across these sections of the property to confirm disturbance was present throughout the picnic area and house lawn. The picnic and lawn area account for two percent of the total subject property.

Within the go-kart track area itself, there was a great deal of disturbance visible on the lawn surrounding the paved tracks, including subsoil visible on the surface, and patches of asphalt and gravel visible in the grass (see Images 15, 16, 30 to 32). Visual inspection of the go-kart track indicated that soil in this area was likely disturbed during construction of the track. This was also supported by a man-made slope along the west edge of the ploughed field where it appears that soil was removed to level the driveway and track area (see Image 33). Approximately 20 discretionary test pits were placed in key locations throughout the track area, all of which confirmed that the area was disturbed (see Images 26 to 29).

Laurel Creek, situated on the west edge of the property, is permanently wet, and is surrounded by permanently wet marshland (see Image 39). This marshland area totals 3.5 hectares in size. Beaver Creek, also permanently wet, runs through the centre of the property (see Image 34) . This creek is surrounded by marsh to the north and woodlot to the south (see

Image 38). Additionally there are small areas of marsh situated within the woodlot, particularly in the northern section of the woodlot (see Images 35 & 36, Map 5). Beaver Creek and surrounding marshland account for 2.0 hectares of the subject property. In total, permanently wet areas represent 10 percent of the total subject property. These wet areas have low archaeological potential and did not require Stage 2 assessment.

Woodlot surrounding Beaver Creek accounts for 25 percent of the subject property (see Images 37 & 38). This section of the subject property still retains archaeological potential, but was not subject to Stage 2 assessment as it is located within a development setback area and the proponent requested that it not be assessed. The limits of the development setback areas surrounding both Laurel Creek and Beaver Creek had been surveyed and clearly delineated prior to the Stage 2 property assessment. These areas have been formally prohibited from development and therefore should be exempt from Stage 2 assessment. As per Section 7.8.1 Standard 1e(i, ii, iii, iv, v) of the *Standards and Guidelines for Consultant Archaeologists* supplementary documents are required for areas formally prohibited from development and exempt from Stage 2 assessment, but which have been identified through Stage 1assessment as having archaeological potential. As appropriate supporting documentation has not been received from the proponent and the approval authority as of the writing of this report, a Stage 2 assessment is recommended for the woodlot. The woodlot cannot be accessed by plough, and therefore meets the condition of terrain where ploughing is not possible or viable, as per Section 2.1.2 Standard 1. Stage 2 assessment through test pit survey at a 5 metre interval is required.

Record of Finds

Six archaeological sites were identified during the Stage 1 and 2 assessment, including four Euro-Canadian findspots, one Euro-Canadian domestic debris artifact scatter and one Aboriginal findspot. Table 3 summarizes key details regarding each site identified during the Stage 2 assessment. All artifacts found during the assessment were mapped, recorded and removed from the property. Select artifacts are shown in Image 40. Complete catalogues of recovered artifacts are presented below, by location.

Table 4: Summary of Sites Identified During the Stage 2 Survey

LOC.	SITE TYPE	SIZE	# OF ARTIFACTS	RECOMMENDATION
1	Euro-Canadian findspot	9.5m apart	2	no further fieldwork required
2	Euro-Canadian findspot	n/a	1	no further fieldwork required
3	Euro-Canadian domestic debris	11m x 7m	6	no further fieldwork required
4	Late Archaic Aboriginal findspot	n/a	1	no further fieldwork required
5	Euro-Canadian findspot	n/a	1	no further fieldwork required
6	Euro-Canadian findspot	7m apart	2	no further fieldwork required

Location 1

Location 1 consists of two Euro-Canadian artifacts found 9.5 metres apart. The site is located within the ploughed agricultural field, on a high knoll in the northeast corner of the study area. Artifacts recovered from Location 1 include a fragment of window pane glass and a fragment of green bottle glass (see Image 40). Table 5 provides a complete catalogue of artifacts found at Location 1.

Table 5: Artifact Catalogue, Location 1

CAT.#	PROVENIENCE	DEPTH	DESCRIPTION	TYPE/FUNCTION	FREQ.	COMMENTS	STORAGE
1000	CSC 1	surface	glass, window pane	clear	1	4mm thick	14-038:1
1001	CSC 2	surface	glass, bottle	green	1	fragment	14-038:1

Location 2

Location 2 consists of one Euro-Canadian artifact, a fragment of brown bottle glass (see Image 40). The site is located within the ploughed agricultural field to the east of the forest surrounding Beaver Creek on a gentle slope to the north of a high knoll. Table 6 provides a complete catalogue of artifacts found at Location 2.

Table 6: Artifact Catalogue, Location 2

CAT.#	PROVENIENCE	DEPTH	DESCRIPTION	TYPE/FUNCTION	FREQ.	COMMENTS	STORAGE
1002	CSC 1	surface	glass, bottle	brown	1	fragment	14-038:1

Location 3

Location 3 consists of a small scatter of Euro-Canadian domestic debris measuring eleven metres north-south by seven metres east-west. The site is located within the ploughed field, on flat terrain in a small corridor between two wooded areas along the southern edge of the subject property.

Six artifacts were found at Location 3, including a brick fragment, three pieces of clear bottle glass, a fragment of red earthenware and a fragment of refined white earthenware (see Image 40 for select artifacts). Table 7 provides a complete catalogue of artifacts found at Location 3.

Table 7: Artifact Catalogue, Location 3

CAT.#	PROVENIENCE	DEPTH	DESCRIPTION	TYPE/FUNCTION	FREQ.	COMMENTS	STORAGE
1003	CSC 1	surface	brick	red	1	fragment	14-038:1
1004	CSC 2	surface	white earthenware	plate fragment	1	no decoration	14-038:1
1005	CSC 3	surface	red earthenware	crock fragment	1	glazed	14-038:1
1006	CSC 4	surface	glass, bottle	clear	1	fragment	14-038:1
1007	CSC 5	surface	glass, bottle	clear	2	fragment	14-038:1

Location 4, AiHd-168

Location 4 consists of an Aboriginal artifact findspot, a projectile point. This site is located within a ploughed agricultural field to the west of Beaver Creek, and is surrounded by forest on all sides. The site is located on flat terrain. Table 8 provides a complete catalogue of artifacts found at Location 4.

The projectile point is a Crawford Knoll point that has a broken tip and one broken shoulder barb (see Image 40). These points are typical of the Late Archaic period, *circa* 3500 and 2800 years before present (Kenyon 1980:3). The point is made on Onondaga chert and measures 21 millimetres in length (incomplete), and three millimetres in thickness. Width at the shoulder is 18 millimetres, neck width is 9 millimetres and base width is 11 millimetres.

The site at Location 4 has been registered in the Ontario Archaeological Sites Database as site AiHd-168.

Table 8: Artifact Catalogue, Location 4, AiHd-168

CAT.#	PROVENIENCE	DEPTH	DESCRIPTION	TYPE/FUNCTION	FREQ.	COMMENTS	STORAGE
1008	CSC 1	surface	projectile point	Late Archaic Crawford Knoll	1	Tip broken	14-038:1
	length=21mm (incomplete), thickness=3mm, base width=11mm, neck width=9mm, shoulder width=18mm						

Location 5

Location 5 consists of one Euro-Canadian artifact, a fragment of a porcelain bowl (see Image 40). The site is located within the ploughed agricultural field to the west of the forest surrounding Beaver Creek. It is located at the base of a gentle slope. Table 9 provides a complete catalogue of artifacts found at Location 5.

Table 9: Artifact Catalogue, Location 5

CAT.#	PROVENIENCE	DEPTH	DESCRIPTION	TYPE/FUNCTION	FREQ.	COMMENTS	STORAGE
1009	CSC 1	surface	porcelain	bowl fragment	1	no decoration	14-038:1

Location 6

Location 6 consists of two Euro-Canadian artifacts found seven metres apart. The site is located within the ploughed agricultural field, on a gentle slope to the west of a high knoll in the northwest corner of the subject property. Artifacts recovered from Location 6 include a fragment of clear bottle glass and a fragment of purple bottle glass (see Image 40). Table 10 provides a complete catalogue of artifacts found at Location 6.

Table 10: Artifact Catalogue, Location 6

CAT.#	PROVENIENCE	DEPTH	DESCRIPTION	TYPE/FUNCTION	FREQ.	COMMENTS	STORAGE
1010	CSC 1	surface	glass, bottle	clear	1	fragment	14-038:1
1011	CSC 2	surface	glass, bottle	purple	1	fragment	14-038:1

All artifacts recovered from this project are curated in the corporate office of Mayer Archaeological Consultants. The collection has been packed in a box identified as 14-038:1. The packed collection measures 20 centimetres by 15 centimetres by 5 centimetres.

Records and documents kept or created for this project include photos, maps and field notes. A detailed list of these items is presented in Table 11. All digital items have been

duplicated on a CD-Rom and all paper items have been duplicated. All items are housed at the Mayer Archaeological Consultants office located at 90 Curtis Street, St. Thomas, Ontario.

Table 11: Documentary Record

DOCUMENT	NUMBER	DESCRIPTION
photos	183	digital format
maps	1	aerial map provided by client
	1	development plan provided by client
field notes	27	pages

Analysis and Conclusions

The Stage 1 archaeological assessment determined that portions of the property had archaeological potential and required a Stage 2 archaeological assessment (see Map 5). Fifty-five percent of the study area is actively cultivated agricultural field. This portion of the study area required Stage 2 assessment using pedestrian survey. Approximately 10 percent of the study area was manicured lawn with a fenced cart racing track, a picnic area, a miniature golf course, a miniature race track, and an existing house. This portion of the property could not be ploughed because of potential damage to existing landscaping and infrastructure and because a plough could not access the lot, therefore Stage 2 assessment was conducted using the test pit survey method.

The grassed area to the south of the go-kart track was test pitted at a five-metre interval, and test pits showed no signs of disturbance. The picnic area and lawn surrounding the residential home were begun at a five-metre interval, however, test pits determined that the soil in these sections had been subject to extensive disturbance and test pits were widened to a ten-metre interval to confirm disturbance was present throughout the picnic area and house lawn.

Within the manicured lawn area, a number of disturbances were noted, including a paved/gravel access driveway and parking lot, a 30 by 35 metre miniature golf course , a 30 by 20 metre miniature cart track, a paved go-kart track, with bridges and viewing stands. There are two buildings associated with the go-kart track; a 32 by 22 metre T-shaped shed and a 10 metre by 10 metre concession stand. As well, there is a 13 by 22 metre residential home with a number of disturbed/inaccessible areas, including a 3 by 3 metre shed, a paved driveway, and a gravel driveway.

Throughout the go-kart track area there was a great deal of disturbance visible on the lawn surrounding the paved tracks, including subsoil visible on the surface, and patches of asphalt and gravel visible in the grass. Visual inspection of the go-kart track indicated that soil in this area was likely disturbed during construction of the track. Discretionary test pits placed in key locations throughout the track area confirmed this disturbance.

Permanently wet marshland surrounding Beaver Creek and Laurel Creek accounts for 10 percent of the subject property. These areas were not recommended for Stage 2 assessment due to low archaeological potential. The permanently wet areas are all located within the limits of a development setback area.

Woodlot surrounding portions of Beaver Creek account for 25 percent of the subject property and still retain archaeological potential. The woodlot was not subject to Stage 2

assessment as it located within a development setback area. The development setback areas, as shown on Maps 5 to 8, have been formally prohibited from development and should be exempt from Stage 2 assessment. As per Section 7.8.1 Standard 1e(i, ii, iii, iv, v) of the *Standards and Guidelines for Consultant Archaeologists* supplementary documents are required for areas formally prohibited from development and exempt from Stage 2 assessment, but which have been identified through Stage 1assessment as having archaeological potential. As appropriate supporting documentation has not been received from the proponent and the approval authority as of the writing of this report, a Stage 2 assessment is recommended for the woodlot. The woodlot cannot be accessed by plough, and therefore meets the condition of terrain where ploughing is not possible or viable, as per Section 2.1.2 Standard 1. Stage 2 assessment through test pit survey at a 5 metre interval is required.

Six sites were identified as a result of the Stage 2 property assessment. An evaluation of the cultural heritage value or interest of each site is provided below.

Location 1

Location 1 represents a small Euro-Canadian artifact findspot where two artifacts were recovered 9.5 metres apart. Artifacts recovered from Location 1 include a fragment of window pane glass and a fragment of green bottle glass. The window pane glass is four millimetres thick. Kenyon (1980) has observed that through time there is a trend toward thicker glass and that pane glass that is thicker than 1.6 millimetres generally indicates a post-1850 date on a site. There are no indications on the bottle glass fragment to determine any manufacturing methods. Green bottle glass has been manufactured since the 1860's and is still in production today (Horn, 2005).

Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* identifies criteria for requiring Stage 3 assessment at sites found during Stage 2 property assessment. In this case, the Euro-Canadian site at Location 1 represents a post-contact archaeological site dating the period of use from the mid-nineteenth century to the present. According to the *Standards and Guidelines for Consultant Archaeologists*, the site at Location 1 does not meet the criteria for requiring a Stage 3 assessment at post-contact sites. Specifically, at least 20 artifacts that date the period of use to before 1900 are required on a site [Section 2.2, Standard 1c]. Twentieth century archaeological sites where background documentation or archaeological features indicate possible cultural heritage value or interest at this site also warrant further Stage 3 assessment [Section 2.2, Standard 1d]. Only two artifacts were recovered from this site and neither are particularly temporally sensitive. In addition, background documentation and archaeological features do not indicate cultural heritage value for this site. Therefore Standard 1c and Standard 1d do not apply to Location 1. Location 1 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 1.

Location 2

Location 2 represents a small Euro-Canadian artifact findspot where one fragment of brown bottle glass was recovered. There are no indications on the glass fragment to determine any manufacturing methods. Brown bottle glass has been manufactured since the 1860's and is still in production today (Horn, 2005).

Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* identifies criteria for requiring Stage 3 assessment at sites found during Stage 2 property assessment. In this case, the Euro-Canadian site at Location 2 represents a post-contact archaeological site dating the period of use from the mid-nineteenth century to the present. According to the *Standards and Guidelines for Consultant Archaeologists*, the site at Location 2 does not meet the criteria for requiring a Stage 3 assessment at post-contact sites. Specifically, at least 20 artifacts that date the period of use to before 1900 are required on a site [Section 2.2, Standard 1c]. Twentieth century archaeological sites where background documentation or archaeological features indicate possible cultural heritage value or interest at this site also warrant further Stage 3 assessment [Section 2.2, Standard 1d]. Only one artifact was recovered from this site and it not temporally sensitive. In addition, background documentation and archaeological features do not indicate cultural heritage value for this site. Therefore Standard 1c and Standard 1d do not apply to Location 2. Location 2 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 2.

Location 3

Location 3 represents a small Euro-Canadian artifact domestic debris scatter. Six artifacts were found within an eleven metre by seven metre area. Artifacts found at Location 3 include a red brick fragment, three pieces of clear bottle glass, a fragment of red earthenware and a fragment of refined white earthenware.

The brick is too fragmentary to provide any information regarding manufacture and generally brick is not a temporally sensitive artifact. The three clear glass pieces are too fragmentary to provide any information on manufacturing methods. In addition, clear bottle glass is not temporally sensitive and cannot accurately be used to date a site (Jones and Sullivan, 1985). Red earthenware dates from 1725 through to present and is not temporally sensitive (Ramsay, 1939:128). White earthenware is commonly found on nineteenth century sites, especially between 1830 and 1870 (Kenyon, 1985).

Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* identifies criteria for requiring Stage 3 assessment at sites found during Stage 2 property assessment. In this case, the Euro-Canadian site at Location 4 represents a post-contact archaeological site dating the period of use from the mid-nineteenth century to the present. According to the *Standards and Guidelines for Consultant Archaeologists*, the site at Location 3 does not meet the criteria for requiring a Stage 3 assessment at post-contact sites. Specifically, at least 20 artifacts that date the period of use to before 1900 are required on a site [Section 2.2, Standard 1c]. Twentieth century archaeological sites where background documentation or archaeological features indicate possible cultural heritage value or interest at this site also warrant further Stage 3 assessment [Section 2.2, Standard 1d]. Only six artifacts were recovered from this site most of which are not temporally sensitive. In addition, background documentation and archaeological features do not indicate cultural heritage value for this site. Therefore Standard 1c and Standard 1d do not apply to Location 3. Location 3 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 3.

Location 4, AiHd-168

Location 4 represents an isolated Aboriginal findspot where one projectile point was recovered. The projectile point is a Crawford Knoll point, typical of the Late Archaic period, *circa* 3500 and 2800 years before present (Kenyon 1980:3). The artifact recovered from Location 4 indicates that the site represents a typical Aboriginal findspot, similar to other Aboriginal sites found nearby (see Table 2).

Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* identifies criteria for requiring Stage 3 assessment at sites found during Stage 2 property assessment. In this case, Location 4 represents an Aboriginal site found during pedestrian survey; therefore Standard 1a.i and Standard 1b are applicable to this type of site.

Standard 1a.i states that that artifacts, groups of artifacts, or archaeological sites that are found within a 10 metre by 10 metre pedestrian survey area must be subject to a Stage 3 site-specific assessment if they meet the following requirements: (1) at least one diagnostic artifact or fire-cracked rock in addition to two or more non-diagnostic artifacts, or (2) in areas east or north of the Niagara Escarpment, at least five non-diagnostic artifacts, or (3) in areas on or west of the Niagara Escarpment, at least 10 non-diagnostic artifacts. Standard 1b details single examples of special interest. A recommendation for Stage 3 assessment is required if any of the following are found: (i) Aboriginal ceramics, (ii) exotic or period specific cherts, and (iii) isolated Paleoindian or Early archaic diagnostic artifacts.

As only a single artifact was found at the site, and it is manufactured on local Onondaga chert, Location 4 does not meet any of the above criteria for requiring a Stage 3 assessment at pre-contact sites. Location 4 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 4.

Location 5

Location 5 represents a small Euro-Canadian artifact findspot where one fragment of a porcelain bowl was recovered. Although it has been manufactured since the 1700's, porcelain was an expensive ware and is rare on sites dating to before 1900 (Kenyon, 1986).

Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* identifies criteria for requiring Stage 3 assessment at sites found during Stage 2 property assessment. In this case, the Euro-Canadian site at Location 5 represents a post-contact archaeological site dating the period of use from post-1900 to the present. According to the *Standards and Guidelines for Consultant Archaeologists*, the site at Location 5 does not meet the criteria for requiring a Stage 3 assessment at post-contact sites. Specifically, at least 20 artifacts that date the period of use to before 1900 are required on a site [Section 2.2, Standard 1c]. Twentieth century archaeological sites where background documentation or archaeological features indicate possible cultural heritage value or interest at this site also warrant further Stage 3 assessment [Section 2.2, Standard 1d]. Only one artifact was recovered from this site and it likely dates to the twentieth century. In addition, background documentation and archaeological features do not indicate cultural heritage value for this site. Therefore Standard 1c and Standard 1d do not apply to Location 5. Location 5 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 5.

Location 6

Location 6 represents a small Euro-Canadian artifact findspot where two artifacts were recovered seven metres apart. Artifacts recovered from Location 1 include a fragment of clear bottle glass and a fragment of purple bottle glass. There are no indications on either fragment of bottle glass to determine any manufacturing methods. Clear bottle glass is not temporally sensitive and cannot accurately be used to date a site (Jones and Sullivan, 1985). Purple bottle glass was produced between 1900 and 1920 (Horn, 2005).

Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* identifies criteria for requiring Stage 3 assessment at sites found during Stage 2 property assessment. In this case, the Euro-Canadian site at Location 6 represents a post-contact archaeological site dating the period of use to the beginning of the twentieth century. According to the *Standards and Guidelines for Consultant Archaeologists*, the site at Location 6 does not meet the criteria for requiring a Stage 3 assessment at post-contact sites. Specifically, at least 20 artifacts that date the period of use to before 1900 are required on a site [Section 2.2, Standard 1c]. Twentieth century archaeological sites where background documentation or archaeological features indicate possible cultural heritage value or interest at this site also warrant further Stage 3 assessment [Section 2.2, Standard 1d]. Only two artifacts were recovered from this site and only one is temporally sensitive, dating to the early twentieth century. In addition, background documentation and archaeological features do not indicate cultural heritage value for this site. Therefore Standard 1c and Standard 1d do not apply to Location 6. Location 6 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 6.

RECOMMENDATIONS

The following recommendation is provided for consideration by MHBC Planning, Urban Design & Landscape Architecture and by the Ontario Ministry of Tourism, Culture and Sport:

1. The Euro-Canadian site identified in this report as Location 1 does not meet the criteria for requiring Stage 3 assessment listed in Section 2.2. Standard 1 of the Ontario Ministry of Tourism, Culture and Sport's *2011 Standards and Guidelines for Consultant Archaeologists*. Location 1 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 1.

2. The Euro-Canadian site identified in this report as Location 2 does not meet the criteria for requiring Stage 3 assessment listed in Section 2.2. Standard 1 of the Ontario Ministry of Tourism, Culture and Sport's *2011 Standards and Guidelines for Consultant Archaeologists*. Location 2 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 2.

3. The Euro-Canadian site identified in this report as Location 3 does not meet the criteria for requiring Stage 3 assessment listed in Section 2.2. Standard 1 of the Ontario Ministry of Tourism, Culture and Sport's *2011 Standards and Guidelines for Consultant Archaeologists*. Location 3 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 3.

4. The Late Archaic Aboriginal site identified in this report as Location 4, AiHd-168, does not meet the criteria for requiring Stage 3 assessment listed in Section 2.2. Standard 1 of the Ontario Ministry of Tourism, Culture and Sport's *2011 Standards and Guidelines for Consultant Archaeologists*. Location 4 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 4.

5. The Euro-Canadian site identified in this report as Location 5 does not meet the criteria for requiring Stage 3 assessment listed in Section 2.2. Standard 1 of the Ontario Ministry of Tourism, Culture and Sport's *2011 Standards and Guidelines for Consultant Archaeologists*. Location 5 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 5.

6. The Euro-Canadian site identified in this report as Location 6 does not meet the criteria for requiring Stage 3 assessment listed in Section 2.2. Standard 1 of the Ontario Ministry of Tourism, Culture and Sport's *2011 Standards and Guidelines for Consultant Archaeologists*. Location 6 is deemed to have little cultural heritage value or interest and it is considered sufficiently assessed at Stage 2. As such, no additional fieldwork or assessment is recommended for Location 6.

7. Woodlot surrounding Beaver Creek and accounting for 25 percent of the study area, as shown on Maps 5 to 8 of this report, was not assessed because it is situated within a protected development setback area. This area was not assessed as per instructions by the proponent. As per Section 7.8.1 Standard 1e(i, ii, iii, iv, v) of the *Standards and Guidelines for Consultant Archaeologists* supplementary documents are required for areas formally prohibited from development and exempt from Stage 2 assessment, but which have been identified through Stage 1assessment as having archaeological potential. As appropriate supporting documentation has not been received from the proponent and the approval authority as of the writing of this report, a Stage 2 assessment is recommended for the woodlot because it has archaeological potential. The Stage 2 assessment should occur through test pit survey at a five metre interval.

ADVICE ON COMPLIANCE WITH LEGISLATION

The following advice on compliance with current legislation is provided for consideration:

1. This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act,* R.S.O. 1990, c 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 development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

2 It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed the 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.*

3. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and are 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.*

4. 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 appropriate municipal police, the local coroner, and the Registrar of Cemeteries at the Ministry of Consumer Services.

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Image 1: Ploughed Field, From Southeast Corner, Facing Northwest



Image 2: Ploughed Field, From Northeast Corner, Facing Southwest



Image 3: Ploughed Field, From North Edge, Facing West



Image 4: Ploughed Field, From Southwest Corner, Facing North



Image 5: Ploughed Field, From West of Beaver Creek, Facing West



Image 6: Ploughed Field, From West of Beaver Creek, Facing South



Image 7: Ploughed Field, From West Edge, Facing East



Image 8: Ploughed Field, From Northwest Corner, Facing Northeast



Image 9: Lawn, Facing Northwest



Image 10: Lawn, Facing Southwest, Note Gravel for Mini-Golf Course on East Edge



Image 11: Disturbed Asphalt/Gravel Parking Lot, Facing Southwest



Image 12: Paved Access Driveway, Facing Northwest



Image 13: Mini-Golf Course, Facing Southwest



Image 14: Mini Race Track, Facing Southeast, Note Subsoil on Surface of Track



Image 15: Go-Kart Track, Facing Northwest



Image 16: Go-Kart Track, Facing Southeast



Image 17: Shed, and Parking Lot, Facing Northwest



Image 18: Concession Stand and Gravel Parking Lot, Facing Northeast



Image 19: Picnic Area, Facing Southwest



Image 20: Picnic Area and Residential House Lawn, Facing Northwest



Image 21: House and Paved Driveway Facing Southwest



Image 22: House, Shed and Gravel Driveway, Facing West



Image 23: Typical Undisturbed Test Pit, South Grass Area



Image 24: Typical Disturbed Test Pit, Picnic Area



Image 25: Typical Disturbed Test Pit, Residential House Area



Image 26: Disturbed Test Pit, Go-Kart Track Area



Image 27: Disturbed Test Pit, Go-Kart Track Area



Image 28: Disturbed Test Pit, Go-Kart Track Area



Image 29: Disturbed Test Pit, Go-Kart Track Area



Image 30: Test Pit Containing Asphalt, Go-Kart Track Area



Image 31: Asphalt in Soil, Go-Kart Track, Facing East



Image 32: Disturbed Area Surrounding Bridge, Go-Kart Track, Facing West



Image 33: Man-Made Slope at Edge of Ploughed Field to Level Driveway, Facing Northwest



Image 34: Beaver Creek, Facing Northwest



Image 35: Marsh, Development Setback Area, Facing East



Image 36: Marsh, Development Setback Area, Facing East



Image 37: Woodlot, Development Setback Area, Facing West



Image 38: Woodlot and Beaver Creek, Development Setback Area, Facing Northwest



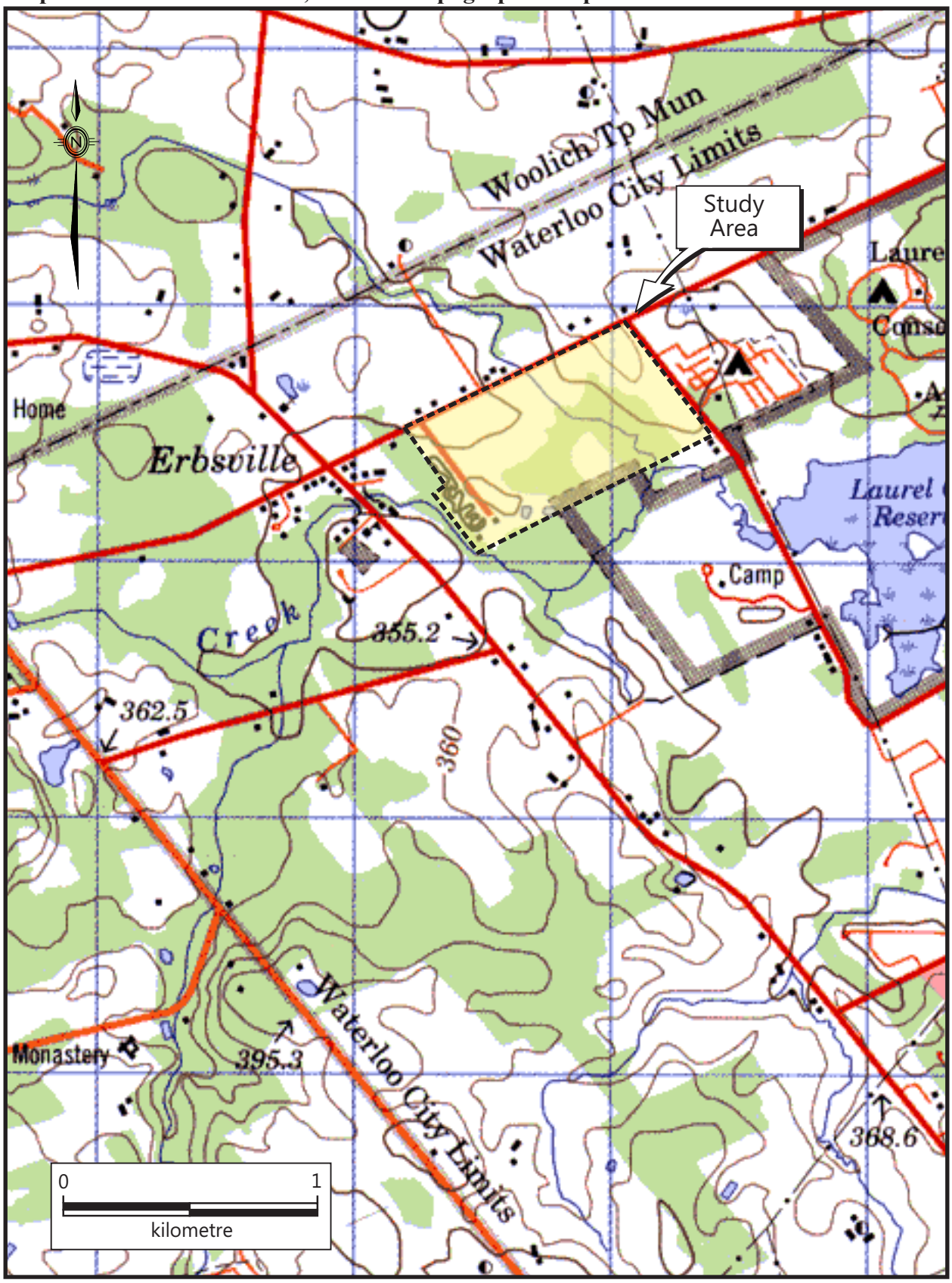
Image 39: Marsh Surrounding Laurel Creek, Development Setback Area, Facing Northwest



Image 40: Select Artifacts Recovered During Stage 2 Property Assessment



Map 1: Site Location on 1:50,000 Scale Topographic Map



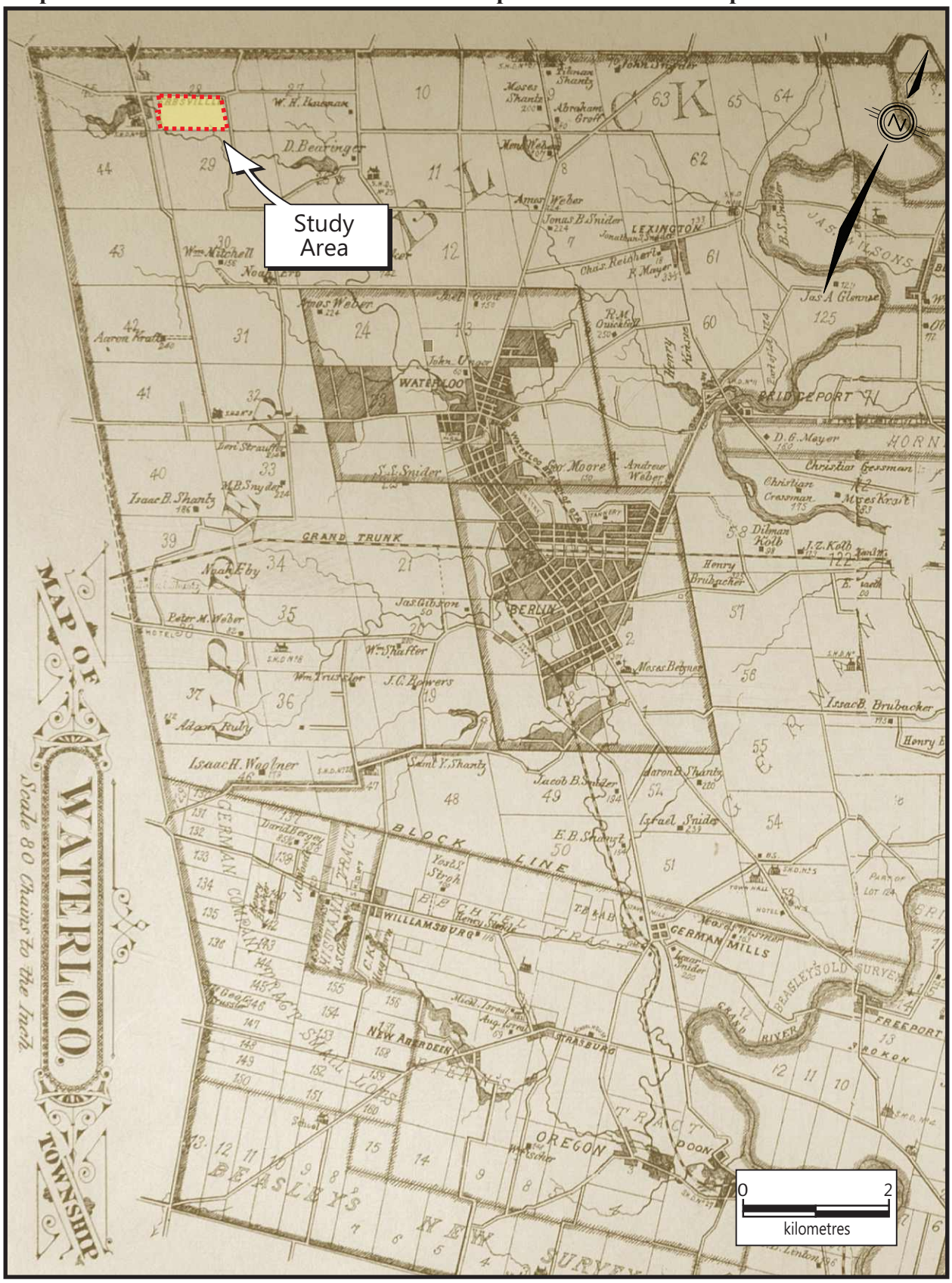
Source: Natural Resources Canada, 1998

Map 2: Site Location on 1861 Historic Atlas Map of Waterloo County



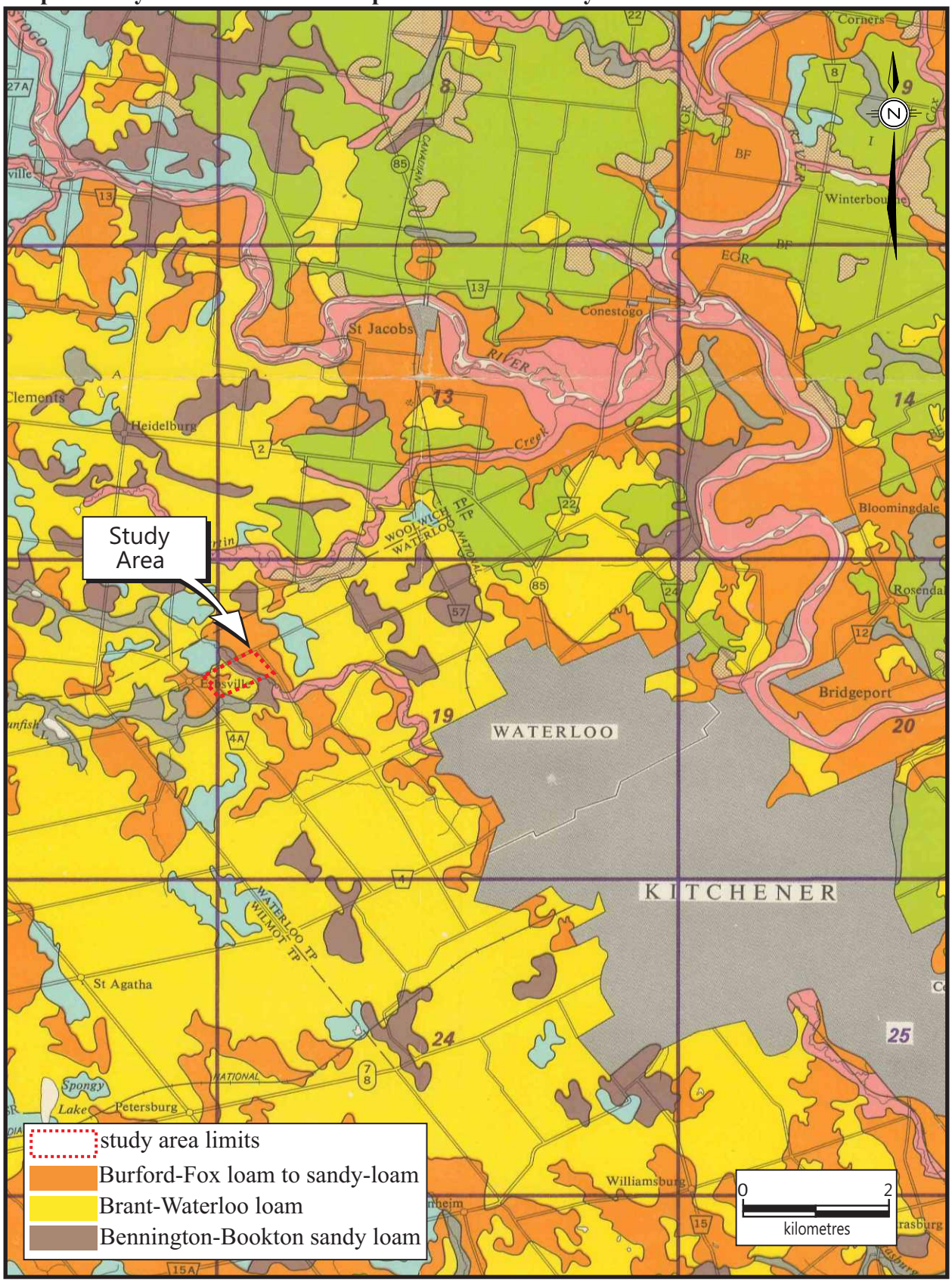
Source: Tremaine, 1861

Map 3: Site Location on 1881 Historic Atlas Map of Waterloo Township



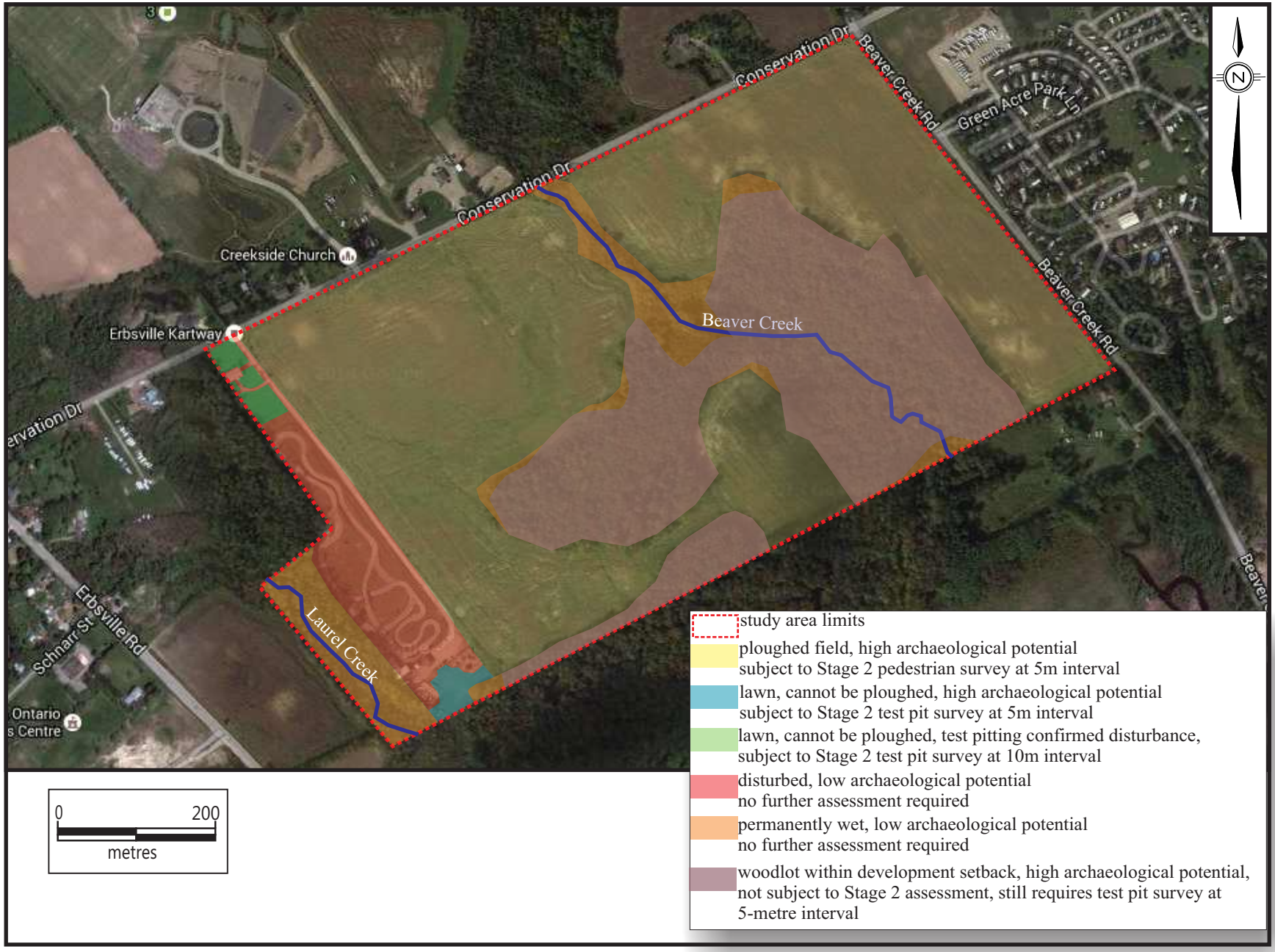
Source: Parsell, 1881

Map 4: Study Area Location on Map of Waterloo County Soils



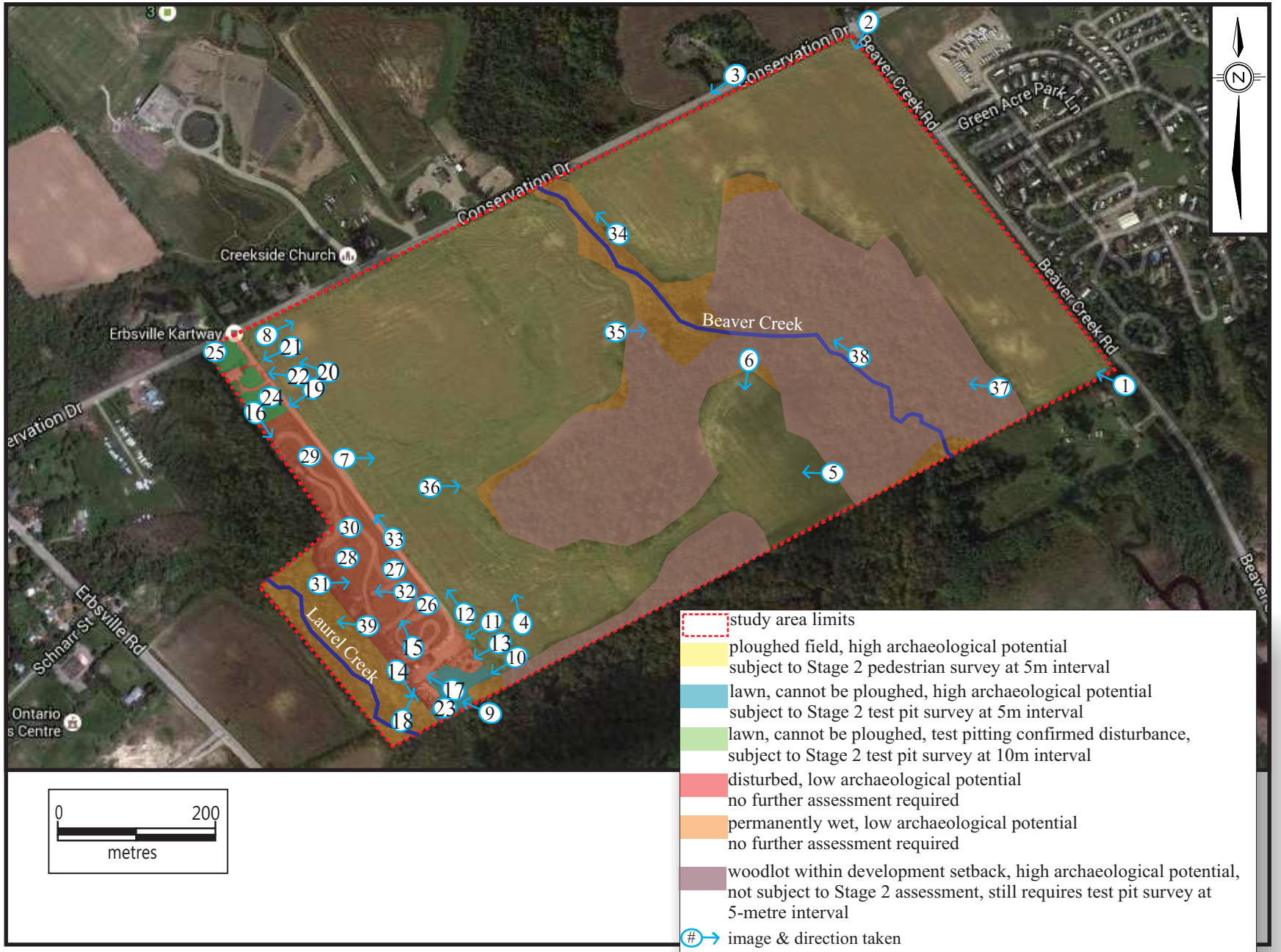
Source: OMAFRA, 2006

Map 5: Aerial Map Showing Results of Stage 1 and 2 Property Assessment



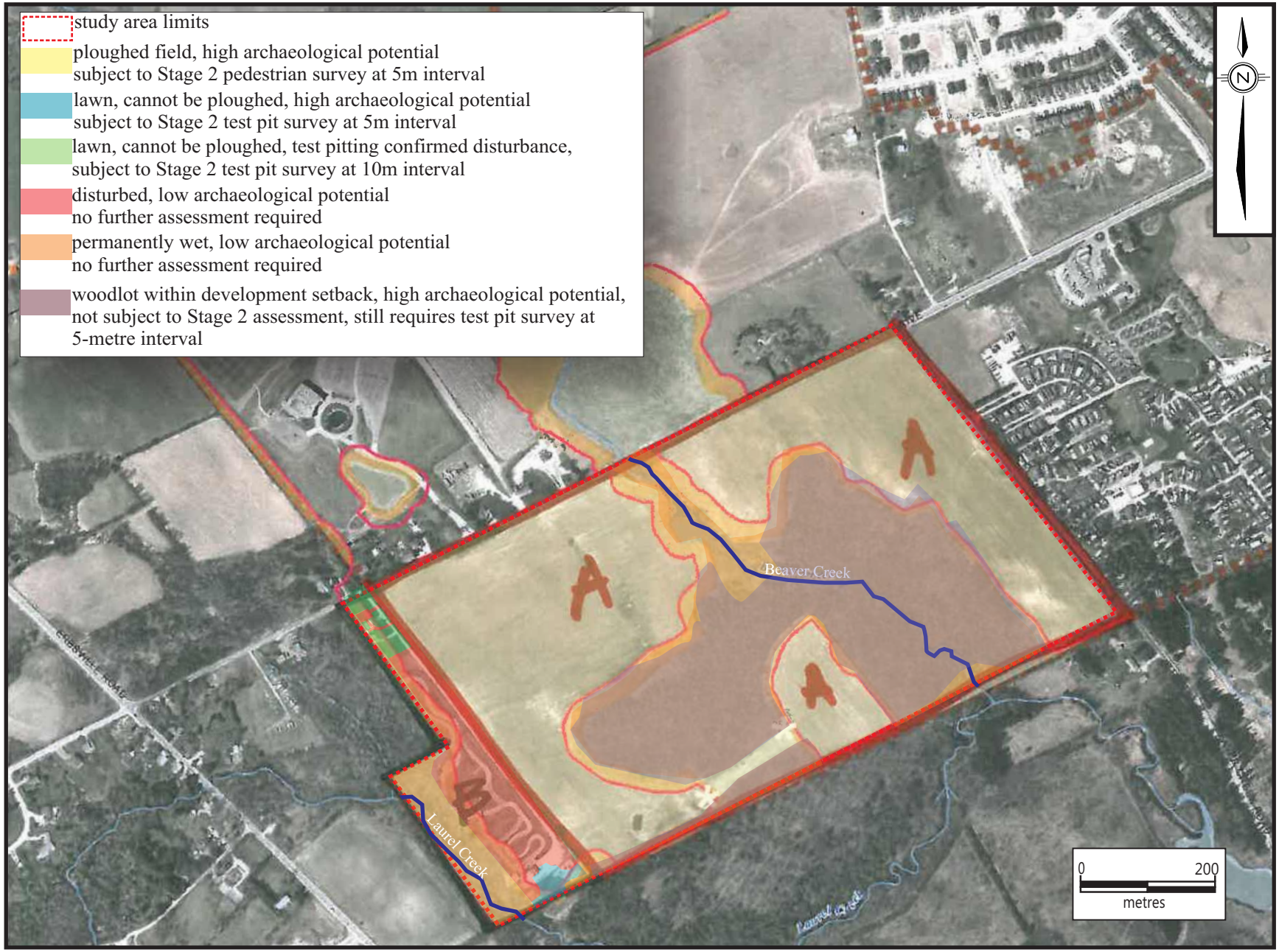
Source: Google, 2015.

Map 6: Aerial Map Showing Results of Stage 1 and 2 Property Assessment, Showing Image Locations



Source: Google, 2015.

Map 7: Aerial Map Showing Watershed Areas and Results of Stage 1 and 2 Property Assessment



Map 8: Development Plan Showing Results of Stage 1 and 2 Property Assessment

