

**STAGE 1 ARCHAEOLOGICAL ASSESSMENT
MOBILITY HUB PLANNING CONSULTING SERVICES: APPLEBY
LOTS 2-7, CONCESSION III SDS
(FORMER TOWNSHIP OF NELSON, COUNTY OF HALTON)
CITY OF BURLINGTON
REGIONAL MUNICIPALITY OF HALTON, ONTARIO**

ORIGINAL REPORT

Prepared for:

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**Stage 1 Archaeological Assessment
Mobility Hub Planning Consulting Services: Appleby
Lots 2-7, Concession III SDS
(Former Township of Nelson, County of Halton)
City of Burlington
Regional Municipality of Halton, Ontario**

EXECUTIVE SUMMARY

Archaeological Services Inc. was contracted by Brook McIlroy Inc. to conduct a Stage 1 Archaeological Assessment as part of the Mobility Hub Planning Consulting Services MCEA in the City of Burlington. The purpose of the project is to develop four Area Specific Plans to support the future redevelopment and intensification of each of Burlington's Mobility Hubs: Aldershot, Burlington, Downtown, and Appleby. As part of the City of Burlington's "Grow Bold" initiative, the City is currently undertaking updates to several key planning and transportation documents (including the Official Plan and associated intensification framework and employment lands review, Transportation Plan, Transit Mobility Plan and Cycling Master Plan) to plan for future growth and intensification.

This report will address the Appleby Study Area, approximately 207 hectares, roughly bounded by Highway 403 to the north, Inverary Road to the west, Deerhurst Drive to the east, and the existing hydro corridor to the south.

The Stage 1 background study determined that 10 previously registered archaeological sites are located within one kilometre of the Study Area. The background research determined that parts of the Study Area exhibits potential and will require a detailed Stage 1 including property inspection prior to any future development.

1. Locations where archaeological potential has been identified require a detailed, property specific Stage 1 archaeological assessment, including a property inspection, once project design concepts are known, in accordance with the Ministry of Tourism, Culture and Sport 2011 *Standards and Guidelines for Consultant Archaeologists*, in order to confirm the assessment of archaeological site potential and to determine the degree to which recent development and landscape alteration may affect that potential.
2. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.



PROJECT PERSONNEL

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1.0 PROJECT CONTEXT

Archaeological Services Inc. (ASI) was contracted by Brook McIlroy Inc. to conduct a Stage 1 Archaeological Assessment as part of the Mobility Hub Planning Consulting Services Municipal Class Environmental Assessment (MCEA) in the City of Burlington. The purpose of the project is to develop four Area Specific Plans (ASPs) to support the future redevelopment and intensification of each of Burlington's Mobility Hubs: Aldershot, Burlington, Downtown, and Appleby. As part of the City of Burlington's "Grow Bold" initiative, the City is currently undertaking updates to several key planning and transportation documents (including the Official Plan and associated intensification framework and employment lands review, Transportation Plan, Transit Mobility Plan and Cycling Master Plan) to plan for future growth and intensification.

This report will address the Appleby Study Area, approximately 207 hectares, roughly bounded by Highway 403 to the north, Inverary Road to the west, Deerhurst Drive to the east, and the existing hydro corridor to the south (Figure 1).

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (1990, as amended in 2017) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Tourism, Culture and Sport (MTCS).

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act*, RSO (Ministry of the Environment 1990 as amended 2010) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the Municipal Engineers' Association document *Municipal Class Environmental Assessment* (2000 as amended in 2007, 2011 and 2015).

The *Archaeological Master Plan for the Regional Municipality of Halton* (ASI 1998) and the 2008 Update (ASI 2008a) were also consulted.

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment was granted by Brook McIlroy Inc. on March 8, 2017.

1.2 Historical Context

The purpose of this section, according to the S & G, Section 7.5.7, Standard 1, is to describe the past and present land use and the settlement history and any other relevant historical information pertaining to the Study Area. A summary is first presented of the current understanding of the Indigenous land use of the Study Area. This is then followed by a review of the historical Euro-Canadian settlement history.

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (BP) (Ferris 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000



BP, the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990, 2009; Brown 1995:13).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2500 BP and exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 BP, evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). By 1500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2300 BP - it is likely that once similar analyses are conducted on Ontario vessels of the same period, the same evidence will be found (Birch and Williamson 2013:13–15). Bands likely retreated to interior camps during the winter. It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 BP lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (CE), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990:317). By 1300-1450 CE, this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al. 1990:343). From 1450-1649 CE this process continued with the coalescence of these small villages into larger communities (Birch and Williamson 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. By 1600 CE, the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity between the Haudenosaunee¹ and the Huron-Wendat (and their Algonkian allies such as the Nipissing and Odawa) led to the dispersal of the Huron-Wendat.

Shortly after dispersal of the Wendat and their Algonquian allies, Ojibwa began to expand into southern Ontario and Michigan from a “homeland” along the east shore of Georgian Bay, west along the north shore of Lake Huron, and along the northeast shore of Lake Superior and onto the Upper Peninsula of Michigan (Rogers 1978:760–762). This history was constructed by Rogers using both Anishinaabek oral tradition and the European documentary record, and notes that it included Chippewa, Ojibwa, Mississauga, and Saulteaux or “Southeastern Ojibwa” groups. Ojibwa, likely Odawa, were first

¹ The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian-speaking groups – the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.



encountered by Samuel de Champlain in 1615 along the eastern shores of Georgian Bay. Etienne Brule later encountered other groups and by 1641, Jesuits had journeyed to Sault Sainte Marie (Thwaites 1896:11:279) and opened the Mission of Saint Peter in 1648 for the occupants of Manitoulin Island and the northeast shore of Lake Huron. The Jesuits reported that these Algonquian peoples lived “solely by hunting and fishing and roam as far as the “Northern sea” to trade for “Furs and Beavers, which are found there in abundance” (Thwaites 1896-1901, 33:67), and “all of these Tribes are nomads, and have no fixed residence, except at certain seasons of the year, when fish are plentiful, and this compels them to remain on the spot” (Thwaites 1896-1901, 33:153). Algonquian-speaking groups were historically documented wintering with the Huron-Wendat, some who abandoned their country on the shores of the St. Lawrence because of attacks from the Haudenosaunee (Thwaites 1896-1901, 27:37).

Other Algonquian groups were recorded along the northern and eastern shores and islands of Lake Huron and Georgian Bay - the “Ouasouarini” [Chippewa], the “Outchougai” [Outchougai], the “Atchiligouan” [Achiligouan] near the mouth of the French River and north of Manitoulin Island the “Amikouai, or the nation of the Beaver” [Amikwa; Algonquian] and the “Oumisagai” [Mississauga; Chippewa] (Thwaites 1896-1901, 18:229, 231). At the end of the summer 1670, Father Louys André began his mission work among the Mississagué, who were located on the banks of a river that empties into Lake Huron approximately 30 leagues from the Sault (Thwaites 1896-1901, 55:133-155).

After the Huron had been dispersed, the Haudenosaunee began to exert pressure on Ojibwa within their homeland to the north. While their numbers had been reduced through warfare, starvation, and European diseases, the coalescence of various Anishinaabek groups led to enhanced social and political strength (Thwaites 1896-1901, 52:133) and Sault Sainte Marie was a focal point for people who inhabited adjacent areas both to the east and to the northwest as well as for the Saulteaux, who considered it their home (Thwaites 1896-1901, 54:129-131). The Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. From east to west, these villages consisted of Ganneious, on Napanee Bay, an arm of the Bay of Quinte; Quinte, near the isthmus of the Quinte Peninsula; Ganaraske, at the mouth of the Ganaraska River; Quintio, at the mouth of the Trent River on the north shore of Rice Lake; Ganatsekwyagon (or Ganestiquiagon), near the mouth of the Rouge River; Teyaiagon, near the mouth of the Humber River; and Quinaouatoua, on the portage between the western end of Lake Ontario and the Grand River (Konrad 1981:135). Their locations near the mouths of the Humber and Rouge Rivers, two branches of the Toronto Carrying Place, strategically linked these settlements with the upper Great Lakes through Lake Simcoe. The inhabitants of these villages were agriculturalists, growing maize, pumpkins and squash, but their central roles were that of portage starting points and trading centres for Iroquois travel to the upper Great Lakes for the annual beaver hunt (Konrad 1974; Williamson et al. 2008:50–52). Ganatsekwyagon, Teyaiagon, and Quinaouatoua were primarily Seneca; Ganaraske, Quinte and Quintio were likely Cayuga, and Ganneious was Oneida, but judging from accounts of Teyaiagon, all of the villages might have contained peoples from a number of the Iroquois constituencies (ASI 2013).

During the 1690s, some Ojibwa began moving south into extreme southern Ontario and soon replaced, the Haudenosaunee by force. By the first decade of the eighteenth century, the Michi Saagiig Nishnaabeg (Mississauga Nishnaabeg) had settled at the mouth of the Humber, near Fort Frontenac at the east end of Lake Ontario and the Niagara region and within decades were well established throughout southern Ontario. In 1736, the French estimated there were 60 men at Lake Saint Clair and 150 among small settlements at Quinte, the head of Lake Ontario, the Humber River, and Matchedash (Rogers 1978:761). This history is based almost entirely on oral tradition provided by Anishinaabek elders such as George Copway (Kahgegagahbowh), a Mississauga born in 1818 near Rice Lake who followed a traditional lifestyle until his family converted to Christianity (MacLeod 1992:197; Smith 2000). According to



Copway, the objectives of campaigns against the Haudenosaunee were to create a safe trade route between the French and the Ojibwa, to regain the land abandoned by the Huron-Wendat. While various editions of Copway's book have these battles occurring in the mid-seventeenth century, common to all is a statement that the battles occurred around 40 years after the dispersal of the Huron-Wendat (Copway 1850:88, 1851:91, 1858:91). Various scholars agree with this timeline ranging from 1687, in conjunction with Denonville's attack on Seneca villages (Johnson 1986:48; Schmalz 1991:21–22) to around the mid-to late-1690s leading up to the Great Peace of 1701 (Schmalz 1977:7; Bowman 1975:20; Smith 1975:215; Tanner 1987:33; Von Gernet 2002:7–8).

Robert Paudash's 1904 account of Mississauga origins also relies on oral history, in this case from his father, who died at the age of 75 in 1893 and was the last hereditary chief of the Mississauga at Rice Lake. His account in turn came from his father Cheneebesh, who died in 1869 at the age of 104 and was the last sachem or Head Chief of all the Mississaugas. He also relates a story of origin on the north shore of Lake Huron (Paudash 1905:7-8) and later, after the dispersal of the Huron-Wendat, carrying out coordinated attacks against the Haudenosaunee. Francis Assikinack, an Ojibwa of Manitoulin Island born in 1824, provides similar details on battles with the Haudenosaunee (Assikinack 1858:308–309).

Peace was achieved between the Haudenosaunee and the Anishinaabek Nations in August of 1701 when representatives of more than twenty Anishinaabek Nations assembled in Montreal to participate in peace negotiations (Johnston 2004:10). During these negotiations captives were exchanged and the Iroquois and Anishinaabek agreed to live together in peace. Peace between these nations was confirmed again at council held at Lake Superior when the Iroquois delivered a wampum belt to the Anishinaabek Nations.

From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there is no interruption to Anishinaabek control and use of southern Ontario. While hunting in the territory was shared, and subject to the permission of the various nations for access to their lands, its occupation was by Anishinaabek until the assertion of British sovereignty, the British thereafter negotiating treaties with them. Eventually, with British sovereignty, tribal designations changed (Smith 1975:221–222; Surtees 1985:20–21). According to Rogers (1978), by the twentieth century, the Department of Indian Affairs had divided the "Anishinaubag" into three different tribes, despite the fact that by the early eighteenth century, this large Algonquian-speaking group, who shared the same cultural background, "stretched over a thousand miles from the St. Lawrence River to the Lake of the Woods." With British land purchases and treaties, the bands at Beausoleil Island, Cape Croker, Christian Island, Georgina and Snake Islands, Rama, Sarnia, Saugeen, the Thames, and Walpole, became known as "Chippewa" while the bands at Alderville, New Credit, Mud Lake, Rice Lake, and Scugog, became known as "Mississauga." The northern groups on Lakes Huron and Superior, who signed the Robinson Treaty in 1850, appeared and remained as "Ojibbewas" in historical documents.

The Michi Saagiig (Mississauga) Nishnaabeg left a minimal footprint archaeologically, as they were historically a highly mobile sustainably living society, but it is known through oral histories and traditional knowledge that the north shore of Lake Ontario has been their homeland for millennia (Kapyrka and Migizi 2016; Migizi and Kapyrka 2015). The Michi Saagiig are known as "the people of the big river mouths" and the "Salmon People", as their traditional territory span the north shore of Lake Ontario between Gananoque in the east to the north shore of Lake Erie, along the waterways from their headwaters to their outlets in Lake Ontario (Migizi 2018). Individual bands were politically autonomous and numbered several hundred people. Nevertheless, they shared common cultural traditions and relations with one another and the land. These groups were highly mobile, with a subsistence economy based on hunting, fishing, gathering of wild plants, and garden farming.



In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century, the Crown acknowledged the Mississaugas as the owners of the lands between Georgian Bay and Lake Simcoe and entered into negotiations for additional tracts of land as the need arose to facilitate European settlement.

The eighteenth century saw the ethnogenesis in Ontario of the Métis, when Métis people began to identify as a separate group, rather than as extensions of their typically maternal First Nations and paternal European ancestry (Métis National Council n.d.). Métis populations were predominantly located north and west of Lake Superior, however, communities were located throughout Ontario (MNC n.d.; Stone and Chaput 1978:607,608). During the early nineteenth century, many Métis families moved towards locales around southern Lake Huron and Georgian Bay, including Kincardine, Owen Sound, Penetanguishene, and Parry Sound (MNC n.d.). Recent decisions by the Supreme Court of Canada (Supreme Court of Canada 2003, 2016) have reaffirmed that Métis people have full rights as one of the Indigenous people of Canada under subsection 91(24) of the Constitution Act, 1867.

The Study Area is within Treaty 3. In 1792, under the terms of the “Between the Lakes Purchase” signed by Sir Frederick Haldimand and the Mississaugas, the Crown acquired over one million acres of land in part spanning westward from near modern day Niagara-on-the-Lake along the north shore of Lake Ontario to modern day Burlington. The Study Area is also within Treaty 3 ¾, signed in 1795 and confirmed in 1797 between the Mississaugas and the Crown for the parcel of 3450 acres on the present site of the City of Burlington, as chosen by Mohawk Chief Joseph Brant in recognition of his military service in the American Revolutionary War (Mississauga of the New Credit First Nation 2017; Aboriginal Affairs and Northern Development Canada 2016).

1.2.2 Euro-Canadian Land Use: Township Survey and Settlement

Historically, the Study Area is located in part of Lots 2-7, Concession 3 South of Dundas Street (SDS), in the Former Nelson Township, County of Halton.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 m of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation



routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

Nelson Township

The land within the Township of Nelson was acquired by the British from the Mississaugas in 1795. The first township survey was undertaken in 1806, and the first legal settlers occupied their land holdings in the same year. The township was first named “Alexander Township” in honour of Alexander Grant, the administrator of Upper Canada. In 1806, it was renamed in honour of Horatio Viscount Nelson, after his victory at Cabo Trafalgar in Spain the previous year. Nelson was initially settled by the children of Loyalists, soldiers who served during the War of 1812, and by immigrants from England, Scotland and Ireland. By the 1840s, the township was noted for its good land and excellent farms (Smith 1846:121; Armstrong 1985:143; Rayburn 1997:237). In 1817, it was estimated that the Township of Nelson contained sixty-eight inhabited houses, with a total population of 476. At that time it contained two grist mills and three saw mills (Smith 1851:257–258; Pope 1877:60). The oldest principal village in the township during the nineteenth century was Burlington, which had originally been named “Wellington Square.” Other villages within the township during the nineteenth century included Nelson, Zimmerman, Lowville, Willbrook, Cumminsville and Kilbride (Smith 1846:121; Crossby 1873:92; Pope 1877:38–39). By the 1850s, Nelson had 3,792 inhabitants and was well settled with schools, churches, prosperous farms and an established system of municipal government (Smith 1851:258; Walker & Miles 1877:60). Additional prosperity came with the Toronto branch of the Great Western Railway, constructed across the township in 1854–55. In 1878, the Northern and North Western Railway constructed a rail line diagonally across the township between the towns of Burlington and Milton. This line is now owned and operated by the Canadian National Railway.

City of Burlington

This incorporated village comprised part of Lots 17 and 18 Concessions 3 and 4 SDS in Nelson Township. Burlington was first settled by Augustus Bates in 1800. Mohawk Chief Joseph Brant held over 3,000 acres of land here, and the settlement was first known as “Brant’s Block.” In 1807, James Gage purchased land from the widow of Chief Joseph Brant upon which he laid out a plan of subdivision which was called “Wellington Square.” Some of the streets were named after various members of the Brant family, such as John, Elizabeth and Caroline. Registered plans of subdivision for Burlington date from 1854–1866. Between 1845 and 1865 Wellington Square was one of the largest producers and exporters of wheat. Burlington was a port where ships would sail in to collect local produce. Gradually flour became an important export and since ships were important to the life of the area, the development of ship building became a thriving industry. Lumber was another important enterprise. By 1846, there were 17 sawmills in Nelson Township, with local merchant Benjamin Eager particularly successful. In 1873, the communities of Wellington Square and Port Nelson amalgamated and formed a new town known as Burlington. It is thought to have been the corrupt form of the name of a resort town in England called “Bridlington.” In 1877, an Anglican Church and cemetery was located in the block bounded by Ontario, Elgin, Burlington and Nelson. Burlington also contained a Catholic and Methodist church by the late nineteenth century. Rail service was provided by the Hamilton and North Western Railway, as well as the Great Western Railway. Three wharves (Baxter, Torrance and Bunton) extended into Lake Ontario between Brant and Elizabeth Streets, and large quantities of grain and lumber were shipped from here during the nineteenth century. It also contained a number of stores such as John Waldie & Co. Other businesses in the village included two telegraph offices, several hotels, stores, and a saw and grist mill. The population numbered about 700 in 1873. In 1958, the Town of Burlington annexed Aldershot and most of the Township of Nelson, and in 1974 was incorporated as a city (Crossby 1873:353; Emery 1967;



Winearls 1991:631; Scott 1997:37; Rayburn 1997:48; Turcotte 1989a, 1989b, 1992; Town of Burlington 1973).

Village of Appleby

This post office village was located on part Lots 5 and 6 Concessions 2 and 3 SD, near what is now Upper Middle Road and Appleby Line. It was originally known as the Van Norman Settlement, after William Van Norman, a Loyalist from Pennsylvania, who in 1806 moved to Nelson. His sons Ephraim and Isaac each built a log cabin and cleared land. Appleby acquired its name from later settlers from England, including the Alton's and the Breckon's. In 1848, Isaac's son built a brick house and then sold in 1870 to John Breckon – the house still stands at 955 Century Drive. In 1837 Isaac sold an acre of land to the Wesleyan Methodist Church of Canada for a frame church and the Mount Vernon Cemetery, as he had already buried his daughter there in 1814. In 1847 David Alton sold part of his land for the construction of a church and the Appleby Cemetery. A brick church was built to replace the Wesleyan Methodists frame church next to Mount Vernon Cemetery. The Great Western Railway was built through Appleby in 1854, and by 1877, the village contained a school, church, grist mill, post office, cemetery and blacksmith shop. The population was about 100 in 1873. The Appleby Church was torn down in 1906. Most of the historical village of Appleby was demolished in the 1950s during construction of the QEW (Crossby 1873:21; Turcotte 1989a:163–164, 1992; Appleby United Church 2018).

Railways

The Great Western Railway (GWR) was originally incorporated in 1834 as the London and Gore Railroad Co. and changed its name to the GWR in 1853. It received considerable promotion by Allan Napier MacNab, Isaac and Peter Buchanan, R.W. Harris and John Young. Aided by government guarantees and supported by foreign American and British investment, the GWR opened its mainline (Windsor-London-Hamilton-Niagara Falls) in 1854. By 1882, it was operating throughout southwestern Ontario and even into Michigan. In 1882 it merged with the Grand Trunk Railway (GTR) in an attempt to successfully compete with rival American railroads for American through-traffic between Michigan and New York states (Baskerville 2015).

1.2.3 Historical Map Review

The 1806 Plan of the Township of Nelson (Wilmot 1806), 1858 *Map of the County of Halton* (Tremaine 1858), and the 1877 *Illustrated Historical Atlas of the County of Halton*, Township of Nelson and Village of Burlington pages (Pope 1877) were examined to determine the presence of historic features within the Study Area during the nineteenth century (Figures 2-4).

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases.

In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced in order to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including the



vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.

Table 1: Nineteenth-century property owner(s) and historical features(s) within or adjacent to the Study Area

1858			1877		
Con #	Lot #	Property Owner(s)	Historical Feature(s)	Property Owner(s)	Historical Feature(s)
3	2	John Dynes Jno. F. Stephenson	None	Jas Dynes Jno Stephenson	Farmstead
	3	Horace and Arthur Van Norman	None	Jno Breckon	Farmstead
	4	David Hopkins	Saw Mill	Danl. Hopkins	Farmstead (2), cemetery
	5	Thos. Atkinson Thos. Alton	None	Alf Kitchen Chas. Gage	Farmstead Farmstead
	6	David Alton	Church	David Alton	Farmstead, house, church, cemetery
	7	Thomas Alton	None		

The 1806 plan shows that Lot 2 was part of the Clergy reserve, while Lots 4 and 7 had Crown patents granted to Isaac Vanorman (Van Norman) and Bela Stevens, respectively.

In 1858, the community of Appleby is depicted as a cross-roads settlement at the junction of Appleby Line and the present day QEW. The community is shown as having a blacksmith shop, church, and post office northeast of the study area, with a saw mill and mill pond along Appleby Creek within the Study Area on Lot 4. Sheldon Creek is also illustrated through the Study Area. The GWR is shown running through the Study Area.

The 1877 map indicates that the settlement of Appleby had not significantly grown by this time. Farmsteads are illustrated along the Middle Road, now the QEW, including seven within or adjacent to the Study Area, plus a house in the village. One church and two cemeteries are shown within the Study Area. A school house is shown on the north west corner of Appleby.

1.2.4 Twentieth-Century Mapping Review

The 1909 and 1999 National Topographic System Hamilton and Hamilton-Burlington Sheets as well as the 1954 aerial photograph of the City of Burlington (Department of Militia and Defence 1909; University of Toronto 1954; Natural Resources Canada 1999) were examined to determine the extent and nature of development and land uses within the Study Area (Figures 5-7).

The 1909 map illustrates a number of frame and brick houses are located on the west side of Middle Road. The railway had become part of the GTR. The Toronto and Niagara Power Co. power line follows the southern limit of the Study Area.



The 1954 photograph indicates that the Study Area remained relatively unchanged within a rural agricultural landscape into the mid-twentieth century adjacent to the village of Appleby. It also shows that the railway was then owned by the Canadian National Railway.

By 1999, the Study Area is illustrated as having undergone significant industrial and commercial development between the railway corridor and the QEW.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MTCS through “Ontario’s Past Portal”; published and unpublished documentary sources; and the files of ASI.

1.3.1 Current Land Use and Field Conditions

The optional Stage 1 property inspection was not conducted.

A review of available Google satellite imagery between 2004 and 2017 illustrates that the Study Area has remained relatively unchanged within an urban landscape of predominantly commercial and industrial development since 2004 (Figure 11). Expansion to the Appleby GO Station is shown between 2009 and 2013, including new structures on both sides of the tracks, and an additional parking lot to the east of the north parking lot. Residential townhouse development is indicated as beginning before 2004 along what is now Mercer Common.

1.3.2 Geography

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

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. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow and Warner 1990:Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive



modeling of site location.

Other geographic characteristics that can indicate archaeological potential include: elevated topography (eskers, drumlins, large knolls, and 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 (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

The Study Area is on shale plains within the Iroquois Plain physiographic region of southern Ontario (Figure 9). This is a lowland region bordering Lake Ontario. This region is characteristically flat, and formed by lacustrine deposits laid down by the inundation of Lake Iroquois, a body of water that existed during the late Pleistocene. This region extends from the Trent River, around the western part of Lake Ontario, to the Niagara River, spanning a distance of 300 km (Chapman and Putnam 1984:190). The old shorelines of Lake Iroquois include cliffs, bars, beaches and boulder pavements. The old sandbars in this region are good aquifers that supply water to farms and villages. The gravel bars are quarried for road and building material, while the clays of the old lake bed have been used for the manufacture of bricks (Chapman and Putnam 1984:196). The Study Area is located between two glacial beach ridges between Highway 403 and Harvester Road, roughly between Guelph Line and Fraser Drive and between Burloak Drive and McPherson Road. A shorecliff runs roughly north-south through the Study Area parallel to the north side of Harvester Road.

Figure 10 depicts surficial geology for the Study Area. The surficial geology mapping demonstrates that the Study Area is underlain by Paleozoic bedrock (Ontario Geological Survey 2010). A bedrock pressure release ridge (pop-up) Figure 8 depicts the soil drainage in the Study Area. Soil types include Chinguacousy clay loam, an imperfectly-drained gray brown luvisol; Jeddo clay loam, a poorly-drained humic gleysol; Font sandy loam, a well-drained outwash gravel; and Oneida clay loam, a well-drained gray brown luvisol (Presant and Wicklund 1955).

The Study Area includes Appleby Creek and Sheldon Creek, two of eighteen smaller subwatersheds making up the Urban Creeks watershed, located along the north shore of Lake Ontario and cross through Hamilton, Burlington, Oakville, and portions of Mississauga (Conservation Halton 2017). Appleby Creek begins as two tributaries east of Walkers Line which spring from north of Dundas Street under Highway 403 east of Appleby Line where they merge and flow into Lake Ontario. Sheldon Creek begins west of Appleby Line north of Dundas Street and flows on the east side of Appleby Line south of Dundas to outlet near Great Lakes Boulevard. Both creeks have been heavily modified through channelization.

1.3.3 Previous Archaeological Research

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



According to the OASD, 10 previously registered archaeological sites located within an approximately one kilometre radius of the Study Area, five of which are within the Study Area (Ministry of Tourism, Culture and Sport 2018). A summary of the sites is provided below.

Table 2: List of previously registered sites within one kilometre of the Study Area

Borden #	Site Name	Cultural Affiliation	Site Type	Researcher
AiGw-22	Stelco Ltd.	Unknown	Unknown	BCPP 1974
AiGw-53	Extreme	Early Archaic	Findspot	BCPP 1973
AiGw-87	George Richardson	Archaic	Unknown	Roberts 1976
AiGw-88	Appleby Line	PaleoIndian; Archaic; Woodland	Unknown	Roberts 1976
AiGw-89	Tree Stump	Archaic	Findspot	Roberts 1976
AiGw-90	Baseball Diamond	Archaic	Scatter	Roberts 1976
AiGw-91	Misfit Creek Valley 1	Archaic	Camp	Roberts 1976
AiGw-92	Misfit Creek Valley 2	Archaic	Unknown	Roberts 1976
AiGw-93	West Misfit Bank	Archaic	Unknown	Roberts 1976
AiGw-116	Burloak	Unknown	Unknown	Unknown 1976

N.B. sites in **bold** are within the Study Area
 BCPP – Bronte Creek Provincial Park Archaeology Project

The George Davidson site (AiGw-87) was identified by Arthur Roberts during his Ph.D. research along the north shore of Lake Ontario in the mid-1970s (Roberts 1985). No formal site write-up exists, and the OASD records on the site are vague: it is an isolated find dating to the Archaic period that was likely surface-collected on the undeveloped grounds of a commercial property near intersection of the GO Rail lines and Appleby Line. Based on a review of twentieth- and twenty-first-century mapping, the site location appears not to have undergone extensive disturbance. While it is not known if the site has further Cultural Heritage Value or Interest (CHVI) the other five sites within the Study Area appear not to retain further CHVI due to their locations within areas of twentieth-century development disturbance, however this should be confirmed through a Stage 1 property inspection.

The majority of the previously registered sites within one kilometre of the Study Area were first documented by Roberts in the late 1970s (see Table 2), at a time of substantial development of the areas surrounding the historical downtown core of Burlington. A series of surveys undertaken by Arthur Roberts of the Burlington-Oakville area in the 1970s were part of his larger study of the north shore of Lake Ontario (Roberts 1985). The study involved both interviews with landowners and field surveys. The field surveys in the Burlington-Oakville region focused on four specific areas, two of which were located between the Lake Iroquois shoreline and Lake Ontario; these two areas were chosen due to their status as the only locations in both of the rapidly developing towns with remaining actively-cultivated agricultural lands. The main objectives of these surveys were “to locate as many sites as possible and to expand the site inventory of the lake-edge zone between the Lake Iroquois shoreline and Lake Ontario” (Roberts 1985:54). Roberts reported that, of 157 pre-contact Indigenous sites located within the Burlington-Oakville area, the majority were well drained and within 63 metres of the nearest water source. The exact limits of the studies conducted by Roberts in the Burlington area are unclear. The Bronte Creek Provincial Park Archaeology Project was also conducted in the region in the early 1970s.



According to the background research, two previous reports detail fieldwork within 50 m of the Study Area.

ASI (2008b) conducted a Stage 2 archaeological assessment in advance of construction of new ramps at the Highway 403/Waterdown Road Interchange, City of Burlington. South of Highway 403 within the current Study Area a section of the proposed road was subject to test pit survey. The remainder of the study area was identified as disturbed. No archaeological resources were identified and the area was cleared of archaeological concern.

ASI (2017) conducted a Stage 1 Archaeological Assessment during the Impact Assessment Phase of the GO Rail Network Electrification Transit Project Assessment Process (TPAP). The assessment includes portions of the Lakeshore West Corridor within the current Study Area. The background research and field inspection determined that the railway corridor within the current Study Area did not retain archaeological potential due to deep and extensive disturbance, and did not require further assessment.

2.0 FIELD METHODS: PROPERTY INSPECTION

A property inspection was not required as part of this assessment, as per the S & G Section 1.2 Property Survey.

3.0 ANALYSIS AND CONCLUSIONS

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. These data are presented below in Section 3.1.

3.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Proximity to previously registered archaeological sites (see Table 1);
- Proximity to Euro-Canadian settlements (village of Appleby, farmsteads, school house, church, cemeteries, saw mill);
- Proximity to historic transportation routes (GWR, Middle Road, Appleby Line); and,
- Proximity to water sources (Appleby and Sheldon Creeks)

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The City of Burlington's Municipal Heritage Register was consulted and three properties are Listed or Designated within the Study Area:

- 0 Appleby Line, Appleby Cemetery, est. 1861,
- 955 Century Drive, "Pine Hall", built 1848 by William Van Norman
- 5098 South Service Road, Mount Vernon Cemetery



For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those which are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be captured by the basic proximity to the water model, since these occupations were subject to similar environmental constraints. An added factor, however, is the development of the network of concession roads and railroads through the course of the nineteenth century. These transportation routes frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 m of the early settlement roads and 50m from historic railroads are also considered to have potential for the presence of Euro-Canadian archaeological sites.

An archaeological potential model takes into consideration the Study Area's proximity to previously registered archaeological sites, designated heritage structures, and up to 100 metres from historic transportation routes. Where data was available building footprints with basements, massive infrastructure like highways and railways, as well as analysis of Google Earth orthoimagery showing twenty-first century urban development (eg. condominium construction and other topsoil stripping construction activities), were removed from areas of potential. Deeply buried archaeological sites may still be identified below disturbed areas like parking lots within urban contexts, where deep excavation has not taken place. In consideration of these factors, parts of the Study Area is determined to have potential for the identification Indigenous and Euro-Canadian archaeological resources (Figure 10). The archaeological potential model is presented here for planning purposes only, and does not replace a property inspection or Stage 2 assessment.

3.2 Conclusions

The Stage 1 background study determined that 10 previously registered archaeological sites are located within one kilometre of the Study Area. The background research determined that parts of the Study Area exhibits potential and will require a detailed Stage 1 including property inspection prior to any future development.



4.0 RECOMMENDATIONS

In light of these results, the following recommendations are made:

1. Locations where archaeological potential has been identified require a detailed, property specific Stage 1 archaeological assessment, including a property inspection, once project design concepts are known, in accordance with the Ministry of Tourism, Culture and Sport 2011 *Standards and Guidelines for Consultant Archaeologists*, in order to confirm the assessment of archaeological site potential and to determine the degree to which recent development and landscape alteration may affect that potential.
2. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the MTCS should be immediately notified.



5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

ASI also advises compliance with the following legislation:

- 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*, RSO 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 field work and report recommendations ensure the conservation, preservation and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the *Ontario Heritage Act*.
- The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.
- Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.



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7.0 MAPS



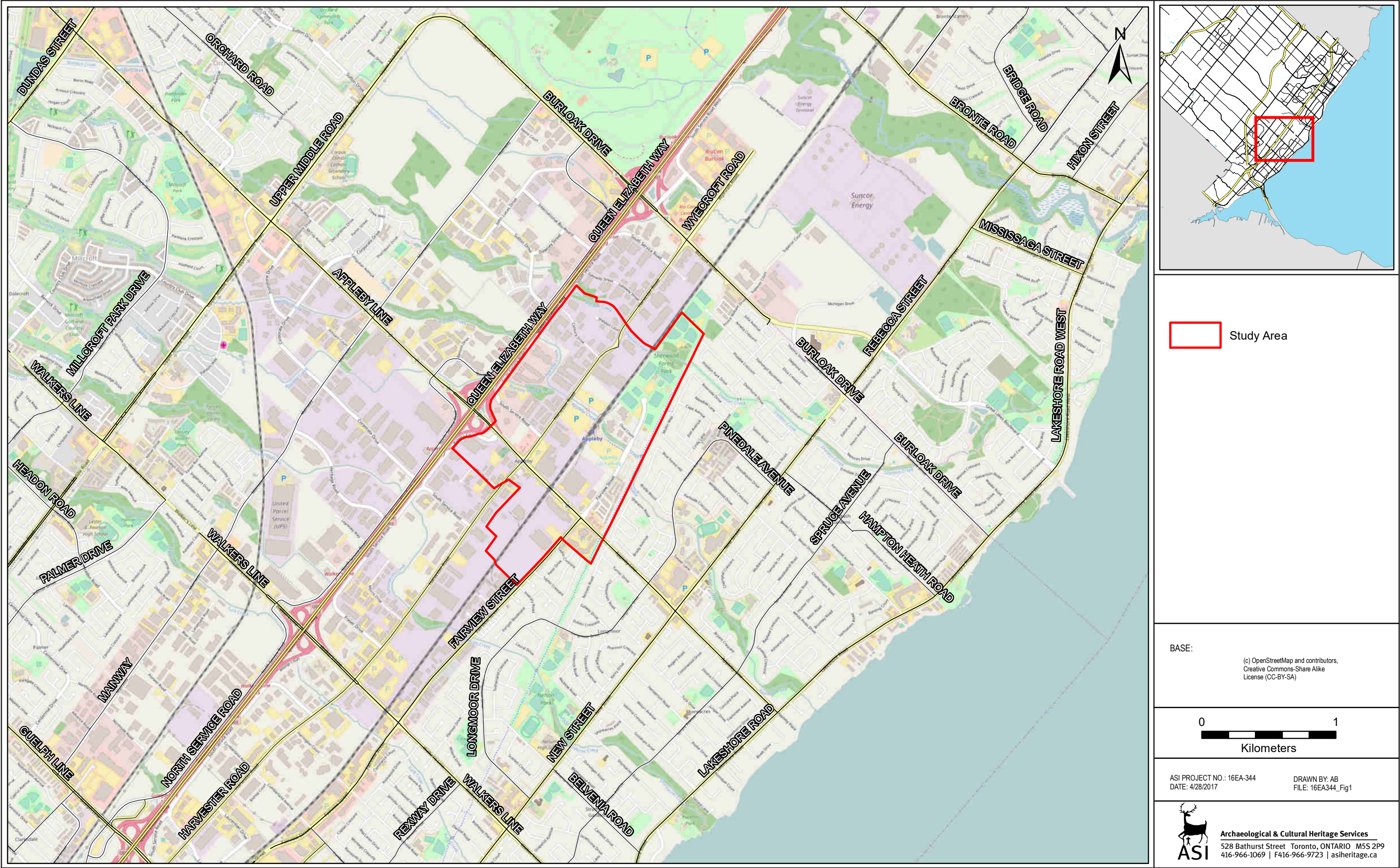
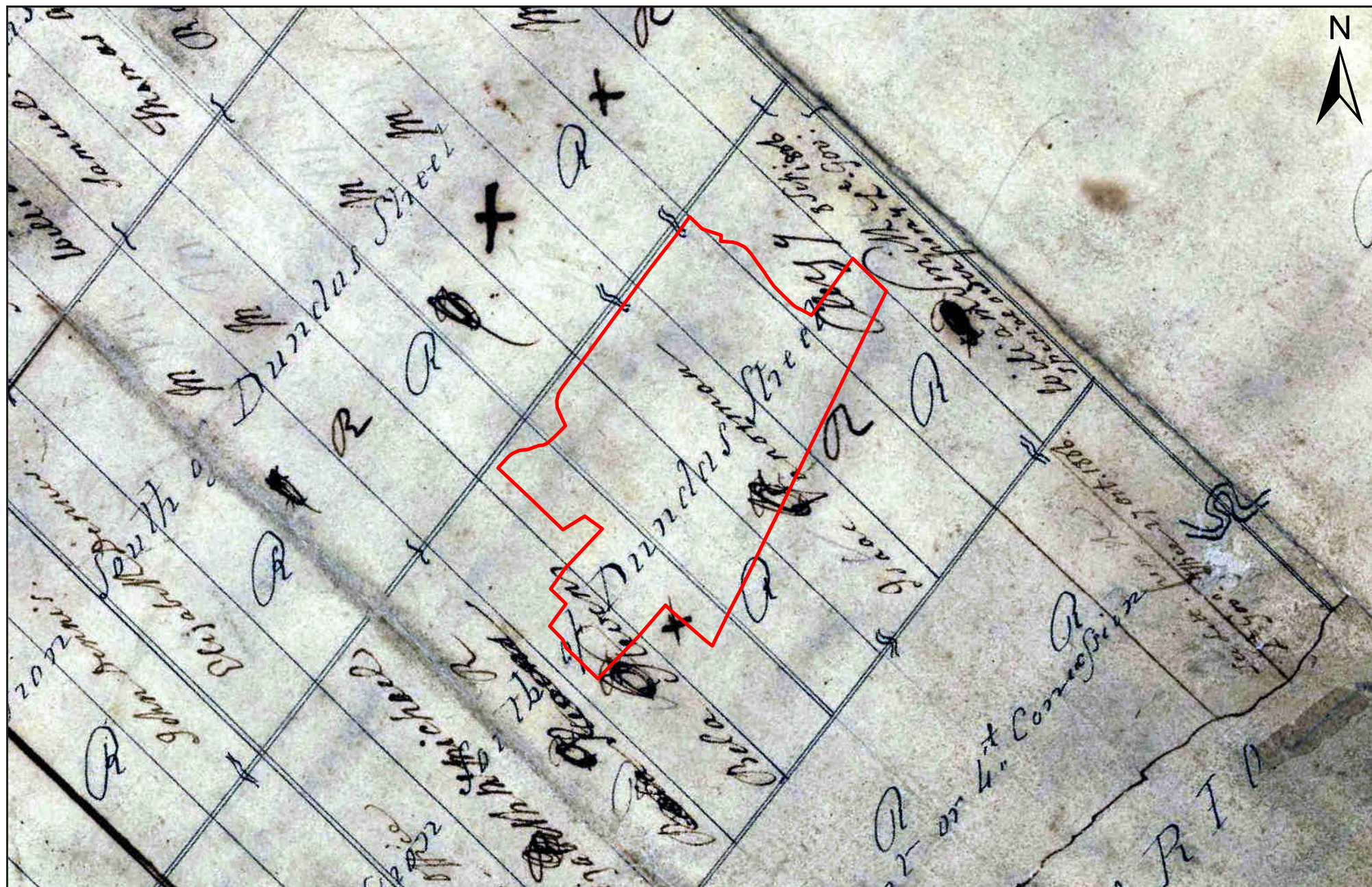


Figure 1: Burlington Mobility Hubs: Appleby - Location of the Study Area



Archaeological & Cultural Heritage Services
528 Bathurst Street Toronto, ONTARIO M5S 2P9
416-966-1069 | F416-966-9723 | asiheritage.ca



Study Area



Kilometres

ASI PROJECT NO.: 16EA-344
DATE: 20-Mar-18

DRAWN BY: JF & BW
FILE: 16EA344_fig2_1806

Figure 2: Mobility Hub Planning Consulting Services: Appleby Study Area (Approximate Location) Overlaid on the 1806 Plan of Nelson Township

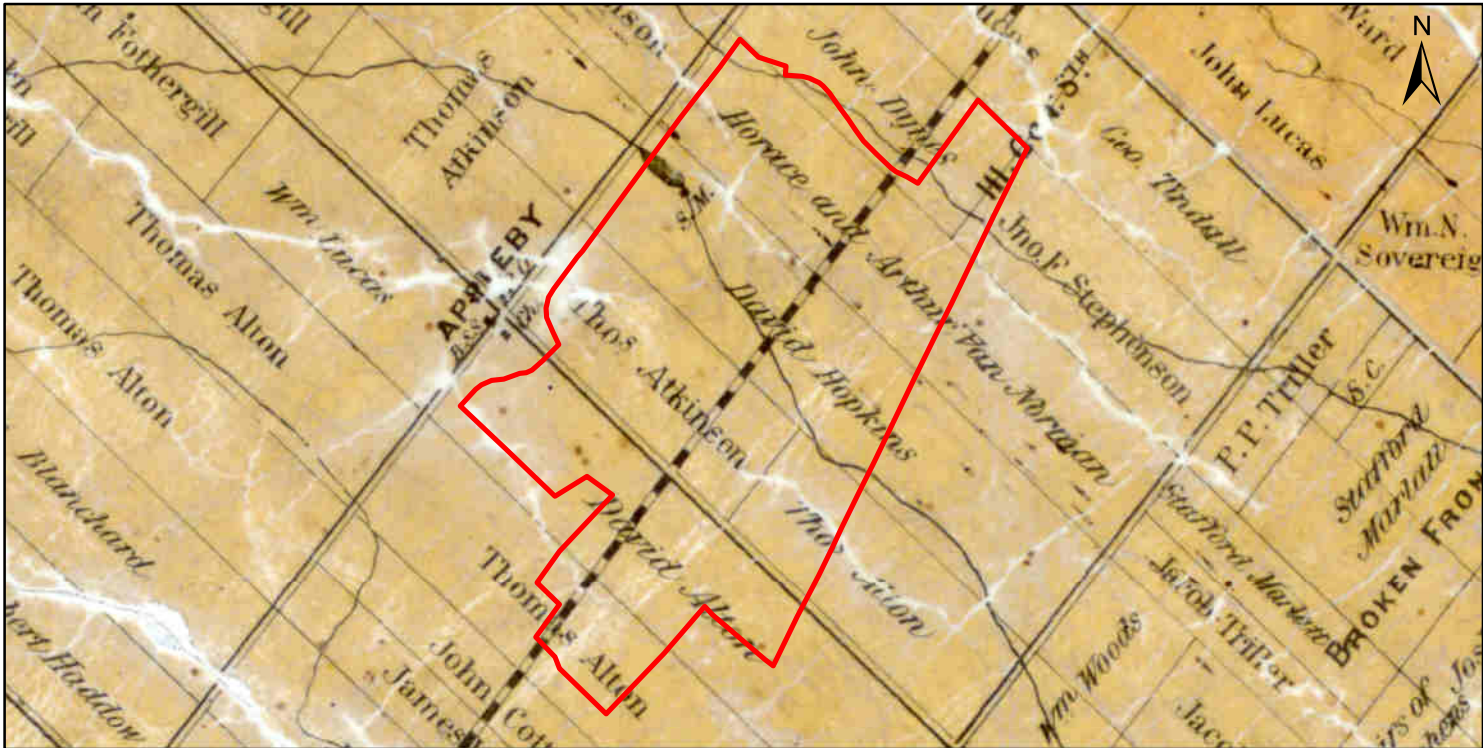


Figure 3: Burlington Mobility Hubs: Appleby Study Area (Approximate Location) Overlaid on the 1858 Map of the County of Halton

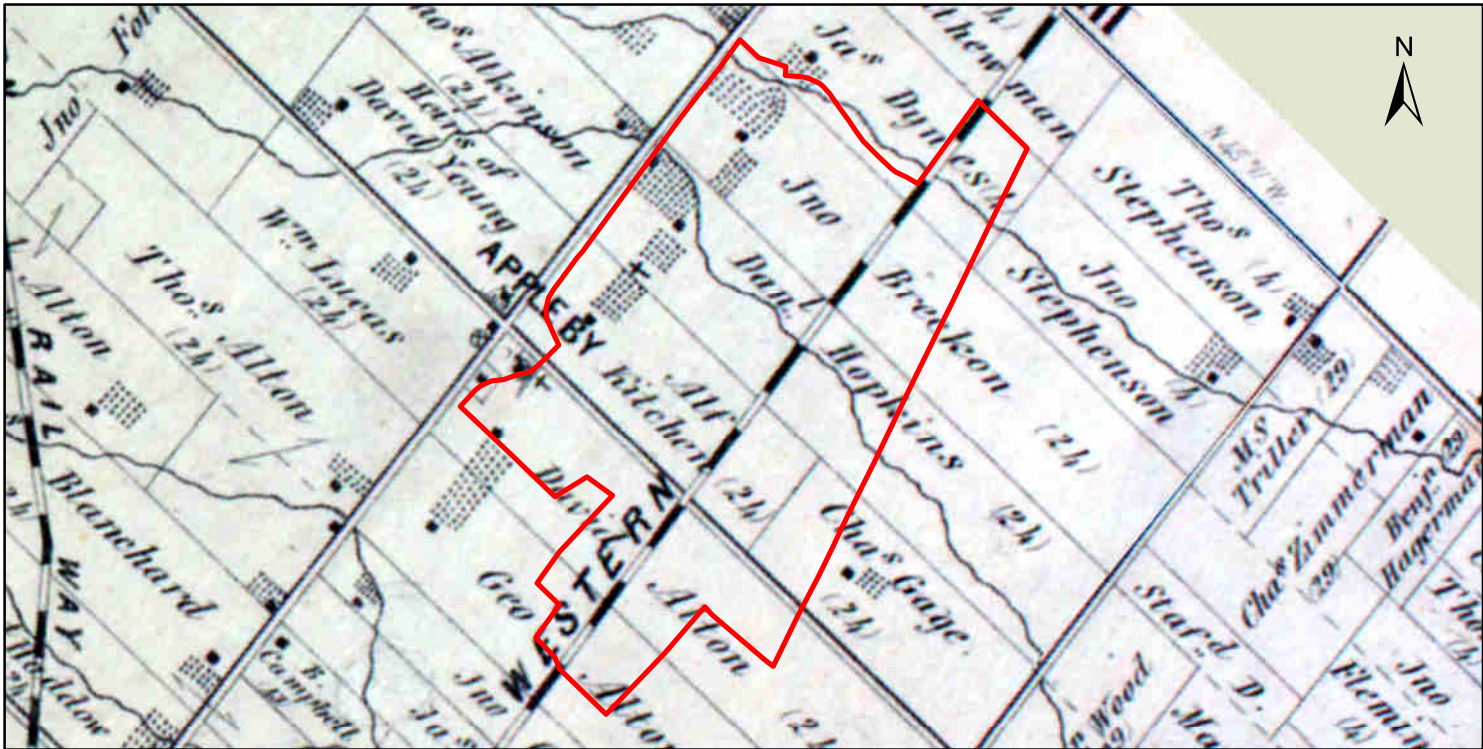


Figure 4: Burlington Mobility Hubs: Appleby Study Area (Approximate Location) Overlaid on the 1877 Illustrated Historical Atlas of the Township of Nelson

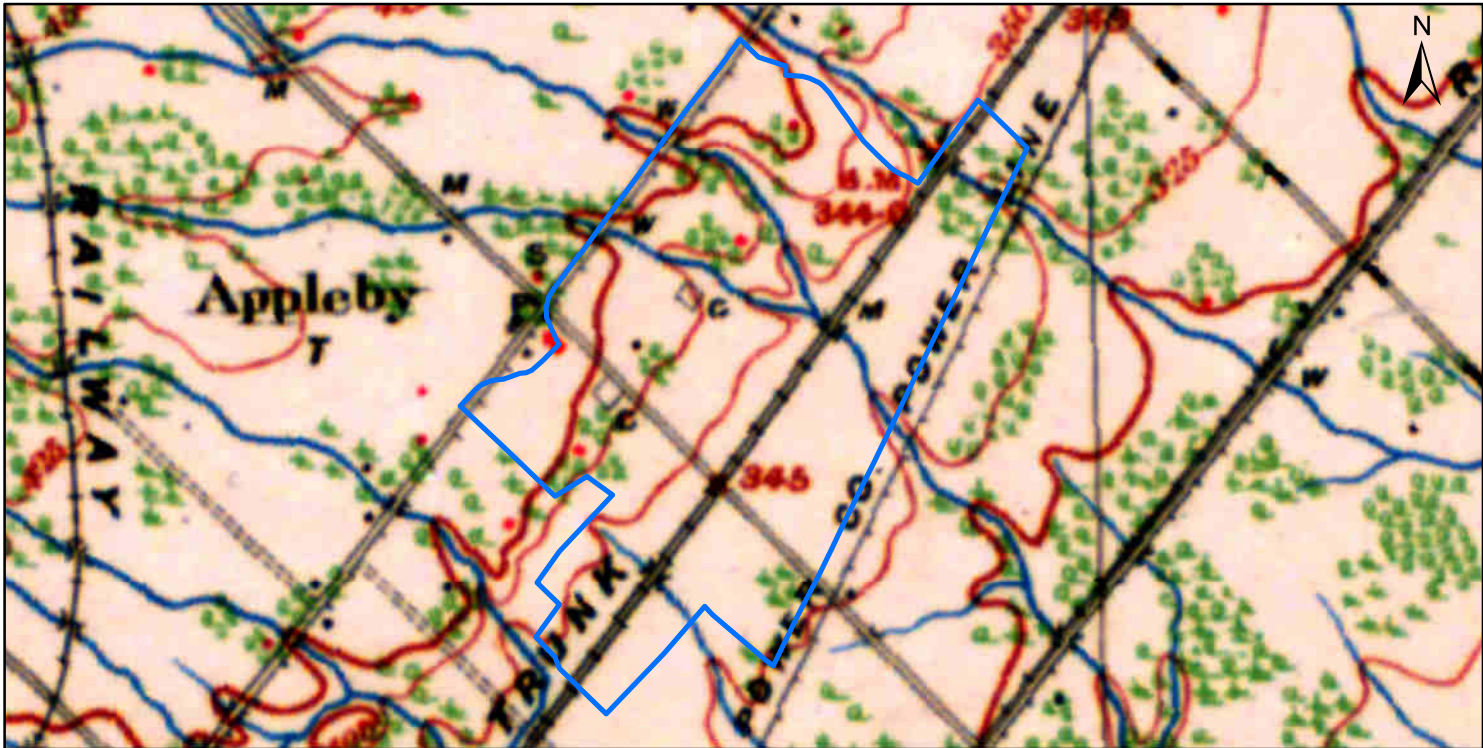


Figure 5: Burlington Mobility Hubs: Appleby Study Area (Approximate Location) Overlaid on the 1909 National Topographic Series Hamilton Sheet

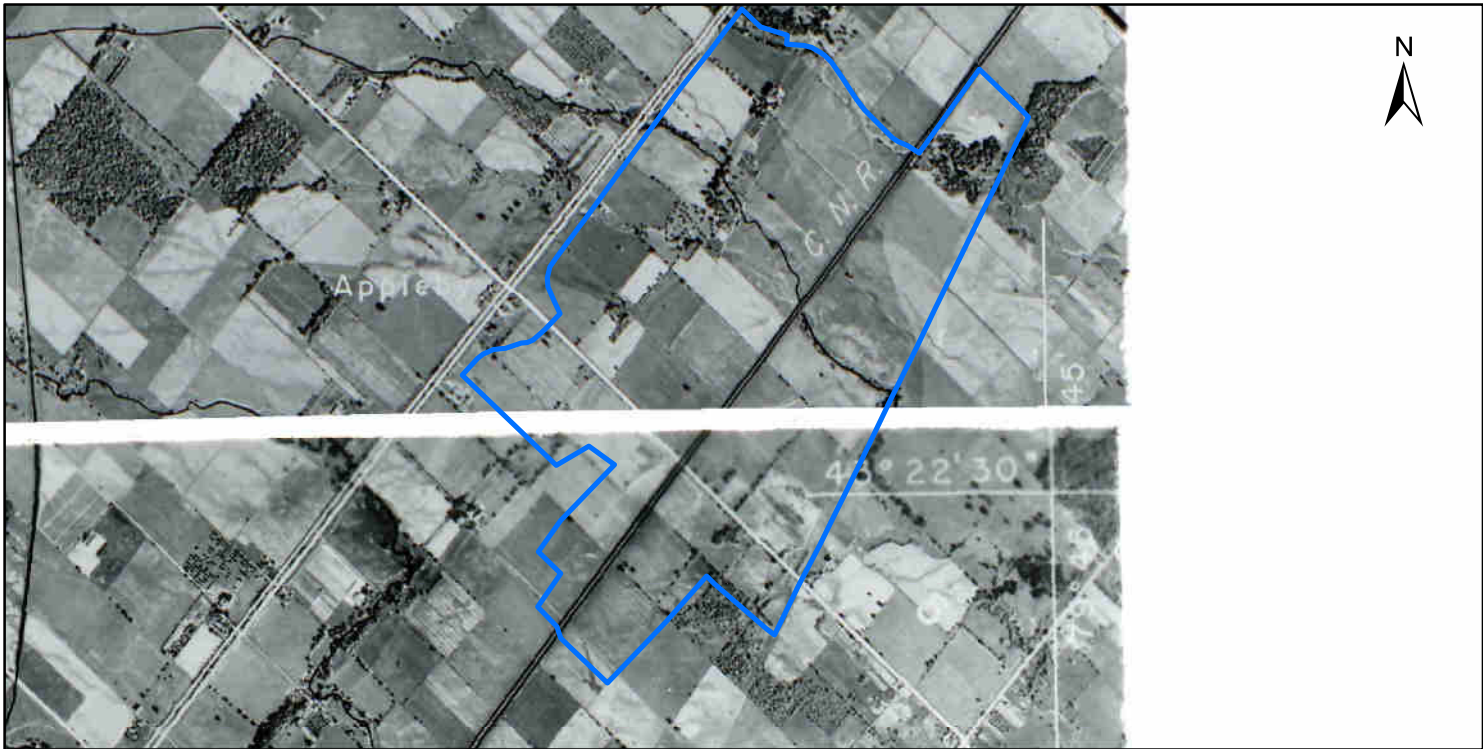


Figure 6: Burlington Mobility Hubs: Appleby Study Area (Approximate Location) Overlaid on the 1954 Aerial Photograph of Burlington

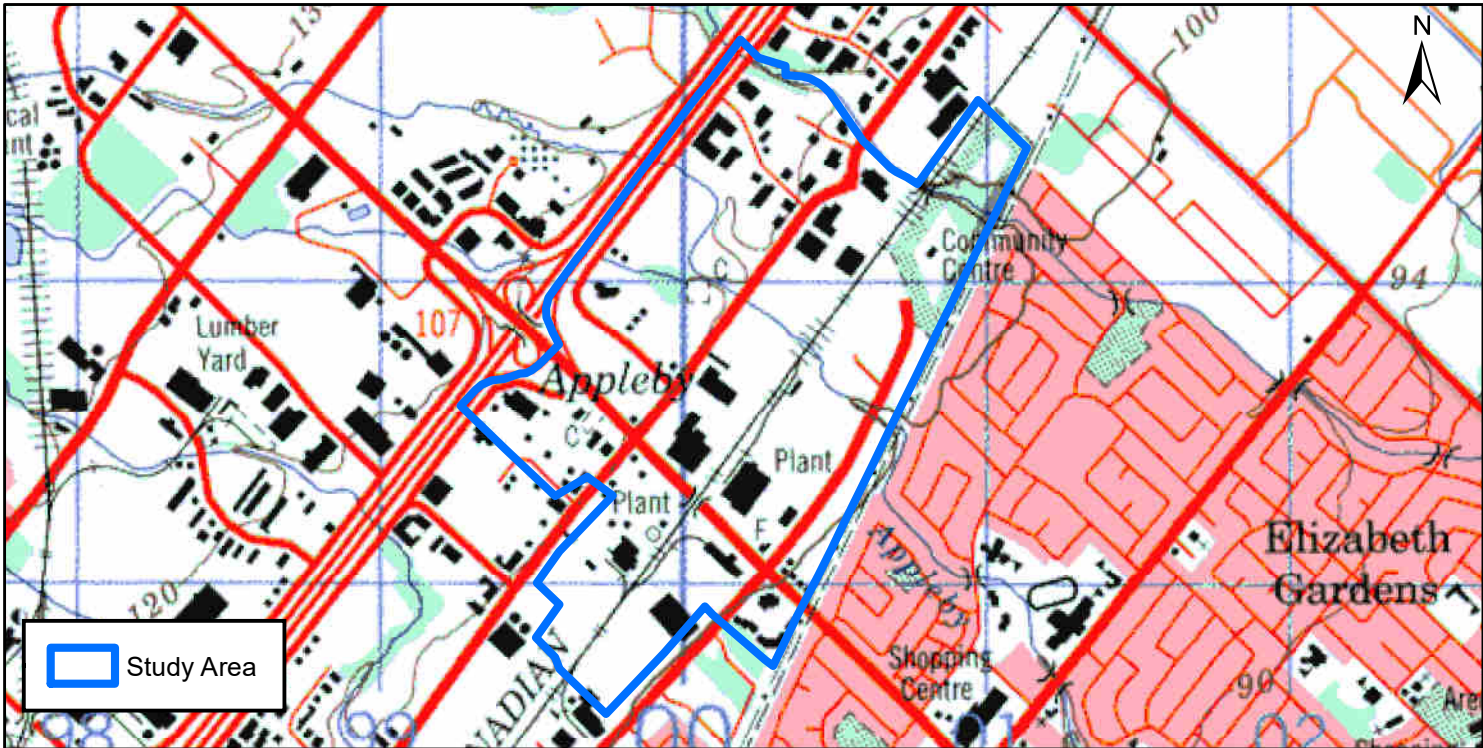


Figure 8: Mobility Hub Planning Consulting Services: Appleby Study Area (Approximate Location) Overlaid on the 1999 National Topographic Series Hamilton-Burlington Sheet



Figure 9: Mobility Hub Planning Consulting Services: Downtown Study Area (Approximate Location) Overlaid on 2004 Google Earth Orthoimagery

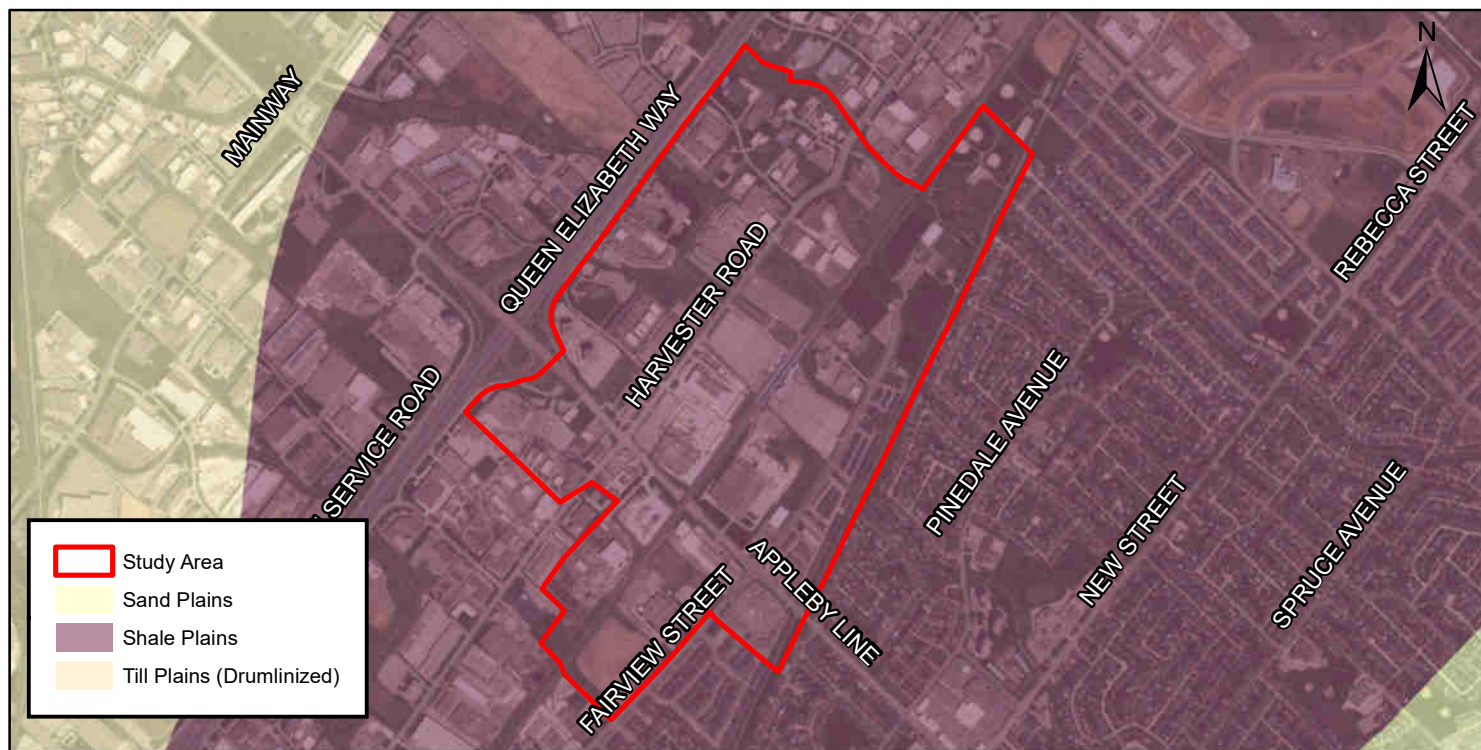


Figure 9: Burlington Mobility Hubs: Appleby Study Area - Physiographic Regions



Figure 10: Burlington Mobility Hubs: Appleby Study Area - Surficial Geology

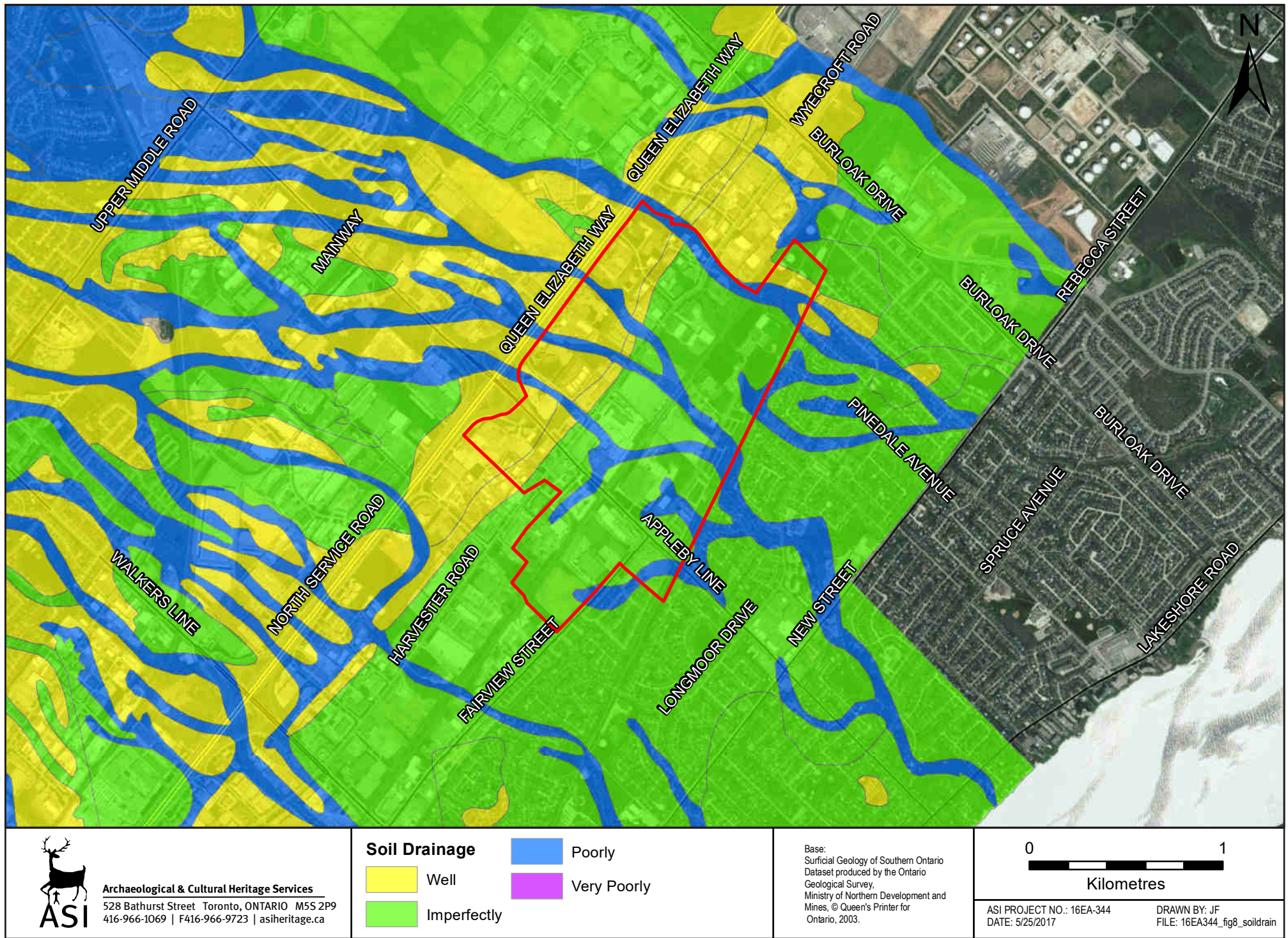
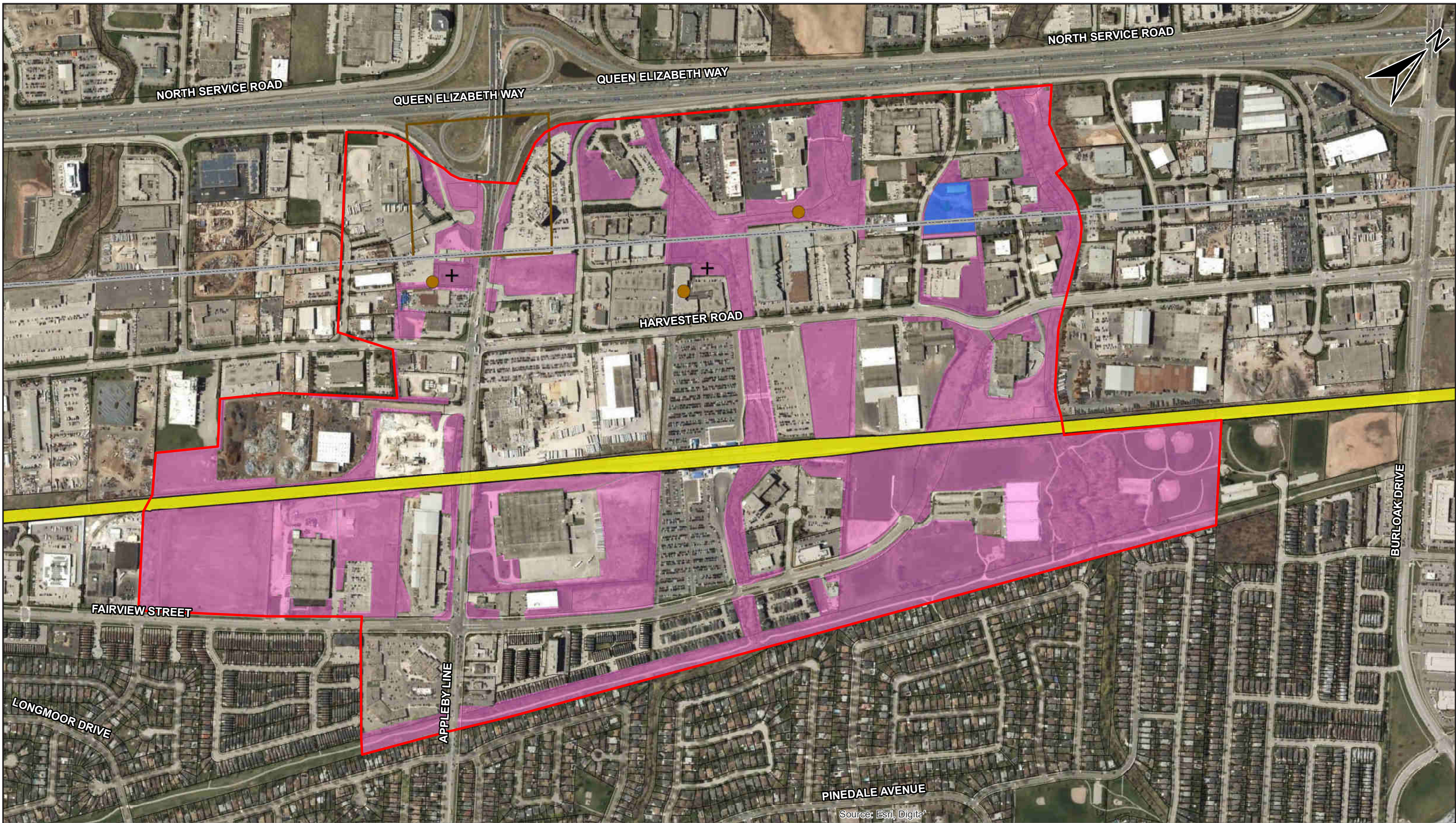


Figure 11: Burlington Mobility Hubs: Appleby Study Area - Soil Drainage



<p>Archaeological & Cultural Heritage Services 528 Bathurst Street Toronto, ONTARIO M5S 2P9 416-966-1069 F416-966-9723 asiheritage.ca</p>	Study Area Cemetery Previously Assessed - No Potential	Archaeological Potential Heritage Properties Parcels	Historic Structure Historic Roads Historic Settlement	BASE: Ortho Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community	 0 250 Metres
	ASI PROJECT NO.: 16EA-344 DATE: 8/22/2018			DRAWN BY: BW FILE: 16EA344_Fig10_ArchPotent_v3	

Figure 12: Mobility Hub Planning Consulting Services: Appleby Study Area– Archaeological Potential Model