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Appendix D

Stage 1 Archaeological Assessment Report

ARCHEOWORKS INC.

**Stage 1 Archaeological Assessment for the
John Street Wastewater Pumping Station Improvements
Municipal Class Environmental Assessment Study
Within the Part of Lots 18-19, Concessions 9-10
Geographic Township of Esquesing
Former County of Halton
Now in the Town of Halton Hills
Regional Municipality of Halton
Ontario**

**Project #: 178-HH1756-16
Licensee (#): Kim Slocki (P029)
PIF#: P029-0910-2017**

Original Report

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EXECUTIVE SUMMARY

The Region's John Street Wastewater Pumping Station (WWPS) in Georgetown is nearing the end of its useful life and requires significant capital upgrades to maintain the station in a state of good repair. Accordingly, the Regional Municipality of Halton is undertaking a Municipal Class Environmental Assessment Study ('study area') that will consider a wide range of WWPS and/or collection system upgrade alternatives (Alternatives 1-6), to select the most appropriate station design concept that meets Halton Region's latest design standards, including provision for an emergency over flow to reduce the risk of a sewer surcharge in the event of WWPS system failure and/or during peak wet weather events. Alternatives 1-6 are located within the study area.

To facilitate this study, *Archeoworks Inc.* was retained by *R.J. Burnside & Associates Ltd.* to conduct a Stage 1 Archaeological Assessment (AA) in support of the John Street WWPS Municipal Class Environmental Assessment Study, located in part of Lots 18 and 19, Concession 9 and 10, in the Geographic Township of Esquesing, former County of Halton, now in the Town of Halton Hills, Regional Municipality of Halton ('study area').

Stage 1 AA background research established elevated potential for the recovery of archaeologically significant materials within the study area. To determine if the archaeological potential classification of the study area is relevant, a desktop review of ground conditions was undertaken using historical aerial photography and satellite imagery. The desktop review identified parts of the study area as having archaeological potential removed and parts of the study area as having low to no archaeological potential. The remaining balance of the study area was identified as retaining archaeological potential.

Considering the findings detailed in preceding sections, the following recommendations are presented:

1. Alternatives 1 and 6

If selected as the preferred alternative, given these options would involve leaving the existing infrastructure as is, there is no further archaeological concern with either alternative.

2. Alternatives 2, 3, and 4

If selected as the preferred alternative, a Stage 2 AA test pit survey at five metre intervals in accordance with Section 2.1.2 of the 2011 S&G will be required in all areas retaining archaeological potential. All parts of the alternative that have been identified as having archaeological potential removed (i.e., areas of identified deep and extensive disturbance) need to be confirmed through an on-site property inspection during a Stage 2 AA. All parts of the alternative that have been identified as having no or low archaeological potential (i.e., areas of steeply sloping terrain and low-lying wet areas and watercourses) need to be confirmed through an on-site property inspection during a Stage 2 AA.

3. Alternative 5

If selected as the preferred alternative, a Stage 2 AA test pit survey at five metre intervals in accordance with Section 2.1.2 of the 2011 S&G will be required in all areas retaining archaeological potential. All parts of the alternative that have been identified as having archaeological potential removed (i.e., areas of identified deep and extensive disturbance) need to be confirmed through an on-site property inspection during a Stage 2 AA.

4. Study area

Should development impacts extend beyond the limits of the alternatives, the following recommendations apply:

- i. Lands encompassed within the study area limits which have already been subjected to Stage 1, Stage 2, and/or Stage 3 survey (Archaeological Services Inc., 2009b; Stantec Consulting Ltd., 2015; AMICK Consultants Ltd., 2016), and deemed free of further archaeological concern are recommended to be exempt from further assessment.
- ii. Parts of the study area that were identified as having archaeological potential removed (i.e., areas of identified deep and extensive disturbance) need to be confirmed through an on-site property inspection during a Stage 2 AA.
- iii. Parts of the study area that were identified as having no or low archaeological potential (i.e., areas of steeply sloping terrain and low-lying wet areas and watercourses) need to be confirmed through an on-site property inspection during a Stage 2 AA.
- iv. Parts of the study area that were identified as retaining archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to test pit survey at five metre intervals in accordance with *Section 2.1.2* of the *2011 S&G*.

No construction activities shall take place within the study area prior to the *MTCS* (Archaeology Programs Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

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1.0 PROJECT CONTEXT

1.1 Objective

The objectives of a Stage 1 Archaeological Assessment (AA), as outlined by the 2011 *Standards and Guidelines for Consultant Archaeologists* ('2011 S&G') published by the *Ministry of Tourism, Culture, and Sport (MTCS)* (2011), are as follows:

- To provide information about the property's geography, history, previous archaeological fieldwork and current land condition;
- To evaluate in detail the property's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property; and
- To recommend appropriate strategies for Stage 2 survey.

1.2 Development Context

The Region's John Street Wastewater Pumping Station (WWPS) in Georgetown is nearing the end of its useful life and requires significant capital upgrades to maintain the station in a state of good repair. Accordingly, the Regional Municipality of Halton is undertaking a Municipal Class Environmental Assessment Study ('study area') that will consider a wide range of WWPS and/or collection system upgrade alternatives (Alternatives 1-6), to select the most appropriate station design concept that meets Halton Region's latest design standards, including provision for an emergency over flow to reduce the risk of a sewer surcharge in the event of WWPS system failure and/or during peak wet weather events. Alternatives 1-6 are located within the study area, and a description of each alternative is provided below.

Alternative 1: Do nothing

Confined to the existing John Street forcemain and existing gravity main located along John Street from John Street WWPS at 68 John Street to Victoria Street gravity sewer (GS) and from Lynden Circle WWPS to John Street WWPS.

Alternative 2: Upgrade at the existing location with emergency storage/outflow

Includes a proposed second forcemain running parallel to the existing John Street forcemain from John Street WWPS to Victoria Street GS; a proposed emergency outflow running parallel to the existing forcemain and gravity main along John Street from John Street WWPS to where John Street turns southeast; and emergency outflow discharge (Options A, B or C) extending from John Street bend to the Credit River. A 10-metre radius around the proposed emergency outflow, emergency outflow discharge option and second forcemain was reviewed.

Alternative 3: Replacement station at the existing location with emergency storage/outflow

Includes a proposed second forcemain running parallel to the existing John Street forcemain from John Street WWPS to Victoria Street GS; a proposed emergency outflow running parallel to the existing forcemain and gravity main along John Street from John Street WWPS to where John Street turns southeast; emergency outflow discharge (Options A, B or C) extending from John Street bend to the Credit River; and, a replacement station at 68 John Street. A 10-metre radius around proposed emergency outflow, emergency outflow discharge option, second forcemain and replacement station was reviewed.

Alternative 4: Replace station at a new location with emergency storage/outflow

Includes a proposed second forcemain running parallel to the existing John Street forcemain from John Street WWPS to a replacement WWPS at a new location at Barber Mill Park on River Drive; a proposed emergency outflow discharge (Option D) extending from John Street WWPS to the Credit River; and, a replacement WWPS at a new location at Barber Mill Park on River Drive.. A 10-metre radius around proposed emergency outflow discharge options and replacement station was reviewed.

Alternative 5: Redirect from the Lynden Circle SPS to the Victoria Street gravity sewer by-passing the John Street SPS

Includes redirecting flow from the Lynden Circle SPS to the Victoria Street GS, by-passing the John Street SPS which runs parallel to the existing forcemain from Mountainview Drive to Victoria Street. A 10-metre radius around proposed Lynden Circle forcemain extension to Victoria Street GS was reviewed.

Alternative 6: Reduce inflow and infiltration in the collection system

Includes reducing the inflow and infiltration in the collection system by utilizing the existing forcemain and gravity main located along John Street from Victoria Street to Lynden Circle and along Lynden Circle to the Lynden Circle SPS.

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This study was triggered by the Environmental Assessment Act in support of Schedule B of the Municipal Class Environmental Assessment regulatory process. This Stage 1 AA was conducted under the project direction of Ms. Kim Slocki, under the archaeological consultant licence number P029, in accordance with the *Ontario Heritage Act* (2009). Permission to investigate the study area was granted by *R.J. Burnside & Associates Limited* on July 6th, 2017.

The Regional Municipality of Halton has an archaeological management plan (AMP) that is founded on the principles of archaeological potential modeling. Archaeological site potential modeling incorporates a variety of sources, such as history, human geography, settlement

archaeology, ecological archaeology, and paleoecology, in an attempt to reconstruct past land use patterns. The predictive model employs two approaches, using known site locations and attempts to predict site locations on the basis of expected behavioural patterns, such as access to water for travel and subsistence (ASI, 2009a, p.2). According to the Region of Halton, the study area is identified as having archaeological potential (ASI, 2009a, p.11).

1.3 Historical Context

To establish the historical context and archaeological potential of the study area, *Archeoworks Inc.* conducted a review of Aboriginal and Euro-Canadian settlement history, and a review of available historic mapping.

The results of this background research are documented below and summarized in **Appendix B – Summary of Background Research**.

1.3.1 Pre-Contact Period

The Pre-Contact Period of Southern Ontario includes numerous Aboriginal groups that continually progressed and developed within the environmental constraints they inhabited. **Table 1** includes a summary of the Pre-Contact Aboriginal history of Southern Ontario.

Table 1: Pre-Contact Period

Periods	Date Range	Overview
Paleo-Indian	ca. 11,000 to 7,500 B.C.	Small groups of nomadic hunter-gathers who utilized seasonal and naturally available resources; sites are rare; hunted in small family groups who periodically gathered into larger groups/bands during favourable periods in the hunting cycle; artifacts include fluted and lanceolate stone points, scrapers, dart heads. - Gainey, Barnes, Crowfield Fluted Points (Early Paleo-Indian) - Holcombe, Hi-Lo, Lanceolates (Late Paleo-Indian) (Ellis and Deller, 1990, pp.37-64; Wright, 1994, p.25).
Archaic	ca. 7,800 to 500 B.C.	Descendants of Paleoindian ancestors; lithic scatters are the most commonly encountered site type; trade networks appear; artifacts include reformed fluted and lanceolate stone points with notched bases to attach to wooden shaft; ground-stone tools shaped by grinding and polishing; stone axes, adzes and bow and arrow. - Side-notched, corner-notched, bifurcate (Early Archaic) - Stemmed, Otter Creek/Other Side-notched, Brewerton side and corner-notched (Middle Archaic) - Narrow Point, Broad Point, Small Point (Late Archaic) (Ellis et al., 1990, pp.65-124; Wright, 1994, pp.26-28; Ellis, 2013, pp.41-46).
Early Woodland	ca. 800 to 0 B.C.	Evolved out of Late Archaic Period; introduction of pottery (ceramic) where the earliest were coil-formed, under fired and likely utility usage; two primary cultural complexes: Meadowood (broad extent of occupation in southern Ontario) and Middlesex (restricted to Eastern Ontario); poorly understood settlement-subsistence patterns; artifacts include cache blades, and side-notched points that were often recycled into other tool forms; primarily Onondaga chert; commonly associated with Saugeen and Point Peninsula complexes.

**STAGE 1 AA FOR JOHN STREET WASTEWATER PUMPING STATION IMPROVEMENTS – CLASS EA
TOWN OF HALTON HILLS, REGIONAL MUNICIPALITY OF HALTON, ONTARIO**

Periods	Date Range	Overview
		<p>- Meadowood side-notched (Spence et al., 1990, pp.125-142; Wright, 1994, pp.29-30; Ferris and Spence, 1995, p.89-97; Williamson, 2013, pp.48-61).</p>
Middle Woodland	ca. 200 B.C. to A.D. 700	<p>Three primary cultural complexes: Point Peninsula (generally located throughout south-central and eastern Southern Ontario), Saugeen (generally located southwestern Southern Ontario), and Couture (generally located in southwestern-most part of Ontario); introduction of large “house” structures; settlements have dense debris cover indicating increased degree of sedentism; burial mounds present; shared preference for stamped, scallop-edged or tooth-like decoration, but each cultural complex had distinct pottery forms.</p> <ul style="list-style-type: none"> - Saugeen point (Saugeen) - Vanport point (Couture) - Snyder Point <p>(Spence et al., 1990, pp.142-170; Wright, 1994, pp.28-33; Ferris and Spence, 1995, p.97-102; Wright, 1999, pp.629-649; Williamson, 2013, pp.48-61).</p>
Late Woodland (Transitional)	ca. A.D. 600 to 1000	<p>Princess Point exhibits few continuities from earlier developments with no apparent processors; hypothesized to have migrated into Ontario; the settlement data is limited, but oval houses are present; artifacts include ‘Princess Point Ware’ vessel that are cord roughened, with horizontal lines and exterior punctation; smoking pipes and ground stone tools are rare; introduction of maize/corn horticulture; continuity of Princess Point and Late Woodland cultural groups.</p> <ul style="list-style-type: none"> - Triangular projectile points. <p>(Fox, 1990, pp.171-188; Ferris and Spence, 1995, pp.102-106).</p>
Late Woodland (Early Ontario Iroquois Stage)	ca. A.D. 900 to 1300	<p>Two primary cultures: Glen Meyer (located primarily in southwestern Ontario from Long Point on Lake Erie to southwestern shore of Lake Huron) and Pickering (encompassed north of Lake Ontario to Georgian Bay and Lake Nipissing); well-made and thin-walled clay vessels with stamping, incising and punctation; multi-family longhouses and some small, semi-permanent palisade villages; increase in corn-yielding sites; crudely made smoking pipes, and worked bone/antler present; evolution of the ossuary burials</p> <ul style="list-style-type: none"> - Triangular-shaped, basally concave points with downward projecting corners or spurs. <p>(Williamson, 1990, pp.291-320; Ferris and Spence, 1995, pp.106-109).</p>
Late Woodland (Middle Ontario Iroquois Stage)	ca. A.D. 1300 to 1400	<p>Fusion of Glen Meyer and Pickering caused by conquest and absorption of Glen Meyer by Pickering; two primary cultures: Uren (A.D. 1300-1350) and Middleport (A.D. 1350-1400); decorated clay vessels decrease; well developed clay pipe complex that includes effigy pipes; increase in village sizes (0.5 to 1.7 ha) and campsites (0.1 to 0.6 ha) appear with some palisades; classic longhouse takes form; increasing reliance on maize and other cultigens such as beans and squash.</p> <ul style="list-style-type: none"> - Triangular and (side of corner or corner removed) notched projectile points - Middleport Triangular and Middleport Notched Points. <p>(Dodd et al., 1990, pp.321-360; Ferris and Spence, 1995, pp.109-115).</p>
Late Woodland (Late Ontario Iroquois Stage)	ca. A.D. 1400 to 1600	<p>Ontario Iroquoian sites describes two major groups east and west of the Niagara Escarpment: the ancestral Neutral Natives to the west, and the ancestral Huron-Wendat and to the east; Huron-Wendat “concentrations of sites occur in the areas of the Humber River valley, the Rouge and Duffin Creek valleys, the lower Trent valley, Lake Scugog, the upper Trent River and Simcoe County” (Ramsden, 1990, p.363); longhouse; villages enlarged to 100 longhouses clustered together as horticulture (maize, squash, and beans) gained importance in subsistence</p>

**STAGE 1 AA FOR JOHN STREET WASTEWATER PUMPING STATION IMPROVEMENTS – CLASS EA
TOWN OF HALTON HILLS, REGIONAL MUNICIPALITY OF HALTON, ONTARIO**

Periods	Date Range	Overview
		<p>patterns; villages chosen for proximity to water, arable soils, available fire wood and defensible position; diet supplemented with fish; ossuaries; tribe/band formation; relocation to north of Lake Simcoe; pre-contact ancestral Neutral (called Attiewandaron by the Huron-Wendat) Natives distributed west of the Niagara Escarpment; varying settlements include villages up to five acres in size to isolated fishing cabins; villages tend to be located along smaller creeks, headwaters and marshlands; diet dependent on hunting, gathering, fishing and farming; longhouses present; ossuaries; tribe/band formation; theorized that Credit River may have functioned as a boundary marker between the ancestral Neutral Natives and ancestral Huron-Wendat peoples; the Petun (Tionnontaté or Khionontateronon) were located along the Blue Mountains to the northwest, and arrived ca. 1580 from Neutral territory; since the Grand River headwaters are located in the northwest corner of Dufferin County, the Petun are believed to have utilized Dufferin County (north of the study area) as hunting territory.</p> <ul style="list-style-type: none"> - Huron-Wendat points are limited but change from predominantly side-notched to unnotched triangular. - Neutral points are typically small but long and narrow, frequently side-notched. <p>(Sawden, 1952, p.7; Heidenreich, 1978, pp.368-388; Lennox and Fitzgerald, 1990, pp.405-456; Ramsden, 1990, pp.361-384; Trigger, 1994, p.42-47; Ferris and Spence, 1995, pp.115-122; Warrick, 2000, p.446-454; Warrick, 2008, p.15; Brown, 2009, p.26; Garrad, 2014, pp.1, 147-148).</p>

1.3.2 Contact Period

The Contact Period of Southern Ontario is dominated by the European arrival, interaction and influence with the established Aboriginal communities of Southern Ontario. **Table 2** includes a summary of some of the main developments that occurred during the Contact Period of Southern Ontario.

Table 2: Contact Period

Periods	Date Range	Overview
European Contact	ca. A.D. 1600s	<p>The area “south of Lake Simcoe and along the north shore of Lake Ontario remained a no-man’s land, with no permanent settlements and traversed only by raiding parties from the north or from the south” (Robinson, 1965, p.11); Huron-Wendat villages north of Lake Simcoe; Neutral Native villages were clustered in the Niagara Peninsula; Credit River may have continued to function as a frontier boundary between groups; French arrival into Ontario; trade relationship with Huron-Wendat and French establish; Neutral Natives referred as <i>la Nation neutre</i> by Samuel de Champlain but limited European contact with Neutrals; no direct commercial trade relationship was formed between the French and Neutral natives; the Tionnontaté or Khionontateronon were called ‘Petun’ a term meaning tobacco; scant references to the Petun were made by fur traders leading to the belief that fur traders assumed they were similar to the Huron-Wendat; trade goods begin to replace traditional tools/items; Jesuit and Recollét missionaries; epidemics (Bricker, 1934, p.58; Jury, 1974, pp.3-4; Garrad and Heidenreich, 1978, pp.395-396; Heidenreich, 1978, pp.368-388; White, 1978, pp.407-411; Lennox and Fitzgerald, 1990, pp.405-456;</p>

**STAGE 1 AA FOR JOHN STREET WASTEWATER PUMPING STATION IMPROVEMENTS – CLASS EA
TOWN OF HALTON HILLS, REGIONAL MUNICIPALITY OF HALTON, ONTARIO**

Periods	Date Range	Overview
		Trigger, 1994, pp.47-55; Warrick, 2008, pp.12, 15, 80, 245; Garrad, 2014, pp.148, 167-168, 490).
Five Nation (Haudenosaunee) Arrival	ca. A.D. 1650s	The Five (later Six) Nations (or Haudenosaunee), originally located south of the Great Lakes, engaged in warfare with Huron-Wendat neighbours as their territory no longer yielded enough furs; Haudenosaunee attacked and destroyed numerous Huron-Wendat villages in 1649-50; the small groups that remained became widely dispersed throughout the Great Lakes region, ultimately resettling in Quebec; to prevent the revival of Huron-Wendat settlements, the Haudenosaunee attacked and destroyed the villages of the Huron-Wendat allies, the Tionnontaté; in 1650, what remained of the Tionnontaté migrated through Attiawandaron territory prior to resettlement in America; the Haudenosaunee attacked Neutrals ca.1650s and caused their dispersal; Haudenosaunee established settlements along the Lake Ontario shoreline at strategic locations along canoe-and-portage routes and used territory for extensive fur trade; European fur trade and exploration continues (Robinson, 1965, pp.15-16; Schmalz, 1991, pp.12-34; Trigger, 1994, p.53-59; Williamson, 2013, p.60; Garrad, 2014, pp.501-505).
Anishinaabeg Arrival	ca. A.D. 1650s to 1700s	Algonquin-speaking and cultural groups within the Anishinaabeg (Mississauga, Ojibway, Chippewa, Odawa and others) began to challenge the Haudenosaunee dominance in the region; by 1690s, Haudenosaunee settlements were abandoned; battles fought throughout Southern Ontario; by 1701, Haudenosaunee were defeated and the Anishinaabeg replaced the Haudenosaunee in Southern Ontario; gathered collectively as First Nations to participate in Great Peace negotiations; Mississauga granted land extending northward of Lake Ontario and Lake Erie; Mississauga focused on hunting/fishing/gathering with little emphasis on agriculture; temporary and moveable houses (wigwam) left little archaeological material behind; Credit River known as <i>Missinnihe</i> (or <i>Messinnike</i>) translated to ‘trusting creek’ and was a favoured location of trade between the Mississauga and European traders; the Mississauga who settled along the west shore of Lake Ontario became known as the Credit River Indians (Hathaway, 1930, p.433; Loverseed, 1987, p.17; Trigger, 1994, pp.57-59; Johnston, 2004, pp.9-10; McMillian and Yellowhorn, 2004, pp.110-111; Gibson, 2006, pp.35-41; Smith, 2013, pp.16-20; Williamson, 2013, p.60).
Fur Trade Continues	ca. A.D. 1750s	The Anishinaabeg continued to trade with both the English and the French; introduction of Métis people; Seven Years War between France and Britain resulted in French surrender of New France in 1763; Royal Proclamation of 1763; Beaver Wars between groups within the Haudenosaunee and groups within the Anishinaabeg against the British; fur trade continued until Euro-Canadian settlement (Schmalz, 1991, pp.35-62, 81; Surtees, 1994, pp.92-97; Johnston, 2004, pp.13-14).
British Colony/Land Treaties	ca. A.D. 1750s to 1800s	American Revolution caused large number of United Empire Loyalists, military petitioners, immigrants from the British Isle/European locations, and groups who face persecution in the United States arrived in Upper Canada; Treaty of Paris signed in 1784; in 1805 a tract of land was ceded from the Mississauga that included lands “reaching from the Etobicoke Creek on the East for twenty-six miles westward to the outlet of Burlington Bay, these lands stretching back from the Lake shore line for from five to six miles to what we now know as the Second Concession North of Dundas

Periods	Date Range	Overview
		(or Eglinton Avenue)” (Fix, 1967, p.13); one-mile on either side of the Credit River and the ‘flat lands’ bordering the Etobicoke Creek were to remain property of the Mississaugas; the Mississauga obtained £1000 worth of goods and the right to retain their fishery sites at the mouths of the Credit River, Sixteen Mile Creek, and Twelve Mile Creek; this treaty included lands in the southern parts of the Township of Toronto in Peel County and Trafalgar and Nelson Townships in Halton County (Weaver, 1913, p.65; Loverseed, 1987, p.21; Surtees, 1994, p.110; Government of Ontario, 2014)
Second Land Treaty	ca.1800-1820	After the War of 1812, immigration from the United States came to a halt as a change in British policy discouraged Americans from taking residence in Canada and encouraged immigration from the British Isles; to accommodate the influx of European settlers, the remainder of the Mississauga Tract, which included Halton Region, was purchased by William Claus in 1818; The area belonged to the Credit River Mississauga who, despite efforts from the Indian Department officials to protect them, found themselves victim to encroachment on their lands and fisheries by Euro-Canadian settlers; Ajetance, chief of the Credit River Mississauga, settled for goods in the value of £522.10 shilling annually per person in exchange for 648,000 acres of land; this second purchase surrendered those lands within what would encompass “the northern section of Trafalgar, and Nelson Townships, and all of Esquesing and Nassagaweya Townships” (McDonald, 2011, p.71) (Surtees, 1994, pp.116-117; N.A., 1891, p.xxi; Government of Ontario, 2014).

1.3.3 Euro-Canadian Settlement Period (1800s to present)

The name ‘Esquesing’ was once believed to mean ‘land of the tall pines,’ is now commonly accepted to mean ‘last out river’ derived from the Mississauga language. The township of Esquesing was surveyed by Richard Bristol to Lot 17 and Charles Kennedy from Lots 18 to 32. The ‘new’ survey of Halton utilized the ‘double-front’ survey technique which created wider 200-acre lots between each concession. Settlement began in 1819 and settlers were predominately from the British Isles. By 1821, the population of the Township of Esquesing numbered 424 individuals. Many settlers focused on agricultural pursuits after timber resources were cleared. Additionally, some parts of the township produced excellent quality building stone, and lime was largely manufactured throughout Esquesing. By 1846, 57,347 acres were taken up, and 19,622 acres were under cultivation, there were four grist and 11 saw mills in the township and the settlers were primarily English, Irish and Scottish (Smith, 1846, p.56; Walker & Smiles, 1877, p.77; Rowe, 1992, p.1; McDonald, 2011, p.146).

Georgetown was founded with the arrival of George Kennedy, the son of a United Empire Loyalist from Gainsborough in 1821 (Rowe, 2006, p.7; McDonald, 2011, p.152). In lieu of payment for providing the survey for the northern portion of Esquesing Township, Charles Kennedy, George’s brother, was allowed to choose any property on the Silver Creek (Rowe, 2006, p.8). The Kennedy family obtained the crown patent for Lot 22 and Lot 20, Concession 8 and George resided on the east half of Lot 20 (Rowe, 2006, p.8). By 1823, George moved his small family to Lot 18, Concession 8 and constructed the first mill on Silver Creek (Rowe, 2006, p.11). Initially, business

at the mill was poor leading to its nickname, ‘Hungry Hallow,’ but gradually improved when the York to Guelph Road was opened in 1828 (Rowe, 2006, p.11). By 1830, Kennedy’s Mill began to prosper adding a grist mill, foundry, and woolen mill to the industrial complex and schoolhouse for formal schooling (Rowe, 1992, p.2). In 1837, the village was officially named Georgetown (McDonald, 2011, p.152). By 1864, 700 individuals resided in the village, and the village contained one grist mill, one saw mill, a cloth factory, two tanneries, two stores, one foundry, one ashery, one tavern, three waggon makers, four blacksmiths, two tailors and three shoemakers (Smith, 1846, p.63).

In 1851, a meeting was held in Guelph to organize a railway company to lay rails to Toronto from Guelph through Georgetown and the value of land around the proposed route skyrocketed with many lots remaining undeveloped for decades. By 1856, the first train on the Grand Trunk Railway crossed the bridge over the Credit River toward Guelph, allowing for long distance commerce of agricultural goods, and bringing a new level of prosperity to the hamlet (Rowe, 2006, pp.27-28).

By the 1860s, Georgetown had multiple industries constructed along the Credit River enticing settlers looking for employment. Three paper mills were constructed by the Barber Brothers along the Credit River, and the Dayfoot Boot & Shoe Factory provided employment for some of the 1,250 individuals residing in Georgetown. In 1865, Georgetown petitioned for incorporation into a village and subsequently became the Village of Georgetown. In 1877, the Hamilton and Northwestern Railway was constructed, which connected Hamilton to Barrie through Milton and Georgetown, assuring Georgetown as the centre of commerce and industry in northern Halton. This prosperity continued into the 20th century with many entrepreneurs arriving in Georgetown to exploit the successful industrial base the earliest pioneers created (Rowe, 1992, p.7; McDonald, 2011, p.152).

1.3.4 Past Land Use

To further assess the study area’s potential for the recovery of historic pre-1900 remains, several documents were reviewed to gain an understanding of the land use history.

A review of the 1858 *Tremaine’s Map of the County of Halton (see Map 3)* reveals that the study area was situated within part of property owned by several property owners. The historic village of Georgetown, and the Grand Trunk Railway are depicted within the study area. The Credit River is depicted within the study area. A depot, Silver Creek and additional village lots of Georgetown are depicted within 300 metres of the study area.

Table 3: Historic Structures within the Study Area in the 1858 Tremaine’s Map of the County of Halton

Lot, Con.	Occupant/Owner	Structure(s)
East half, 18, 9	Geo. Kennedy	No structure(s)
East half, 19, 9	Young & Barber	One structure
West half, 18, 10	Barber Brothers	Two structures: paper mill, saw mill
West half, 19, 10	Barber Brothers	No structures

The 1877 *Illustrated Historical Atlas of the County of Halton* (*see Map 3*) reveals that the study area was situated within the village of Georgetown. The Grand Trunk Railway and the Credit River continued to travel through the study area. The Silver Creek and additional village lots of Georgetown are depicted within 300 metres of the study area.

Review of the 1877 *Illustrated Historical Atlas of the County of Halton – Georgetown* (*see Map 4*) depicted the study area encompassing the multiple village lots of Georgetown. The Georgetown Railway Station and Grounds is depicted within the study area. No structures are depicted within 300 metres of the study area.

Additionally, the study area is located along present-day Mountainview Road North, which was originally laid out during the survey of the Township of Esquesing. John Street, Victoria Street, St. Michael Street, Caroline Street, Rosetta Street and River Road were originally laid out during the survey of the Village of Georgetown. The study area also traverses the present-day Canadian National Railway (formerly the Grand Trunk Railway). In Ontario, the 2011 S&G considers areas of early Euro-Canadian settlements (e.g., pioneer homesteads, isolated cabins, farmstead complexes, early wharf or dock complexes, pioneer churches, and early cemeteries), early historic transportation routes (e.g., trails, passes, roads, railways, portage routes), and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations are considered features or characteristics that indicate archaeological potential (per *Section 1.3.1* of the 2011 S&G). Therefore, based on the proximity of both early Euro-Canadian settlements and historic transportation routes, there is elevated potential for the location of Euro-Canadian archaeological resources (pre-1900) within portions of the study area which lie within 300 metres and 100 metres, respectively, of these historic features.

1.3.5 Present Land Use

The present land use of the study area is categorized as Greenlands, Low Density Residential Area, Medium Density Residential Area, High Density Residential Area, Trafalgar Road Redevelopment Area, Residential Special Policy Area, Neighbourhood Park and GO Station Area (Town of Halton Hills, 2017a).

1.4 Archaeological Context

To establish the archaeological context and further establish the archaeological potential of the study area, Archeoworks Inc. conducted a comprehensive review of designated and listed heritage properties, cultural heritage landscapes, commemorative markers and pioneer churches and early cemeteries in relation to the study area. Furthermore, an examination of registered archaeological sites and previous AAs within proximity to the study area limits, and a review of the physiography of the study area were performed.

The results of this background research are documented below and summarized in **Appendix B – Summary of Background Research**.

1.4.1 Designated and Listed Cultural Heritage Resources

Per *Section 1.3.1* of the *2011 S&G*, property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial, or municipal historic landmark or site are considered features or characteristics that indicate archaeological potential. Several designated and listed heritage resources are located in and within 300 metres of the study area (*see Tables 4-5*; Town of Halton Hills, 2017b; Town of Halton Hills, 2017c). Therefore, this feature further elevates archaeological potential within portions of the study area that fall within 300 metres of these designated and listed heritage resources.

Table 4: Heritage Resources within the Study area

Address	Description	Heritage Status
24 John Street	Saunders Grocery Store: A former grocery store owned by the Saunders family, which catered to the workers of the mill; Built this building to expand the grocery store after purchasing the business from the Forster family in 1930	Listed
29 & 31 John Street	The Forster Family House and Grocery Store: Comprised of two sections: the left side housed the Forster family, known for their work with evolution in the hydro empire, for almost ten years, the right was the was a grocery store the family operated for the same time period; Mrs. Jack Saunders took over in the 1930"s and built a new grocery store right across the street	Listed
33 John Street	-	Listed
99 River Drive	Barber Paper Mill: 1854: an excellent example of a late nineteenth century industrial complex and is a prominent local landmark	Designated Part IV
1 Rosetta Street	John Roaf Barber, a Georgetown native, started the Canada Coating Mill in 1905; The Barber family started the papermaking business in Georgetown in 1854, bringing business to the area for over a century; Later changed to Barber Paper and Coating Mills in 1912, later to Provincial Paper Mills in 1916, Provincial Paper Limited, and finally Abitibi Forest Products Limited; The mill has now been subdivided into several different companies, including masonry, hard wood flooring, carpentry, metal welding, and kitchen renovation; Large rare industrial building with flat and gable roofs, hydro stone and cement block construction, some original windows, loading docks, water tower, silos, and decorative front addition; Linked to the historic industrial landscape around the Georgetown railway and contributes to the understanding of the industrial growth of the community	Listed
2 Rosetta Street	Georgetown Coated Paper Mill/ Alliance Paper Mills/ Domtar Paper Mills: Opened in 1910 to compete with its next door neighbor, Barber Mills; Edward Fleck was manager and vice president of the mill from its founding until 1947; First building in Georgetown made of reinforced concrete construction; Large industrial building with flat roof, cement construction, loading docks, and large single pane windows; Linked to the historic industrial landscape around the Georgetown railway	Listed

"-" denotes details not provided.

**STAGE 1 AA FOR JOHN STREET WASTEWATER PUMPING STATION IMPROVEMENTS – CLASS EA
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Table 5: Heritage Resources within 300 metres of the Study area

Address	Description	Heritage Status
15 Albert Street	Foundation of the house belonged to a barn which existed previously on the property; part of the historic residential streetscape of Albert Street	Listed
19 Albert Street	Part of historic residential streetscape of Albert Street.	Listed
27 Albert Street	Associated with John Ballantine, a local shoe maker who lived in the house, and who's family owned the house for over 90 years; Part of historic residential streetscape of Albert Street.	Listed
34 Albert Street	Part of historic residential streetscape of Albert Street.	Listed
2 King Street	Contributes to the historic residential streetscape of King Street	Listed
4 King Street	Contributes to the historic residential streetscape of King Street	Listed
5 King Street	Contributes to the historic residential streetscape of King Street	Listed
6 King Street	Contributes to the historic residential streetscape of King Street	Listed
8 King Street	Contributes to the historic residential streetscape of King Street	Listed
9 King Street	Contributes to the historic residential streetscape of King Street	Listed
11 King Street	Contributes to the historic residential streetscape of King Street	Listed
15 King Street	Contributes to the historic residential streetscape of King Street	Listed
21 King Street	Contributes to the historic residential streetscape of King Street	Listed
25 King Street	Contributes to the historic residential streetscape of King Street	Listed
33 King Street	Contributes to the historic residential streetscape of King Street	Listed
36 King Street	Contributes to the historic residential streetscape of King Street	Listed
40 & 42 King Street	King Variety; Formerly King's Variety, a variety store with a butcher portion in the back and one of two places to get your groceries, now apartments; Contributes to the historic residential streetscape of King Street	Listed
46 King Street	Contributes to the historic residential streetscape of King Street	Listed
53 King Street	Contributes to the historic residential streetscape of King Street	Listed
59 King Street	Contributes to the historic residential streetscape of King Street	Listed
82 King Street	Contributes to the historic residential streetscape of King Street	Listed
105 King Street	Contributes to the historic residential streetscape of King Street	Listed
109 King Street	Contributes to the historic residential streetscape of King Street	Listed
113 King Street	Contributes to the historic residential streetscape of King Street	Listed
65 Maple Avenue	Excellent example of Gothic Revival style architecture	Listed
1 McNabb Street	Contributes to the historic residential streetscape of McNabb Street	Listed
5 McNabb Street	Contributes to the historic residential streetscape of McNabb Street	Listed
7 McNabb Street	Contributes to the historic residential streetscape of McNabb Street	Listed
8 McNabb Street	Contributes to the historic residential streetscape of McNabb Street	Listed
9 McNabb Street	Contributes to the historic residential streetscape of McNabb Street	Listed

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Address	Description	Heritage Status
17 McNabb Street	Waldie House: One of three similar houses built by Robert John Waldie at the intersection of McNabb and King Streets. These houses are landmark features in a streetscape of smaller frame houses.	Designated Part IV
99 Mountainview Road North	Formerly the Coach Hotel for Georgetown, serving travellers going from Guelph to Toronto during the mid 19th century for over a hundred years	Listed
111 Mountainview Road North	Good example of Craftsman style architecture	Listed
121 Mountainview Road North	Home of Edward and Maude Fleck; E. Fleck was manager and vice president the coating paper mill on Rosetta Street from its founding in 1910 until 1947	Listed
2 Murdock Street	See 48 Queen Street	Listed
4-6 Murdock Street	John Ballantine, who ran a coal business on King Street, likely built this structure. He owned property on Queen and Murdock Streets where he built several structures; Part of the historic residential streetscape of Murdock Street.	Listed
5 Murdock Street	Contributes to the historic residential streetscape of Murdock Street	Listed
8-10 Murdock Street	John Ballantine, who ran a coal business on King Street, likely built this structure. He owned property on Queen and Murdock Streets where he built several structures; Part of the historic residential streetscape of Murdock Street.	Listed
16 Murdock Street	Possible Aladdin Kit house; Contributes to the historic residential streetscape of Murdock Street	Listed
18 Murdock Street	Possible Aladdin Kit house; Contributes to the historic residential streetscape of Murdock Street	Listed
20 Murdock Street	Possible Aladdin Kit house; Contributes to the historic residential streetscape of Murdock Street	Listed
55 Ontario Street	Good example of Gothic Revival style architecture	Listed
14-16 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
15 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
17 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
18 Queen Street	This structure sits on a lot that was included in the vast McCannah estate. Edward McCannah was responsible for the construction of several of the houses on Queen Street; Part of historic residential streetscape of Queen Street	Listed
19 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
20 Queen Street	This structure sits on a lot that was included in the vast McCannah estate. Edward McCannah was responsible for the construction of several of the houses on Queen Street; Part of historic residential streetscape of Queen Street.	Listed
21 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
22 Queen Street	UENI: inscribed in stone over the door; This house and the neighbouring one at 24 Queen Street were constructed as twin dwellings and were part of the McCannah estate. Edward McCannah was responsible for the construction of several of the houses on Queen Street; Part of historic residential streetscape of Queen Street.	Listed

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Address	Description	Heritage Status
23 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
24 Queen Street	Word “ILLAHEE” inscribed in stone over the door; This house and the neighbouring one at 22 Queen Street were constructed as twin dwellings and were part of the McCannah estate. Edward McCannah was responsible for the construction of several of the houses on Queen Street; Part of historic residential streetscape of Queen Street	Listed
26 Queen Street	This log house was built on part of the McCannah estate. Edward McCannah was Georgetown’s station agent and owned a great deal of property on Queen Street; Part of the historic residential streetscape of Queen Street; Home of Walter Beihn, owner of the Georgetown Herald	Listed
30 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
33 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
35 Queen Street	Associated with William Howard Kentner, owner of the Georgetown Lumber Company, who owned the house prior to purchasing the well known family home on Queen Street; Part of the historic residential streetscape of Queen Street.	Listed
36 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
39 Queen Street	Associated with the Tucks, a prominent local family; Part of the historic residential streetscape of Queen Street	Listed
40-42 Queen Street	This house has stayed within the ownership of the Ballantine family since the family patriarch, John Ballantine who ran a coal business on King Street, constructed it; Ballantine owned property on Queen and Murdock Streets where he built several structures; Part of the historic residential streetscape of Albert Street.	Listed
41 Queen Street	Associated with James Drummond, a local saddler who built the house; Part of the historic residential streetscape of Queen Street.	Listed
45 Queen Street	Rare use of polychrome brickwork in a 1900s building in Halton Hills; Associated with John MacDonald, a local coal merchant, who used the building as an office and grocery store. It was subsequently used by Howard Kentner of the Georgetown Lumber Company to sell fuel and coal, followed by Boehmers Fuel; Part of the historic streetscape of Queen Street.	Listed
46 Queen Street	This house has remained in the Davis family since it was constructed by William Kentner of the Georgetown Lumber Co.; Part of the historic residential streetscape of Queen Street.	Listed
48 Queen Street/2 Murdock Street	John Ballantine, who ran a coal business on King Street, likely built this structure. He owned property on Queen and Murdock Streets where he built several structures; Part of the historic residential streetscape of Albert Street.	Listed
50 Queen Street	Part of historic residential streetscape of Queen Street.	Listed
56 Queen Street	1880; Second Empire style mansion associated with the Goodwillie family. Mr. Goodwillie was a Solicitor who was Clerk and Treasurer for the Village of Georgetown.	Listed
8 Union Street	Contributes to the historic residential streetscape of Union Street	Listed
10 Union Street	Contributes to the historic residential streetscape of Union Street	Listed
12 Union Street	Contributes to the historic residential streetscape of Union Street	Listed

Address	Description	Heritage Status
14 Union Street	Contributes to the historic residential streetscape of Union Street	Listed

1.4.2 Heritage Conservation Districts

Per *Section 1.3.1* of the *2011 S&G*, heritage resources listed on a municipal register or designated under the *Ontario Heritage Act* are considered features or characteristics that indicate archaeological potential. The study area is not located in or within 300 metres of a Heritage Conservation District (MTCS, 2017a). Therefore, this feature does not contribute in establishing the archaeological potential of the study area.

1.4.3 Commemorative Plaques or Monuments

Per *Section 1.3.1* of the *2011 S&G*, commemorative markers of Aboriginal and Euro-Canadian settlements, which may include their history, local, provincial, or federal monuments, cairns or plaques, or heritage parks are considered features or characteristics that indicate archaeological potential. One Ontario Heritage Foundation Plaque is located within the study area commemorating ‘John R. Barber and the Credit River Dynamo.’ In 1854, brothers William James, Joseph and Robert Barber, prominent manufacturers in the Credit Valley, established a papermill here. Within a few years, it had become an important producer of fine rag paper. Later, John Roaf Barber outfitted the mill with new technology that allowed the mill to manufacture wood pulp, and in 1888, installed a dynamo to supply additional power. This power plant was the first in Canada to produce hydro-electric power for industrial production (Ontario Historical Plaques, 2017). Therefore, this feature further elevates archaeological potential within portions of the study area that fall within 300 metres of this commemorative plaque.

1.4.4 Pioneer/Historic Cemeteries

Per *Section 1.3.1* of the *2011 S&G*, pioneer churches and early cemeteries are considered features or characteristics that indicate archaeological potential. The study area is located within 300 metres of Greenwood Cemetery, a historic cemetery located at 100 King Street. In 1869, a by-law was passed that established the Greenwood Cemetery after it was identified that the cemeteries that were located within the towns boundaries were at capacity. Eventually, older cemeteries were closed, such as the Wesleyan Methodist burial grounds, and the deceased persons were removed and reinterred in Greenwood. The cemetery was first managed by the Cemetery Board, appointed by the Village Council, and was taken over by the Town of Halton Hills in 1974 (Town of Halton Hill, N.D.; OGS, 2017). Therefore, this feature further elevates archaeological potential within portions of the study area that fall within 300 metres of this historic cemetery.

1.4.5 Registered Archaeological Sites

Per *Section 1.3.1* of the *2011 S&G*, previously registered archaeological are considered features or characteristics that indicate archaeological potential. Per *Section 1.1, Standard 1* and *Section 7.5.8, Standard 1* of the *2011 S&G*, four registered archaeological sites is located within one-kilometre of the study area (MTCS, 2017b) (*see Table 6*). One site, AjGx-251, is located within the study area. Two sites, AjGx-228 and AjGx-237, are located within 300 metres of the study area.

Therefore, this feature further elevates archaeological potential within portions of the study area that fall within 300 metres of these registered archaeological sites.

Table 6: Registered Archaeological Sites

Borden #	Name	Cultural Affiliation	Type
Registered Archaeological Sites within the Study Area			
AjGx-251	Location 1	Post-contact, Euro-Canadian	Unknown
Registered Archaeological Sites within 300 metres of the Study Area			
AjGx-228	Dayfoot	-	-
AjGx-237	h1	Pre-contact; Post-contact, Euro-Canadian	Other; Homestead
Registered Archaeological Sites within one-kilometre of the Study Area			
AjGx-62	Augustus	Late Archaic; Early Woodland	Other-camp/campsite

“-” denotes details not provided in OASD.

1.4.6 Previous Archaeological Assessments

Per *Section 1.1., Standard 1.* of the *2011 S&G*, to further establish the archaeological context of the study area, a review of previous AAs carried out within the limits of, or immediately adjacent (i.e., within 50 metres) to the study area (as documented by all available reports) was undertaken. Six previous AAs report were identified (*see Table 7*):

Table 7: Previous Archaeological Assessments

Company	Stage of Work	Relation to Current Study Area	Details + Recommendation
Stantec Consulting Ltd., 2015	Stage 1-2 AA	Within the study area	Located at 111 John Street and 193-197 Mountainview Road North. During the Stage 2 AA, one site, Location 1 (AjGx-251) was discovered. A total of 93 Euro-Canadian artifacts were recovered and dated from mid-to-late 19 th century. Stage 3 AA was recommended with the potential for future Stage 4 mitigation strategies.
AMICK Consultants Ltd., 2016	Stage 3 AA	Within the study area	Associated with the Stage 3 AA of Location 1 (AjGx-251). A total of 14 one-metre square test units were excavated recovering 1,321 artifacts that fit the date range from the mid-to-late nineteenth century. The results of the test unit excavations, artifact analysis, and detailed archival research, indicate that the site retains no further cultural heritage value or interest. Therefore, it is recommended that no further archaeological assessment is necessary.
Archeoworks Inc., 2013a	Stage 1 AA	Within 50 metres of the study area	Located at 127 Mountainview Road. Stage 2 recommended.
Archeoworks Inc., 2013b	Stage 2 AA	Within 50 metres of the study area	During the Stage 2 AA, one Euro-Canadian site, H1 Site (AjGx-237) was discovered. Stage 3 AA recommended. However, this site is located

Company	Stage of Work	Relation to Current Study Area	Details + Recommendation
			approximately 70 metres away and will not be impacted by the current development.
Archaeological Services Inc., 2009b	Stage 1 AA	Within the study area	Associated with the GO Transit feasibility study to extent GO train service beyond Georgetown to Guelph and the Kitchener area. Within this study, proposed upgrades to the Georgetown GO Station have been included. The results of the Stage 1 AA regarding the Georgetown GO Station concluded that there was no archaeological potential and no further archaeological assessment is required. It was noted that one historic building designated under the Railway Stations Protection Act is adjacent to the proposed improvements area. However, proposed improvements will not impact the historic building. Of the entire subject area, nine locations have potential for the recovery of archaeological resources and must be subjected to Stage 2 AA.

1.4.7 Physical Features

The study area is situated within the Niagara Escarpment and South Slope physiographic region of Southern Ontario. The Niagara Escarpment physiographic region extends from the Niagara River to the northern tip of the Bruce Peninsula, continuing through the Manitoulin Islands. Although surrounding regions exhibit glacial-altered topography, the steep valleys of the Niagara escarpment indicate that glacier activity did not create this landscape. Vertical cliffs along the brow of the escarpment mostly outline the edge of the dolostone of the Lockport and Amabel Formations, which the slopes below are carved in red shale. The escarpment is present along the Niagara Peninsula and the shore of Georgian Bay, although there is an intervening area in which the slopes are covered with morainic deposits, particularly in Mono or Mulmur Townships, and in the Town of Caledon, long stretches are almost completely hidden. The steep slopes of the Niagara Escarpment, combined with shallow, rocky soils, inhibited agricultural use and tended to preserve the forest. Water sources falling over the escarpment create a source of power, and the smaller streams which were amenable to the manipulations of early pioneer technology, promoted industry and settlement in the region. To this day, the development of Niagara power by Ontario Hydro furnishes energy to a large part of Southern Ontario (Chapman & Putnam, 1984, pp. 114-122).

The South Slope is the southern slope of the Oak Ridges Moraine, but also includes a strip south of the Peel Plain. This region covers approximately 2,400 square kilometres from the Niagara Escarpment to the Trent River. The South Slope contains a variety of soils that have been conducive to agricultural use. The soils in the west are developed upon more clayey than sandy tills, and the slopes here are less steep than in the east. Portions of the South Slope region that

lay in the interior, away from the lakeshore, were mainly colonized by the “second wave” of largely British immigrants after the Napoleonic Wars. Early settlers practiced mixed subsistence agriculture, although grain exportation did confer a measure of prosperity across the region, as evidenced by the construction of many fine fieldstone houses, the building of railroads and the improvement of main haulage roads. The decline of wheat growing, however, resulted in the replacement with commercial mixed farming in which beef cattle, hogs, and dairy butter were the primary income sources. The western portion of the South Slope region has preserved less of its rural character compared to the eastern portion, as large areas around Toronto are becoming more urbanized (Chapman and Putnam, 1984, pp. 172-174).

A few native soil types are found within the study area: Chinguacousy clay loam, Font sandy loam, Granby sandy loam, Guelph loam, Oneida clay loam and Ravines. Ravines is located along the Credit River, while the land located western part consists of Oneida clay loam, Guelph loam, Granby sandy loam and Font sandy loam. To the east of the Credit River lies Oneida clay loam. Chinguacousy clay loam is in the southern limits of the study area. A description of their characteristics may be found in **Table 8** (Ontario Agricultural College, 1971). The great variety in soil types further highlights the mixed landscape that the study area encompasses and supports the mixed nature of past subsistence practices and changing industries of early settlers in these areas. Soils more conducive to agriculture, such as good drainage and stonefree, has the potential for past settlement, support greater population density and subsequently elevated archaeological potential.

Table 8: Study area Soil Types

Soil Series and Type	Great Soil Group	Parent Materials	Drainage	Topography and Stoniness
Chinguacousy clay loam	Gray Brown Luvisol	Clay loam till	Imperfectly drained	2-5% slopes; moderately stony
Font sandy loam	Gray Brown Luvisol	Outwash gravel	Well drained	2-5% slopes; moderately stony
Granby sandy loam	Humic Gleysol	Medium sand	Poorly drained	0-0.5% slopes; stone free
Guelph loam	Gray Brown Luvisol	Loam till	Well drained	9-15% slope: moderately stony
Oneida clay loam	Gray Brown Luvisol	Clay loam till	Well drained	2-5% slope & 15-30% slope; Moderately stony
Ravines	Alluvial	Alluvial	Variable	Variable

Hydrological features such as primary water sources (i.e. lakes, rivers, creeks, streams) and secondary water sources (i.e. intermittent streams and creeks, springs, marshes, swamps) would have helped supply plant and food resources to the surrounding area and are indicators of archaeological potential (per *Section 1.3.1* of the 2011 S&G). The Credit River is located within the study area. Therefore, this feature further elevates archaeological potential within portions of the study area that fall within 300 metres of these hydrological features.

1.4.8 Historical Imagery

To facilitate the evaluation of the established archaeological potential, a detailed review of an aerial photograph taken in 1954 (*see Map 5*), orthographic mapping taken in 1999 (*see Map 6*) and satellite imagery taken from 2005 to 2016 (*see Maps 7-9*) was undertaken.

The 1954 aerial photograph shows the construction area consisted primarily of extant structures along River Drive and Mountainview Road North, open road allowances, the Georgetown GO Train station and railway, the Credit River, open agricultural lands, and woodlots (*see Map 5*). By 1999, much of the study area had been subjected to major residential subdivision developments (*see Map 6*).

A satellite image from 2005 reveals that additional residential developments occurred north of John Street and west of Mountainview Road, and south of River Drive (*see Map 7*). The study area remained unchanged after this time (*see Maps 8-9*).

1.4.9 Current Land Conditions

The study area is situated within the suburban/residential area of the community of Georgetown, in the Town of Halton Hills. The study area encompasses a commercial building along River Drive, residential homes, several recreational parks, the Georgetown GO Train station, the CN Railway, the Credit River and the Credit River valley lands. The topography within the study area gradually decreases from west to east with a significant decline around the Credit River, with the elevation measuring between 262 to 225 metres above sea level.

1.4.10 Date of Review

A desktop review of field conditions using 20th century aerial photography as well as past and current satellite imagery obtained through the Google Earth application was undertaken on September 12th, 2017.

1.5 Confirmation of Archaeological Potential

Based on the information gathered from the background research documented in the preceding sections, elevated archaeological potential has been established within the study area boundary. Features contributing to archaeological potential are summarized in **Appendix B**.

2.0 ANALYSIS AND CONCLUSIONS

In combination with data gathered from the background research (*see Sections 1.3 and 1.4*) and an inspection of aerial photography and satellite imagery, an evaluation of the established archaeological potential was performed for the study area.

2.1 Previously Archaeological Assessments

Lands encompassed within the study area limits which have already been subjected to Stage 1, Stage 2, and/or Stage 3 survey (Archaeological Services Inc., 2009b; Stantec Consulting Ltd., 2015; AMICK Consultants Ltd., 2016), and deemed free of further archaeological concern are recommended to be exempt from further assessment (*see Map 10*).

Archaeological Services Inc. (2009b) previously conducted a Stage 1 AA within the study area. The Stage 1 AA determined the assessed lands within the study area to have no archaeological potential.

Stantec Consulting Ltd. (2015) previously conducted a Stage 1-2 AA within the study area. During this assessment, the Location 1 site (AjGx-251) was discovered, and deemed to have further cultural value and interest. The Location 1 site (AjGx-251) was subjected to a Stage 3 AA, and deemed to have no further cultural heritage value or interest (AMICK Consultants Ltd., 2016).

2.2 Identified Deep and Extensive Disturbances

The study area was evaluated for extensive disturbances that have removed archaeological potential. Disturbances may include but are not limited to: grading below topsoil, quarrying, building footprints, or sewage and infrastructure development. *Section 1.3.2* of the *2011 S&G* considers infrastructure development among those “features indicating that archaeological potential has been removed.”

Obvious visual disturbances include but are not limited to the various roads and their right-of-way, a railway corridor, grading below topsoil, building footprints, and various infrastructure development (*see Map 10*). The construction of these features would have resulted in severe damage to the integrity of any archaeological resources which may have been present within their footprints. However, the areas of deep and extensive disturbances should only be considered as *likely* not requiring Stage 2 survey (*see Map 10*). A visual inspection is still required to provide on-site confirmation and documentation of the actual condition and exact extent of the disturbance, if these areas are to be impacted.

2.3 Physiographic Features of No or Low Archaeological Potential

The study area was evaluated for physical features of no or low archaeological potential. These usually include but are not limited to: permanently wet areas, exposed bedrock, and steep slopes (greater than 20°) except in locations likely to contain pictographs or petroglyphs, as per *Section 2.1, Standard 2.a.* of the 2011 S&G.

Physical features of low to no archaeological potential include and low-lying and permanently wet terrain associated with the Credit River (*see Map 10*). However, the areas of low to no archaeological potential should only be considered as *likely* not requiring Stage 2 survey. A visual inspection is still required to provide on-site confirmation and documentation of the actual condition and exact extent of the disturbance, if these areas are to be impacted.

2.4 Identified Areas of Archaeological Potential

The remaining balance of the study area, consisting of grassed, overgrown vegetation, and wooded areas is considered to retain archaeological potential (*see Map 10*). Given ploughing is not possible or viable in these areas, as per *Section 2.1.2, Standard 1* of the 2011 S&G, these identified areas that retain archaeological potential must be subjected to a Stage 2 test pit survey at five-metre transects in accordance with *Section 2.1.2* of the 2011 S&G.

2.5 Alternative 1

This alternative would involve leaving the existing infrastructure as is. Therefore, there are no further archaeological concerns associated with Alternative 1 (*see Map 11*).

2.6 Alternative 2

This alternative would involve a proposed second forcemain running parallel to the existing John Street forcemain from John Street WWPS to Victoria Street GS; a proposed emergency outflow running parallel to the existing forcemain and gravity main along John Street from John Street WWPS to where John Street turns southeast; and emergency outflow discharge (Options A, B or C) extending from John Street bend to the Credit River. A 10-metre radius around the proposed emergency outflow, emergency outflow discharge option and second forcemain was reviewed (*see Map 12*).

Alternative 2 was evaluated for extensive disturbances that have removed archaeological potential, physical features of no or low archaeological potential. Obvious visual disturbances include but are not limited to the various roads and their right-of-way, grading below topsoil, building footprints, and various infrastructure development. Physical features of low to no archaeological potential include and low-lying and permanently wet terrain associated with the Credit River. A visual inspection is still required to provide on-site confirmation and documentation of the actual condition and exact extent of these disturbances and features.

The remainder of Alternative 2 is considered to retain archaeological potential, and must be subjected to a Stage 2 test pit survey at five-metre transects

2.7 Alternative 3

This alternative would involve a proposed second forcemain running parallel to the existing John Street forcemain from John Street WWPS to Victoria Street GS; a proposed emergency outflow running parallel to the existing forcemain and gravity main along John Street from John Street WWPS to where John Street turns southeast; emergency outflow discharge (Options A, B or C) extending from John Street bend to the Credit River; and, a replacement station at 68 John Street. A 10-metre radius around proposed emergency outflow, emergency outflow discharge option, second forcemain and replacement station was reviewed (*see Map 13*).

Alternative 3 was evaluated for extensive disturbances that have removed archaeological potential, physical features of no or low archaeological potential. Obvious visual disturbances include but are not limited to the various roads and their right-of-way, grading below topsoil, building footprints, and various infrastructure development. Physical features of low to no archaeological potential include and low-lying and permanently wet terrain associated with the Credit River. A visual inspection is still required to provide on-site confirmation and documentation of the actual condition and exact extent of these disturbances and features.

The remainder of Alternative 3 is considered to retain archaeological potential, and must be subjected to a Stage 2 test pit survey at five-metre transects

2.8 Alternative 4

This alternative would involve a proposed second forcemain running parallel to the existing John Street forcemain from John Street WWPS to a replacement WWPS at a new location at Barber Mill Park on River Drive; a proposed emergency outflow discharge (Option D) extending from John Street WWPS to the Credit River; and, a replacement WWPS at a new location at Barber Mill Park on River Drive. A 10-metre radius around proposed emergency outflow discharge options and replacement station was reviewed (*see Map 14*)

Alternative 4 was evaluated for extensive disturbances that have removed archaeological potential, physical features of no or low archaeological potential. Obvious visual disturbances include but are not limited to the various roads and their right-of-way, grading below topsoil, building footprints, and various infrastructure development. Physical features of low to no archaeological potential include and low-lying and permanently wet terrain associated with the Credit River. A visual inspection is still required to provide on-site confirmation and documentation of the actual condition and exact extent of these disturbances and features.

The remainder of Alternative 4 is considered to retain archaeological potential, and must be subjected to a Stage 2 test pit survey at five-metre transects

2.8 Alternative 5

This alternative would involve redirecting flow from the Lynden Circle SPS to the Victoria Street GS, by-passing the John Street SPS which runs parallel to the existing forcemain from Mountainview Drive to Victoria Street. A 10-metre radius around proposed Lynden Circle forcemain extension to Victoria Street GS was reviewed (*see Map 15*).

Alternative 5 was evaluated for extensive disturbances that have removed archaeological potential, physical features of no or low archaeological potential. Obvious visual disturbances include but are not limited to the various roads and their right-of-way, grading below topsoil, building footprints, and various infrastructure development. No physical features of low to no archaeological potential were identified within this alternative. A visual inspection is still required to provide on-site confirmation and documentation of the actual condition and exact extent of these disturbances.

The remainder of Alternative 5 is considered to retain archaeological potential, and must be subjected to a Stage 2 test pit survey at five-metre transects

2.9 Alternative 6

This alternative would involve reducing the inflow and infiltration in the collection system by utilizing the existing forcemain and gravity main located along John Street from Victoria Street to Lynden Circle and along Lynden Circle to the Lynden Circle SPS. Therefore, there are no further archaeological concerns associated with Alternative 6 (*see Map 16*).

3.0 RECOMMENDATIONS

Considering the findings detailed in preceding sections, the following recommendations are presented:

1. Alternative 1 and 6

If selected as the preferred alternative, given these alternatives would involve leaving the existing infrastructure as is, there is no further archaeological concern with these alternatives.

2. Alternative 2, 3, and 4

If selected as the preferred alternative, a Stage 2 AA test pit survey at five metre intervals in accordance with Section 2.1.2 of the 2011 S&G will be required in all areas retaining archaeological potential. All parts of the alternative that have been identified as having archaeological potential removed (i.e., areas of identified deep and extensive disturbance) need to be confirmed through an on-site property inspection during a Stage 2 AA. All parts of the alternative that have been identified as having no or low archaeological potential (i.e., areas of steeply sloping terrain and low-lying wet areas and watercourses) need to be confirmed through an on-site property inspection during a Stage 2 AA.

3. Alternative 5

If selected as the preferred alternative, a Stage 2 AA test pit survey at five metre intervals in accordance with Section 2.1.2 of the 2011 S&G will be required in all areas retaining archaeological potential. All parts of the alternative that have been identified as having archaeological potential removed (i.e., areas of identified deep and extensive disturbance) need to be confirmed through an on-site property inspection during a Stage 2 AA.

4. Study area

Should development impacts extend below the limits of the alternatives, the following recommendations apply:

- i. Lands encompassed within the study area limits which have already been subjected to Stage 1, Stage 2, and/or Stage 3 survey (Archaeological Services Inc., 2009b; Stantec Consulting Ltd., 2015; AMICK Consultants Ltd., 2016), and deemed free of further archaeological concern are recommended to be exempt from further assessment.
- ii. Parts of the study area that were identified as having archaeological potential removed (i.e., areas of identified deep and extensive disturbance) need to be confirmed through an on-site property inspection during a Stage 2 AA.

STAGE 1 AA FOR JOHN STREET WASTEWATER PUMPING STATION IMPROVEMENTS – CLASS EA
TOWN OF HALTON HILLS, REGIONAL MUNICIPALITY OF HALTON, ONTARIO

- iii. Parts of the study area that were identified as having no or low archaeological potential (i.e., areas of steeply sloping terrain and low-lying wet areas and watercourses) need to be confirmed through an on-site property inspection during a Stage 2 AA.
- iv. Parts of the study area that were identified as retaining archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to test pit survey at five metre intervals in accordance with *Section 2.1.2* of the *2011 S&G*.

No construction activities shall take place within the study area prior to the *MTCS* (Archaeology Programs Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

4.0 ADVICE ON COMPLIANCE WITH LEGISLATION

1. This report is submitted to the *MTCS* as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the *MTCS*, 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 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 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 require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the *Ministry of Consumer Services*.

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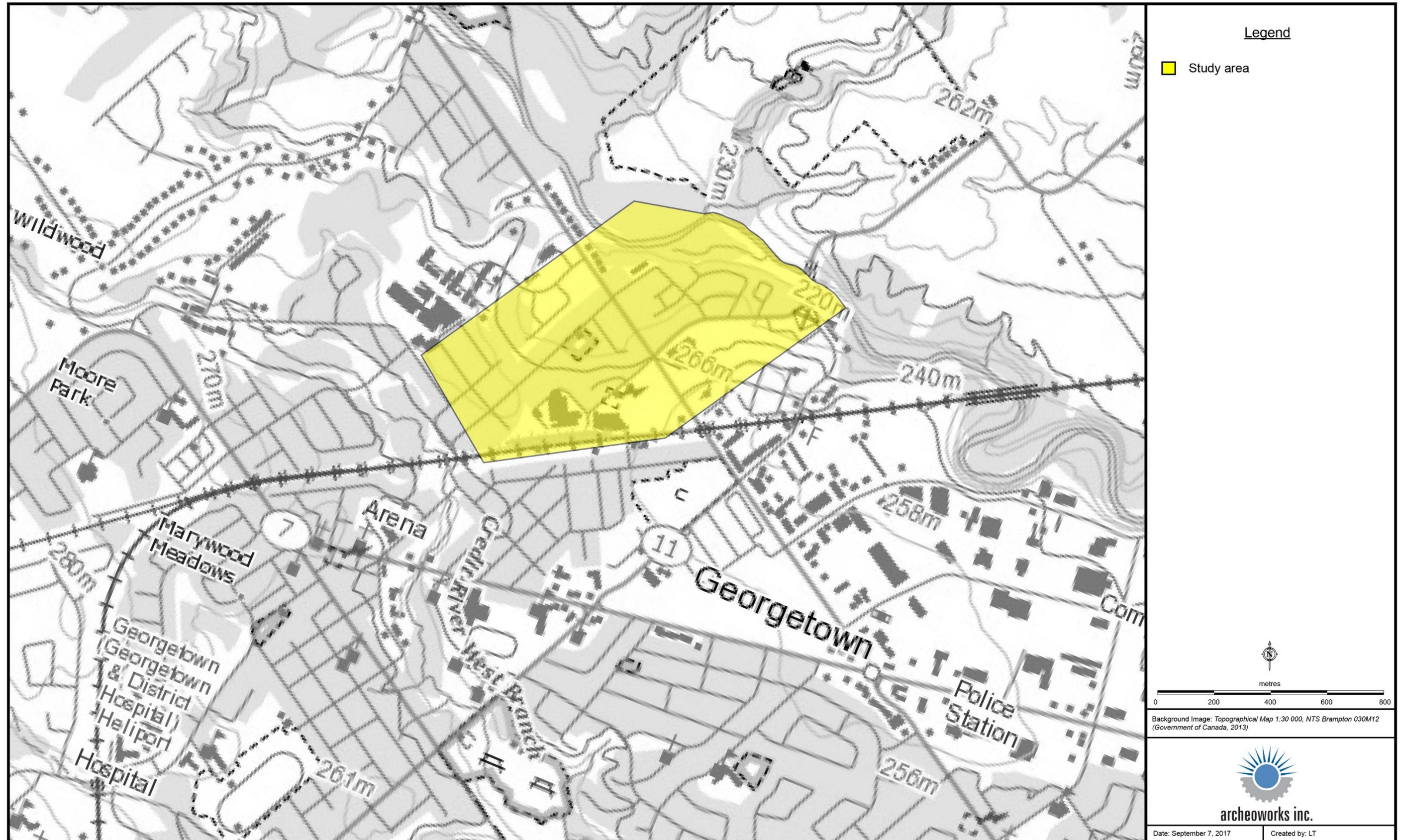
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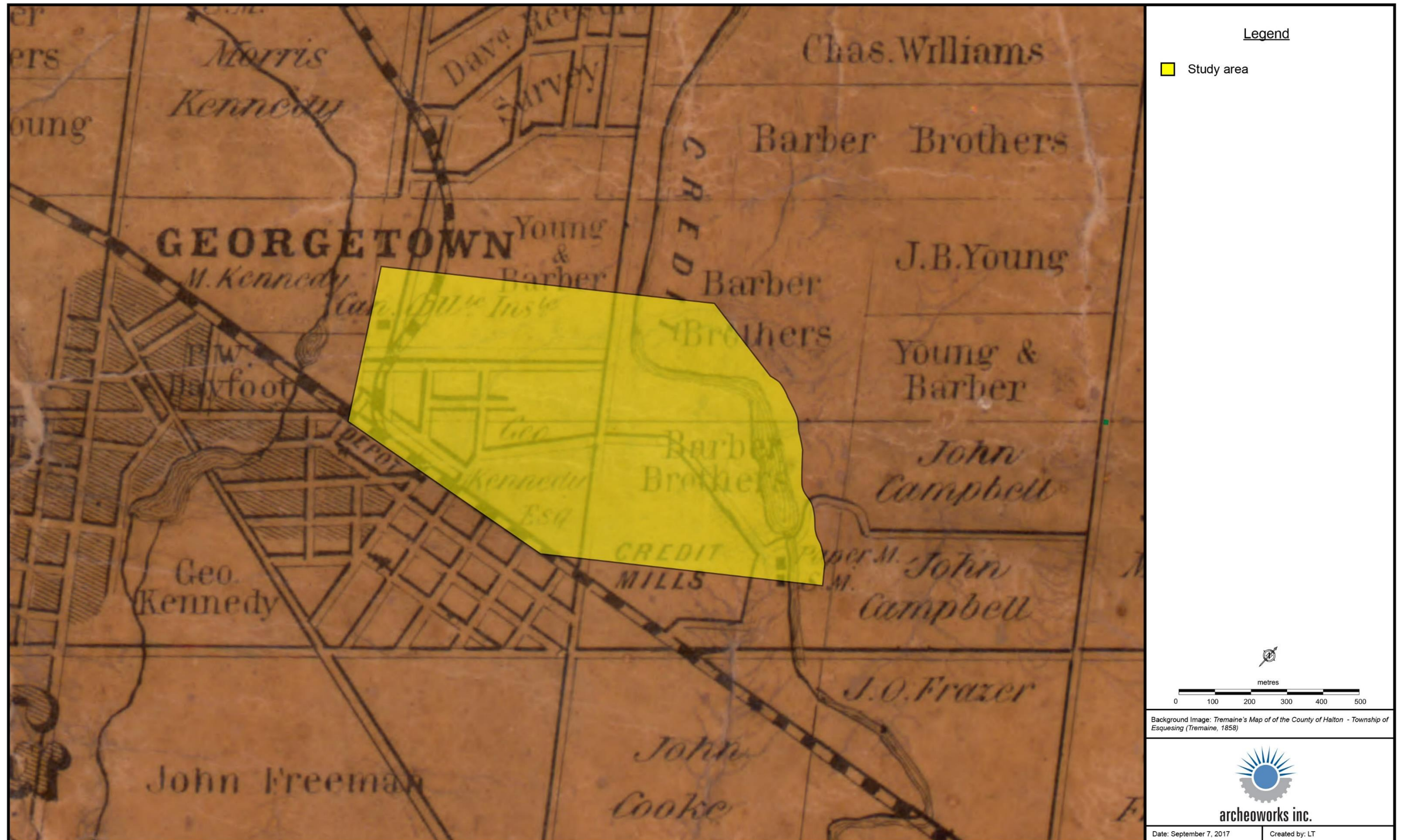
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APPENDICES

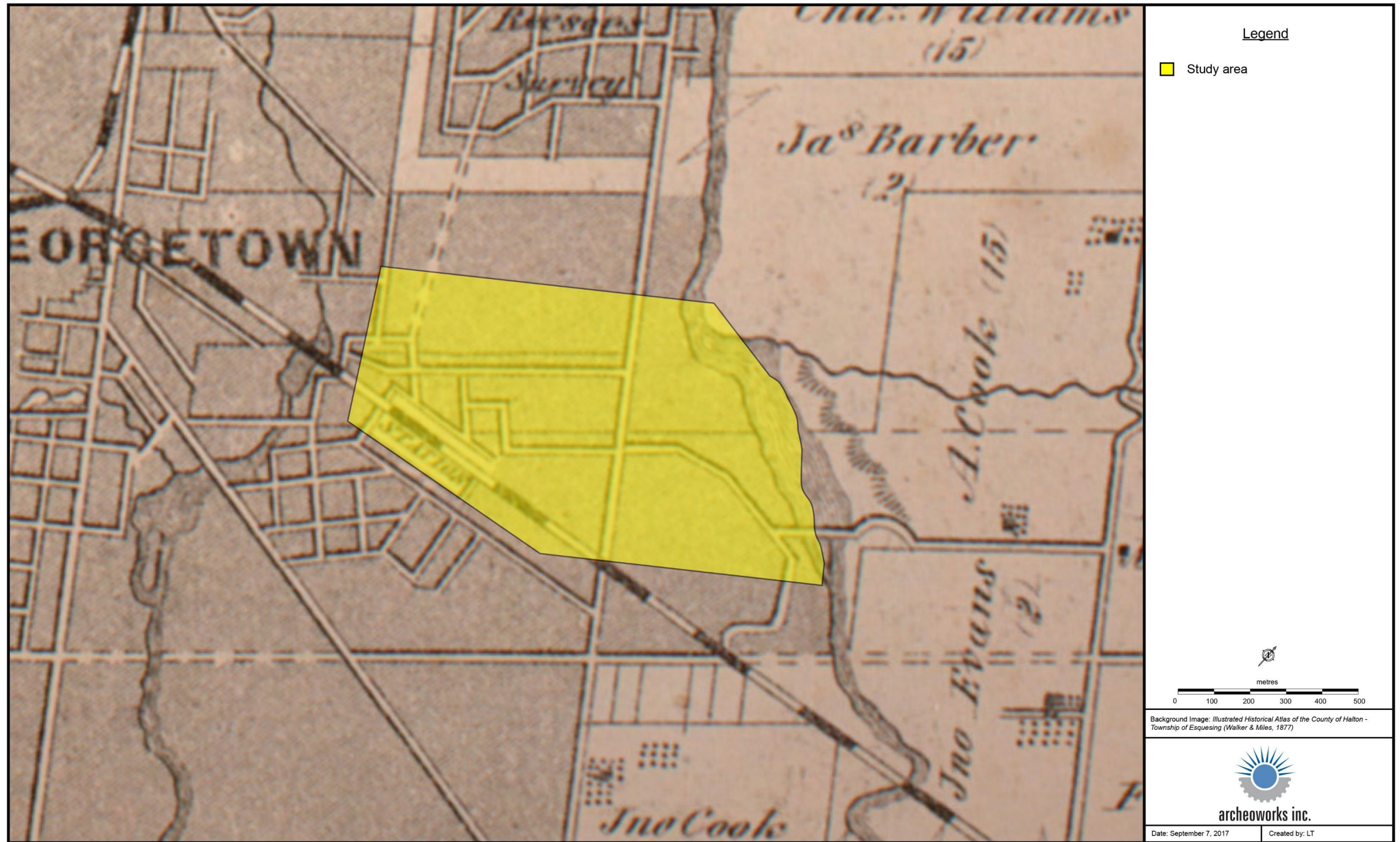
APPENDIX A: MAPS



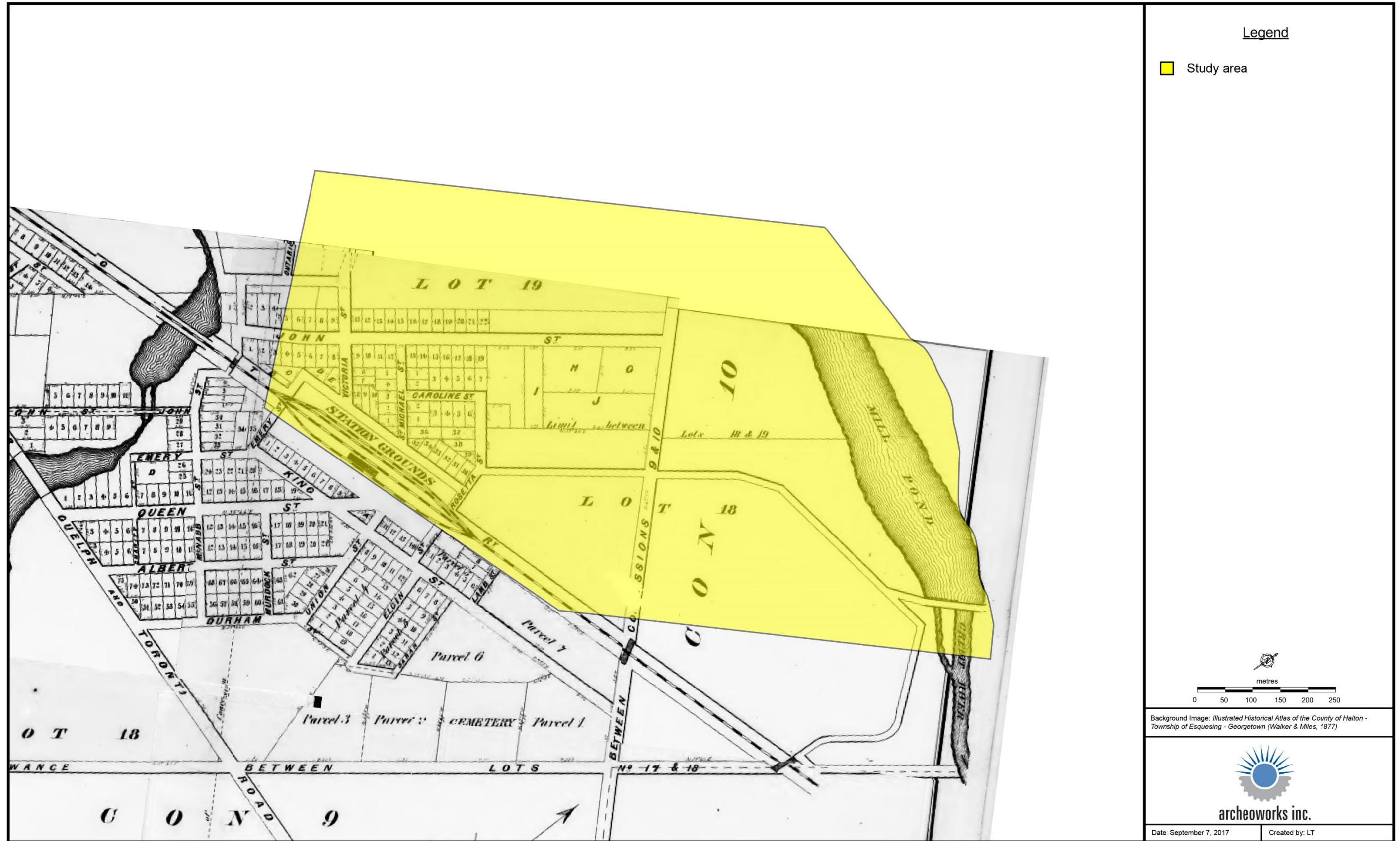
Map 1: Topographical map 1:50,000, NTS Brampton 030M12 (Government of Canada, 2013) identifying the Stage 1 AA study area.



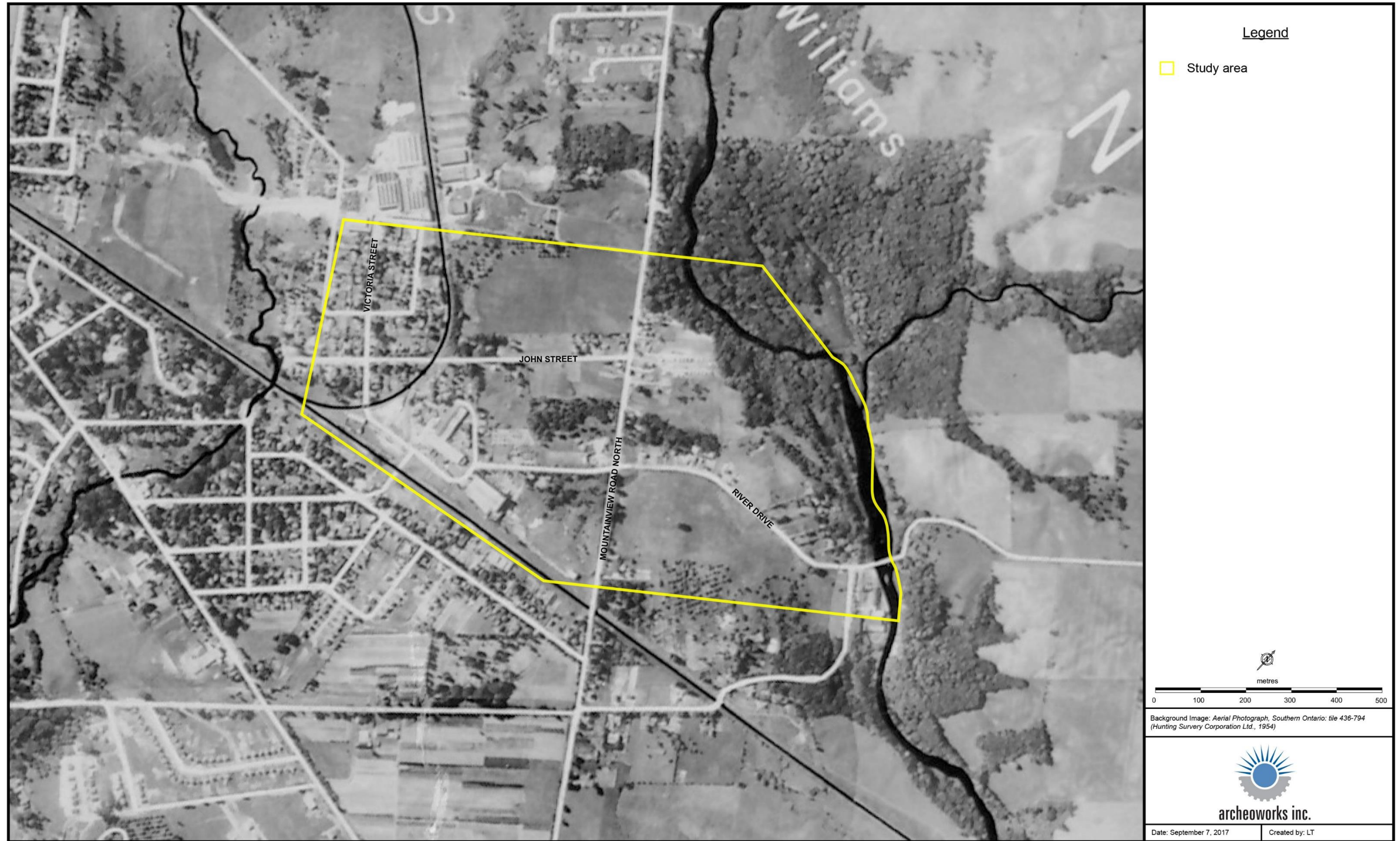
Map 2: Stage 1 AA study area within the 1858 Tremaine's Map of the County of Halton – Township of Esquesing (Tremaine, 1858).



Map 3: Stage 1 AA study area within the 1877 Illustrated Historical Atlas of the County of Halton – Township of Esquesing (Walker & Miles, 1877).



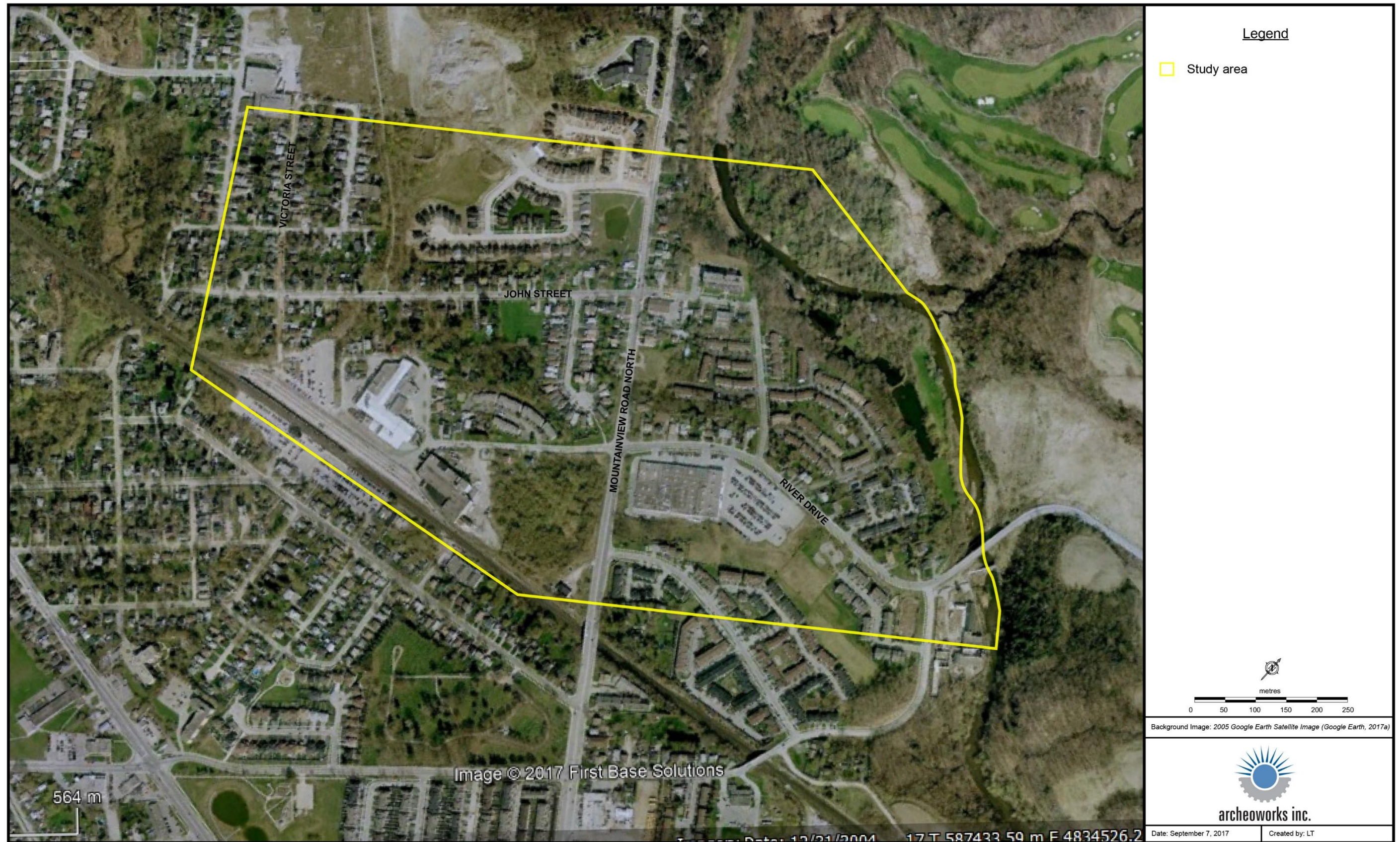
Map 4: Stage 1 AA study area within the 1877 Illustrated Historical Atlas of the County of Halton – Township of Esquesing – Village of Georgetown (Walker & Miles, 1877).



Map 5: Stage 1 AA study area within a 1954 aerial photograph (Hunting Survey Corporation Ltd., 1954).



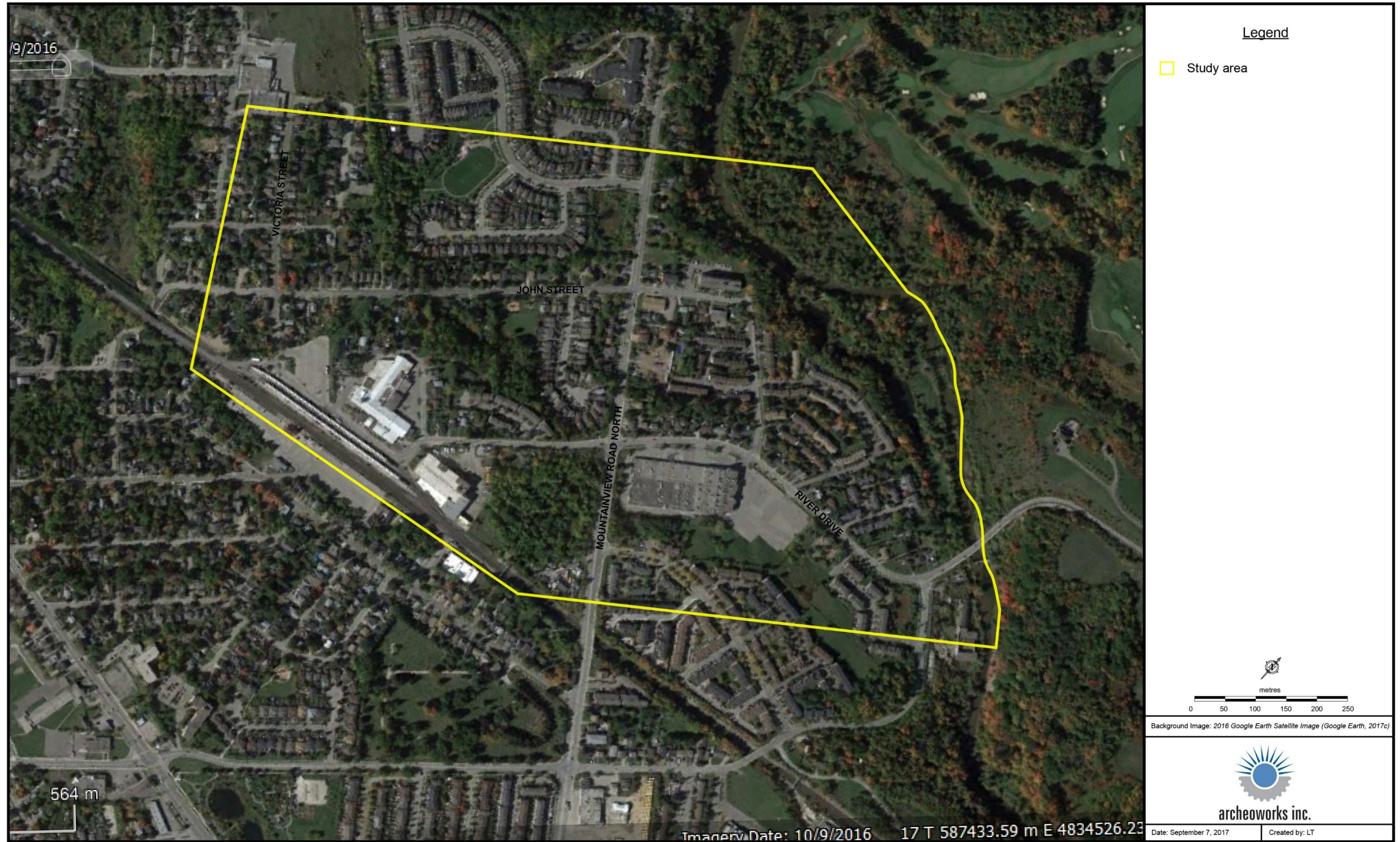
Map 6: Stage 1 AA study area within a 1999 orthographic map (Town of Halton Hills, 2017d).



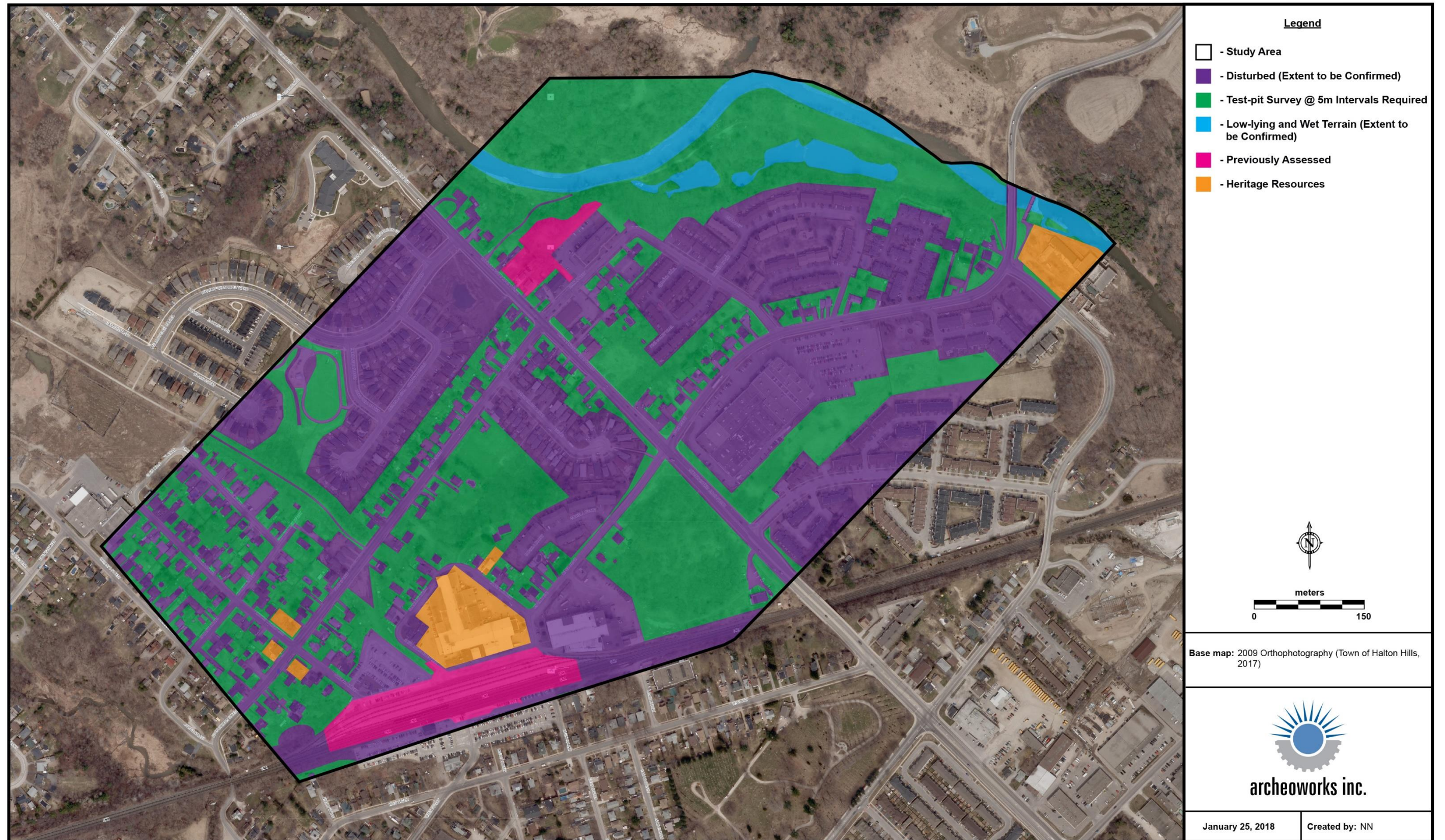
Map 7: Stage 1 AA study area within a 2005 satellite image (Google Earth, 2017a).



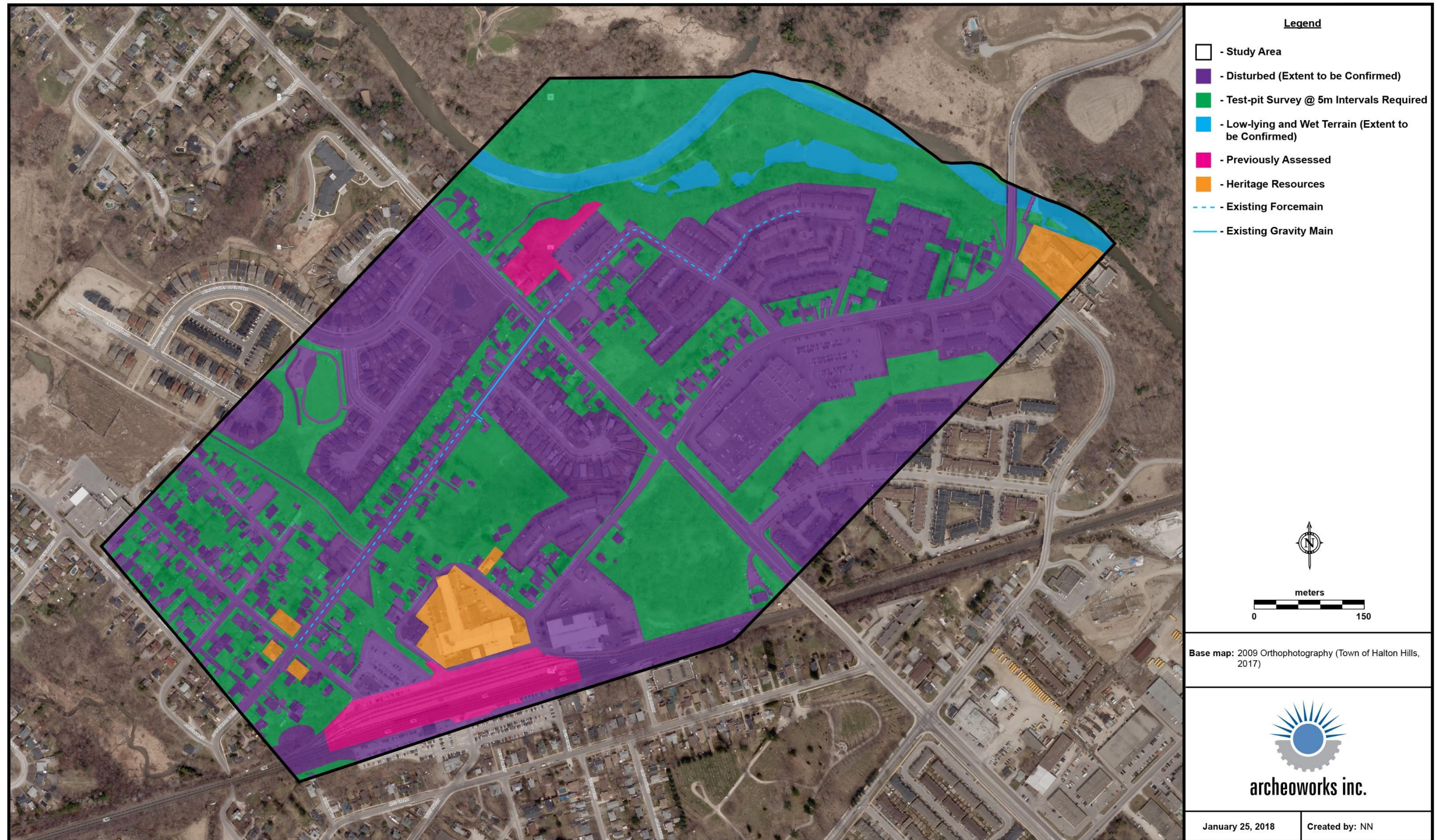
Map 8: Stage 1 AA study area within a 2009 satellite image (Google Earth, 2017b).



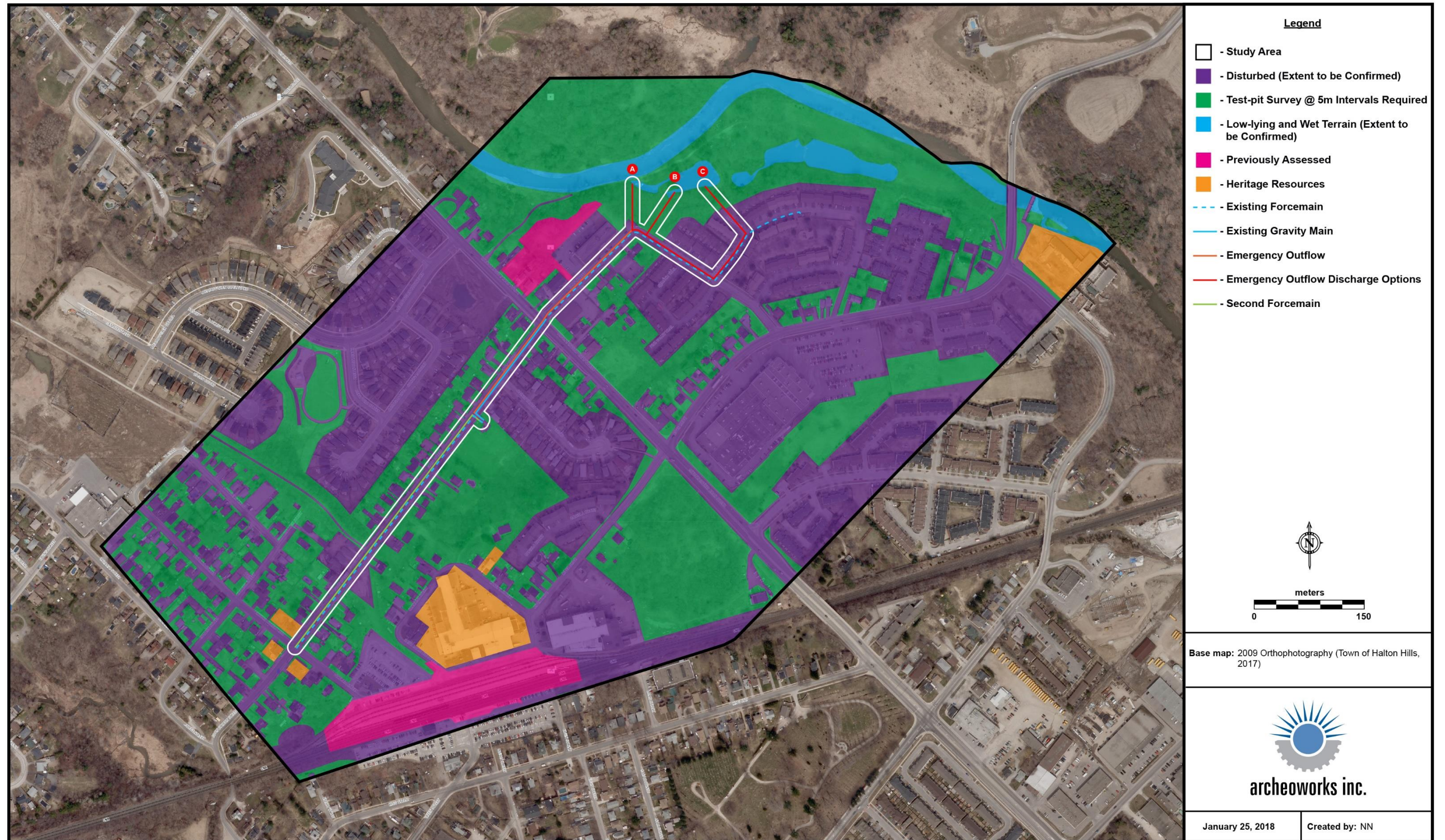
Map 9: Stage 1 AA study area within a 2016 satellite image (Google Earth, 2017c).



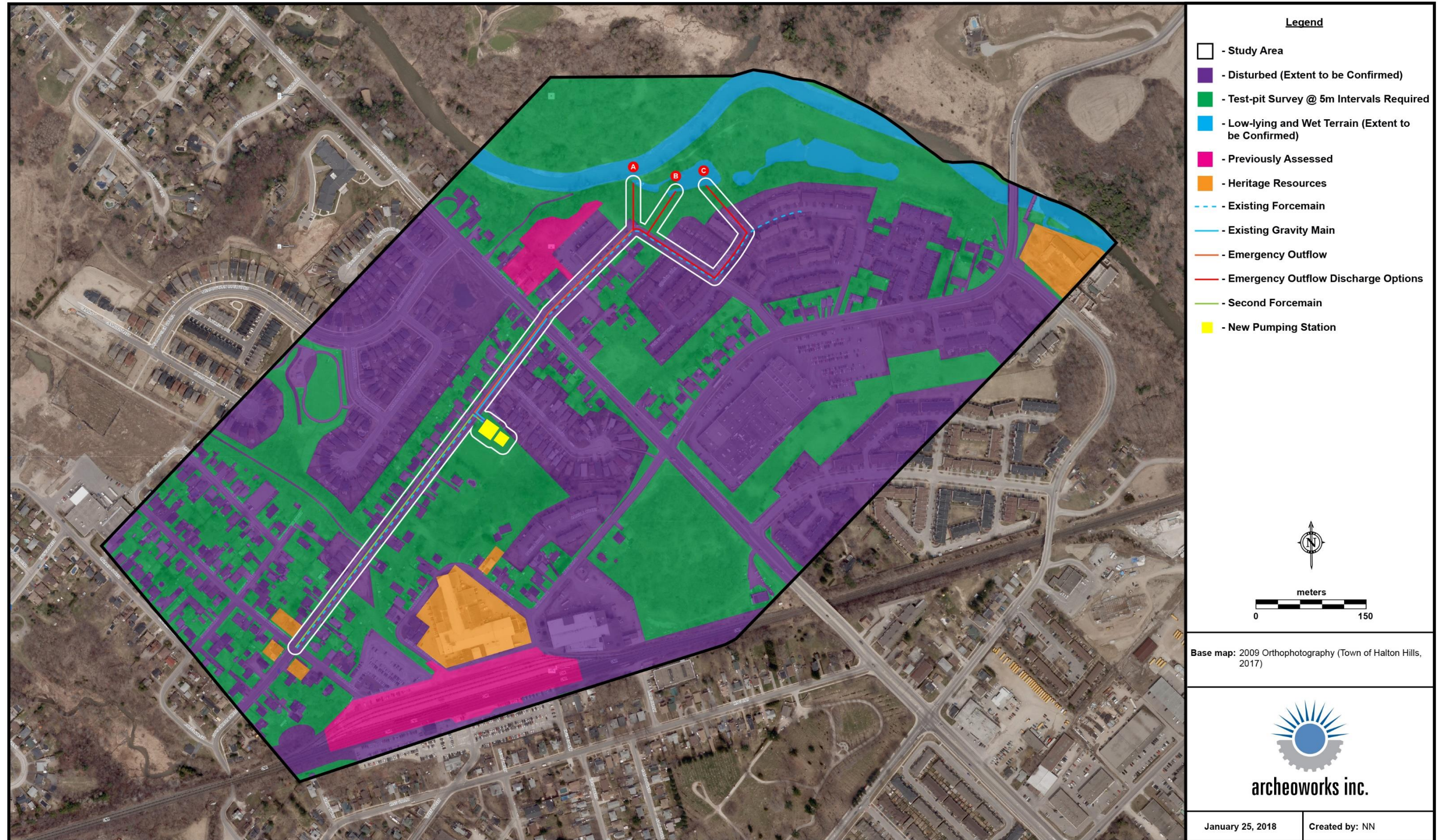
Map 10: Stage 1 AA results.



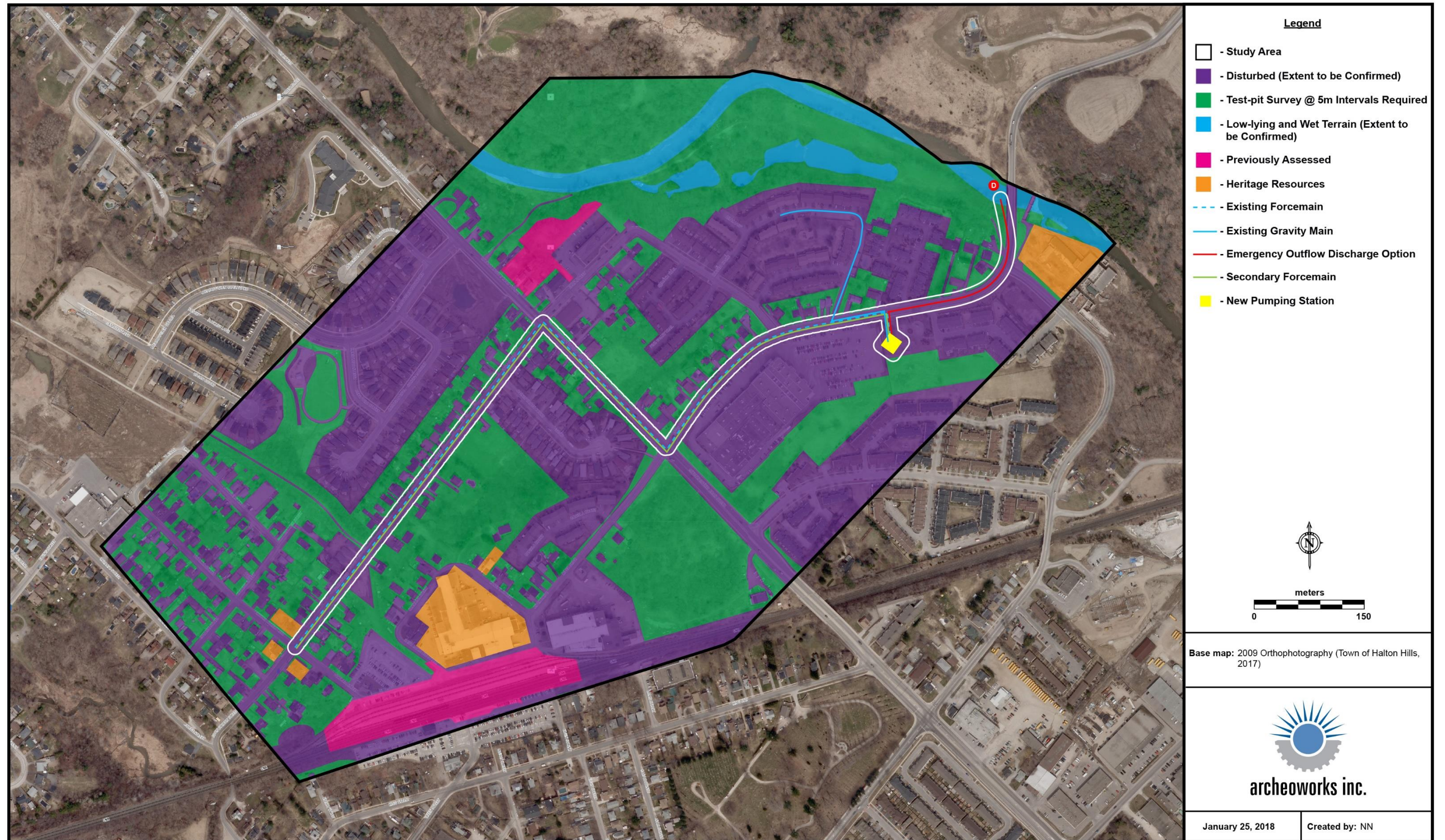
Map 11: Stage 1 AA results of Alternative 1.



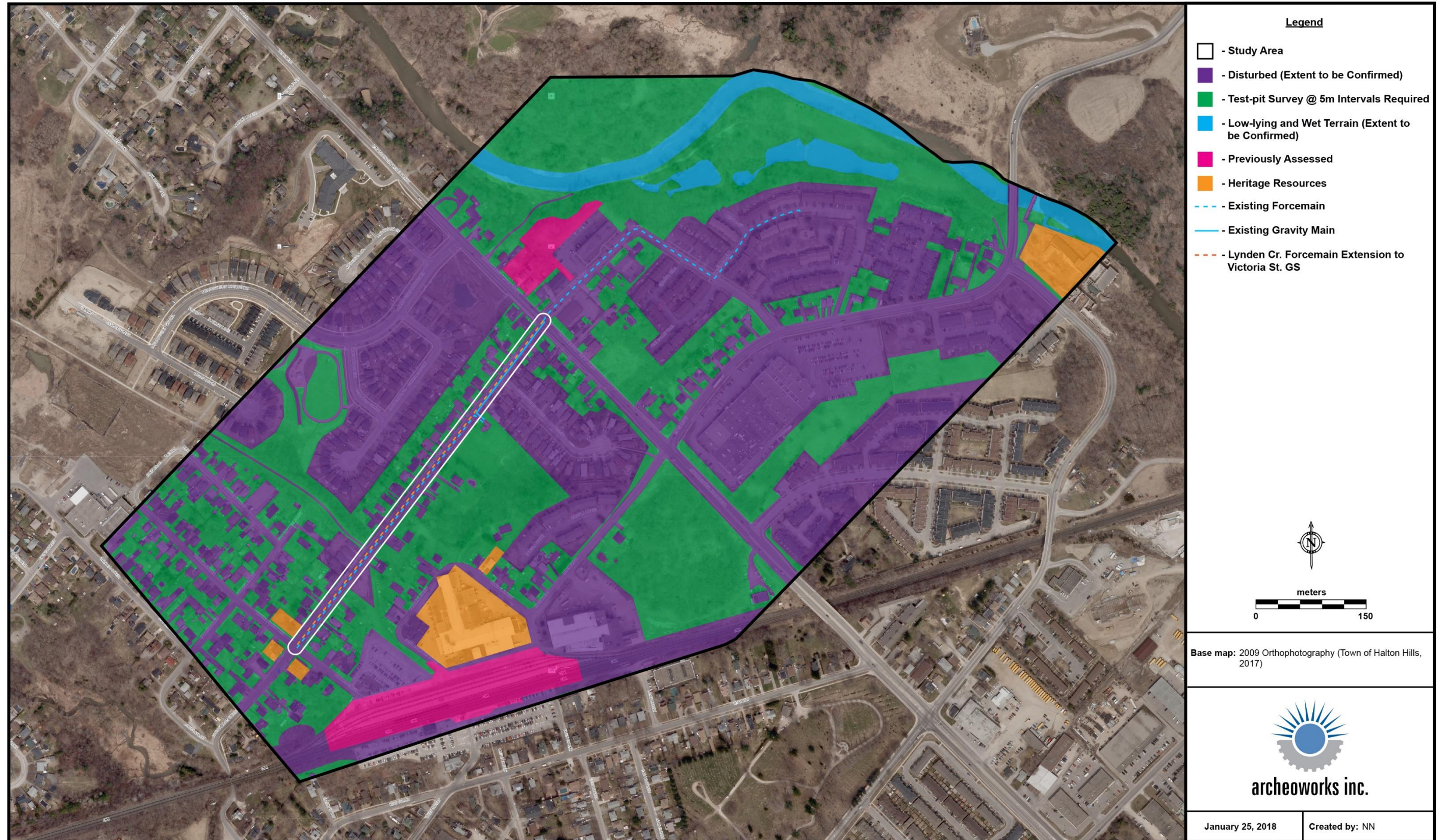
Map 12: Stage 1 AA results of Alternative 2.



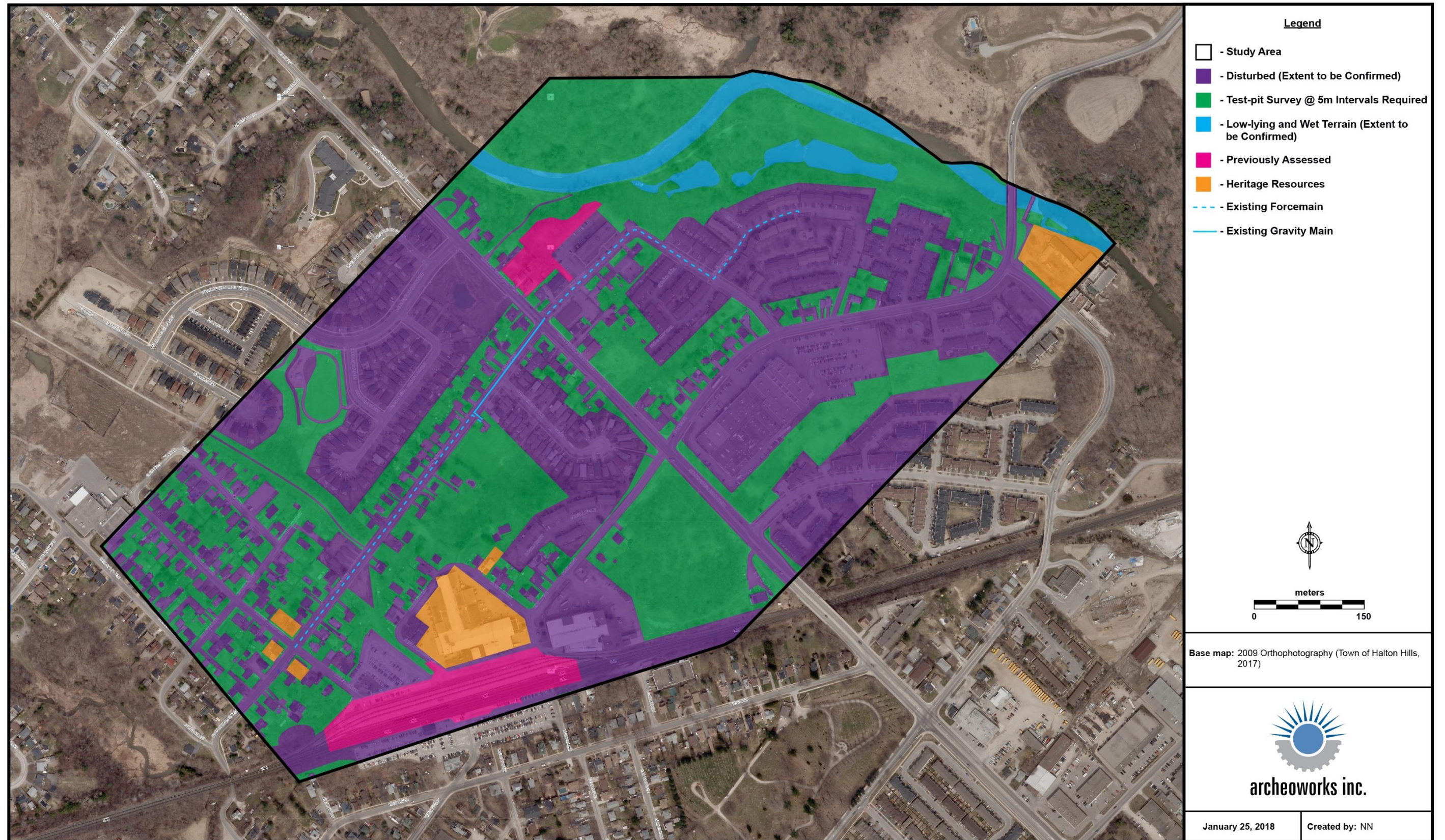
Map 13: Stage 1 AA results of Alternative 3.



Map 14: Stage 1 AA results of Alternative 4.



Map 15: Stage 1 AA results of Alternative 5.



Map 16: Stage 1 AA results of Alternative 6.

APPENDIX B: SUMMARY OF BACKGROUND RESEARCH

Feature of Archaeological Potential		Yes	No	Unknown	Comment
1	Known archaeological sites within 300 m?	X			If Yes, potential confirmed
Physical Features		Yes	No	Unknown	Comment
2	Is there water on or adjacent to the property?	X			If Yes, potential confirmed
2a	Presence of primary water source within 300 metres of the study area (lakes, rivers, streams, creeks)	X			If Yes, potential confirmed
2b	Presence of secondary water source within 300 metres of the study area (intermittent creeks and streams, springs, marshes, swamps)		X		If Yes, potential confirmed
2c	Features indicating past presence of water source within 300 metres (former shorelines, relic water channels, beach ridges)		X		If Yes, potential confirmed
2d	Accessible or inaccessible shoreline (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)		X		If Yes, potential confirmed
3	Elevated topography (knolls, drumlins, eskers, plateaus, etc.)		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
4	Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
5	Distinctive land formations (mounds, caverns, waterfalls, peninsulas, etc.)		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
Cultural Features		Yes	No	Unknown	Comment
6	Is there a known burial site or cemetery that is registered with the Cemeteries Regulation Unit on or directly adjacent to the property?		X		If Yes, potential confirmed
7	Associated with food or scarce resource harvest areas (traditional fishing locations, food extraction areas, raw material outcrops, etc.)		X		If Yes to two or more of 3-5 or 7-10, potential confirmed
8	Indications of early Euro-Canadian settlement (monuments, cemeteries, structures, etc.) within 300 metres	X			If Yes to two or more of 3-5 or 7-10, potential confirmed
9	Associated with historic transportation route (historic road, trail, portage, rail corridor, etc.) within 100 metres of the property	X			If Yes to two or more of 3-5 or 7-10, potential confirmed
Property-specific Information		Yes	No	Unknown	Comment
10	Contains property designated under the Ontario Heritage Act	X			If Yes, potential confirmed
11	Local knowledge (aboriginal communities, heritage organizations, municipal heritage committees, etc.)		X		If Yes, potential confirmed
12	Recent ground disturbance, not including agricultural cultivation (post-1960, extensive and deep land alterations)	X- parts of the study area			If Yes, low archaeological potential is determined

(MTCS, 2015)

APPENDIX C: INVENTORY OF DOCUMENTARY AND MATERIAL RECORD

Project Information:				
Project Number:		178-HH1756-16		
Licensee:		Kim Slocki (P029)		
MTCS PIF:		P029-0910-2017		
Document/ Material		Location		Comments
1.	Research/ Analysis/ Reporting Material	Digital files stored in: /2017/ 178-HH1756-16 - John Street WWPS	Archeoworks Inc., 16715-12 Yonge Street, Suite 1029, Newmarket, ON, Canada, L3X 1X4	Stored on Archeoworks network servers

Under Section 6 of Regulation 881 of the *Ontario Heritage Act*, Archeoworks Inc. will, “keep in safekeeping all objects of archaeological significance that are found under the authority of the licence and all field records that are made in the course of the work authorized by the licence, except where the objects and records are donated to Her Majesty the Queen in right of Ontario or are directed to be deposited in a public institution under subsection 66 (1) of the Act.”