APPENDIX E

Stage 1 Archaeological Assessment (TRCA 2019)

STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Ajax & Pickering Dykes Rehabilitation Class EA

ORIGINAL REPORT
June 25, 2019
DC19-06 | PIF P1016-0175-2019
Licensee: **Alvina Tam (P1016)**

Lot 15, Concession I, and Lots 16 – 18, Concession II
Geographic Township of Pickering, Historic Ontario County
in the City of Pickering and Town of Ajax,
Regional Municipality of Durham

Executive Summary

A Stage 1 archaeological assessment was triggered by the Class Environmental Assessment (Class EA) process for Remedial Flood and Erosion Control under the Environmental Assessment Act, and internal Toronto and Region Conservation Authority (TRCA) policy outlined in the Archaeology Resource Management Services Guidelines and Procedures. The focus of the study is to identify alternatives for the rehabilitation of two existing flood control dykes.

The project area is situated within TRCA lands on Lot 15, Concession I, and Lots 16 – 18, Concession II in the Geographic Township of Pickering, historic Ontario County in the City of Pickering and Town of Ajax, Regional Municipality of Durham. Permission for this assessment was granted to TRCA Archaeology and Cultural Heritage by TRCA. No property inspection was completed during this assessment, thus no permission-to-enter was required. Areas requiring further Stage 2 archaeological assessment will be determined based on the results of the Stage 1 archaeological assessment documented herein.

The review of historic land use, geographic and cultural features, with careful consideration of available aerial photography, has indicated that the Ajax & Pickering Dykes Rehabilitation project area has the potential for buried cultural resources.

The following recommendations are made:

- Background research has identified portions of the project area having been previously subject to a Stage 1-2 archaeological assessment. With previous archaeological assessments having fulfilled the Stage 2 archaeological assessment requirements within their respective portion(s) of the project area, these areas are recommended to be exempt from Stage 2 assessment within the scope this project.

- A Stage 2 archaeological assessment is required in all areas identified as holding potential prior to any ground disturbing activities within the boundaries of the project area. Areas determined to hold potential must be subject to archaeological test pit survey at five-metre intervals prior to any ground disturbing activities, in accordance with the 2011 Standards and Guidelines for Consultant Archaeologists.

- Portions of the project area identified as disturbed and holding no potential due to built features (e.g. man-made disturbances) must be subjected to an on-site visual survey to confirm and document their nature and extent. Only then can these areas be exempt from Stage 2 test pit survey.

- Portions of the project area classified as having low or no archaeological potential due to physiographic features (e.g., permanently wet areas; steep slope) must be subjected to an on-site visual survey to confirm and document their nature and extent. Only then can these areas be exempt from Stage 2 test pit survey.

- Future areas determined for construction that are not covered by this Stage 1 archaeological assessment such as staging areas, temporary access roads, etc., must also be subject to a Stage 1 archaeological assessment, and if recommended, a Stage 2 archaeological assessment.

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1.0 Project Context

1.1 Development Context

A Stage 1 archaeological assessment was triggered by the Class Environmental Assessment (Class EA) process for Remedial Flood and Erosion Control under the Environmental Assessment Act, and internal Toronto and Region Conservation Authority (TRCA) policy outlined in the Archaeology Resource Management Services Guidelines and Procedures. The focus of the study is to identify alternatives for the rehabilitation of two existing flood control dykes. The existing limits of the two dykes and potential disturbance areas will herein be referred to as the "project area".

The objective of the dyke rehabilitation is to provide the same level of flood control as the existing dykes, but to improve the structural stability of the dykes to meet current engineering design guidelines and factors of safety. The footprints of the dykes will either remain the same as existing or expand by up to 5-10 metres. The environmental, social and economic impacts of the alternatives will be evaluated to identify the preferred alternative and then a 30% design will be prepared for the preferred alternative.

The project area is situated within Lot 15, Concession I, and Lots 16 – 18, Concession II in the Geographic Township of Pickering, historic Ontario County in the City of Pickering and Town of Ajax, Regional Municipality of Durham (**Maps 1 and 2**). Permission for this assessment was granted to TRCA Archaeology and Cultural Heritage by TRCA. No property inspection was completed during this assessment, thus no permission-to-enter was required. Areas requiring further Stage 2 archaeological assessment will be determined based on the results of the Stage 1 archaeological assessment documented herein.

1.2 Traditional Territories and Treaties

TRCA's jurisdiction encompasses the overlapping Traditional territories and Treaty areas relating to the Anishinaabe, Haudenosaunee, Huron-Wendat, and Métis nations. TRCA lands contain hundreds of known ancestral archaeological sites, as well as the high potential to discover more.

The treaty making process began during the 1700s in Ontario and continued through to the twentieth century. The treaties most relevant to the Greater Toronto Area (GTA) include the Treaties of 1701, the Toronto Purchase (1805), the Head of the Lake Treaty (1806), the Ajetance Treaty (1818), and the Williams Treaties (1923), which are briefly discussed below.

During the late seventeenth century, Britain and France were locked in a struggle to establish trade dominance in the Great Lakes Region. The French had allied with the Huron-Wendat and Anishinaabe, while the British were aided by the Haudenosaunee or Five Nations Iroquois (Mohawk, Oneida, Onondaga, Cayuga and Seneca Nations). Both the Huron and Iroquois claimed the lands north of Lake Ontario as part of their traditional hunting territory.

The 1701 Albany deed, also known as the Nanfan Treaty of 1701, between the Five Nations Iroquois and the British Crown identified beaver hunting grounds in the environs of Lakes Ontario, Erie, Huron and Michigan and included southwestern Ontario. The map accompanying the ceded area was made by Samuel Clowes, protracted by John Nanfan who was the Lieutenant Governor of New York at the time. Clowes Map of 1701 is currently accepted by the courts as the geographic extent of the Nanfan Treaty. However, the Iroquois had been pushed out of these territories before the end of the seventeenth century, and a large portion of the

beaver hunting grounds described in the deed were also claimed and in use by the French and their First Nation allies, the Huron-Wendat and Anishinaabe Nations, at the time of this surrender.

Following the Seven Years' War, Britain became the dominant colonial power in North America. By the late eighteenth century, it was the Anishinaabeg Mississauga who resided along the north shore of Lake Ontario and in the Trent River valley, and the Chippewas resided around Lake Simcoe, the Bruce Peninsula, and the Thames River valley. The Five Nations Iroquois at the time were not residing within the region. A number of land surrenders (the Upper Canada Land Surrenders of 1763-1830) occurred between the Crown and the Chippewas, the Mississauga, and the now Six Nations of the Iroquois Confederacy, that potentially affect lands within the GTA.

The Johnson-Butler Purchase was arranged in 1787 with the Mississauga and involved the surrender of a large tract of land along the north shore of Lake Ontario between the Trent River to the east and the Etobicoke River to the west, north to Lake Simcoe. However, due to irregularities in the document, particularly the lack of a detailed description of the land surrendered, the Crown determined the treaty to be invalid but did not rectify the issue until 1805, where the land was formally purchased from the Mississauga under the Toronto Purchase in 1805. Under the new agreement, the Mississauga reserved exclusive fishing rights on Etobicoke Creek. A day after, the Crown sought to purchase the lands immediately west of the Toronto Purchase Treaty (Treaty 13). In return for the lands, the Mississaugas received £1000 and the sole right to fish at the Credit River, as well as a one-mile strip of land on each of its banks. These terms were signed in 1806 under the Head of Lake Treaty (Treaty 14).

Following the Chippewas cession of land to the Crown in 1818 under the Lake Simcoe-Nottawasaga Treaty, the Crown wished to purchase adjacent lands from the Mississauga. This area includes part of the present day cities of Mississauga, Brampton and Caledon. The Ajetance Treaty (Treaty 19) was negotiated in 1818, where 648,000 acres of lands were exchanged for an annual amount of goods.

The Williams Treaties negotiated the surrender of a large tract of land in central and southern Ontario, which involved the Rama, Beausoleil, Georgina Island, Scugog Island, Alderville, Hiawatha, and Curve Lake First Nations and the Crown in 1923. These treaties were to account for the absence of documentation tied to the Gunshot Treaty of 1788, the northern boundary of which was to be established as far back as one could hear a gun shot from Lake Ontario. Part of the lands included in the Williams Treaties encompasses the southern part of the Rouge River Valley and in territory claimed by The Mississaugas of the Credit. Given that the Mississaugas were not a signatory of the Williams Treaty and did not surrender their interest in the lands, they claim unextinguished aboriginal title to the Rouge River Valley tract.

Differing interpretations of these historic treaties have been the subject of several land claims brought to federal and provincial courts over Aboriginal rights, rights to land, and traditional uses of that land. Descendants of Indigenous peoples who occupied Ontario prior to European settlement are actively involved in consultations with the provincial and federal governments relating to ancestral sites (particularly burial grounds and other sacred spaces) and proposed projects that have the potential to impact ancestral territories and Indigenous rights under the Canadian constitution. These descendant communities reside on reserve lands and in urban areas throughout Ontario, in the Province of Quebec, and in the States of Kansas and New York.

The TRCA has formulated Engagement Guidelines to provide guidance on stewardship and management decisions within the archaeological assessment process and other TRCA land management processes. These

guidelines outline our commitment to growing our relationships with Anishinaabe, Huron-Wendat, Haudenosaunee and Métis communities, whether that be relatively informal partnerships in various initiatives or in formal engagement for large-scale projects.

We acknowledge that the archaeological assessment reported here was undertaken within Traditional Territories and Treaty Lands of the Huron-Wendat, the Anishinaabeg of the Williams Treaty First Nations, and the Haudenosaunee. As stewards of land and water resources within the greater Toronto region TRCA appreciates and respects the history and diversity of the land, recognizes our shared values and interests, and is grateful to have the opportunity to work in this territory.

2.0 Background

Following the *2011 Standards and Guidelines for Consultant Archaeologists* (2011 Standards and Guidelines) set by the Ministry of Tourism, Culture, and Sport (MTCS), this background study includes the following research information and sources:

- the most current list of archaeological sites from the Ontario Archaeological Sites Database (OASD) and TRCA records for the presence of sites in and within one-kilometre of the project area;
- previous archaeological field work within a radius of 50 metres around the project area;
- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historic settlement maps and atlases;
- known archaeological management plans or other archaeological potential mapping;
- aerial photography (both recent and historical);
- title deeds and other land registry documents;
- historical land use and ownership records including assessment rolls, census records and commercial directories;
- organizations with oral or written information about the land use of the project area and area;
- secondary historical document sources such as local and regional histories and academic research; and,
- known built heritage resources within one-kilometre of the project area.

The background investigation for the project area encompasses the historical and cultural contexts of the people who lived both within and adjacent to the project area boundaries. Archival research of historic and modern heritage documents was conducted using available resources through the Ontario Archives, Collections Canada and various internet genealogical resources to provide a detailed synopsis of Euro-Canadian/Settlement period families on these properties. Relevant heritage documents accessed for this study included nineteenth-century surveyor's maps and land abstracts for each property. Secondary sources that document the settlement of York Township, villages, and the surrounding areas were also reviewed.

In addition to archival research, a review of documented nineteenth- and twentieth-century property alterations within the project area provides the means to evaluate the potential for cultural heritage resources and landscapes to remain intact within undisturbed pockets of these properties. Despite the level of archaeological potential evaluated through the modelling process, the potential for encountering intact resources is often mitigated by the degree of modern development and construction activities, largely in urban and near urban settings.

Detailed archival research into historic and modern heritage documents was conducted as a component of this study and is presented in **Section 2.2**.

2.1 Local Historic Environmental Context

Archival research into historic and modern heritage documents was conducted as a component of this study. A brief historical overview of the historic environment is provided below, following which an in depth review of the local area historical context is detailed.

Prehistoric Environment

Ten thousand years ago, Early Lake Ontario was considerably smaller than the earlier Lake Iroquois. This low water phase began around 11,400 BP when the St. Lawrence River outlet became established. Climatic changes during the Holocene were the result of "interplay of movements of continental cyclonic weather systems, fluctuating Great Lakes levels and associated climatic influences, and site-specific microclimate regimes" (Karrow and Warner 1990:35). Changes in forest composition reflect these climatic changes. During the Early Holocene ameliorating winters and warm, dry summers that were longer and warmer than present resulted in changes in the landscape in southern Ontario from treeless tundra to spruce forest by *ca.* 10,000 BP (Karrow and Warner 1990:33-35).

After 10,000 BP a gradual increase in atmospheric humidity in conjunction with warm summers led to the replacement of spruce forests by jack pine which were dominant between 9800 and 8500 BP but were replaced by white pine by 8000 BP, suggesting a gradual increase in humidity and a continuation of hot summers. These forests would have been similar to, although not directly analogous with a modern boreal forest, insofar as a variety of hardwood and mast trees such as oak were present. In this relatively open boreal forest, subsistence resources were probably woodland caribou and/or elk, moose, beaver, hare and fish (Dibb 2004:126; Lennox 2002:8). With the exception of a mid-Holocene warm/dry period between 6,000 and 3,000 years ago (Yu and McAndrews 1994:151), after *ca*. 7,500 years ago the southern Ontario climate shifted from deglacial to postglacial (Yu 2003:387), and experienced an essentially modern but slightly drier climate. Mixed coniferous-deciduous forest dominated the region. Subsistence resources at this time likely included a wide variety of aquatic animals, as well as waterfowl attracted to the riverine and marsh environment. Deer, fish, beaver, hare, duck and turtle as well as seasonal plants such as berries, sedges and nut trees were all possible food items established at this time (Ellis *et al*. 1990:111-114; Jamieson 2002:31; Ritchie 1994:34). Sand plains were rich in nut bearing trees such as oak, hickory, chestnut, walnut and beech. The well drained soils in this area were highly suited for growing Native horticultural crops and along with the rich food sources in the environment would have provided an ideal locale for more sedentary agriculturalists that populated southern Ontario after A.D. 900 (Karrow and Warner 1990:14).

Historic Environment

Early nineteenth century settler families would have encountered thriving forests filled with plenty of hardwood trees important for building homes and fueling fires. Families were fortunate if their land had a substantial water source, such as a stream, creek or spring that would attract game animals, provide fish and be a source of drinking water. Clearing the land would have been a tedious, painstaking task but of high importance. The planting, growing and harvesting of crops was vital if the pioneer families were to survive through the harsh winter months. Tree species included maple, beech, oak and white pine (Bonis 1968:39).

Some of the early settlers were skilled in hunting and trapping practices, as well as other means of subsistence in the absence of a thriving agricultural foundation.

Pickering Township's first settlers, William Peak and his wife Margaret, arrived in 1793. It was noted that "Wildlife thrived in the dense forest and Duffins Creek was filled with salmon; in fact, only a pitchfork was required to spear a meal" (Prymja 1992). They settled at the mouth of Duffins Creek.

2.2 Historical Context

The objectives of this background study are to provide "detailed documentary research providing a record of the property's archaeological and land use history and present condition" (MTCS 2011). The following sections provide an inclusive review of the geographic and cultural features of both the project area and its surroundings in order to evaluate the potential for cultural resources. Archival research of the nineteenth-century settlement of the property provides an historical overview of the local area and documentary evidence of twentieth and twenty-first century construction, as well as a summary of the landscape history and use. This research was completed to determine the potential for cultural materials to be recovered from the project area, or conversely to identify if and where the project area has been subjected to extensive modifications that have damaged or removed any archaeological potential.

The following historic background was written to document the chronological history of the lands within the project area. The subsequent Pre-Contact chronology is constructed from research contained within *The Archaeology of Southern Ontario to A.D. 1650*, edited by C.J. Ellis and N. Ferris (1990). The Euro-Canadian period is presented from its broadest scale and refined down to individual properties. That is, the discussion reviews the history of Ontario County; Pickering Township, as well as the communities, industries, and structural improvements located within the vicinity of the project area.

Pre-Contact History

Paleo Period – 12,000 to 10,000 BP

Twelve thousand years ago, as the glaciers retreated from southern Ontario, nomadic peoples gradually moved into areas recently vacated by the massive ice-sheets. These people lived in small family groups and it is presumed that they hunted caribou and other fauna associated with the cooler environment of this time period. As the glaciers melted at the end of the last ice age, the landscape of southern Ontario was very much like the tundra of the present day eastern sub-arctic. Traditionally, the occupation of southern Ontario during the Paleo Period has been associated with glacial lake shorelines, however recent investigations in the Toronto vicinity indicate that these peoples also exploited interior locations situated inland from the glacial lakes.

Intense Diversification Period – 10,000 to 2,800 BP

As the climate in southern Ontario warmed, Indigenous populations adapted to these new environments and associated fauna. Thus, many new technologies and subsistence strategies were introduced and developed by the Indigenous peoples of this time period. Woodworking implements such as groundstone axes, adzes, and gouges began to appear, as did net-sinkers (for fishing), numerous types of spear points and items made from native copper, which was mined from the Lake Superior region. The presence of native copper on archaeological sites in southern Ontario and adjacent areas suggests that people were involved in long range exchange and interaction. The trade networks established at this time were to persist between Indigenous groups until European contact. To harvest the new riches of the warming climate, the bands residing in southern Ontario followed an annual cycle, which exploited seasonably available resources in differing

geographic locales within watersheds. As the seasons changed, these bands split into smaller groups and moved inland to exploit other resources that were available during the fall and winter such as deer, rabbit, squirrel, and bear, which thrived in the forested margins of these areas.

Initial Woodland Period – 2,800 BP to A.D. 700

Early in the Initial Woodland period, band size and subsistence activities were generally consistent with the groups of the preceding Intense Diversification Period. Associated with the earliest components of this cultural period is the introduction of clay pots. Additionally, around two thousand years ago a revolutionary new technology, the bow and arrow, was brought into southern Ontario and radically changed approaches to hunting and warfare. These two technological innovations allowed for major changes in subsistence and settlement patterns. As populations became larger, camps and villages with more permanent structures were occupied longer and more consistently. Generally, these larger sites are associated with the gathering of macrobands. Often these larger groups would reside in favourable locations to cooperatively take advantage of readily exploitable resources. It was also during this period that elaborate burial rituals and the interment of numerous exotic grave goods with the deceased began to take place. Increased trade and interaction between southern Ontario populations and groups as far away as the Atlantic coast and the Ohio Valley was also taking place.

Late Woodland Period – A.D. 700 to 1650

Around A.D. 700, maize was introduced into southern Ontario from the south. With the development of horticulture as the predominant subsistence base, the Late Woodland Period gave rise to a tremendous population increase and the establishment of permanent villages. These villages consisted of longhouses measuring six metres wide and high and extending anywhere from three to 15 metres in length. Quite often these villages, some of which are one to four hectares in size, were surrounded by multiple rows of palisades suggesting that defence was a community concern. Aside from villages, Late Woodland peoples also inhabited hamlets and special purpose cabins and campsites that are thought to have been associated with larger settlements. Social changes were also taking place, as reflected in the fluorescence of smoking pipes; certain burial rituals; increased settlement size; and distinct clustering of both longhouses within villages (clan development) and villages within a region (tribal development). One interesting socio-cultural phenomenon that occurred during this period as a result of the shift in emphasis from hunting to horticulture was a movement away from the traditional patrilineal and patrilocal societies of the preceding band-oriented groups to a matrilineal orientation. Warfare was also on the rise.

The movement of villages northward within individual watersheds in the Toronto region is clearly documented over time. This movement is generally attributed to the decline of resource availability over the lifetime of the village. After which, communities continued a northward trend eventually settling in Huronia (in the Penetanguishene Peninsula) and it was these communities that eventually interacted with and were described by French missionaries and explorers during the early seventeenth century.

According to oral traditions, *Anishinaabe* peoples migrated from the Eastern coast into the Great Lakes region around A.D. 1400. The Anishinaabe include people identified as Ojibway, Chippewa, or Mississauga and until the seventeenth century lived primarily a nomadic lifestyle north of Lake Ontario on the Canadian Shield. The *Wendat,* who are recognized as the cultural group that inhabited the Toronto area during the Late Woodland Period, eventually moved their villages northward toward Georgian Bay. The Huron-Wendat Nation was

decimated by warfare with the Iroquois from south of the lake that was exacerbated by illnesses brought to the New World by Europeans. They fled Huronia around 1650, and now have established communities in Wendake, Quebec and in the American States of Kansas and New York. The Haudenosaunee, or people of the longhouse, comprise the six Iroquois Nations of Mohawk, Oneida, Onondaga, Cayuga, Seneca, and Tuscarora. As allies of the British during the American Revolution under Captain Joseph Brant the Haudenosaunee were granted a tract of land along the Grand River where many relocated from the Finger Lakes region of New York State. It was these and other nations in southwestern Ontario that interacted with and were described by French missionaries and explorers during the early seventeenth century.

Post Contact History

Post Contact Period – A.D. 1650 to 1778

Also called the Early Historic Period, these years are characterized by the arrival of a small number of Europeans interested in exploration, trade, and establishing missions, coupled with a gradual adoption of European materials by First Nations peoples.

Anishinaabe peoples who traditionally lived further north on the Canadian Shield remained largely nomadic well into the Historic Period. Exploration and fur trade activities between Lake Ontario and the upper Great Lakes were carried out along well-established trails linking Lake Ontario to the Holland River, Lake Simcoe and Lake Huron. It was during this period of trade and exploration that male fur traders established families with Indigenous women during their travels. A blending of cultural traditions eventually resulted in distinct Métis communities along the lakes and waterways of Ontario. The French explorers and fur traders began to travel along the Lake Ontario shoreline and explore parts of the north shore inland. They followed the centuries-old route of the well-established west branch of the Toronto Carrying Place Trail along the Humber River and the east branch along the Rouge River north to the Holland River and beyond, to the upper lakes.

By A.D. 1650 the lands along the north shore of Lake Ontario were largely uninhabited and small groups of Seneca subsequently moved into the area *ca.*1660. The Seneca established the villages of Teiaiagon and Ganatsekwyagon at strategic trading locations at the mouths of the Humber and Rouge Rivers, effectively controlling access to the west and east branches of the Toronto Carrying Place Trail. Teiaiagon and Ganatsekwyagon were also connected east-west by an overland route along the lakeshore.

In terms of material culture, it is often difficult to distinguish between *Haudenosaunee*, *Anishinaabe*, *Métis* and colonial settler campsites during these early years. This is due to the interaction and adoption of each other's material goods and subsistence strategies which blur cultural boundaries. Such interaction was essential to early explorers and missionaries who relied on local people for survival strategies and knowledge of the local landscape.

These permeable boundaries continued until the Crown established segregated reserves in the eighteenth and early nineteenth centuries for the *Haudenosaunee* and *Anishinaabe* communities who remained here while granting properties to European settlers.

Due to the trade disputes between the French and English, these disruptions to trade resulted in the Seneca abandoning their villages after 1695, leaving the region without a permanent First Nations settlement. The Mississauga people began moving south in the seventeenth century, traversing southern Ontario on their seasonal rounds and establishing villages along the north shore of Lake Ontario, even re-occupying those

formerly abandoned by the Seneca. The Mississauga were largely fishers and hunters, and participated in more casual maize horticulture. By the late eighteenth century, the Mississauga resided along the north shore of Lake Ontario and in the Trent River valley, and the Chippewa resided near Lake Simcoe, the Bruce Peninsula, and the Thames River valley. The Five Nations Iroquois were not residing within the region at the time nor were the Huron.

Following the signing of the Treaty of Paris, which passed New France into British hands, King George III issued the Royal Proclamation, a document attributed to the first formal recognition of Indigenous rights. The Royal Proclamation asserted the British Crown's sovereignty of the region, while also declaring the land to be in possession of the Indigenous peoples who lived there. It forbade non-Indigenous people from entering the land and denied individual land purchasing rights. Only the Crown could purchase land from the Indigenous peoples living there, and this land could then be subsequently be bought from the Crown. As described in **Section 1.2**, a number of key land surrenders were negotiated between the Crown and the Chippewa, the Mississauga, and the Five Nations Iroquois, that potentially impact lands within the Greater Toronto Area.

Euro-Canadian Period – A.D. 1778 to Present

Ontario County

The original Ontario County, formed in 1778, was part of the district of Nassau. From 1792 to 1800 Ontario County was part of the Eastern District which included the St. Lawrence River. However, this was dissolved after 1800 and the islands and river were reassigned to mainland counties (Farewell 1907). The later Ontario County was created in 1853 from the eastern half of York in order to administer over Ontario's own judicial and municipal functions. Ontario County covered an area of 514,000 acres from Lake Ontario to Lake Simcoe and encompassed nine original townships including Brock, Mara, Pickering, Rama, Reach, Scott, Thorah, Uxbridge and Whitby.

Pickering Township

The land that formed Pickering Township was originally part of the District of Nassau in the Province of Quebec. In 1792, when Lieutenant-Governor John Graves Simcoe arrived in the newly created province of Upper Canada, new counties, which included York, were created by Proclamation and the old name was changed from "Nassau" to the "Home" District. Pickering fell under the jurisdiction of the East Riding of York until 1849 when the Districts were abolished, and the County of Ontario was established. For a few years this was united with York and Peel, but it was elevated to independent County status in 1851.

The first name suggested for Pickering Township was "Edinburgh." The initial survey was undertaken by Augustus Jones in February 1791, and it established the baseline and the first few Concessions. This map, as well as one dated 1793, indicates that the name "Duffin's Creek" was used from the earliest period of British settlement in reference to the creek. It should be noted that Duffins Creek was known to the French during the 17th and 18th centuries that referred to it as the *Rivière au Saumon* from the large number of salmon that used the upper reaches of the watershed as a spawning ground. Due to the great number of mills constructed along Duffins Creek, access to the spawning grounds was cut off and it was noted by local historians that the salmon had nearly disappeared from Duffins Creek by the end of the first quarter of the 19th century.

It is noted that the map dating to 1793 appears to have a number of errors, illustrating Frenchman's Bay one township lot too far towards the east. Perhaps because of the errors in the 1793 map a new survey of the

Broken Front Concessions was ordered by the Surveyor General's office of Upper Canada and instructions were issued to John Galbraith to commence this work on June 10, 1833.

The survey commenced from the township line between Scarborough and Pickering and the terrain encountered was "so rough that it was almost impossible to chain it accurately." Marshes, heavy rain and "almost impenetrable thickets of brush" further hindered the work of the crew. Robert Collins and George Gosling were hired as additional axemen but due to the rigorous nature of the work and rainy weather Collins quit after just a few days while Gosling was later excused due to sickness. Additional difficulties were encountered on June 17th due to the depth of the water at Duffins Creek where "we could do nothing without a canoe or boat." A great deal of time was wasted one afternoon in the attempts to procure a craft and even when one was located Galbraith "found it a very difficult matter to measure through the water. We quit work a little before sundown having got no further than the west limit of lot 14."

The following day Galbraith was unsatisfied with the measurement of "the marsh, and the more so as it did not come near the place where the proprietor of lot 14 pretended to claim the land to by some former survey, I ran the east and west boundary lines of lot no. 14 southward to the lakeshore and chained the distance between them to find whether the lot had its' full width or not and finding that it did we proceeded with the line in front of the 3rd Range." On June 25th the line was surveyed between Concessions 1 and 2. On July 4-5 Galbraith dismissed his men and spent July 7-18th in working on his map, diary, field notes and pay lists. In the preparation of his map Galbraith discovered that his survey was still "out" by 0.26 links, therefore he assigned an additional 0.03 links (about ¾ inch) to the depth of the lots between Frenchman's Creek to the Scarborough line as a corrective measure.

Nearby Settlements

Duffins Creek

To the east and north of the project area near the intersection of present-day Kingston Road and Church Street was the community of Duffins Creek. Duffins Creek was one of three villages of importance in Pickering Township by 1850. At the time, the village was also known as "Canton", and had arisen around the first mill established in Ontario County. Despite its early beginnings, the mill struggled to reach a level of notoriety compared to rival mills in Whitby and Oshawa, likely due to a lack of either good roads north or trade monopoly over a larger area with competition from Markham and its good roads to Toronto (Johnson 1973).

W.H. Smith (1851) observed in 1844 that Duffin's Creek "Contains about 130 inhabitants. Churches and chapels, 4; viz., Presbyterian, Catholic, British Wesleyan, and Quaker… Post Office, post every day. *Professions and Trades.* – One grist mill, one brewery, one tannery, three stores, two taverns, three shoemakers, two tailors, one blacksmith, one waggon[*sic*] maker" (Johnson1973:138). By 1850, the population had grown to three to four-hundred inhabitants, and included the addition of a Roman Catholic church.

Transportation: Trails, Roads and Railways

The project area lies adjacent to several historic roadways, including present-day Brock Road, Finch Avenue, Kingston Road and Church Street (**Map 5**). Additionally, the present-day CN railway (historic Grand Trunk Railway) is also located within 300 metres of the project area to the south.

Lot Summaries

Lot 15, Concession I

According to the Land Abstract Index for Lot 15, Concession I, the patent for this lot was granted to George Munro on June 1, 1848, apart from 17 acres which were patented to the Toronto Church Society on August 29, 1845. Munro sold the south 100 acres of this lot to William Cowan in March 1853 who then sold to William Dunbar by 1877. Munro sold the north 83 acres to William Hartrick in September 1850 who willed it to his son, James, in 1874. Both William Hartrick and his son subdivided their part of the lot into smaller parcels (¼, ½ and ¾ acre parcels) starting as early as 1854, and the names of some of these small lot owners were Edward Galloway, Horatio Leavens, John Gordon, M. Clary, Rachel Webb and Moses Smith. One acre was deeded to the Roman Catholic Church in 1861 and another parcel for the use of a school in 1865. James Hartrick continued to occupy this land until the 1890's.

Lot 16, Concession II

The patent for this lot was granted to King's College on January 3, 1828. The land remained in the ownership of the College for the next forty years although the land was undoubtedly rented or leased to tenant farmers such as Christopher Elliott who had purchased part of the adjoining lot 17 in 1836. In July 1861 the lot was sold by David Buchan, bursar of the University of Toronto, to Edward Fitzgerald. In October 1870 Fitzgerald sold the lot to the Rev. Adam Elliott who immediately began to divide the lot into smaller parcels. The largest lots sold by Elliott were 26½ acres conveyed to W & J Spink in October 1874 and 158½ acres sold to Thomas Bedford in December 1870. The remainder of the chain of title was quite complex, and involved a number of deed polls, certificates, trust deeds, quit-claims, releases and suits heard in the Court of Chancery in February 1860 and July 1869. Parts of lot 16 were formally subdivided by Registered Plans numbered 11 (1869) and 68 (1877) which formed part of the village of Duffin's Creek.

Lot 17, Concession II

The patent for this lot was granted to Catharine McGill on November 11, 1796. She and her husband, John McGill, sold the land to an innkeeper named Noadiah Woodruff on February 13, 1813 for £250. The chain of title to this land becomes complex as the lot was divided into four parcels, some parts of which were vested, while others were involved in Chancery suits between 1870 and 1875.

The 1860 Tremaine map (**Map 3**) depicts Lot 17 as divided into three parts between M. Willson, N. Woodruff and the Estate of the late C. Elliott. The position of the creek was clearly shown, and some subdivision development had taken place near the south-east corner of the lot. By 1877, some additional channels had been cut from between Duffins Creek and the road allowance between Lots 16 and 17, Concession 2 and joined to what appears to have been the start of a mill race on Lot 16. The configuration suggests that these streams did not occur naturally.

The most northerly 50-acre parcel was sold by Woodruff to Aaron Betts in 1823. Subsequent owners included Platt Betts (1832), Christopher Elliott (1836), Rev. Adam Elliott, Frank Gibbs (1870), William H. Thomas (1874), Richard Winnacott (1874), Robert McGee (1879), William Forrester (1881), Richard Knowles (1886), Wilfred H. Knowles (1900), Robert McBrady (1907), William George Orvis (1912), John Hamilton (1920) and George Funston (1920). Following this time, the lot was further subdivided into still smaller parcels.

The next parcel was a 75-acre tract which followed the same chain of title as above to the time of William H. Thomas in 1874. Following this the ownership passed to Moses Smith (1874), George Leng (1876), the firm of Leng and Decker (1876), Edward J. Shirley (1923), Alex Burdyka (1924), Thomas Walsh (1930), Burton Myers (1930), E. Vitez (1946) and Roy Schaeffer (1972). A small 4-acre parcel was sold by Woodruff to James Greig in 1835 which was willed to James W. Greig in 1853 or 1854. This was sold to Robert and James Campbell (1865) and then to Joshua Richardson (1869). It eventually merged back into the 75-acre parcel.

The next parcel was approximately 20½ acres in size. One lot of about 8 acres was sold by Woodruff to John Fuller in 1844, while another of 12½ acres was sold to Powell Woodruff in 1850. This was sold to Fuller in 1856. Following this the 20½ acres was sold to Michael Wilson (1856), Nicholas Westlake (1873), left through the Westlake estate to his wife Jane in 1878, then sold to Charles Huxtable (1913), Society of St. Vincent de Paul of Toronto (1913), Alex Picov (1942), Bertha Goldman (1946), David Goldman (1964) and then to Bertha Lands Inc. (1974) for development purposes.

The most southerly 80 acres was sold to Nelson Woodruff in 1851; subsequent owners were Washington and Lafayette Woodruff , William and John L. Spink (1875), James Hulbert (1880), Aurelia St. Denis (1891), Frank B. Mosure (1892), Isabella Liscombe (1895), Minnie Wood and Edith Robinette (1914), Albert Calvert (1921), Adelaide Victoria Calvert (1923), Albert Ernest Calvert (1941) and Joseph Liddell (1948).

Early census returns for this area, and this lot in particular, are limited. The census of 1842 contains aggregate returns only, and no names or personal or household data were available. The 1851 census information is also incomplete. The agricultural census is missing for this district and it is, therefore, difficult to determine whether the enumeration in the personal census reflected the registered owner/s as residents on this particular lot or on some other lot within the township since many held title to more than one farm.

Both the personal and agricultural returns are extant for the 1861 census which showed that this lot was occupied by freeholder and tenant farmers in 1860-61. For example, John Cotts (also spelled as Coatts), who was born in England around 1818, was a tenant farmer who occupied 80 acres. He resided in a one storey frame house with his wife, two young daughters and two farm labourers named Robert Thompson and William Prout. The assessed value of his farm was $8000 with $180 in farm equipment. The family grew spring wheat, barley, peas, oats, potatoes, turnip, carrots and hay. Livestock included steers, milch cows, horses, colts, sheep and pigs. Additional farm produce was wool and butter. The family owned one “pleasure carriage” and paid an annual rent of $170 for the premises (division 4, pp. 27 and 71, NAC film C1057 and C1059).

The 1871 census return data showed that the lot was still worked by a mixture of freeholders and tenant farmers. For example, Nicholas Westlake, born in England in 1818, was a tenant farmer who occupied 20½ acres with his wife and four children. Two of his sons, Thomas (age 21) and Richard (age 17) earned their living as a carpenter and butcher, respectively. The Westlake farm produced spring wheat, oats, peas, corn, potatoes, turnip, mangel-wurzel, carrots, hay, apples and plums/pears. Livestock included horses, colts, milch cows, horned cattle and pigs. Additional farm produce included wool, butter and barrels of beef and pork. The family owned one beehive. Farm equipment included a carriage, wagon and plough.

Another small land holder on this lot was John Rex, who was born in Quebec in 1816, was a cabinet maker by trade. He lived with his wife and eleven children. Their garden plot produced beans and potatoes, and the family owned a milch cow, sheep and pigs. The family made their own butter, and muskrat hides/furs were included in the agricultural enumeration.

The cartographic evidence does not indicate the presence of any structures upon this farm lot until four structures were shown on the 1877 Beer's & Co. Atlas map **(Map 4)**. The first was situated at the north end on Winnacott's land on the west side of Duffins Creek; the next was on Westlake's land, well to the east of the Creek around the junction of Elizabeth Street and Riverside Drive; the last two were located on the south end of the lot on the Spink lot west of the creek along Kingston Road. A large pond and mill race also were present upon Spink's lands. The oxbow lake present in the vicinity of the study area is more likely the remains of the mill pond rather than the channels for the aforementioned mill race, as this later map depicts the mill pond approximately in this location, as opposed to the earlier Tremaine map, which depicts no such ponding in the area.

Due to the lack of documentary records, particularly the assessment rolls, it is difficult to determine exactly when any of the structures were built on this lot. Given that the land was worked by tenant farmers during the 2nd and 3rd quarters of the 19th century who carried out mixed agricultural pursuits here, it would appear, based upon census records that these structures were probably in existence by 1860-1861. It is possible that traces of these houses or structures associated with the hypothesized channels or mill pond may be uncovered within the study area, as well as associated structures such as barns/sheds, middens or long discarded farm implements associated with these 19th century agrarian pursuits.

Lot 18, Concession II

A review of the 1860 Tremaine Map for Ontario County reveals that a N. Woodruff owned the southern portion of Lot 18, Concession II which the project area falls within (**Map 3**). Duffins Creek and a mill race bisect the property. The northern portion of the lot (with the exception of a small parcel within the northwest corner of Lot 18) was owned by J. Woodruff. The small parcel in the northwest portion was owned by an individual with the initials L.M. By 1877, the N. Woodruff property was owned by W. & J. Spink. It appears that the alignment of Duffin's Creek shifted slightly north since this time. The property owned by J. Woodruff was owned by H. Major, which is depicted as having one historic structure. The small parcel of land in the northwest corner of the lot was owned by an individual with the initials D.B (**Map 4**).

Twentieth Century History

The twentieth century saw some severe flooding events in the Duffins Creek watershed, the most severe of which occurred on June 5, 1890. The communities of Greenwood and Pickering Village were inundated with major flooding, with several small dams being washed out and flooding of many homes and roads within these communities. Hurricane Hazel in 1954 produced the second most severe flooding event in the Duffins, causing damage to buildings and roads within Stouffville, Greenwood and Pickering Village.

Hurricane Hazel resulted in the loss of 81 lives in Ontario, leaving 4,000 families without homes, and approximately $25 million in damages at the time. Following the aftermath of Hurricane Hazel, governments were spurred into action to create long-range planning solutions so that such devastation would not happen again. The Metropolitan Toronto and Region Conservation Authority was born from the legacy of Hurricane Hazel and heavily flooded areas were expropriated to manage the watersheds appropriately.

The 1959 Plan for Flood Control and Water Conservation identified no need for flood control related works within the Duffins Creek. The only works referenced within the creek were recreational dams proposed upstream of the Village of Green River and within the Greenwood Conservation Area. Neither of these recreational dams have been constructed due to the implications for the aquatic habitat and wildlife species.

Due to the extensive destruction caused by Hurricane Hazel throughout the entire TRCA region, flood protection along the watercourses was deemed a necessity and continues to be based on minimizing damage caused by this type of severe storm. Flood protection works were undertaken in the Village of Stouffville and Pickering Village areas to relieve the flood threats at these locations. Works in the Village of Stouffville consisted of a small dam and reservoir constructed in 1969. A gabion-lined flood control channel through the village was completed in 1980. These two facilities provide a high degree of protection. In Pickering Village, which is located at the confluence of the east and west tributaries of Duffins Creek, a series of flood protection dykes were constructed in 1982-83 to provide flood protection to the community. Two dykes were built, one from Brock Road east to the confluence and then south connecting to Highway 2. The second dyke was constructed on the east side of the main branch of the creek from just above the creek's crossing under Church Street to a high point above the flood-vulnerable area several hundred metres upstream. While both these works provide a high level of protection, both sites remain flood vulnerable under a severe Hurricane Hazel-type event.

Review of Maps and Aerial Photography

Nineteenth-Century Maps

Nineteenth-century maps were reviewed for the project area: the 1860 Tremaine Map of Ontario County (**Map 3**) and the 1877 Beers & Co. Atlas of Ontario County (**Map 4**). The following is a summary of the landowners and any structures noted on these maps (**Tables 1 and 2**).

***Table 1*. Summary of Residents and Historic Features on the 1860 Tremaine Map**

Concession	Lot	Grantee	Historic Features
I	15	Unknown	Duffins Creek, Town Lots, Historic Roadways
II	16	Estate of the Late C. Elliott	Village of Duffins Creek, Duffins Creek, Town Lots, Historic Roadways
II	17 (SW parcel)	N. Woodruff	Duffins Creek, Historic Roadway
II	17 (SE parcel)	L. Greig	One Structure, Duffins Creek, Historic Roadways
II	17 (Middle parcel)	M. Willson	Duffins Creek, Historic Roadway
II	17 (Northern parcel)	Estate of the Late C. Elliott	Duffins Creek, Historic Roadways
II	18 (N ½ of N ½)	D. Decker	Historic Roadways
II	18 (S ½ of N ½)	H. Woodruff	Duffins Creek, Historic Roadway
II	18 (NW parcel of S ½)	T.M.	Historic Roadway
II	18 (NE parcel of S ½)	J. Woodruff	Historic Roadway

Concession	Lot	Grantee	Historic Features
II	18 (Southern parcel of S ½)	N. Woodruff	Duffins Creek; Mill Race, Historic Roadways

***Table 2*. Summary of Residents and Historic Features on the 1877 Beers & Co. Atlas**

Concession	Lot	Grantee	Historic Features
I	15 (SW ½)	J. Hartrick	Duffins Creek, Grand Trunk Railway, Mill Race
I	15 (NE ½)	Sheir & Gordon	Village of Duffins Creek, Mill Race, Historic Roadways, Town Lots
II	16 (158 ½ acres)	T. Betford	Duffins Creek, Historic Roadway
II	16 (26 ½ acres)	W & J. Spink	Grist Mill, Mill Race
II	16 (Town Lots)	Numerous	Seven town lots each with a structure, including one church and cemetery and a blacksmith; Historic Roadways
II	16 (middle parcel)	J.L. Spink	Historic Roadway
II	17 (southern parcel)	W & J. Spink	Two Structures, Mill Race, Mill Pond; Historic Roadways
II	17 (21 acres)	J. Westlake	One Structure, Historic Roadway, Duffins Creek
II	17 (75 acres)	Leng & Decker	Duffins Creek, Historic Roadway
II	17 (50 acres)	R. Winninott	One Structure; Duffins Creek; Historic Roadways
II	18 (80 acres)	W & J. Spink	Duffins Creek
II	18 (66 acres)	H. Major	One Structure; Historic Roadway
II	18 (4 acres)	D.B.	One Structure; Historic Roadway
II	18 (49 acres)	J. Perry	One Structure; Historic Roadway; Duffins Creek
II	18 (51 acres)	D. Decker	One Structure; Historic Roadways; Duffins Creek

Historic mapping reveals that numerous historic structures, roadways, a watercourse, a grist mill, mill pond and mill races, a church and cemetery, a blacksmith shop, and the historic village of Duffins Creek were within proximity of the project area.

It should be stressed that not every aspect of potential interest today would have been illustrated on the historic maps and unknown features could be located within the project area. Consequently, the possibility remains that farm middens or outbuildings, outbuildings relating to local industry, and other features associated with homesteads and early villages, exists within the project limits. Given the proximity of depicted

structures to the project area, it is possible that previously undocumented structures could be encountered relating to nineteenth-century residential, agricultural, industrial, and commercial areas.

Nineteenth- and Twentieth-Century Aerial Photographs and Satellite Images

Topographic maps from aerial photographs from 1954 to 1993 (**Images 1 to 5**) and satellite imagery from 2005 to present day (**Image 6**) were reviewed to illustrate the growth and development of the project area and are on file at TRCA. It should be noted that due to the size of the project area, not every aerial photograph has been included in this report.

The review of nineteenth-century maps indicates there is potential to encounter some historic era structures during Stage 2 archaeological assessments of the project area. However, the review of twentieth-century topographic maps indicates some changes within the project area which may have disturbed or destroyed remnants of these nineteenth-century homesteads.

The project area consisted primarily of wooded and open greenspace in 1954 (**Image 1**). By 1977, the portion of Old Kingston Road west of Duffin's Creek was removed, and Kingston Road was connected across Duffins Creek to its present-day alignment. Other changes include the addition of two residential structures on the south side of Duffins Creek in the northern subcomponent within the project area (**Image 3**). By 1989, pedestrian trails were established in both subcomponents of the project area (**Image 4**). The project area has since remained relatively unchanged (**Images 5 to 6**).

Present Land Use

The project area is presently designated as part "active recreational areas" and natural areas according to the City of Pickering's Official Plan (City of Pickering 2018), and "environmental protection" according to the Town of Ajax's Official Plan (Regional Municipality of Durham 2018).

2.3 Archaeological Context

The general geography and geology, previous archaeological sites registered in the vicinity, site predictive models and previous archaeological assessments within 50 metres of the current project area were reviewed to provide archaeological context for the current project area.

General Geography and Geology

The project area is located within the Iroquois Plain physiographic region. Lake Iroquois was formed roughly 12,000 years ago as the Ontario lobe of the Wisconsin glacier retreated from the Lake Ontario basin. Isostatic uplift of its outlet, combined with blockage of subsequent lower outlets by glacial ice, produced a water plain substantially higher than modern Lake Ontario. Waterlaid sediments that are free of stones and have a very level topography, evident within the Iroquois Sand Plain physiographic region, are typical of beach deposits laid down in shallow waters (Chapman and Putnam 1984:61, Karrow and Warner 1990:7).

The Duffins Creek watershed drains into an area of 283 square kilometres from the headwaters originating on the Oak Ridges Moraine, south to the Duffins Creek marsh, and ultimately into Lake Ontario. The cold water streams on the moraine support an array of fish species amid large areas of forest and wetland habitats. The middle reaches of the watershed meander through rural areas within well-defined valley lands, whereas the southern reaches are largely urbanized.

Current Land Use and Conditions

The project area currently consists of wooded greenspace in the City of Pickering and Town of Ajax (**Map 5**). The native soil types within the project area include Brighton sandy loam, Schomberg clay loam, Woburn loam and Bottom Land. Brighton sandy loam and Schomberg clay loam are both grey-brown podzolic soils that are stonefree with good drainage. Woburn loam is described as a grey-brown podzolic soil with few stones and good drainage. Bottom Land is an alluvial soil with variable drainage (OMAFRA 2009).

Reports Documenting Archaeological Assessments within 50 metres

Four reports documenting a previous archaeological assessment within 50 metres of the project area was identified by MTCS and TRCA project records.

PIF P019-009-2003
Archaeological Assessment of TRCA Property I the Town of Ajax, Duffins Creek-Ajax Trail: Phase I, Lots 16 and 17 Concession 2, Town of Ajax and City of Pickering, Durham Region

TRCA conducted a Stage 1-2 archaeological assessment for the proposed construction of a gravel trail on the east and west sides of Duffins Creek. The Stage 2 assessment consisted of a test pit survey at five-metre intervals along both sides of the length of an existing trail. A mixture of Indigenous and Pre-Contact materials were encountered alongside the trail, including four lithic artifacts and mid-19th century material such as ceramics, bricks, mortar and cut wood planks. The lithic artifacts were located in four separate test pits along a 150 metre stretch of trail. None are diagnostic artifacts and isolated. No further archaeological assessment was recommended for any of the cultural materials and the study area was considered free of further archaeological concern (TRCA 2004a).

PIF P019-016-2004
Archaeological Assessment of TRCA Property in the Town of Ajax, Duffins Creek-Ajax Trail: Phase 2, Lots 13 and 14, Broken Front Range 3, and Lots 13 and 15, Concession 1, Town of Ajax, Durham Region

TRCA conducted a Stage 1-2 archaeological assessment for the proposed construction of the Duffins Creek Trail: Phase 2 on TRCA lands in the Town of Ajax. The Stage 2 assessment consisted of a test pit survey at five-metre intervals along the length of the proposed trail. The investigation confirmed the presence of three cultural heritage resources along the proposed trail route, including two new sites and part of a previously registered site. All three sites are considered to have further cultural heritage value or interest (TRCA 2004b).

PIF P019-035-STG3
Stage 1-2 Archaeological Assessment of the Brookfield Homes Stormwater Outfall, Lot 17, Concession 2, City of Pickering.

TRCA conducted a Stage 1-2 archaeological assessment for the proposed construction of stormwater outfall on TRCA lands in the City of Pickering. The Stage 2 assessment consisted of a test pit survey at five-metre intervals within undisturbed portions of the study area. Twentieth century materials were encountered during the archaeological investigation, however these materials were not collected due to their lack of cultural heritage value or interest. The project area was considered free of further archaeological concern (TRCA 2005).

PIF P303-033-2009

Archaeological Assessment of TRCA Property in the City of Pickering (Stage 1-2), Pickering Ajax Trail at Finch, Lot 17, Concession II, Town of Pickering, Durham Region

TRCA conducted a Stage 1-2 archaeological assessment for the proposed extension of the Duffins North Trail on TRCA lands in the City of Pickering. The Stage 2 assessment consisted of a test pit survey at five-metre intervals along the extent of the proposed trail. No cultural material or cultural features were encountered during the test pit survey, therefore the project area was considered free of further archaeological concern (TRCA 2010).

Previously Identified Archaeological Sites

Consultation with the Ontario Archaeological Sites Database (OASD) maintained by the MTCS and TRCA project records indicates that 22 archaeological sites have been previously located within one kilometre of the project area. No sites are located within 50 metres of the project area.

***Table 3*. Registered Archaeological Sites within One Kilometre of the Project Area**

Borden Number	Site Name	Site Type	Affiliation	Researcher	Further CHVI?
AlGs-110	Elmdale Mill	mill	Post-Contact	Mayer, Pihl, Poulton & Assoc. Inc. 1985	
AlGs-114		findspot	Other	Pearce 1989	
AlGs-130	Boddy 1	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-131	Boddy 2	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-132	Boddy 3	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-133	Boddy 4	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-134	Boddy 5	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-135	Boddy 6	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-136	Boddy 7	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-137	Boddy 8	findspot	Pre-Contact	Dibb 1991	Further CHVI
AlGs-139	Mo 1	findspot	Pre-Contact	Dibb 1991	
AlGs-140	Mo 2	findspot	Pre-Contact	Dibb 1991	
AlGs-260		findspot	Pre-Contact	Crinnion 2003	No Further CHVI
AlGs-261		findspot	Pre-Contact	Crinnion 2003	No Further CHVI
AlGs-262		findspot	Pre-Contact	Crinnion 2003	No Further CHVI

Borden Number	Site Name	Site Type	Affiliation	Researcher	Further CHVI?
AlGs-263		findspot	Pre-Contact	Crinnion 2003	No Further CHVI
AlGs-380	Duffins Creek	village	Woodland, Late	Murray 2009; Cherubin 2016	
AlGs-442	Palmer	Unknown	Post-Contact	Teichroeb 2011	
AlGs-449	Disciples Church			Marr 2011, 2012; Slocki 2012	
AlGs-474		hunting loss	Archaic, Middle	Pihl 2015	No Further CHVI
AlGs-475		hunting loss	Archaic, Late	Pihl 2015	No Further CHVI
AlGs-476		Unknown	Pre-Contact	Pihl 2015	No Further CHVI

Archaeological Potential Models

Archaeological Site Predictive Models (ASPM) are tools used to assist in determining the probability of encountering archaeological sites. Probability models are created under careful consideration of several variables including: distance to water, stream order, soil type, drainage, physiographic region, degree of slope, proximity to registered archaeological sites, and degree of disturbance.

In 1990, the TRCA's Archaeological Master Plan was designed to assess the potential for cultural resources within a particular property. The model employs High, Medium and Low probability categories based on the several variables noted above. The three most significant factors that determine settlement location of past peoples are close proximity to water, well drained soils, and flat to gently sloping terrain. While the model does not forecast exact site locations, it does present a generalized prediction based on the known settlement patterns of Indigenous populations. The accuracy of such models has not been thoroughly studied and compared with archaeological finds in the last two decades; however, it is quite clear that most sites are located in high probability areas. A scenario where archaeological potential is nil occurs when there is reliable, convincing data to determine that a location has been thoroughly disturbed and that no potential remains for intact archaeological resources to survive. Nevertheless, even in areas of disturbance, there is still the possibility to encounter deeply buried deposits containing cultural resources. Low potential is often found in low lying wetlands and scenarios like this greatly reduce the potential for encountering archaeological sites, except in small pockets of undisturbed land at higher elevated locations within the project area.

It should be stressed that accessible water is one of the most fundamental influences on human settlement and is therefore a major indicator of archaeological potential. In the 2011 Standards and Guidelines, the MTCS notes that archaeological sites are likely to be discovered in project and project areas that are within 300 metres of primary water source (lakes, rivers, streams and creeks), secondary water sources (intermittent streams and creeks, springs, marshes and swamps) and features that indicate past or ancient water sources

(glacial lake shorelines). Thus, areas with high probability to contain Pre-Contact cultural resources are approximately within 300 metres of a water source with good soil drainage and level to gently undulating topography.

Euro-Canadian settlers faced the same environmental constraints as Indigenous peoples including good access to water and arable soil. Primary and permanent water resources were crucial for establishing mills and well drained soils were important for gardens, crops and livestock. Roads established at this time were vital for access to settlements and transportation of goods. As a result, areas with high probability to contain Euro-Canadian sites are typically located within 100 metres of historic roads. In many cases modern roads follow these original alignments.

The application of TRCA's ASPM indicated that the project area has high potential for encountering archaeological resources (TRCA 2003) (**Map 6**). This potential model is based on distance to water, drainage and slope, and does not take into consideration disturbance to the land. Within the Greater Toronto Area's watersheds, most indigenous archaeological sites have been located in high and medium potential areas. Accordingly, there is a possibility that additional archaeological sites may be identified within the project area.

Currently, the archaeological potential mapping for the Regional Municipality of Durham is not publicly available.

2.4 Built Features and Heritage Context

The project area was assessed for the identification of built features and heritage resources. Built features, such as parks, bridges, trails and rail lines, are included in this section as their construction often has an impact on the landscape. Heritage resources include the identification of municipally designated and listed structures, bridges, cemeteries, plaques and cultural heritage landscapes. Occasionally a built feature may also be identified as a heritage resource. Common examples include bridges, rail lines, and cemeteries.

The assessment of built features and heritage resources is warranted as they may presently act as a gateway for historical interpretation to the public. Identification of these features and resources also provides an opportunity for future interpretation, for example plaques and informative signage.

One park is located within and alongside the project area. For the purposes of this report, a short description is provided below.

Trails

Trans-Canada Trail

The Trans-Canada Trail traverses both the City of Pickering and Town of Ajax portions of the project area. The trail connects the Glen Major Forest with the Claremont and Greenwood Conservation areas via Sideline 12 and Paddock Road. The route descends southerly on a gentle slope from the Oak Ridges Moraine into Ajax.

Existing Cultural Heritage Resources

Cultural Heritage Landscapes

A Heritage Conservation District (HCD) includes areas that have been protected under Part V of the *Ontario Heritage Act*. An HCD can be found in both urban and rural environments and may include residential, commercial, and industrial areas, rural landscapes or entire villages or hamlets with features or land patterns that contribute to a cohesive sense of time or place and contribute to an understanding and appreciation of the

cultural identity of a local community, region, province, or nation. An HCD may comprise an area with a group or complex of buildings, or large area with many buildings and properties and often extends beyond its built heritage, structures, streets, landscape and other physical and spatial elements, to include important vistas and views between and towards buildings and spaces within the district (MTCS 2006:5). An HCD area contains valuable cultural heritage and must be taken into consideration during municipal planning to ensure that they are conserved.

In March of 2013, the Pickering Village HCD Study was adopted by the Town of Ajax city council to provide the data necessary to affect the designation of an HCD for a portion of Pickering Village, generally along Old Kingston Road and portions of Elizabeth Street and Church Street North. The Pickering Village HCD was designated in 2013 and in effect in 2014. The northern portion of the current project area is adjacent to (within 50 metres of) the Pickering Village HCD (**Map 7**).

Heritage Register

The *Ontario Heritage Act (OHA)* gives municipal heritage advisory committees the responsibility of researching and recommending to municipal council properties of cultural value or interest. The properties are recorded and monitored through a heritage register as *designated* (under the OHA) or *listed* (non-designated properties with cultural heritage interest or value that may become candidates for designation).

The Pickering Village HCD contains 41 designated/listed heritage properties that are now mainly used for commercial and residential purposes. An additional 34 heritage properties are located within 300 metres of the project area outside of the Pickering Village HCD.

Cemeteries and Burials

Elizabeth Street Pioneer Cemetery

The Elizabeth Street Pioneer Cemetery is one of Ajax's earliest cemeteries and the site of one of Duffins Creek's earliest churches and lies in close proximity north of the project area at the top of an embankment within the Pickering Village HCD. Also known as the Old Methodist Cemetery or Pickering Old Methodist Cemetery, the earliest interment in the cemetery is from 1842, while the latest is from 1955. The first church building was built at the north end of the Old Methodist Cemetery in 1843, and consisted of a white wooden structure. It was used until 1879, when the congregation moved and built a newer, larger brick structure on Old Kingston Road in the centre of the Village, which is now the site of the present-day Montessori School. It is believed that the white frame building was sold to Mr. J. Linton, who used the lumber to build a semi-detached frame building across the street which still stands today.

Post Cemetery

The project area is also located within close proximity (300 metres) of Post Cemetery, located at the southwest corner of the intersection of Brock Road and Kingston Road in the City of Pickering. It began as a family cemetery for the Post family who occupied Post Manor, which stands at the northwest corner of Brock Road and Kingston Road.

On April 11, 1863, George Leng sold part of Lot 19 to Abraham Knowles, Charles Flumerfell and William Forrester (listed as Trustees in the *Abstract Indexes*) with the purpose of holding lands for the construction of a Church and other buildings for the Religious Society and Congregation of Disciples. The Disciples Brethren, a denomination of Protestantism, began practicing in the late 19th century. A small group of Disciples met in a

wooden structure on the corner of Brock and Kingston Road. As the congregation grew, a brick church was built over the original wooden foundation (MacDonald, 1995). This brick structure officially became the Disciples Church. Prominent families in the area, including George Leng and Jordon Post, were members of the congregation, which eventually had more than two hundred followers. The number of attendees slowly dwindled and the church services ended when John Tripp, the last elderly speaker and prominent member of the Church, died in 1906. The Post Cemetery, located south of the Church, is assumed to have been established in the 1860s coinciding with the establishment of the church, but no documents are available to confirm this date. However, Jordan Post, having died in 1860, appears to have been the first interment, thus giving name to the Cemetery. An archival photograph from 1927 shows that Highway 2 (Kingston Road) had not yet been widened to its current span (**Image 8**), and that no remnants of the old Disciples Church could be seen around the cemetery grounds.

Commemorative Plaques

One commemorative plaque was identified within close proximity (300 metres) of the project area.

The Founding of Pickering

> Between 1801 and 1807 a settlement developed here in Pickering Township where the Danforth Road crossed Duffin's Creek. Among the early settlers was Timothy Rogers, a prominent Quaker and colonizer who built a saw and gristmill in 1809. A post-office was established in 1829 but the hamlet of Duffin's Creek developed slowly. The construction of the Grand Trunk Railway, completed in 1856, and growing agricultural prosperity stimulated the community's development as an important grist-milling and local commercial centre. Known as Pickering from the late 1870's, it became a police village in 1900 with about 1000 inhabitants. In 1953 it was made an incorporated Village and in 1974 amalgamated with the Town of Ajax.

3.0 Analysis and Conclusions

In the present Stage 1 archaeological assessment a background investigation was completed to review the historical and cultural contexts of the people who lived both within and adjacent to the project area boundaries. As well, archaeological site predictive models were reviewed to identify the potential for the project area to contain archaeological sites. Finally, documented eighteenth, nineteenth, and twentieth-century property alterations were reviewed to evaluate the potential for cultural heritage resources and landscapes to remain intact within undisturbed pockets of the properties. Archaeological potential as determined by the various avenues of research contained within this study are summarized below.

3.1 Potential for Encountering Pre-Contact Sites

The project area is in close proximity of a major watercourse. The surrounding ravine of the Duffins Creek would have offered rich resources such as fish, waterfowl and game that would have been exploited as part of a people’s seasonal round. As a result, there is very high potential for encountering Indigenous sites within the project area.

3.2 Potential for Encountering Euro-Canadian Sites

Based on the proximity to water, former historic structures, roadways, a watercourse, a grist mill, mill pond and mill races, a church and cemetery, a blacksmith shop, and the historic village of Duffins Creek, the project area

would be expected to demonstrate high potential for encountering Euro-Canadian sites. The project area lies adjacent to the Pickering Village HCD and one of the earliest church and cemetery locations in the Town of Ajax.

The review of historic maps indicates there is potential to encounter nineteenth-century structures within the project area. Although twentieth-century topographic maps and aerial photographs reveal some extensive twentieth century disturbances from residential development, there remains the potential to locate some intact cultural heritage resources within undisturbed portions of the project area.

3.3 Proximity to Known Archaeological Sites

A review of the MTCS's OASD revealed that 22 archaeological sites have been registered within one-kilometre of the project area. As a result, the potential for encountering archaeological sites remains high.

3.4 Proximity to Known Built and Cultural Heritage Resources

Several inventories were reviewed in order to determine if the local project area contained any identified built heritage resources, features, or landscapes. Presently, one HCD, numerous designated and listed heritage properties recognized by the City of Pickering and Town of Ajax, and one heritage plaque are located within close proximity of the project area. No built heritage resources are located within the project area, however their close proximity contributes to the elevated potential to find archaeological resources within the project area.

3.5 Twenty and Twenty-First Century Alterations to the Land

The suburbanization of the project area and its surroundings are illustrated through aerial photography dating from 1954 to 1993 (**Images 1 to 5**) and a satellite image from 2005 (**Image 6**). Aerial photographs are important sources to review as they can display past disturbances within a project area. Aerial photographs are also valued for their ability to track changes in watercourse alignments and natural greenspace cover, though greenspaces depicted on aerial photographs often hide potential structures within a project area.

A review of these images and maps indicates that a roadway, paved pedestrian trails, and residential structures were constructed within the project area during the twentieth century. It can also be presumed heavy disturbances associated with the installation of utilities to service the homesteads would be present within their footprint. All of these various twenty and twentieth century alterations would have removed the integrity of any potential archaeological resources in those locales.

3.6 Summary

Based on the information summarized above, the project area has demonstrated the potential for intact cultural heritage resources, in the form of archaeological sites, to be present. Areas assessed as having archaeological potential based on the analysis outlined above are illustrated on **Map 8**.

4.0 Recommendations

The review of geographic and cultural features, with careful consideration of available aerial photography, has indicated that the Ajax and Pickering Dyke Rehabilitation project area has the potential for buried cultural resources (**Map 8**).

It is therefore recommended that:

- Background research has identified portions of the project area having been previously subject to a Stage 1-2 archaeological assessment. With previous archaeological assessments having fulfilled the Stage 2 archaeological assessment requirements within their respective portion(s) of the project area, these areas are recommended to be exempt from Stage 2 assessment within the scope this project.

- A Stage 2 archaeological assessment is required in all of the areas identified as holding potential prior to any ground disturbing activities within the boundaries of the project area. Areas determined to hold potential must be subject to archaeological test pit survey at five-metre intervals prior to any ground disturbing activities, in accordance with the 2011 Standards and Guidelines.

- Portions of the project area identified as disturbed and holding no potential due to built features (e.g. man-made disturbances) must be subjected to an on-site visual survey to confirm and document their nature and extent. Only then can these areas be exempt from Stage 2 test pit survey.

- Portions of the project area classified as having low or no archaeological potential due to physiographic features (e.g., permanently wet areas; steep slope) must be subjected to an on-site visual survey to confirm and document their nature and extent. Only then can these areas be exempt from Stage 2 test pit survey.

- Future areas determined for construction that are not covered by this Stage 1 archaeological assessment such as staging areas, temporary access roads, etc., must also be subject to a Stage 1 archaeological assessment, and if recommended, a Stage 2 archaeological assessment.

Advice on Compliance and Legislation

a. This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, 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.

b. 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*.

c. 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*.

d. 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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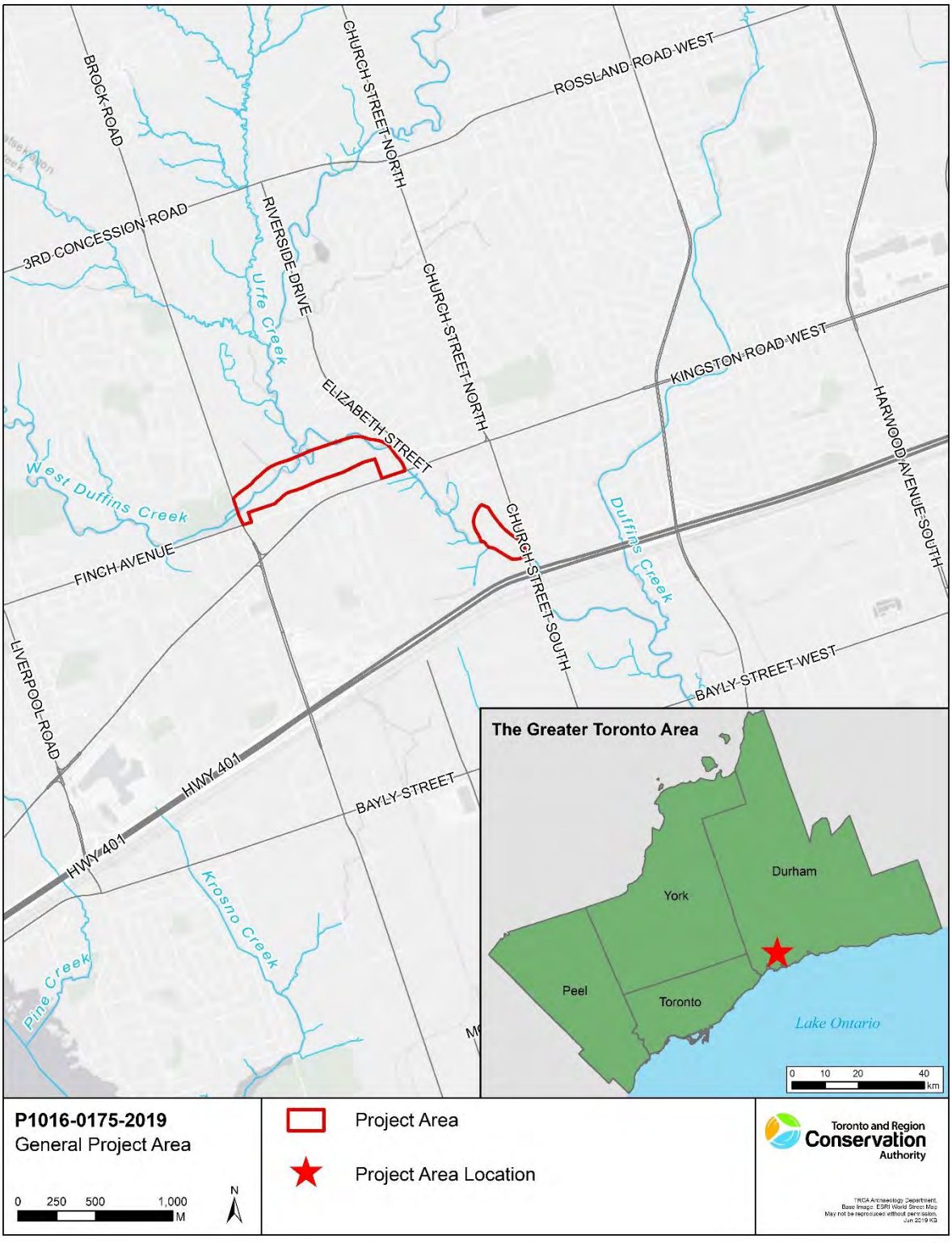
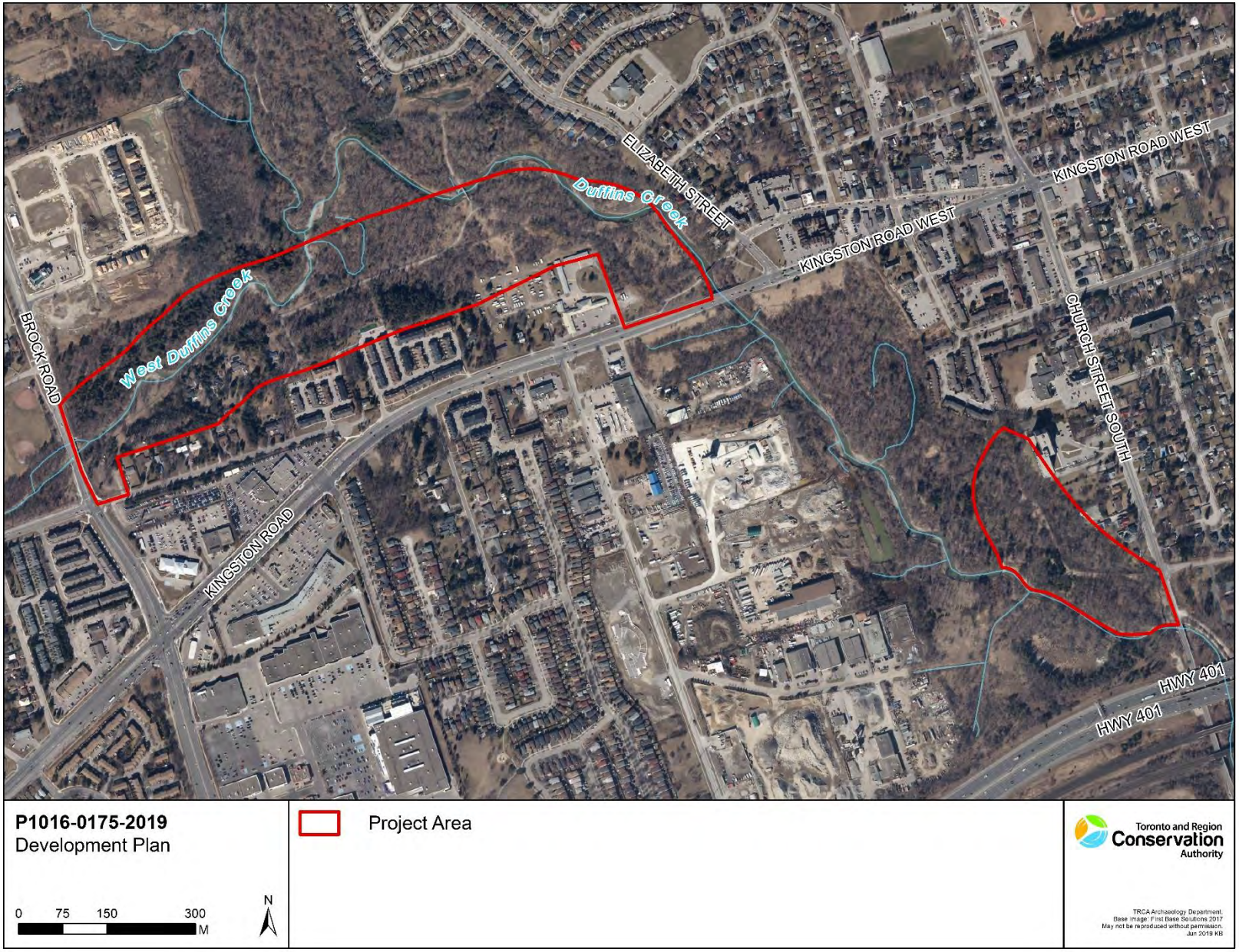
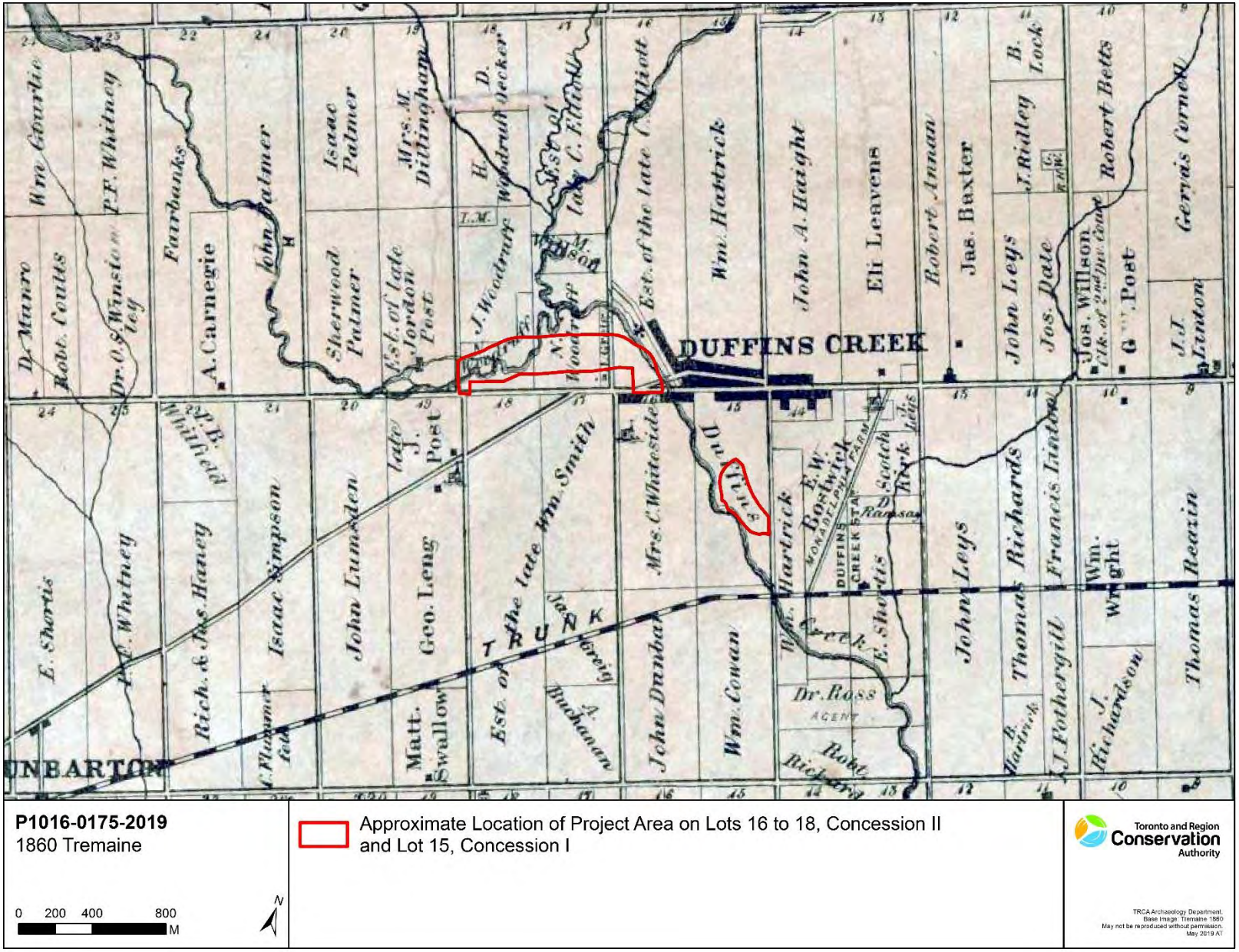
Appendix A: Maps



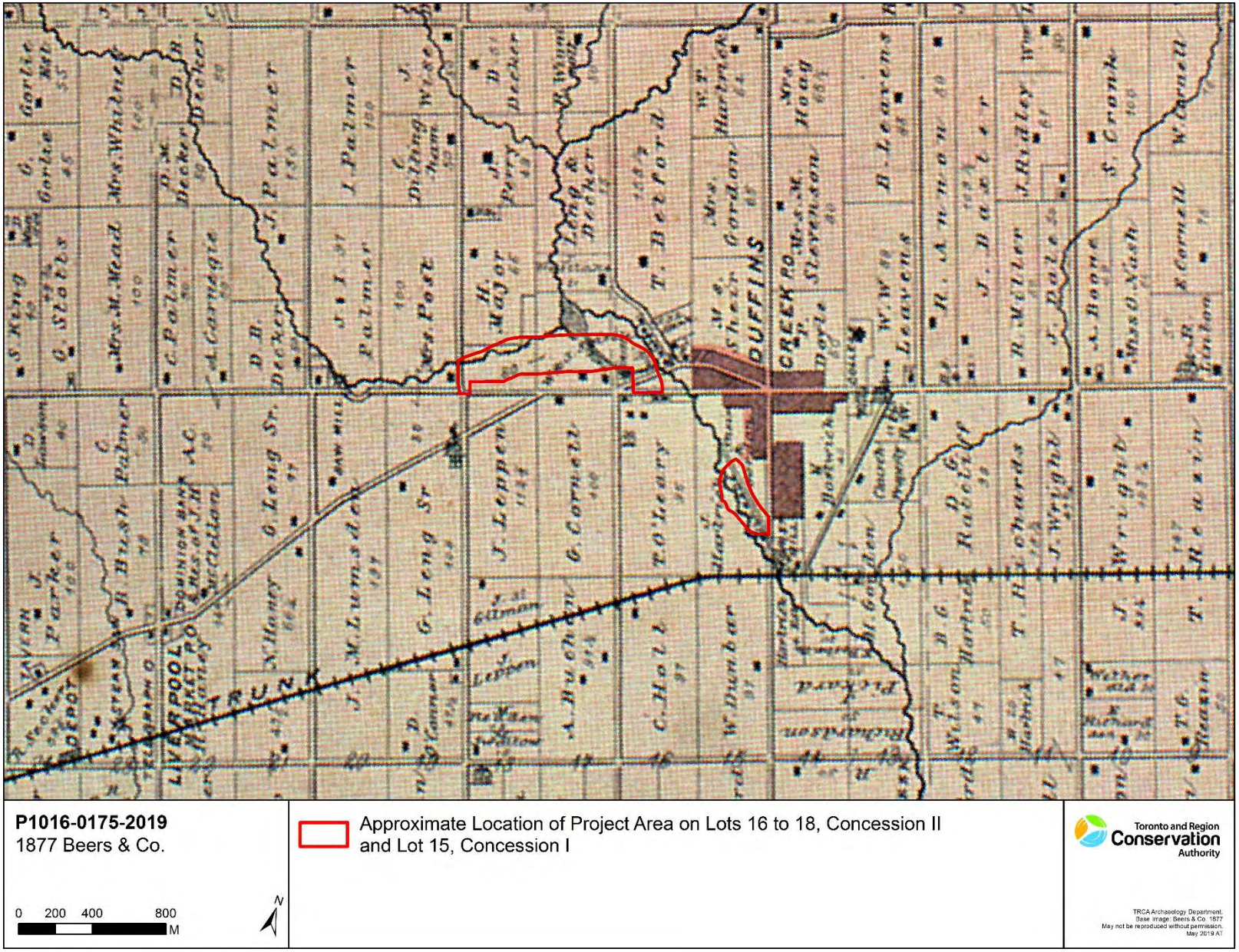
Map 1. General Project Area



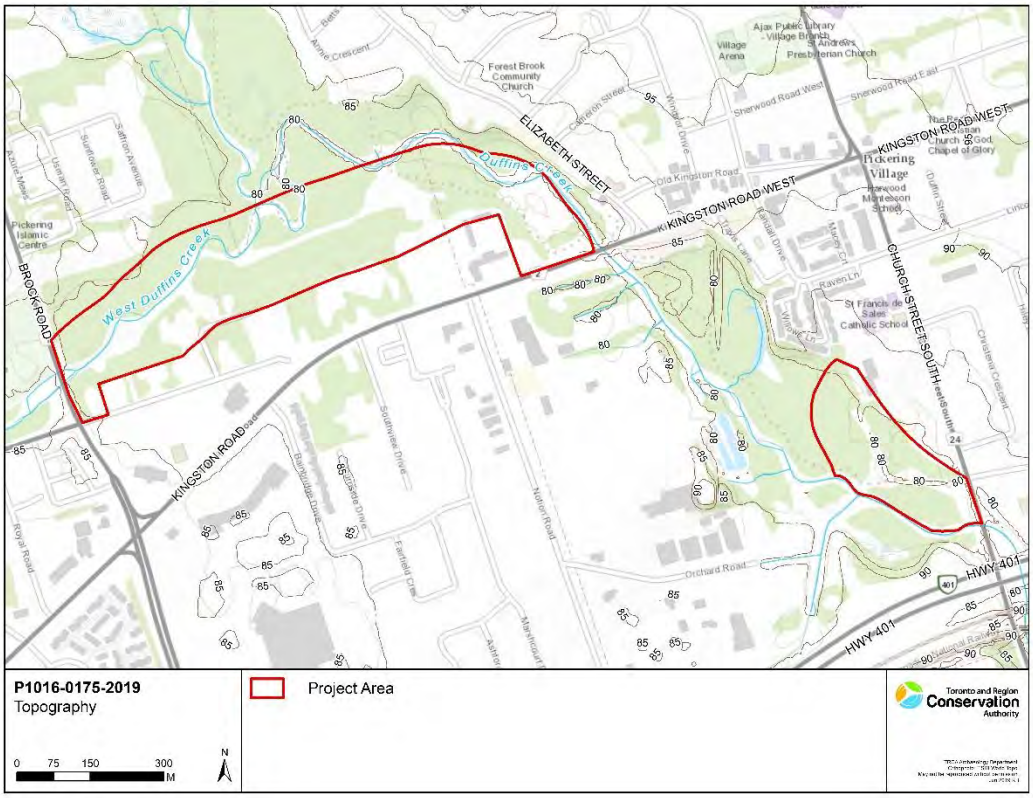
Map 2. Development Plan



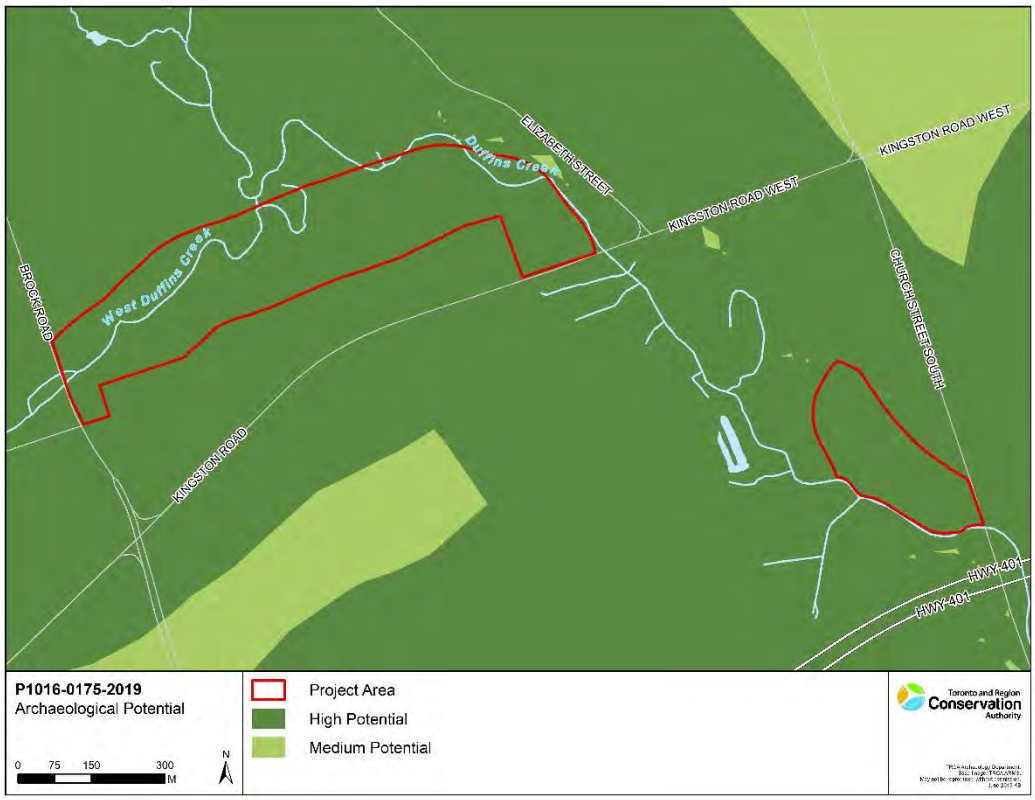
Map 3. Detail of 1860 Tremaine Map – Ontario County



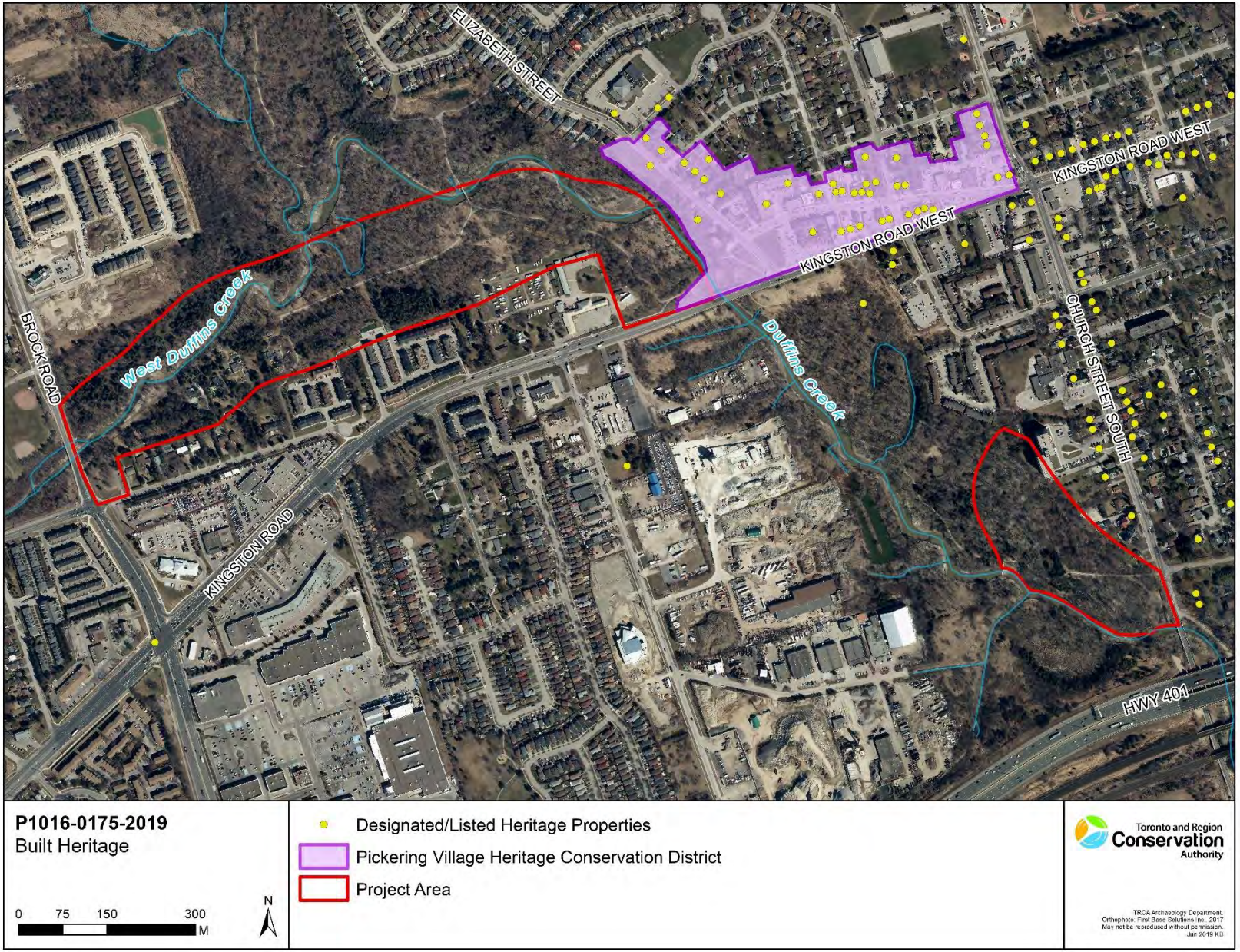
Map 4. Detail of 1878 Miles & Co. Illustrated Atlas – Ontario County



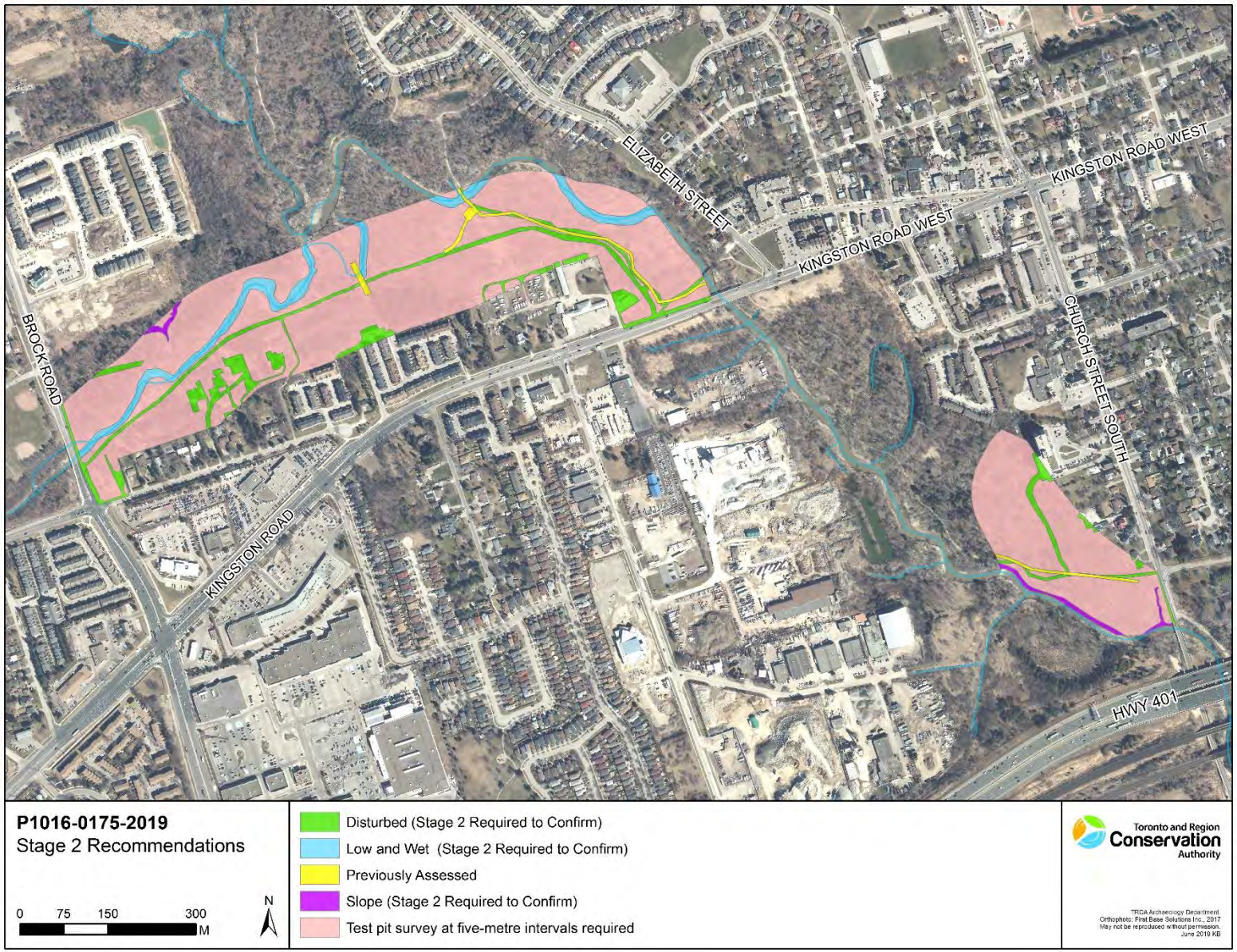
Map 5. Local Topography – Project Area



Map 6. TRCA Archaeological Potential Model



Map 7. Built Heritage Properties within close proximity of the project area



Map 8. Stage 2 Archaeological Assessment Recommendations

Appendix B: Images

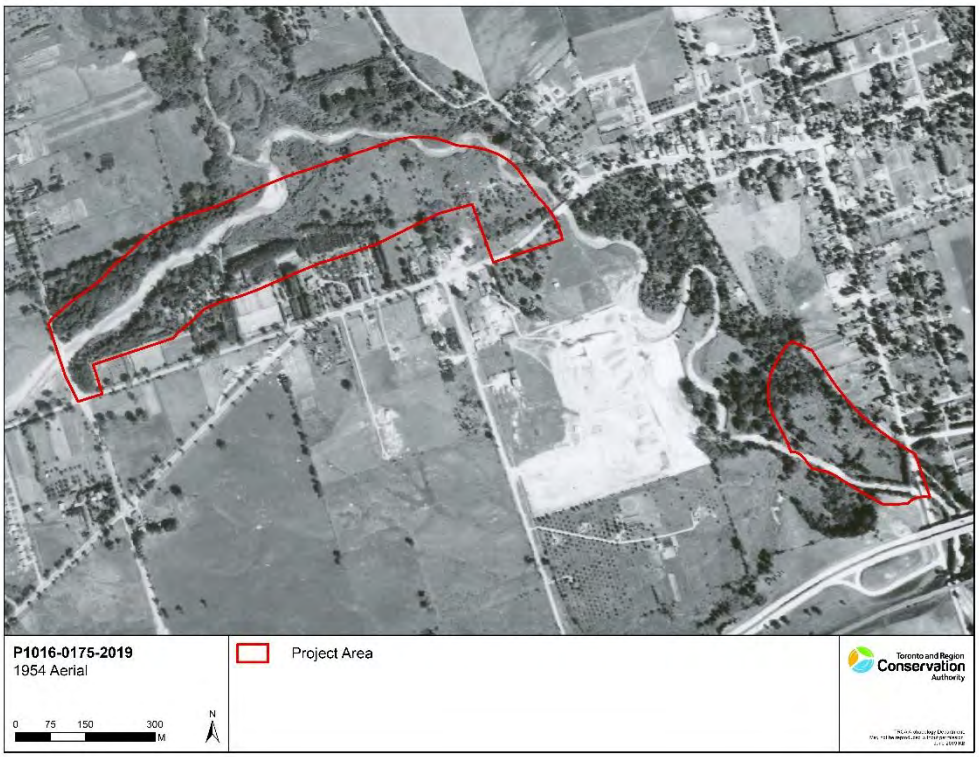


Image 1. 1954 aerial photograph of the project area

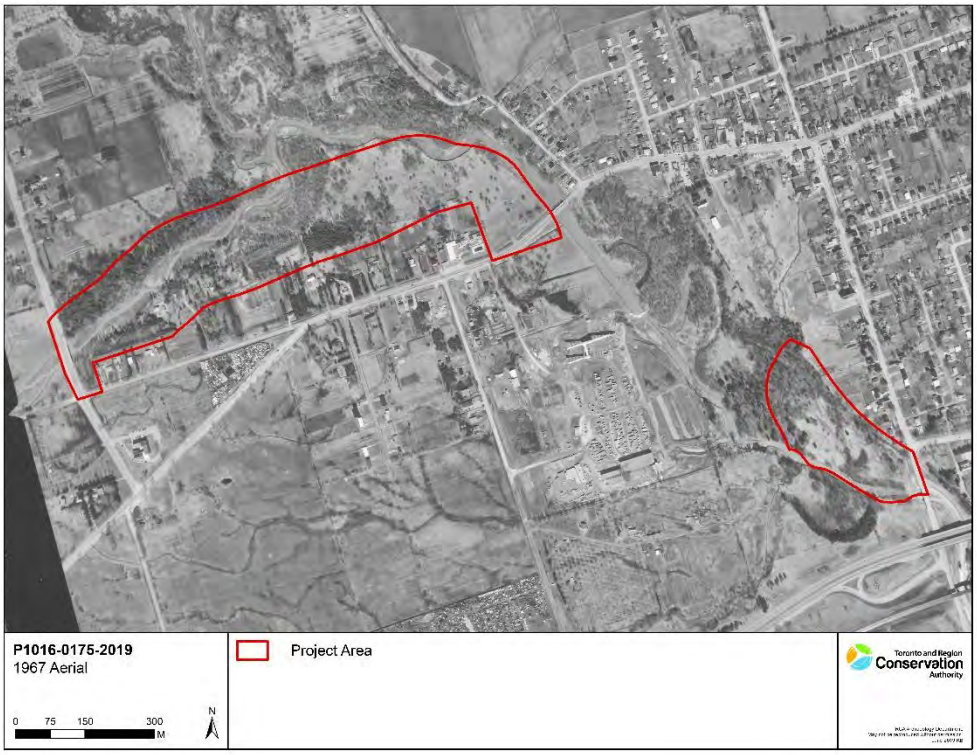


Image 2. 1967 aerial photograph of the project area

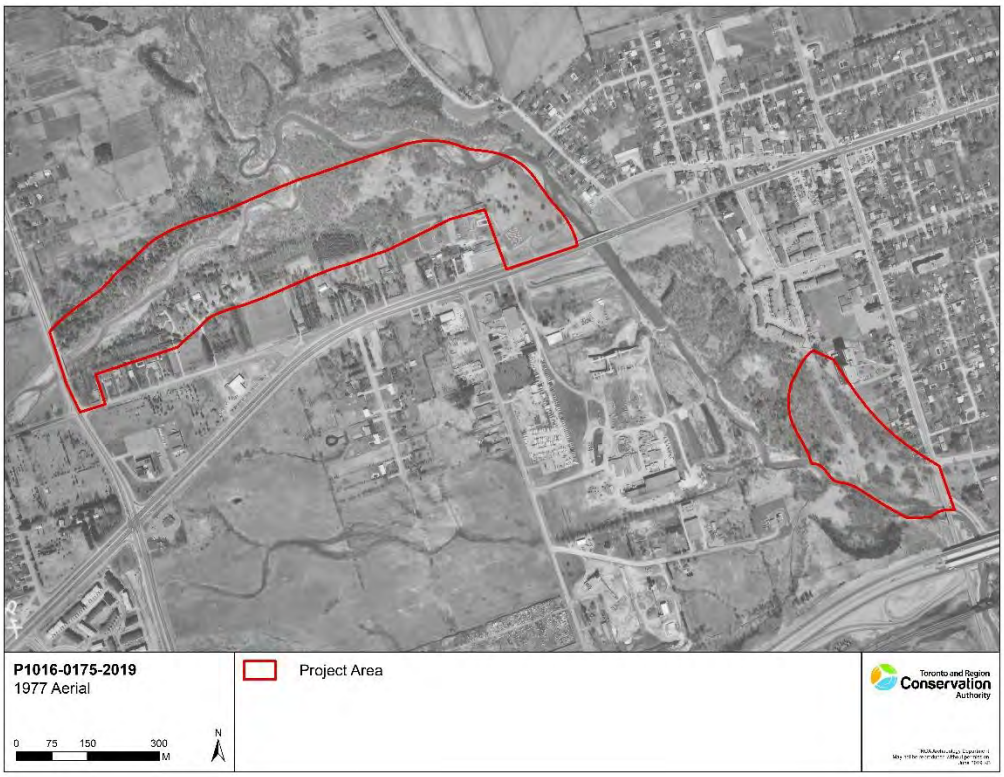


Image 3. 1977 aerial photograph of the project area

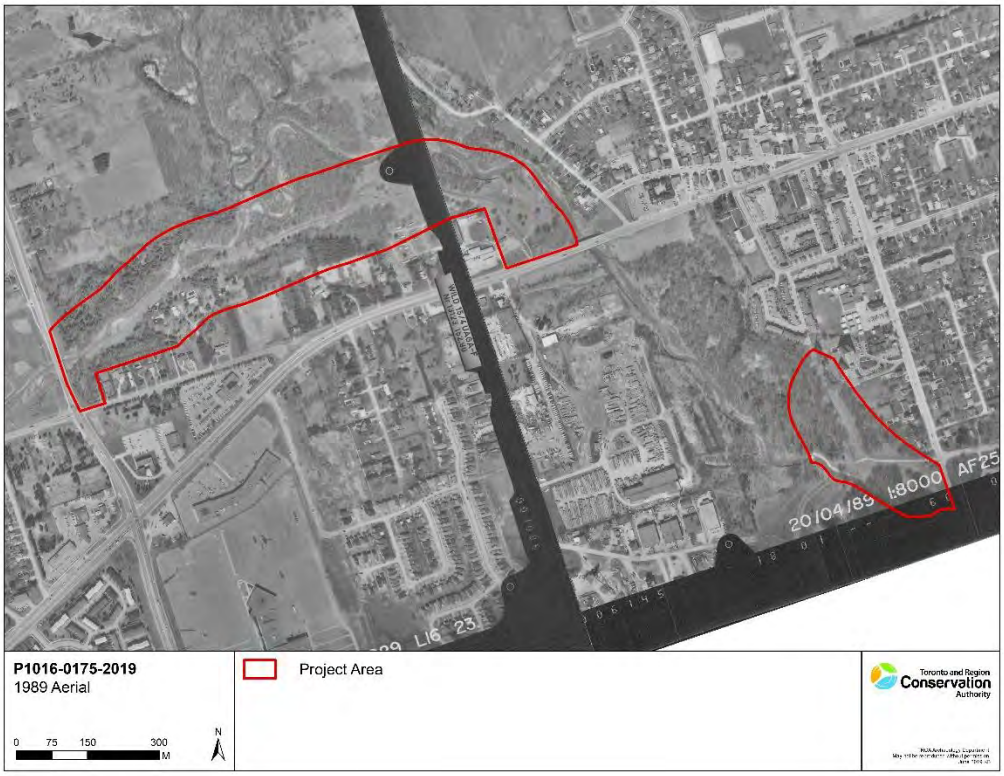


Image 4. 1989 aerial photograph of the project area

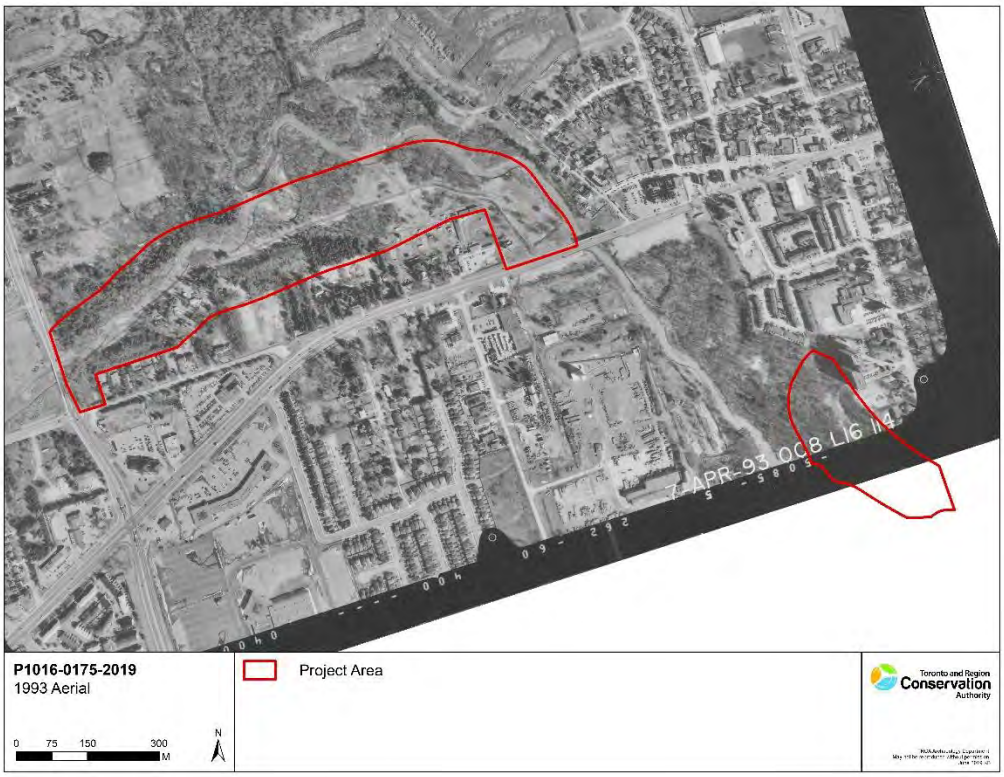


Image 6. 1993 aerial photograph of the project area

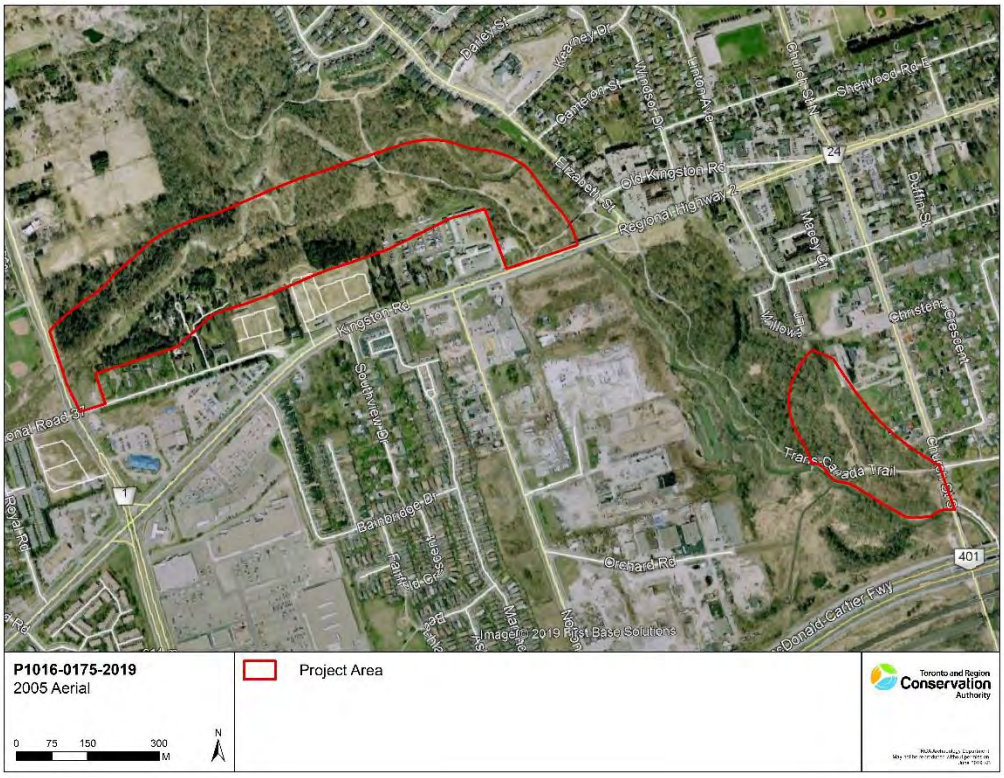


Image 5. 2005 aerial photograph of the project area

Image 7. View of tombstones at Elizabeth Street Pioneer Cemetery (Marsh 2014)

Image 8. Photograph of vicinity of Post Manor in 1927, taken from within Post Cemetery grounds, looking northeast toward Post Manor. The large marker (ext*reme left)* still exists today (Courtesy of Pickering-Ajax Digital Archives)

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