APPENDIX F - ARCHAEOLOGICAL ASSESSMENT REPORT

Ministry of Heritage, Sport, Tourism, and Culture Industries

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Aug 9, 2021

Blake Williams (P383)
ASI Archaeological and Cultural Heritage Services
528 Bathurst Toronto ON M5S2P9

RE: Review and Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "STAGE 1 ARCHAEOLOGICAL ASSESSMENT REGIONAL ROAD 50 NIAGARA STREET BRIDGE RECONSTRUCTION PART OF LOT 248 AND PART OF LOT, 26, CONCESSION 5 (FORMER TOWNSHIP OF THOROLD AND CROWLAND, COUNTY OF WELLAND) CITY OF WELLAND, REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO", Dated Jul 12, 2021, Filed with MHSTCI Toronto Office on Jul 14, 2021, MHSTCI Project Information Form Number P383-0196-2020, MHSTCI File Number 0012014

Dear Mr. Williams:

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18.[1] This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 *Standards and Guidelines for Consultant Archaeologists* set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the assessment of the study area as depicted in Figure 11: Results of Property Inspection of the above titled report and recommends the following:

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

1. The Study Area does not retain archaeological potential on account of deep and extensive land disturbance, low and wet conditions, or slopes in excess of 20 degrees. These lands do not require further archaeological assessment; and,

2. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict,

account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Archaeology Programs Unit of the MHSTCI should be immediately notified.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Teresa Tremblay
Archaeology Review Officer

cc. Archaeology Licensing Officer
Christian Concolino,Associated Engineeering
Melissa Tomascik,Public Works - Niagara Region

[1] *In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.*

STAGE 1 ARCHAEOLOGICAL ASSESSMENT
REGIONAL ROAD 50 NIAGARA STREET BRIDGE RECONSTRUCTION
PART OF LOT 248 AND PART OF LOT, 26, CONCESSION 5
(FORMER TOWNSHIP OF THOROLD AND CROWLAND, COUNTY OF WELLAND)
CITY OF WELLAND, REGIONAL MUNICIPALITY OF NIAGARA
ONTARIO

REVISED REPORT

Prepared for:

Associated Engineering (Ont.) Ltd.
509 Glendale Avenue East
Niagara-on-the-Lake, ON LOS 1J0

Archaeological Licence #P383 (Williams)
Ministry of Heritage, Sport, Tourism and Culture Industries PIF# P383-0196-2020
ASI File: 19EA-104

12 July 2021

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT
REGIONAL ROAD 50 NIAGARA STREET BRIDGE RECONSTRUCTION
PART OF LOT 248 AND PART OF LOT, 26, CONCESSION 5
(FORMER TOWNSHIP OF THOROLD AND CROWLAND, COUNTY OF WELLAND)
CITY OF WELLAND, REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

EXECUTIVE SUMMARY

Archaeological Services Inc. (ASI) was contracted by Associated Engineering (Ont.) Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Regional Road 50 Niagara Street Bridge Reconstruction, part of Lot 248 and Part of Lot 26, Concession 5, Former Township of Thorold and Crowland, County of Welland, City of Welland, Regional Municipality of Niagara, Ontario. This project will review alternatives for the proposed bridge replacement and watermain crossing projected for 2021.

The Stage 1 background study determined that three previously registered archaeological sites are located within one kilometre of the Study Area. A review of the geography and history of the study area suggested that the study area has potential for the identification of Indigenous and Euro-Canadian archaeological resources.

The Stage 1 property inspection determined that a large part of the study area has been previously disturbed by construction and demolition of buildings, landscaping and the channelization of Chippewa Creek in the 1930s. Other parts of the study area are documented to have steeply sloping or permanently low and wet conditions. The area can be considered free of archaeological concern.

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

1. The Study Area does not retain archaeological potential on account of deep and extensive land disturbance or slopes in excess of 20 degrees. These lands do not require further archaeological assessment;

2. The section of the Welland River within the Study Area has been subjected to recent, extensive and intensive disturbance due to bridge construction as well as dredging associated with different iterations of the Welland Canal. The *Criteria for Evaluating Marine Archaeological Potential,* question number eight, indicates that a marine archaeological assessment is not required, and this report acts as part of the documentation of disturbance; and,

3. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

PROJECT PERSONNEL

Senior Project Manager:	Lisa Merritt, MSc. (P094) *Partner | Director* *Environmental Assessment Division*
Project Coordinator:	Katrina Thach, Hon. BA (R1225) *Archaeologist | Project Coordinator* *Environmental Assessment Division*
Project Director (Licensee):	Blake Williams, MLit (P383) *Associate Archaeologist | Project Manager Environmental Assessment Division*
Project Manager:	Blake Williams
Field Director:	Blake Williams
Report Preparation:	Caitlin Lacy, BA (R303) *Associate Archaeologist | Project Manager* *Environmental Assessment Division*
Graphics:	Andrew Clish, BES (P046) *Senior Archaeologist | Senior Field Director, Laboratory & Fieldwork Services* *Operations Division* Blake Williams
Report Review:	Lisa Merritt

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1.0 PROJECT CONTEXT

Archaeological Services Inc. (ASI) was contracted by Associated Engineering (Ont.) Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Regional Road 50 Niagara Street Bridge Reconstruction, part of Lot 248 and Part of Lot 26, Concession 5, Former Townships of Thorold and Crowland, County of Welland, City of Welland, Regional Municipality of Niagara, Ontario (Figure 1). The Niagara Street Bridge (Structure 050205) carries Regional Road 50 (Niagara Street) over the Welland River and the extension of the 600 mm diameter watermain on Niagara Street between Riverbank Street and Mill Street. This goal of this project is to review alternatives for the proposed bridge replacement and watermain crossing projected for 2021.

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (1990, as amended in 2018) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI 2011), formerly the Ministry of Tourism, Culture and Sport.

1.1 Development Context

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

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment was granted by Associated Engineering on January 14, 2020.

1.2 Historical Context

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

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (BP) (Ferris 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 BP, the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal

residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990; Ellis et al. 2009; Brown 1995:13).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 BP and exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 BP, evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). By 1,500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 BP - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch and Williamson 2013:13–15). Bands likely retreated to interior camps during the winter. It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

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

Samuel de Champlain in 1615 reported that a group of Iroquoian-speaking people situated between the Haudenosaunee and the Huron-Wendat were at peace and remained "la nation neutre". In subsequent years, the French visited and traded among the Neutral, but the first documented visit was not until 1626, when the Recollet missionary Joseph de la Roche Daillon recorded his visit to the villages of the Attiwandaron, whose name in the Huron-Wendat language meant "those who speak a slightly different tongue" (the Neutral apparently referred to the Huron-Wendat by the same term). Like the Huron-Wendat, Petun, and Haudenosaunee, the Neutral people were settled village agriculturalists. Several discrete settlement clusters have been identified in the lower Grand River, Fairchild-Big Creek, Upper Twenty Mile Creek, Spencer-Bronte Creek drainages, Milton, Grimsby, Eastern Niagara Escarpment and Onondaga Escarpment areas, which are attributed to Iroquoian populations. These settlement clusters are believed by some scholars to have been inhabited by populations of the Neutral Nation or pre- (or ancestral) Neutral Nation (Lennox and Fitzgerald 1990).

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

Between 1647 and 1651, the Neutral were decimated by epidemics and ultimately dispersed by the Haudenosaunee, who subsequently settled along strategic trade routes on the north shore of Lake Ontario for a brief period during the mid seventeenth-century. Compared to settlements of the Haudenosaunee, the "Iroquois du Nord" occupation of the landscape was less intensive. Only seven villages are identified by the early historic cartographers on the north shore, and they are documented as considerably smaller than those in New York State. The populations were agriculturalists, growing maize, pumpkins, and squash. These settlements also played the important alternate role of serving as stopovers and bases for Haudenosaunee travelling to the north shore for the annual beaver hunt (Konrad 1974).

Shortly after dispersal of the Wendat, Ojibwa began to expand into southern Ontario and Michigan along the east shore of Georgian Bay, west along the north shore of Lake Huron, and along the northeast shore of Lake Superior and onto the Upper Peninsula of Michigan (Rogers 1978:760–762). This history was constructed by Rogers using both Anishinaabek oral tradition and the European documentary record, and notes that it included Chippewa, Ojibwa, Mississauga, and Saulteaux or "Southeastern Ojibwa" groups. Ojibwa, likely Odawa, were first encountered by Samuel de Champlain in 1615 along the eastern shores of Georgian Bay. Etienne Brule later encountered other groups and by 1641, Jesuits had journeyed to Sault Sainte Marie (Thwaites 1896:11:279) and opened the Mission of Saint Peter in 1648 for the occupants of Manitoulin Island and the northeast shore of Lake Huron. The Jesuits reported that these Algonquian peoples lived "solely by hunting and fishing and roam as far as the "Northern sea" to trade for " Furs and Beavers, which are found there in abundance" (Thwaites 1896-1901, 33:67), and "all of these Tribes are nomads, and have no fixed residence, except at certain seasons of the year, when fish are plentiful, and this compels them to remain on the spot" (Thwaites 1896-1901, 33:153). Algonquian-speaking groups were historically documented wintering with the Huron-Wendat, some who abandoned their country on the shores of the St. Lawrence because of attacks from the Haudenosaunee (Thwaites 1896-1901, 27:37).

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

After the Huron had been dispersed, the Haudenosaunee began to exert pressure on Ojibwa within their homeland to the north. While their numbers had been reduced through warfare, starvation, and European diseases, the coalescence of various Anishinaabek groups led to enhanced social and political strength (Thwaites 1896-1901, 52:133) and Sault Sainte Marie was a focal point for people who inhabited adjacent areas both to the east and to the northwest as well as for the Saulteaux, who considered it their home (Thwaites 1896-1901, 54:129-131). The Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. From east to west, these villages consisted of Ganneious, on Napanee Bay, an arm of the Bay of Quinte; Quinte, near the isthmus of the Quinte Peninsula; Ganaraske, at the mouth of the Ganaraska River; Quintio, at the mouth of the Trent River on the north shore of Rice Lake; Ganatsekwyagon (or Ganestiquiagon), near the mouth of the Rouge River; Teyaiagon, near the mouth of the Humber River; and Quinaouatoua, on the portage between the western end of Lake Ontario and the Grand River (Konrad 1981:135). Their locations near the mouths of the Humber and Rouge Rivers, two branches of the Toronto Carrying Place, strategically linked these settlements with the upper Great Lakes through Lake Simcoe. The inhabitants of these villages were

agriculturalists, growing maize, pumpkins and squash, but their central roles were that of portage starting points and trading centres for Iroquois travel to the upper Great Lakes for the annual beaver hunt (Konrad 1974; Williamson et al. 2008:50–52). Ganatsekwyagon, Teyaiagon, and Quinaouatoua were primarily Seneca; Ganaraske, Quinte and Quintio were likely Cayuga, and Ganneious was Oneida, but judging from accounts of Teyaiagon, all of the villages might have contained peoples from a number of the Iroquois constituencies (ASI 2013).

During the 1690s, some Ojibwa began moving south into extreme southern Ontario and soon replaced, the Haudenosaunee by force. By the first decade of the eighteenth century, the Michi Saagiig Nishnaabeg (Mississauga Nishnaabeg) had settled at the mouth of the Humber, near Fort Frontenac at the east end of Lake Ontario and the Niagara region and within decades were well established throughout southern Ontario. In 1736, the French estimated there were 60 men at Lake Saint Clair and 150 among small settlements at Quinte, the head of Lake Ontario, the Humber River, and Matchedash (Rogers 1978:761). This history is based almost entirely on oral tradition provided by Anishinaabek elders such as George Copway (Kahgegagahbowh), a Mississauga born in 1818 near Rice Lake who followed a traditional lifestyle until his family converted to Christianity (MacLeod 1992:197; Smith 2000). According to Copway, the objectives of campaigns against the Haudenosaunee were to create a safe trade route between the French and the Ojibwa, to regain the land abandoned by the Huron-Wendat. While various editions of Copway's book have these battles occurring in the mid-seventeenth century, common to all is a statement that the battles occurred around 40 years after the dispersal of the Huron-Wendat (Copway 1850:88; Copway 1851:91; Copway 1858:91). Various scholars agree with this timeline ranging from 1687, in conjunction with Denonville's attack on Seneca villages (Johnson 1986:48; Schmalz 1991:21–22) to around the mid- to late-1690s leading up to the Great Peace of 1701 (Schmalz 1977:7; Bowman 1975:20; Smith 1975:215; Tanner 1987:33; Von Gernet 2002:7–8).

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

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

From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there is no interruption to Anishinaabek control and use of southern Ontario. While hunting in the territory was shared, and subject to the permission of the various nations for access to their lands, its occupation was by Anishinaabek until the assertion of British sovereignty, the British thereafter negotiating treaties with them. Eventually, with British sovereignty, tribal designations changed (Smith 1975:221–222; Surtees 1985:20–21). According to Rogers (1978), by the twentieth century, the Department of Indian Affairs had divided the "Anishinaubag" into three different tribes, despite the fact that by the early eighteenth century, this large Algonquian-speaking group, who shared the same cultural background, "stretched over a thousand miles from the St. Lawrence River to the Lake of the Woods." With British land purchases and treaties, the bands at Beausoleil Island, Cape Croker, Christian Island, Georgina and Snake Islands, Rama,

Sarnia, Saugeen, the Thames, and Walpole, became known as "Chippewa" while the bands at Alderville, New Credit, Mud Lake, Rice Lake, and Scugog, became known as "Mississauga." The northern groups on Lakes Huron and Superior, who signed the Robinson Treaty in 1850, appeared and remained as "Ojibbewas" in historical documents.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases throughout Ontario in the early nineteenth century, and entered into negotiations with various Nations for additional tracts of land as the need arose to facilitate European settlement.

Following the 1764 Niagara Peace Treaty and the follow-up treaties with Pontiac, the English colonial government considered the Mississaugas to be their allies since they had accepted the Covenant Chain. The English administrators followed the terms of the Royal Proclamation and ensured that no settlements were made in the hunting grounds that had been reserved for their use (Johnston 1964; Lytwyn 2005). In 1784, under the terms of the "Between the Lakes Purchase" signed by Sir Frederick Haldimand and the Mississaugas, the Crown acquired over one million acres of land in-part spanning westward from near modern day Niagara-on-the-Lake along the north shore of Lake Ontario to modern day Burlington (Aboriginal Affairs and Northern Development Canada 2016).

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

The Study Area is within Treaty 3, the Between the Lakes Purchase. Following the 1764 Niagara Peace Treaty and the follow-up treaties with Pontiac, the English colonial government considered the Mississaugas to be their allies since they had accepted the Covenant Chain. The English administrators followed the terms of the Royal Proclamation and insured that no settlements were made in the hunting grounds that had been reserved for their use (Johnston 1964; Lytwyn 2005). In 1784, under the terms of the "Between the Lakes Purchase" signed by Sir Frederick Haldimand and the Mississaugas, the Crown acquired over one million acres of land in-part spanning westward from near modern day Niagara-on-the-Lake along the south shore of Lake Ontario to modern day Burlington (Aboriginal Affairs and Northern Development Canada 2016).

1.2.2 Euro-Canadian Land Use: Township Survey and Settlement

Historically, the study area is situated on part of Lot 248, former Township of Thorold and Part of Lot 26, Concession 5, Former Township of Crowland, County of Welland.

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

Heritage Act or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

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

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

Thorold Township

The first settlers are believed to have taken up land in Thorold around 1787-88, when the first township survey was undertaken in part by Augustus Jones. Jones also compiled the "Plans of the Townships of this Settlement" in the late autumn of 1791, which included a "List of reduced Provincial Troops" settled in the area, as well as reports on features "towards the public utility" such as water falls, minerals and/or quarries, and the quality of the timber &c (Fraser 1906:346, 388–389, 426–427).

Thorold acquired its name in 1792, likely in honor of Sir John Thorold (1734-1815), a representative for Lincolnshire in the House of Commons. Settlement in Thorold advanced at a pace that was roughly equal to that seen in the other nearby townships in the county. Most of the early settlement and land allotment was made to Loyalists and disbanded soldiers from Butler's Rangers. Several of the farms within the township suffered damage to fences and crops, and from plunder, during the Battle of Beaver Dams in June 1813. By 1846, the township was referred to as one of the "best settled townships in the Niagara District, containing a great number of excellent, well cleared farms" (Gardiner 1899:276–277; Armstrong 1985:147; Rayburn 1997:342–343; Smith 1846).

Crowland Township

Crowland Township was established in 1788, named after a town in Lincolnshire, England. The township was settled by United Empire Loyalists who arrived as early as the 1770's. Some of the early families included Buchner, Young, Misner, Cook, Yokam, Bender, Wilson, Brailey, Brookfield, Brown, Doan and Everingham (Mika and Mika 1977:504).

In 1801, a road from Bertie Township through Crowland to the Welland River was surveyed by Charles Fell. In 1803, Crowland had its first town meeting and the population at this time was 120 males and 96 females. By 1817, the population was approximately 600 individuals (Page 1876).

The first post office opened in1841 at Cook's Mills, in the store of Luther Boardman. Mr. Boardman was also a hotelkeeper in Cook's Mills and credited for organizing the Crowland Agricultural Society in 1846.

The Methodists were the first to build a church in the township, followed by the Presbyterians in 1850. The first school was built at Cook's Mills on land donated by Mr. Street in the mid-1800s (Mika and Mika 1977:505). The hamlet of Cook's Mills was located on Lots 11-13, Concessions 4 and 5; this hamlet later became known as Crowland. During this time waterways were the easiest modes of travel. The Welland River (also known as Chippawa Creek) divides the townships of Crowland, Thorold and Stamford (Page 1876).

In 1970, Crowland Township was dissolved, being incorporated into the Town of Thorold, City of Niagara Falls and City of Welland (Mika and Mika 1977:505).

Village of Welland

The village of Welland was located on the west side of Crowland Township adjacent to the Welland River. A portion of the village was also located on the west side of the Welland River, situated in Thorold Township; a swing bridge across the river/canal connected the village. In 1876, the population was approximately 1,900 individuals. The village was the County Town for the Country of Welland providing a number of amenities and services including several churches, fine brick stores, large mills, a court house, a jail, a registry office and a registrar surrogate office. Similar to other villages located along the Welland ship canal, in addition to the Canada Southern Railway, the village of Welland owed a great deal of its growth to that work, providing many facilities for travellers and shippers (Page 1876).

The Welland Canals

William Hamilton Merritt (1793-1861) came to the Niagara area with his United Empire Loyalist parents in 1796. The young Merritt farmed and entered into the mercantile trade around 1809 and served with distinction during the War of 1812. He returned to his mercantile business after the war, but also began milling. His mill was located on the banks of Twelve Mile Creek (Old Welland Canal). Around 1818, Merritt conceived the idea of digging a new channel between the Welland River and the head waters of Twelve Mile Creek, which would ensure a steadier supply of water for the mills and other industries in St. Catharines. By 1824, this idea had evolved into plans for the construction of the First Welland Canal. This enterprise not only supplied a steady source of hydraulic power for local businesses, but also created a navigational route which linked Lake Ontario to Lake Erie, thus providing ships access to inland markets throughout the rest of the Great Lakes region for the first time.

1.2.3 Historical Map Review

The 1862 *Tremaine Map of Welland County* and 1876 *Illustrated Historical Atlas of the Counties of Lincoln and Welland* were examined to determine the presence of historic features within the Study Area during the nineteenth century (Figures 2-5).

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

In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced in order to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including the vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.

According to the 1862 map, the study area is illustrated straddling the Welland River within the historic village of Welland (Figure 2). Property owner information within the Study Area is not provided, however the surrounding network of roads is clearly visible. The 1876 maps of the Township of Thorold and of the Township of Crowland both indicate that the study area is located within the historic village of Welland (Figures 3 and 4). Once again, no property owner information is provided, however, Niagara Street is now illustrated over the Welland River. The 1876 map of the Village of Welland clearly illustrates individual lots within the village of Welland, although tenure information is only indicated for a few individual lots (Figure 5). Part of Lot 248 was owned by “Phelps” and part of Lot 26 was owned by “Gross”.

The Historic Welland Canals Mapping project was consulted to see if any features from the canal systems were noted but no features were mapped within the Study Area (Beard).

1.2.4 Twentieth-Century Mapping Review

The 1907 and 1929 topographic sheets for Niagara Region Welland maps were examined to determine the extent and nature of development and land uses within the Study Area (Figures 6-7). On both maps the Study Area remained much as it had in the past within the urban core of the village of Welland.

The 1934 Google Earth aerial photograph was consulted (Figure 8). The photo notes two houses with extensive construction disturbance to the north west and four buildings to the north east. These areas are disturbed due to the construction and demolition of these buildings followed by the later landscaping as the areas were turned into parks. The photo also noted the channelization of Chippewa Creek into the redeveloped Welland Canal. This construction and auxiliary projects such as the bank stabilization would have disturbed any archaeological resources within the park to the south east.

1.3 Archaeological Context

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

1.3.1 Current Land Use and Field Conditions

A review of available Google satellite imagery since 2004 shows that the Study Area has remained relatively unchanged.

A Stage 1 property inspection was conducted on February 4, 2020 that noted the Study Area includes urban lands on either side of the Welland River. Land use in proximity to the Study Area consists of both residential and commercial developments. A significant portion of the study area consists of the Welland River.

1.3.2 Geography

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

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

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow and Warner 1990:Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include: elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including; food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

The Study Area is located within the Haldimand Clay Plain physiographic region of southern Ontario in clay plain (Chapman and Putnam 1984). The Haldimand Clay Plain is located between the Niagara Escarpment and Lake Erie. It occupies all of the Niagara Peninsula except the fruit belt below the escarpment, and has an area of about 349,600 hectares (Chapman and Putnam 1984:156). The Haldimand clay plain can be described as falling into a series of parallel belts which direct the drainage of the region eastward in parallel streams. In general, the soils of this region have a heavy texture and poor drainage but irregular areas of better-drained soils do exist.

Clay plains are glaciolacustrine features which are formed when glacial melt waters pond between ice margins, high ground or flood basins. Clay plains are formed in deep water by sediment sorting (Karrow and Warner 1990: 5).

Figure 9 depicts surficial geology for the Study Area. The surficial geology mapping demonstrates that the Study Area is underlain by fine-textured glaciolacustrine deposits of silt and clay, minor sand and gravel that area massive to well laminated (Ontario Geological Survey 2010). Soils in the Study Area consist of Niagara clay with variable drainage (Figure 10).

The Welland River drains an area of 800 square kilometres and flows from Ancaster to Niagara Falls (Niagara Peninsula Conservation Authority 2011). The Welland River originates at an elevation of 244 metres above sea level (a.s.l.) and falls to an elevation of 73 metres a.s.l. across a course of 116 kilometres, meeting its confluence with the Niagara River at Chippawa. This river now flows from the Niagara River as an intake for power-generation at Welland, under passing the Welland Canal via inverted siphons (Chapman and Putnam 1984:99).

1.3.3 Previous Archaeological Research

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

According to the OASD, three previously registered archaeological sites are located within one kilometre of the Study Area (MHSTCI 2019). A summary of the sites is provided below in Table 1. The nearest site, AfGt-237, is over 300 m southwest of the Study Area.

Table 1: List of previously registered sites within one kilometre of the Study Area

Borden #	Site Name	Cultural Affiliation	Site Type	Researcher
AfGt-155	Blue River 1	Pre-contact	Unknown	Unknown
AfGt-199	Atkinson-Dillabough	Late Archaic, Early Woodland	Campsite	D. Todd 2016
AfGt-237	--	Pre-contact, Euro-Canadian	Campsite, homestead	Detritus Consulting 2017, 2018

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

In 2015, ASI conducted a Stage 1 archaeological assessment as part of the Welland Water Treatment Plant (WTP) Transmission Watermains Municipal Class EA under MHSTCI PIF P392-0128-2014. The proposed project involved the replacement of watermains at the Welland Water Treatment Plant. The Stage 1 property inspection determined that a large part of the study area has been previously disturbed. Other parts of the study area are documented to have steeply sloping conditions. Some lands within the Study Area are considered to possess archaeological potential and required a Stage 2 property assessment (ASI 2015a).

The Stage 2 archaeological assessment for the Welland WTP Transmission Watermains Municipal Class EA was conducted in the spring of 2015 by ASI under MHSTCI PIF P057-0784-2015. Parts of the study area were determined to have no archaeological potential on account of steeply sloping conditions or previous disturbance. The remainder of the Study Area was considered to possess archaeological potential

and was assessed by test-pit survey at five metre intervals. No archaeological resources were identified during the course of the property assessment (ASI 2015b). A recommendation for no further work was made and the report was entered into the Ontario Public Register of Reports.

1.3.4 Marine Archaeology Potential

While this report is limited to the terrain-based archaeology, the Study Area does cover the water body previously known as the Chippewa Creek which is now known as the Welland River. The proposed bridge will impact the riverbed so marine archaeological potential was considered. The bridge within the Study Area was built in 1932 and the substructure was replaced in 1973 (ASI 2020). The Study Area is also close to the route of the first Welland Canal and it is located adjacent to the path of the current canal with an earthen bank and tunnel located to the east of the Study Area (Figures 8 and 11). Due to the importance of maintaining a safe water level in the canal system this area was likely dredged as part of the first, second and current canal systems as well as being impacted by the construction and the substructure replacement of the Niagara Street Bridge. Under the *Criteria for Evaluating Marine Archaeological Potential*, question number eight, the construction and dredging which occurred within the Study Area would mean that this area as been subjected to extensive disturbance and therefore a marine archaeological assessment is not required (MHSTCI 2016). Andrea Williams, ARO with the MHSTCI and marine archaeology coordinator, was contacted and she concurred that the Study Area is likely disturbed and did not possess marine archaeology potential (Williams 2021).

2.0 FIELD METHODS: PROPERTY INSPECTION

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted under the field direction of Blake Williams (P383) of ASI, on February 4, 2020, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. It was a visual inspection only and did not include excavation or collection of archaeological resources. Fieldwork was only conducted when weather conditions were deemed suitable and seasonally appropriate, per S & G Section 1.2., Standard 2. Field observations are compiled onto the existing conditions of the Study Area in Section 7.0 (Figure 11) and associated photographic plates are presented in Section 8.0 (Plates 1-8).

3.0 ANALYSIS AND CONCLUSIONS

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. These data are presented below in Section 3.1. Results of the analysis of the Study Area property inspection are presented in Section 3.2.

3.1 Analysis of Archaeological Potential

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

- Water sources: primary, secondary, or past water source (Welland River);
- Early historic transportation routes (Niagara Street, Welland Canal);
- Proximity to early settlements (historic village of Welland).

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

These criteria are indicative of potential for the identification of Indigenous and Euro-Canadian archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

3.2 Analysis of Property Inspection Results

The property inspection determined that the Study Area has been subjected to deep soil disturbance events and according to the S & G Section 1.3.2 do not retain archaeological potential (Plates 4-6; Figure 10: areas highlighted in yellow). Lands within the Study Area along the banks of the Welland River are sloped in excess of 20 degrees, and according to the S & G Section 2.1 these lands do not retain potential (Plates 7-8; Figure 10: areas highlighted in pink).

The Study Area does not require further survey.

3.3 Conclusions

The Stage 1 background study determined that three previously registered archaeological sites are located within one kilometre of the Study Area. A review of the geography and history of the study area suggested that the study area has potential for the identification of Indigenous and Euro-Canadian archaeological resources.

The Stage 1 property inspection determined that a large part of the study area has been previously disturbed by construction and demolition of buildings, landscaping and the channelization of Chippewa Creek in the 1930s. Other parts of the study area are documented to have steeply sloping or permanently low and wet conditions. The area can be considered free of archaeological concern.

4.0 RECOMMENDATIONS

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

1. The Study Area does not retain archaeological potential on account of deep and extensive land disturbance or slopes in excess of 20 degrees. These lands do not require further archaeological assessment;

2. The section of the Welland River within the Study Area has been subjected to recent, extensive and intensive disturbance due to bridge construction as well as dredging associated with different iterations of the Welland Canal. The Criteria for Evaluating Marine Archaeological Potential, question number eight, indicates that a marine archaeological assessment is not required, and this report acts as part of the documentation of disturbance; and,

3. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

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

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

ASI also advises compliance with the following legislation:

- This report is submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

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

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

- The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

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7.0 MAPS

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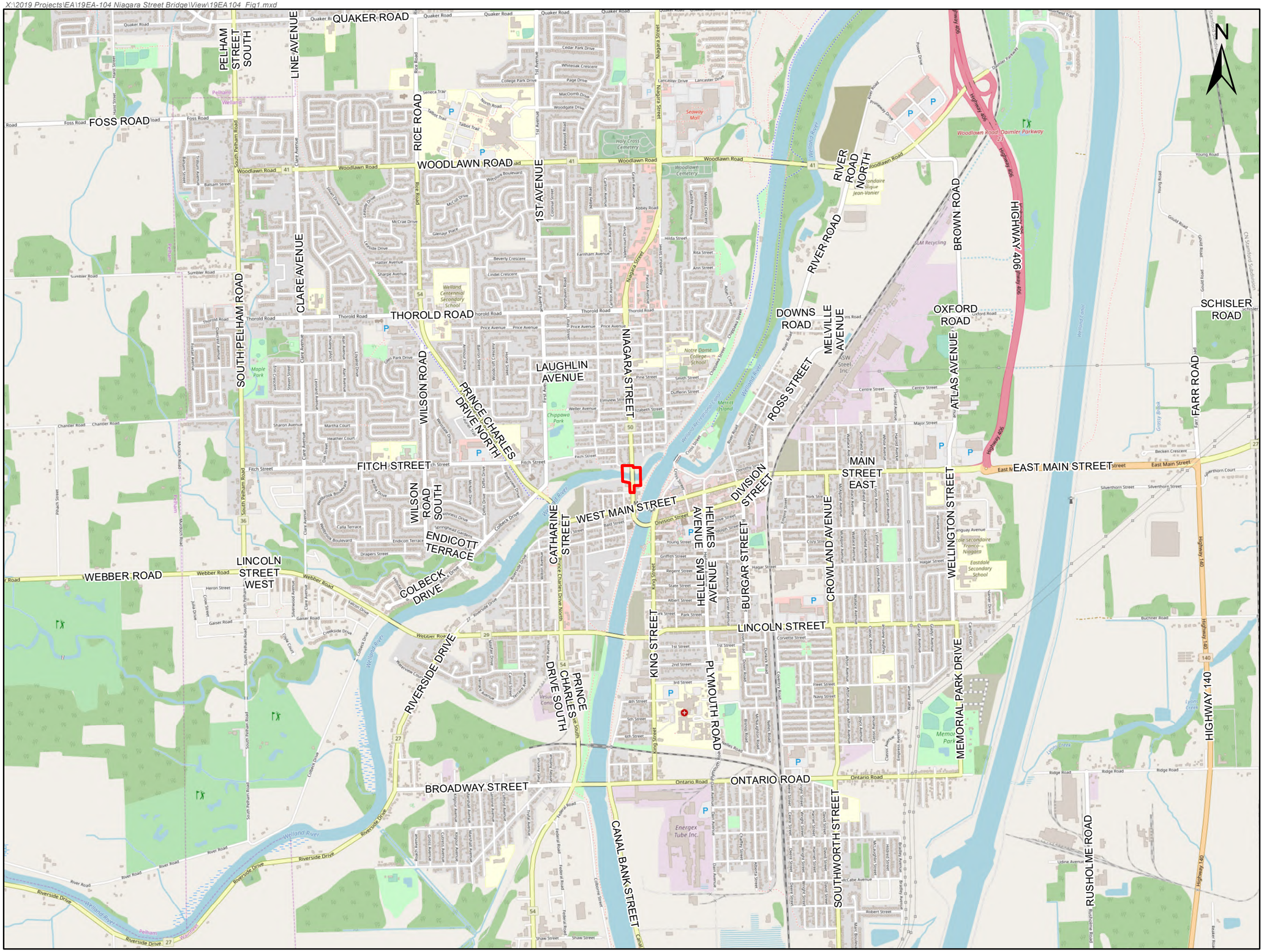

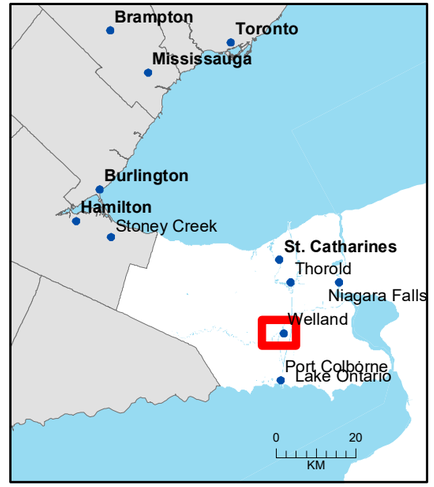

LEGEND

STUDY AREA

Sources:
Ortho: ESRI

Projection: NAD 1983 UTM Zone 17N
Scale: 1:25,000
Page Size: 11 x 17

0 1 km

ASI PROJECT NO.: 19EA-104
DATE: 2020-01-30

DRAWN BY: A.C.
FILE: 19EA104_Fig1

Providing Archaeological & Cultural Heritage Services
528 Bathurst Street Toronto, ONTARIO M5S 2P9
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Figure 1: Niagara Street Bridge Study Area

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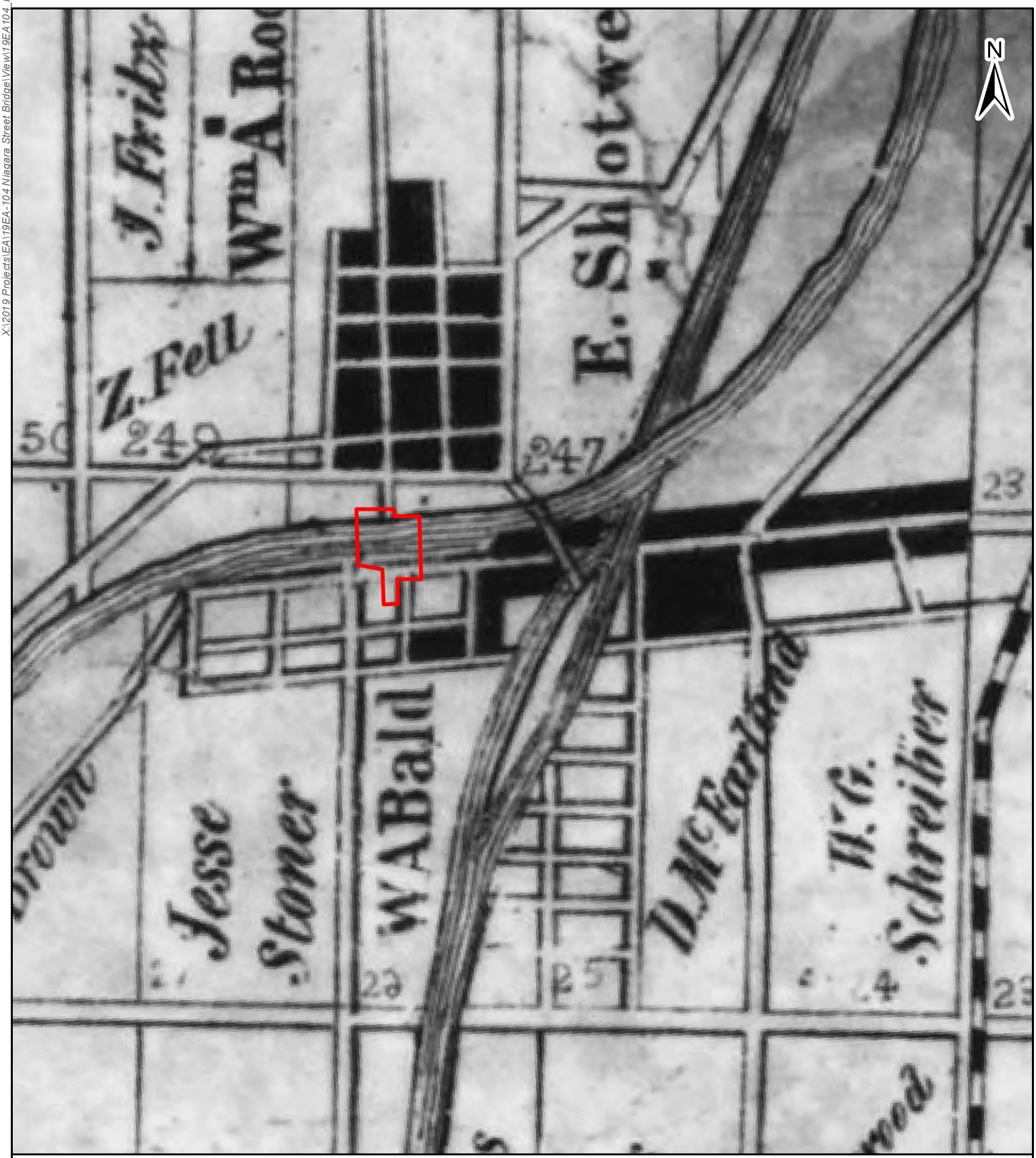

STUDY AREA

Sources:

Projection: NAD 1983 UTM Zone 17NCSRS
Scale: 1:10,000
Page Size: 8.5 x 11

0 400
Metres

ASI PROJECT NO.: 19EA-104
DATE: 2020-02-06

DRAWN BY: A.C.
FILE: 19EA104_Fig2

Figure 2: Regional Road 50 Niagara Street Bridge Study Area overlaid on the 1862 Tremaine Map of Welland County

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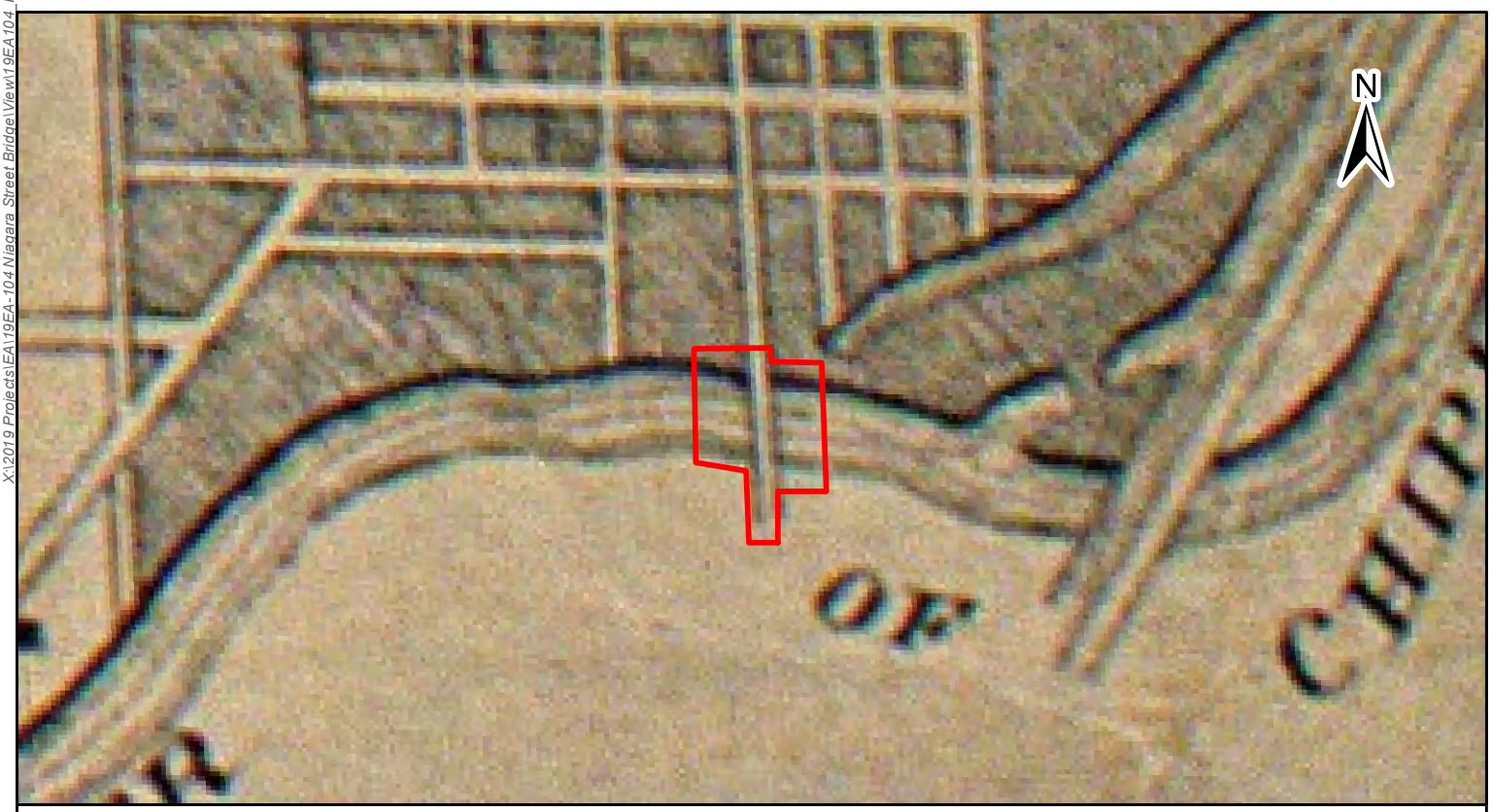


Figure 3: Regional Road 50 Niagara Street Bridge Study Area overlaid on the 1876 map of Township of Thorold

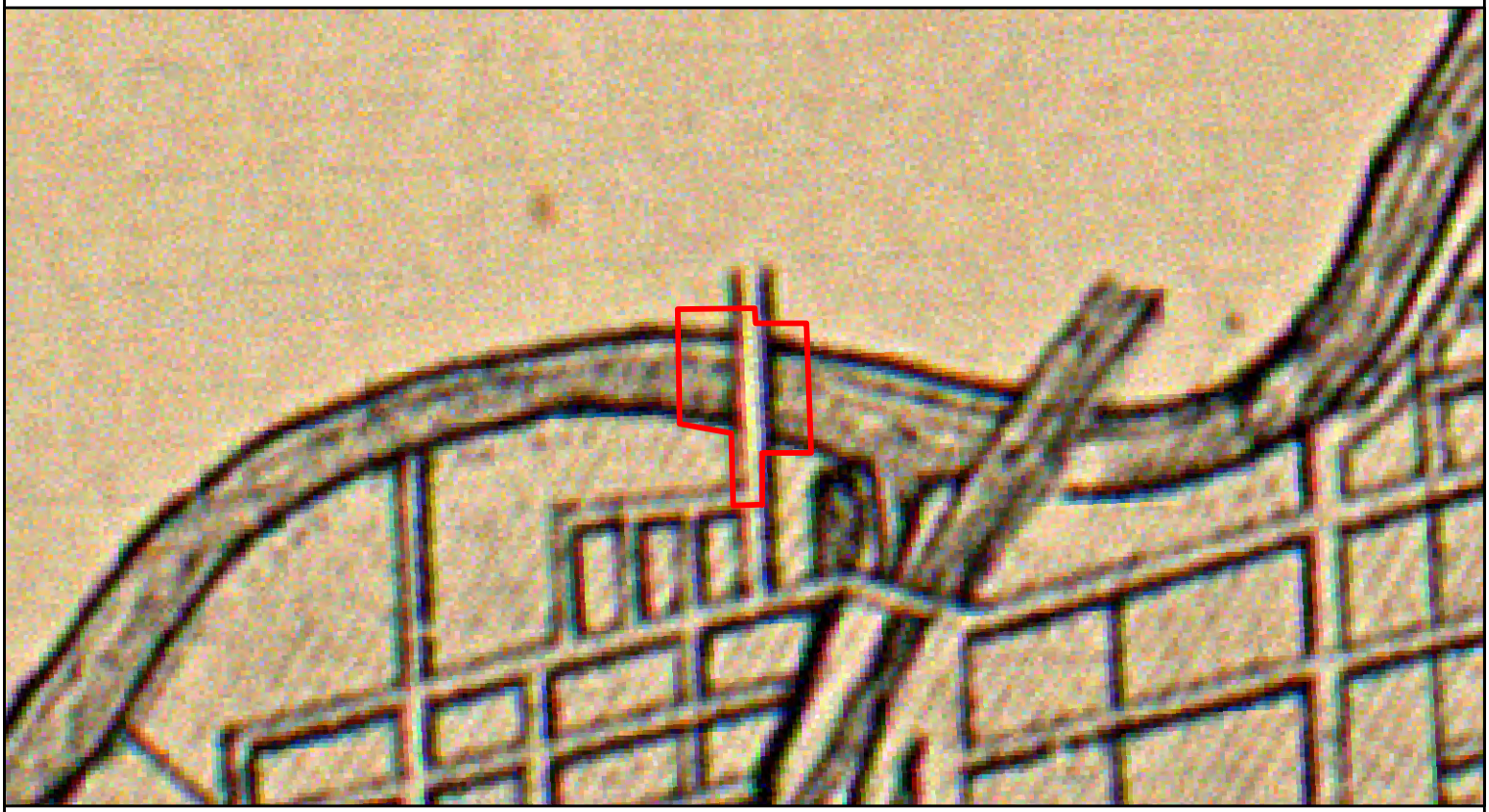


Figure 4: Regional Road 50 Niagara Street Bridge Study Area overlaid on the 1876 map of Township of Crowland

ASI

STUDY AREA

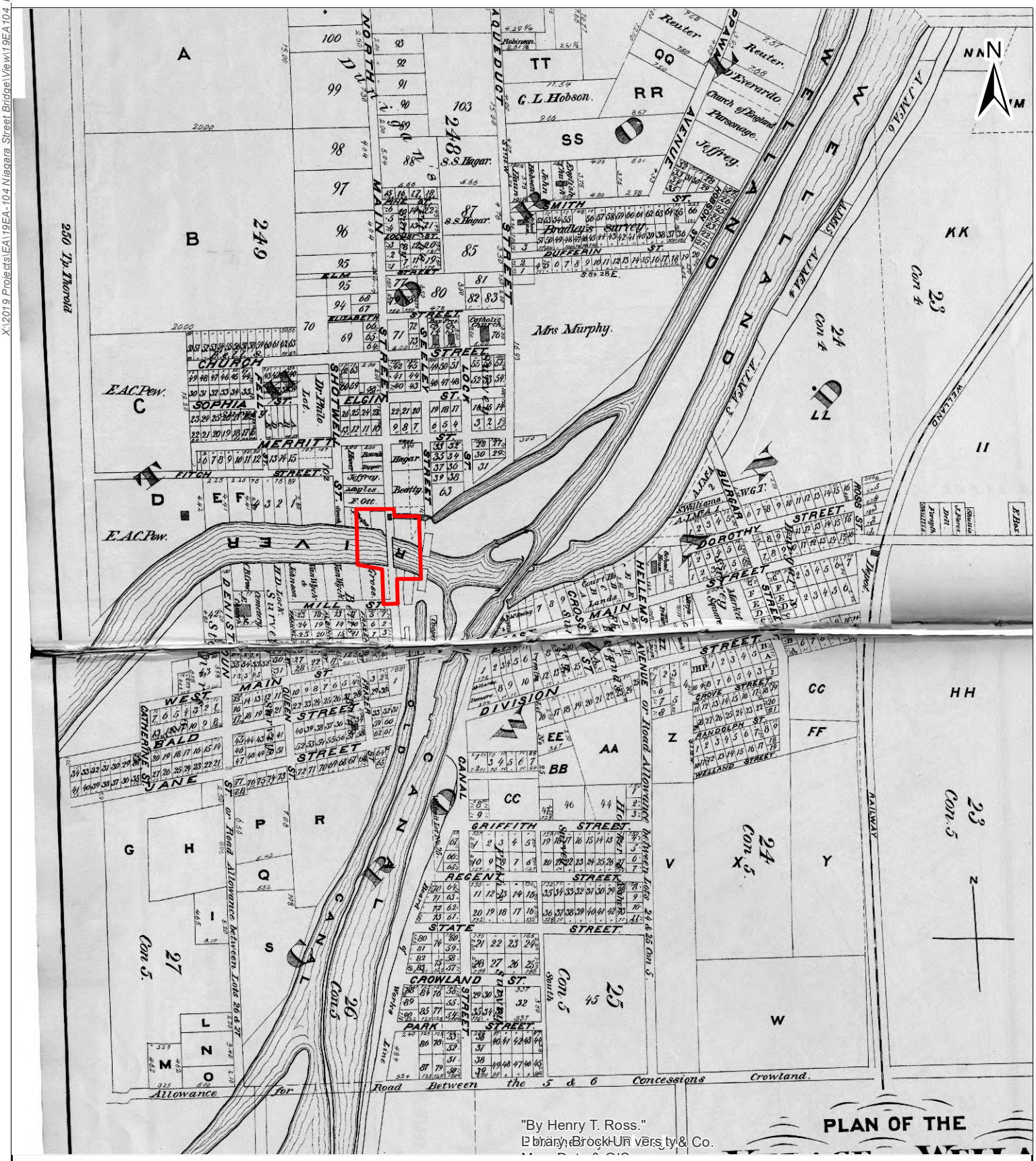
Sources:

Projection: NAD 1983 UTM Zone 17NCSRS
Scale: 1:7,000
Page Size: 8.5 x 11

0 250 m

ASI PROJECT NO.:19EA-104 DRAWN BY: A.C.
DATE: 2020-02-07 FILE: 19EA104_Fig3_4

X:\2019 Projects\EA\19EA-104 Niagara Street Bridge\View\19EA104_Fig5.mxd



STUDY AREA

Sources:

Projection: NAD 1983 UTM Zone 17NCSRS
Scale: 1:10,000
Page Size: 8.5 x 11

0 400
Metres

ASI PROJECT NO.: 19EA-104
DATE: 2020-02-06

DRAWN BY: A.C.
FILE: 19EA104_Fig5

Figure 5: Regional Road 50 Niagara Street Bridge Study Area overlaid on the 1876 map of the Village of Welland

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Figure 6: Regional Road 50 Niagara Street Bridge Study Area overlaid on the 1907 Topographic Sheet for Welland

Figure 7: Regional Road 50 Niagara Street Bridge Study Area overlaid on the 1929 Topographic Sheet for Welland

ASI

STUDY AREA

Sources:

Projection: NAD 1983 UTM Zone 17N
Scale: 1:15,000
Page Size: 8.5 x 11

0 500 m

ASI PROJECT NO.: 19EA-104 DRAWN BY: A.C.
DATE: 2020-02-06 FILE: 19EA104_Fig6_7

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STUDY AREA

Sources:

0 100

Metres

Projection: NAD 1983 UTM Zone 17NCSRS
Scale: 1:2,500
Page Size: 8.5 x 11

ASI PROJECT NO.: 19EA-104
DATE: 04-Mar-20

DRAWN BY: B.W.
FILE: 19EA104_Fig8

Figure 8: Niagara Street Bridge Study Area overlaid on the 1934 Aerial Photograph

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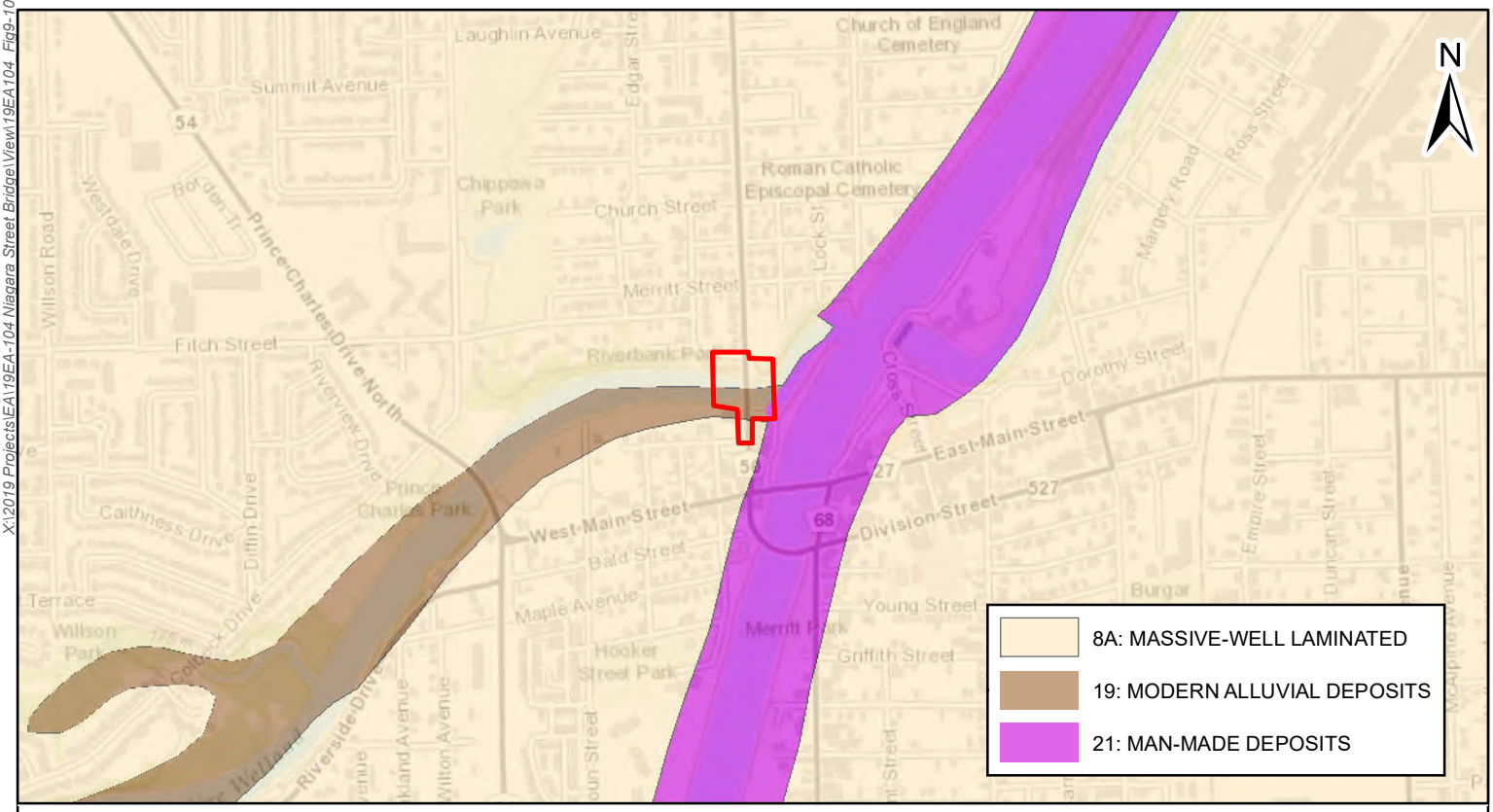

Figure 9: Regional Road 50 Niagara Street Bridge Study Area - Surficial Geology

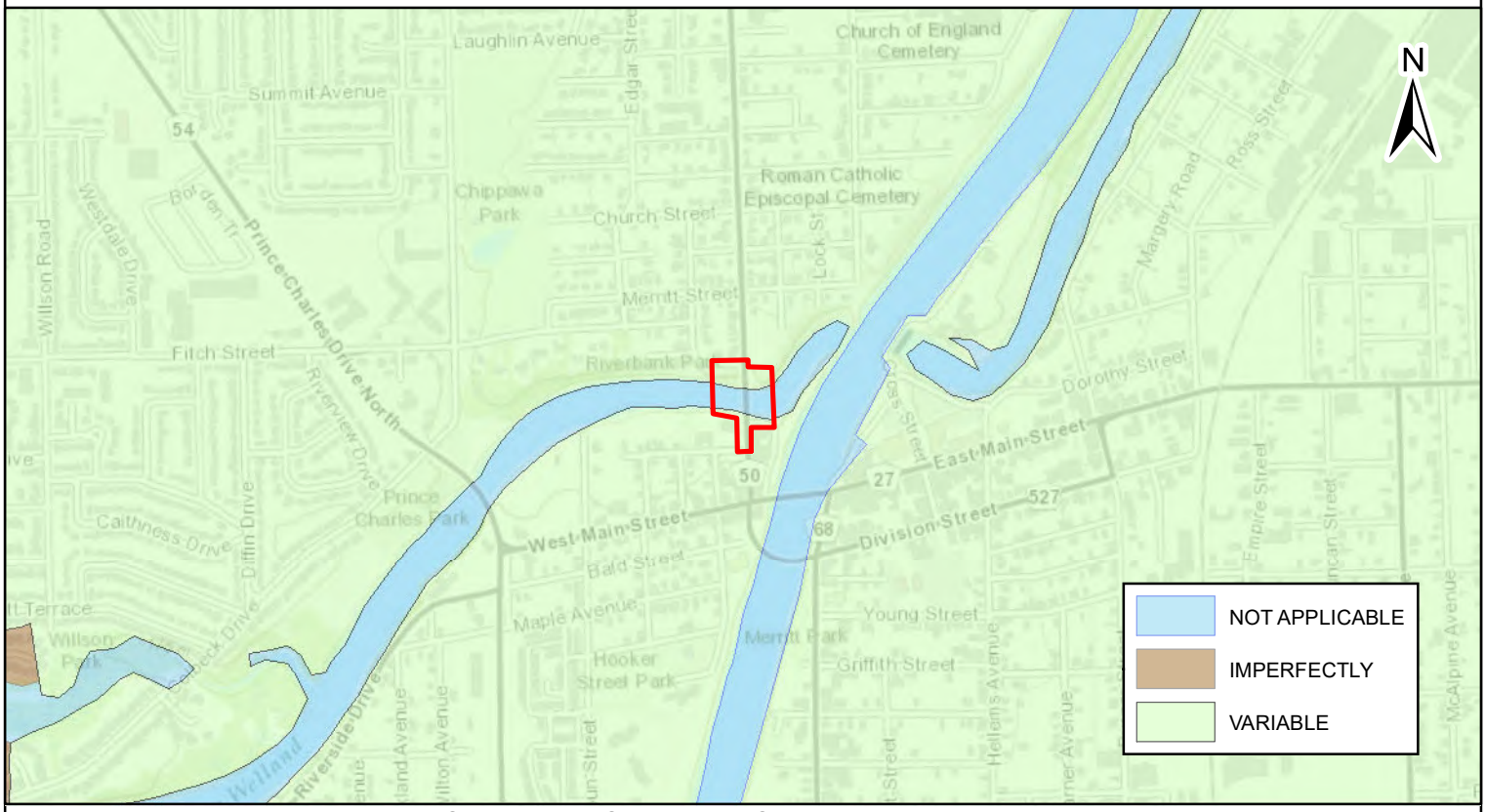

Figure 10: Regional Road 50 Niagara Street Bridge Study Area - Soil Drainage

ASI

STUDY AREA

Sources:

Projection: NAD 1983 UTM Zone 17N
Scale: 1:5,000
Page Size: 8.5 x 11

0 500 m

ASI PROJECT NO.: 19EA-104 DRAWN BY: A.C.
DATE: 04-Mar-20 FILE: 19EA104_Fig9-10

Figure 11: Results of Property Inspection

8.0 IMAGES

Plate 1: [ESE]: View across parkette lands between Riverbank Street and Welland River. Disturbed as noted on 1934 aerial.

Plate 2: [SSE]: View across parkette lands on north side of Welland River. Disturbed as noted on 1934 aerial.

Plate 3: (E) View along sidewalk with parking lot on right. Area disturbed from construction and the bank stabilization noted in 1934 aerial.

Plate 4: (SE) View across parking lot in southwest corner of study area. No potential.

Plate 5: (SE) View across parking lot in southeast corner of study area. No potential.

Plate 6: (S) View along Niagara Street with bridge in distance. No potential.

Plate 7: (W) Welland River riverbanks are steeply sloping. No potential.

Plate 8: (NE) View from Niagara Street bridge across Welland River. The riverbanks are steeply sloping. No potential.

Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Marine Archaeological Potential
A Checklist for Non-Marine Archaeologists

Purpose

The **purpose of this checklist** is to help proponents determine:

- if a property or project area may contain marine archaeological resources or have marine archaeological potential

A marine archaeological site is fully or partially submerged, or lies below or partially below the high-water mark of any body of water.

The property or project area includes all submerged areas that may be impacted by project activities, including, but not limited to:

- the main project area
- temporary storage and stockpiling locations
- staging and work areas, such as docking platforms and dredging locations
- temporary features such as access routes, anchors, moorings and cofferdams.

Please refer to the **instructions** on pages 4 through 9 when completing this checklist

Processes covered

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregate Resources Act*
- *Ontario Heritage Act*
  - Standards & Guidelines for Conservation of Provincial Heritage Properties
- *Canadian Environmental Assessment Act*
- *Canada Shipping Act*

Marine archaeological assessment

The assessment will help you:

- identify, evaluate and protect marine archaeological resources on your property or project area
- reduce potential delays and risks to your project

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed marine archaeologist (defined on page 5) to undertake a marine archaeological assessment.

Note: Under Part VI of the *Ontario Heritage Act*, all marine archaeological assessments **must** be done by a licensed marine archaeologist. Only a licensed marine archaeologist can assess – or alter – a marine archaeological site.

Have you found a site?

If you find something you think may be of marine archaeological value during project work, you **must** – by law – stop all activities immediately and contact a licensed marine archaeologist. The marine archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act*.

Have you found human remains?

If you find remains (e.g., bones) that could be of human origin, you **must** – by law - immediately notify the appropriate authorities (police, coroner's office, or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

Other Checklists

Please use a separate checklist for your project if:

- your Parent Class EA document has approved screening criteria
- your ministry's or prescribed public body's approved Identification and Evaluation Process includes approved screening criteria

Project or Property Name

Project or Property Location (upper and lower or single tier municipality)

Screening Questions

1. Is there a government-authorized, pre-approved screening checklist, methodology or process in place?

☐ Yes ☑ No

If **Yes**, please follow the pre-approved screening checklist, methodology or process. Do not complete the rest of this checklist.

If **No**, continue to Question 2.

2. Has a marine archaeological assessment been prepared for the property or project area and been entered by MTCS into the Ontario Public Register of Archaeological Reports?

☐ Yes ☑ No

If **Yes**, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the marine archaeological assessment report(s).

The proponent and/or approval authority will:

- summarize the previous marine archaeological assessment
- follow any recommendations for further marine archaeological assessment work, as applicable
- add this checklist to the project file, with the appropriate documents that demonstrate a marine archaeological assessment was undertaken (e.g. MTCS letter that states that the report has been entered into the Ontario Public Register of Archaeological Reports)

The summary and appropriate documentation may be:

- submitted as part of a report requirement, e.g. environmental assessment document
- maintained by the proponent or approval authority

If **No**, continue to Question 3.

3. Are there known marine or land-based archaeological sites on or within 500 metres of the property or project area?

☑ Yes ☐ No

4. Is there Aboriginal or local knowledge of marine or land-based archaeological sites on or within 500 metres of the property or project area?

☐ Yes ☑ No

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 500 metres of the property or project area?

☐ Yes ☑ No

6. Is there a known burial site or cemetery on the property or adjacent to the property or project area?

☐ Yes ☑ No

7. Has the property or project area been recognized for its cultural heritage value?

☐ Yes ☑ No

If **Yes** to any of questions 3 to 7, do **not** complete the checklist. Your property or project area could contain marine archaeological resources: please hire a licensed marine archaeologist to conduct a marine archaeological assessment.

If **No**, continue to Question 8.

8. Has the entire property or project area been subjected to recent, extensive and intensive disturbance?

☑ Yes ☐ No

If **Yes**, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance. A marine archaeological assessment is not required.

If **No**, continue to Question 9.

9. Are there two or more reported or registered ship wreck sites or reports of lost ships within a five kilometre radius of the property or project area?

☐ Yes ☐ No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 10.

10. Is the property or project area within one kilometre of an active or historic harbour, seaplane or floatplane base, tunnel, ferry route, marine terminal, or winter road?

☐ Yes ☐ No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 11.

11. Where the project impacts fourth order or higher watercourses, are there existing narrows, rapids, waterfalls or does the watercourse enter or leave a body of water within 300 metres of the property or project area?

☐ Yes ☐ No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 12.

12. Are there potential built heritage or cultural heritage landscape resources that may be of cultural heritage value or interest adjacent to the watercourse or water body?

☐ Yes ☐ No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 13.

13. Are there inundated beaches, bluffs, lakeshores, streams or river banks within 300 metres of the property or project area?

☐ Yes ☐ No

If **Yes**, a marine archaeological assessment is required.

If **No**, continue to Question 14.

14. Are there inundated beaches, lakeshores or river/creek banks beyond 300 metres and at greater depth than the project area with evidence of two or more of the following in the project area?

- elevated bathymetric features such as drumlins, eskers, kames, ridges, etc.
- pockets of sandy lakebed
- distinctive bathymetric formations such as escarpments, shoals, promontories, reefs, etc.
- inundated resource extraction areas (quarry, fishery)
- inundated historical settlement including built heritage resources or cultural heritage landscapes
- inundated historical transportation routes

☐ Yes ☐ No

If **Yes**, a marine archaeological assessment is required.

If **No**, there is low potential for marine archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project report or file

The summary and appropriate documentation may be:

- submitted as part of a report requirement, e.g. under the *Environmental Assessment Act*, *Planning Act* processes
- maintained and retained by the property owner, proponent or approval authority

Instructions

Please have the following available, when requesting information related to the screening questions:

- a clear map or chart showing the location and boundary of the property or project area
  - large scale and small scale maps/charts showing nearby islands or township names for context
- the municipal addresses of all properties or water lots within or adjacent to the project area, if any
- the lot, concession, parcel number or mining claims of any properties within the project area

In this context, the following definitions apply:

- **licensed marine archaeologist** means an archaeologist who has a valid marine archaeology licence issued by the Ministry of Tourism, Culture and Sport to practice in Ontario. As a consultant, a licensed marine archaeologist enters into an agreement with a client to carry out or supervise marine archaeological work on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may be already in place to identify marine archaeological potential, including:

- one prepared and adopted by the municipality, such as an archaeological management plan
- an environmental assessment process, such as a screening checklist for municipal bridges
- projects being reviewed under the Canadian *Environmental Assessment Act*.
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s. B.2.]

2. Has a marine archaeological assessment been prepared for the property or project area and been entered into the Ontario Public register of Archaeological Reports?

Respond 'yes' to this question, if all of the following are true:

- a marine archaeological assessment report has been prepared and complies with MTCS requirements
  - a letter has been sent by MTCS to the licensed marine archaeologist confirming that MTCS has entered the report into to the Ontario Public Register of Archaeological Reports (Register)
- the report contains a recommendation stating that there are no further concerns regarding impacts to marine archaeological sites

If a marine archaeological assessment report has been completed and deemed compliant by MTCS, and the report contains a recommendation that further marine archaeological assessment work be undertaken, this work will need to be completed.

For more information about previously conducted marine archaeological assessments, contact:

- approval authority (such as a municipality or conservation authority)
- proponent for whom the marine archaeological assessment was carried out
- consultant archaeologist qualified to hold a marine archaeology licence in Ontario
- Ministry of Tourism, Culture and Sport at archaeology@ontario.ca

3. Are there known marine or land-based archaeological sites on or within 500 metres of the property or project area?

MTCS maintains a database of marine and land-based archaeological sites reported to the ministry. Land-based archaeological sites may extend into adjacent waterbodies.

For more information, contact MTCS Archaeological Data Coordinator at archaeology@ontario.ca.

4. Is there Aboriginal or local knowledge of marine or land-based archaeological sites on or within 500 metres of the property or project area?

Check with:

- Aboriginal communities in your area
- local municipal staff

Aboriginal communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Aboriginal communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Aboriginal communities and local municipal staff may have information about marine archaeological sites that are not included in the MTCS database or reported to the ministry.

Other sources of local knowledge include the following:

- property owner
- local heritage organizations and historical societies, Association for Great Lakes Maritime History
- local and provincial dive organizations (Save Ontario Shipwrecks, Ontario Underwater Council), Preserve Our Wrecks, Ontario Marine Heritage Committee)
- local dive shops
- local amateur divers and diving associations
- local museums
- municipal heritage committees
- published local histories

5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 500 metres of the property or project area?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge include the following:

- property owner
- local heritage organizations and historical societies
- local museums
- municipal heritage committees
- published local histories

6. Is there a known burial site or cemetery on the property or adjacent to the property or project area?

For more information on known cemeteries or burial sites contact the following:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for database of registered cemeteries
- Ontario Genealogical Society (OGS) – to locate records of Ontario cemeteries, both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to locate early cemeteries

In this context, ‘adjacent’ means ‘contiguous’, or as otherwise defined in a municipal official plan.

When wrecks are associated with a loss of life, the area in the vicinity of the wreck may be established as a cemetery.

7. Has the property or project area been recognized for its cultural heritage value?

There is a strong chance there may be marine archaeological resources on the property or project area if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- Municipal government
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA), including:
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)
  - a land or marine archaeological site (Part VI)
- subject to:
  - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
  - a notice of intention to designate (Part IV)
  - a heritage conservation district study area by-law (Part V) of the OHA
- included on:
  - a municipal register or inventory of heritage properties
  - Ontario government's list of provincial heritage properties
  - Federal government's list of federal heritage buildings
- part of a:
  - National Historic Site
  - UNESCO World Heritage Site
- designated under:
  - *Heritage Railway Station Protection Act*
  - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes

Part VI – Archaeological Sites
Includes three marine archaeological sites prescribed under Ontario Regulation 11/06 and five terrestrial archaeological sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990.

For more information, refer to Regulation 875 and Ontario Regulation 11/06.

8. Has the entire property or project area been subjected to recent, extensive and intensive disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- dredging
- structural footprints and associated construction areas
  - where the structure has deep foundations or footings
- infrastructure development such as:
  - dams
  - pipelines, hydro lines or other utility trenches
  - causeways
  - bridges

Note: this applies only to the excavated part of the right-of-way or corridor as the remainder may not be impacted

A ground disturbance does not include:

- aqua-cultural activities, such as a fish farm
- areas of traditional or commercial harvesting of fish, shellfish or water-based vegetation
- traditional agricultural areas that have been inundated

Property (Project Area) Inspection

Some documentation may provide evidence of prior disturbance, such as:

- photographs
- maps
- detailed descriptions and blueprints of prior projects

If complete disturbance isn't clear from documents available, an archaeologist licensed for marine archaeology can be hired to undertake an underwater and/or remote-sensing inspection of the study area to determine whether there is any remaining marine archaeological potential.

9. Are there two or more reported or registered ship wreck sites or reports of lost ships within a five kilometre radius of the property or project area?

The presence of two or more ship wreck sites or reports of lost ships in the vicinity may indicate increased marine archaeological potential for additional marine wrecks.

10. Is the property or project area within one kilometre of an active or historic harbour, seaplane or floatplane base, tunnel, ferry route, marine terminal, or winter road?

Focussed areas of marine activity on- and off-shore are indicators for potential marine archaeology due to:

- deliberate structures built in or on the water, such as:
  - mooring and anchoring structures
  - weirs, piers, docks, cribwork
  - groynes, breakwaters, artificial reefs
  - vessels scuttled for utilitarian or other purposes
  - infrastructure related to the construction or operation of a facility like marine railways
- incidental features, such as:
  - beached or sunken vessels or aircraft
  - dropped objects

As a result, there is potential for marine archaeological features or artifacts.

11. Where the project impacts fourth order or higher watercourses, are there existing narrows, rapids, waterfalls or does the watercourse enter or leave a body of water within 300 metres of the property or project area?

Fourth order and higher watercourses (on the Strahler scale) have potential association with human activity around narrows, rapids, waterfalls and proximity to waterbodies such as lakes due to:

- fish harvesting and related dams or weirs
- portage locations for navigable waterways
- early historical fording locations
- early historical water power sources for mills

These activities may result in marine archaeological features or artifacts.

12. Are there potential built heritage or cultural heritage landscape resources that may be of cultural heritage value or interest adjacent to the watercourse or water body?

Euro-Canadian settlement immediately adjacent to water bodies or watercourses may be focussed on the water for specific industrial, commercial or residential uses resulting in marine archaeological features or artifacts. For guidance, see the MTCS Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

13. Are there inundated beaches, bluffs, lakeshores, streams or river banks within 300 metres of the property or project area?

The margins of water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

- water body types:
  - primary - lakes, rivers, streams, creeks
  - secondary - springs, marshes, swamps and intermittent streams and creeks
- water bodies can include constructed water bodies or watercourses, such as:
  - temporary channels for surface drainage
  - rock chutes and spillways
- Accessible or inaccessible shorelines can also have archaeological potential, for example:
  - high bluffs or cliffs
  - sandbars

You can get information about inundated shoreline features through:

- a site visit
- aerial photographs
- bathymetric data
- geological and physiographic studies

14. Are there inundated beaches, lakeshores or river/creek banks beyond 300 metres and at greater depth than the project area with evidence of two or more of the following in the project area?

- elevated bathymetric features such as drumlins, eskers, kames, ridges, etc.
- pockets of sandy lakebed
- distinctive bathymetric formations such as escarpments, shoals, promontories, reefs, etc.
- inundated resource extraction areas (quarry, fishery)
- inundated historical settlement including built heritage resources or cultural heritage landscapes
- inundated historical transportation routes

Landforms associated with past human occupations that have later been inundated, as historically documented or demonstrated through water-level chronologies, retain their archaeological potential.

- **Elevated bathymetric features**

  Higher ground and elevated positions, surrounded by low or level topography, often indicate past settlement and land use. Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands or other such features are a strong indication of archaeological potential.

  Find out if your property or project area had elevated topography prior to inundation through:

  - nautical charts
  - bathymetric data

- **Pockets of sandy lakebed**

  Areas of sandy soil, prior to being inundated, that would be well-drained and in areas characterized by heavy soil or rocky ground may indicate archaeological potential

  Find out if your property or project area had sandy soil through:

  - site visits
  - lakebed studies and sediment borehole data

- **Distinctive bathymetric formations**

  Distinctive land formations include – but are not limited to:

  - waterfalls
  - rock outcrops or faces
  - caverns
  - mounds

  Prior to inundation such features were often important to past inhabitants as special or sacred places. The following sites may be present at – or close to – these formations:

  - burials
  - structures
  - offerings
  - rock paintings or carvings

  Find out if your property or project area has a distinctive land formation through:

  - site visits
  - aerial photographs
  - bathymetric data

- **Inundated resource extraction areas**

  Prior to inundation, the following resources were collected in these extraction areas:

  - food or medicinal plants e.g. migratory routes, spawning areas, prairie
  - scarce raw materials e.g. quartz, copper, ochre or outcrops of chert
  - resources associated with early historic industry e.g. fur trade, logging, prospecting, mining

  Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Inundated early historic settlement**

  Early Euro-Canadian settlements include – but are not limited to:

  - early military or pioneer settlement, e.g. pioneer homesteads, isolated cabins, farmstead complexes
  - early wharf or dock complexes
  - pioneers churches and early cemeteries

- **Inundated early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

  For more information, see:

  - historical maps or atlases
    - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
    - Archives of Ontario holds a large collection of historical maps and atlases
    - digital versions of historical atlases are available on the Canadian County Atlas Digital Project
  - commemorative markers or plaques such as those posted by local, provincial or federal agencies
  - municipal heritage committees or other local heritage organizations
    - for information on early historic settlements or landscape features (e.g. fences, mill races)
    - for information on commemorative markers or plaques