



Stage 1 & 2 Archaeological Assessment

Part of Lot 11, Concession 9
Geographic Township of Grimsby
Township of West Lincoln
Regional Municipality of Niagara

Prepared for:
Elite Developments
c/o Faisal Safi
102-3410 South Service Road
Burlington, Ontario
L7N 3T2

Licensee: Shane McCartney
PIF: P321-0416-2022
Original Report



Earthworks

ARCHAEOLOGICAL SERVICES INC.

Earthworks Archaeological Services Inc.
2365 Watts Road,
Haliburton, Ontario
K0M 1S0

October 26, 2022

Executive Summary

Earthworks Archaeological Services Inc. was retained to conduct a Stage 1 & 2 archaeological assessment of a 1.39 hectare area located on part of Lot 11, Concession 9, Geographic Township of Grimsby, Township of West Lincoln, Regional Municipality of Niagara, historically part of Welland County, Ontario. The assessment is undertaken in support of a proposed Zoning By-Law Amendment and Draft Plan of Subdivision Applications and was conducted as part of the requirements defined in Section 8.3.5 (d) of the *Official Plan of the Township of West Lincoln*, which permits development and site alteration on lands containing archaeological resources or areas of archaeological potential if the significant archaeological resources have been conserved by removal and documentation, or by preservation on site.

The study area contains evidence of archaeological potential. The location of the study area within 40 metres of a tributary of Twenty Mile Creek and within 300 metres of an unregistered Pre-Contact Indigenous findspot suggests the potential for locating Pre-Contact Indigenous archaeological material. Additionally, the location of the study area within close proximity to Regional Road 20, a historically documented transportation route, suggests potential for locating historic Euro-Canadian archaeological material. In summary, a Stage 2 archaeological assessment was determined to be required in order to identify and document any archaeological material that may be present. The study area contains actively or recently cultivated land, and a Stage 2 pedestrian survey was determined to be required.

The Stage 2 archaeological assessment of the study area was conducted on October 18, 2022 under PIF #: P321-0416-2022, issued to Shane McCartney, M.A. (P321). The weather during the survey was overcast and mild. The study area was ploughed and had been weathered by heavy rainfall. The topsoil was completely exposed, with an estimated surface visibility of 98% of the ploughed ground surface. At no time were weather or lighting conditions detrimental to the observation or recovery of archaeological material.

The study area was assessed through a pedestrian survey. Survey transects were spaced at a maximum of five metres apart. No archaeological material was identified during the course of the survey.

Based on the results of the Stage 1 background investigation and the subsequent Stage 2 pedestrian survey, the surveyed area is considered to be free of archaeological material. Therefore, no additional archaeological assessments are recommended.

The Ministry of Heritage, Sport, Tourism and Culture Industries is requested to review this report and provide a letter indicating their satisfaction that the fieldwork and reporting for this archaeological assessment are consistent with the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.



Table of Contents

1.0	Project Context.....	1
1.1	Development Context	1
1.2	Historic Context	2
1.2.1	Pre-Contact Indigenous History	2
1.2.2	Post-Contact Indigenous History.....	3
1.2.3	European Settlement History	3
1.2.4	Land Use History of Study Area.....	3
1.2.5	Historic Plaques	4
1.3	Archaeological Context	4
1.3.1	Current Conditions	4
1.3.2	Natural Environment	4
1.3.3	Known Archaeological Sites.....	5
1.3.4	Adjacent Archaeological Assessments	6
1.4	Summary	6
2.0	Field Methods	7
3.0	Record of Finds	8
4.0	Analysis & Conclusions.....	9
5.0	Recommendations	10
6.0	Advice on Compliance with Legislation	11
7.0	References	12
8.0	Images.....	14
9.0	Maps	17



Project Personnel

Managing Director:	Anthony Butler, M.Sc. (P310)
Licensed Archaeologist:	Shane McCartney, M.A. (P321)
Licensed Field Director:	Justina Zivic, M.Sc. (R1312)
Field Technicians:	Gary Cole (A1159)
	Kelsea Dawn, GIS (PG)
Report Production:	Shane McCartney, M.A. (P321)



1.0 Project Context

1.1 Development Context

Earthworks Archaeological Services Inc. (Earthworks) was retained to conduct a Stage 1 & 2 archaeological assessment of a 1.39 hectare area located on part of Lot 11, Concession 9, Geographic Township of Grimsby, Township of West Lincoln, Regional Municipality of Niagara, historically part of Welland County, Ontario (Map 1). The assessment is undertaken in support of a proposed Zoning By-Law Amendment and Draft Plan of Subdivision Applications (Map 2) and was conducted as part of the requirements defined in Section 8.3.5 (d) of the *Official Plan of the Township of West Lincoln*, which permits development and site alteration on lands containing archaeological resources or areas of archaeological potential if the significant archaeological resources have been conserved by removal and documentation, or by preservation on site (Township of West Lincoln 2019:100).

The objective of the Stage 1 & 2 archaeological assessment, as outlined by the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), are as follows:

- To provide information about the property's geography, history, previous archaeological fieldwork and current land condition
- To evaluate the property's archaeological potential.
- To document archaeological resources located on the property
- To determine whether any identified archaeological resources require further assessment
- To recommend Stage 3 assessment strategies for any archaeological sites determined to require additional assessment.

As part of this assessment, background research was conducted in Earthworks corporate library, the OnLand Registry Database, and the Federal Canadian Census located online at Library and Archives Canada.

Permission to access the property was provided by the proponent.



1.2 Historic Context

1.2.1 Pre-Contact Indigenous History

Table 1 provides a summary of the general culture history of southern Ontario, as based on Ellis and Ferris (1990)

Table 1: Summary of Pre-Contact Indigenous Culture History of Southern Ontario

Culture Period	Diagnostic Artifacts	Time Span (Years B.P.)	Detail
Early Paleo-Indian	Fluted Projectile Points	11,000-10,400	Nomadic caribou hunters
Late Paleo-Indian	Hi-Lo, Holcombe, Plano Projectile Points	10,400-10,000	Gradual population increase
Early Archaic	Nettling and Bifurcate Points	10,000-8,000	More localized tool sources
Middle Archaic	Brewerton and Stanly-Neville Projectile Points	8,000-4,500	Re-purposed projectile points and greater amount of endscrapers
Narrow Point Late Archaic	Lamoka and Normanskill Projectile Points	4,000-3,800	Larger site size
Broad Point Late Archaic	Genessee, Adder Orchard Projectile Points	3,800-3,500	Large bifacial tools. First evidence of houses
Small Point Late Archaic	Crawford Knoll, Innes Projectile Points	3,500-3,100	Bow and Arrow Introduction
Terminal Archaic	Hind Projectile Points	3,100-2,950	First evidence of cemeteries
Early Woodland	Meadowood Points, Cache Blades, and pop-eyed birdstones	2,950-2,400	First evidence of Vinette I Pottery
Middle Woodland	Pseudo-scallop shell	2,450-1550	Burial Mounds
	Princess Point pottery	1550-1100	First evidence of corn horticulture
Late Woodland	Levanna Point	1,100-700	Early longhouses
	Saugeen Projectile Points	700-600	Agricultural villages
	Nanticoke Notched Points	600-450	Migrating villages, tribal warfare



1.2.2 Post-Contact Indigenous History

The surrounding area enters the historic record in 1626, when Father La Roche Daillon, a French Jesuit missionary, spent three months in the Hamilton region attempting to conclude a trading alliance with the Neutral Confederacy. These negotiations ultimately failed due to opposition from Huron allies (White 1978:409). By 1638, the Neutral had expanded east to the Niagara River in response to a void left by the Wenro migrating to Huronia and the Erie migrating southwest. By the early 1640s, the Neutrals were engaged in large scale warfare with the Assistaeronons to the west while maintaining a neutral stance between the Huron and the League of Five Nations Iroquois. European influence in the region was generally restricted to the beaver pelt trade, and Aboriginal groups practiced a way of life that did not differ significantly from the pre-Contact period. By the late 1640's, the increasing scarcity of beaver pelts prompted the invasion of the Neutral by the League of Five Nations Iroquois. By 1651, the Neutral Confederacy was destroyed and its members either moved west out of Ontario or were absorbed into the League of Five Nations (Trigger 1994:57).

The region appears to have been relatively unpopulated by permanent settlements in the latter half of the seventeenth century, with much of southern Ontario used as a hunting territory by the Iroquois. However, Ojibway groups previously thought to have settled along the northern shores of Georgian Bay and Lake Superior gradually migrated into southern Ontario, and by 1707 had settled in the Niagara region (Rogers 1978:761).

By 1784, the British government purchased from the Mississauga over a million hectares of land between Lake Ontario and Lake Erie, which became known as the Between the Lakes Purchase (Surtees 1994:102). The Mississauga eventually relocated to the Grand River at New Credit in 1847.

1.2.3 European Settlement History

The study area is situated within the Geographic Township of Grimsby, which was first surveyed in 1791 by Augustus Jones (Winearls 1991:506). It first settled by United Empire Loyalists and disbanded members of Butler's Rangers following the conclusion of the American Revolutionary War in 1783. One of the main founders was Robert Nelles, a Colonel during the War of 1812 who migrated to Upper Canada in the 1780s and developed the area around Forty Mile Creek with numerous mills and a store. The first township meeting in Upper Canada was held in Grimsby in 1790, when the Town of Grimsby was founded. Early settlement radiated out from this area, and favourable farming conditions resulted in steady agricultural improvement and population growth. In 1833 the township was split into North and South Grimsby, with the study area forming part of South Grimsby Township (Coffman & Powell 1956:138). The nearby Town of Smithville was first settled by Richard Griffin and his family who arrived from New York State in 1787. It became a central milling location with the construction of a treadmill in 1810 and a water powered gristmill on Twenty Mile Creek. Smithville first became a police village in 1887 and in 1970, study area and surrounding region were amalgamated into the Township of West Lincoln as part of the larger Regional Municipality of Niagara.

1.2.4 Land Use History of Study Area

The study area is located on Lot 11, Concession 9 in the Geographic Township of Grimsby, which was first granted to Thomas Harris in 1824, although he likely settled on the property near the turn of the nineteenth century (Coffman & Powell 1956:139). The property was subsequently sold off in multiple parcels, with the study area forming a block of land in the



northern part of the lot that was sold to Isaac Merritt in 1845. The 1851 census lists Mr. Merritt as an American farmer residing in a one storey frame house (Government of Canada 1853:13). The 1862 Tremaine Map of the Counties of Lincoln and Welland list a Fisher and Nesbitt as residents on the study area (Map 3, Tile 1). However, these names do not appear in Land Registry records, and the 1861 census indicates Mr. Merritt owned 180 acres of land spread over Lots 11 & 12, Concessions 8 & 9, of which 100 had been cleared for agricultural use (Government of Canada 1863:17). Isaac Merritt is also listed as the owner in 1876 *Illustrated Historical Atlas of the Counties of Lincoln and Welland* (Map 3, Tile 4). The property remained in the possession of the Merritt Family until 1920, when Earnest Merritt sold it to Joseph and Ethel Topp. Analysis of historic aerial imagery indicates the study area has remained as agricultural land through to the present day (Map 4).

1.2.5 Historic Plaques

As per Section 1, Standard 1.1 of the *Standards and Guidelines for Consultant Archaeologists*, Earthworks consulted local historical plaques in order to inform archaeological potential and assessment strategies. No local plaques were found which informed archaeological potential on the property.

1.3 Archaeological Context

1.3.1 Current Conditions

The study area consists of an open agricultural field (Images 1 thru 5).

1.3.2 Natural Environment

The study area is situated within a clay plain (Map 5) of the Haldimand Clay Plains physiographic region of Ontario. This physiographic region lies between the Niagara Escarpment and Lake Erie. The soil within the region consists of stratified clay and till (Chapman and Putnam 1984:156-159). Surficial geology mapping indicates the study area consists of glaciolacustrine clay and silt (Map 5) and the soil of the study area is listed as Beverly soil, a mainly lacustrine silty clay with imperfect drainage in the regional soil survey (Kingston and Presant 1989:24).

The nearest water source is a tributary of Twenty Mile Creek, located approximately 40 metres north of the study area. Twenty mile creek drains into Lake Ontario approximately 17 kilometres to the northeast.

The study area is located within the Niagara District of the Lake Erie – Lake Ontario Ecoregion, which itself is situated within the Mixedwood Plains Ecozone. This region encompasses 2,185,845 hectares, and contains a diverse array of flora and fauna. It is characterized by a mix of Carolinian forest remnants of tulip-tree, black gum, sycamore, Kentucky coffee-tree, pawpaw, various oaks and hickories, and common hackberry, in addition to the more widespread sugar maple, American beech, white ash, eastern hemlock, and eastern white pine.

Typical mammals inhabiting this ecoregion include white-tailed deer, northern raccoon, striped skunk, and the Virginia opossum which has increased its distribution and abundance since the latter half of the 20th century. Characteristic birds include green heron, Virginia rail, Cooper's hawk, eastern kingbird, willow



flycatcher, brown thrasher, yellow warbler, common yellowthroat, northern cardinal, and savannah sparrow. Wild turkey has been re-introduced into the ecoregion. Herpetofauna, is diverse, including several provincially rare species (e.g., spiny softshell turtle), as well as more frequent species such as eastern red-backed salamander, American toad, eastern gartersnake, and Midland painted turtle. Longnose gar, channel catfish, smallmouth bass, yellow perch, walleye, northern hogsucker, banded killifish, and spottail shiner are among the fish species found in the lakes and rivers in this ecoregion.

(Crins et al. 2009:52)

1.3.3 Known Archaeological Sites

A search of registered archaeological sites within the MHSTCI Archaeological Sites Database was conducted. A total of 23 archaeological sites were found to be within a one-kilometre radius of the study area. A summary of these sites is provided in Table 2.

Table 2: Summary of Registered Archaeological Sites within 1 kilometre of the Study Area

Borden Number	Site Name	Time Period	Affinity	Site Type
AgGv-85		Woodland	Aboriginal	findspot
AgGv-84		Pre-Contact	Aboriginal	findspot
AgGv-83		Pre-Contact	Aboriginal	findspot
AgGv-82		Pre-Contact	Aboriginal	findspot
AgGv-81		Pre-Contact	Aboriginal	findspot
AgGv-80		Pre-Contact	Aboriginal	findspot
AgGv-78		Woodland, Early	Aboriginal	findspot
AgGv-77	Bartel Bridge	Pre-Contact	Aboriginal	Othercamp/campsite
AgGv-76	Area 12	Pre-Contact	Aboriginal	Othercamp/campsite
AgGv-75	Area 11	Pre-Contact	Aboriginal	Othercamp/campsite
AgGv-74	Area 10	Woodland, Early	Aboriginal	Othercamp/campsite
AgGv-72	Area 8	Archaic, Early	Aboriginal	Othercamp/campsite, scatter



**Earthworks Archaeological Services Inc.
Stage 1 & 2 Archaeological Assessment
Regional Road 20
Smithville**

Borden Number	Site Name	Time Period	Affinity	Site Type
AgGv-70	Area 6	Woodland, Late	Aboriginal, Iroquoian, Neutral	Othercamp/campsite
AgGv-69	Area 5	Archaic, Late	Aboriginal	Othercamp/campsite, scatter
AgGv-68	Area 4	Pre-Contact	Aboriginal	Othercamp/campsite
AgGv-67	Area 3	Archaic, Early	Aboriginal	Othercamp/campsite
AgGv-66	Area 2	Archaic, Early	Aboriginal	Othercamp/campsite, scatter
AgGv-65	Area 1	Pre-Contact	Aboriginal	Othercamp/campsite
AgGv-64	Streamside 2	Pre-Contact	Aboriginal	camp / campsite
AgGv-63	Streamside 1	Pre-Contact	Aboriginal	camp / campsite
AgGv-142	Location 7	Pre-Contact	Aboriginal	scatter
AgGv-141	Location 2	Archaic, Late	Aboriginal	findspot
AgGv-138	AC 45	Pre-Contact	Aboriginal	scatter

1.3.4 Adjacent Archaeological Assessments

The neighbouring property to the east was surveyed by Stantec Consulting Ltd. in 2016 under PIF #: P415-0080-2016. A Stage 2 test pit and pedestrian survey was undertaken, resulting in the identification of an isolated Pre-Contact Indigenous lithic scraper, with no further archaeological assessments recommended (Stantec 2016).

1.4 Summary

As documented in Section 1.0 the study area contains evidence of archaeological potential. The location of the study area within 40 metres of a tributary of Twenty Mile Creek and within 300 metres of an unregistered Pre-Contact Indigenous findspot suggests the potential for locating Pre-Contact Indigenous archaeological material. Additionally, the location of the study area within close proximity to Regional Road 20, a historically documented transportation route, suggests potential for locating historic Euro-Canadian archaeological material. In summary, a Stage 2 archaeological assessment was determined to be required in order to identify and document any archaeological material that may be present. The study area contains actively or recently cultivated land, and a Stage 2 pedestrian survey was determined to be required.

2.0 Field Methods

The Stage 2 archaeological assessment of the study area was conducted on October 18, 2022 under PIF #: P321-0416-2022, issued to Shane McCartney, M.A. (P321). The weather during the survey was overcast and mild. The study area was ploughed and had been weathered by heavy rainfall. The topsoil was completely exposed, with an estimated surface visibility of 98% of the ploughed ground surface. At no time were weather or lighting conditions detrimental to the observation or recovery of archaeological material.

The study area was assessed through a pedestrian survey (Image 6). Survey transects were spaced at a maximum of five metres apart. No archaeological material was identified during the course of the survey.

The results of the Stage 2 archaeological survey are presented in Map 7.



3.0 Record of Finds

Table 3 provides an inventory of the documentary record generated in the field.

Table 3: Information Inventory of Documentary Record

Document	Location	Description
Field Notes	Earthworks Office Project File	1 Page of Notes
Photographs	Earthworks Office Project File	14 Digital Photographs
Field Map	Earthworks Office Project File	1 Page



4.0 Analysis & Conclusions

A Stage 1 & 2 Archaeological Assessment was conducted on a 1.39 hectare area located on part of Lot 11, Concession 9, Geographic Township of Grimsby, Township of West Lincoln, Regional Municipality of Niagara, historically part of Welland County, Ontario.

A Stage 2 pedestrian survey was conducted on October 18, 2022. The Stage 2 archaeological survey did not yield any evidence of archaeological material. As a result, no additional archaeological assessments are required.



5.0 Recommendations

Based on the results of the Stage 1 background investigation and the subsequent Stage 2 pedestrian survey the study area is considered to be free of archaeological material, and no additional archaeological assessments are recommended.

The MHSTCI is requested to review this report and provide a letter indicating their satisfaction that the fieldwork and reporting for this archaeological assessment are consistent with the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.



6.0 Advice on Compliance with 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, 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 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 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.

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.

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.



7.0 References

Chapman, Lyman John and Donald F. Putnam

1984 *The Physiography of Southern Ontario*. 3rd edition. Ontario Geological Survey Special Volume 2. Ontario Ministry of Natural Resources, Toronto.

Coffman, Barbara F. & R. Janet Powell

1956 *Lincoln County 1856 – 1956*. Lincoln County Council, St. Catharines.

Crins, William J., Gray, Paul A., Uhlig, Peter W.C., and Monique C. Wester

2009 *The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions*. Technical Report, Ontario Ministry of Natural Resources, Science & Information Branch.

Ellis, Chris J. and Neal Ferris (editors)

1990 *The Archaeology of Southern Ontario to A.D. 1650*. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5.

Government of Canada

1853 Enumeration District No. 7 Township of Grimsby in the County of Lincoln. In *Census of the Canadas for 1851-1852*. Printed by order of the Board. J. Lovell, Quebec.

1863 Enumeration District No. Three of the Township of Grimsby in the County of Lincoln. In *Census of the Canadas, 1860-1861*. S.B. Foote, Quebec.

Government of Ontario

2011 *Standards and Guidelines for Consultant Archaeologists*. Ministry of Heritage, Sport, Tourism and Culture Industries, Culture Division, Programs and Services Branch, Culture Programs Unit, Toronto.

Kingston, M.S. and E.W. Presant

1989 *The Soils of the Regional Municipality of Niagara, Volume 2. Report No. 60 of the Ontario Institute of Pedology*. Agriculture Canada, Research Branch.

Rogers, E.S.

- 1978 Southeastern Ojibwa. In *Handbook of North American Indians*, William C. Sturtevant and Bruce Trigger (eds). Smithsonian Institution, Washington, D.C.

Stantec (Stantec Consulting Ltd.)

- 2016 *Stage 1-2 Archaeological Assessment: Smithville Northwest Subdivision Development*. Report on file with the Ministry of Heritage, Sport, Tourism and Culture Industries, Toronto.

Surtees, Robert J.

- 1994 Land Cessions, 1763-1830. In *Aboriginal Ontario*, Edward S. Rogers and Donald B. Smith (eds.). Dundurn Press, Toronto.

Township of West Lincoln

- 2019 *Official Plan of the Township of West Lincoln*. Available Online at URL:
<https://www.westlincoln.ca/en/build-and0invest/resources/Consolidated-Official-Nov-2019.pdf>

Trigger, Bruce G.

- 1994 The Original Iroquoians: Huron, Petun and Neutral. In *Aboriginal Ontario*, Edward S. Rogers and Donald B. Smith (eds.). Dundurn Press, Toronto.

White, Marian E.

- 1978 Neutral and Wenro. In *Handbook of North American Indians*, William C. Sturtevant and Bruce Trigger (eds). Smithsonian Institution, Washington, D.C.

Winearls, Joan

- 1991 *Mapping Upper Canada 1780-1867. An annotated bibliography of manuscript and printed maps*. University of Toronto Press. Toronto.



8.0 Images



Image 1: Study Area Conditions. Facing Northeast.



Image 2: Study Area Conditions. Facing Northwest.





Image 3: Study Area Conditions. Facing South.



Image 4: Study Area Conditions. Facing Southwest.





Image 5: Study Area Conditions. Facing Northeast.



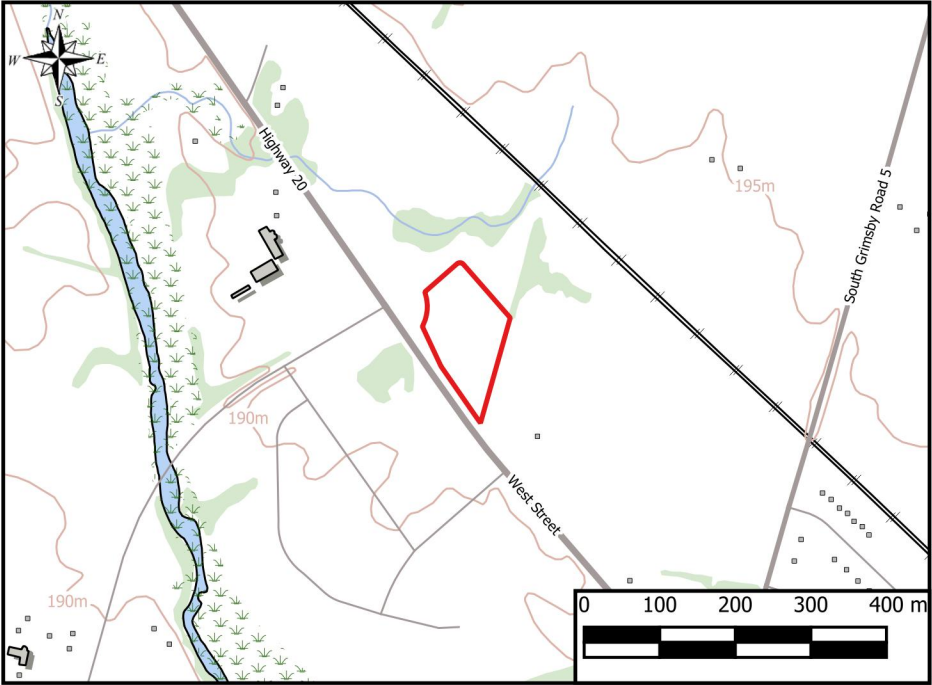
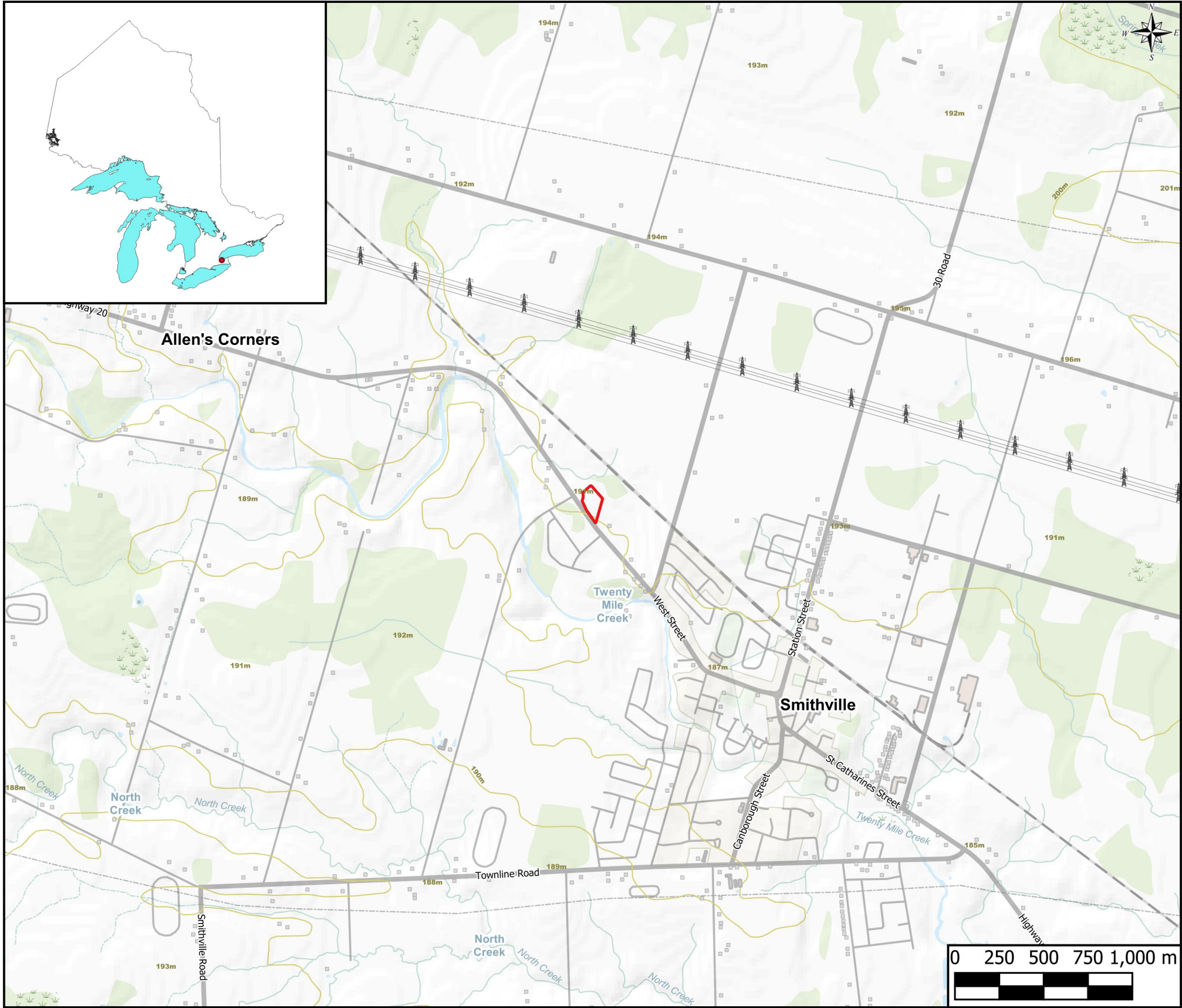
Image 6: Pedestrian Survey in Progress. Facing South.



9.0 Maps



Earthworks Archaeological Services Inc.
Stage 1 & 2 Archaeological Assessment
Regional Road 20
Smithville



Legend

Study Area

Reference:
Canvec Data. Scale 1:50000
Ontario Basic Mapping. Scale 1:10000
Niagara Region 2020 Aerial Imagery

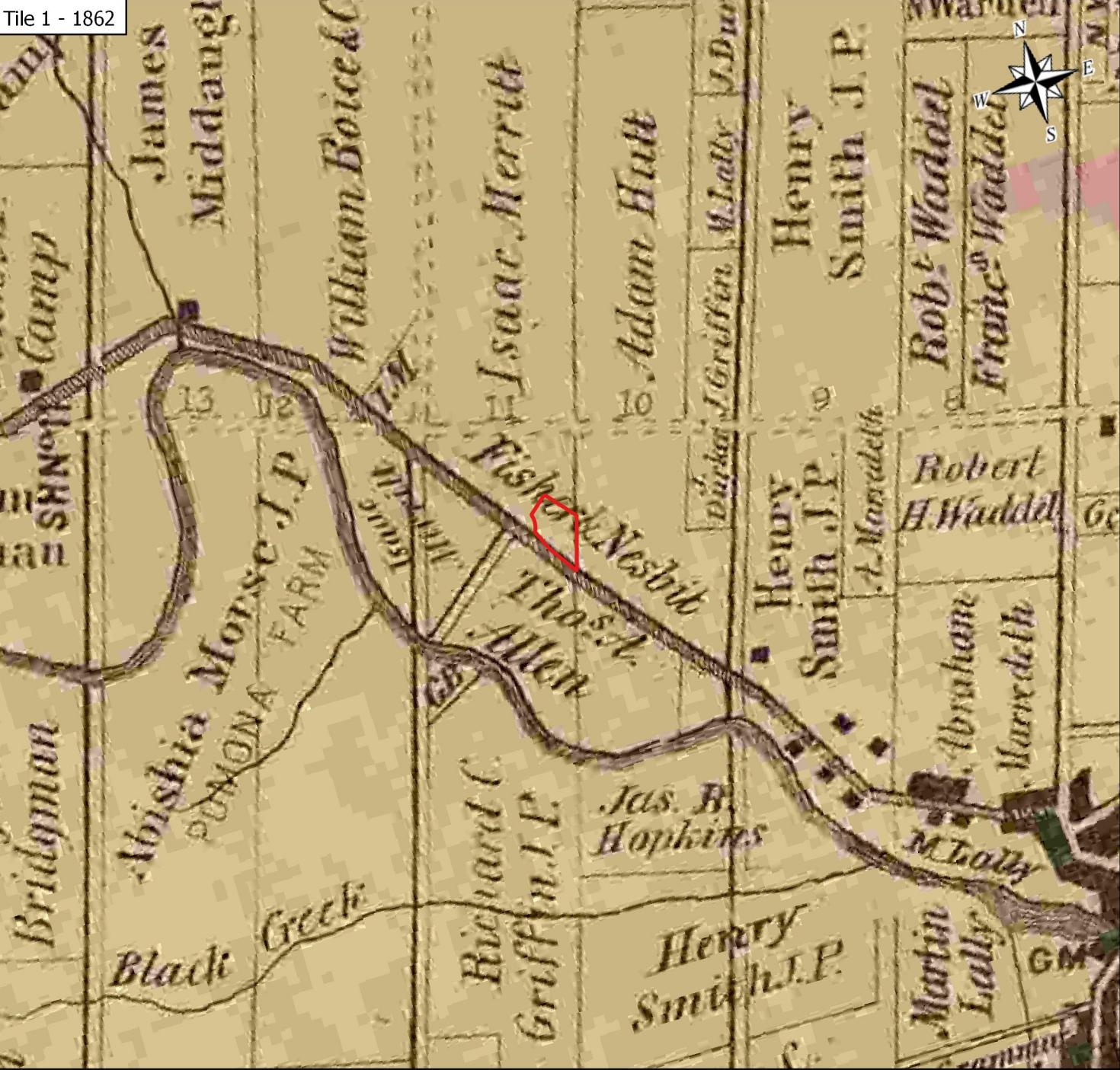
Map 1: Regional Map

**Earthworks Archaeological Services Inc.
Stage 1 & 2 Archaeological Assessment
Regional Road 20
Smithville**



Map 2: Site Plan


Tile 1 - 1862



Tile 2 - 1876



Legend

 Study Area

Not to Scale

Tile 1 - Tremaine's Map of the Counties of Lincoln and Welland, Canada West. Compiled and Drawn from actual surveys by the Publishers Geo. R. Tremaine & G.M. Tremaine. Toronto, 1862.

Tile 2 - Illustrated historical atlas of the counties of Lincoln & Welland, Ont. H.R. Page & Co. 1876

Map 3: Nineteenth Century Historic Mapping

Tile 1 - 1934



Tile 2 - 1954




Tile 3 - 1965



Tile 4 - 2000



Legend

 Study Area


Tile 1 - Niagara Region 1934 Aerial Imagery

Tile 2 - Niagara Region 1954 Aerial Imagery

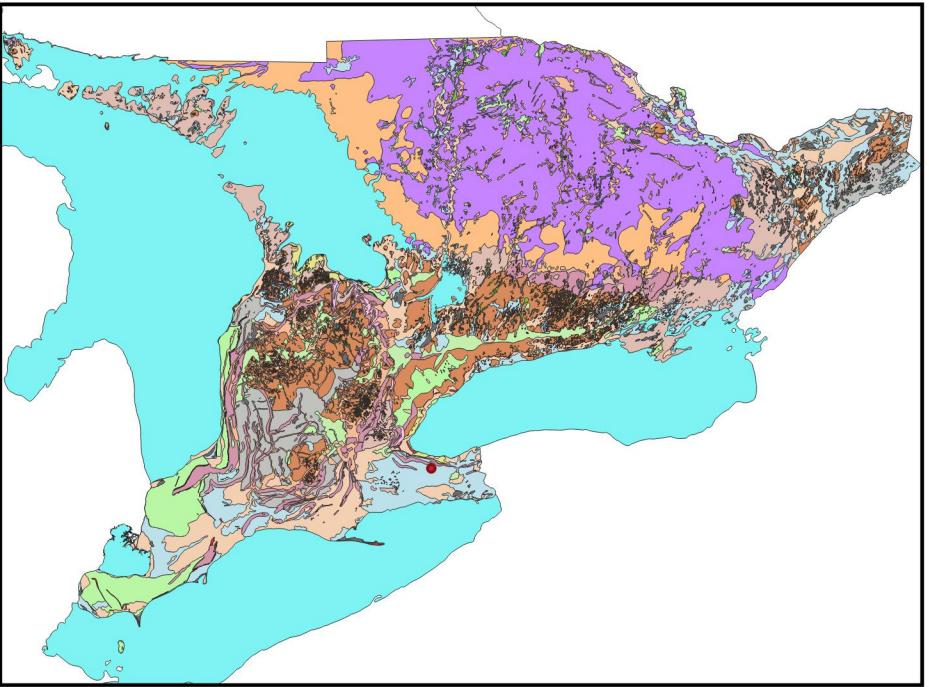
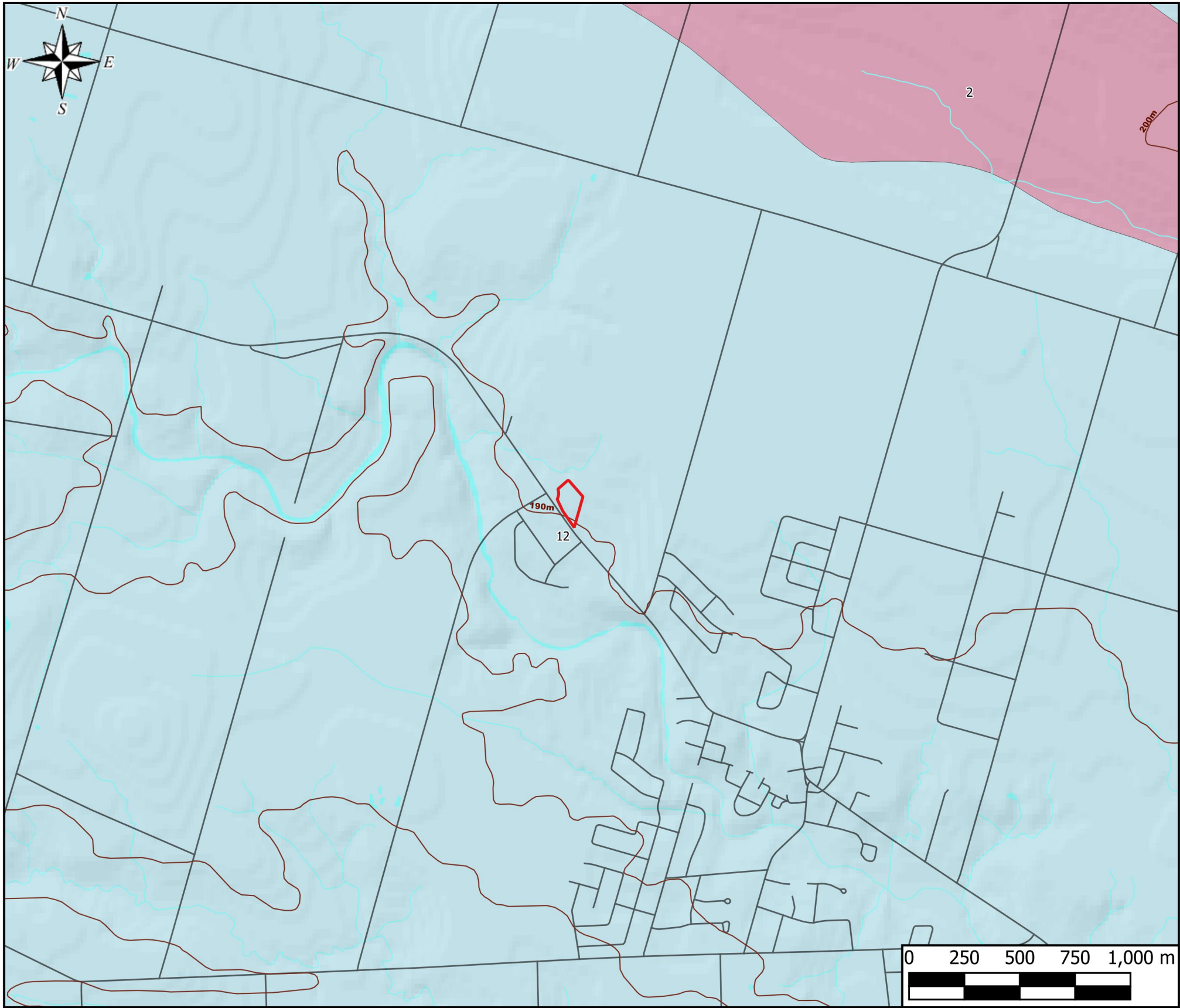
Tile 3 - Niagara Region 1965 Aerial Imagery

Tile 4 - Niagara Region 2000 Aerial Imagery

0 100 200 300 400 m



Map 4: Twentieth Century Aerial Imagery

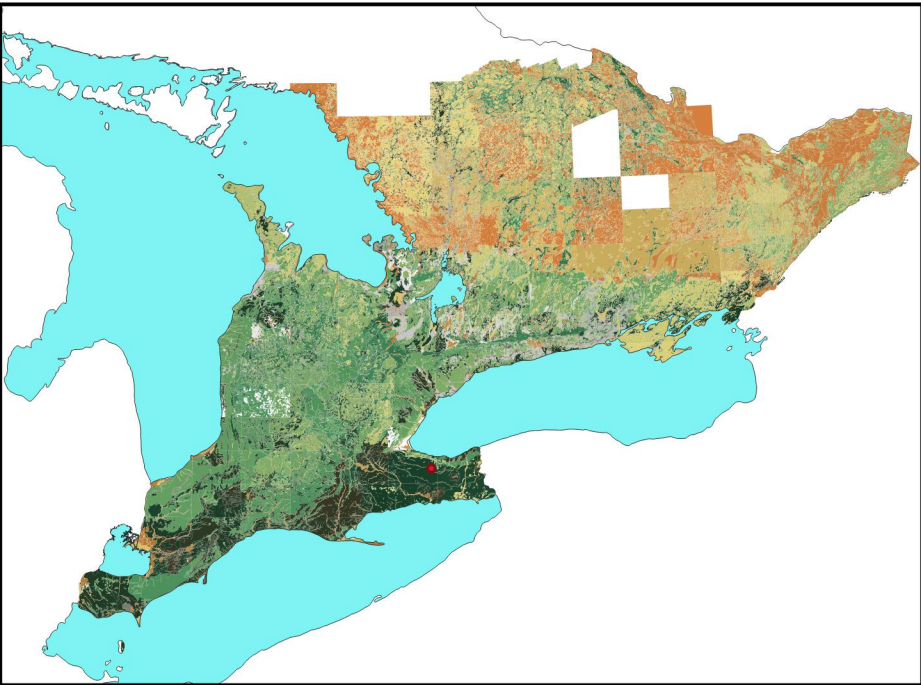
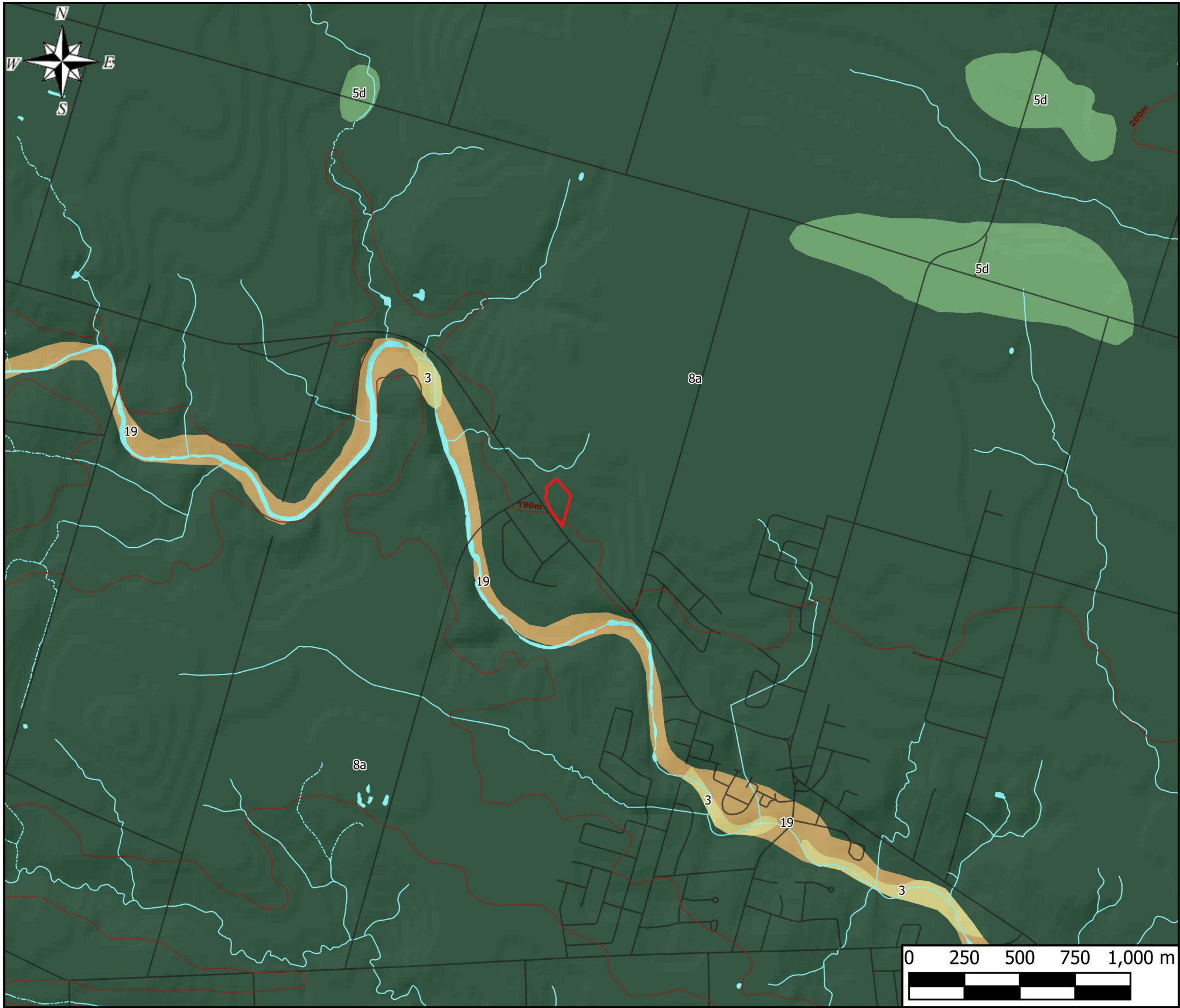


Legend

- Study Area
- Road Network
- 2 - Till Moraines
- 12 - Clay Plains

Base Data:
Chapman, L.J. and Putnam, D.F. 2007. Physiography of southern Ontario; Ontario Geological Survey, Miscellaneous Release—
Data 228.

Map 5: Physiographic Landforms



Legend

- Study Area
- Road Network
- 3 - Dolostone (Limestone, Chert, And Shale)
- 5d - Clayey Silt-Clay Till
- 8a - Glaciolacustrine Clay And Silt
- 19 - Predominantly Clay And Silt, Some Sand And Gravel

Base Data:
Ontario Geological Survey 2010. Surficial geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data
128-REV ISBN 978-1-4435-2483-4

Map 6: Surficial Geology



Legend

- Study Area
- Area Subject to Stage 2 Pedestrian Survey at 5 metre intervals
- # Photo Location and Direction

Reference:
Niagara Region 2020 Aerial Imagery

**Map 7: Stage 2
Assessment Results**