



# Draft Cultural Heritage Resources Existing Conditions Report

Twin Creeks Environmental Centre Landfill  
Optimization Project Environmental Assessment

WM Canada

*Warwick Township, Ontario*

March 2023 (revised November 2023)

Prepared by:

Archaeological Services Inc.  
528 Bathurst Street  
Toronto, ON L3T 3T1



# Executive Summary

Archaeological Services Inc. (ASI) was contracted by HDR Corporation on behalf of WM Canada (WM) to prepare a Cultural Heritage Resources Existing Conditions Report as part of the Twin Creeks Environmental Centre (TCEC) Landfill Optimization Project Environmental Assessment (EA). The purpose of this report is to present an inventory of known and potential built heritage resources (BHR) and cultural heritage landscapes (CHL) and identify existing conditions within the project study area.

The TCEC is located approximately 1 kilometre north of the Village of Watford in the Township of Warwick, southeast of the intersection of Zion Line and Nauvoo Road. The project study area consists of the On-Site Study Area, corresponding to the existing 301 hectare TCEC site, and the Off-Site Study Area, which extends approximately 1 km outside the limits of the On-Site Study Area.

There are approximately 8 years of approved landfill airspace capacity remaining at the TCEC (i.e., capacity will be reached in approximately 2031). The proposed optimization would provide additional airspace of approximately 14 million cubic metres (m<sup>3</sup>), which could extend the site life by approximately 12 years (from 2031 to 2043), and may be achieved through alternative landfill configurations or alternative methods within the existing 301 hectare TCEC site area. No changes are proposed to the size of the TCEC site area, approved service area, or annual fill rate.

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with a rural history dating back to the early-nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are no known BHRs or CHLs within the On-Site Study Area or Off-Site Study Area. An additional three potential BHRs and 19 potential CHLs were identified during background research and field review. Of these identified BHRs and CHLs, one (CHL 1) is within the On-Site Study Area, the remaining 18 CHLs and all three BHRs are within the Off-Site Study Area.

# Acronyms, Units and Glossary

## Acronyms

Acronym	Definition
ASI	Archaeological Services Incorporated
BCE	Before Common Era, similar to former use of BC
BHR	Built Heritage Resource
CE	Common Era, similar to former use of AD
CHL	Cultural Heritage Landscape
CHR	Cultural Heritage Resource
EA	Environmental Assessment
MCM	Ministry of Citizenship and Multiculturalism
MECP	Ministry of Environment, Conservation and Parks
OEAA	<i>Ontario Environmental Assessment Act</i>
TCEC	Twin Creeks Environmental Centre
ToR	Terms of Reference
WM	WM Canada

## Units

Unit	Definition
km	kilometre
m	metre
m <sup>3</sup>	cubic metre

## Glossary

Term	Definition
Approval	Permission granted by an authorized individual or organization for an undertaking to proceed. This may be in the form of program approval, certificate of approval or provisional certificate of approval.
Built Heritage Resource	"...a building, structure, monument, installation or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. built heritage resources are located on property that may be designated under Parts IV or V of the <i>Ontario Heritage Act</i> , or that may be included on local, provincial, federal and/or international registers" (Ministry of Municipal Affairs and Housing 2020, 41).

## Glossary

Term	Definition
Cultural Heritage Landscape	“...a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the <i>Ontario Heritage Act</i> , or have been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms” (Ministry of Municipal Affairs and Housing 2020, 42).
Environment	As defined by the Environmental Assessment Act, environment means: <ul style="list-style-type: none"> <li>• air, land or water;</li> <li>• plant and animal life, including human life;</li> <li>• the social, economic and cultural conditions that influence the life of humans or a community;</li> <li>• any building, structure, machine or other device or thing made by humans;</li> <li>• any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities; or</li> <li>• any part or combination of the foregoing and the interrelationships between any two or more of them (ecosystem approach).</li> </ul>
Environmental Assessment (EA)	A systematic planning process that is conducted in accordance with applicable laws or regulations aimed at assessing the effects of a proposed undertaking on the environment.
Evaluation criteria	Evaluation criteria are considerations or factors taken into account in assessing the advantages and disadvantages of various alternatives being considered.
Known Built Heritage Resource or Cultural Heritage Landscape	A known built heritage resource or cultural heritage landscape is a property that has recognized cultural heritage value or interest. This can include a property listed on a Municipal Heritage Register, designated under Part IV or V of the <i>Ontario Heritage Act</i> , or protected by a heritage agreement, covenant or easement, protected by the <i>Heritage Railway Stations Protection Act</i> or the <i>Heritage Lighthouse Protection Act</i> , identified as a Federal Heritage Building, or located within a U.N.E.S.C.O. World Heritage Site (Ministry of Tourism, Culture and Sport 2016).
Indicators	Indicators are specific characteristics of the evaluation criteria that can be measured or determined in some way, as opposed to the actual criteria, which are fairly general.
Impact	Includes negative and positive, direct and indirect effects to an identified built heritage resource and cultural heritage landscape. Direct impacts include destruction of any, or part of any, significant heritage attributes or features and/or unsympathetic or incompatible alterations to an identified resource. Indirect impacts include, but are not limited to, creation of shadows, isolation of heritage attributes, direct or indirect obstruction of significant views, change in land use, land disturbances (Ministry of Tourism Culture and Sport 2006). Indirect impacts also include potential vibration impacts.
Landfill site	An approved engineered site/facility used for the final disposal of waste. Landfills are waste disposal sites where waste is spread in layers, compacted to the smallest practical volume, and typically covered by soil.
Mitigation	Measures taken to reduce adverse impacts on the environment.
Potential Built Heritage Resource or Cultural Heritage Landscape	A potential built heritage resource or cultural heritage landscape is a property that has the potential for cultural heritage value or interest. This can include properties/project area that contain a parcel of land that is the subject of a commemorative or interpretive plaque, is adjacent to a known burial site and/or cemetery, is in a Canadian Heritage River Watershed, or contains buildings or structures that are 40 or more years old (Ministry of Tourism, Culture and Sport 2016).

## Glossary

Term	Definition
Proponent	A person who: <ul style="list-style-type: none"> <li>• carries out or proposes to carry out an undertaking; or</li> <li>• is the owner or person having charge, management or control of an undertaking.</li> </ul>
Receptor	The person, plant or wildlife species that may be affected due to exposure to a contaminant.
Significant	With regard to cultural heritage and archaeology resources, significant means “resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the <i>Ontario Heritage Act</i> . While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation” (Ministry of Municipal Affairs and Housing 2020, 51).
Terms of Reference (ToR)	A terms of reference is a document that sets out detailed requirements for the preparation of an Environmental Assessment.
Undertaking	Is defined in the Environmental Assessment Act as follows: <ul style="list-style-type: none"> <li>• An enterprise or activity or a proposal, plan or program in respect of an enterprise or activity by or on behalf of Her Majesty in right of Ontario, by a public body or public bodies or by a municipality or municipalities;</li> <li>• A major commercial or business enterprise or activity or a proposal, plan or program in respect of a major commercial or business enterprise or activity of a person or persons other than a person or persons referred to in clause (1) that is designated by the regulations; or</li> <li>• An enterprise or activity or a proposal, plan or program in respect of an enterprise or activity of a person or persons, other than a person or persons referred to in clause (a), if an agreement is entered into under section 3.0.1 in respect of the enterprise, activity, proposal, plan or program ("enterprise").</li> </ul>
Vibration Zone of Influence	Area within a 50m buffer of construction-related activities in which there is potential to affect an identified built heritage resource or cultural heritage landscape. A 50m buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature and direction (Wiss 1981; Rainer 1982; Ellis 1987; Crispino and D’Apuzzo 2001; Carman et al. 2012). This buffer accommodates the additional threat from collisions with heavy machinery or subsidence (Randl 2001).
Waste	Refuse from places of human or animal habitation; unwanted materials left over from a manufacturing process.

## Contents

Executive Summary .....	i
Acronyms, Units and Glossary .....	ii
1 Introduction .....	1
1.1 Project Context .....	1
2 Twin Creeks Environmental Centre and Study Areas .....	2
3 Methods .....	3
3.1 Data Collection and Review .....	5
3.1.1 Review of Existing Heritage Inventories .....	6
3.1.2 Review of Previous Heritage Reporting .....	7
3.1.3 Community Information Gathering .....	7
3.2 Field Studies .....	8
3.3 Characterization of Existing Conditions .....	9
4 Historical Context .....	9
4.1 Physiography .....	9
4.2 Indigenous Land Use and Settlement .....	9
4.2.1 The Long Woods Purchase, Treaty #21 and Treaty #25, and the Huron Tract Purchase, Treaty #29 .....	11
4.3 Historical Euro-Canadian Township Survey and Settlement .....	12
4.3.1 Township of Warwick .....	12
4.3.2 Village of Watford .....	12
4.4 Review of Historical Mapping .....	13
5 Built Heritage Resource and Cultural Heritage Landscape Context .....	17
5.1 Description of Field Review .....	17
5.1.1 Field Review Photographs .....	19
5.2 Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes .....	26
6 Description of Existing Conditions .....	48
6.1 Built Heritage Resources and Cultural Heritage Landscapes .....	48
6.1.1 Proximity of Known or Potential Built Heritage Resources and Cultural Heritage Landscapes to the Landfill .....	48
6.2 Summary of Existing Conditions .....	48
7 References .....	49

## Tables

Table 3-1. Evaluation Criteria, Indicators and Data Sources for Cultural Heritage Resources .....	4
Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area .....	28

## Figures

Figure 2-1. On-site and Off-site Study Areas for Cultural Heritage Resources .....	3
Figure 4-1. The study area overlaid on the 1880 <i>Illustrated Historical Atlas of the County of Lambton</i> .....	15
Figure 4-2. The study area overlaid on the 1911 Topographic Map of Strathroy .....	15
Figure 4-3. The study area overlaid on the 1933 topographic map of Strathroy .....	16
Figure 4-4. The study area overlaid on the 1954 aerial survey of Warwick.....	16
Figure 4-5. The study area overlaid on the 1996 topographic map of Strathroy .....	17
Figure 5-1. Zion Line, looking east toward the intersection with Nauvoo Road.....	19
Figure 5-2. Zion Line, looking west from the eastern end of TCEC.....	19
Figure 5-3. Zion Line, looking east toward Power Road.....	20
Figure 5-4. Nauvoo Road at the north end of the study area, looking north toward the interchange with Highway 402 .....	20
Figure 5-5. Nauvoo Road, looking south to Zion Line .....	21
Figure 5-6. Intersection of Nauvoo Road and Zion Line, looking south.....	21
Figure 5-7. Entrance to the Twin Creeks Environmental Centre, looking northeast from Nauvoo Road.....	22
Figure 5-8. The intersection of Nauvoo Road and Confederation Line, looking south .....	22
Figure 5-9. Nauvoo Road, looking north at the Watford Village core .....	23
Figure 5-10. Confederation Line, looking east toward Nauvoo Road .....	23
Figure 5-11. Confederation Line, looking west .....	24
Figure 5-12. Confederation, looking east from east of the Watford Village limits .....	24
Figure 5-13. Watford Village commercial centre, looking southwest on Nauvoo Road.....	25
Figure 5-14. Watford Village centre, looking northeast from the intersection of Nauvoo Road and Ontario Street.....	25
Figure 5-15. Warwick Street, looking north from Victoria Street.....	26
Figure 5-16. Simcoe Street, looking east from east of Nauvoo Road.....	26
Figure 5-17. Western elevation of the residence at 5876 Nauvoo Road.....	28
Figure 5-18. Obscured view of the southern and western elevations of the residence at 5966 Nauvoo Road .....	28
Figure 5-19. Southern and western elevations of the church at 5378 Nauvoo Road .....	29
Figure 5-20. View of the agricultural fields on lots 20 and 21, Concession 4 .....	29
Figure 5-21. The gates of Watford Cemetery, looking east from Nauvoo Road.....	30
Figure 5-22. View of agricultural fields on Lots 19 and 20, Concession 2 .....	30
Figure 5-23. View of the farmscape at 8060 Zion Line, looking north .....	31
Figure 5-24. Looking east down Zion Line.....	31
Figure 5-25. Entrance gates to Our Lady Help of Christians Cemetery from Nauvoo Road .....	32
Figure 5-26. View of the farmscape at 5859 Nauvoo Road, looking west.....	32
Figure 5-27. View of the farmscape at 8210 Zion Line, looking north .....	33
Figure 5-28. View of the farmscape at 8234 Zion Line, looking northwest.....	33
Figure 5-29. View of the farmscape at 8190 Confederation Line, looking northeast.....	34
Figure 5-30. The running track on Nauvoo Road, looking south .....	34
Figure 5-31. View of the farmscape at 7985 confederation Line, looking south.....	35
Figure 5-32. View of the farmscape at 5737 Nauvoo Road, looking west.....	35
Figure 5-33. View of the farmscape at 8337 Confederation Line, looking south .....	36

Figure 5-34. The Watford Pioneer Cemetery Cairn, looking south..... 36

Figure 5-35. Village of Watford's historical commercial centre. Nauvoo Road, looking southwest from Erie Street ..... 37

Figure 5-36. View of a parkette and the historic Schoolhouse, now Watford Museum, in the Village of Watford, looking northeast from the intersection of Nauvoo Road and Ontario Street..... 37

Figure 5-37. Victoria Street, looking west from Main Street ..... 38

Figure 5-38. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Key Sheet) ..... 39

Figure 5-39. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 1) ..... 40

Figure 5-40. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 2) ..... 41

Figure 5-41. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 3) ..... 42

Figure 5-42. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 4) ..... 43

Figure 5-43. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 5) ..... 44

Figure 5-44. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 6) ..... 45

Figure 5-45. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 7) ..... 46

Figure 5-46. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 8) ..... 47

## Appendices

Appendix A      Qualified Persons Involved in the Project





# 1 Introduction

This report presents a description of the existing conditions for the Cultural Heritage Resources Existing Conditions Report for the WM Canada (WM) Twin Creeks Environmental Centre (TCEC) Landfill Optimization Project in support of the environmental assessment (EA). The EA is being carried out in accordance with the requirements of the *Ontario Environmental Assessment Act (OEAA)* and Terms of Reference (ToR), which was approved by the Ministry of Environment, Conservation and Parks (MECP) on December 13, 2022.

The approved ToR included a preliminary description of the existing conditions within the area surrounding the TCEC, with the commitment that a more detailed description of existing environmental conditions would be prepared as part of the EA. In accordance with the approved ToR, additional investigative studies were carried out as necessary to generate a more detailed description of the existing natural, cultural, socio-economic, and built environments for use in the assessment of the effects of the alternative methods for the TCEC Landfill Optimization Project during the EA.

This Cultural Heritage Resources Existing Conditions Report is one component of the EA. The EA Study Report will incorporate the information presented herein as appropriate, and this report will be included with the EA Study Report as a supporting document.

## 1.1 Project Context

Archaeological Services Inc. (ASI) was contracted by HDR Corporation on behalf of WM Canada to prepare a Cultural Heritage Resources Existing Conditions Report as part of the TCEC Landfill Optimization Project EA. The purpose of this report is to present an inventory of known and potential built heritage resources (BHR) and cultural heritage landscapes (CHL) and identify existing conditions within the project study area.

The TCEC is located approximately 1 kilometre north of the Village of Watford in the Township of Warwick, southeast of the intersection of Zion Line and Nauvoo Road. The project study area consists of the On-Site Study Area, corresponding to the existing 301 hectare TCEC site, and the Off-Site Study Area, which extends approximately 1 km outside the limits of the On-Site Study Area.

There are approximately 8 years of approved landfill airspace capacity remaining at the TCEC (i.e., capacity will be reached in approximately 2031). The proposed optimization would provide additional airspace of approximately 14 million cubic metres (m<sup>3</sup>), which could extend the site life by approximately 12 years (from 2031 to 2043), and may be achieved through alternative landfill configurations or alternative methods within the existing 301 hectare TCEC site area. No changes are proposed to the size of the TCEC site area, approved service area, or annual fill rate.

All activities carried out during this assessment of cultural heritage resources were completed in accordance with the *Ontario Heritage Act* (Ontario Heritage Act, R.S.O. c. O.18, 1990, as amended in 2019), the *Ontario Environmental Assessment Act* (OEAA) (Ministry of the Environment 1990), and the approved ToR.

## 2 Twin Creeks Environmental Centre and Study Areas

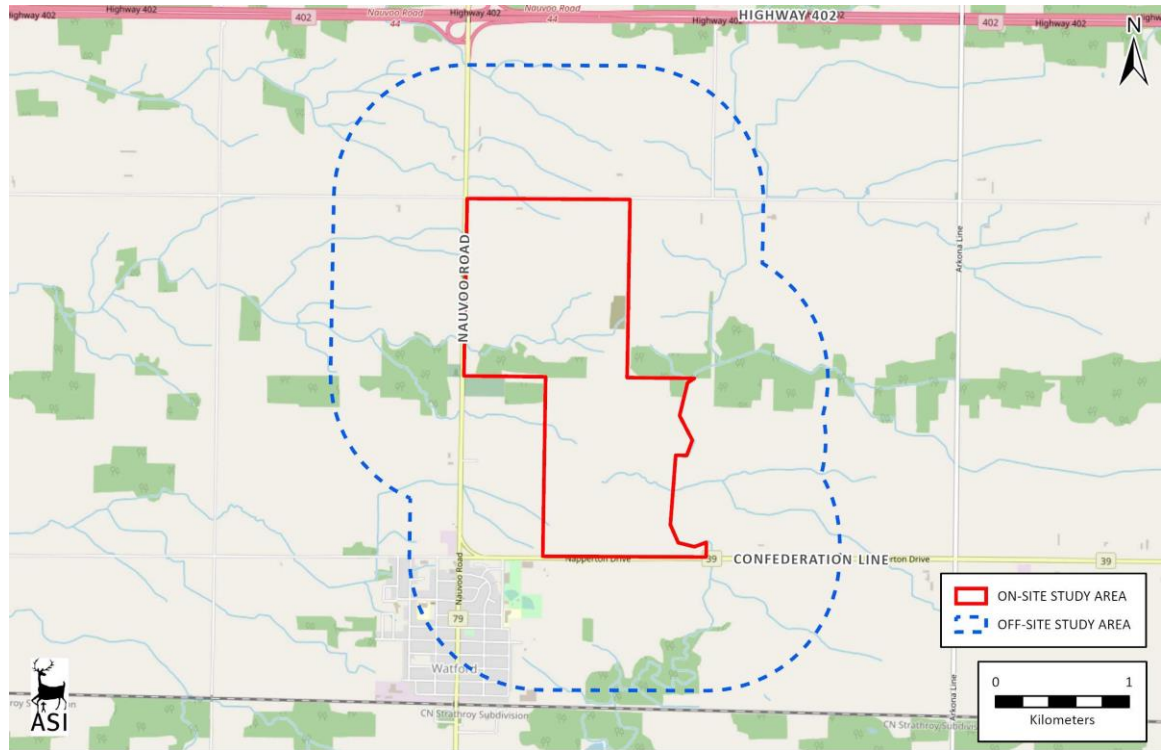
During the EA, existing conditions and potential effects will be considered in the context of two study areas: on-site and off-site. The general study areas proposed for the purposes of the EA are (**Figure 2-1**):

- On-site Study Area: the existing TCEC.
- Off-site Study Area: the lands within the vicinity of the TCEC extending approximately 1 km out from the On-site Study Area.

These study areas have been utilized for the Cultural Heritage Resources Existing Conditions Report, and together are referred to herein as the project study area.

This project study area has been defined as inclusive of those lands that may contain cultural heritage resources (CHR), specifically BHR or CHL that may be subject to direct or indirect impacts as a result of the proposed undertaking. The project study area is located in the Township of Warwick.

**Figure 2-1. On-site and Off-site Study Areas for Cultural Heritage Resources**



### 3 Methods

This Cultural Heritage Resources Existing Conditions Report was developed based on the evaluation criteria, indicators, and data sources included in the approved ToR, which were developed in consultation with government agencies and other stakeholders. The evaluation criteria, rationale, indicators and data sources used for Cultural Heritage Resources as per the approved ToR are provided in **Table 3-1**.

**Table 3-1. Evaluation Criteria, Indicators and Data Sources for Cultural Heritage Resources**

Evaluation Criteria	Rationale	Indicators	Data Sources
<b>Cultural Environment</b>			
Cultural Heritage Resources (Built Heritage Resources and Cultural Heritage Landscapes)	Activities related to construction and operation of the landfill may result in direct or indirect effects on identified built heritage resources and cultural heritage landscapes.	<ul style="list-style-type: none"> <li>• Proximity of known or potential cultural heritage resources to the landfill (known/potential built heritage resources and cultural heritage landscapes will be assessed for potential direct or indirect effects).</li> <li>• Direct impacts may include: the destruction of any, or part of any, significant heritage attributes or features; and alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance.</li> <li>• Indirect impacts may include: shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden; and isolation of a heritage attribute from its surrounding environment, context or a significant relationship; direct or indirect obstruction of significant views or vistas within, from, or of built and natural features; a change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces; and land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.</li> </ul>	<ul style="list-style-type: none"> <li>• Published data sources</li> <li>• Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes (MTCS 2016)</li> <li>• Ontario Heritage Tool Kit (MTCS 2006)</li> <li>• Commemorative statements</li> <li>• Proposed facility characteristics</li> <li>• Landfill design and operations data</li> <li>• Viewshed analysis</li> <li>• Previous EA reports</li> <li>• Municipal Heritage Inventories and Staff Reports</li> <li>• Provincial and Federal Heritage Registers and Inventories</li> <li>• Township of Warwick, MHSTCI, Ontario Heritage Trust, and Walpole Island First Nation consultation</li> <li>• Field survey results</li> <li>• Historical mapping, historical topographical maps and aerial photographs</li> </ul>

## 3.1 Data Collection and Review

The characterization of the existing cultural heritage conditions of the On-Site and Off-Site Study Areas required the following tasks:

1. Municipal, provincial and federal heritage inventory and database review. This task involved review of available municipal, provincial, and federal registers and databases that identify known BHRs and CHLs, and previously completed cultural heritage studies completed during the previous EA for this facility (Archaeological Services Incorporated 2005).
2. Agency and stakeholder consultation. Agency and stakeholder consultation and engagement was carried out as part of the preparation of the ToR and EA. Municipal and provincial heritage staff were consulted to determine if any previously identified BHRs and CHLs, including those listed by the municipality, designated under Part IV or Part V of the *Ontario Heritage Act*, and those subject to any Federal recognition are located within the On-Site or Off-Site Study Areas. Consultation with interested Indigenous groups was conducted by ASI to determine if the project area contains any lands known to hold special significance or any features of known Indigenous interest.
3. Background historical research. This task includes conducting historical research for the On-Site and Off-Site Study Areas and surrounding historical settlements to establish the Indigenous land use and settlement and the historical Euro-Canadian Township survey and settlement. Historical documents including local historical records, census records, and land ownership records, historical mapping, and aerial photographs were consulted to establish the historical development and settlement history of the project study area. Background historical document review aids in the determination of approximate construction dates of structures, transportation features, and other landscape features within the project study area. As part of the historical map review, project-specific mapping was produced to illustrate the On-Site and Off-Site Study Areas overlaid on historical mapping and aerial photography to demonstrate the development and evolution of the project study area over time.
4. Field review to document existing conditions. This task was completed following consultation and background historical research to locate known BHRs and CHLs and to identify any potential BHRs and CHLs identified during background research. New potential BHRs and CHLs were also identified in field review by following the Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes (Ministry of Citizenship and Multiculturalism 2016).
5. Preparation of an inventory of known and potential BHRs and CHLs within the project study area. This task includes compiling the results of the heritage inventory and database review, stakeholder consultation, background historical research, and field review to produce an inventory of known and potential BHRs

and CHLs within the project study area. This inventory includes photographic documentation and description of general features and characteristics, and the rationale for identifying such features.

Outputs of the data collection and review, including the identification of known and potential BHRs and CHLs within the On-Site and Off-Site Study Area, will allow the project team to avoid and/or minimize potential effects to identified BHRs and CHLs during the design of the alternative methods through avoidance or by establishing suitable mitigation measures. This Cultural Heritage assessment was completed following the guidance presented in, and ensuring compliance with the Ontario Heritage Tool Kit (Ministry of Culture 2006), the Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes (Ministry of Citizenship and Multiculturalism 2016), and the Guide to Environmental Assessment Requirements for Waste Management Projects (Ministry of the Environment 2016).

### 3.1.1 Review of Existing Heritage Inventories

A number of resources were consulted in order to identify previously identified built heritage resources and cultural heritage landscapes within the project study area. These resources, reviewed on 5 October, 2022, include:

- Historical maps (including historical atlases, topographic maps, and aerial photography);
- The *Ontario Heritage Act Register* (Ontario Heritage Trust n.d.);
- The *Places of Worship Inventory* (Ontario Heritage Trust n.d.);
- The inventory of Ontario Heritage Trust easements (Ontario Heritage Trust n.d.);
- The Ontario Heritage Trust's *An Inventory of Provincial Plaques Across Ontario: a PDF of Ontario Heritage Trust Plaques and their locations* (Ontario Heritage Trust 2018);
- Inventory of known cemeteries/burial sites in the Ontario Genealogical Society's online databases (Ontario Genealogical Society n.d.);
- Canada's Historic Places website: available online, the searchable register provides information on historic places recognized for their heritage value at the local, provincial, territorial, and national levels (Parks Canada n.d.);
- Directory of Federal Heritage Designations: a searchable on-line database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses (Parks Canada n.d.);
- Canadian Heritage River System: a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage (Canadian Heritage Rivers Board and Technical Planning Committee n.d.); and

- United Nations Educational, Scientific and Cultural Organization (U.N.E.S.C.O.) World Heritage Sites (U.N.E.S.C.O. World Heritage Centre n.d.).

### 3.1.2 Review of Previous Heritage Reporting

Additional cultural heritage studies undertaken within parts of the project study area were also reviewed. These include:

- Stage 1 and 2 Archaeological Resource Assessment, Warwick Landfill Expansion Project (Archaeological Services Inc. 2001);
- Warwick Landfill Expansion Environmental Assessment, Cultural Heritage Resources (Archaeological Services Incorporated 2005);
- Stage 3 Archaeological Assessment Sites AfHI-8 to -42, and -45, Warwick Landfill Expansion (Archaeological Services Inc. 2007); and
- Stage 1 and 2 Archaeological Assessment, Highway 402 and County Road 79 Improvements Class Environmental Assessment (Archaeological Services Inc. 2008).

### 3.1.3 Community Information Gathering

The following individuals, groups, and/or organizations were contacted to gather information on known and potential BHRs and CHLs, active and inactive cemeteries, and areas of identified Indigenous interest within the project study area:

- The Township of Warwick planning staff (email communication March 26, 2021). Email correspondence confirmed that there are no known BHRs or CHLs within the Off-Site Study Area. In a follow up email (email communication February 28, 2023), planning staff confirmed that there were still no known BHRs or CHLs within the project study area.
- The Ministry of Tourism, Culture and Sport (email communication February 25, 2021). Email correspondence confirmed there are no properties designated by the Minister and they are not aware of any Provincial Heritage Properties within the project study area. A follow up email was sent (email communication February 24, 2023), and a response on March 2, 2023 confirmed that there are still no properties designated by the Minister and they are not aware of any Provincial Heritage Properties within the project study area.
- The Ontario Heritage Trust (email communication March 1, 2021). Email correspondence confirmed there are no known BHRs or CHLs within the project study area. A follow up email was sent (email communication February 24, 2023), and a response on March 3, 2023 confirmed that there are no Heritage Conservation Easements or Trust-owned properties within the On-Site or Off-Site Study Areas.



- Chief Chris Plain, Aamjiwnaang First Nation (email communication 17 August 2023). Email correspondence enquired if there were any known or potential BHRs or CHLs that are of interest to the community that they would be interested in sharing. A request for information on the community's history within the study area was also requested. No feedback was received by the time of report submission.
- Chief Dan Miskokomon; Dean Jacobs, Consultation Manager; and Janet MacBeth, Project Review Coordinator, Walpole Island First Nation (email communication 17 August 2023). Email correspondence enquired if there were any known or potential BHRs or CHLs that are of interest to the community that they would be interested in sharing. A request for information on the community's history within the study area was also requested. No feedback was received by the time of report submission.
- Chief Kimberly Bressette, Chippewas of Kettle and Stony Point First Nation (email communication 17 August 2023). Email correspondence enquired if there were any known or potential BHRs or CHLs that are of interest to the community that they would be interested in sharing. A request for information on the community's history within the study area was also requested. Email and phone discussions with Jordan George, Communications Specialist, and A.S.I. staff completing the associated Stage 1 Archaeological Assessment for this project were completed on 5 and 29 September and 4 and 5 October 2023. Discussions provided some additional context and information on treaties concerning the study area. This information was added into the November 2023 draft report.
- Chief J. Todd Cornelius, Oneida Nation of the Thames (email communication 17 August 2023). Email correspondence enquired if there were any known or potential BHRs or CHLs that are of interest to the community that they would be interested in sharing. A request for information on the community's history within the study area was also requested. No feedback was received by the time of report submission.
- Chippewas of the Thames First Nation (email communication by HDR on behalf of A.S.I. on 17 August 2023). Email correspondence enquired if there were any known or potential BHRs or CHLs that are of interest to the communities that they would be interested in sharing. A request for information on the community's history within the study area was also requested. A response on 28 August 2023 confirmed that the Chippewas of the Thames First Nation had moderate concern in the project and additional consultation, including project meetings, were required. The specifics of this consultation were ongoing at the time of the November 2023 draft report submission.

## 3.2 Field Studies

A field review was completed following consultation and background historical research to locate known BHRs and CHLs and to identify any potential BHRs and CHLs identified during background research. Any new potential BHRs or CHLs

identified in field review were identified by following the Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes (Ministry of Tourism, Culture and Sport 2016).

### 3.3 Characterization of Existing Conditions

The existing conditions for Cultural Heritage Resources were characterized as follows:

1. Information collected from the sources identified in **Section 3.1** were reviewed and summarized;
2. Field studies were undertaken to survey known BHRs or CHLs and identify any potential additional BHRs and CHLs (**Section 3.2**); and
3. Information from all sources was compiled by environmental criterion.

## 4 Historical Context

This section provides a brief summary of historical research. A review of available primary and secondary source material was undertaken to produce a contextual overview of the study area, including a general description of physiography, Indigenous land use, and Euro-Canadian settlement.

### 4.1 Physiography

The project study area is situated within the Horseshoe Moraines physiographic region of southern Ontario (Chapman & Putnam 1984). The Horseshoe Moraine physiographic region of southern Ontario forms the core of a horse-shoe shaped area flanking the upland that lies to the west of the highest part of the Niagara cuesta (Chapman & Putnam 1984). The southwestern limb of the region, located in the southern part of Huron County, has a fairly simple landscape consisting of morainic ridges composed of pale brown, hard calcareous, fine-textured till, with a moderate degree of stoniness. Huron clay loam is the most representative soil type, and it occurs widely throughout the region.

### 4.2 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years ago, or 11,000 Before the Common Era (BCE) (Ferris 2013). During the Paleo period (c. 11,000 BCE to 9,000 BCE), groups tended to be small, nomadic, and non-stratified. The population relied on hunting, fishing, and gathering for sustenance, though their lives went far beyond subsistence strategies to include cultural practices including, but not limited to, art and astronomy. Fluted points, beaked scrapers, and gravers are among the most important artifacts to have been found at various sites throughout southern Ontario, and particularly along the shorelines of former glacial lakes. Given the low regional

population levels at this time, evidence concerning Paleo-Indian period groups is very limited (C. J. Ellis & Deller 1990).

Moving into the Archaic period (c. 9,000 BCE to 1,000 BCE), many of the same roles and responsibilities continued as they had for millennia, with groups generally remaining small, nomadic, and non-hierarchical. The seasons dictated the size of groups (with a general tendency to congregate in the spring/summer and disperse in the fall/winter), as well as their various sustenance activities, including fishing, foraging, trapping, and food storage and preparation. There were extensive trade networks which involved the exchange of both raw materials and finished objects such as polished or ground stone tools, beads, and notched or stemmed projectile points. Furthermore, mortuary ceremonialism was evident, meaning that there were burial practices and traditions associated with a group member's death (C. J. Ellis et al. 2009; C. J. Ellis & Deller 1990).

The Woodland period (c. 1,000 BCE to 1600 CE) saw several trends and aspects of life remain consistent with previous generations. Among the more notable changes, however, was the introduction of pottery, the establishment of larger occupations and territorial settlements, incipient horticulture, more stratified societies, and more elaborate burials. Later in this period, settlement patterns, foods, and the socio-political system continued to change. A major shift to agriculture occurred in some regions, and the ability to grow vegetables and legumes such as corn, beans, and squash ensured long-term settlement occupation and less dependence upon hunting and fishing. This development contributed to population growth as well as the emergence of permanent villages and special purpose sites supporting those villages. Furthermore, the socio-political system shifted from one which was strongly kinship based to one that involved tribal differentiation as well as political alliances across and between regions (Birch et al. 2021; Dodd et al. 1990; C. J. Ellis & Deller 1990; Williamson 1990).

The arrival of European trade goods in the sixteenth century, Europeans themselves in the seventeenth century, and increasing settlement efforts in the eighteenth century all significantly impacted traditional ways of life in southern Ontario. Over time, war and disease contributed to death, dispersion, and displacement of many Indigenous peoples across the region. The Euro-Canadian population grew in both numbers and power through the eighteenth and nineteenth centuries and treaties between colonial administrators and First Nations representatives began to be negotiated.

The project study area is within an area that borders the Long Woods Purchase, or Treaties #21 and #25, and The Huron Tract Purchase, Treaty #29, of the Upper Canada Land Surrenders.

#### 4.2.1 The Long Woods Purchase, Treaty #21 and Treaty #25, and the Huron Tract Purchase, Treaty #29

The Study Area is within an area that borders the Long Woods Purchase (Treaties No. 21 and 25 of the Upper Canada Land Surrenders) and the Huron Tract Purchase (Treaty 29). The area is the traditional territory of Walpole Island First Nation, Chippewas of the Thames First Nation, Aamjiwnaang First Nation, Chippewas of Kettle and Stony Point First Nation, Caldwell First Nation, the Oneida Nation of the Thames and the Chippewas of the Thames First Nation.

On October 16, 1818, several Anishinaabeg Chiefs met with John Askin at Amherstburg. An agreement was struck to sell land south of Lake Huron. A provisional treaty agreement was signed for the Longwoods Treaty Region on March 9, 1819 (Treaty #21). The terms were subsequently modified for the final agreement, Treaty #25, signed on July 8, 1822. The final agreement, Treaty #29, was not signed until eight years later, on July 10, 1827.

The surrendered treaty lands for the Longwoods Treaty covered 552,190 acres (223,463 hectares) of unceded land between Treaty #7, Treaty #6, and Treaty #2 along the Thames River between the Delaware village in London Township and the Moravian Village in Oxford Township. It includes the current communities of Strathroy and Mt. Brydges.

The final agreement for the neighboring Huron Tract Treaty #29 was not signed until eight years later, on July 10, 1827. This treaty also had a "provisional" agreement that was enshrined in Treaty #27 ½. The Huron Tract comprises 2,200,000 acres (890,308 hectares) of acres of land south of Lake Huron up to the Nine Mile river and bordering, to the south and east, the land ceded in Treaties #7, #21, #6, and #3. It includes most of the drainage of the St. Clair River and the present communities of Stratford and Sarnia.

The Anishinaabeg Chiefs retained land for the use of their communities below the St. Clair River rapids, at Sombra Township, at Kettle Point, and at the Ausable River. The signatory bands agreed on an annual payment of £1,100 to be distributed equally between the 460 persons inhabiting the tract in 1825.

The signees on the side of the Anishinaabeg included Wawanosh, Osawip, Shashawinibisie, Pukinince, Negig, Cheebican, Mukatuokijigo, Mshinikaibik, Animikince, Peetawtick, Shawanipinissie, Saganash, Annotowin, Pinessiwagum, Shaiowkima, Chekateyan, Mokeetchewan, and Quaikeegon. The signees on the British side included Superintendent of Indian Affairs George Ironside, Captain Joseph de la Hay and Lieutenant William Taylor of the 70<sup>th</sup> regiment, Lieutenant H.D.C. Douglas, and M.P. Bailey (Crown-Indigenous Relations and Northern Affairs, 2016a; Surtees, 1984, pp. 80–85).

Implications relating to un-surrendered harvesting and gathering rights on these "surrendered" treaty lands still plays a large part in duty to consult processes today, as well as concerns over cumulative effects impacting unceded reserved lands and un-surrendered fishing rights in Lake Huron that these First Nations continue to hold jurisdiction upon.

## 4.3 Historical Euro-Canadian Township Survey and Settlement

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 that typically followed the highlands adjacent to various creeks and rivers (ASI 2006). Early European settlements occupied similar locations as Indigenous settlements as they were generally accessible by trail or water routes and would have been in locations with good soil and suitable topography to ensure adequate drainage.

Historically, the project study area is located in the former Township of Warwick, County of Lambton in parts of Lots 17-22, Concession 2 South of Egremont Road; Lots 18-22 and parts of Lots 17 and 23, Concession 3 South of Egremont Road; Lots 19-22 and parts of Lots 17, 18, and 23, Concession 4 South of Egremont Road; and parts of Lots 18-23 Concession 5 South of Egremont Road.

### 4.3.1 Township of Warwick

The first survey of Warwick Township occurred in 1832 by Peter Carrol, who described the land as level, fertile, and well suited to agriculture. The name Warwick was chosen after a county in England. In 1836 the Township of Warwick had a population numbering 472. The population grew substantially to 3330 in 1859 after the Grand Trunk and Great Western railways began operations in the area. By 1869 Warwick was largely cleared and settled with a thriving agricultural industry. (Mika and Mika 1983; Stott 2008).

### 4.3.2 Village of Watford

Watford is a village in the Township of Warwick and is located to the south of the TCEC within the southwestern limit of the Off-Site Study Area. It was first known as Brown's Corners after Richard Brown, an early settler who arrived in 1853. When the Great Western Railway was built in 1851, the community relocated to be nearer to the tracks. The village was incorporated in 1873 and the name Watford was chosen after a city in Hertfordshire County in England, or by Colonel Brown after his hometown of Watford

in Ireland. In the 1880s a great fire caused by Guy Fawkes Night celebrations destroyed much of the village.

The village is also known as the birthplace of the “Maxmobile”, the first hand-made automobile in Canada, built by Watford resident David A. Maxwell in 1900. David A. Maxwell started his career as a blacksmith but became well-known in the area as a capable mechanic and ran Watford’s first service station. The “Maxmobile” can still be seen on display at the Watford Museum.

Watford retains its historical character as a small rural agricultural community and is located south of the intersection of Nauvoo Road and Confederation Line. (Township of Warwick 2018; Mika and Mika 1983; Dillon n.d.; “Maxwell” 2022).

## 4.4 Review of Historical Mapping

The 1880 Illustrated Historical Atlas of the County of Lambton (Belden 1880) was examined to determine the presence of historical features within the study area during the nineteenth century (**Figure 4-1**). Historically, the project study area is located in the former Township of Warwick, County of Lambton on parts of Lots 17-22, Concession 2 South of Egremont Road; Lots 18-22 and parts of Lots 17 and 23, Concession 3 South of Egremont Road; Lots 19-22 and parts of Lots 17, 18, and 23, Concession 4 South of Egremont Road; and parts of Lots 18-23 Concession 5 South of Egremont Road.

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

The 1880 Illustrated Historical Atlas of the County of Lambton (Belden 1880) shows the study area within a primarily rural agricultural context with the village of Watford at the southwest corner of the Off-Site Study Area. Nauvoo Road (County Road 79), Confederation Line, and Zion Line are historically surveyed roads that follow alignments similar to the present. Arkona Road is depicted as a planned road from Zion Line to the south end of the Off-Site Study Area. A structure is located at the south of the lot on the southwest corner of the On-Site Study Area. Three additional structures are located to its immediate south and west within the Off-Site Study Area and another is located to the east of Arkona Road. A cemetery is shown at the southeast corner of Lot 18 Concession 4. The village of Watford occupies the southwest corner of the Off-Site Study Area on both sides of Nauvoo Road, south of

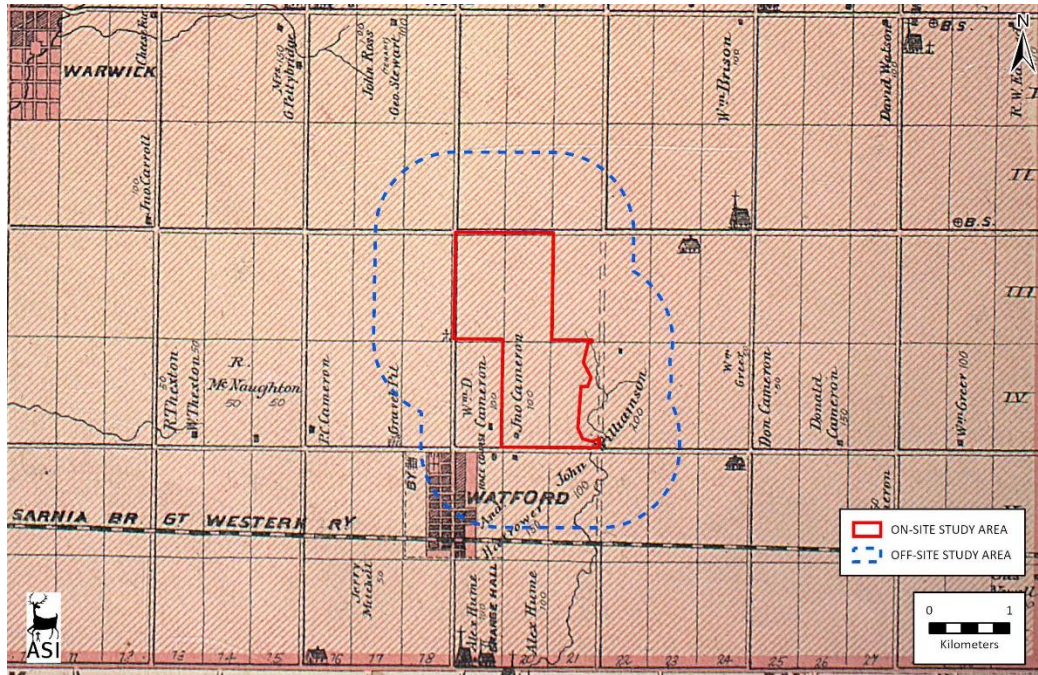
Confederation Line. A racecourse is shown on the south side of Confederation Line, east of the village limits (**Figure 4-1**).

In addition to nineteenth-century mapping, historical topographic mapping and aerial photographs from the twentieth century were examined. This report presents maps and aerial photographs from 1911, 1933, 1954, and 1996 (**Figure 4-2** to **Figure 4-5**). These do not represent the full range of maps consulted for the purpose of this study but were judged to cover the full range of land uses that occurred in the area during this period.

Mapping from the early twentieth century shows the project study area continuing in a primarily rural agricultural context with some development along the major roadways and in the village of Watford. Nauvoo Road (County Road 79), Confederation Line, and Zion Line are all depicted as metalled (all-weather, paved) roads. Arkona Road is an unmetalled road (i.e., gravel/dirt road) which terminates approximately halfway between Confederation Line and Zion Line. Confederation Line has a telephone or telegraph line running along its northern side and a wooden bridge across a creek at the southeast corner of the On-Site Study Area. The creek runs through the eastern side of the Off-Site Study Area in a generally north-south alignment. At the north end of this waterway, where it crosses Zion Line, there are three bridges: two metal and one wood. Two cemeteries are now depicted on either side of Nauvoo Road (County Road 79) approximately halfway between Zion Line and Confederation Line and an additional cemetery is shown on the south side of Confederation Line, just north of the village of Watford. The village of Watford shows some development with a mixture of wood and stone structures. The village is also shown to contain both a telegraph and telephone office (**Figure 4-2**). Topographic mapping from 1933 shows little development in the study area. Zion Line is depicted as a paved road under 20 feet wide and Confederation Line and Nauvoo Road as paved roads over 20 feet wide (**Figure 4-3**).

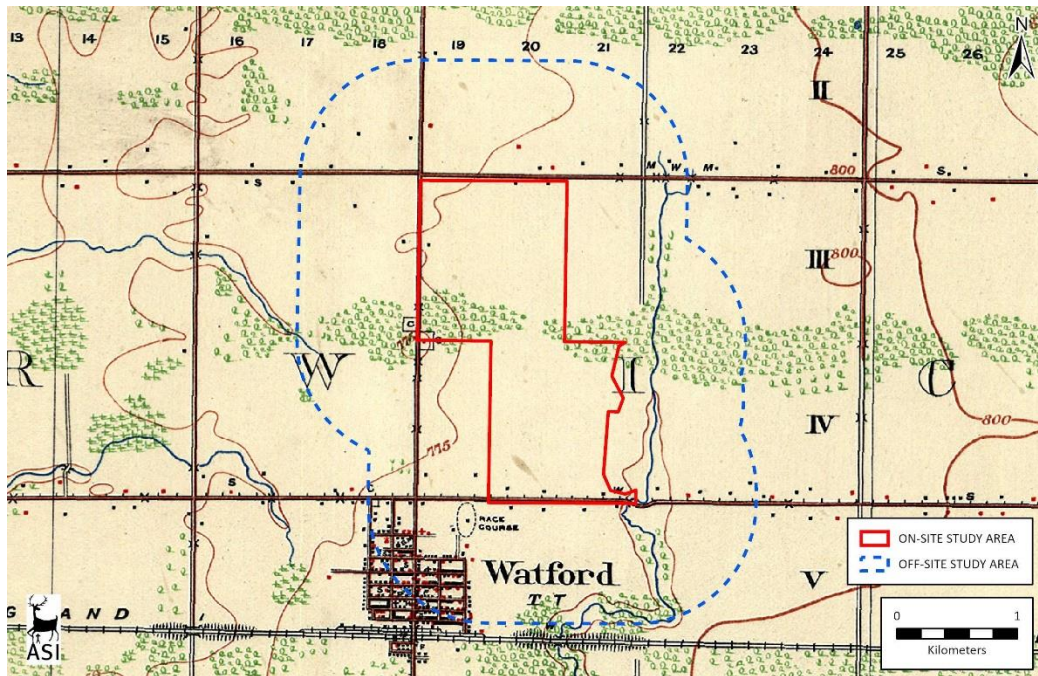
Aerial photographs from 1954 show that the project study area has remained in a generally rural agricultural context with little development in the study area (**Figure 4-4**). Topographic mapping from 1994 shows a dump on the east side of the On-Site Study Area, south of Zion Line. Mapping from this period shows considerable development in the village of Watford, which has expanded its village limits; however, the area continues to be primarily rural agricultural with structures and farmsteads along Confederation Line, Nauvoo Road, and Zion Line (**Figure 4-5**).

**Figure 4-1. The study area overlaid on the 1880 *Illustrated Historical Atlas of the County of Lambton***



Source: Base Map: Belden 1880.

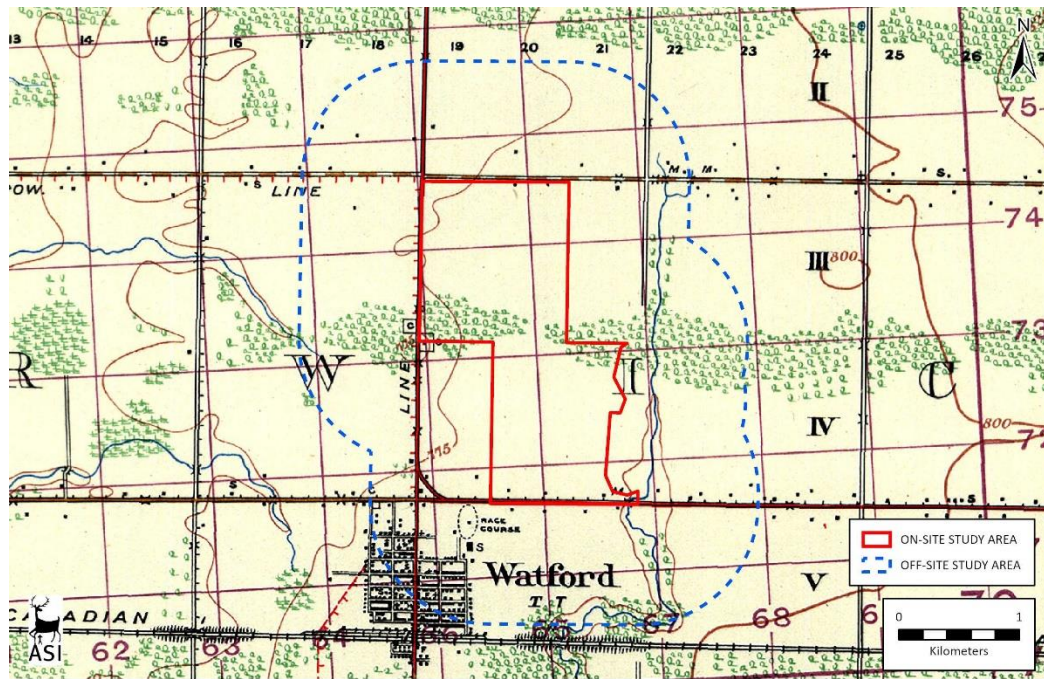
**Figure 4-2. The study area overlaid on the 1911 Topographic Map of Strathroy**



Source: Base Map: Department of Militia and Defence 1911.

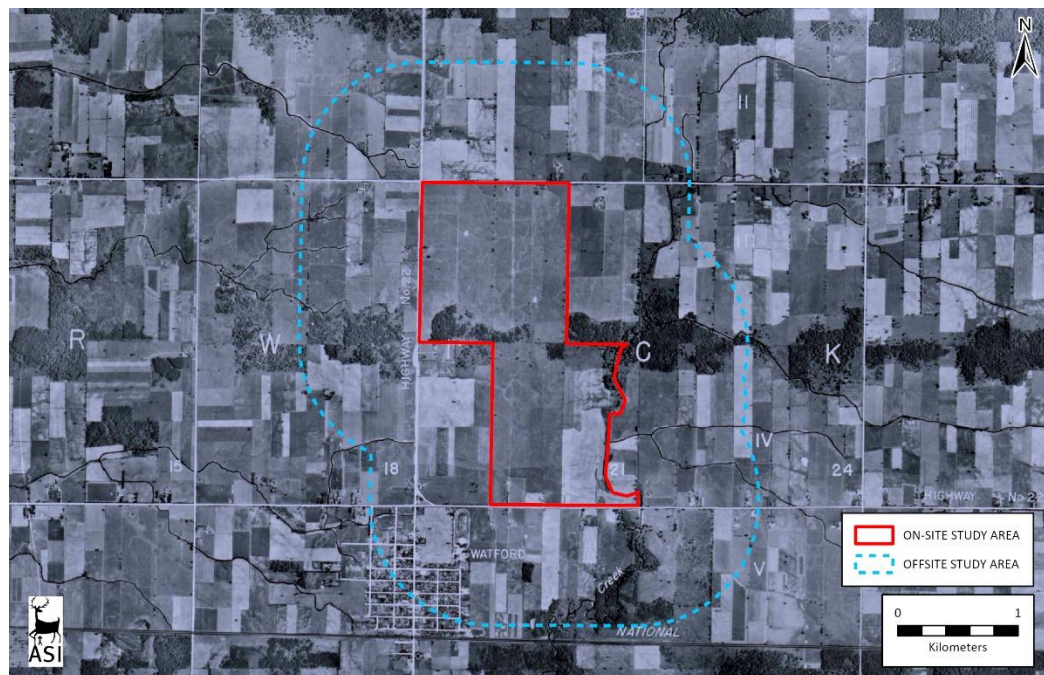


Figure 4-3. The study area overlaid on the 1933 topographic map of Strathroy



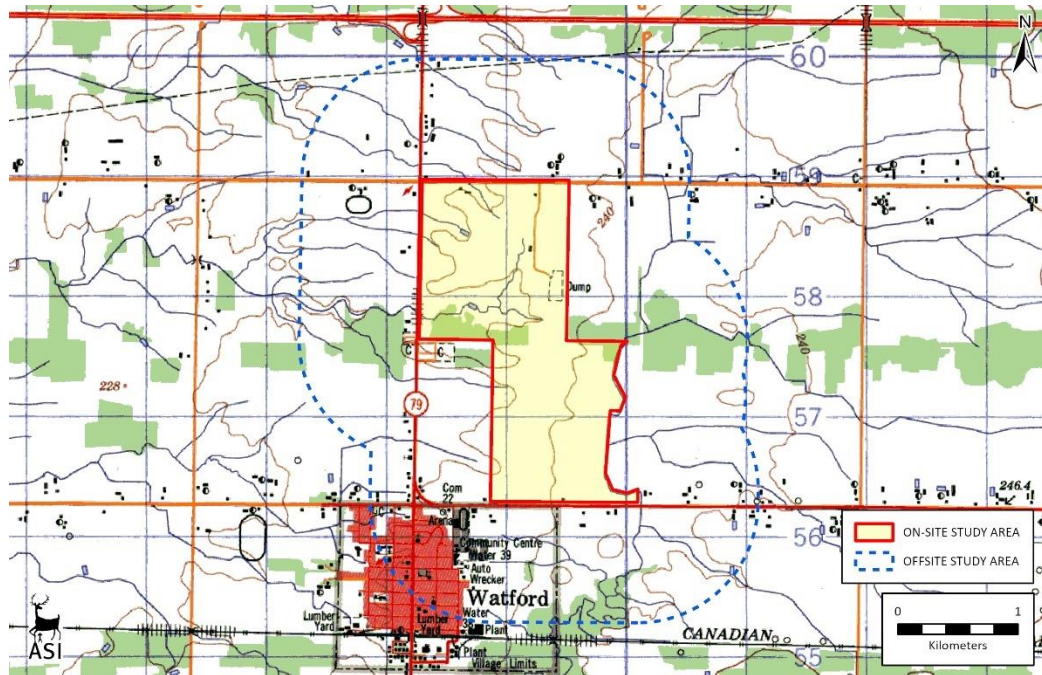
Source: Base Map: Department of National Defence 1933.

Figure 4-4. The study area overlaid on the 1954 aerial survey of Warwick



Source: Base Map: Hunting Survey Corporation Limited 1954.

Figure 4-5. The study area overlaid on the 1996 topographic map of Strathroy



Source: Base Map: National Topographic System 1996.

## 5 Built Heritage Resource and Cultural Heritage Landscape Context

A field review of the project study area was undertaken in November 2022 to document the existing conditions of the study area from existing rights-of-way.

### 5.1 Description of Field Review

The project study area is in the Township of Warwick and is divided into the On-Site Study Area and Off-Site Study Area. The On-Site Study Area is the existing TCEC, which is located east of Nauvoo Road and is bounded by Zion Line to the north and Confederation Line to the south. The Off-Site Study Area comprises the land surrounding TCEC to a distance of approximately 1 km.

Zion Line, within the Off-Site Study Area, is a rural paved, two-lane road with gravel shoulders that runs in an east-west alignment. West of Nauvoo Road, there are agricultural fields on both sides with the occasional gravel driveway. There are Hydro lines along the north side of the roadway (**Figure 5-1**). The intersection with Nauvoo Road is a two-way stop with stop signs on Zion Line. East of Nauvoo Road, for approximately 1.2 km, Zion Line is bounded on the south side by a tall, landscaped berm, separating the roadway from TCEC (**Figure 5-2**). The berm is interrupted by a small access road, approximately 200 m east of Nauvoo Road. The north side of Zion

Line, and the south side, east of the berm, is bounded by agricultural fields and farms. At the east end of the study area Power Road intersects with Zion Line on the north side in a T-intersection (**Figure 5-3**). Power Road is a single lane, gravel roadway with a north-south alignment.

Nauvoo Road, within the Off-Site Study Area, is generally a two-lane road with paved shoulders running in a north-south alignment. At the northern end of the Off-Site Study Area there is an access ramp to Highway 402 (**Figure 5-4**). North of Zion Line, Nauvoo Road is bounded on both sides by agricultural fields, farms, and residential properties. There are occasional driveways to access the farms and residences along both sides of the road (**Figure 5-5**). At the southeast corner of the intersection with Zion Line is a decorative landscape feature. The TCEC is south of Zion Line, on the east side of Nauvoo Road, and is visually obscured from the roadway by a tall landscaped berm for approximately 1.3 km. Just south of Zion line, on the west side of Nauvoo Road is a small transformer station (**Figure 5-6**). The main entrance to the TCEC is approximately 300 m south of the intersection, on the east side of Nauvoo Road (**Figure 5-7**).

South of TCEC, on Nauvoo Road, are the Our Lady Help of Christians Cemetery and the Watford Cemetery, on the west and east side, respectively. South of the cemeteries, Nauvoo Road is bounded on both sides by a mixture of agricultural and industrial properties to the intersection with Confederation Line. The intersection is controlled by stop signs on Confederation Line with a bypass for vehicles turning northbound (**Figure 5-8**). South of Confederation Line, Nauvoo Road becomes the principal street of the Village of Watford and is bounded on both sides by a mixture of residential, institutional, and commercial properties. Within the village there are sidewalks on both sides of the road and in the village core, there is street parking on both sides (**Figure 5-9**).

Confederation Line, within the Off-Site Study Area, is a paved, two-lane road with gravel shoulders. At the west end of the Off-Site Study Area the roadway forms the northern limit of the Village of Watford and is generally bounded on both sides by a mixture of residential and institutional properties (**Figure 5-10**). East of Nauvoo Road, to Centennial Avenue, the village continues on the south side, but the north side is occupied by agricultural fields and farms. East of Centennial Avenue, on the south side of the roadway is the East Lambton Community Complex and running track (**Figure 5-11**), east of which, Confederation Line is bounded once again on both sides by farmland. The berm on the southern end of TCEC is visible to the north (**Figure 5-12**).

The Village of Watford makes up the southwestern corner of the Off-Site Study Area. The village is generally laid out in a grid pattern centered on Nauvoo Road. The village's commercial centre and historic core is also Nauvoo Road with residential properties and some institutional properties on the cross streets. The residential structures have similar scales, massing, and setbacks from the roadway and are generally from the late-nineteenth to early twentieth century (**Figure 5-13 to Figure 5-16**).

### 5.1.1 Field Review Photographs

**Figure 5-1** through **Figure 5-16** below present photographs taken during the field review in November 2022.

**Figure 5-1. Zion Line, looking east toward the intersection with Nauvoo Road**



**Figure 5-2. Zion Line, looking west from the eastern end of TCEC**



**Figure 5-3. Zion Line, looking east toward Power Road**



**Figure 5-4. Nauvoo Road at the north end of the study area, looking north toward the interchange with Highway 402**



**Figure 5-5. Nauvoo Road, looking south to Zion Line**



**Figure 5-6. Intersection of Nauvoo Road and Zion Line, looking south**



The decorative landscape feature is visible in the centre and the transformer station on the right.

**Figure 5-7. Entrance to the Twin Creeks Environmental Centre, looking northeast from Nauvoov Road**



**Figure 5-8. The intersection of Nauvoov Road and Confederation Line, looking south**



**Figure 5-9. Nauvoov Road, looking north at the Watford Village core**



**Figure 5-10. Confederation Line, looking east toward Nauvoov Road**





**Figure 5-11. Confederation Line, looking west**



The running track is just visible on the left.

**Figure 5-12. Confederation, looking east from east of the Watford Village limits**



**Figure 5-13. Watford Village commercial centre, looking southwest on Nauvoo Road**



**Figure 5-14. Watford Village centre, looking northeast from the intersection of Nauvoo Road and Ontario Street**



**Figure 5-15. Warwick Street, looking north from Victoria Street**



**Figure 5-16. Simcoe Street, looking east from east of Nauvoo Road**





## 5.2 Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes



Based on the results of municipal and provincial consultation, background research and historical mapping review, three potential BHRs and 16 potential CHLs were

identified within the Off-Site Study Area. Only one resource, CHL 1, was identified within the On-Site Study Area. Of the 19 identified BHRs and CHLs, seven were identified in previous consultant reports for the original Warwick Landfill EA (ASI 2005) and 12 were identified during completion of background research for this Cultural Heritage Resources Existing Conditions Report. No known BHRs or CHLs that are listed by the Township of Warwick or designated under Part IV of the *Ontario Heritage Act* were identified. An inventory of known and potential BHRs and CHLs within the project study area is presented in **Table 5-1**. Three CHLs previously identified in the original EA (CHL 10, CHL 14, CHL 16), are not included in **Table 5-1** as one or more significant structures have since been demolished. Numbering of the remaining CHLs remains consistent with the original EA. **Figure 5-38** to **Figure 5-46** provide mapping showing the location of identified BHRs and CHLs.



**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
<b>Built Heritage Resources</b>					
BHR 1	Farmhouse	5876 Nauvoo Road	Potential BHR - Identified in Warwick Landfill Expansion Environmental Assessment (2005)	<p>This BHR is located on the east side on Nauvoo Road, north of Zion Line.</p> <p>The BHR is a vernacular Italianate buff brick residence, c. 1890 (ASI 2005). Potential heritage attributes include the building's height and massing, fenestration, buff brick construction, and hipped roof.</p>	<p><b>Figure 5-17. Western elevation of the residence at 5876 Nauvoo Road</b></p> 
BHR 2	Farmhouse	5966 Nauvoo Road	Potential BHR - Identified in Warwick Landfill Expansion Environmental Assessment (2005)	<p>This BHR is located on the east side of Nauvoo Road, south of Highway 402.</p> <p>The BHR is a vernacular residence, of frame or brick construction, built in the late nineteenth century (ASI 2005). Potential heritage attributes include the buildings height and massing, fenestration, front verandah with decorative pillars, and hipped roof.</p>	<p><b>Figure 5-18. Obscured view of the southern and western elevations of the residence at 5966 Nauvoo Road</b></p> 



**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
BHR 3	Church	5378 Nauvoo Road	Potential BHR – Identified in the Ontario Heritage Trust’s Places of Worship Inventory	<p>This BHR is located on the northeast corner of Victoria Street and Nauvoo Road.</p> <p>The BHR is a Gothic Revival Church with a gabled roof and steeple. Potential heritage attributes include the building’s height and massing, fenestration, buff brick construction, buttresses, and steeple.</p>	<p><b>Figure 5-19. Southern and western elevations of the church at 5378 Nauvoo Road</b></p> 
<b>Cultural Heritage Resources</b>					
CHL 1	Agricultural	Lot 20-21, Con 4	Potential CHL- Identified in Warwick Landfill Expansion Environmental Assessment (2005)	<p>CHL 1 is located on the north side of Confederation Line, east of Nauvoo Road.</p> <p>The CHL contains active agricultural lands suspected of being in continuous operation since the late nineteenth century.</p> <p>NOTE- The 2005 Environmental Assessment included the entire property parcel, the boundaries of which are depicted in Figure 5-44. However, since the 2005 assessment there have been changes to land use on this property, and only areas that remain under active agricultural cultivation are considered to retain potential cultural heritage value or interest.</p>	<p><b>Figure 5-20. View of the agricultural fields on lots 20 and 21, Concession 4</b></p> 

**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**



Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 2	Cemetery	5606 Nauvoo Road	Potential CHL- Identified in Warwick Landfill Expansion Environmental Assessment (2005)	<p>CHL 2 is located on the east side of Nauvoo Road, south of the Twin Creeks Environmental Centre.</p> <p>The CHL contains Watford Cemetery. Watford Cemetery was established in 1888, although it contains some markers dating to the 1860s (ASI 2005). Potential heritage attributes may include the cemetery plots and grave markers, landscaping, entry gates, and pathways.</p>	<p><b>Figure 5-21. The gates of Watford Cemetery, looking east from Nauvoo Road</b></p> 
CHL 3	Agricultural	Lot 19 and 20, Con 2	Potential CHL- Identified in Warwick Landfill Expansion Environmental Assessment (2005)	<p>CHL 3 is located on the northeast corner of Nauvoo Road and Zion Line.</p> <p>The CHL contains active agricultural lands suspected of being in continuous operation since the late nineteenth century.</p>	<p><b>Figure 5-22. View of agricultural fields on Lots 19 and 20, Concession 2</b></p> 

**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**



Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 4	Farmscape	8060 Zion Line	Potential CHL- Identified in Warwick Landfill Expansion Environmental Assessment (2005)	<p>CHL 4 is located on the north side of Zion Line, west of Power Road.</p> <p>CHL 4 contains a farmscape featuring a vernacular farmhouse with Edwardian influence, constructed c. 1901-1939, a gable barn with vertical wooden boards and concrete foundation, constructed c.1901-1939 and active agricultural fields (ASI 2005). Potential heritage attributes include the farmhouse, barn, agricultural lands, and mature trees.</p>	<p><b>Figure 5-23. View of the farmscape at 8060 Zion Line, looking north</b></p> 
CHL 5	Roadscape	Zion Line	Potential CHL- Identified in Warwick Landfill Expansion Environmental Assessment (2005)	<p>Zion Line is a historically surveyed roadway in a rural agricultural setting that has retained a similar context since the late nineteenth century. Several BHRs and CHLs are located on Zion Road.</p> <p>Potential heritage attributes include the roadway, views over agricultural fields, and the presence of historic farmscapes along the road.</p>	<p><b>Figure 5-24. Looking east down Zion Line</b></p> 





**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 6	Cemetery	5621 Nauvoo Road	Potential CHL- Identified in historical map review	<p>This CHL is located on the west side of Nauvoo Road, across from the south side of the Twin Creeks Environmental Centre.</p> <p>CHL 6 contains Our Lady Help of Christians Roman Catholic Cemetery, located in Lot 18, Con. 3. A cemetery is depicted in this location in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the cemetery plots and grave markers, landscaping, entry gates, and statuary.</p>	<p><b>Figure 5-25. Entrance gates to Our Lady Help of Christians Cemetery from Nauvoo Road</b></p> 
CHL 7	Farmscape	5859 Nauvoo Road	Potential CHL- Identified in historical map review	<p>This CHL is located on the west side of Nauvoo Road, north of Zion Line.</p> <p>CHL 7 contains an early twentieth century single-storey residence, gable roofed barn with concrete foundations. The residence is in a similar location to a structure depicted in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the residence, barn, outbuildings, and agricultural fields.</p>	<p><b>Figure 5-26. View of the farmscape at 5859 Nauvoo Road, looking west</b></p> 



**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 8	Farmscape	8210 Zion Line	Potential CHL- Identified in historical map review	<p>This CHL is located on the north side of Zion Line, east of Power Road.</p> <p>CHL 8 contains a two-storey buff brick farmhouse, a gravel drive, outbuildings, and agricultural fields. The residence is in a similar location to a structure depicted in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the residence, driveway, outbuildings, treed windbreaks, and agricultural fields.</p>	<p><b>Figure 5-27. View of the farmscape at 8210 Zion Line, looking north</b></p> 
CHL 9	Farmscape	8234 Zion Line	Potential CHL- Identified in historical map review	<p>This CHL is located on the north side of Zion Line, east of Power Road.</p> <p>CHL 9 contains a two-and-a-half storey buff brick farmhouse, mature treelines, and agricultural fields. The residence is in a similar location to a structure depicted in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the farmhouse, outbuildings, treed windbreaks, and agricultural fields.</p>	<p><b>Figure 5-28. View of the farmscape at 8234 Zion Line, looking northwest</b></p> 



**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 11	Farmscape	8190 Confederation Line	Potential CHL- Identified in historical map review	<p>This CHL is located on the north side of Confederation Line, approximately halfway between Nauvoo Road and Arkona Road.</p> <p>CHL 11 contains a two-storey frame residence, outbuildings, and silos. Residence is in a similar location to a structure depicted in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the residence, driveway, mature trees, and agricultural fields.</p>	<p><b>Figure 5-29. View of the farmscape at 8190 Confederation Line, looking northeast</b></p> 
CHL 12	Race Course	Confederation Line east of Nauvoo Rd.	Potential CHL- Identified in historical map review	<p>This CHL is located on the south side of Confederation Line, east of Centennial Avenue.</p> <p>CHL 12 contains a running track. A racecourse was depicted in this location in historical mapping from 1880 and throughout the twentieth century (<b>Figure 4-1 to Figure 4-5</b>). Potential heritage attributes include the running track in a similar location as the historical racecourse.</p>	<p><b>Figure 5-30. The running track on Nauvoo Road, looking south</b></p> 



**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 13	Farmscape	7985 Confederation Line	Potential CHL- Identified in historical map review	<p>The CHL is located on the south side of Confederation Line, east of Centennial Avenue.</p> <p>CHL 13 contains a residence that appears to be a frame residence behind a newer brick residence, with outbuilding and a long drive. Residence is in a similar location to a structure depicted in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the residence, outbuilding, gravel drive, and mature trees.</p>	<p><b>Figure 5-31. View of the farmscape at 7985 confederation Line, looking south</b></p> 
CHL 15	Farmscape	5737 Nauvoo Road	Potential CHL- Identified in historical map review	<p>This CHL is located on the west side of Nauvoo Road, across from the Twin Creeks Environmental Centre.</p> <p>CHL 15 contains a small single storey frame residence, an outbuilding, and agricultural fields. Residence is in a similar location to a structure depicted in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the residence, outbuilding, agricultural fields, driveway, and mature trees.</p>	<p><b>Figure 5-32. View of the farmscape at 5737 Nauvoo Road, looking west</b></p> 

**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 17	Farmscape	8337 Confederation Line	Potential CHL- Identified in historical map review	<p>This CHL is located on the south side of Confederation Line, west of Arkona Road.</p> <p>CHL 17 contains a single storey frame residence, outbuildings, fenced-in pastures, and agricultural fields. Residence is in a similar location to a structure depicted in the 1911 topographical map (<b>Figure 4-2</b>). Potential heritage attributes include the residence, outbuildings, pastures, agricultural fields, driveway, and mature trees.</p>	<p><b>Figure 5-33. View of the farmscape at 8337 Confederation Line, looking south</b></p> 
CHL 18	Cemetery	Confederation Line west of Nauvoo Rd.	Potential CHL- Identified in historical map review	<p>This CHL is located on the south side of Confederation Line, east of John Street.</p> <p>CHL 18 contains Watford Pioneer Cemetery Cairn. The cairn is brick with original grave markers. In the location of a cemetery depicted in 1880 Historical Atlas Mapping (<b>Figure 4-1</b>). Potential heritage attributes include the grave markers and brick cairn.</p>	<p><b>Figure 5-34. The Watford Pioneer Cemetery Cairn, looking south</b></p> 

**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**

Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
CHL 19	Settlement	Village of Watford	Potential CHL- Identified in historical map review	<p>CHL 19 consists of the historic Village of Watford. The Village of Watford was established in the 1850s, and is depicted in the 1880 Historical Atlas (<b>Figure 4-1</b>).</p> <p>The Village of Watford contains an assembly of nineteenth and early twentieth-century commercial, residential, and institutional properties that form the historical core of the village and reflect its growth and development. The commercial buildings along Nauvoo Road feature similar scale, massing, and setbacks from the roadway. The residential buildings on Nauvoo Road as well as on the side streets also feature similar scale, massing and setbacks. The variety of architectural styles demonstrate the continued use and development of the Village of Watford from the mid-nineteenth century founding of the village.</p>	<p><b>Figure 5-35. Village of Watford's historical commercial centre. Nauvoo Road, looking southwest from Erie Street</b></p>  <p><b>Figure 5-36. View of a parkette and the historic Schoolhouse, now Watford Museum, in the Village of Watford, looking northeast from the intersection of Nauvoo Road and Ontario Street</b></p> 

**Table 5-1. Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Off-Site Study Area**


Feature ID	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential CHVI	Image
					<p data-bbox="1908 354 2542 385"><b>Figure 5-37. Victoria Street, looking west from Main Street</b></p> 

Figure 5-38. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Key Sheet)

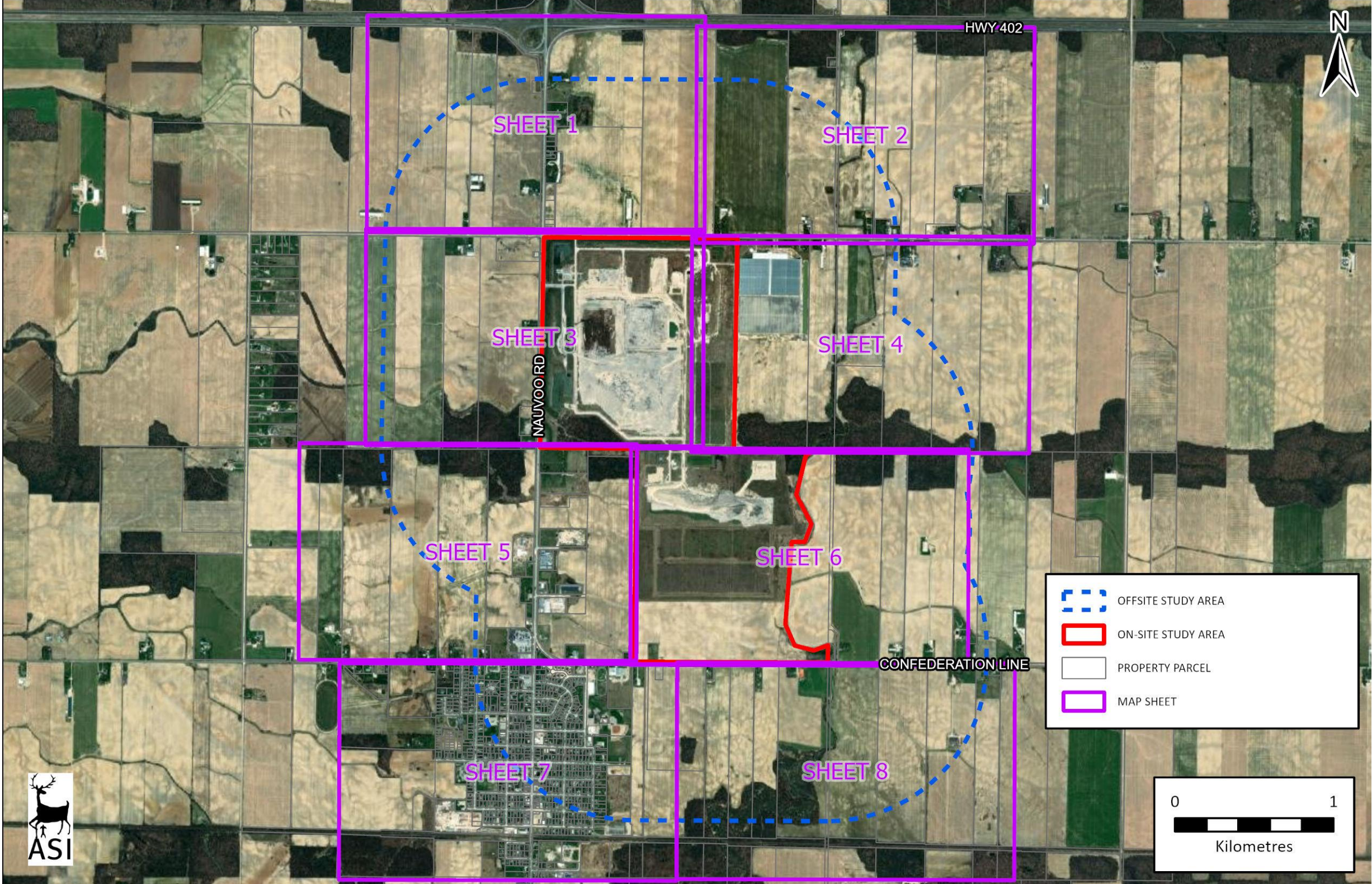




Figure 5-39. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 1)

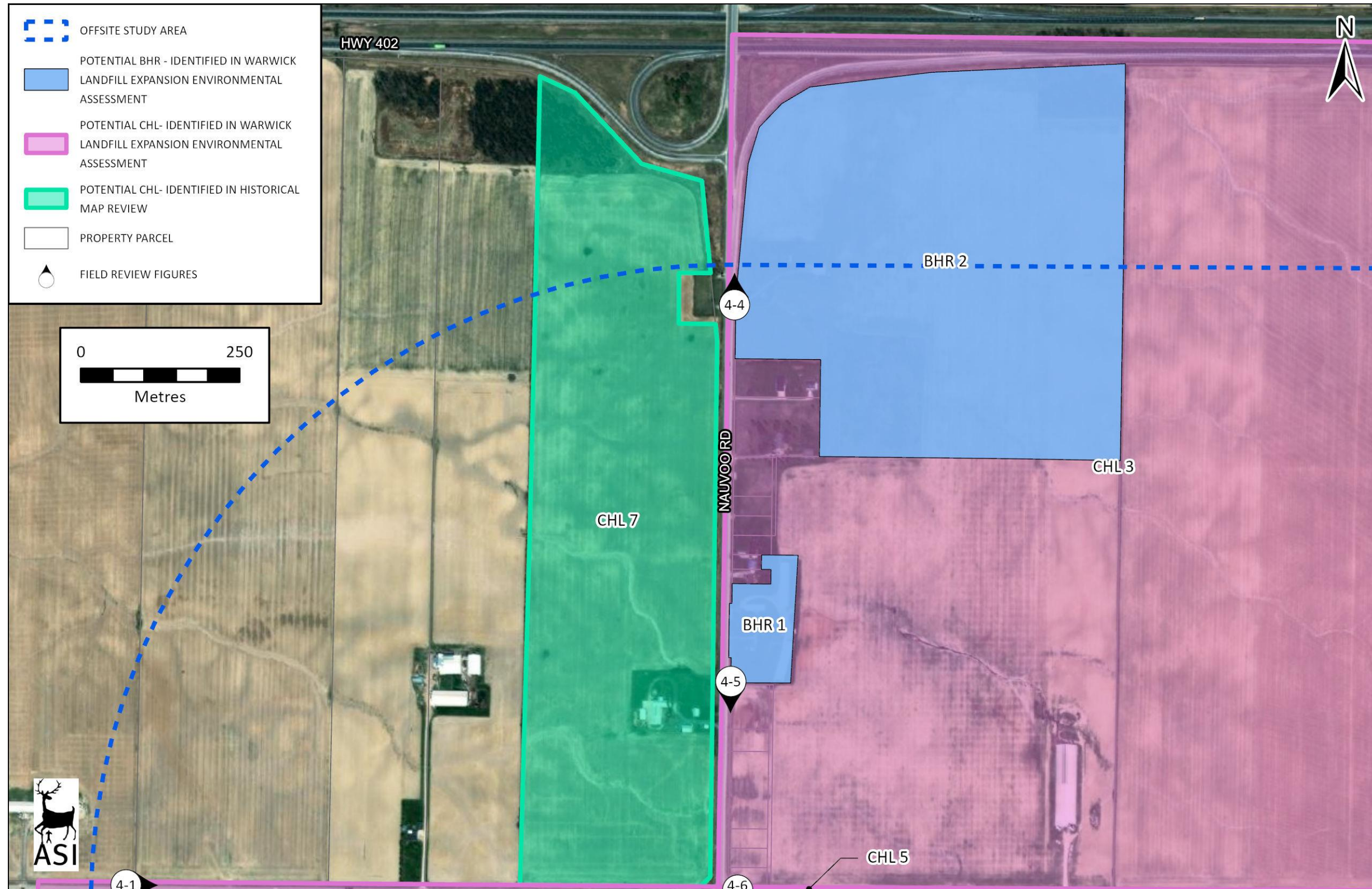


Figure 5-40. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 2)

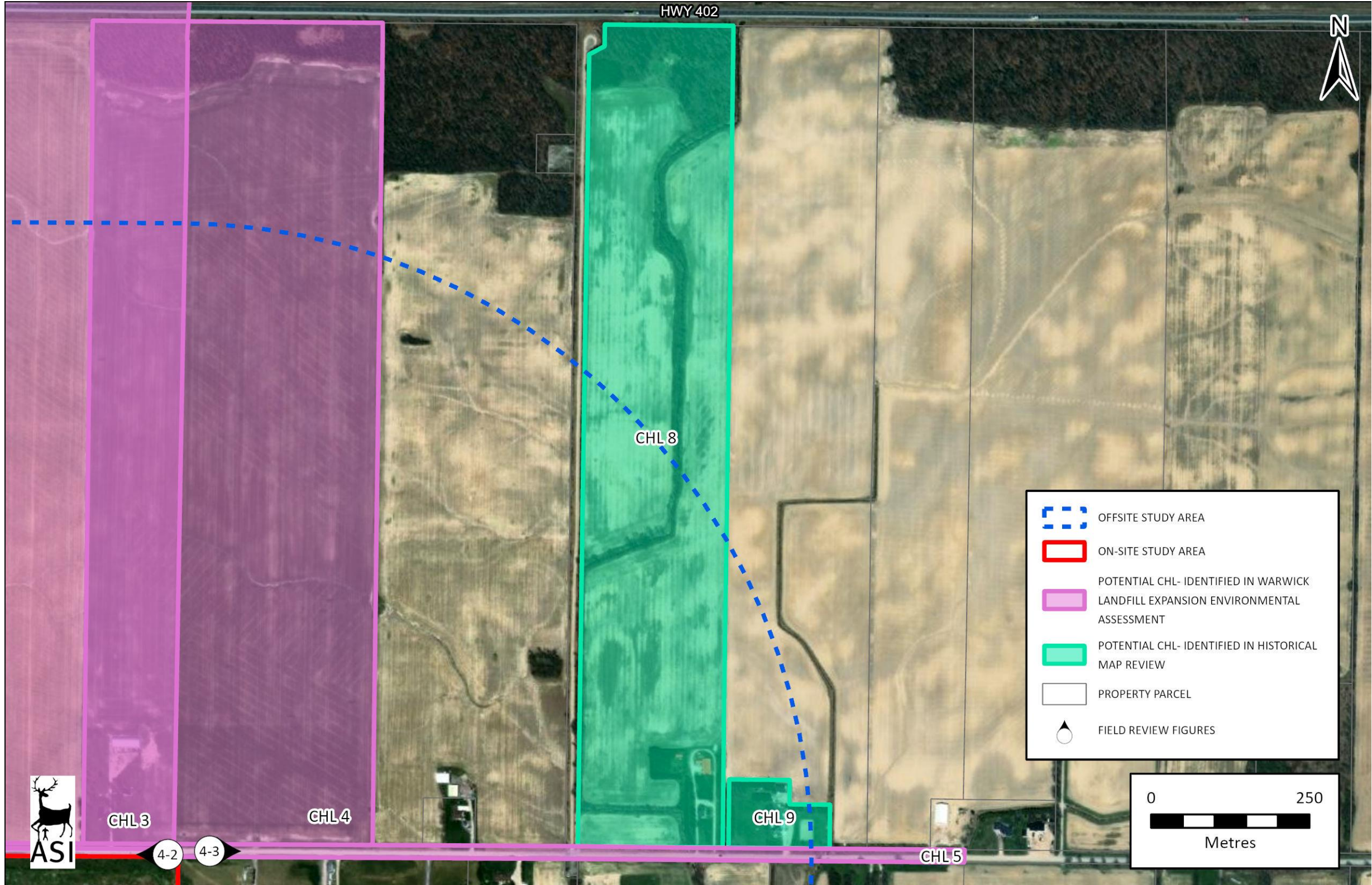


Figure 5-41. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 3)



Figure 5-42. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 4)

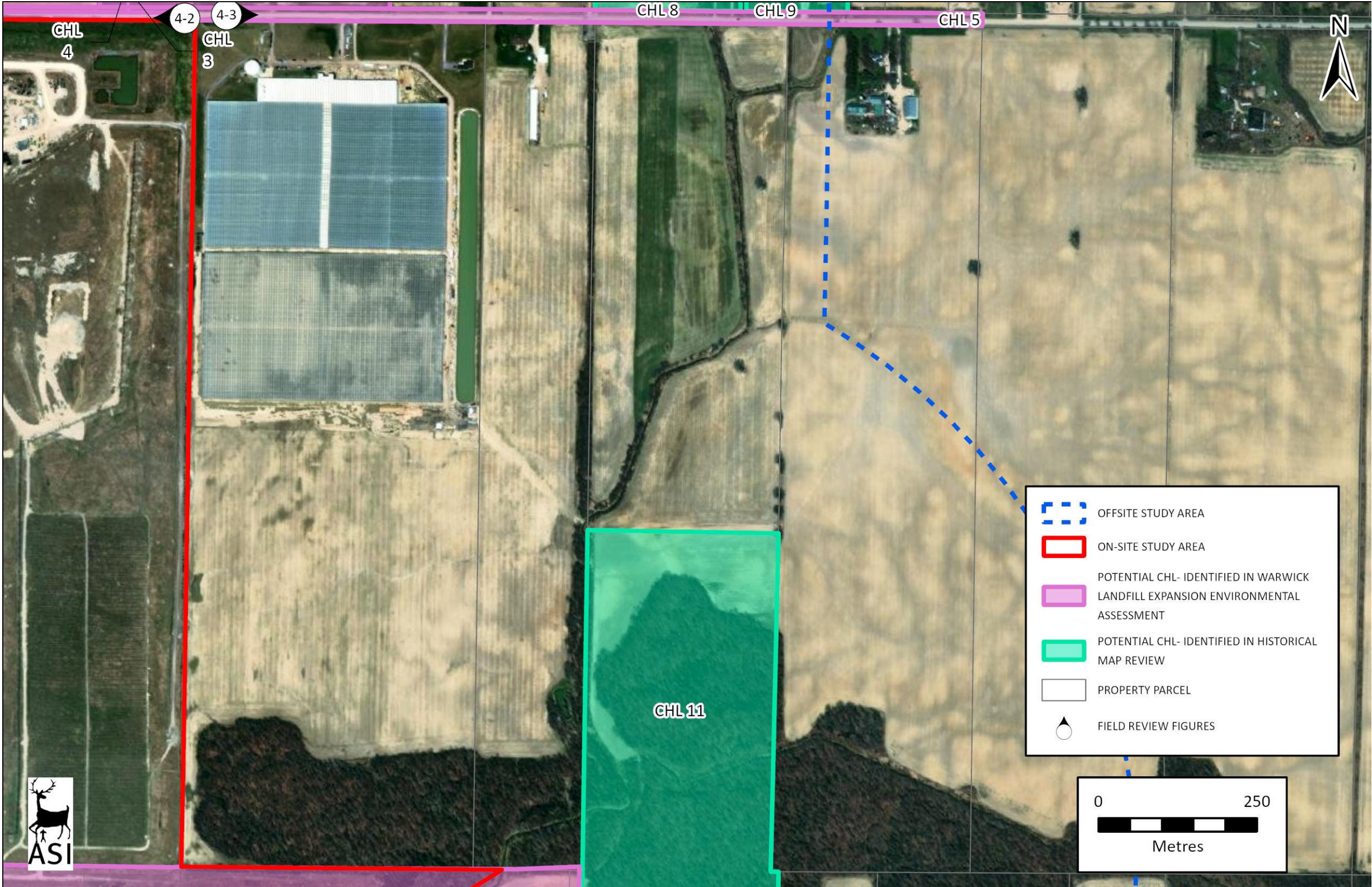


Figure 5-43. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 5)



Figure 5-44. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 6)

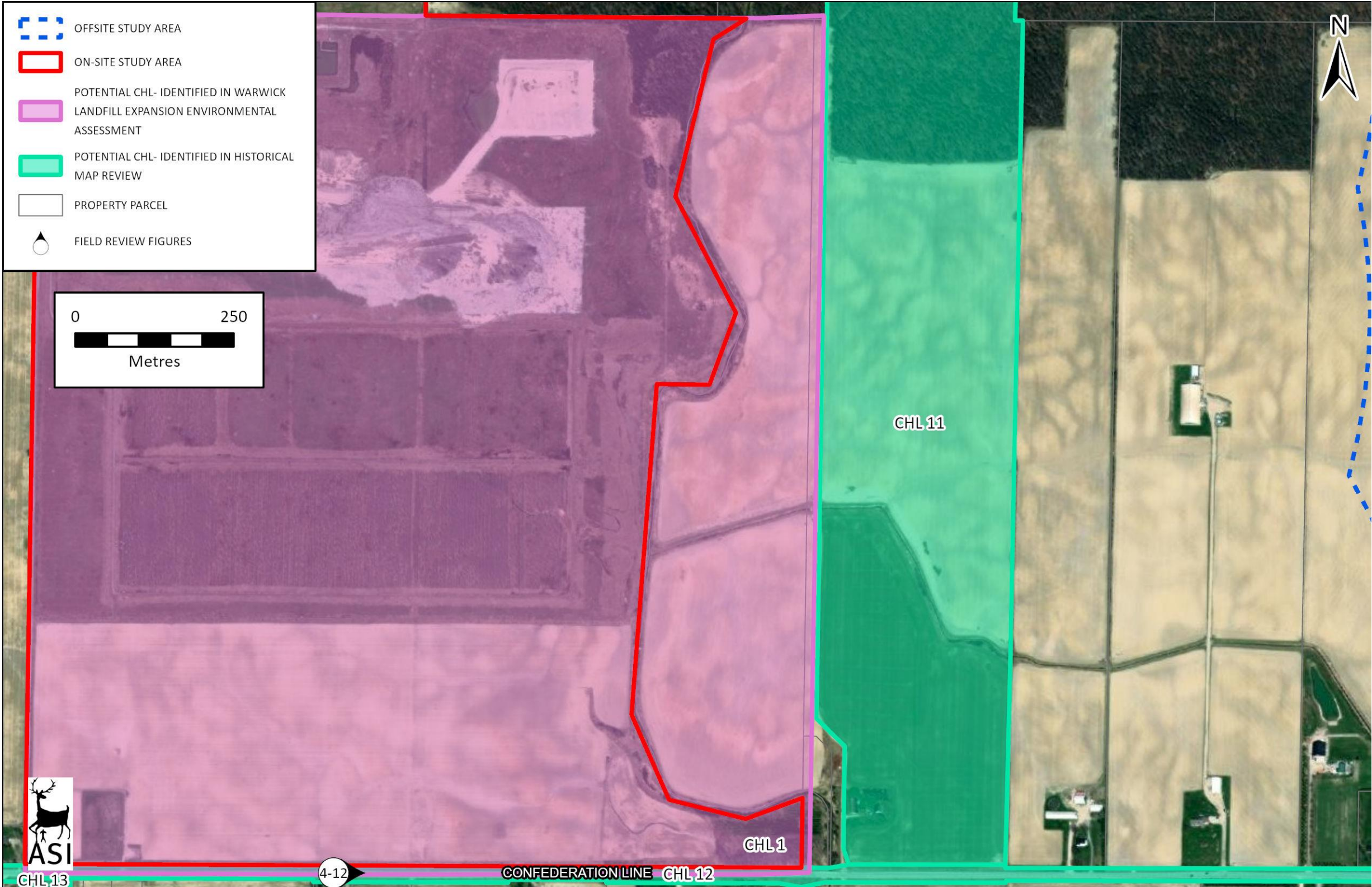


Figure 5-45. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 7)

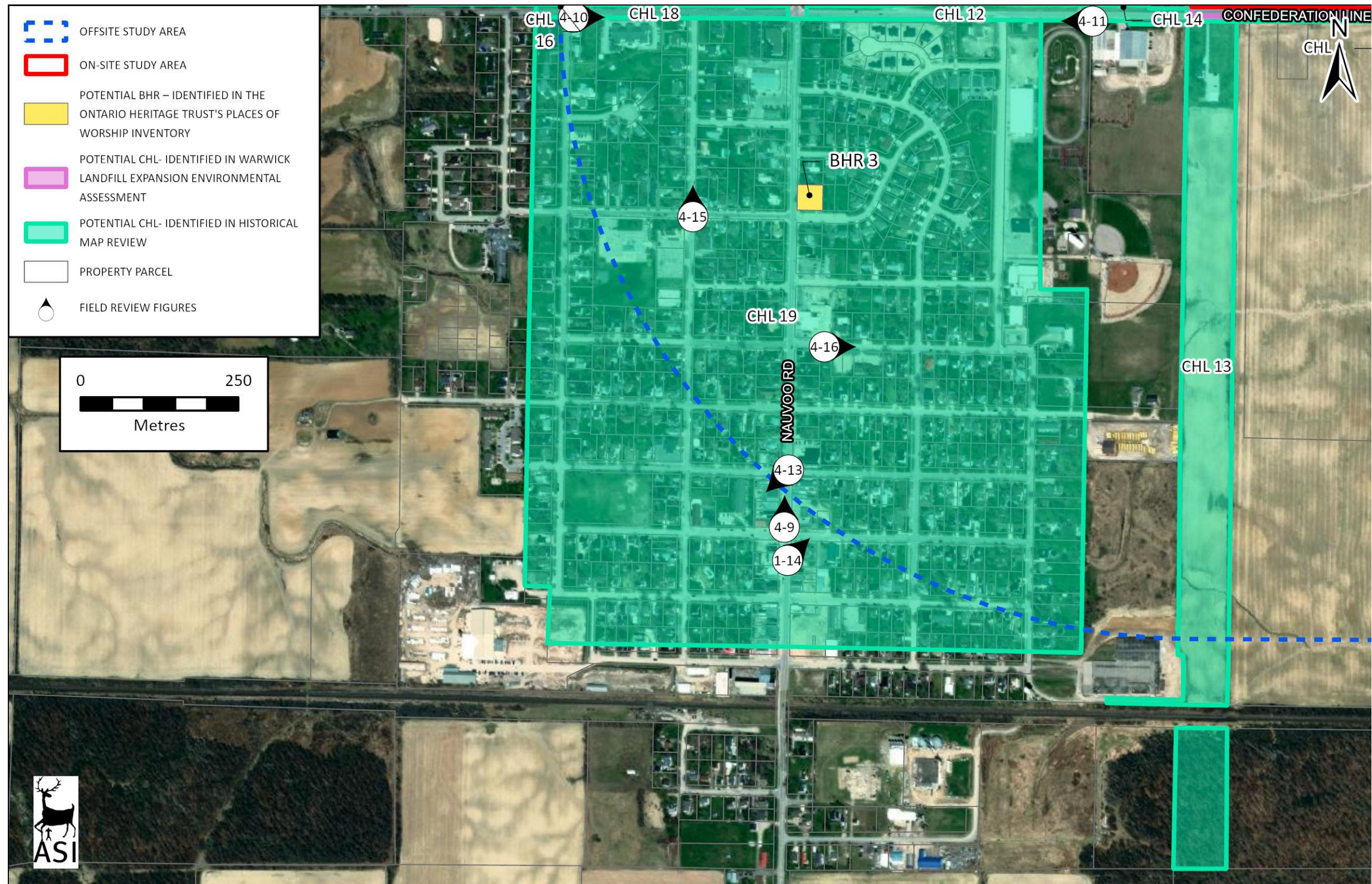
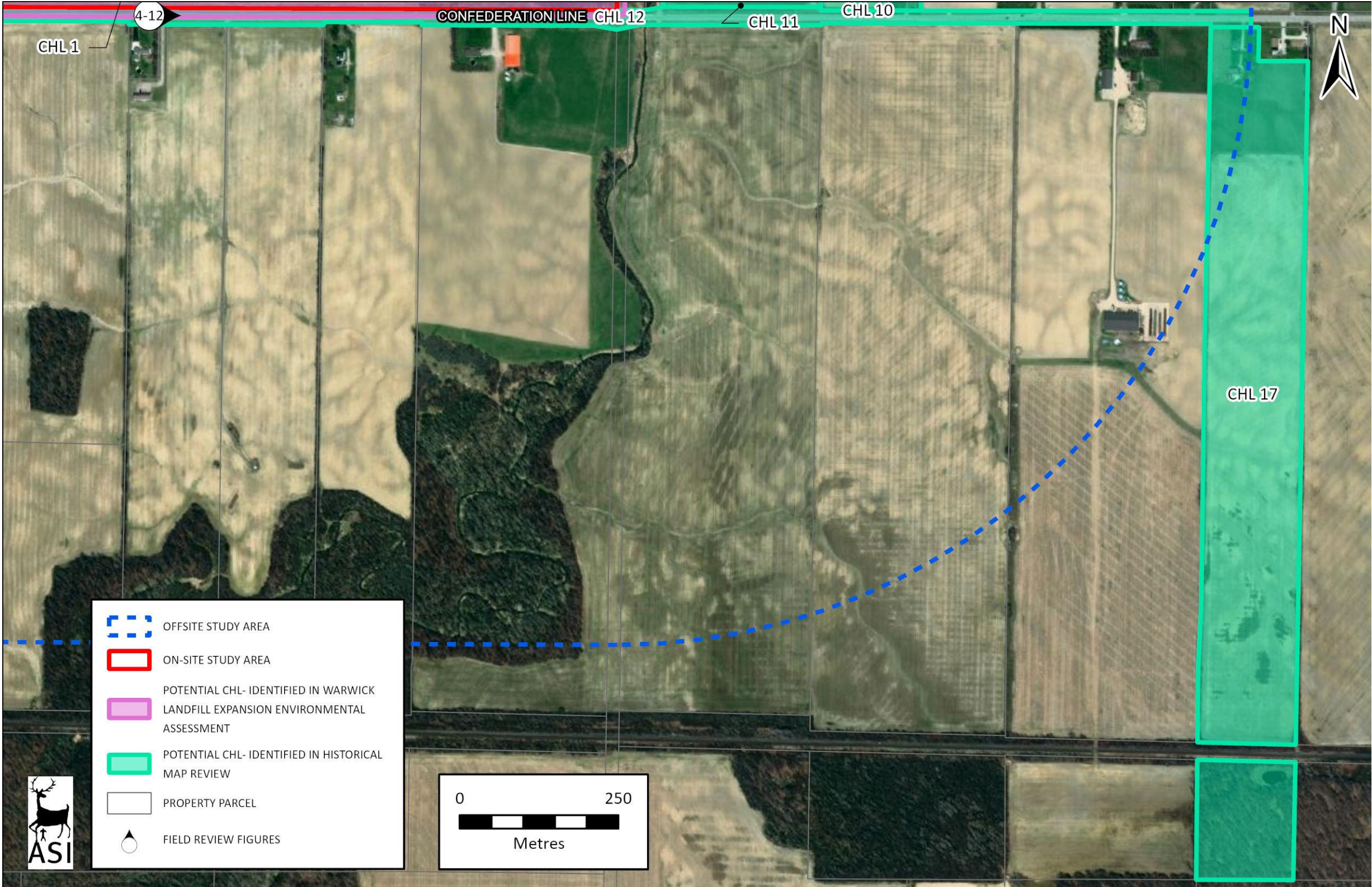


Figure 5-46. Location of identified BHRs and CHLs in the subject area and Field Review Figure Locations (Sheet 8)





## 6 Description of Existing Conditions

### 6.1 Built Heritage Resources and Cultural Heritage Landscapes

BHRs and CHLs are cultural heritage resources that can be negatively impacted or destroyed by the construction and operation of a waste disposal facility. Activities related to construction and operation of the landfill may cause negative effects on cultural heritage resources, specifically known or potential BHRs and CHLs within proximity of the proposed undertaking.

#### 6.1.1 Proximity of Known or Potential Built Heritage Resources and Cultural Heritage Landscapes to the Landfill

Three potential BHRs and 16 potential CHLs were identified within the project study area. Of the 19 identified BHRs and CHLs, one resource (CHL 1) is located within the On-Site Study Area. The remaining 18 identified BHRs and CHLs are located within the Off-Site Study Area. Known and potential BHRs and CHLs include 10 farmscapes (CHLs 1, 3, 4, 7-9, 11, 13, 15, and 17), three cemeteries (CHLs 2, 6, and 18), two farmhouses (BHRs 1 and 2), one church (BHR 3), one roadscape (CHL 5), one race track (CHL 12), and one historical settlement centre (CHL 19).

### 6.2 Summary of Existing Conditions

The purpose of this Cultural Heritage Resources Existing Conditions Report is to identify any known or potential BHRs and CHLs that could be potentially affected by the TCEC Landfill Optimization Project for the EA, i.e., those present within the project study area. The project study area includes the On-Site Study Area, which consists of the existing TCEC site, and the Off-Site Study Area, which extends approximately 1 km outside the On-Site Study Area.

Three potential BHRs and 16 potential CHLs were identified within the project study area. A full inventory of identified BHRs and CHLs present within the project study area is provided in **Table 5-1**. Of the identified BHRs and CHLs, one resource (CHL 1) is located within the On-Site Study Area. The remaining 18 identified BHRs and CHLs are located within the Off-Site Study Area. Mapping of all identified BHRs and CHLs is provided in **Figure 5-38** to **Figure 5-46**.

## 7 References

### Archaeological Services Inc.

- 2001 “Stage 1/2 Archaeological Resource Assessment, Warwick Landfill Expansion Project, Township of Warwick, County of Lambton, Ontario [1999-007-054].” 05EA-077.
- 2005 “Warwick Landfill Expansion Environmental Assessment: Cultural Heritage Resources.” CHRA 05EA-077. Report on File at ASI, Toronto, ON.
- 2006 “Historical Overview and Assessment of Archaeological Potential Don River Watershed, City of Toronto.” Toronto: Report on file with the Ontario Ministry of Tourism, Culture and Sport.
- 2007 “Stage 3 Archaeological Assessment Sites AfHI-8 to -14, -39 to -42, and -45, Warwick Landfill Expansion, Township of Warwick, County of Lambton, Ontario [P057-307-2006 and P057-374-2007 ].”
- 2008 “Stage 1 and 2 Archaeological Assessment Highway 402 and County Road 79 Improvements Class Environmental Assessment Warwick Township, Lambton County, Ontario [P057-423-2007].”

### Belden, H.

- 1880 “Illustrated Historical Atlas of the County of Lambton.”

### Canadian Heritage Rivers Board and Technical Planning Committee

- n.d. “The Rivers – Canadian Heritage Rivers System Canada’s National River Conservation Program.” Canadian Heritage Rivers System. n.d.  
<http://chrs.ca/en/rivers/>.

### Carman, Richard A., David Buehler, Stephen Mikesell, and Carolyn L. Searls

- 2012 Current Practices to Address Construction Vibration and Potential Effects to Historic Buildings Adjacent to Transportation Projects. Washington, D.C.: Wilson, Ihrig and Associates, ICF International, and Simpson, Gumpertz and Heger, Incorporated for the American Association of State Highway and Transportation Officials (AASHTO).

### Crispino, M., and M. D’Apuzzo

- 2001 “Measurement and Prediction of Traffic-Induced Vibrations in a Heritage Building.” *Journal of Sound and Vibration* 246 (2): 319–35.

### Crown-Indigenous Relations and Northern Affairs

- 2016 “Huron Tract, No. 29.” Treaty Texts – Upper Canada Land Surrenders. 2016.  
<https://www.rcaanc-cirnac.gc.ca/eng/1370372152585/1581293792285#ucls21>.

### Department of Militia and Defence

- 1911 “Strathroy Sheet 40I13.” NTS.

### Department of National Defence

- 1933 “Strathroy Sheet (40-I/13).” Topographic.

Dillon, Martin

- n.d. "Watford Ontario." Petrolia - Canada's Victorian Oil Town. Accessed March 1, 2023.  
<http://www.petroliaheritage.com/watfordCAR.html>.

Ellis, Patricia

- 1987 "Effects of Traffic Vibration on Historic Buildings." *The Science of the Total Environment* 59: 37–45.

Hunting Survey Corporation Limited

- 1954 "Digital Aerial Photographs, Southern Ontario 1954." 1954.  
[http://maps.library.utoronto.ca/data/on/AP\\_1954/index.html](http://maps.library.utoronto.ca/data/on/AP_1954/index.html).

"Maxwell"

- 2022 Museum Website. Lambton County Museums. June 22, 2022.  
<https://www.lambtonmuseums.ca/en/lambton-county-archives/maxwell.aspx>.

Mika, N., and H. Mika

- 1983 Places In Ontario: Their Name Origins and History, Part III, N-Z. Belleville: Mika Publishing Company.

Ministry of Citizenship and Multiculturalism

- 2016 "Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes."

Ministry of Culture

- 2006 "Ontario Heritage Tool Kit."

Ministry of Municipal Affairs and Housing

- 2020 "Provincial Policy Statement, 2020, Under the Planning Act." Queen's Printer for Ontario.

Ministry of the Environment

- 1990 Environmental Assessment Act, R.S.O. c. E.18. Current to January 1, 2022.  
2016 "Guide to Environmental Assessment Requirements for Waste Management Projects." Ontario.Ca. February 10, 2016. <https://www.ontario.ca/page/guide-environmental-assessment-requirements-waste-management-projects>.

Ministry of Tourism, Culture and Sport

- 1990 *Ontario Heritage Act*, R.S.O. c. O.18.  
2006 "InfoSheet #5: Heritage Impact Assessments and Conservation Plans."  
2016 "Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes, A Checklist for the Non-Specialist."  
<http://www.mtc.gov.on.ca/en/heritage/tools.shtml>.

National Topographic System

- 1996 "Strathroy Sheet (40-1/13)." National Topographic System.

#### Ontario Genealogical Society

- n.d. "OGS Cemeteries." Digitals Collections & Library Catalogue. n.d.  
<http://vitacollections.ca/ogscollections/2818487/data>.

#### Ontario Heritage Trust

- 2018 "An Inventory of Provincial Plaques Across Ontario."  
[https://www.heritagetrust.on.ca/user\\_assets/documents/Inventory-of-provincial-plaques-ENG.pdf](https://www.heritagetrust.on.ca/user_assets/documents/Inventory-of-provincial-plaques-ENG.pdf).
- n.d. "Easement Properties." Ontario Heritage Trust. n.d.  
<https://www.heritagetrust.on.ca/en/property-types/easement-properties>.
- n.d. "Ontario Heritage Act Register." n.d.  
<https://www.heritagetrust.on.ca/en/pages/tools/ontario-heritage-act-register>.
- n.d. "Places of Worship Inventory." Ontario Heritage Trust. n.d.  
<https://www.heritagetrust.on.ca/en/places-of-worship/places-of-worship-database>.

#### Parks Canada

- n.d. "Canada's Historic Places." n.d. [www.historicplaces.ca](http://www.historicplaces.ca).
- n.d. "Directory of Federal Heritage Designations." n.d.  
[https://www.pc.gc.ca/apps/dfhd/search-recherche\\_eng.aspx](https://www.pc.gc.ca/apps/dfhd/search-recherche_eng.aspx).

#### Rainer, J. H.

- 1982 "Effect of Vibrations on Historic Buildings." *The Association for Preservation Technology Bulletin* XIV (1): 2–10.

#### Randl, Chad

- 2001 "Preservation Tech Notes: Protecting a Historic Structure during Adjacent Construction." U.S. Department of the Interior National Park Service.  
<https://www.nps.gov/tps/how-to-preserve/tech-notes/Tech-Notes-Protection03.pdf>.

#### Stott, Glen

- 2008 "From Forest to Field." In *The Township of Warwick: A Story Through Time*. Vol. Chapter 3. Warwick History Township Committee.  
<https://www.lambtonmuseums.ca/en/lambton-county-archives/early-years.aspx>.

#### Surtees, R.

- 1984 "Indian Land Surrenders in Ontario 1763-1867." Research Branch, Corporate Policy, Department of Indian and Northern Affairs Canada.

#### Township of Warwick

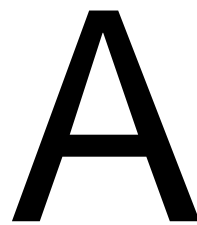
- 2018 "History and Heritage." 2018. <https://www.warwicktownship.ca/en/things-to-do/history-and-heritage.aspx>.

#### U.N.E.S.C.O. World Heritage Centre

- n.d. "World Heritage List." U.N.E.S.C.O. World Heritage Centre. n.d.  
<http://whc.unesco.org/en/list/>.

Wiss, J. F.

1981 "Construction Vibrations; State-of-the-Art." *Journal of Geotechnical Engineering* 107:  
167–81.

A large, bold, black letter 'A' centered on the page.

## Qualified Persons Involved in the Project

## Qualified Persons Involved in the Project

### **Lindsay Graves, M.A., C.A.H.P.**

#### **Senior Cultural Heritage Specialist, Assistant Manager - Cultural Heritage Division**

The Senior Project Manager for this Cultural Heritage Report is **Lindsay Graves** (M.A., Heritage Conservation), Senior Cultural Heritage Specialist and Assistant Manager for the Cultural Heritage Division. She was responsible for: overall project scoping and approach; development and confirmation of technical findings and study recommendations; application of relevant standards, guidelines and regulations; and implementation of quality control procedures. Lindsay is academically trained in the fields of heritage conservation, cultural anthropology, archaeology, and collections management and has over 15 years of experience in the field of cultural heritage resource management. This work has focused on the assessment, evaluation, and protection of built heritage resources and cultural heritage landscapes. Lindsay has extensive experience undertaking archival research, heritage survey work, heritage evaluation and heritage impact assessment. She has also contributed to cultural heritage landscape studies and heritage conservation plans, led heritage commemoration and interpretive programs, and worked collaboratively with multidisciplinary teams to sensitively plan interventions at historic sites/places. In addition, she is a leader in the completion of heritage studies required to fulfill Class Environmental Assessment processes and has served as Project Manager for over 100 heritage assessments during her time at A.S.I. Lindsay is a member of the Canadian Association of Heritage Professionals.

### **John Sleath, M.A.**

#### **Cultural Heritage Specialist, Project Manager - Cultural Heritage Division**

The Project Manager for this Cultural Heritage Report is John Sleath (MA), who is a Cultural Heritage Specialist and Project Manager within the Cultural Heritage Division with ASI. He was responsible for the day-to-day management activities, including scoping of research activities and site surveys and drafting of study findings and recommendations. John has worked in a variety of contexts within the field of cultural heritage resource management for the past 14 years, as an archaeologist and as a cultural heritage professional. An exposure to both land-based and underwater archaeology and above ground cultural heritage assessments has provided John with a holistic understanding of heritage in a variety of contexts. In 2015 John began working in the Cultural Heritage Division researching and preparing a multitude of cultural heritage assessment reports and for which he was responsible for a variety of tasks including: completing archival research, investigating built heritage and cultural heritage landscapes, report preparation, historical map regression, and municipal consultation. Since 2018 John has been a project manager responsible for a variety of tasks required for successful project completion. This work has allowed John to engage with stakeholders from the public and private sector, as well as representatives from local municipal planning departments and museums. John has conducted hundreds of cultural heritage assessments across Ontario, with a focus on transit and rail corridor infrastructure including bridges and culverts.

**Leora Bebko, M.M.St.**  
**Cultural Heritage Technician, Technical Writer and Researcher - Cultural Heritage Division**

One of the Cultural Heritage Technicians for this project is **Leora Bebko** (M.M.St.), who is a Cultural Heritage Technician and Technical Writer and Researcher within the Cultural Heritage Division. She was responsible for preparing and contributing research and technical reporting. In Leora's career as a cultural heritage and museum professional she has worked extensively in public programming and education within built heritage spaces. Leora is particularly interested in the ways in which our heritage landscapes can be used to facilitate public engagement and interest in our region's diverse histories. While completing her Master of Museum Studies she was able to combine her interest in heritage architecture and museums by focusing on the historic house museum and the accessibility challenges they face. As a thesis project, Leora co-curated the award-winning exhibit *Lost & Found: Rediscovering Fragments of Old Toronto* on the grounds of Campbell House Museum. Since completing her degree she has worked as a historical interpreter in a variety of heritage spaces, learning a range of traditional trades and has spent considerable time researching heritage foodways and baking in historic kitchens. In 2022, she joined ASI's Cultural Heritage team as a Cultural Heritage Technician.