

**APPENDIX G:  
STAGE 1 ARCHAEOLOGICAL  
ASSESSMENT**





**Stage 1 Archaeological Assessment:  
Union Gas Windsor Line Replacement**

Parts of Various Lots and Concessions,  
Multiple Lower Tier Municipalities,  
Essex County and the Municipality of  
Chatham-Kent, Ontario

March 11, 2019

Prepared for:

Union Gas Limited  
50 Keil Drive North  
Chatham, Ontario N7M 5M1

Prepared by:

Stantec Consulting Ltd.  
600-171 Queens Avenue  
London, Ontario N6A 5J7

Licensee: Parker Dickson, MA  
License Number: P256  
PIF Number: P256-0552-2018  
Project Number: 160961289

**ORIGINAL REPORT**

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>I</b>
<b>ABBREVIATIONS .....</b>	<b>II</b>
<b>PROJECT PERSONNEL.....</b>	<b>IV</b>
<b>1.0 PROJECT CONTEXT .....</b>	<b>1.1</b>
1.1 DEVELOPMENT CONTEXT .....	1.1
1.1.1 Objectives .....	1.1
1.2 HISTORICAL CONTEXT.....	1.2
1.2.1 Post-Contact Indigenous Resources .....	1.2
1.2.2 Euro-Canadian Resources .....	1.4
1.2.3 Recent Reports .....	1.10
1.3 ARCHAEOLOGICAL CONTEXT .....	1.10
1.3.1 The Natural Environment .....	1.10
1.3.2 Pre-contact Indigenous Resources.....	1.11
1.3.3 Known Archaeological Sites and Surveys .....	1.13
1.3.4 Existing Conditions.....	1.16
<b>2.0 FIELD METHODS .....</b>	<b>2.1</b>
<b>3.0 ANALYSIS AND CONCLUSIONS .....</b>	<b>3.1</b>
<b>4.0 RECOMMENDATIONS .....</b>	<b>4.1</b>
<b>5.0 ADVICE ON COMPLIANCE WITH LEGISLATION .....</b>	<b>5.1</b>
<b>6.0 REFERENCES.....</b>	<b>6.1</b>
<b>7.0 IMAGES.....</b>	<b>7.1</b>
7.1 PHOTOGRAPHS .....	7.1
<b>8.0 MAPS.....</b>	<b>8.1</b>
<b>9.0 CLOSURE.....</b>	<b>9.1</b>

## LIST OF TABLES

Table 1: Summary of Historic Townships Comprising the Study Area .....	1.5
Table 2: Generalized Cultural Chronology of the Study Area .....	1.11
Table 3: Previous Archaeological Assessments .....	1.14



**LIST OF FIGURES**

Figure 1: Study Area Overview .....8.2  
Figure 2: Location of Project – Mapbook.....8.3  
Figure 3: Map of Treaty Areas in Upper Canada.....8.4  
Figure 4: Treaties and Purchases (Adapted from Morris 1943) .....8.5  
Figure 5: Documented Indigenous Activity in Essex County (Lajeunesse 1960).....8.6  
Figure 6: 1797 Plan of Sandwich Township .....8.7  
Figure 7: 1821 Plan of Sandwich Township .....8.8  
Figure 8: 1877 Map of Essex County Illustrating East Sandwich and Maidstone Townships .....8.9  
Figure 9: 1881 Historical Atlas Map of East Sandwich Township .....8.10  
Figure 10: 1821 Plan of Maidstone Township .....8.11  
Figure 11: 1877 Map of Essex County Illustrating Maidstone, Rochester, and Tilbury West Townships .....8.12  
Figure 12: 1881 Historical Atlas Map of Maidstone Township .....8.13  
Figure 13: 1826 Plan of Rochester Township.....8.14  
Figure 14: 1881 Historical Atlas Map of Rochester Township.....8.15  
Figure 15: 1821 Plan of Tilbury West Township .....8.16  
Figure 16: 1881 Historical Atlas Map of Tilbury West Township .....8.17  
Figure 17: 1821 Plan of Tilbury East Township .....8.18  
Figure 18: 1876 Historical Atlas Map of Tilbury East and Romney Townships .....8.19  
Figure 19: 1821 Plan of Romney Township.....8.20  
Figure 20: Archaeological Potential of the Study Area.....8.21



## Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Union Gas Limited (Union Gas) to complete a Stage 1 archaeological assessment for the Windsor Line Replacement Project (the Project). The study area for the Stage 1 assessment of the Project comprises approximately 687 hectares of various lots and concessions of: the Geographic Township of East Sandwich, now Town of Tecumseh, Essex County; the Geographic Townships of Rochester, Maidstone, and Tilbury West, now Town of Lakeshore, Essex County; and the Geographic Townships of Tilbury East and Romney, formerly Kent County, now Municipality of Chatham-Kent, Ontario. The Stage 1 archaeological assessment was conducted during the preliminary planning phase of the Project in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the requirements of Section 4.3.4 of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7<sup>th</sup> Edition* (OEB 2016).

A property inspection was conducted under archaeological consulting license P256 issued to Parker Dickson, MA, of Stantec by the Ministry of Tourism, Culture and Sport (MTCS). The property inspection was completed on October 30, 2018 under Project Information Form number P256-0552-2018 in accordance with Section 1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The Stage 1 archaeological assessment of the Project, involving background research and a property inspection, determined that much of the study area retains potential for the identification and documentation of archaeological resources

The Stage 1 archaeological assessment of the study area for the Project determined that much of the area retains potential for the identification and documentation of archaeological resources. In accordance with Section 1.3.1 and Section 7.7.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is required for any portion of the Project's anticipated construction easement which impacts an area of archaeological potential.** The Stage 1 archaeological assessment determined that there are small pockets of previously assessed lands within the study area which retain low to no archaeological potential. In accordance with Section 1.3.2 and Section 7.7.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is not required for any portion of the Project's anticipated construction easement which impacts a previously surveyed area.** Full details regarding Stage 2 archaeological assessment recommendations are provided in the body of the report.

The MTCS is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*. Archaeological sites recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) and may not be altered, or have artifacts removed, except by a person holding an archaeological license.

*The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.*



## Abbreviations

ASI	Archaeological Services Inc.
ARA	Archaeological Research Associates Ltd.
COTTFN	Chippewas of the Thames First Nation
DRP	D. R. Poulton & Associates Inc.
Golder	Golder Associates Inc.
G.W.R.	Great Western Railway
M.Env.Sc.	Master of Environmental Sciences
MA	Master of Arts
MCIP	Member of the Canadian Institute of Planners
MTCS	Ministry of Tourism, Culture and Sport
OEB	Ontario Energy Board
PIF	Project Information Form
Ph.D.	Doctor of Philosophy
ROW	Right-of-way
RPP	Registered Professional Planner
Stantec	Stantec Consulting Ltd.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

the Project	Windsor Line Replacement Project
TMHC	Timmins Martelle Heritage Consultants Inc.
TLU	Temporary Land Use
Union Gas	Union Gas Ltd.
WIFN	Walpole Island First Nation



## Project Personnel

Licensed Archaeologist:	Parker Dickson, MA (P256)
Project Manager:	Mark Knight, MA, MCIP, RPP Laura Hill, M.Env.Sc.
Task Manager:	Parker Dickson, MA (P256)
Licensed Field Director:	Ruth Dickau, Ph.D. (R1171)
Report Writer:	Ruth Dickau, Ph.D. (R1171)
Historian:	Frank Smith
Quality Review:	Parker Dickson, MA (P256)
Independent Review:	Colin Varley, MA, RPA (P002)

## Acknowledgements

Proponent Contacts:	Ryan Park – Senior Environmental Planner
Ministry of Tourism, Culture and Sport	Robert von Bitter, Archaeological Sites Database Coordinator
Ministry of Natural Resources and Forestry:	Lisa Casselman – Survey Records Clerk





Project Context  
March 11, 2019

### 1.0 PROJECT CONTEXT

#### 1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Union Gas Limited (Union Gas) to complete a Stage 1 archaeological assessment for the Windsor Line Replacement Project (the Project). The study area for the Stage 1 assessment of the Project comprises approximately 687 hectares of various lots and concessions of: the Geographic Township of East Sandwich, now Town of Tecumseh, Essex County; the Geographic Townships of Rochester, Maidstone, and Tilbury West, now Town of Lakeshore, Essex County; and, the Geographic Townships of Tilbury East and Romney, formerly Kent County, now Municipality of Chatham-Kent, Ontario (Figures 1 and 2). The Stage 1 archaeological assessment was conducted during the preliminary planning phase of the Project in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario 1990a) and the requirements of Section 4.3.4 of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7<sup>th</sup> Edition* (OEB 2016).

To ensure the continued reliable delivery of natural gas and serve an increased demand in Tilbury, Essex, Lakeshore, Comber, Leamington, Windsor and surrounding area, Union Gas is proposing to replace the Windsor Line natural gas pipeline. The Project involves decommissioning and replacing approximately 59 kilometres of the existing Windsor Line, a combination of eight-inch and ten-inch diameter pipelines, with a new six-inch diameter pipeline that will operate at a higher pressure. The replacement pipeline will be constructed in the vicinity of the existing pipeline. The Project will occur between the existing Union Gas Sandwich Station on Concession Road 8 (between North Talbot Road and Highway 401, southeast of the City of Windsor) and the existing Union Gas Port Alma Transmission Station (at the intersection of Port Road and Talbot Trail, west of the town of Port Alma on Lake Erie). Pipeline installation will occur through an open trench technique, although select features may be crossed using a trenchless method such as bore or horizontal directional drill.

While the alignment for the new pipe is expected to largely follow the road allowances of County Road 46, Townline Road Rochester, South Middle Road, Concession Road 9, Wheatley Road, Goodreau Road, Simpson Line, and Port Road (see "Preferred Route" on Figure 1), the final construction easement, or temporary land use (TLU), will be determined by Union Gas at a later date. Thus, the current study area for the Stage 1 archaeological assessment is large and serves to capture a broad and generalized geographic area associated with the Project.

##### 1.1.1 Objectives

The objectives of the Stage 1 archaeological assessment were to compile available information about the known and potential archaeological resources within the study area and to provide specific direction for the protection, management, and/or recovery of these resources. In compliance with the provincial standards and guidelines set out in the Ministry of Tourism, Culture and Sport's (MTCS) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 Archaeological Overview/Background Study are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions;



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

- To evaluate the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the study area; and
- To recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historic, and environmental literature pertaining to the study area;
- A review of the land use history, including pertinent historic maps;
- An examination of the *Ontario Archaeological Sites Database* to determine the presence of known archaeological sites in and around the study area; and
- A property inspection of the study area.

Permission to enter the study area for the property inspection was not required as all photo documentation occurred from public/municipal road rights-of-way (ROW).

## 1.2 HISTORICAL CONTEXT

### 1.2.1 Post-Contact Indigenous Resources

“Contact” is typically used as a chronological benchmark in discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. The precise moment of *contact* is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16<sup>th</sup> century (Loewen and Chapdelaine 2016).

At the turn of the 16<sup>th</sup> century, the region of the study area is documented to have been occupied by the “Western Basin Tradition” archaeological culture (see Section 1.3.2). Following the turn of the 17<sup>th</sup> century, the region of the study area is understood to have been within the territory of the historic “Fire Nation”, an Algonquian group occupying the western end of Lake Erie. It is argued, however, that the Attiwandaron (Neutral) expanded extensively westward, displacing the Fire Nation and occupying the region of modern-day Chatham-Kent (Lennox and Fitzgerald 1990:418-419). It is debated whether the Fire Nation was descendent from the archaeologically described “Western Basin Tradition”, or if they migrated into the western part of Lake Erie, displacing a previous Indigenous culture (Murphy and Ferris 1990:193-194). Historians understand that the displaced “Fire Nation” moved across the St. Clair and Detroit Rivers into what is modern-day lower Michigan and their populations are synonymous with the later historic Kickapoo, Miami, Potawatomi, Fox and Sauk (Heidenreich 1990: Figure 15.1). Bkejwanong (Walpole Island) First Nation tradition states that Nations of the Three Fires (a political confederacy, constituted of the Pottawatomi, the Ojibwa and Ottawa) have occupied the delta of the St. Clair River and the surrounding region continually for thousands of years (Walpole Island First Nation [WIFN] n.d.). In 1649, the Seneca with the Mohawk led a campaign into southern Ontario and dispersed the resident Nations and the Seneca used the lower Great Lakes basin as a prolific hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345).

By 1690, Ojibwa speaking people had begun to displace the Seneca from southern Ontario. The Indigenous economy, since the turn of the 18<sup>th</sup> century, focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). The study area falls within the traditional territory of the Bkejwanong (Walpole Island) First Nation (WIFN), the Aamjiwnaang (Sarnia) First Nation (Aamjiwnaang First Nation), the Wiiwkwedong and Aazhoodena (Kettle Point and Stony Point) First Nation (Lytwyn 2009), and the Deshkaan Ziibing Anishnaabeg (Chippewas of the Thames First Nation) (COTTFN). Some populations of Wyandot (a Nation of historically



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

amalgamated Tionontate and Huron-Wendat populations) also had moved to the region of Lake St. Clair at the turn of the 18<sup>th</sup> century and resided with the Three Fires Nations (Tooker 1978:398).

In Essex County, and specifically in the Windsor region, a splinter group of Odawa settled in the area (Cultural Resource Management Group Limited *et al.* 2005:2-14 to 2-15). Also, the surviving remnants of the Huron and Petun were settling in the Windsor region as the Wyandot, exhibiting continuities with their 16<sup>th</sup> and 17<sup>th</sup> century predecessors from the Midland and Blue Mountain regions (Garrad 2014; Steckley 2014). Given the amalgamated nature of the Wyandot people, sometimes one of the contributing Indigenous peoples was recognized over another, hence the Wyandot were known as Huron in the Windsor region (Garrad 2014:16-54). Therefore, the Wyandot settlement in the Windsor region is commonly referred to as the “Huron Village” and related place names survive in Windsor today, such as Huron Church Road (but also note Wyandotte Street).

Despite the dispersal and movement of Indigenous groups throughout southern Ontario during the 17<sup>th</sup> and 18<sup>th</sup> centuries, archaeologically they can be characterized by continuity with their pre-contact Indigenous counterparts. These peoples still maintained a Terminal Woodland archaeological culture, albeit with some features of European material culture. While there was cultural and social change occurring due to contact with European colonial powers, there was equally a definite persistence of Indigenous socio-cultural practices since these groups were not so profoundly affected by European contact that they left their former lifeways behind (Ferris 2009).

Under British administration in the 19<sup>th</sup> century, the various Indigenous groups were divided into separate bands. For example, the Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18<sup>th</sup> century, the central Algonquian-speaking peoples, including the Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of the 18<sup>th</sup> century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Indigenous peoples and their communities continue to play a large role in the occupation of the study area and its environs.

Following the American Revolutionary War, Britain focused on the settlement of European immigrants into what became the province of Upper Canada in 1791. To enable widespread settlement, the British government negotiated a series of treaties with the First Nations peoples. Figure 3 provides a map of southwestern Ontario illustrating early treaties and purchases (Government of Canada n.d.). One of the earliest treaties involving lands located in close proximity to the study area was made on May 19, 1790. Originally identified as the Detroit Treaty, the chiefs of the Odawa, Chippewa, Pottawatomi, and Huron Nations and representatives of the British Crown established a vast tract of land “...from the Detroit River easterly to Catfish Creek and south of the river La Tranche [now Thames River] and Chenail Ecarte [now St. Clair River], and contains Essex County except Anderdon Township and Part of West Sandwich; Kent County except Zone Township, and Gores of Camden and Chatham; Elgin County except Bayham Township and parts of South Dorchester and Malahide...[i]n Middlesex County, Delaware and Westminster Township and part of North Dorchester” (Morris 1943:17). Today, this treaty is identified as Treaty Number 2, illustrated by the letter “C” on Figure 4. Note that Figure 4 does not represent an exhaustive list of the various treaties, land claims, and land cessations within the region. Rather, Figure 4 is based on Morris (1943) which provide a general outline of some of the treaties within the Province of Ontario from 1783 to 1923.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

A plaque, erected by the Historic Sites and Monuments Board of Canada, further identifies this Treaty Number 2 as *McKee's Purchase*. The commemorative plaque, located in the Blenheim Memorial Park in Blenheim, Ontario, reads:

*In May 1790 Alexander McKee, Deputy Agent of the British Indian Department, and the principal chiefs of the Ottawa, Potawatomi, Chippewa and Wyandot negotiated a treaty whereby the British Crown acquired title to what is now southwestern Ontario. This treaty completed the process begun with Niagara treaties of 1781 and 1784, with the result that most of the Ontario peninsula was soon opened to British and Loyalist settlement.*

(Ontario Plaques 2016)

In addition to the above, Figure 5 reproduces a map from the *History of the Windsor Border Region* (Lajeunesse 1960) which depicts several Indigenous sites and trails documented in Essex County during the late 18<sup>th</sup> century. Trail A extends from the City of Windsor at the Detroit River to the Town of Leamington. Subsequently, Talbot Road and Highway 3 were constructed to largely follow Trail A. Trail B extends north from the shores of Lake Erie (west of the Town of Leamington) to an Indigenous site, identified as "Site 20", near the mouth of the Ruscom River. Trail D, located within the southern portion of the study area, connects Indigenous shoreline settlements or camps along the north shore of Lake Erie, roughly from the Village of Colchester to the Town of Leamington. "Site 2", illustrated by two black dots on Figure 5 to the south of the study area, represents two Indigenous camps along the north shoreline of Lake Erie. Trails A and B intersect with the study area and no illustrated Indigenous sites are located within the study area. Located north of the study area, Trail G represents an early path along the south shore of Lake St. Clair, connecting the Thames River to Sandwich (now, the City of Windsor). This road was also travelled by Governor Simcoe in 1793 (Lajeunesse 1960: xxxix).

The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift, "written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to...systems of ideology and thought" (Ferris 2009:114). As a result, First Nations peoples have left behind archaeologically significant resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.

### 1.2.2 Euro-Canadian Resources

The study area extends through the north central portion of Essex County and the southwestern portion of Kent County (now the Municipality of Chatham-Kent). Table 1 provides a summary of the former and current municipal designations for the study area. In discussing the late 19<sup>th</sup> century historical mapping it must be remembered that many historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, all structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

Review of historic mapping also has inherent accuracy difficulties due to potential error in geo-referencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in 'fixed' locations over time (e.g., road intersections),



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

errors/difficulties of scale and the relative idealism of the historic cartography, historic maps may not translate accurately into real space points. This may provide obvious inconsistencies during the historic map review. Table 1 provides a summary of the historic townships comprising the study area.

**Table 1: Summary of Historic Townships Comprising the Study Area**

Geographic Township	Former County	Current Lower Tier Municipality	Current Upper Tier Municipality
East Sandwich	Essex	Town of Tecumseh	Essex County
Maidstone	Essex	Town of Lakeshore	Essex County
Rochester	Essex	Town of Lakeshore	Essex County
Tilbury West	Essex	Town of Lakeshore	Essex County
Tilbury East	Kent	Municipality of Chatham-Kent	Municipality of Chatham-Kent
Romney	Kent	Municipality of Chatham-Kent	Municipality of Chatham-Kent

Initial Euro-Canadian activity in Essex County and Kent County is related to French attempts to fortify claims to the Ohio Valley and Great Lakes region. Southwestern Ontario was part of France's vast colonial holdings in North America called New France. The centre of French activity in the Great Lakes region was Detroit (Lajeunesse 1960:liii). French soldiers, farmers, and missionaries were active on both the present-day Canadian and American sides of the Detroit River, Lake St. Clair, and Lake Erie (Lajeunesse 1960:liv). From 1756 to 1763, Great Britain and France were at war during the Seven Years War. By 1760, the British had captured New France and in 1763 the vast majority of France's North American holdings, including the study area, were ceded to the British (Craig 1963:2).

In 1763, present-day Ontario and the Ohio Valley were closed off to European settlement to appease Britain's Indigenous allies (Craig 1963:2). In 1774, the *Quebec Act* was passed which extended the borders of Quebec into the Ohio Valley and protected French culture and law in the province (Library and Archives Canada 2001). The *Quebec Act* enflamed tensions with the increasingly restless Thirteen Colonies in New England. The American Revolutionary War was fought between Britain and the fledgling United States from 1775 to 1783. Great Britain recognized American independence in 1783 (Craig 1963:3). During the war and afterwards, an influx of United Empire Loyalists entered the Province of Quebec, which included land in present-day Ontario. Frederick Haldimand, Governor of Quebec, proposed formally settling the Loyalists in southern Quebec, stating that the new settlers "would be attached to the interests of Great Britain and capable of being useful upon many occasions" (Craig 1963:5).

The *Constitution Act* of 1791 divided the Province of Quebec into Upper and Lower Canada. The division was created at the behest of the Loyalists who wished to live under the same English customs and legal procedures they had lived under in Britain and the former Thirteen Colonies (Craig 1963:17). John Graves Simcoe was appointed the first Lieutenant Governor of Upper Canada. In July 1792, Simcoe renamed the districts and divided the province of Upper Canada into 19 counties, including the County of Essex and County of Kent, within the renamed Western District (Archives of Ontario 2015). Each county was subdivided into townships.

The development of Essex and Kent Counties during the first half of the 19<sup>th</sup> century within the study area is closely linked with Colonel Thomas Talbot, who was instrumental in the settlement of 29 townships in southwestern Ontario. Talbot had served as private secretary to John Graves Simcoe and, in 1803, he obtained a large land grant to settle on Lake Erie and was appointed Crown Land Agent and a District Commissioner. This portion of land became known



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

as the Talbot Settlement. Talbot was mistrustful of American settlers and intended to populate the townships under his stewardship with immigrants from the British Isles (Armstrong 1986:24; Elgin County Archives n.d.).

During a time when there were few roads in Canada, and those that existed were in poor condition, Talbot undertook to improve the road network. The two main roads in Talbot's jurisdiction were the Talbot Road, with survey starting in 1809 and following a former Indigenous trail (see Section 1.2.1 and Figure 5), and the Middle Road, surveyed in 1823. These roads helped to open the interior of Essex and Kent counties to further survey and European settlement. Middle Road forms part of the study area ROW in Sandwich, Maidstone, and Rochester Townships.

The major impediment to development in much of Kent and Essex counties was poor drainage. This issue was tackled in earnest with the passage of the *Provincial Drainage Act* in 1872. The act gave municipal councils the ability to deepen streams or construct ditches to drain property when the majority of resident owners petitioned. The municipalities were also granted the right to borrow money and levy rate for the payment of drainage improvements. By 1880, significant drainage improvements were made and thousands of acres in Essex and Kent County had been brought into cultivation (Jones 1946).

### 1.2.2.1 Sandwich Township

Sandwich Township was named after the Port of Sandwich in Kent County, England (Gardiner 1899:347). Survey of the township was initiated between 1792 and 1793 by Patrick McNiff. McNiff did not complete the full survey of the township, and additional surveys were undertaken by Abraham Iredell in 1796-1797 and Mahlon Burwell in 1824 (Clarke 2001:67). Township lots are irregularly laid out, due to Lake St. Clair and the Detroit River bounding the township on the north and west sides, the presence of French settlers prior to survey, and areas of swampy land. Along the Detroit River and Lake St. Clair, the township has long narrow lots in order to provide the greatest number of settlers with water access (Figure 6). The remaining south and east portions of the township utilize the double-front survey system (Figure 7).

In 1788, a one square mile block of land was acquired by the British from the Chiefs of the Wyandottes/Huron, the Chippewa, and Ottawa along the Detroit River opposite the settlement of Detroit. The village of Sandwich was established on this parcel of land and was made the new county town by the colonial administrator Peter Russell in 1796. In the 1830s, the Town of Sandwich became an important terminal on the Underground Railroad following the *Emancipation Act* in 1833. Between 30,000 and 100,000 refugees made their journey into Upper Canada by way of Sandwich, with many settling in the town (City of Windsor 2018). Most of the other early Euro-Canadian villages and towns of Sandwich Township were established later along the Detroit River, such as Windsor and Walkerville, or along waterways, such as Canard River in the southwest. Settlement of the interior of the township was limited until the mid to late 19<sup>th</sup> century and was located mostly along Talbot and Middle Roads (Belden 1881) (Figures 8 and 9).

In 1844, the rural population of Sandwich Township was 3,624 outside of the towns on the Detroit River (Smith 1844:164). Farming was the main industry, with residents supplying products such as poultry to Windsor and Detroit. By 1846, approximately 21% of the township was under cultivation (Smith 1846:104). In 1853, the Great Western Railway was constructed through the township, with the line running through Ryegate along the St. Clair Lake shore and terminating at Windsor. The railway brought increased economic prosperity to Windsor and the surrounding area. In 1861, the remainder of Sandwich Township was divided into East Sandwich and West Sandwich Townships (Belden 1881:7).



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

The population of East Sandwich Township in 1881 was 4,386 (Census of Canada 1881). Historic mapping shows a developed agricultural landscape in the interior of the township, with an established road and rail network (Figure 9). According to the 1891 Census' agricultural information, the main crops grown in East Sandwich Township were oats, wheat, corn, and hay, and the township was the largest producer of poultry in Essex County (Census of Canada 1891). In 1893, the Township of Sandwich East was further subdivided, with the creation of the Township of Sandwich South, where the study area is located (Town of Tecumseh 2014).

### 1.2.2.2 Maidstone Township

Maidstone Township was named after the town of Maidstone in Kent County, England (Gardiner 1899:346). Beginning in 1788, Patrick McNiff was ordered by the Land Board to survey what is now the Township of Maidstone. In 1793, McNiff managed to lay out 24 farms on rectangular blocks of land, 200 acres each, abutting either side of Pike Creek and Puce River and the west side of Belle River (Burnside *et al.* 1982). The surveying of Maidstone Township was completed in 1821 (Figure 10). Like the Township of Sandwich, lots in the township were laid out irregularly to afford water access to the largest number of settlers. These long and narrow waterfront lots fronted Lake St. Clair, the Puce River, and Pike Creek. The earliest European settlers in Maidstone Township were primarily French-Canadians who clustered along the Belle River, which constitutes the eastern border of the township.

The exact date of Euro-Canadian settler arrival in the area is difficult to determine. The first official record of land ownership in Maidstone Township is dated to 1793-1794 (Burnside *et al.* 1982). However, many of the landowners never set foot on their land, as rights and grants were sold and traded to pay debts or were used in business dealings (Burnside *et al.* 1982). There is some evidence of Euro-Canadian settlement prior to 1793, as French fishermen and trappers visited the shores of Lake St. Clair and established semi-permanent camp sites or cabins (Burnside *et al.* 1982).

English speaking settlement in Maidstone Township began in 1828 when settlement along the Middle Road began. The early settlers along the Middle Road in Maidstone were primarily Irish Catholics, the first of them being the O'Connor family and the Kavanagh family (Belden 1881:13). During the 1830s, settlement in the township remained sparse and Middle Road was little more than a blazoned path through the forest. Under Talbot's road building program, Middle Road became a major thoroughfare and greatly increased the prospects of settlement in the area when it was planked in 1854 (Burnside *et al.* 1982).

During the 1840s and 1850s the northern half of the township became increasingly settled and the first sawmill was opened along the Tecumseh Road in the 1840s. In the northwest portion of the township, a settlement of Scottish families settled in what became known as the Scotch Settlement. The portion of the township south of Middle Road was not widely settled until the second half of the 19<sup>th</sup> century (Belden 1881:13).

In 1881, the population of Maidstone Township was 3,260, an increase of 1,205 people since 1871 (Census of Canada 1871; Census of Canada 1881). Agricultural production of grain, hay, and cattle was well developed in the township by the late 19<sup>th</sup> century (Census of Canada 1891). Historic mapping from 1877 shows several churches and schoolhouses along Middle Road, as well as the hamlet of Woodslee (Figure 11). While the 1877 map illustrates numerous landowners within the study area, the 1881 *Illustrated Historical Atlas of the Counties of Essex and Kent* (Belden 1881) illustrates only a few landowners along Middle Road (Figure 12); however, it is likely many landowners were not subscribers to the atlas and therefore not shown.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

### 1.2.2.3 Rochester Township

Rochester Township was named after the town of Rochester in Kent County, England (Gardiner 1899:346). The township was first surveyed in 1796 by Abraham Iredell (Clarke 2001:67). Generally, the township has an irregular layout to allocate water access (i.e., Lake St. Clair, Belle River, and Ruscom River) to as many lots as possible (Figure 13). Because of poor road conditions and the swampy terrain of large stretches of the township, water access was heavily valued by early settlers (Lajeunesse 1960:182-183). The original survey map of Rochester Township illustrates a path along the west side of the Ruscom River which crosses the study area, labelled “Path travelled from Lake Erie to Lake St. Clair” (Figure 13, Government of Canada n.d.). This path appears to be equivalent to the Indigenous “Trail B” illustrated on Lajeunesse’s map (1960: xxxix) (Figure 5). The earliest European settlers of Rochester Township were mostly French-Canadian and included the Renaud, Camperau, Compeau, Derouches, Marenette, and Hamel families, whom resided on the present-day site of the community of Belle River (Belden 1881:11).

The French population began to be supplemented with English speaking settlers in the 1830s. The English-speaking settlers took land near Lake St. Clair or along the Middle Road. The first to settle in the Township of Rochester was William Murray, in 1834, on Lot 7, Concession 1 fronting the Belle River. Many other settlers took up land along the Middle Road, such as James O’Connor in 1828. These were mostly Irish settlers but included a group of German settlers. More settlers arrived following the Upper Canadian Rebellion of 1837 (Wallace 1978). The interior between Middle Road and Lake St. Clair was not settled until the development of better roadways in the mid-19<sup>th</sup> century (Belden 1881:11).

Development in the township increased following the construction of the Great Western Railway (G.W.R.) in 1854 near the shore of Lake St. Clair (Wallace 1978). Prior to the opening of the railway, the township had a population of only 474, with 922 acres under cultivation (Smith 1846:161). By 1861, the population of the township had reached 1,349 (Sutherland & Co. 1866:6), and nearly doubled within two decades with 2,483 people in 1881 (Census of Canada 1871; Census of Canada 1881). Settlement continued to increase in the late 19<sup>th</sup> century, with the construction of the Canada Southern Railway through the interior of the township in 1873 and improvements to the drainage system (Figures 11 and 14).

### 1.2.2.4 Tilbury West Township

Tilbury West Township was named after Fort Tilbury in Essex County, England (Gardiner 1899:327). The initial Tilbury West Township, formed in 1798, consisted of 22 lots along the coast of Lake St. Clair as well as five concessions (Figure 15). Following this, Lieutenant-Colonel Burwell was commissioned to complete survey of the remainder of the township in 1824 (Wallace 1978; Clarke 2002:67-73). The first European settlers in the area were French residents, who set up along the shores of Lake St. Clair in the area that would eventually be known as Stoney Point in the 1790s (Belden 1881). Following the initial settlement, Peter Gardner and Peter Truedell began clearing a considerable portion of the land in the region. Despite the early arrival, there was little development within the township, due largely to the extensive swampland in the back concessions of the township. These large stretches of swamp impeded European settlement of the township as settlers selected better lands in the adjacent townships. Large-scale settlement of Tilbury West Township would not begin until after 1840 (Belden 1881:14). According to Smith (1846:192), the population of the entire township in 1844 was 437 people, with only 6.7% of the land being used for agricultural purposes. Following development along Middle Road in the 1830s and 1840s, more residents





## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

came to the area, with the interior of the township between Middle Road and Lake St. Clair being settled in the mid-19<sup>th</sup> century. Settlers in this portion of the township included French-Canadians and immigrants from the British Isles. Prominent families at the time include the Dodd and Nicholson families (Belden 1881:14). To the south of Middle Road, the main hindrance to settlement was poor drainage and settlement did not begin until after 1870 (Belden 1881:14).

Few settlers are depicted in the interior of Tilbury West on the 1881 *Illustrated Historical Atlas of Essex County, Ontario* (Belden 1881) (Figure 16); however, it is likely many landowners were not subscribers to the atlas and therefore not shown. A spur of the Michigan Central Railway was built between Comber and Leamington in 1888 which crosses the study area (Andreae 1997). The population of Tilbury West Township in 1881 was 4,410 people, an increase of 2,018 since 1871 (Census of Canada 1871; Census of Canada 1881).

### 1.2.2.5 Tilbury East Township

Tilbury East Township was named after Fort Tilbury in Essex County, England (Gardiner 1899:327). The first survey of the township was carried out by Patrick McNiff in 1793 when he surveyed lots on both sides of the Thames River (Figure 17). The township survey was completed in 1824. The earliest settlers in Tilbury East Township were French-Canadians who resided in the low-lying land along the Thames River. Many of the French settlers along the river in Tilbury East were veterans of the American Revolutionary War who had served as officers in the Indian Department and many had familial ties to each other (Hamil 1951:21). English-speaking settlement of Tilbury East Township was concentrated along the shoreline of Lake Erie. The interior southern portion of East Tilbury remained largely unsettled until the second half of the 19<sup>th</sup> century due to vast stretches of swamp (Belden 1881:62) (Figure 18). Other reasons for the slow early growth of Tilbury included that large areas of the township were set aside as Clergy Reserves or were purchased by the Canada Company (Lauriston 1952:307).

The population of Tilbury East Township in 1871 was 1,846 (Census of Canada 1871). By 1881, this had increased to 2,872 (Census of Canada 1881). Between 1884 and 1892, over 5,000 acres of land in the township were brought into cultivation under the *Municipal Drainage Act* (Lauriston 1952:312-313). The Lake Erie and Detroit River Railway was constructed through East Tilbury and Romney Townships in 1893, prompting the creation of settlements around the stations of Merlin, Glenworth, and Stevenson (Andreae 1997).

### 1.2.2.6 Romney Township

Romney Township was named after the port of Romney in Kent County, England (Gardiner 1899:328). The surveying of the township was started in 1799 by Abraham Iredell (Hamil 1951:26). Iredell likely only laid out the borders of the township. The survey of the township was completed in 1821 (Figure 19). The township is the smallest township in Kent County (Belden 1881:62). The first recorded land grant in Romney Township was to James Fleet, who received a patent in 1802 along the shore of Lake Erie (Lauriston 1952:324). Romney Township remained mostly unsettled before the War of 1812 due to swampy terrain and a lack of creeks or rivers (Belden 1881:62) (Figure 18).

After the War of 1812, Mahlon Burwell surveyed the Talbot Road through Romney Township along the shore of Lake Erie. The Talbot Road was instrumental in the development of Kent and Essex Counties and early European settlement in Romney Township was clustered along Talbot Road (Figure 18). The first record of a land patent holder settling in Romney Township was in 1817 when Robert Coatsworth settled on Lot 200, North Talbot Road. The Coatsworth family had immigrated to Canada from Durham, England, and eventually built a mill and shipping docks



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

on the lake that facilitated trade with Buffalo, New York (Lauriston 1952:324). In 1862, Talbot Road within Romney Township was moved back from the lake. Drainage ditches built by settlers along the ridge of Lake Erie soon eroded into deep ravines and necessitated realigning the part of the road along Concession 2 (Lauriston 1952:328). Talbot Road maintains this alignment in the former Romney Township to the present-day. Port Alma was founded in the 1880s when Joe Cusack, from Buffalo, built a dock and boarding house and named the settlement after his wife. The community also had a brickyard and store (Lauriston 1952:331-332). By 1881, the population of Romney Township was 1,082 (Census of Canada 1881).

### 1.2.2.7 Summary

As demonstrated above, the historical context of the Stage 1 study area for the Project includes potential for Euro-Canadian resources. The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 100 years, having been densely populated by Euro-Canadian farmers by the late 19<sup>th</sup> century. Moreover, much of the study area has been cleared of woodlot and had extensive drainage systems installed to reclaim swamp and marshland as agricultural field.

### 1.2.3 Recent Reports

As part of the environmental study for the Project, Stantec initiated a Cultural Heritage Assessment Report (CHAR) (Stantec n.d.). As part of agency and municipal consultation for the CHAR, Stantec reached out to the Ontario Heritage Trust (OHT), the MTCS, the Municipality of Chatham-Kent, Town of Lakeshore, and Town of Tecumseh. The OHT and MTCS reported that there were no provincial heritage interests within or adjacent to the study area for the Project. Similarly, the Municipality of Chatham-Kent and the Town of Tecumseh confirmed that there are no protected properties located within the study area for the Project. In the Town of Lakeshore, five properties with potential heritage interest have been identified within the study area for the Project. Full details pertaining to potential heritage properties and the anticipated impacts of the Project will be provided in CHAR for the Project (Stantec n.d.).

## 1.3 ARCHAEOLOGICAL CONTEXT

### 1.3.1 The Natural Environment

The Stage 1 study area for the Project is situated within the St. Clair Clay Plain. The St. Clair Clay Plain physiographic region is described as:

*Adjoining Lake St. Clair in Essex and Kent Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l., except for the moraine at Ridgetown and Blenheim which rises 50 to 100 feet higher. ...Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.*

(Chapman and Putnam 1984:147)



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

The study area is situated within a sub-region identified as the Essex Clay Plain, extending between the basins of Lake Erie and Lake St. Clair. The clay plain is quite flat, with slow surface drainage towards Lake St. Clair in the north and towards Lake Erie in the south (Chapman and Putnam 1984). The dominant soil type is Brookston clay loam, typical of swampy areas populated with elm, black ash, white ash, and silver maple (Chapman and Putnam 1984). European agricultural practices were moderately delayed until artificial drainage was established by dredged ditches and field tiling.

The western end of the study area at the Union Gas Sandwich Station is situated on a paleo beach ridge formed by Lake Whittlesley around 14,000 years ago. This extensive beach ridge extends from southeastern Windsor southeast towards Kingsville.

Water sources are abundant within the Stage 1 study area and surrounding region. In addition to large primary water sources to the north and south of the study area, i.e., Lake St. Clair and Lake Erie, there are numerous primary and secondary sources of potable water within the study area. The majority of the study area drains towards Lake St. Clair, primarily by the Little River, Puce River, Belle River, and Ruscom River, aided by secondary creeks and streams such as: Pike Creek, Duck Creek, Moison Creek, Big Creek, Tilbury Creek, and Baptiste Creek. The eastern part of the study area near Port Alma drains towards Lake Erie, primarily via artificial drainage ditches. Additional tertiary creeks and streams from these primary and secondary sources are noted throughout the study area, and many have been dredged during the 20<sup>th</sup> century to form municipal drains.

### 1.3.2 Pre-contact Indigenous Resources

This portion of southwestern Ontario has been occupied by First Nations peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into cultural periods based on observed changes in material culture. These cultural periods are largely based in observed changes in formal lithic tools, and separated into the Early Paleo-Indian, Late Paleo-Indian, Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, cultural periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these cultural periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. Table 2 provides a general outline of the cultural chronology of the study area, summarized from Ellis and Ferris (1990). The provided time periods are based on the “Common Era” calendar notation system, i.e., Before Common Era (BCE) and Common Era (CE).

**Table 2: Generalized Cultural Chronology of the Study Area**

Period	Characteristics	Time	Comments
Early Paleo-Indian	Fluted Projectiles	9,000 – 8,400 BCE	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8,400 – 8,000 BCE	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8,000 – 6,000 BCE	slow population growth
Middle Archaic	Brewerton-like Points	6,000 – 2,500 BCE	environment similar to present



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

Period	Characteristics	Time	Comments
Late Archaic	Narrow Point	2,000 – 1,800 BCE	increasing site size
	Broad Point	1,800 – 1,500 BCE	large chipped lithic tools
	Small Point	1,500 – 1,100 BCE	introduction of bow hunting
Terminal Archaic	Hind Points	1,100 – 950 BCE	emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BCE	introduction of pottery
Middle Woodland	Couture Corded Pottery	400 BCE – CE 500	increased sedentism
	Riviere au Vase Phase	CE 500 – 800	seasonal hunting and gathering
Late Woodland	Younge Phase	CE 800 – 1200	incipient agriculture
	Springwells Phase	CE 1200 – 1400	agricultural villages
	Wolf Phase	CE 1400 – 1550	earth worked villages, warfare
Contact Indigenous	Various Algonkian and Iroquoian Groups	CE 1600 – 1875	early written records and treaties
Historic	French/Euro-Canadian	CE 1749 – present	European settlement

Local environmental conditions during the Paleo-Indian period were significantly different from what they are today. Ontario's first peoples would have crossed the landscape in small groups in search of food, particularly migratory game species. In this area, caribou may have been a Paleo-Indian diet staple, supplemented by wild plants, small game, birds, and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo-Indian sites are small and ephemeral. They are sometimes identified by the presence of fluted points. Sites are frequently located adjacent to the shorelines of large glacial lakes (Ellis and Deller 1990).

Archaeological records indicate subsistence changes around 8,000 BCE at the start of the Archaic Period in southwestern Ontario. Since the large mammal species that formed the basis of the Paleo-Indian diet became extinct or moved north with the warming of the climate, Archaic populations had a more varied diet, exploiting a range of plants and bird, mammal, and fish species. Reliance on specific food resources like fish, deer, and several nut species became more noticeable through the Archaic Period and the presence of warmer, more hospitable environs led to expansion of group and family sizes. In the archaeological record, this is evident in the presence of larger sites. The coniferous forests of earlier times were replaced by stands of mixed coniferous and deciduous trees by about 4,000 BCE. The transition to more productive environmental circumstances led to a rise in population density. As a result, Archaic sites become more abundant over time. Artifacts typical of these occupations include a variety of stemmed and notched projectile points; chipped stone scrapers; ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets); bifaces or tool blanks; animal bone; and chert waste flakes, a byproduct of the tool making process (Ellis *et al.* 1990).

Significant changes in cultural and environmental patterns occurred in the Early and Middle Woodland periods (*circa* 950 BCE to CE 800). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by roughly 1,000 years ago. Archaeologically, the most significant changes by Woodland peoples were the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The earliest pottery was crudely made by the coiling method; and early house structures were simple oval enclosures. The Early and Middle Woodland periods are also characterized by extensive trade in raw materials, objects, and finished tools, with sites in Ontario containing trade items with origins in the Mississippi and Ohio River valleys (Spence *et al.* 1990).



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

By the Late Woodland period there was a distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties. The primary Late Woodland occupants of this area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes: Riviere au Vase, Younge, Springwells, and Wolf.

### 1.3.3 Known Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by upper case letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lower case letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the MTCS who maintain the *Ontario Archaeological Sites Database*. The study area is located within Borden blocks AbHr, AbHq, AbHp, AbHo, and AbHn.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MTCS will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the *Ontario Archaeological Sites Database* has shown that there is one registered archaeological site within one kilometre of the study area (Government of Ontario 2018a).

Location 28 (AbHq-8) was identified during the Stage 2 archaeological assessment of the Belle River Wind Project by Golder Associates Inc. (Golder) (Golder 2015). The site consists of a scatter of 47 Euro-Canadian artifacts in an area measuring 37 metres by 46 metres. The site dates to 1870-1900 based on primary documentation. The site retains cultural heritage value or interest and was recommended for Stage 3 assessment. The site is not located within the study area for the current Project or within 50 metres of the study area for the current Project.

A query of the *Ontario Public Register of Archaeological Reports* identified thirteen archaeological assessments which may document work within the broad Stage 1 study area or within 50 metres of it (Government of Ontario 2018b). Table 3 provides a summary of the relevant reports.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

**Table 3: Previous Archaeological Assessments**

Year	Report	Author	Project Information Form (PIF) #
2006	<i>Stage 1 Archaeological Assessment, Port Alma Wind Power Project, Romney Township, East Tilbury Township, and Raleigh Township, Municipality of Chatham-Kent.</i>	Timmins Martelle Heritage Consultants Inc. (TMHC)	P118-054-2006
<b>2007</b>	<b><i>Stage 2 Archaeological Assessment Kruger Energy Port Alma Wind Power Project, Municipality of Chatham-Kent</i></b>	<b>TMHC</b>	<b>P064-122-2006</b>
2007	<i>The 2007 Stage 1 Archaeological Assessment of the Gosfield Comber Wind Energy Project, Town of Kingsville &amp; Town of Comber, Essex County, Ontario</i>	D.R. Poulton and Associates Inc. (DRP)	P116-161-2006
2009	<i>Stage 1 Archaeological Assessment, Proposed Merlin-Quinn Wind Farm, Kent and Essex Counties, Ontario (For Suncor Energy Products Inc.)</i>	Jacques Whitford	P002-131-2008
2009	<i>Stage 2 Archaeological Assessment: Kruger Energy Chatham Wind Project, Municipality of Chatham-Kent</i>	TMHC	P064-304-2009
2010	<i>Stage 1 Archaeological Assessment (Background Study and Property Inspection): South Kent Wind Project Municipality of Chatham-Kent, Ontario</i>	Archaeological Services Inc. (ASI)	P264-120-2010
<b>2011</b>	<b><i>Stage 2 Archaeological Assessment Comber Wind Limited Partnership Project (Comber East FIT-FSUTXQ9 and Comber West FIT-FI4DYH9) Town of Lakeshore (Formerly Townships of Rochester and Tilbury West) Essex County, Ontario</i></b>	<b>Archaeological Research Associates Ltd. (ARA)</b>	<b>P007-269-2010</b>
2011	<i>Stage 2 A. A. (Property Assessment) South Kent Wind Project Municipality of Chatham-Kent, Ontario Interim Report on the 2010 Field season</i>	ASI & Scarlett Janusas Archaeological & Heritage Consulting Ltd.	P264-119-2010, P264-120-2010, P027-112-2010
2011	<i>Stage 2 Property Assessment South Kent Wind Project Municipality of Chatham-Kent, Ontario, Final Report: Part 1 of 2</i>	ASI	P347-001-2011
2014	<i>Stage 1 Archaeological Assessment, SP Belle River Wind LP, Belle River Wind Project, Various Lots and Concessions, Geographic Townships of Maidstone, Rochester, and Tilbury West, Essex County, Ontario</i>	Golder	P311-0277-2014, P311-0291-2014, P311-0298-2014, P311-0300-2014
<b>2015</b>	<b><i>Stage 2 Archaeological Assessment: Belle River Wind Project Various Lots and Concessions Former Geographic Townships of Maidstone, Rochester and Tilbury West Now Town of Lakeshore Essex County, Ontario</i></b>	<b>Golder</b>	<b>P311-0278-2014, P311-0292-2014, P311-0301-2014</b>
2016	<i>Stage 1 Archaeological Assessment: Victor Wind Project: Geographic Townships of Rochester and Tilbury West, Municipality of Lakeshore, County of Essex, Ontario</i>	Stantec	P256-0394-2016
<b>2017</b>	<b><i>Stage 1 and 2 Archaeological Assessments Romney Wind Energy Centre L-006356-WIN-001-060 2016 Season Town of Lakeshore and Municipality of Chatham-Kent Multiple Lots and Concessions</i></b>	<b>ARA</b>	<b>P007-0783-2016</b>



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

Year	Report	Author	Project Information Form (PIF) #
	<b><i>Geographic Townships of Tilbury West and Romney Essex County and Former Kent County, Ontario</i></b>		

*Note: Assessments in bold represent survey work completed within the study area for the current Project and are illustrated on Figure 20*

In 2006, Timmins Martelle Heritage Consultants Inc. (TMHC) completed a Stage 1 archaeological assessment for the Port Alma Wind Power Project which overlaps part of the study area in Romney Township and East Tilbury Township, Municipality of Chatham-Kent, under PIF # P118-054-2006 (TMHC 2006). TMHC recommended that a Stage 2 archaeological assessment be completed for any portion of the Port Alma Wind Power Project which may impact an area of archaeological potential. Subsequently, TMHC (2007, 2009) undertook Stage 2 archaeological assessments under PIF #s P064-122-2006 and P064-304-2009 for the Kruger Energy Port Alma Wind Power Project, which was later renamed the Kruger Energy Chatham Wind Project. Parts of this Stage 2 archaeological assessment overlap the current study area and are illustrated on Figure 20. Three isolated Indigenous artifacts and one small Euro-Canadian artifact scatter were documented during the Stage 2 assessments outside the current study area. These sites were determined to have no further cultural heritage value or interest and a Stage 3 assessment was not recommended. No archaeological resources were identified during the Stage 2 assessments within the current study area.

In 2007, D.R. Poulton and Associates (DRP) completed a Stage 1 archaeological assessment for the Gosfield Comber Wind Energy Project which overlaps part of the study area in Essex County under PIF # P116-161-2006 (DRP 2007). DRP recommended that a Stage 2 archaeological assessment be completed for any portion of the Gosfield Comber Wind Project which may impact an area of archaeological potential. Subsequently, Archaeological Research Associates Ltd. (ARA 2011) undertook a Stage 2 archaeological assessment for the Comber Wind Project in the Townships of Rochester and Tilbury West in Essex County under PIF # P007-269-2010. Parts of this Stage 2 archaeological assessment overlap the current study area and are illustrated on Figure 20. No archaeological resources were identified during the Stage 2 assessment by ARA (2011).

In 2009, Jacques Whitford (Jacques Whitford 2009) completed a Stage 1 archaeological assessment for the proposed Merlin-Quinn Wind Farm in Chatham-Kent County under PIF # P002-131-2008. A Stage 2 archaeological assessment was recommended for any portion of the study area which may impact an area of archaeological potential.

In 2010, Archaeological Services Inc. (ASI) completed a Stage 1 for the South Kent Wind Project under PIF # P264-120-2010 which incorporates much of the Merlin-Quinn Wind Project and overlaps a portion of the eastern part of the current study area (ASI 2010). ASI recommended Stage 2 archaeological assessment for any portion of the South Kent Wind Project which may impact an area of archaeological potential. Subsequently, the wind turbines and transmission infrastructure proposed along Goodreau Line as part of the South Kent Wind Project were dropped (ASI & Scarlett Janusas Archaeological & Heritage Consulting Ltd. 2011; ASI 2011). The remainder of the South Kent Wind Project is more than 50 metres from the current study area.

In 2014, Golder Associates Ltd. (Golder) completed a Stage 1 archaeological assessment for the Belle River Wind Project in the Town of Lakeshore under PIF #s P311-0277-2014, P311-0291-2014, P311-0298-2014, and P311-0300-2014. Golder recommended that a Stage 2 archaeological assessment be completed for any portion of the



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Project Context  
March 11, 2019

Belle River Project which may impact an area of archaeological potential. Subsequently, Golder (2015) undertook Stage 2 archaeological assessments under PIF #s P311-0278-2014, P311-0292-2014, and P311-0301-2014 for the Project. Parts of this Stage 2 archaeological assessment, specifically the municipal ROWs along parts of Concession Road 2, Concession Road 3, County Road 31, Concession Road 6A, and County Road 46 in Rochester Township overlap the current study area and are illustrated on Figure 20. As mentioned above, a 19<sup>th</sup> century Euro-Canadian site, Location 28 (AbHq-8), was identified within one kilometre of the current study area and a Stage 3 assessment of this archaeological site was recommended by Golder (2014). Another location with Euro-Canadian artifacts, Location 27, was identified within one kilometre of the current study area, but this site was determined to have no further cultural heritage value or interest (Golder 2014). No other archaeological resources were identified during the Stage 2 assessments within current study area or within one kilometre of the current study area.

In 2016, Stantec completed a Stage 1 archaeological assessment for the Victor Wind Farm Project in Tilbury West and Rochester Townships, Essex County, under PIF # P256-0394-2016. A Stage 2 archaeological assessment was recommended for any portion of the study area which may impact an area of archaeological potential.

In 2017, ARA conducted a Stage 1-2 archaeological assessment for the Romney Wind Project (ARA 2017). A portion of this project, a transmission line which runs along Richardson Sideroad, crosses the current study area. No archaeological resources were identified within this portion of the Romney Wind Project and no further archaeological assessment was recommended (ARA 2017).

### 1.3.4 Existing Conditions

The study area for the Stage 1 assessment of the Project comprises approximately 687 hectares and includes various lots and concessions, multiple lower tier municipalities, Essex County and the Municipality of Chatham-Kent (see Table 1). The proposed pipeline will begin at Union Gas' existing Sandwich Station on Concession Road 8 (between North Talbot Road and Highway 401, southeast of the City of Windsor) and travel along County Road 46, Townline Road Rochester, South Middle Road, Concession Road 9, Wheatley Road, Goodreau Road, Simpson Line, and Port Road. The replacement pipeline will end at the existing Union Gas Port Alma Transmission Station at the intersection of Port Road and Talbot Trail, west of the town of Port Alma on Lake Erie. The existing pipeline to be decommissioned follows approximately the same route, with four areas where it deviates cross-country: at the intersection of County Road 46 and Townline Road Rochester; from the same intersection to the intersection of South Middle Road and Concession Road 9; from Concession Road 9 to the intersection of Goodreau Line and Wheatley Road; and from the intersection of Goodreau Line and Simpson Line to the Port Alma Transmission Station.

Broadly, much of the study area consists of active agricultural field with smaller pockets of sparse woodlot. The study area is also inundated with natural water sources, municipally constructed drains, municipal road ROWs, and residential/commercial/industrial buildings. Further, existing Union Gas infrastructure, such as metering stations, pumping stations, and storage facilities are located within the study area. The study area was subject to a property inspection on October 30, 2018. Further details regarding the property inspection are provided in Section 2.0 below.





## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Field Methods  
March 11, 2019

### 2.0 FIELD METHODS

Initial background research compiled information concerning known and/or potential archaeological resources within the study area. A property inspection was conducted under archaeological consulting license P256 issued to Parker Dickson, MA, of Stantec by the MTCS. The property inspection was completed on October 30, 2018 under PIF # P256-0552-2018 in accordance with Section 1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). During the property inspection on October 30, 2018, the weather was partly cloudy and cool. The lighting and visibility of land features was suitable. At no time were field, lighting, or weather conditions detrimental to the identification of features of archaeological potential.

As noted in Section 1.1 and 1.3.4, and detailed in Table 1, the Stage 1 study area for the Project comprises approximately 687 hectares in various lots and concessions, multiple lower tier municipalities, Essex County and the Municipality of Chatham-Kent. The six-inch diameter pipeline replacing the existing Windsor Line will begin at Union Gas' existing Sandwich Station on Concession Road 8 (between North Talbot Road and Highway 401, southeast of the City of Windsor) and travel along County Road 46, Townline Road Rochester, South Middle Road, Concession Road 9, Wheatley Road, Goodreau Road, Simpson Line, and Port Road. The replacement pipeline will end at the existing Union Gas Port Alma Transmission Station at the intersection of Port Road and Talbot Trail, west of the town of Port Alma on Lake Erie. The decommissioned pipeline follows approximately the same route, with four areas where it deviates cross-country: at the intersection of County Road 46 and Townline Road Rochester; from the same intersection to the intersection of South Middle Road and Concession Road 9; from Concession Road 9 to the intersection of Goodreau Line and Wheatley Road; and from the intersection of Goodreau Line and Simpson Line to the Port Alma Transmission Station.

The final preferred route and construction easement/footprint, or temporary land use (TLU), for the Project will be determined by Union Gas at a later date. Thus, the overall study area for the Stage 1 archaeological assessment is large and serves to capture a broad and generalized geographic area associated with the Project. However, since the preliminary preferred route provides a moderately reliable indicator of the final alignment, the property inspection was largely limited to the preliminary preferred alignment along municipal road ROWs, and the lands immediately adjacent to them, to identify the presence or absence of any features of archaeological potential.

The photography from the property inspection is presented in Section 7.1 and confirms that the requirements for a Stage 1 property inspection were met, as per Section 1.2 and Section 7.7.2 Standard 1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Photos 1 to 4 illustrate typical agricultural fields within the study area which retain archaeological potential. Photo 5 illustrates a typical woodlot within the study area. Numerous modern disturbances were noted throughout the study area, including existing Union Gas infrastructure (Photos 6 to 8), former rail lines (Photo 9 and 10), and municipal road ROWs (Photos 11 to 20). While the road surface, gravel shoulder, and adjacent ditching are visibly disturbed, other portions of the municipal road ROWs, particularly those immediately adjacent to agricultural fields, are not definitively disturbed. Other modern disturbances are noted throughout the study area, including residences and commercial buildings, but were not photo documented as part of the property inspection. Lastly, portions of primary water sources are noted throughout the study area, such as Pike Creek, Belle River, Ruscom River, and Big Creek (Photos 21 to 24). These areas are low and permanently wet.



### 3.0 ANALYSIS AND CONCLUSIONS

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by the MTCS (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. However, it is worth noting that extensive land disturbance can eradicate archaeological potential (Wilson and Horne 1995).

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most commonly used variables for predictive modeling of archaeological site locations. Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site location and type to varying degrees. The MTCS categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, creeks;
- Secondary water sources: intermittent streams and creeks, springs, marshes and swamps;
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes; and
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

Primary water sources are abundant within the Stage 1 study area. Transecting the study area are various rivers and creeks, such as: Little River, Belle River, Ruscom River, Pike Creek, Puce Creek, Duck Creek, and Big Creek. Additional secondary and tertiary creeks and streams from these, and other, primary sources run throughout the study area. Additional ancient and/or relic tributaries of water sources may have existed but are not identifiable today and are not indicated on historic mapping.

Further examination of the study area's natural environment identified soil conditions suitable for Indigenous and Euro-Canadian agriculture, especially in the 19<sup>th</sup> and 20<sup>th</sup> centuries following the implementation of municipal drainage systems and agricultural field tiling.

Indigenous trails are noted on the early 19<sup>th</sup> century township surveys (see, for example, Figure 13; as well as Figure 5). An examination of the *Ontario Archaeological Sites Database* identified no Indigenous archaeological sites within one kilometre of the study area, but this may be a reflection of fewer archaeological assessments being conducted in this particular region than other parts of Ontario.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

### Analysis and Conclusions

March 11, 2019

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990a) or property that local histories or informants have identified with possible historical events, activities, or occupations. While the OHT, MTCS, Municipality of Chatham-Kent, and the Town of Tecumseh reported that there were no protected heritage properties within or adjacent to the study area for the Project, the Town of Lakeshore noted that there are five properties with potential heritage interest within the study area for the Project. Full details pertaining to potential heritage properties and the anticipated impacts of the Project will be provided in CHAR for the Project (Stantec n.d.).

Historical mapping demonstrates that the study area follows early interior roads and concessions with structures illustrated as fronting these roads, particularly around Talbot Road and Middle Road. Much of the established road and rail networks and agricultural settlement from the 19<sup>th</sup> century is still visible today. Adding to these observations is the presence of the three registered 19<sup>th</sup> century archaeological sites.

Previous archaeological assessments unrelated to the current Project have been completed within small portions of the Stage 1 study area (see Table 4 and Figure 20). As they relate to the current study area, these intersecting and overlapping areas of previous assessment and survey (excepting areas which were only subject to Stage 1 assessment and retain archaeological potential) are considered to retain low to no archaeological potential.

As noted above, extensive and deep land alteration can eradicate archaeological potential. The Stage 1 property inspection has determined that portions of the study area, particularly around Union Gas' substations and proposed preliminary pipeline route, have been subject to extensive land disturbance which may have removed archaeological potential. These areas include modern disturbances associated with municipal road ROWs. However, while the road surface, gravel shoulder, and adjacent ditching are visibly disturbed along portions of the preferred pipeline route, other portions of the municipal road ROWs, particularly those immediately adjacent to agricultural fields, are not definitively disturbed. These portions of the study area retain archaeological potential and require confirmation of disturbance. The proposed Project impacts were not known at the time of the property inspection and therefore municipal road ROWs and adjacent ditches will require further archaeological assessment to confirm complete disturbance. Similarly, other areas of modern disturbance (i.e., railways, residential buildings, commercial complexes, etc.) were not specifically examined during the property inspection and may still retain archaeological potential. As such, these areas have been included as part of the determination that the majority of the study area exhibits potential for the identification and recovery of archaeological resources.

Further, several watercourses and wetlands are located within the study area. These areas are permanently low and wet, and typically, do not retain archaeological potential. However, as each watercourse and wetland was not specifically examined as part of the property inspection, these areas have also been included as part of the determination that the majority of the study area exhibits potential for the identification and recovery of archaeological resources.

In summary, the Stage 1 archaeological assessment of the Project, involving background research and a property inspection, determined that much of the study area (approximately 98%) retains potential for the identification and documentation of archaeological resources.



### 4.0 RECOMMENDATIONS

Stantec was retained by Union Gas to complete a Stage 1 archaeological assessment for the area to be impacted by the proposed Windsor Line Replacement Project. The Stage 1 archaeological assessment of the study area for the Project, involving background research and a property inspection, determined that much of the area retains potential for the identification and documentation of archaeological resources. In accordance with Section 1.3.1 and Section 7.7.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is required for any portion of the Project's anticipated construction easement which impacts an area of archaeological potential (Figure 20).**

The objective of the Stage 2 archaeological assessment will be to document any archaeological resources within the portions of the study area still retaining archaeological potential and to determine whether these archaeological resources require further assessment. The Stage 2 archaeological assessment will include the systematic walking of open ploughed fields at five metre intervals as outlined in Section 2.1.1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The MTCS standards further require that all agricultural land, both active and inactive, be recently ploughed and sufficiently weathered to improve the visibility of archaeological resources. Ploughing must be deep enough to provide total topsoil exposure, but not deeper than previous ploughing, and must provide at least 80% ground surface visibility.

Moreover, for areas inaccessible for ploughing, the Stage 2 archaeological assessment will include a test pit survey at five metre intervals as outlined in Section 2.1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The MTCS standards require that each test pit be approximately 30 centimetres in diameter, excavated to at least five centimetres in to subsoil, and have all soil screened through six millimetre hardware cloth to facilitate the recovery of any cultural material that may be present. Prior to backfilling, each test pit will be examined for stratigraphy, cultural features, or evidence of fill.

In addition to the above, areas along the various roadways associated with the Project were examined as part of the property inspection and disturbances, such as ditching, were evident. However, the exact proposed Project impacts were not known at the time of the property inspection and so, the specific roadways and ROWs will require further archaeological assessment in accordance with Section 2.1.8 of Standard 2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Any portion of the ROW within agricultural or accessible land may require ploughing and pedestrian survey in accordance with Section 2.1.1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) noted above, depending on the specific Project impact. Confirmation of disturbance will also be required for any anticipated Project impact to other existing features (i.e., existing roads, railways, and previously constructed wind farm infrastructure; as well as farm complexes, residences, and any other existing feature that was not specifically examined during the property inspection). Areas requiring further testing in this manner have been illustrated on Figure 20 as "Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment".

If the archaeological field team determines any lands to be low and wet, steeply sloped, or disturbed during the course of the Stage 2 field work, those areas will not require survey, but will be photographically documented in accordance with Section 2.1 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Recommendations

March 11, 2019

In addition to the above, the Stage 1 archaeological assessment determined that there are areas of previously surveyed lands within the study area which retain low to no archaeological potential (TMHC 2007, 2009; ARA 2011, Golder 2015). In accordance with Section 1.3.2 and Section 7.7.4 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is not required for any portion of the Project's anticipated construction easement which impacts a previously surveyed area (Figure 20).**

The MTCS is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*. Additional archaeological assessment is still required for portions of the study area and so these portions recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) and may not be altered, or have artifacts removed, except by a person holding an archaeological license.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Advice on Compliance With Legislation  
March 11, 2019

### 5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18 (Government of Ontario 1990a). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990a) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990a).

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a). The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a).

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (Government of Ontario 2002) requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Government and Consumer Services.

Additional archaeological assessment is still required for portions of the study area and so these portions recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990a) and may not be altered, or have artifacts removed, except by a person holding an archaeological license.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

### References

March 11, 2019

## 6.0 REFERENCES

Andreae, Christopher. 1997. *Lines of the Country: An Atlas of Railway and Waterway History in Canada*. Erin: Boston Mills Press.

Archaeological Research Associates (ARA). 2011. *Stage 2 Archaeological Assessment Comber Wind Limited Partnership Project (Comber East FIT-FSUTXQ9 and Comber West FIT-FI4DYH9) Town of Lakeshore (Formerly Townships of Rochester and Tilbury West) Essex County, Ontario*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P007-269-2010.

Archaeological Research Associates (ARA). 2017. *Stage 1 and 2 Archaeological Assessments Romney Wind Energy Centre L-006356-WIN-001-060 2016 Season Town of Lakeshore and Municipality of Chatham-Kent Multiple Lots and Concessions Geographic Townships of Tilbury West and Romney Essex County and Former Kent County, Ontario*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P007-0783-2016.

Archaeological Services Inc. (ASI) 2008. *Stage 2 A.A. Highway 3 (Talbot Road), between Outer Drive & Essex Bypass, Class EA, Essex Co., Ontario, for Philips Engineering*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P223-008-2008.

Archaeological Services Inc. (ASI) 2010. *Stage 1 Archaeological Assessment (Background Study and Property Inspection): South Kent Wind Project Municipality of Chatham-Kent, Ontario*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P264-120-2010.

Archaeological Services Inc. (ASI) 2011. *Stage 2 Property Assessment South Kent Wind Project Municipality of Chatham-Kent, Ontario, Final Report: Part 1 of 2*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P347-001-2011.

Archaeological Services Inc. & Scarlett Janusas Archaeological & Heritage Consulting Ltd. 2011. *Stage 2 A. A. (Property Assessment) South Kent Wind Project Municipality of Chatham-Kent, Ontario Interim Report on the 2010 Field season*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF #s P264-119-2010, P264-120-2010, P027-112-2010.

Archives of Ontario. 2015. *The Changing Shape of Ontario*. Electronic Document: <http://www.archives.gov.on.ca/en/maps/ontario-districts.aspx>. Last Accessed: October 18, 2018.

Armstrong, Frederick. 1986. *The Forest City: An Illustrated History*. Canada: Windsor Publications.

Belden, H. & Co. 1881. *Illustrated Historical Atlas of the Counties of Essex and Kent*. Toronto: H. Belden & Co.

Blackbird, Andrew J. 1887. *History of the Ottawa and Chippewa Indians of Michigan*. Ypsilanti Job Print House. Electronic document: [http://eco.canadiana.ca/view/oocihm.00429#oocihm.00429/3?r=0&s=1&\\_suid=142558197786609233669627186604](http://eco.canadiana.ca/view/oocihm.00429#oocihm.00429/3?r=0&s=1&_suid=142558197786609233669627186604). Last accessed February 25, 2017.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

### References

March 11, 2019

Borden, Charles E. 1952. A Uniform Site Designation Scheme for Canada. *Anthropology in British Columbia*, No. 3, 44-48.

Burnside, Scott, Cathie Fenchak, Sandra Mulatti, and Mark Skursky. 1982. *Maidstone Township: An Historical Overview*. Windsor: Windsor Print and Lithography.

Caston, Wayne A. 1997. Evolution in the Mapping of Southern Ontario and Wellington County. *Wellington County History* 10:91-106.

Census of Canada. 1871. *Census of Canada 1870-71*. Ottawa: I.B. Taylor.

Census of Canada. 1881. *Census of Canada 1880-81*. Ottawa: Maclean, Roger & Co.

Census of Canada. 1891. *Census of Canada 1890-91*. Ottawa: S.E. Dawson, Printer to the Queen's Most Excellent Majesty.

Chapman, Lyman John and Donald F. Putnam. 1984. *The Physiography of Southern Ontario*. 3<sup>rd</sup> ed. Ontario Geological Survey Special Volume 2. Toronto: Ontario Ministry of Natural Resources.

City of Windsor. 2018. *History of Sandwich*. Electronic

Document: <https://www.citywindsor.ca/residents/historyofwindsor/history-of-sandwich/Pages/default.aspx>.

Last accessed: April 16, 2018.

Clarke, John. 2001. *Land, Power, and Economics on the Frontier of Upper Canada*. Montreal: McGill-Queen's University Press.

Craig, Gerald R. 1963. *Upper Canada: The Formative Years*. Don Mills: Oxford University Press.

Cultural Resource Management Group Limited, Fisher Archaeological Consulting, Historic Horizon Inc., and Dillon Consulting Limited. 2005. *Archaeological Master Plan Study Report for the City of Windsor*. Report submitted to the City of Windsor, Windsor.

D. R. Poulton & Associates Inc. 2007. *The 2007 Stage 1 Archaeological Assessment of the Gosfield Comber Wind Energy Project, Town of Kingsville & Town of Comber, Essex County, Ontario*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P116-161-2006.

Elgin County Archives. n.d. *Talbot Settlement and Survey Maps, 1793-1849*. Electronic

Document: <http://www.elgin.ca/ElginCounty/CulturalServices/Archives/TalbotTract/talbot.html>. Last

Accessed: October 18, 2018.

Ellis, Chris J. and D. Brian Deller. 1990. Paleo-Indians. In Ellis and Ferris 1990, pp. 37-64.

Ellis, Chris J. and Neal Ferris. 1990. *The Archaeology of Southern Ontario to A.D. 1650*. Occasional Publications of the London Chapter, Ontario Archaeological Society Inc., Publication Number 5.

Ellis, Chris J., Ian T. Kenyon, and Michael W. Spence. 1990. The Archaic. In Ellis and Ferris 1990, pp. 65-124.





## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

### References

March 11, 2019

- Ferris, Neal. 2009. *The Archaeology of Native-Lived Colonialism: Challenging History in the Great Lakes*. Tucson: University of Arizona Press.
- Gardiner, Herbert F. 1899. *Nothing But Names*. Toronto: George N. Morang and Company Limited.
- Garrad, Charles. 2014. 2014. *Petun to Wyandot: The Ontario Petun from the Sixteenth Century*. Edited by Jean-Luc Pilon and William Fox. Mercury Series, Archaeology Paper 174. Ottawa: University of Ottawa Press and Canadian Museum of History.
- Gentilcore, R. Louis and C. Grant Head. 1984. *Ontario's History in Maps*. Toronto: University of Toronto Press.
- Golder Associates Inc. 2014. *Revised Stage 1 Archaeological Assessment: SP Belle River Wind LP, Belle River Wind Project, Various Lots and Concessions, Geographic Townships of Maidstone, Rochester and Tilbury West, Essex County, Ontario*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF#s P311-0277-2014, P311-0291-2014, P311-0298-2014, P311-0300-2014.
- Golder Associates Inc. 2015. *Stage 2 Archaeological Assessment: Belle River Wind Project, Various Lots and Concessions, Geographic Townships of Maidstone, Rochester and Tilbury West, Now Town of Lakeshore, Essex County, Ontario*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF#s P311-0278-2014, P311-0292-2014, P311-0301-2014.
- Government of Canada. n.d. *Map of Treaty Areas in Upper Canada*. Ottawa: Department of Indian Affairs, Survey Branch.
- Government of Ontario. n.d. *Crown Land Surveys Maps of Sandwich, Maidstone, Rochester, Tilbury West, Tilbury East, and Romney Townships*. Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.
- Government of Ontario. 1990a. *Ontario Heritage Act, R.S.O. 1990, CHAPTER O.18*. Last amendment:2009, c. 33, Sched. 11, s. 6. Electronic document: <https://www.ontario.ca/laws/statute/90o18>. Last accessed December 15, 2016.
- Government of Ontario. 1990b. *Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c.F.31*. Last amendment:2016, c.5. Sched.10. Electronic document: <https://www.ontario.ca/laws/statute/90f31>. Last accessed February 1, 2017.
- Government of Ontario. 2002. *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c. 33*. Electronic document: <https://www.ontario.ca/laws/statute/02f33>. Last accessed December 15, 2016.
- Government of Ontario. 2011. *Standards and Guidelines for Consultant Archaeologists*. Toronto: Ministry of Tourism, Culture and Sport.
- Government of Ontario. 2018a. *Archaeological Sites Database Files, PastPortal*. Toronto: Ministry of Tourism, Culture and Sport. Electronic resource. Last accessed December 19, 2018.
- Government of Ontario. 2018b. *Public Register of Archaeological Reports, PastPortal*. Toronto: Ministry of Tourism, Culture and Sport. Electronic resource. Last accessed December 19, 2018.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

### References

March 11, 2019

Hamil, Fred. 1951. *The Valley of the Lower Thames*. Toronto: University of Toronto Press.

Heidenreich, Conrad E. 1978. Huron. In *Handbook of North American Indians. Volume 15, Northeast*, edited by Bruce G. Trigger, pp. 368-388. Washington: Smithsonian Institution Press.

Heidenreich, Conrad E. 1990. History of the St. Lawrence-Great Lakes Area to A.D. 1650. In Ellis and Ferris 1990, pp.475-492.

Jacques Whitford. 2009. *Stage 1 Archaeological Assessment, Proposed Merlin-Quinn Wind Farm, Kent and Essex Counties, Ontario (For Suncor Energy Products Inc.)*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF# P002-131-2008.

Jones, Robert Leslie. 1946. *History of Agriculture in Ontario 1613-1880*. Toronto: University of Toronto Press.

Konrad, Victor. 1981. An Iroquois Frontier: the North Shore of Lake Ontario During the Late Seventeenth Century. *Journal of Historical Geography* 7(2).

Lajeunesse, Ernest J. (editor).1960. *The Windsor Border Region: Canada's Southernmost Frontier*. The Champlain Society. Toronto: University of Toronto Press.

Lauriston, Victor. 1952. *Romantic Kent*. Wallaceburg: Standard Press.

Lennox, Paul A. and William R. Fitzgerald. 1990. The Culture History and Archaeology of the Neutral Iroquoians. In Ellis and Ferris 1990, pp. 405-456.

Library and Archives Canada. 2001. *The Quebec Act*. Electronic Document:<https://www.collectionscanada.gc.ca/confederation/023001-3010.52-e.html>. Last Accessed: October 15, 2018.

Loewen, Brad and Claude Chapdelaine (editors). 2016. *Contact in the 16<sup>th</sup> Century: Networks among Fishers, Foragers and Farmers*. Mercury Series Archaeology Paper 176. Ottawa: University of Ottawa Press.

Lytwyn, Victor P. 2009. *Walpole Island First Nation: Traditional Ecological Knowledge Study: Dawn Gateway Project*. Walpole Island First Nation: Walpole Island Heritage Centre.

Morris, J.L. 1943. *Indians of Ontario*. 1964 reprint. Toronto: Department of Lands and Forests.

Murphy, Carl and Neal Ferris. 1990. The Late Woodland Western Basin Tradition in Southwestern Ontario. In Ellis and Ferris 1990, pp. 189-278.

Ontario Energy Board. 2016. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario*. 7<sup>th</sup> Edition. Electronic document:  
[https://www.oeb.ca/oeb/Documents/Regulatory/Enviro\\_Guidelines\\_HydrocarbonPipelines\\_2016.pdf](https://www.oeb.ca/oeb/Documents/Regulatory/Enviro_Guidelines_HydrocarbonPipelines_2016.pdf). Last accessed October 25, 2018.

Ontario Plaques. 2016. *McKee's Purchase / L'achat de McKee*. Electronic document:[http://ontarioplaques.com/Plaques/Plaque\\_ChathamKent29.html](http://ontarioplaques.com/Plaques/Plaque_ChathamKent29.html). Last accessed October 15, 2017.



## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

### References

March 11, 2019

- Rogers, E.S. 1978. Southeast Ojibwa. In *Handbook of North American Indians. Volume 15, Northeast*, edited by Bruce Trigger, pp. 760-771. Washington: Smithsonian Institute.
- Smith, William Henry. 1846. *Smith's Canadian Gazetteer*. Toronto: H. & W. Rowsell.
- Spence, Michael W., Robert H. Pihl, and Carl Murphy. 1990. Cultural Complexes of the Early and Middle Woodland Periods. In Ellis and Ferris 1990, pp. 125-170.
- Stantec Consulting Ltd. 2016. *Stage 1 Archaeological Assessment: Victor Wind Project: Geographic Townships of Rochester and Tilbury West, Municipality of Lakeshore, County of Essex, Ontario*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P256-0394-2016.
- Stantec Consulting Ltd. n.d. *Cultural Heritage Assessment Report—Union Gas Limited Windsor Line Replacement*. Report in preparation.
- Steckley, John. 2014. *The Eighteenth Century Wyandot: A Clan-Based Study*. Waterloo: Wilfrid Laurier University Press.
- Sutherland, & Co. 1866. *County of Essex Gazetteer and General Business Directory*. Woodstock: Sutherland & Co.
- Timmins Martelle Heritage Consultants Inc. (TMHC). 2006. *Stage 1 Archaeological Assessment, Port Alma Wind Power Project, Romney Township, East Tilbury Township, and Raleigh Township, Municipality of Chatham-Kent*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P118-054-2006.
- Timmins Martelle Heritage Consultants Inc. (TMHC). 2007. *Stage 2 Archaeological Assessment Kruger Energy Port Alma Wind Power Project, Municipality of Chatham-Kent*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P064-122-2006.
- Timmins Martelle Heritage Consultants Inc. (TMHC). 2009. *Stage 2 Archaeological Assessment: Kruger Energy Chatham Wind Project, Municipality of Chatham-Kent*. Report on file, Toronto: Ministry of Tourism, Culture and Sport. PIF # P064-304-2009.
- Tooker, Elisabeth. 1978. Wyandot. In *Handbook of North American Indians. Volume 15, Northeast*, edited by Bruce G. Trigger, pp.418-441. Washington: Smithsonian Institute Press.
- Town of Tecumseh. 2014. *History*. Electronic Document: <http://www.tecumseh.ca/discover/history>. Last accessed: April 16, 2018.
- Trigger, Bruce G. 1978. Early Iroquoian Contacts with Europeans. In *Handbook of North American Indians. Volume 15, Northeast*, edited by Bruce G. Trigger, pp. 344-356. Washington: Smithsonian Institute Press.
- Wallace, Madeline. 1978. *Rochester Township, 1853: History of Rochester Township*. Essex: Township of Rochester.
- Walling, H.F. 1877. *Map of Essex County, Ontario*. Toronto: R.M. Tackabury.
- Walpole Island First Nation. n.d. *Bkejwanong Walpole Island First Nation*. Online resource: <http://walpoleislandfirstnation.ca/> Last accessed November 9, 2017.

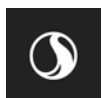


## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

### References

March 11, 2019

Wilson, J.A. and M. Horne. 1995. *City of London Archaeological Master Plan*. London: City of London, Department of Planning and Development.



Images  
March 11, 2019

## 7.0 IMAGES

### 7.1 PHOTOGRAPHS

**Photo 1: Typical Agricultural Field and Road ROW within the Study Area, facing Northwest**



**Photo 2: Typical Agricultural Field within the Study Area, facing South**



**Photo 3: Typical Agricultural Field and Road ROW within the Study Area, facing West**



**Photo 4: Typical Agricultural Field within the Study Area, facing Northwest**



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT**

Images  
March 11, 2019

**Photo 5: Typical Woodlot within the Study Area, facing Northeast**



**Photo 6: Existing Union Gas Infrastructure within the Study Area, facing Northeast**



**Photo 7: Existing Union Gas Infrastructure and Road ROW within the Study Area, facing West**



**Photo 8: Existing Union Gas Infrastructure and Road ROW within the Study Area, facing Southeast**



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT**

Images

March 11, 2019

**Photo 9: Former Rail Line within the Study Area, facing Southwest**



**Photo 10: Former Rail Line within the Study Area, facing Southeast**



**Photo 11: Port Road ROW within the Study Area, facing Northwest**



**Photo 12: Simpson Line ROW within the Study Area, facing Southwest**



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT**

Images

March 11, 2019

**Photo 13: Goodreau Line ROW within the Study Area, facing West**



**Photo 14: Wheatley Road ROW within the Study Area, facing North**



**Photo 15: Concession Road 9 ROW within the Study Area, facing West**



**Photo 16: South Middle Road ROW within the Study Area, facing Northeast**





**STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT**

Images

March 11, 2019

**Photo 17: Townline Road ROW within the Study Area, facing South**



**Photo 18: County Road 46 ROW within the Study Area, facing West**



**Photo 19: County Road 46 ROW within the Study Area, facing East**



**Photo 20: 8<sup>th</sup> Concession Road ROW within the Study Area, facing South**



**STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT**

Images

March 11, 2019

**Photo 21: Pike Creek within the Study Area, facing Northwest**



**Photo 22: Belle River within the Study Area, facing Northwest**



**Photo 23: Ruscom River within the Study Area, facing South**



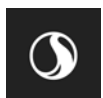
**Photo 24: Big Creek within the Study Area, facing Northeast**

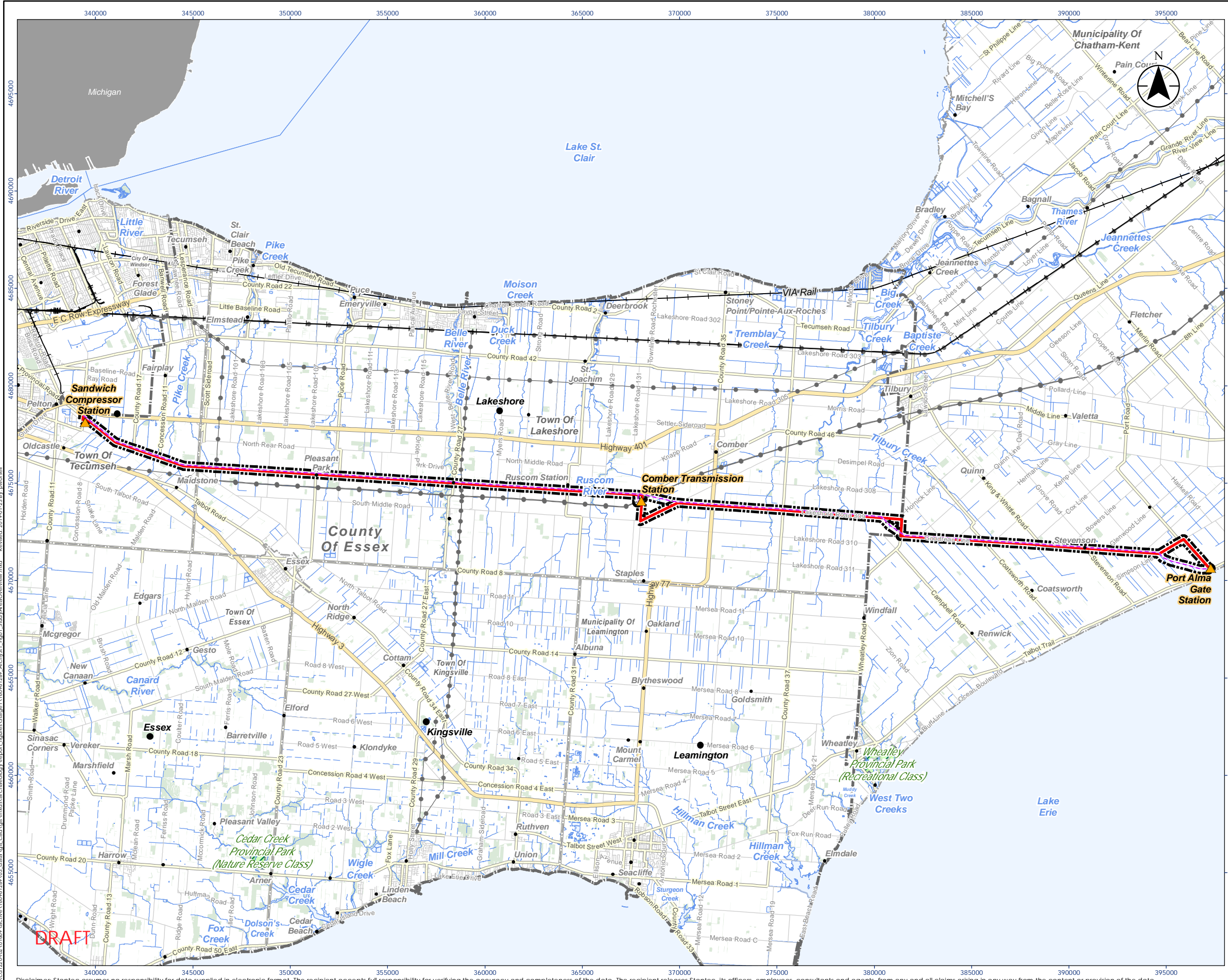


Maps  
March 11, 2019

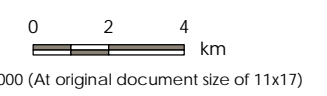
## 8.0 MAPS

All maps will follow on succeeding pages.

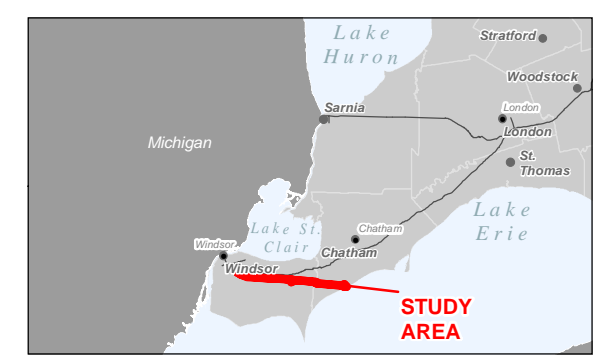




- Legend**
- Study Area
  - ▲ Existing Union Gas Station
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Railway
  - Hydro Line
  - Watercourse (Intermittent)
  - Watercourse (Permanent)
  - Provincial Park
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Upper
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.

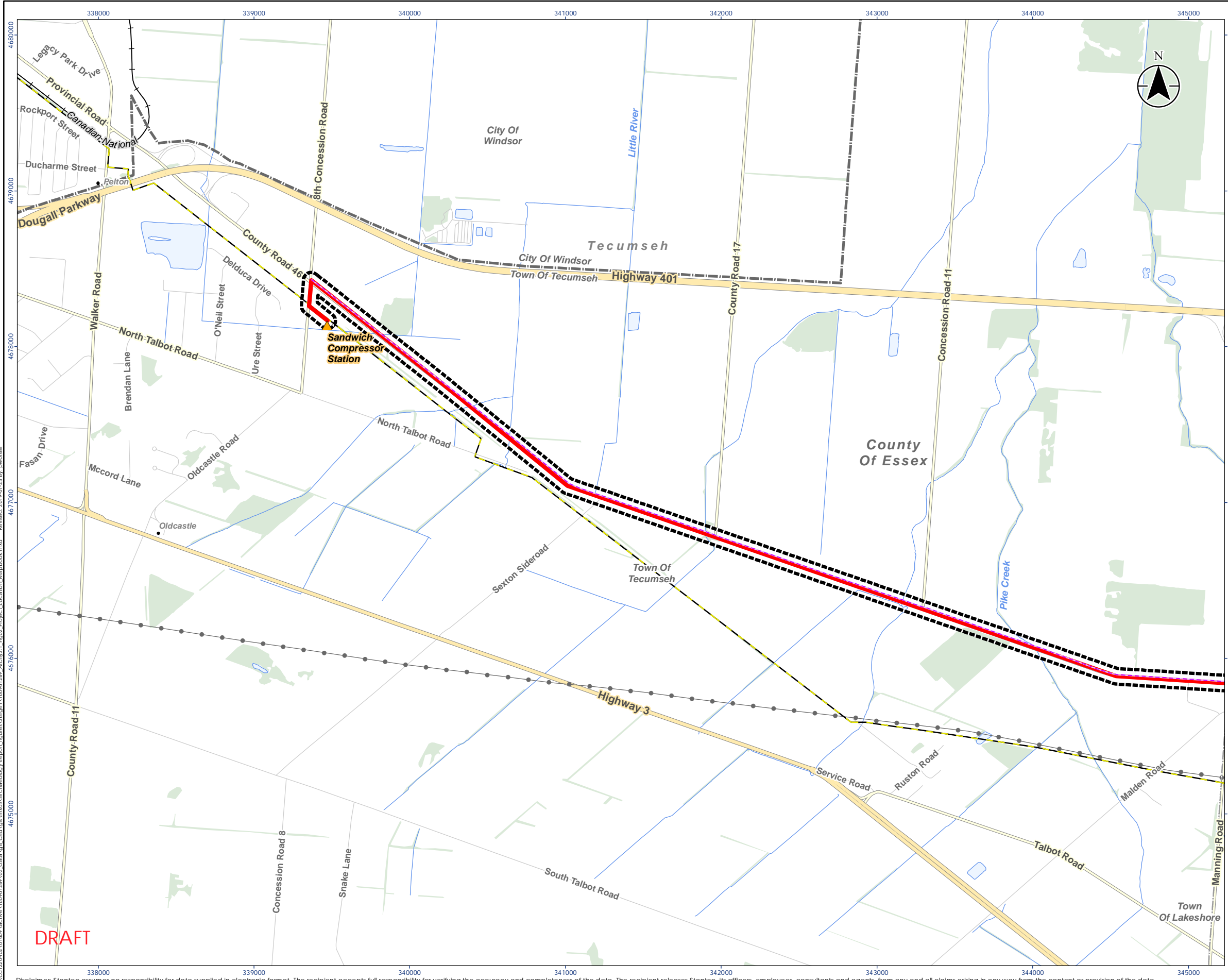


Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

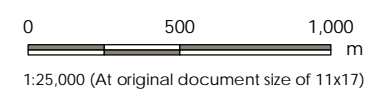
Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 1  
 Title: Study Area Overview

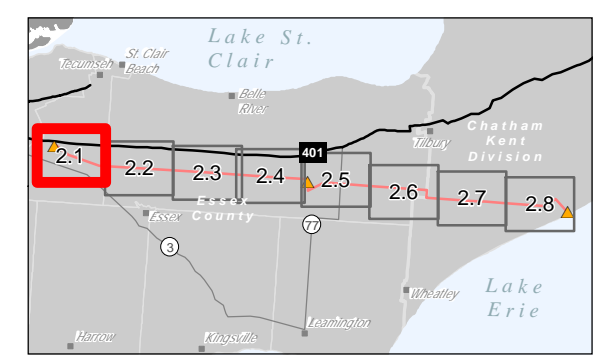
**DRAFT**



- Legend**
- Study Area
  - Existing Union Gas Station
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Railway
  - Hydro Line
  - Watercourse (Permanent)
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Upper
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.



Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

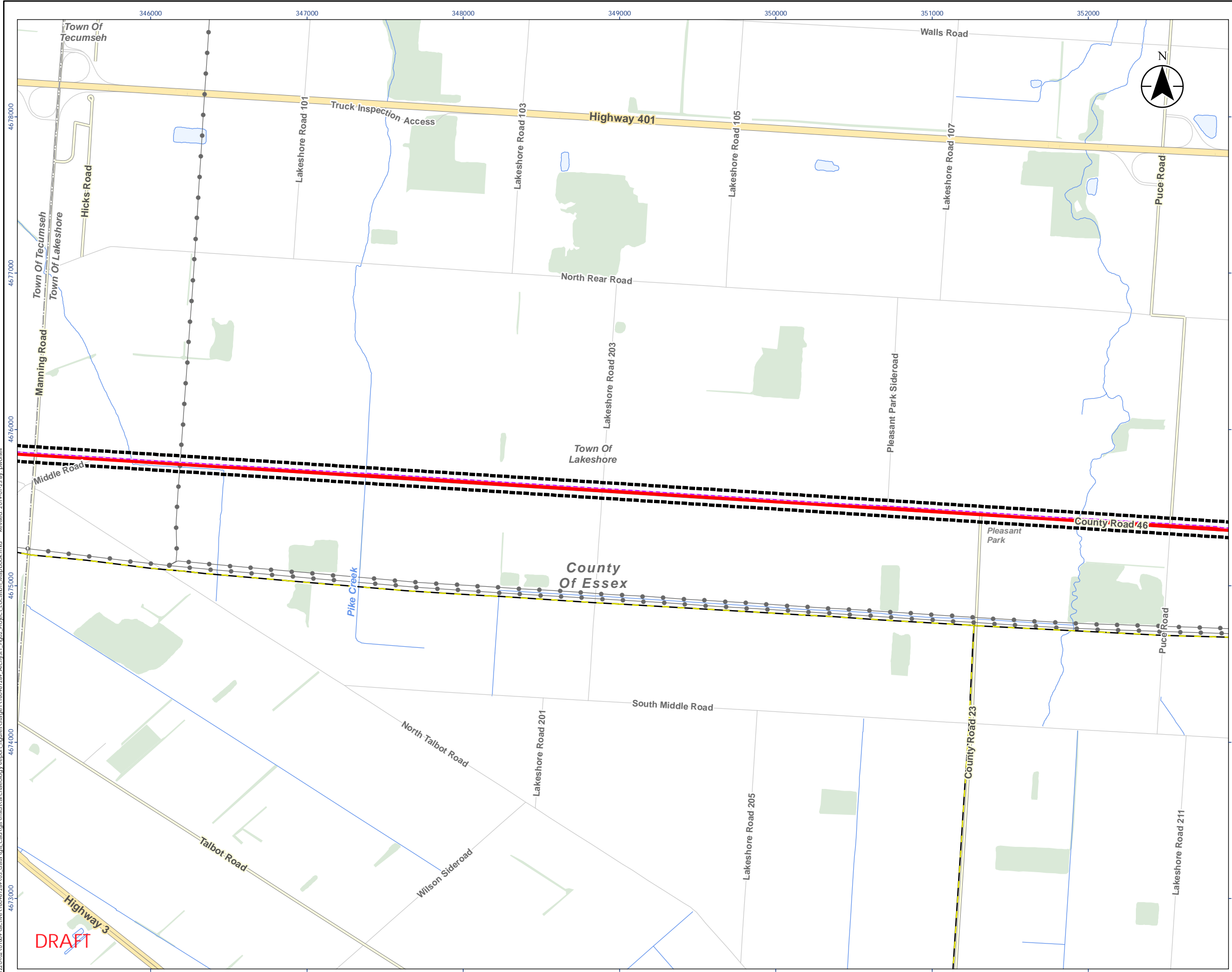
Figure No.  
 2.1  
 Title  
 Project Location

**DRAFT**

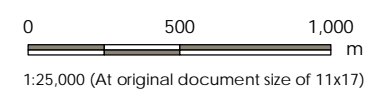
**DRAFT**

\\cd1210\02\01\609\archive\160961289\03\_data\gis\mxd\archaeology\report\figures\Stage1\160961289\_ArchyS11\_Ep02\_Project\_Location\_Mapbook.mxd Revised: 2019-01-23 By: pwooseal

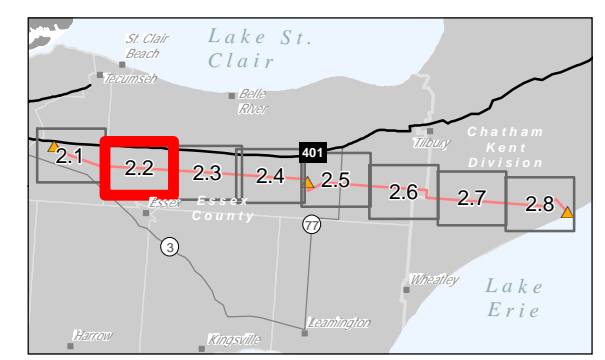
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Upper
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.

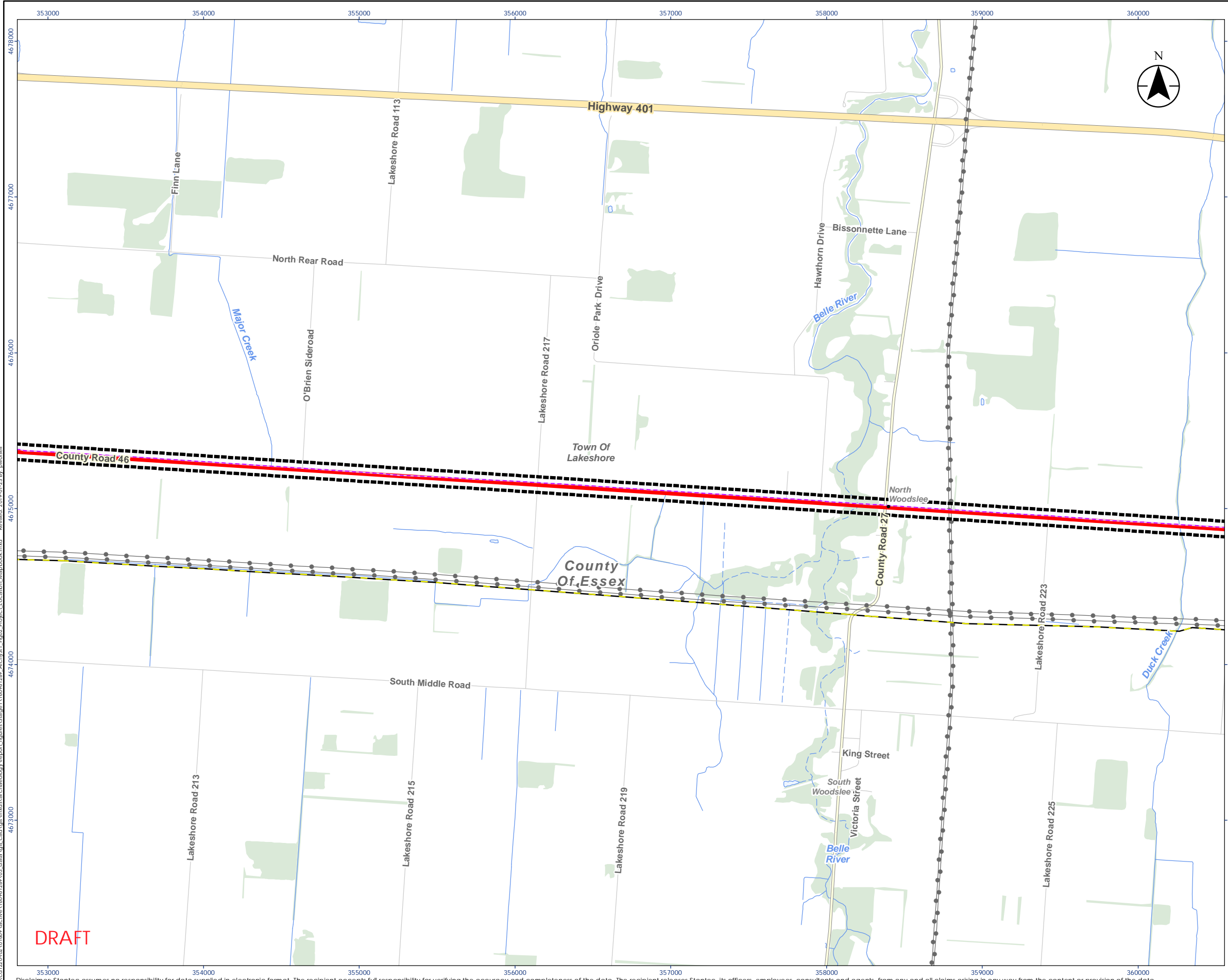


Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

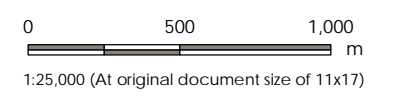
Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. **2.2**  
 Title **Project Location**

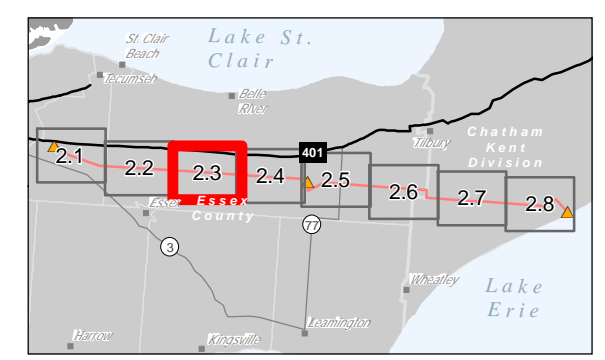
**DRAFT**



- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Intermittent)
  - Watercourse (Permanent)
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Upper
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

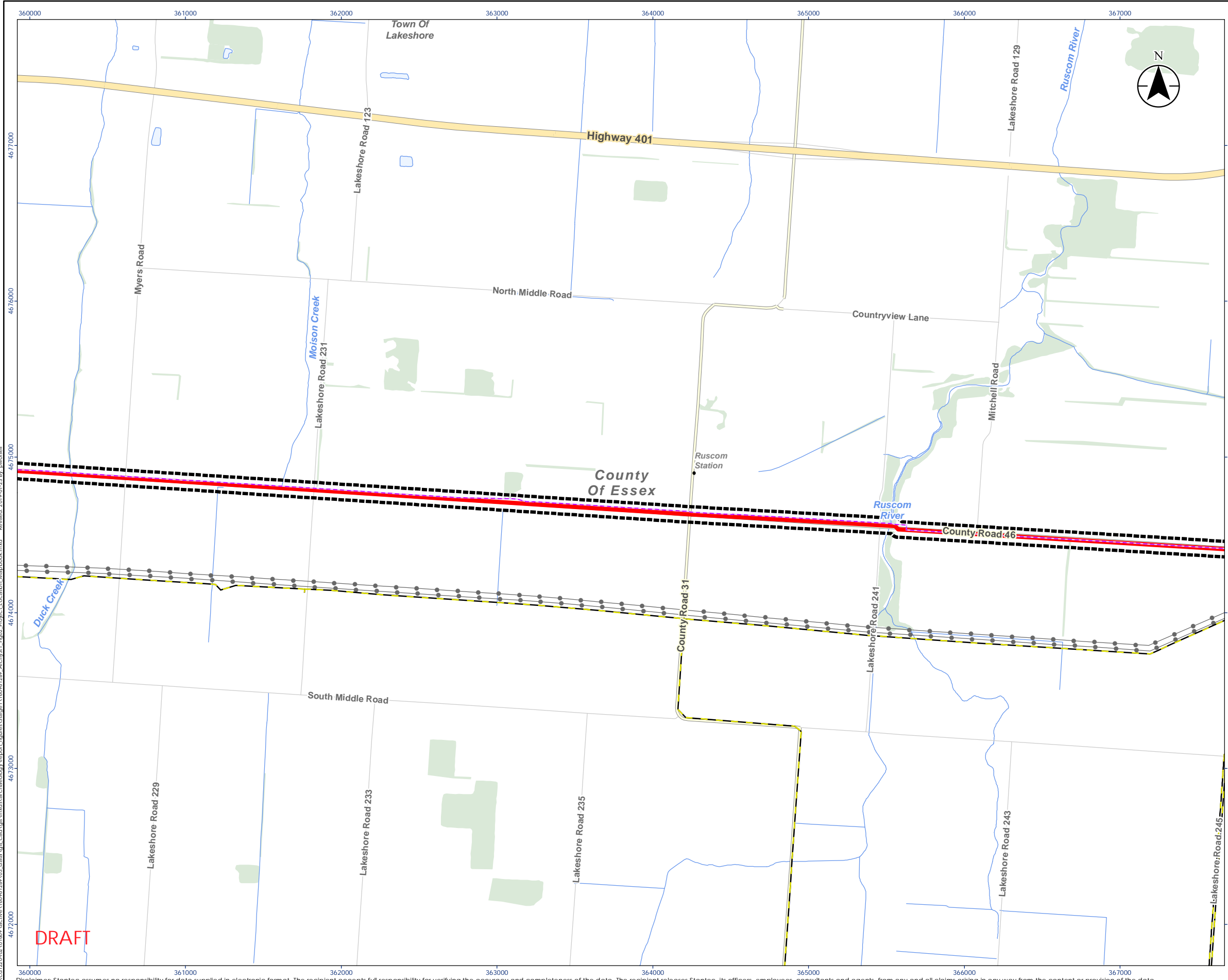
Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 2.3  
 Title: Project Location

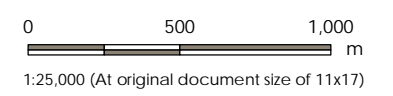
**DRAFT**

**DRAFT**

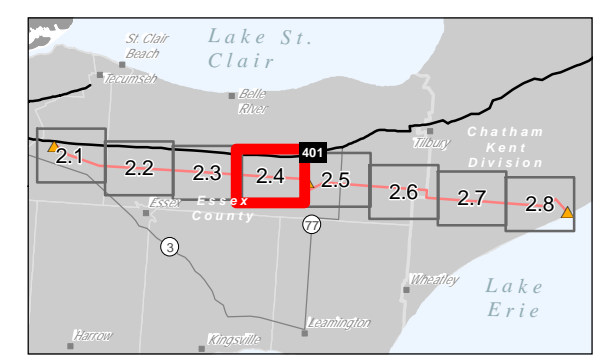
\\cd120402\01609\active\16094\289\03\_data\gis\cad\gis\mxd\report\figures\Stage1\Fig02\_Project\_Location\_Mapbook.mxd Revised: 2019-01-23 By: pwooseal



- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Upper
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 2.4  
 Title: Project Location

**DRAFT**

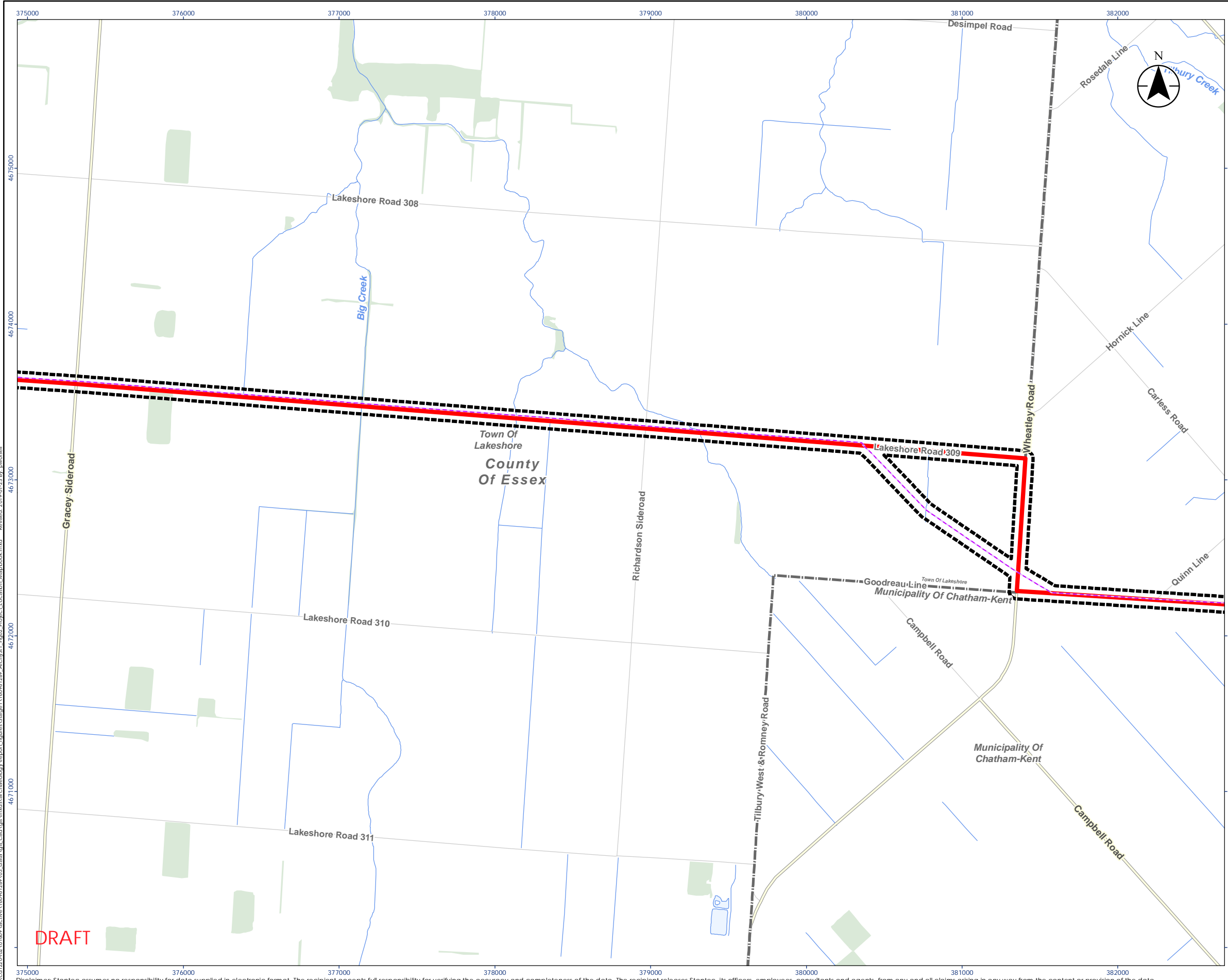
\\cd1220402\01609\active\16094289\03\_data\gis\cad\gis\mxd\archaeology\report\figures\Stage1\16094289\_Archys1\_Ep02\_Project\_Location\_Mapbook.mxd Revised: 2019-01-23 By: jwosnell

**DRAFT**

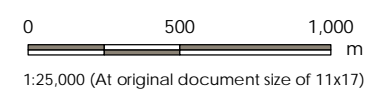
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



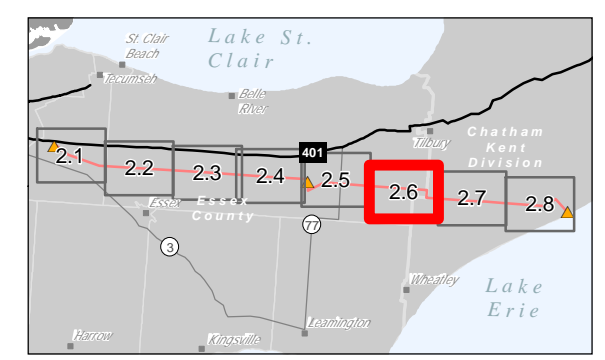




- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Upper
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

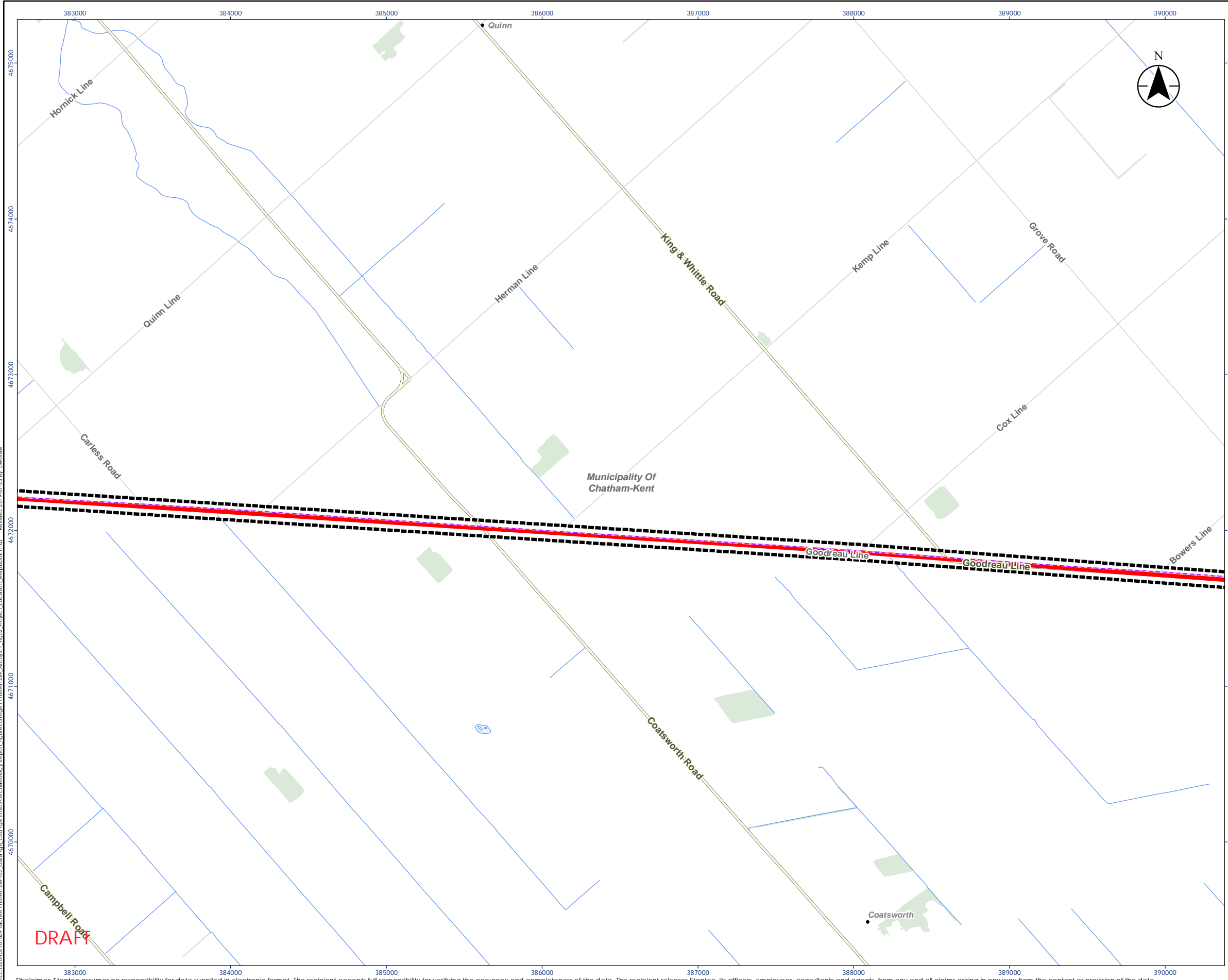
Figure No.: 2.6  
 Title: Project Location

**DRAFT**

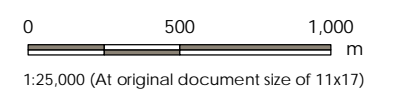
\\cd1220402\01609\active\1609\289\03\_data\gis\_cad\gis\mxd\archaeology\report\_figures\Stage1\1609\289\_ArchyS1\_Ep02\_Project\_Location\_Mapbook.mxd Revised: 2019-01-23 By: pwooseal

**DRAFT**

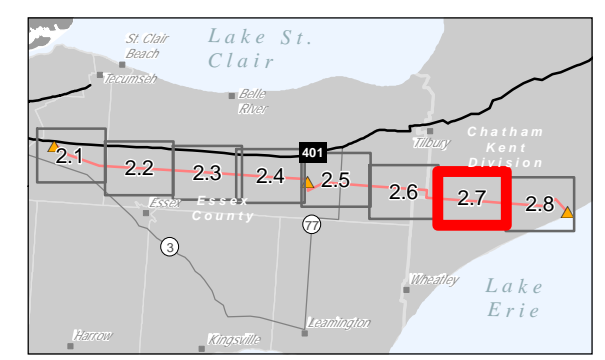
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.



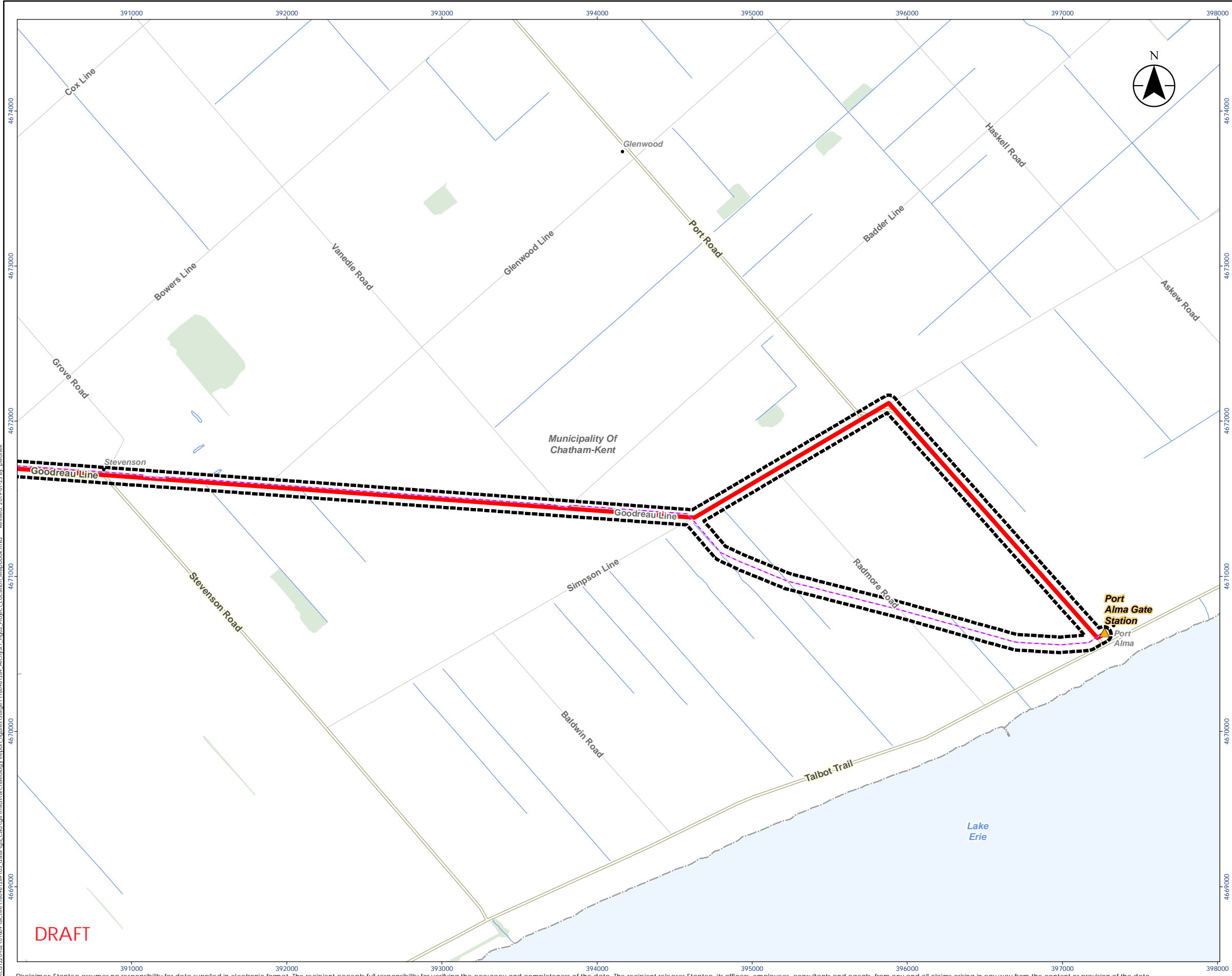
Project Location: 160961289 REVA  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

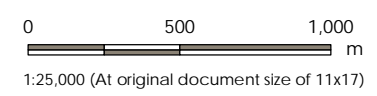
Figure No.: 2.7 **DRAFT**  
 Title: Project Location

\\cd1220\02\01\609\active\160961289\03\_data\gis\cad\gis\mxd\archaeology\report\_figures\Stage1\160961289\_ArchyS1\_Ep02\_Project\_Location\_Mapbook.mxd Revised: 2019-01-23 By: pwooseal

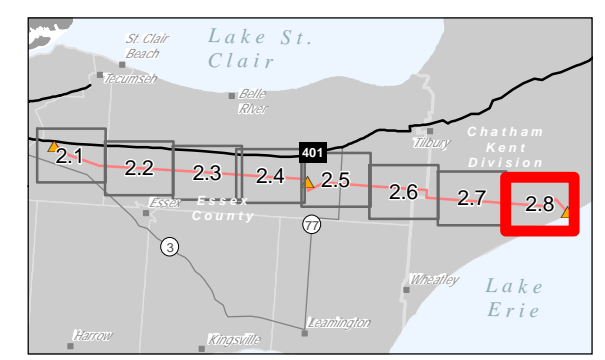
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



- Legend**
- Study Area
  - Existing Union Gas Station
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Waterbody
  - Wooded Area
  - Municipal Boundary, Lower



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.



Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 2.8 **DRAFT**

Title  
 Project Location

**DRAFT**

\\cd1220402\01609\active\16094289\03\_data\gis\card\gis\mxd\archaeology\report\figures\Stage1\16094289\_ArchyS1\_Ep02\_Project\_Location\_Mapbook.mxd Revised: 2019-01-23 By: pwooseal

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

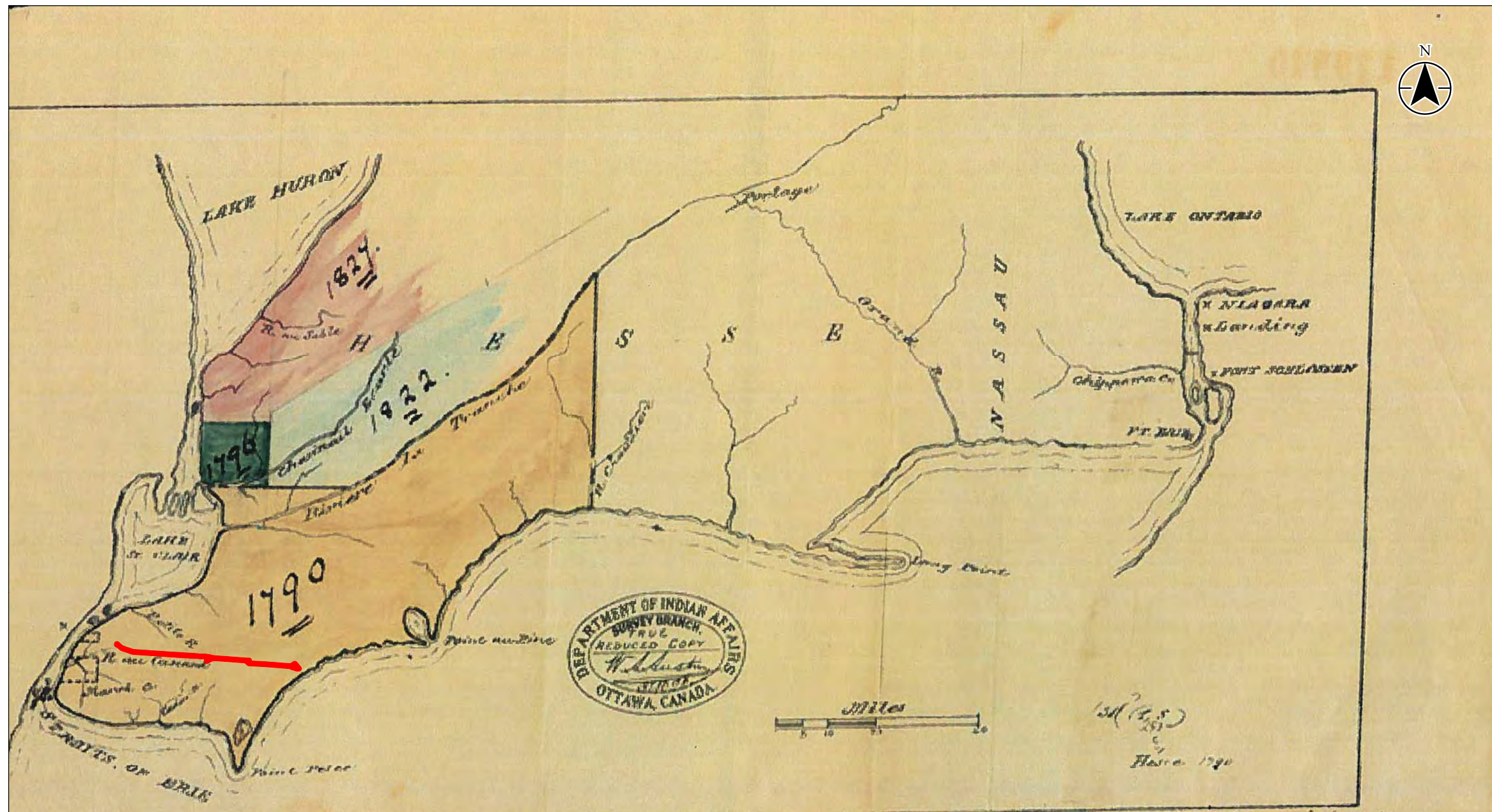
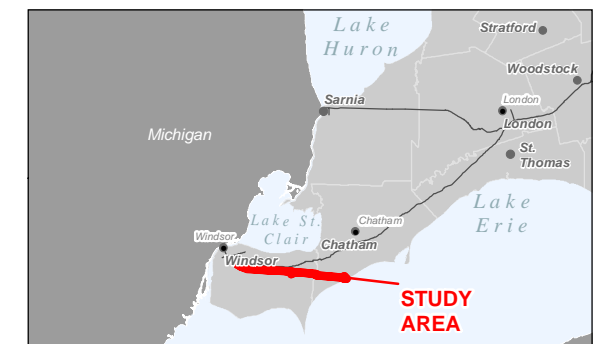






Figure not to scale.

Notes  
 1. Historic map source: Government of Canada, n.d.a. Map of Treaty Areas in Upper Canada. Ottawa: Department of Indian Affairs, Survey Branch.



	10 <sup>th</sup> July 1824	"That part of the Chippewa nation of Indians inhabiting and claiming the territory to some of the signatories signed the treaty of 1790 or 1822."
	8 <sup>th</sup> July 1822	"Chiefs & principal men of the Chippewa Nation of Indians inhabiting and claiming the tract to some signed the 1796 treaty."
	7 <sup>th</sup> Sept. 1796.	"People of the Chippewa Nation" three also signed the 1790 treaty.
	19 <sup>th</sup> May 1790.	"The Ottawa, Chippewa, Pottowattomy & Seneca Indians nations of Detroit. Three signed the 1796 treaty."

Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04

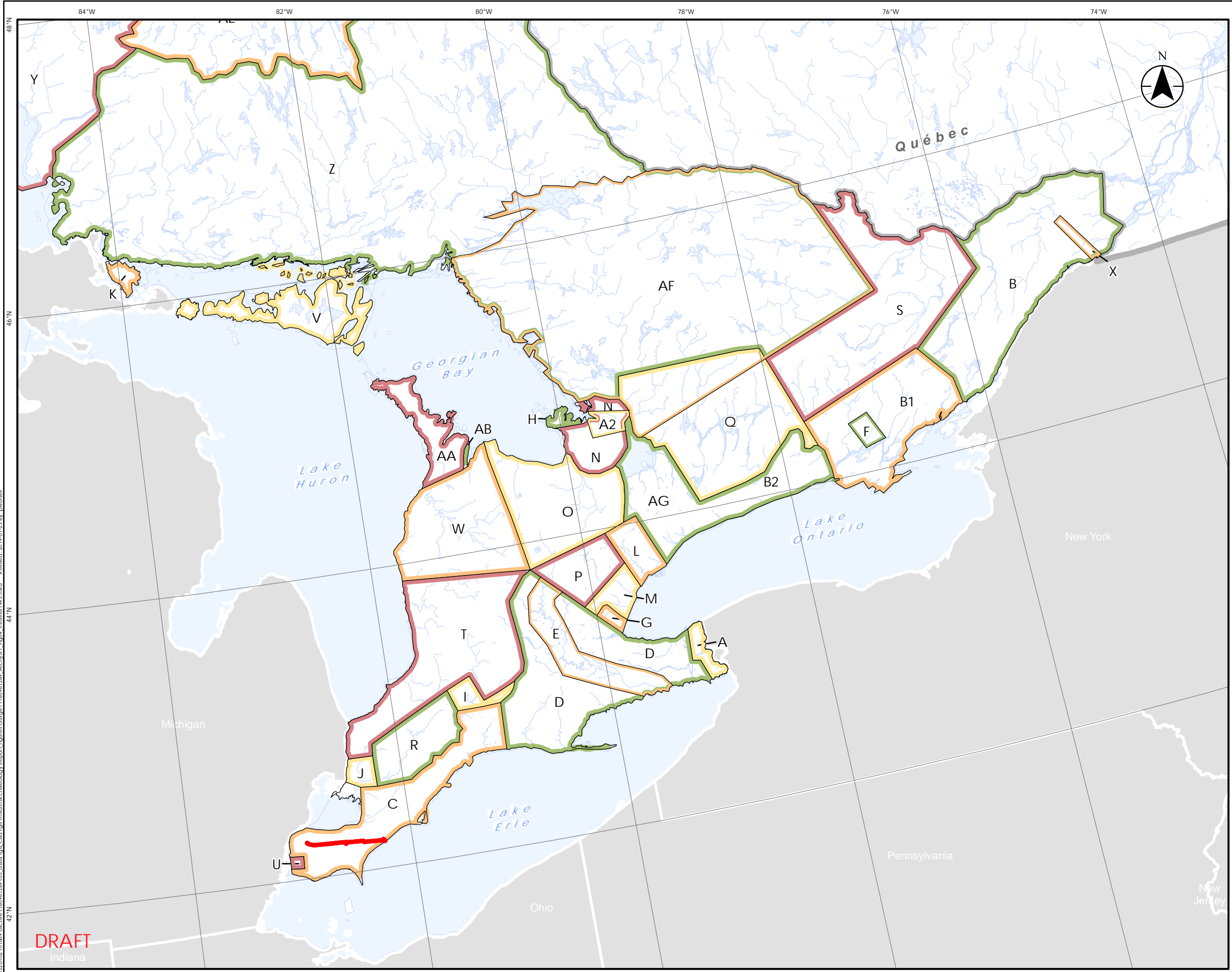
Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 3 **DRAFT**

Title: Map of Treaty Areas in Upper Canada

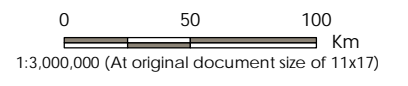
**DRAFT**

C:\cd120\02\01\609\active\160961289\03\_data\gis\mxd\archaeology\report\_figures\160961289\_Archy01\_Fig03\_TreatyAreasUpperCanada.mxd  
 Revised: 2019-01-23 By: p.worrell



- Legend**
- Study Area
  - Waterbody

- A Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
- AA Treaty No. 72, October 30th, 1854 (Chippewa)
- AB Treaty No. 82, February 9th, 1857 (Chippewa)
- AE Treaty No. 9, James Bay 1905, 1906 (Ojibway and Cree)
- AF Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
- AG Williams Treaty, October 31st, 1923 (Chippewa)
- A2 John Collins' Purchase, 1785 (Chippewa)
- B Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
- B1 Crawford's Purchase, October 9th, 1783 (Mississauga)
- B2 Crawford's Purchase, 1783, 1787, 1788 (Mississauga)
- C Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
- D Treaty No. 3, December 2nd, 1792 (Mississauga)
- E Haldimand Tract: from the Crown to the Mohawk, 1793
- F Tyendinaga: from the Crown to the Mohawk, 1793
- G Treaty No. 3 3/4: from the Crown to Joseph Brant, October 24th, 1795
- H Treaty No. 5, May 22nd, 1798 (Chippewa)
- I Treaty No. 6, September 7th, 1796 (Chippewa)
- J Treaty No. 7, September 7th, 1796 (Chippewa)
- K Treaty No. 11, June 30th, 1798 (Chippewa)
- L Treaty No. 13, August 1st, 1805 (Mississauga)
- M Treaty No. 13A, August 2nd, 1805 (Mississauga)
- N Treaty No. 16, November 18th, 1815 (Chippewa)
- O Treaty No. 18, October 17th, 1818 (Chippewa)
- P Treaty No. 19, October 28th 1818 (Chippewa)
- Q Treaty No. 20, November 5th, 1818 (Chippewa)
- R Treaty No. 21, March 9th, 1819 (Chippewa)
- S Treaty No. 27, May 31st, 1819 (Mississauga)
- T Treaty No. 27½, April 25th, 1825 (Ojibwa and Chippewa)
- U Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
- V Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
- W Treaty No. 45½, August 9th, 1836 (Saugeen)
- X Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
- Y Treaty No. 60, Robinson, Superior, September 7th, 1850 (Ojibwa)
- Z Treaty No. 61, Robinson, Huron, September 9th, 1850 (Ojibwa)



- Notes**
1. Coordinate System: NAD 1983 Statistics Canada Lambert
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.

Project Location: 160961289 REVA  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04

Client/Project:  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 4 **DRAFT**

Title:  
 Treaties and Purchases (Adapted from Morris 1943)

\\cd1220\02\01609\active\160961289\03\_data\gis\card\gis\mxd\archaeology\report\_figures\Shape\160961289\_ArchyS1\_Ep04\_Treaties.mxd - Revised: 2019-01-23 By: pwoonol

**DRAFT**  
 Indiana

Legend  
 Study Area

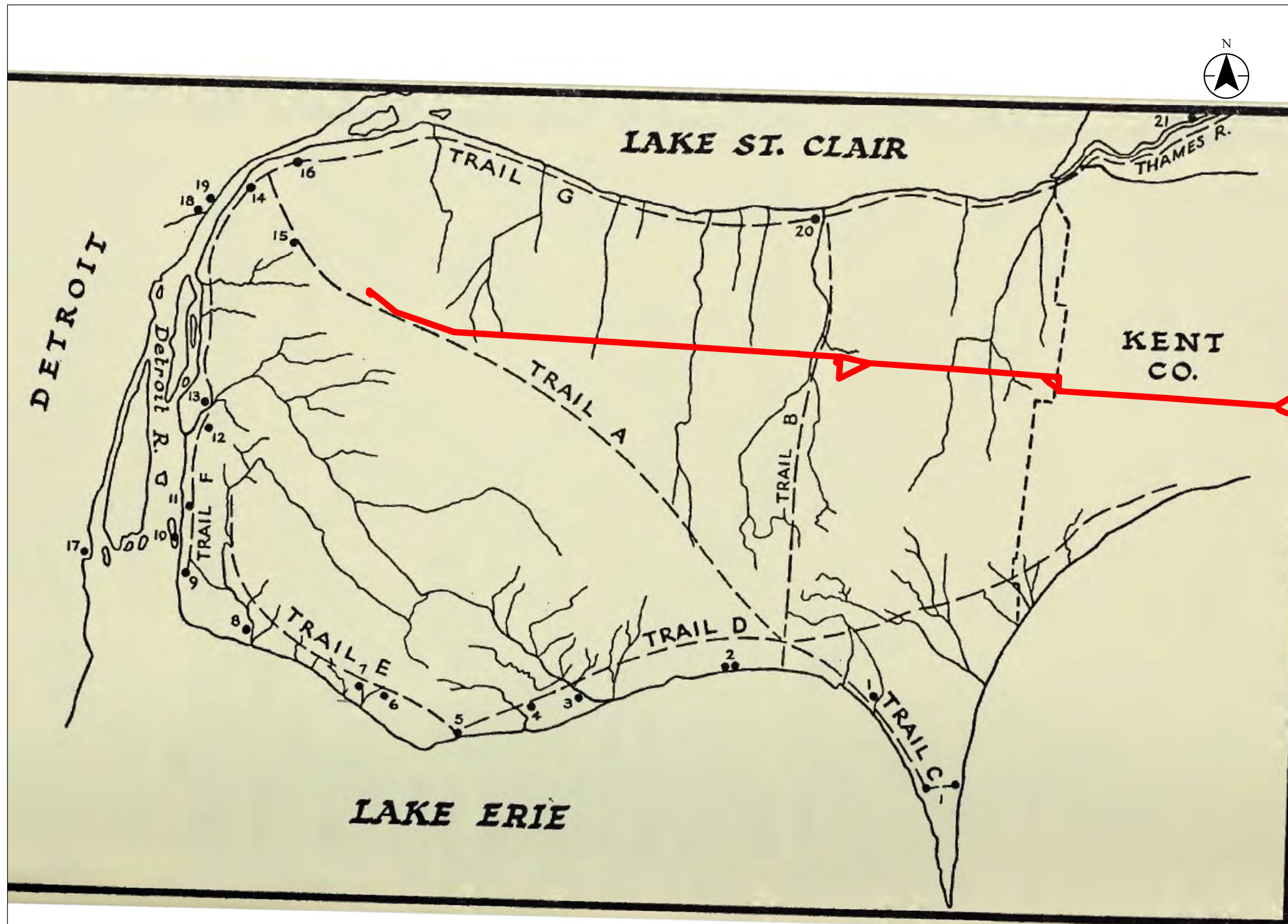


Figure not to scale.

Notes  
 1. Historic map source: Lajeunesse, Ernest J. 1960. The Windsor Border Region: Canada's Southernmost Frontier. The Champlain Society. Toronto: University of Toronto Press.



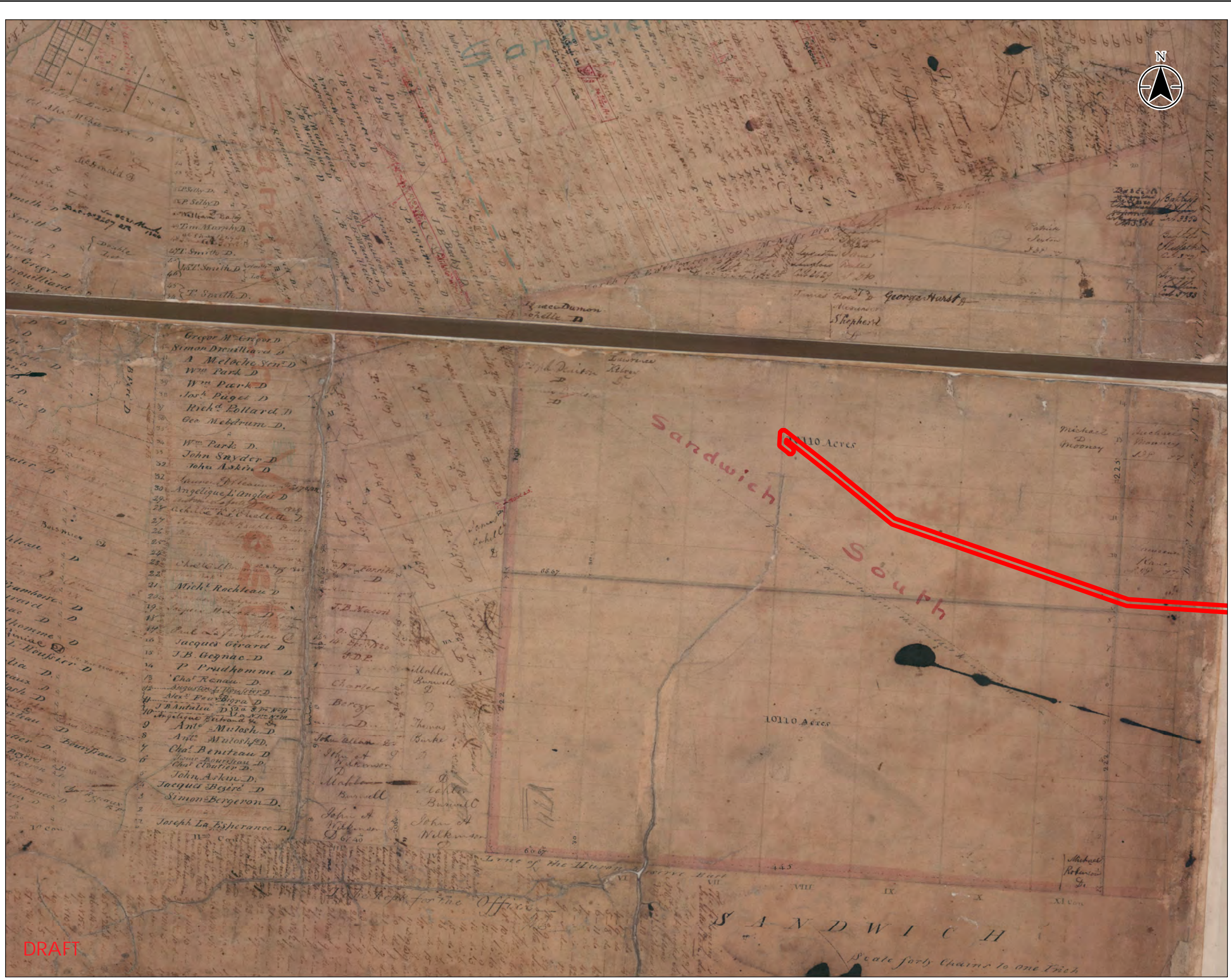
Project Location: County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04  
 160961289 REVA

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 5 **DRAFT**

Title: Documented Indigenous Activity in Essex County (Lajeunesse 1960)

**DRAFT**



Legend  
 Study Area

Figure not to scale.

Notes  
 1. Historic map source: Government of Canada. nd. Crown Land Survey Maps.  
 Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.



Project Location: County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 6

**DRAFT**

Title: 1797 Plan of Sandwich Township

**DRAFT**

C:\cd\120\02\01\609\archive\160961289\03\_draft\gis\mxd\160961289\_03\_ArchyS1\_Ep06\_1797Sandwich.mxd  
 Revised: 2019-01-23 By: pcorneil





Figure not to scale.

Notes  
 1. Historic map source: Government of Canada. nd. Crown Land Survey Maps.  
 Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 7 **DRAFT**

Title: 1821 Plan of Sandwich Township

DRAFT

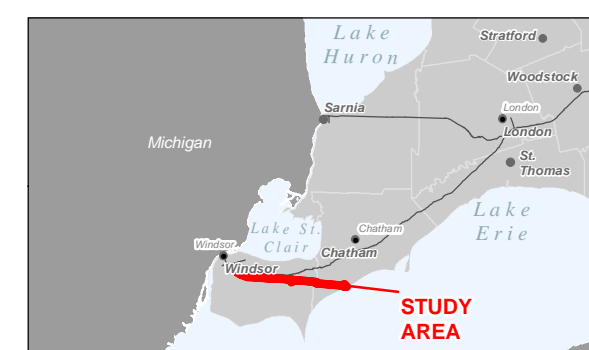
\\cd\1210\02\01\609\action\160961289\03\_draft\ark.cad\vw\mxd\archaeology\report\_figures\Shape1\160961289\_ArchyS1\_Ep08\_1877EssexCounty.mxd Revised: 2019-01-23 By: poworski



Legend  
Study Area

Figure not to scale.

Notes  
1. Historic map source: Walling, H.F. 1877. Map of Essex County, Ontario. Toronto:R.M. Tackabury.



Project Location: County of Essex and the Municipality of Chatham-Kent  
Prepared by PW on 2019-01-23  
Technical Review by DH on 2018-12-04  
160961289 REVA

Client/Project: UNION GAS LIMITED  
WINDSOR LINE REPLACEMENT  
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

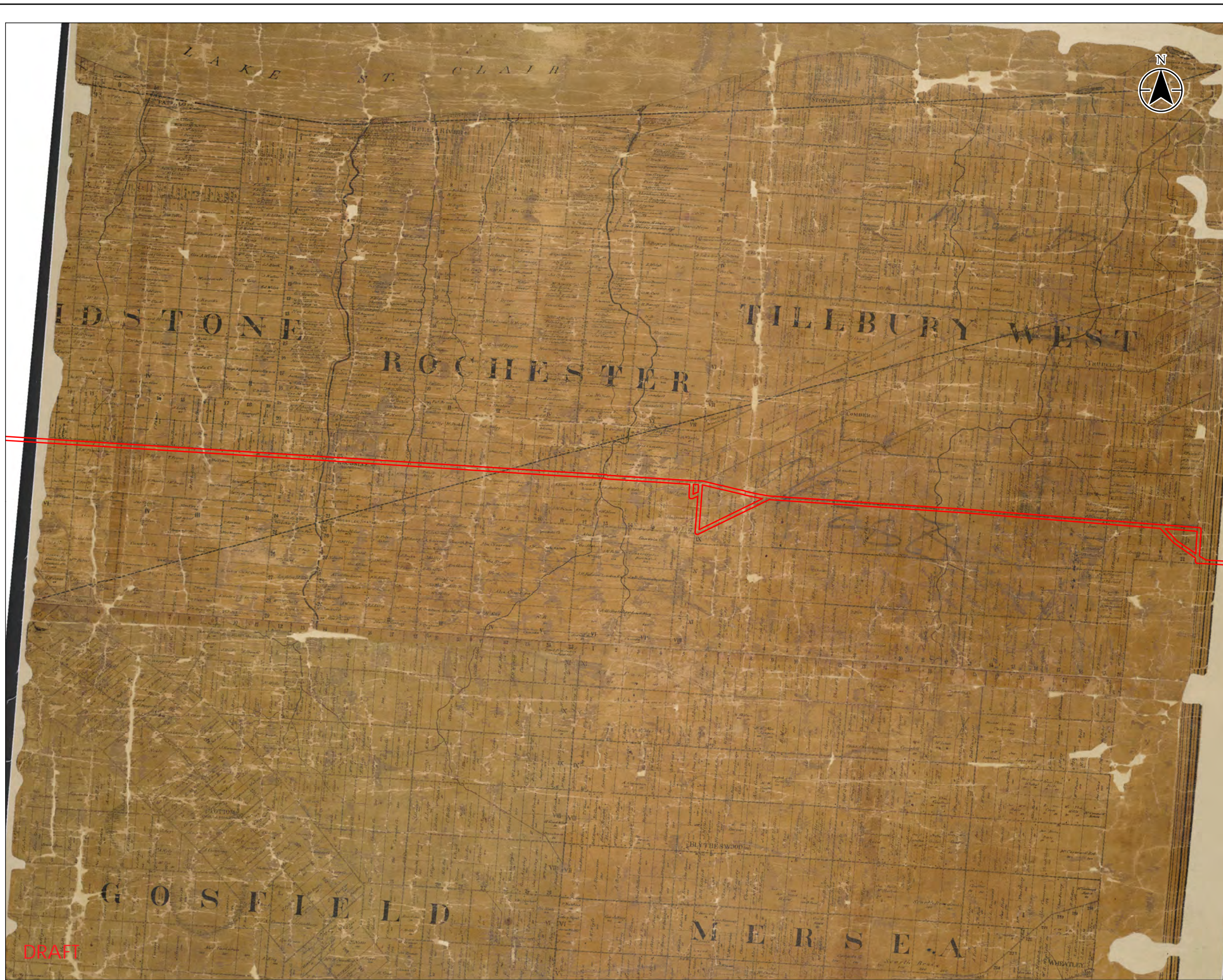
Figure No. 8

DRAFT

Title: 1877 Map of Essex County Illustrating East Sandwich and Maidstone Townships







Legend  
 Study Area

Figure not to scale.

Notes  
 1. Historic map source: Walling, H.F. 1877. Map of Essex County, Ontario. Toronto:R.M. Tackabury.



Project Location: County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04  
 160961289 REVA

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 11 **DRAFT**

Title: 1877 Map of Essex County Illustrating  
 Maidstone, Rochester, and Tilbury West





Legend  
 Study Area



Figure not to scale.

Notes  
 1. Historic map source: Belden, H. & Co. 1881. Illustrated Historical Atlas of the Counties of Essex and Kent. Toronto: H. Belden & Co.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04  
 160961289 REVA

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 14

**DRAFT**

Title: 1881 Historical Atlas Map of Rochester Township

**DRAFT**





Legend  
 Study Area

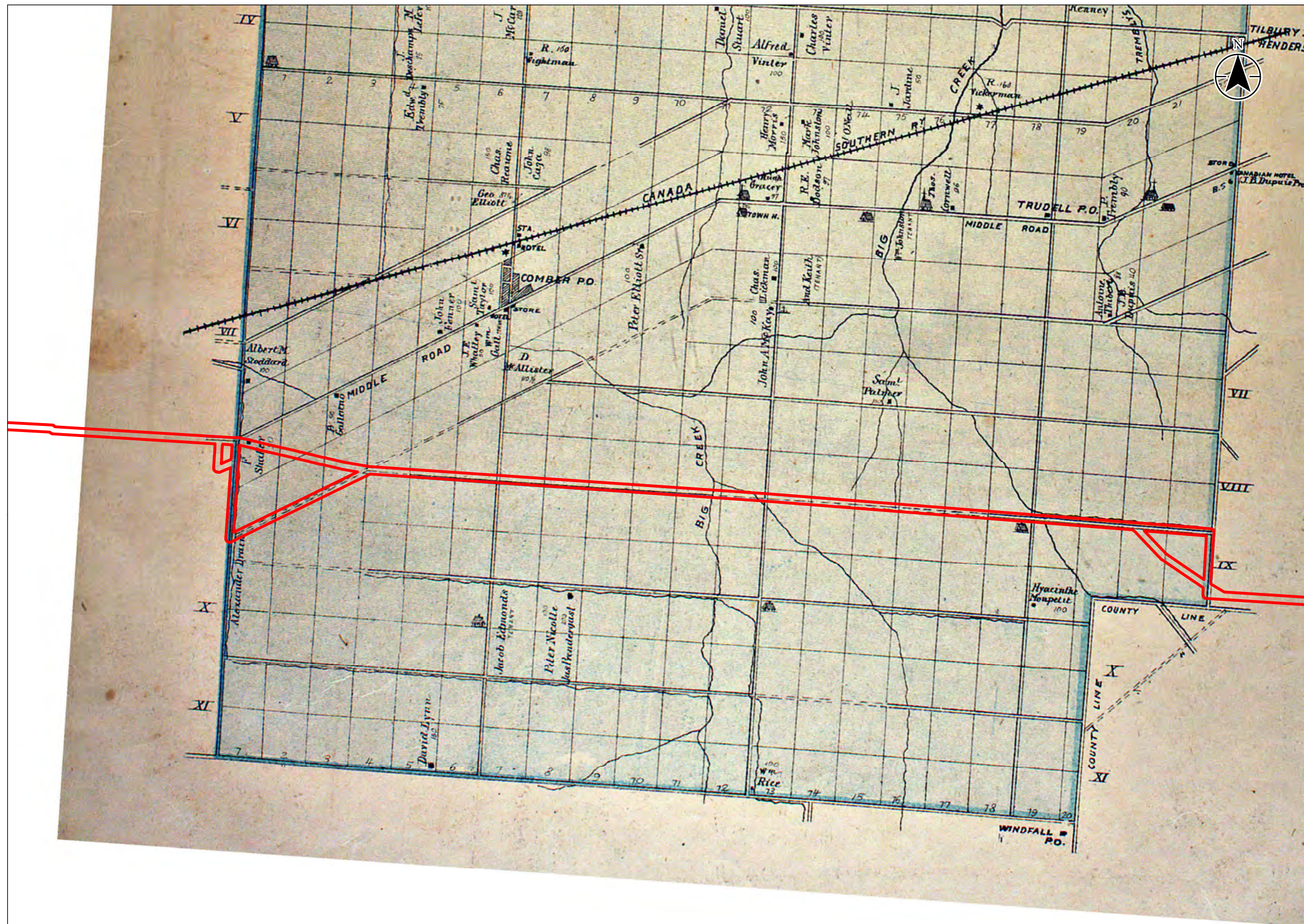


Figure not to scale.

Notes  
 1. Historic map source: Belden, H. & Co. 1881. Illustrated Historical Atlas of the Counties of Essex and Kent. Toronto: H. Belden & Co.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 16 **DRAFT**

Title: 1881 Historical Atlas Map of Tilbury West Township

**DRAFT**

C:\cd1220\02\01609\active\16094\289\03\_data\gis\mxd\archaeology\report\_figures\Shape\16094\289\_Archys11\_Fig16\_1881TilburyWestTwp.mxd  
 Revised: 2019-01-23 By: mwooseil

\\cd1220\02\01609\active\16094\289\03\_data\GIS\_Cad\GIS\mxd\Archaeology\Report\_Figures\Stage1\Fig17\_1821TilburyEastTownship.mxd Revised: 2019-01-23 By: jpwonell



Legend  
Study Area

Figure not to scale.

Notes  
1. Historic map source: Government of Canada. nd. Crown Land Survey Maps.  
Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.



Project Location 160961289 REVA  
County of Essex and the Municipality Of Chatham-Kent Prepared by PW on 2019-01-23  
Technical Review by DH on 2018-12-04

Client/Project  
UNION GAS LIMITED  
WINDSOR LINE REPLACEMENT  
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 17 **DRAFT**

Title  
1821 Plan of Tilbury East Township

**DRAFT**

Legend  
 Study Area

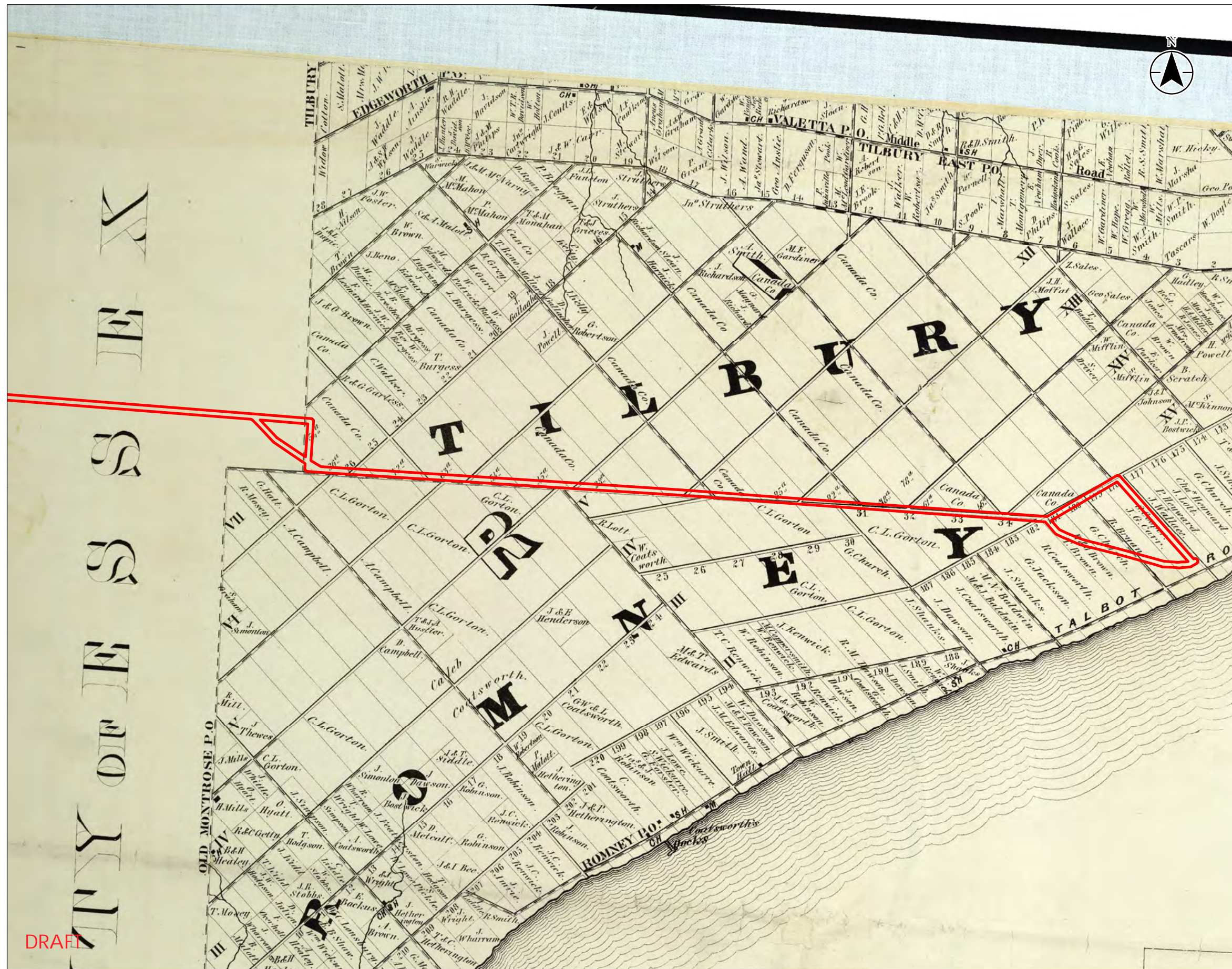


Figure not to scale.

Notes  
 1. Historic map source: Shackleton, J. W. and F. J. McIntosh. 1876. Map of the County of Kent, Chatham: Shackleton and McIntosh.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 18 **DRAFT**

Title: 1876 Historical Atlas Map of Tilbury East and Romney Townships

DRAFT



Figure not to scale.

Notes  
 1. Historic map source: Government of Canada. nd. Crown Land Survey Maps.  
 Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.

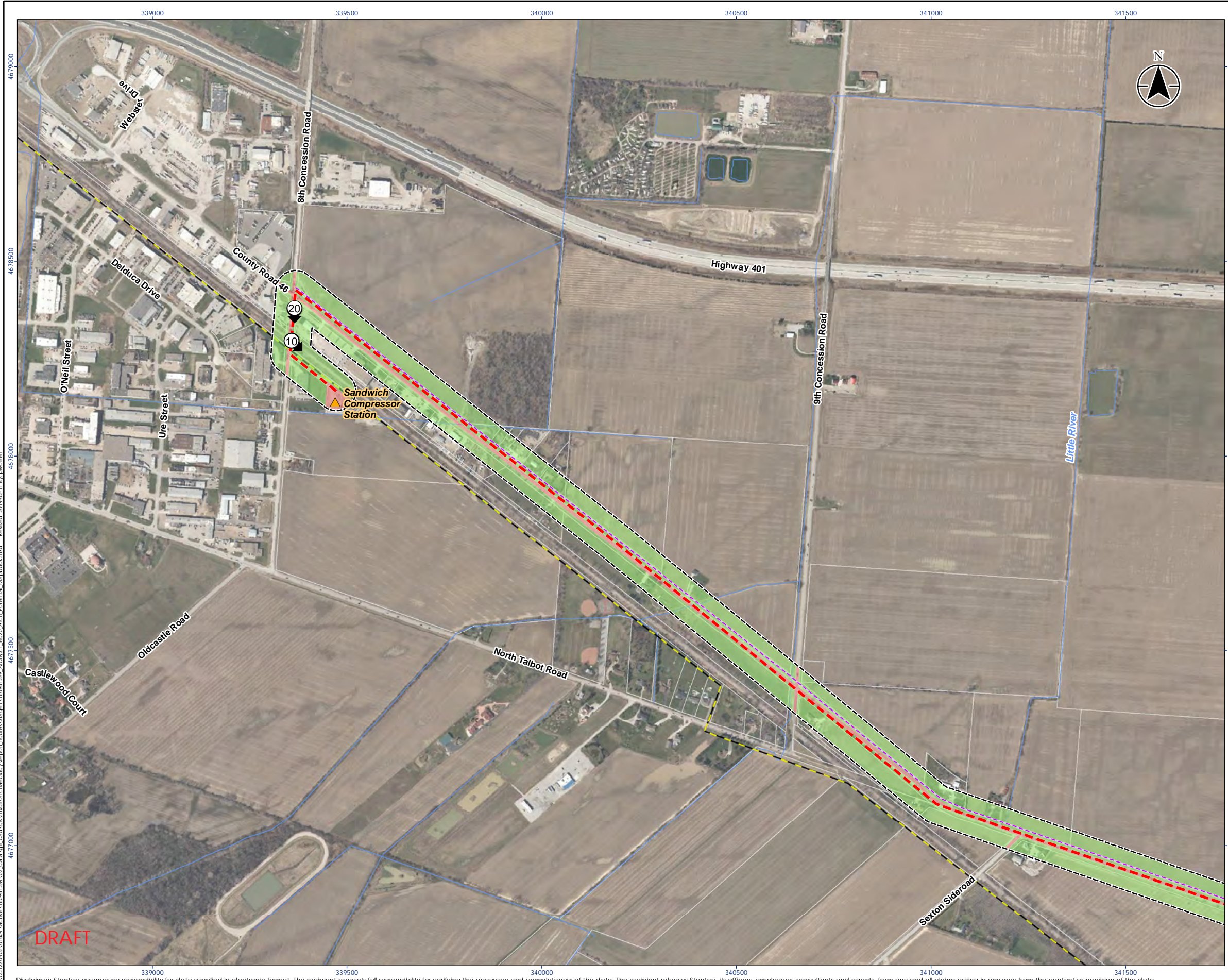


Project Location: County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-01-23  
 Technical Review by DH on 2018-12-04  
 160961289 REVA

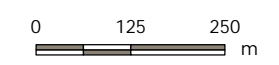
Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 19 **DRAFT**

Title: 1821 Plan of Romney Township

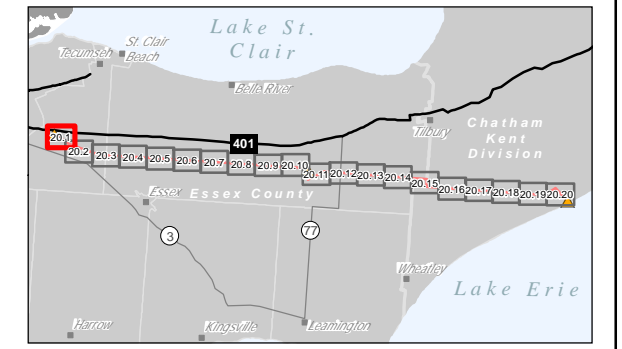


- Legend**
- Study Area
  - Photo Location and Direction
  - Existing Union Gas Station
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.1

**DRAFT**

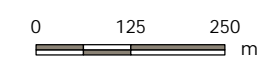
Title  
 Archaeological Potential of the Study Area

C:\cd1220\02\01\609\active\160961289\03\_data\GIS\_CAD\GIS\mxd\160961289\_Arch\_Potential\_Mapbook.mxd  
 Revised: 2019-02-11 By: pncosell  
 4677000  
 4675000  
 4670000  
 4665000  
 4660000  
 4655000  
 4650000  
 4645000  
 4640000  
 4635000  
 4630000  
 4625000  
 4620000  
 4615000  
 4610000  
 4605000  
 4600000  
 4595000  
 4590000  
 4585000  
 4580000  
 4575000  
 4570000  
 4565000  
 4560000  
 4555000  
 4550000  
 4545000  
 4540000  
 4535000  
 4530000  
 4525000  
 4520000  
 4515000  
 4510000  
 4505000  
 4500000  
 4495000  
 4490000  
 4485000  
 4480000  
 4475000  
 4470000  
 4465000  
 4460000  
 4455000  
 4450000  
 4445000  
 4440000  
 4435000  
 4430000  
 4425000  
 4420000  
 4415000  
 4410000  
 4405000  
 4400000  
 4395000  
 4390000  
 4385000  
 4380000  
 4375000  
 4370000  
 4365000  
 4360000  
 4355000  
 4350000  
 4345000  
 4340000  
 4335000  
 4330000  
 4325000  
 4320000  
 4315000  
 4310000  
 4305000  
 4300000  
 4295000  
 4290000  
 4285000  
 4280000  
 4275000  
 4270000  
 4265000  
 4260000  
 4255000  
 4250000  
 4245000  
 4240000  
 4235000  
 4230000  
 4225000  
 4220000  
 4215000  
 4210000  
 4205000  
 4200000  
 4195000  
 4190000  
 4185000  
 4180000  
 4175000  
 4170000  
 4165000  
 4160000  
 4155000  
 4150000  
 4145000  
 4140000  
 4135000  
 4130000  
 4125000  
 4120000  
 4115000  
 4110000  
 4105000  
 4100000  
 4095000  
 4090000  
 4085000  
 4080000  
 4075000  
 4070000  
 4065000  
 4060000  
 4055000  
 4050000  
 4045000  
 4040000  
 4035000  
 4030000  
 4025000  
 4020000  
 4015000  
 4010000  
 4005000  
 4000000  
 3995000  
 3990000  
 3985000  
 3980000  
 3975000  
 3970000  
 3965000  
 3960000  
 3955000  
 3950000  
 3945000  
 3940000  
 3935000  
 3930000  
 3925000  
 3920000  
 3915000  
 3910000  
 3905000  
 3900000  
 3895000  
 3890000  
 3885000  
 3880000  
 3875000  
 3870000  
 3865000  
 3860000  
 3855000  
 3850000  
 3845000  
 3840000  
 3835000  
 3830000  
 3825000  
 3820000  
 3815000  
 3810000  
 3805000  
 3800000  
 3795000  
 3790000  
 3785000  
 3780000  
 3775000  
 3770000  
 3765000  
 3760000  
 3755000  
 3750000  
 3745000  
 3740000  
 3735000  
 3730000  
 3725000  
 3720000  
 3715000  
 3710000  
 3705000  
 3700000  
 3695000  
 3690000  
 3685000  
 3680000  
 3675000  
 3670000  
 3665000  
 3660000  
 3655000  
 3650000  
 3645000  
 3640000  
 3635000  
 3630000  
 3625000  
 3620000  
 3615000  
 3610000  
 3605000  
 3600000  
 3595000  
 3590000  
 3585000  
 3580000  
 3575000  
 3570000  
 3565000  
 3560000  
 3555000  
 3550000  
 3545000  
 3540000  
 3535000  
 3530000  
 3525000  
 3520000  
 3515000  
 3510000  
 3505000  
 3500000  
 3495000  
 3490000  
 3485000  
 3480000  
 3475000  
 3470000  
 3465000  
 3460000  
 3455000  
 3450000  
 3445000  
 3440000  
 3435000  
 3430000  
 3425000  
 3420000  
 3415000  
 3410000  
 3405000  
 3400000  
 3395000  
 3390000  
 3385000  
 3380000  
 3375000  
 3370000  
 3365000  
 3360000  
 3355000  
 3350000  
 3345000  
 3340000  
 3335000  
 3330000  
 3325000  
 3320000  
 3315000  
 3310000  
 3305000  
 3300000  
 3295000  
 3290000  
 3285000  
 3280000  
 3275000  
 3270000  
 3265000  
 3260000  
 3255000  
 3250000  
 3245000  
 3240000  
 3235000  
 3230000  
 3225000  
 3220000  
 3215000  
 3210000  
 3205000  
 3200000  
 3195000  
 3190000  
 3185000  
 3180000  
 3175000  
 3170000  
 3165000  
 3160000  
 3155000  
 3150000  
 3145000  
 3140000  
 3135000  
 3130000  
 3125000  
 3120000  
 3115000  
 3110000  
 3105000  
 3100000  
 3095000  
 3090000  
 3085000  
 3080000  
 3075000  
 3070000  
 3065000  
 3060000  
 3055000  
 3050000  
 3045000  
 3040000  
 3035000  
 3030000  
 3025000  
 3020000  
 3015000  
 3010000  
 3005000  
 3000000  
 2995000  
 2990000  
 2985000  
 2980000  
 2975000  
 2970000  
 2965000  
 2960000  
 2955000  
 2950000  
 2945000  
 2940000  
 2935000  
 2930000  
 2925000  
 2920000  
 2915000  
 2910000  
 2905000  
 2900000  
 2895000  
 2890000  
 2885000  
 2880000  
 2875000  
 2870000  
 2865000  
 2860000  
 2855000  
 2850000  
 2845000  
 2840000  
 2835000  
 2830000  
 2825000  
 2820000  
 2815000  
 2810000  
 2805000  
 2800000  
 2795000  
 2790000  
 2785000  
 2780000  
 2775000  
 2770000  
 2765000  
 2760000  
 2755000  
 2750000  
 2745000  
 2740000  
 2735000  
 2730000  
 2725000  
 2720000  
 2715000  
 2710000  
 2705000  
 2700000  
 2695000  
 2690000  
 2685000  
 2680000  
 2675000  
 2670000  
 2665000  
 2660000  
 2655000  
 2650000  
 2645000  
 2640000  
 2635000  
 2630000  
 2625000  
 2620000  
 2615000  
 2610000  
 2605000  
 2600000  
 2595000  
 2590000  
 2585000  
 2580000  
 2575000  
 2570000  
 2565000  
 2560000  
 2555000  
 2550000  
 2545000  
 2540000  
 2535000  
 2530000  
 2525000  
 2520000  
 2515000  
 2510000  
 2505000  
 2500000  
 2495000  
 2490000  
 2485000  
 2480000  
 2475000  
 2470000  
 2465000  
 2460000  
 2455000  
 2450000  
 2445000  
 2440000  
 2435000  
 2430000  
 2425000  
 2420000  
 2415000  
 2410000  
 2405000  
 2400000  
 2395000  
 2390000  
 2385000  
 2380000  
 2375000  
 2370000  
 2365000  
 2360000  
 2355000  
 2350000  
 2345000  
 2340000  
 2335000  
 2330000  
 2325000  
 2320000  
 2315000  
 2310000  
 2305000  
 2300000  
 2295000  
 2290000  
 2285000  
 2280000  
 2275000  
 2270000  
 2265000  
 2260000  
 2255000  
 2250000  
 2245000  
 2240000  
 2235000  
 2230000  
 2225000  
 2220000  
 2215000  
 2210000  
 2205000  
 2200000  
 2195000  
 2190000  
 2185000  
 2180000  
 2175000  
 2170000  
 2165000  
 2160000  
 2155000  
 2150000  
 2145000  
 2140000  
 2135000  
 2130000  
 2125000  
 2120000  
 2115000  
 2110000  
 2105000  
 2100000  
 2095000  
 2090000  
 2085000  
 2080000  
 2075000  
 2070000  
 2065000  
 2060000  
 2055000  
 2050000  
 2045000  
 2040000  
 2035000  
 2030000  
 2025000  
 2020000  
 2015000  
 2010000  
 2005000  
 2000000  
 1995000  
 1990000  
 1985000  
 1980000  
 1975000  
 1970000  
 1965000  
 1960000  
 1955000  
 1950000  
 1945000  
 1940000  
 1935000  
 1930000  
 1925000  
 1920000  
 1915000  
 1910000  
 1905000  
 1900000  
 1895000  
 1890000  
 1885000  
 1880000  
 1875000  
 1870000  
 1865000  
 1860000  
 1855000  
 1850000  
 1845000  
 1840000  
 1835000  
 1830000  
 1825000  
 1820000  
 1815000  
 1810000  
 1805000  
 1800000  
 1795000  
 1790000  
 1785000  
 1780000  
 1775000  
 1770000  
 1765000  
 1760000  
 1755000  
 1750000  
 1745000  
 1740000  
 1735000  
 1730000  
 1725000  
 1720000  
 1715000  
 1710000  
 1705000  
 1700000  
 1695000  
 1690000  
 1685000  
 1680000  
 1675000  
 1670000  
 1665000  
 1660000  
 1655000  
 1650000  
 1645000  
 1640000  
 1635000  
 1630000  
 1625000  
 1620000  
 1615000  
 1610000  
 1605000  
 1600000  
 1595000  
 1590000  
 1585000  
 1580000  
 1575000  
 1570000  
 1565000  
 1560000  
 1555000  
 1550000  
 1545000  
 1540000  
 1535000  
 1530000  
 1525000  
 1520000  
 1515000  
 1510000  
 1505000  
 1500000  
 1495000  
 1490000  
 1485000  
 1480000  
 1475000  
 1470000  
 1465000  
 1460000  
 1455000  
 1450000  
 1445000  
 1440000  
 1435000  
 1430000  
 1425000  
 1420000  
 1415000  
 1410000  
 1405000  
 1400000  
 1395000  
 1390000  
 1385000  
 1380000  
 1375000  
 1370000  
 1365000  
 1360000  
 1355000  
 1350000  
 1345000  
 1340000  
 1335000  
 1330000  
 1325000  
 1320000  
 1315000  
 1310000  
 1305000  
 1300000  
 1295000  
 1290000  
 1285000  
 1280000  
 1275000  
 1270000  
 1265000  
 1260000  
 1255000  
 1250000  
 1245000  
 1240000  
 1235000  
 1230000  
 1225000  
 1220000  
 1215000  
 1210000  
 1205000  
 1200000  
 1195000  
 1190000  
 1185000  
 1180000  
 1175000  
 1170000  
 1165000  
 1160000  
 1155000  
 1150000  
 1145000  
 1140000  
 1135000  
 1130000  
 1125000  
 1120000  
 1115000  
 1110000  
 1105000  
 1100000  
 1095000  
 1090000  
 1085000  
 1080000  
 1075000  
 1070000  
 1065000  
 1060000  
 1055000  
 1050000  
 1045000  
 1040000  
 1035000  
 1030000  
 1025000  
 1020000  
 1015000  
 1010000  
 1005000  
 1000000  
 995000  
 990000  
 985000  
 980000  
 975000  
 970000  
 965000  
 960000  
 955000  
 950000  
 945000  
 940000  
 935000  
 930000  
 925000  
 920000  
 915000  
 910000  
 905000  
 900000  
 895000  
 890000  
 885000  
 880000  
 875000  
 870000  
 865000  
 860000  
 855000  
 850000  
 845000  
 840000  
 835000  
 830000  
 825000  
 820000  
 815000  
 810000  
 805000  
 800000  
 795000  
 790000  
 785000  
 780000  
 775000  
 770000  
 765000  
 760000  
 755000  
 750000  
 745000  
 740000  
 735000  
 730000  
 725000  
 720000  
 715000  
 710000  
 705000  
 700000  
 695000  
 690000  
 685000  
 680000  
 675000  
 670000  
 665000  
 660000  
 655000  
 650000  
 645000  
 640000  
 635000  
 630000  
 625000  
 620000  
 615000  
 610000  
 605000  
 600000  
 595000  
 590000  
 585000  
 580000  
 575000  
 570000  
 565000  
 560000  
 555000  
 550000  
 545000  
 540000  
 535000  
 530000  
 525000  
 520000  
 515000  
 510000  
 505000  
 500000  
 495000  
 490000  
 485000  
 480000  
 475000  
 470000  
 465000  
 460000  
 455000  
 450000  
 445000  
 440000  
 435000  
 430000  
 425000  
 420000  
 415000  
 410000  
 405000  
 400000  
 395000  
 390000  
 385000  
 380000  
 375000  
 370000  
 365000  
 360000  
 355000  
 350000  
 345000  
 340000  
 335000  
 330000  
 325000  
 320000  
 315000  
 310000  
 305000  
 300000  
 295000  
 290000  
 285000  
 280000  
 275000  
 270000  
 265000  
 260000  
 255000  
 250000  
 245000  
 240000  
 235000  
 230000  
 225000  
 220000  
 215000  
 210000  
 205000  
 200000  
 195000  
 190000  
 185000  
 180000  
 175000  
 170000  
 165000  
 160000  
 155000  
 150000  
 145000  
 140000  
 135000  
 130000  
 125000  
 120000



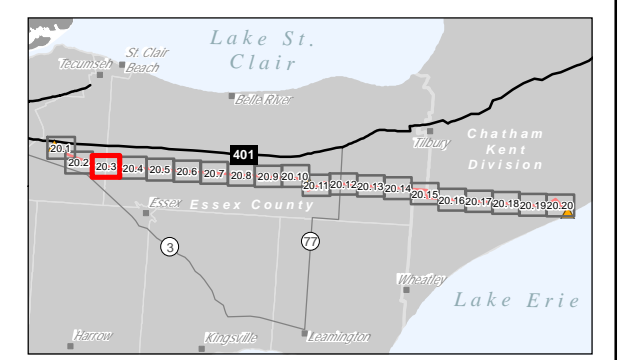


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.3

**DRAFT**

Title  
 Archaeological Potential of the Study Area

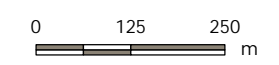
C:\cd1220\02\01\609\archaeo\160961289\03\_data\gis\card\gis\mxd\archaeology\report\figures\Stage1\160961289\_Archys11\_Eg20\_Arch\_Potential\_Mapbook.mxd  
 Revised: 2019-02-11 By: psonell

**DRAFT**



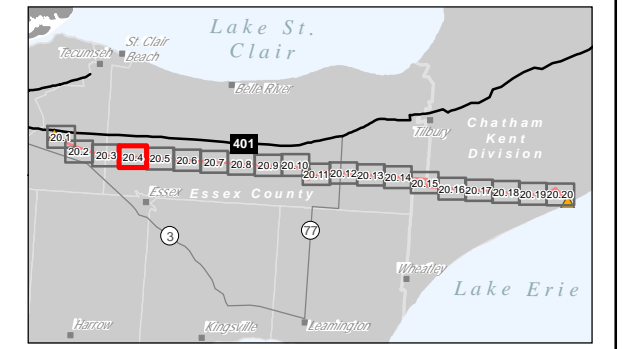


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.4 **DRAFT**

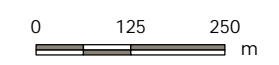
Title  
 Archaeological Potential of the Study Area

\\cd1220\02\01609\archive\160961289\03\_data\gis\_cadd\gis\mxd\archaeology\report\figures\Stage1\160961289\_Archys1\_Eg20\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pmonell

**DRAFT**

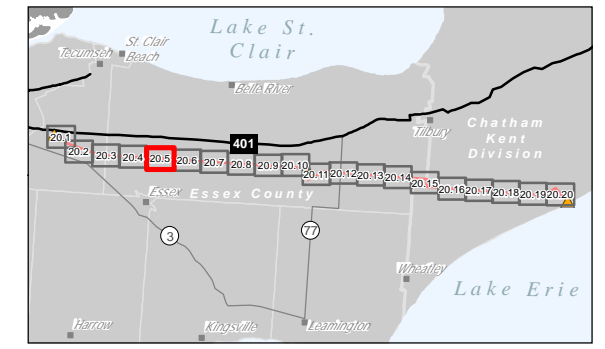


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

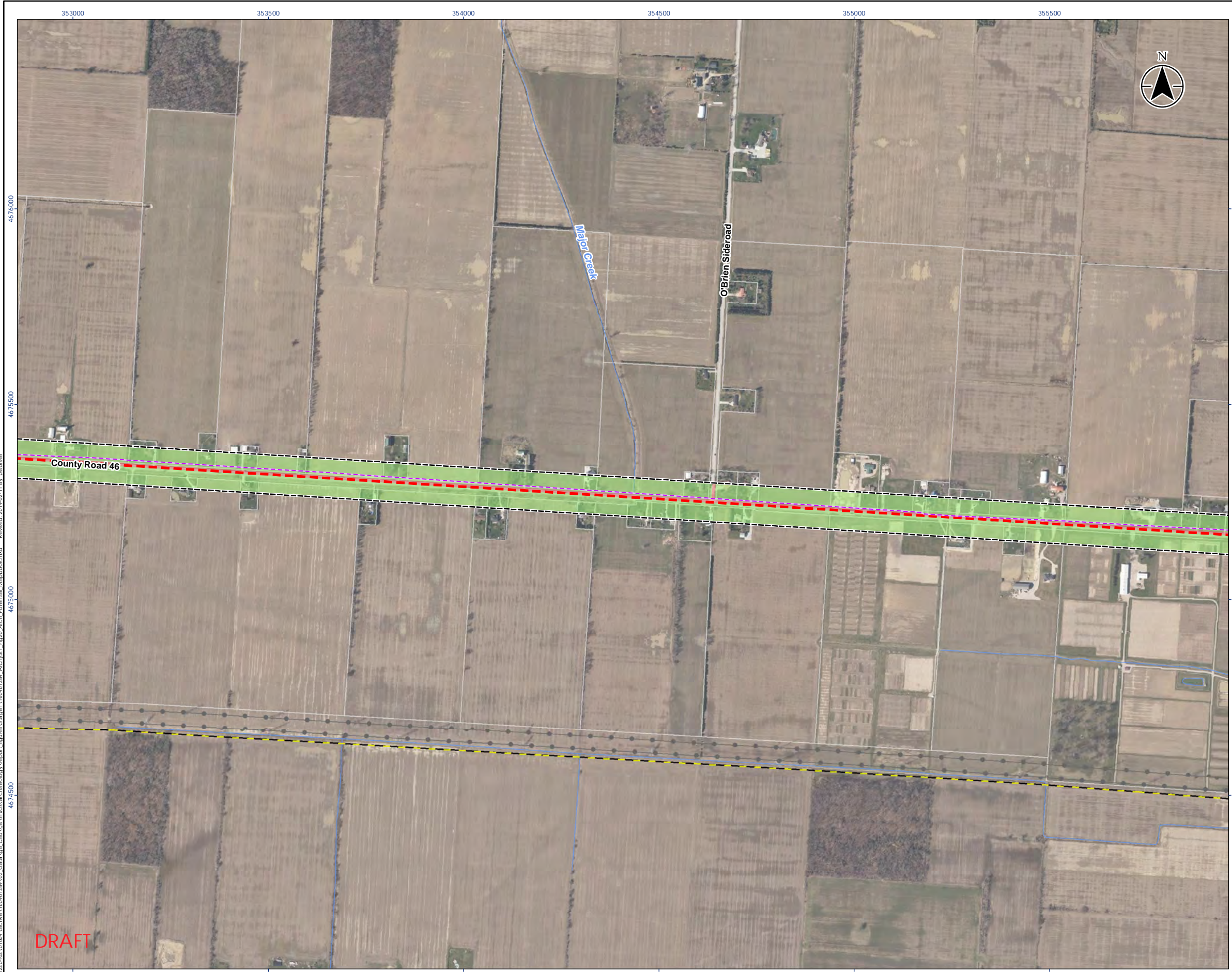
Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.5 **DRAFT**

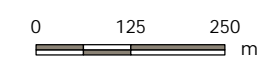
Title  
 Archaeological Potential of the Study Area

C:\cd\2020\02\01\609\active\160961289\03\_data\gis\card\gis\mxd\archaeology\report\_figures\Stage1\Fig20\_Arch\_Potential\_Mapbook.mxd  
 Revised: 2019-02-11 By: Diconelli

**DRAFT**

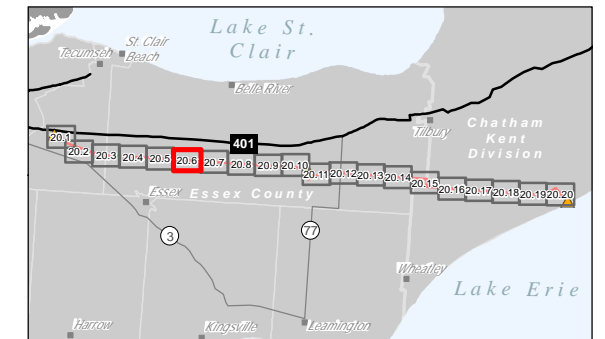


- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.: 20.6 DRAFT

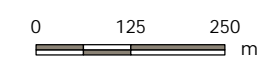
Title: Archaeological Potential of the Study Area

DRAFT

C:\cd120\02\01\609\archive\160961289\03\_data\gis\card\gis\mxd\S\archaeology\report\_figures\Stage1\_Fig20\_Arch\_Potential\_Mapbook.mxd  
 Revised: 2019-02-11 By: psonnell

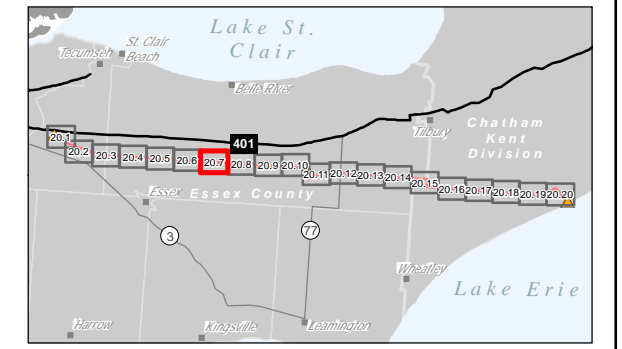


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Intermittent)
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

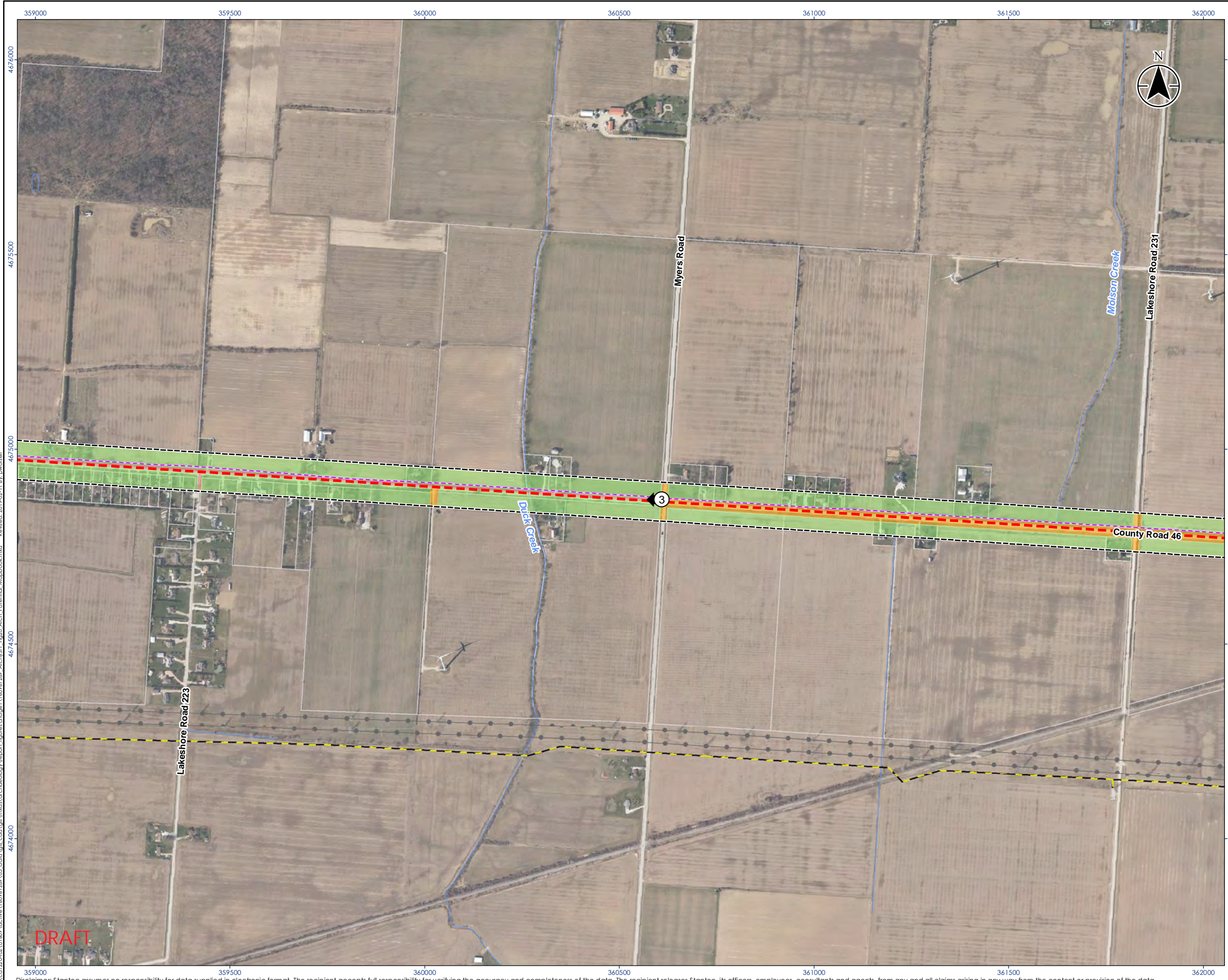
Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 20.7 DRAFT

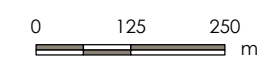
Title: Archaeological Potential of the Study Area

\\cd1220102\01609\active\160961289\03\_data\gis\mxd\archaeology\report\_figures\Stage1\160961289\_ArchyS1\_Eg20\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pconell

DRAFT

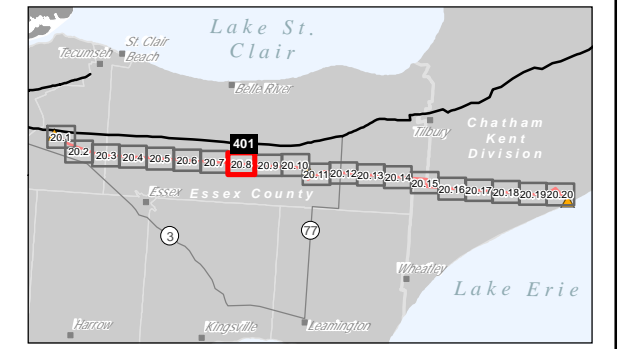


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.8 **DRAFT**

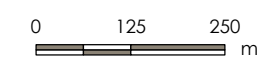
Title  
 Archaeological Potential of the Study Area

\\cd\2020\02\01\609\active\16094\289\03\_data\gis\cost\gis\mxd\archaeology\report\_figures\Stage1\16094\_289\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pwestell

**DRAFT**

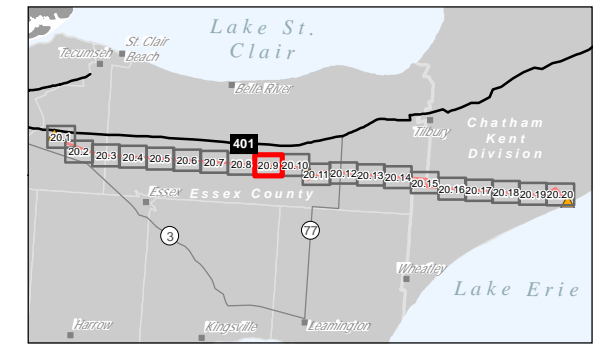


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.9 DRAFT

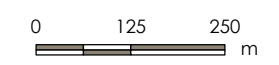
Title  
 Archaeological Potential of the Study Area

DRAFT

\\cd\2204\02\01\609\active\16094\289\03\_data\gis\_coat\gis\mxd\archaeology\report\_figures\Stage1\_Arch\Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pwestell

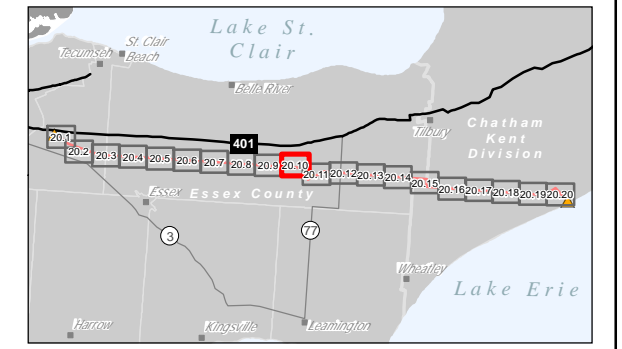


- Legend**
- Study Area
  - Photo Location and Direction
  - Existing Union Gas Station
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 20.10 DRAFT

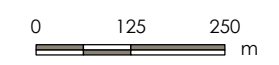
Title: Archaeological Potential of the Study Area

DRAFT

\\cd\2020\02\01\609\active\16094\289\03\_data\gis\cost\gis\mxd\archaeology\report\_figures\Stage1\16094\_289\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pwestell  
 Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

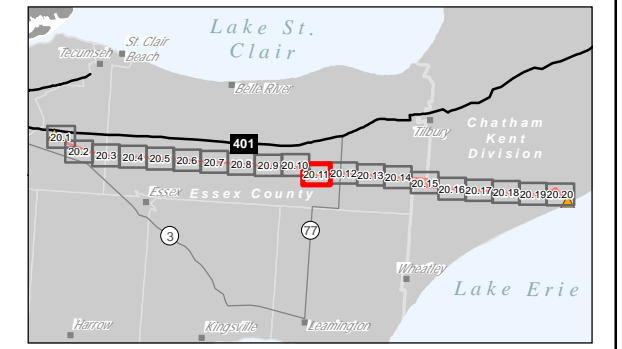


- Legend**
- Study Area
  - Photo Location and Direction
  - Existing Union Gas Station
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Existing Union Gas Transmission Pipeline
  - Hydro Line
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: 160961289 REVA  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 20.11 DRAFT

Title: Archaeological Potential of the Study Area

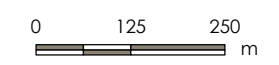
\\cd\2020\02\01\609\active\160961289\03\_data\gis\cost\gis\mxd\archaeology\report\_figures\Stage1\160961289\_ArchyS1\_Ep20\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pwestell  
 4673500  
 4673000  
 4672500  
 4672000  
 4671500  
 4671000  
 4670500  
 4670000

DRAFT



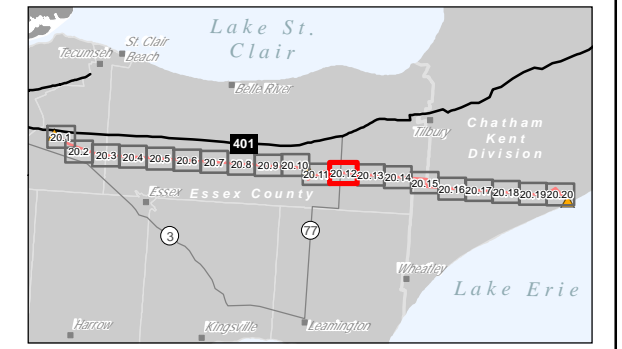


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: 160961289 REVA  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

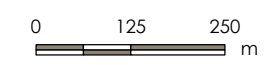
Figure No. 20.12 **DRAFT**  
 Title: Archaeological Potential of the Study Area

\\cd\2020\02\01\609\active\16094\289\03\_data\gis\cost\gis\mxd\archaeology\report\_figures\Stage1\16094\_289\_ArchyS1\_Ep20\_Ach\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pwnsell

**DRAFT**

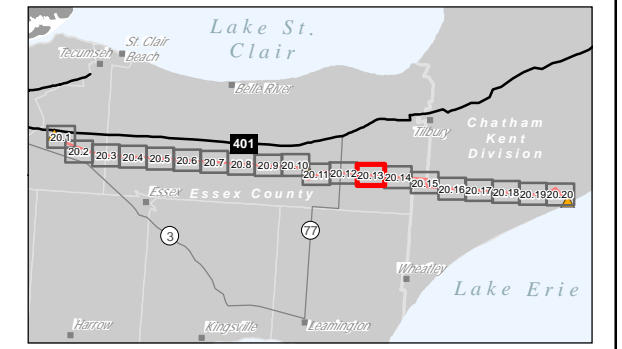


- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.13 DRAFT

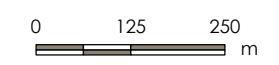
Title  
 Archaeological Potential of the Study Area

\\cd\2020\02\01\609\active\16094\289\03\_data\gis\cost\gis\mxd\archaeology\report\_figures\Stage1\_Fig20\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pwestell

DRAFT

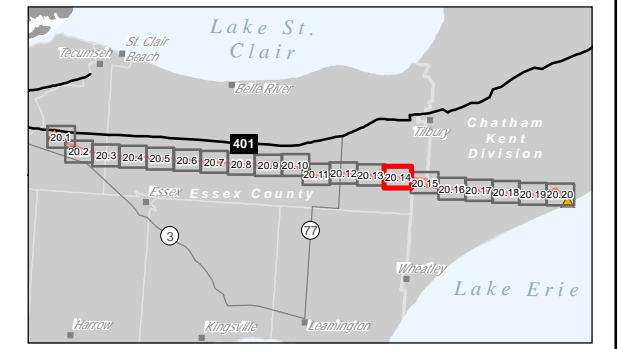


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.14 **DRAFT**

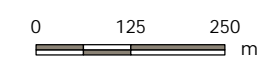
Title  
 Archaeological Potential of the Study Area

\\cd\2020\02\01\609\active\16094\289\03\_data\gis\cost\mxd\16094\_289\_Arch\Stage1\Report\_Figures\Stage1\Archaeology\Report\_Figures\Stage1\Archaeology\Mapbook.mxd Revised: 2019-02-11 By: pwnsell

**DRAFT**

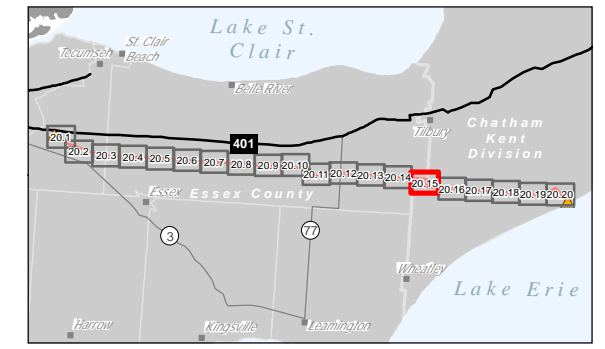


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 20.15 **DRAFT**

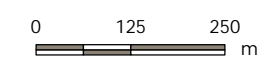
Title: Archaeological Potential of the Study Area

\\cd1220-02\01669\active\160961289\03\_data\gis\_cad\gis\mxd\archaeology\report\_figures\Stage1\160961289\_Archys11\_Eg20\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pwoonell

**DRAFT**

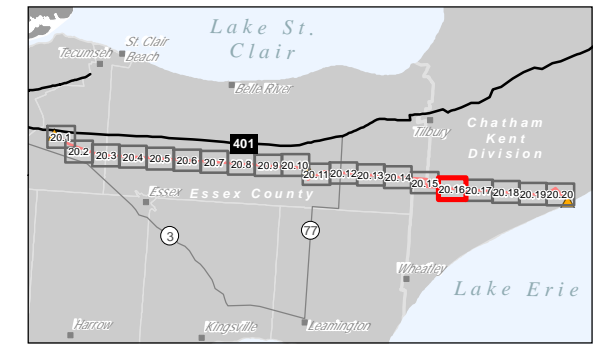


- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: 160961289 REVA  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project:  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 20.16 **DRAFT**

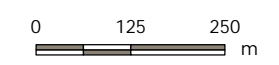
Title: Archaeological Potential of the Study Area

\\cd1220-02\01609\archive\160961289\03\_data\gis\card\gis\mxd\archaeology\report\_figures\Stage1\160961289\_Archys11\_Eg20\_Arch\_Potential\_Mapbook.mxd  
 Revised: 2019-02-11 By: pconnell  
 4671000  
 4671500  
 4672000  
 4672500  
 4673000

**DRAFT**

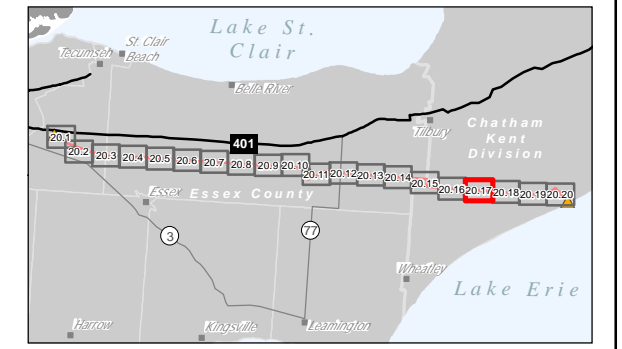


- Legend**
- Study Area
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: 160961289 REVA  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project:  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 20.17 **DRAFT**

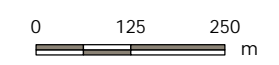
Title: Archaeological Potential of the Study Area

C:\cd\120-02\01\609\active\160961289\03\_data\gis\card\gis\mxd\160961289\_Arch\_Potential\_Mapbook.mxd  
 Revised: 2019-02-11 By: pconsell

**DRAFT**

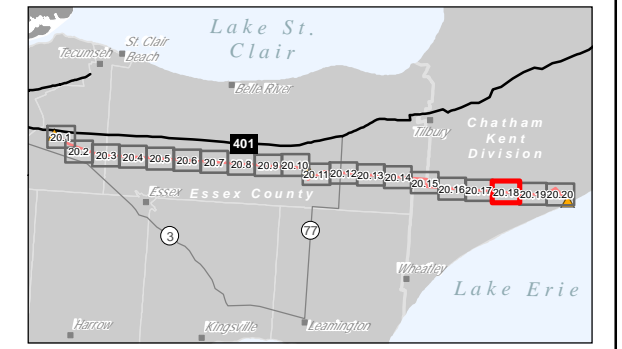


- Legend
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location: 160961289 REVA  
 County of Essex and the Municipality of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project: UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. 20.18 DRAFT

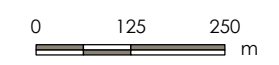
Title: Archaeological Potential of the Study Area

\\cd1220402\01669\active\160961289\03\_data\gis\card\gis\mxd\archaeology\report\_figures\Stage1\_Eg20\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 By: pmonell

DRAFT

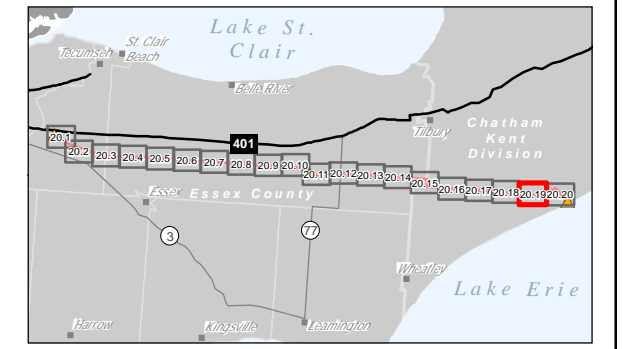


- Legend**
- Study Area
  - Photo Location and Direction
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment
  - Previously Assessed Area - No Further Archaeological Assessment Required



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



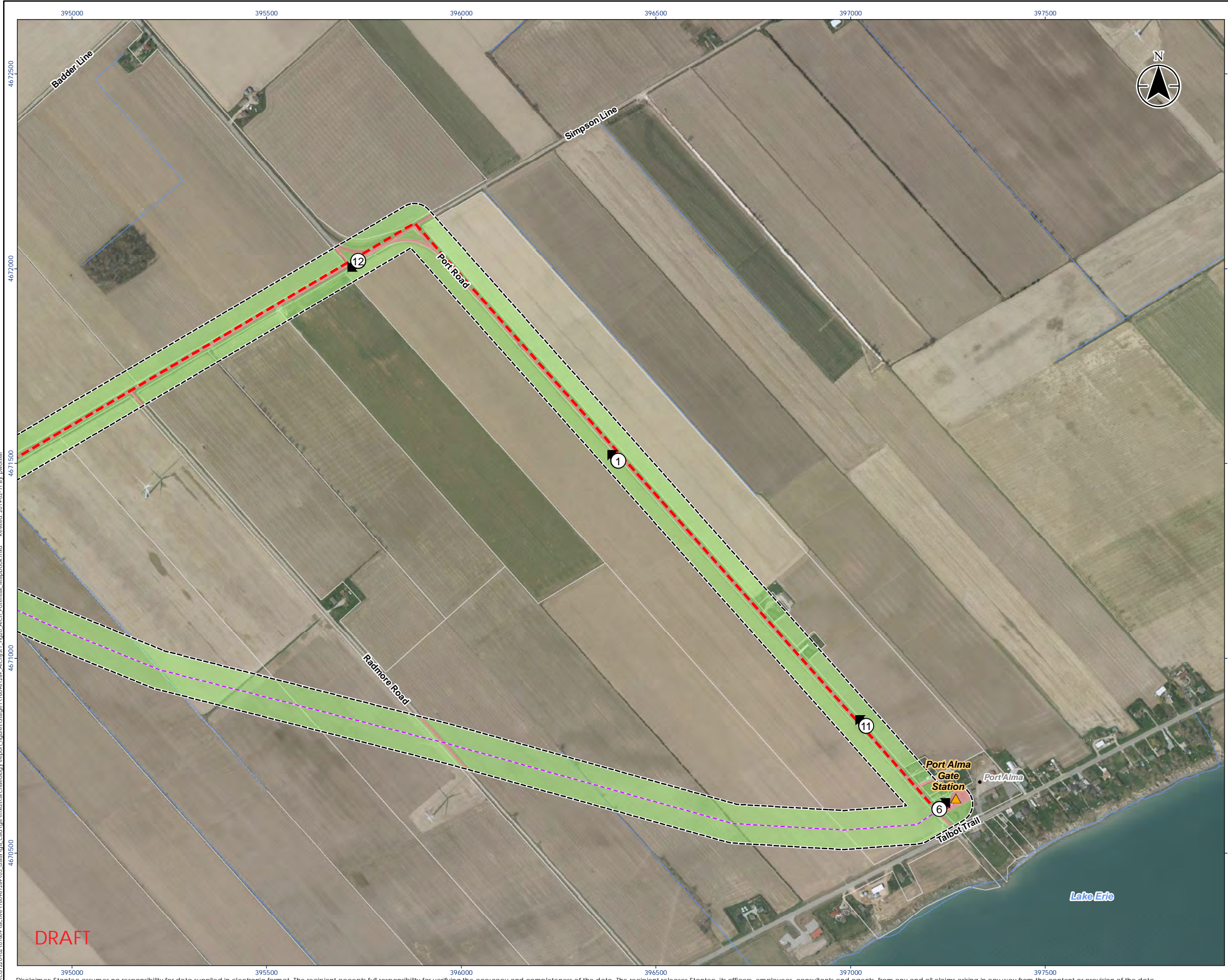
Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

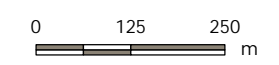
Figure No. 20.19 **DRAFT**  
 Title  
 Archaeological Potential of the Study Area

\\cd120-02\01.609\active\160941289\03\_data\gis\_coat\gis\mxd\archaeology\report\_figures\Stage1\_Fig20\_Arch\_Potential\_Mapbook.mxd Revised: 2019-02-11 by: dwnsell



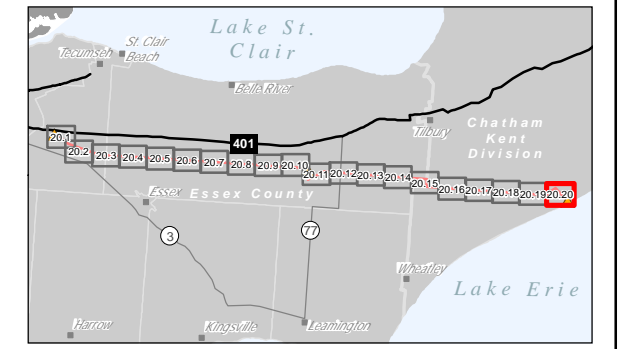


- Legend**
- Study Area
  - Photo Location and Direction
  - Existing Union Gas Station
  - Preliminary Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Watercourse (Permanent)
  - Waterbody
  - Property Line
- Archaeological Potential**
- Area of Archaeological Potential - Stage 2 Archaeological Assessment Required
  - Area of Modern Disturbance - Archaeological Potential to be Confirmed During Stage 2 Assessment



1:10,000 (At original document size of 11x17)

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
  2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
  3. Orthoimagery © First Base Solutions, 2019. Imagery dates: Essex, 2017. Chatham-Kent, 2010.



Project Location  
 County of Essex and the Municipality Of Chatham-Kent  
 Prepared by PW on 2019-02-11  
 Technical Review by ABC on yyyy-MM-dd

Client/Project  
 UNION GAS LIMITED  
 WINDSOR LINE REPLACEMENT  
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.  
 20.20 DRAFT

Title  
 Archaeological Potential of the Study Area

\\cd1220-02\01609\archive\16094\289\03\_data\gis\card\gis\mxd\archaeology\report\_figures\Stage1\_Eg20\_Arch\_Potential\_Mapbook.mxd  
 Revised: 2019-02-11 By: pconsell  
 4670500  
 4671000  
 4671500  
 4672000  
 4672500

DRAFT

## STAGE 1 ARCHAEOLOGICAL ASSESSMENT: UNION GAS WINDSOR LINE REPLACEMENT

Closure  
March 11, 2019

### 9.0 CLOSURE

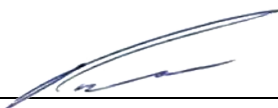
This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities, or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Quality Review \_\_\_\_\_



(signature)

**Parker Dickson, Associate, Senior Archaeologist**

Independent Review \_\_\_\_\_



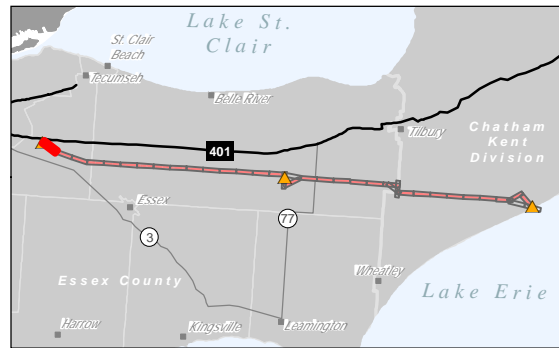
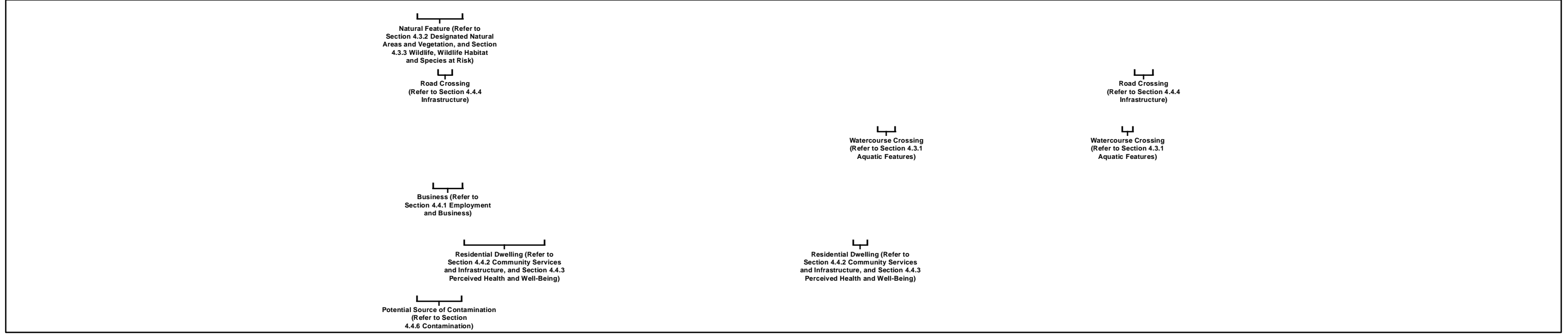
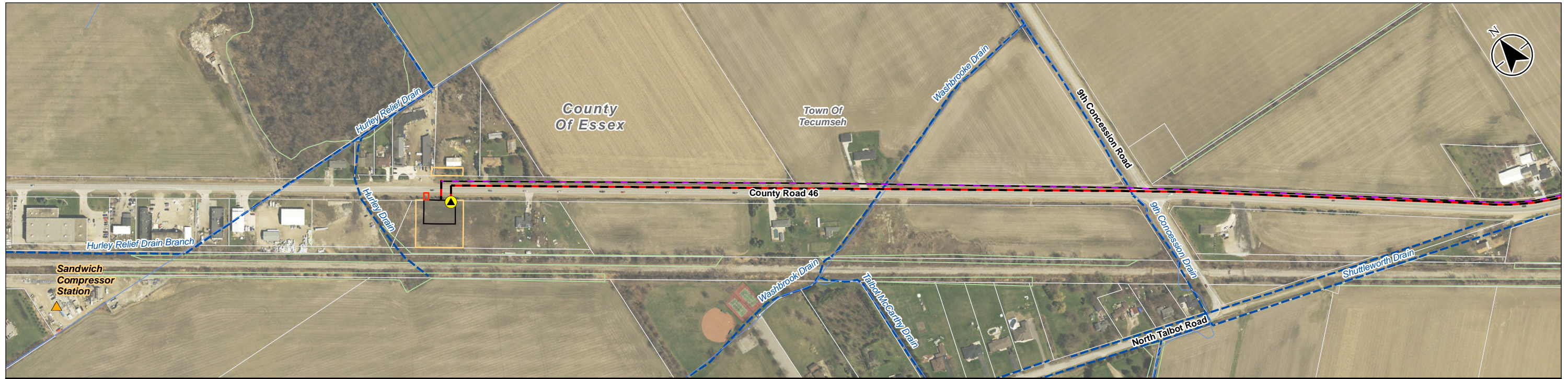
(signature)

**Colin Varley, Senior Associate, Senior Archaeologist**

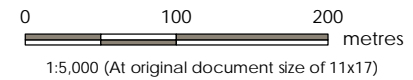


# **APPENDIX H: MITIGATION PHOTOMOSAIC**





- Legend**
- Existing Enbridge Station
  - Proposed New Station
  - Preferred Route
  - Access Road
  - Proposed Easement
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

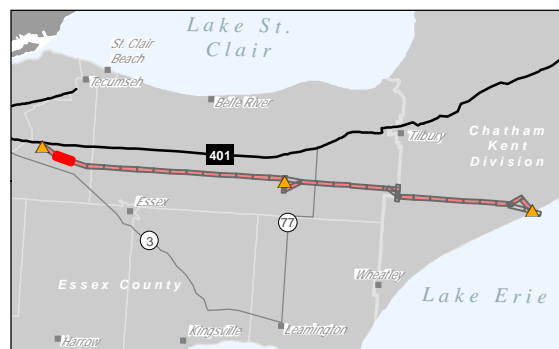
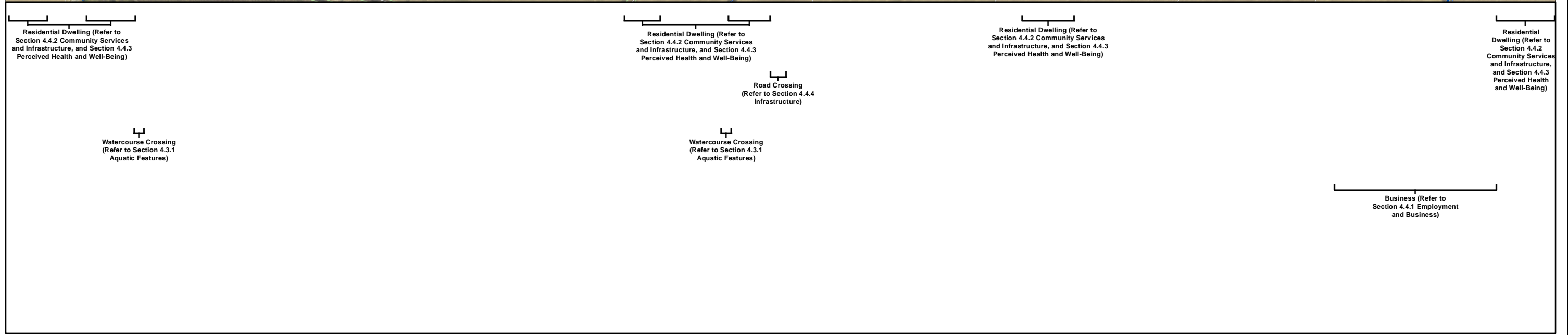
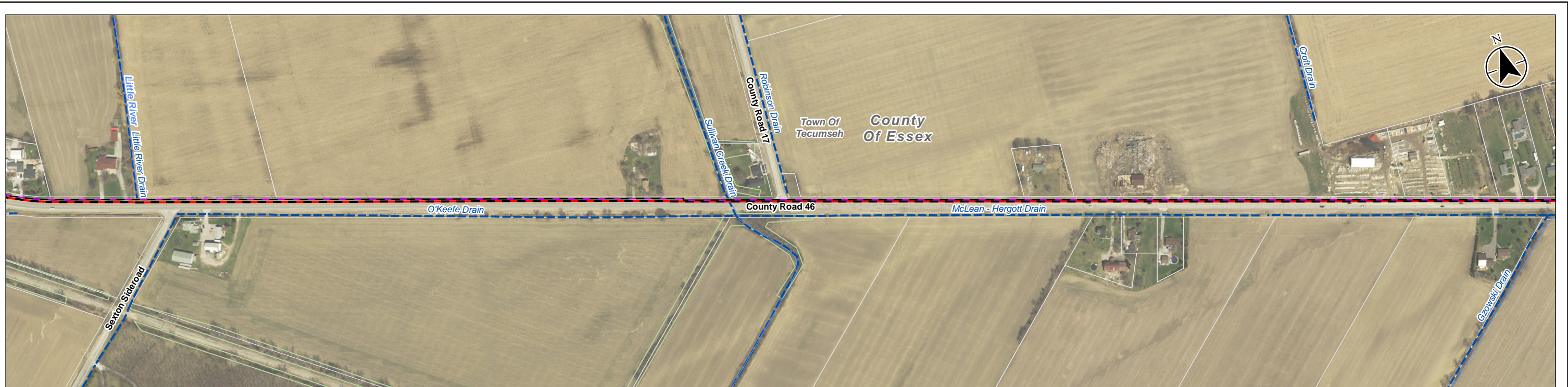
Figure No.: 1.1  
 Title: Mitigation Photomosaic

**DRAFT**

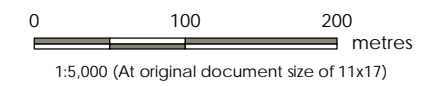
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

C:\cd\2020-02-01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

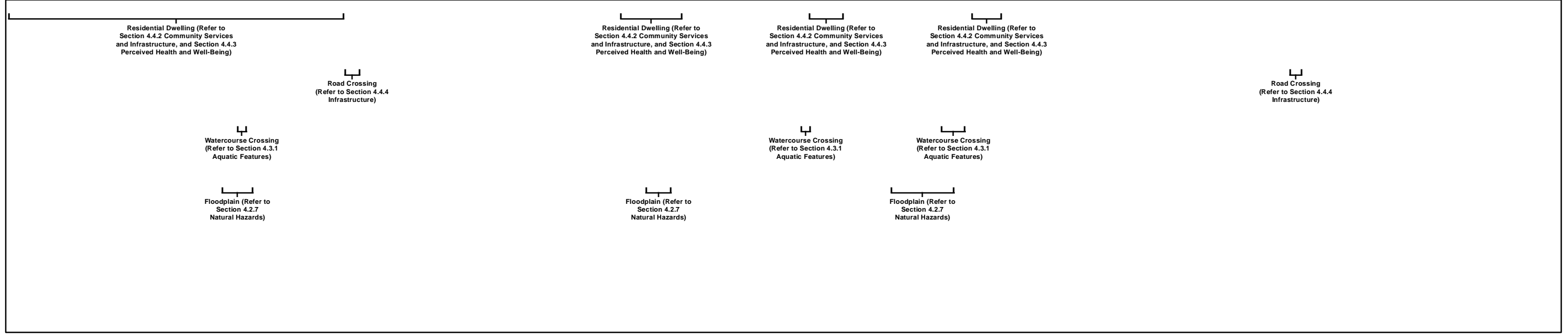
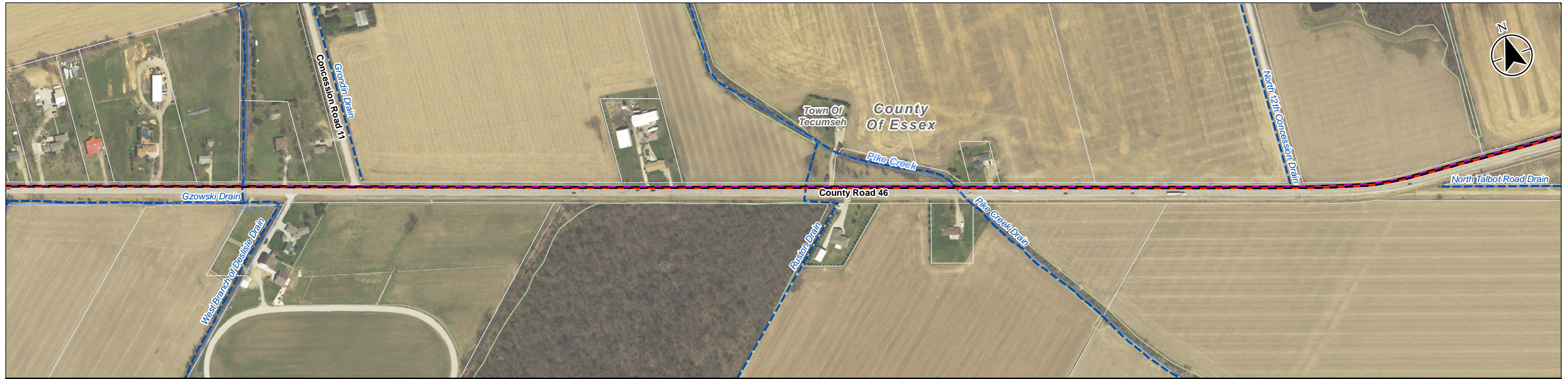
Figure No. 1.2  
 Title: Mitigation Photomosaic

**DRAFT**

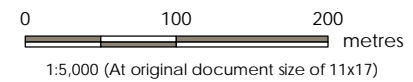
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd120-02\01\609\active\160941289\03\_data\gis\mxd\assessment\permitted\report\_figures\mitigation\_photomosaic\160941289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Preferred Route
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-18  
 160961289 REVA

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No.: 1.3  
 Title: Mitigation Photomosaic

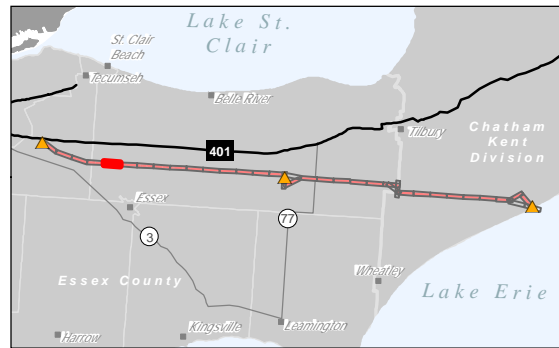
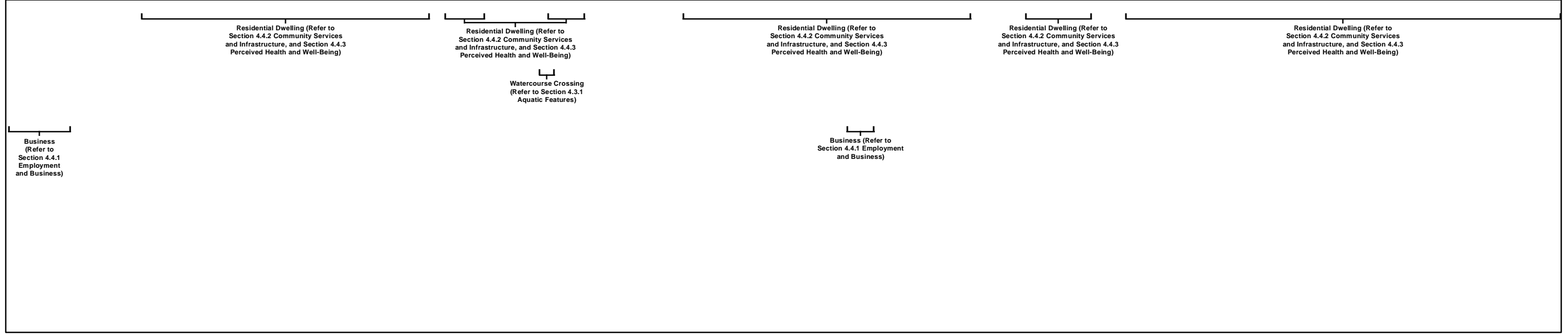
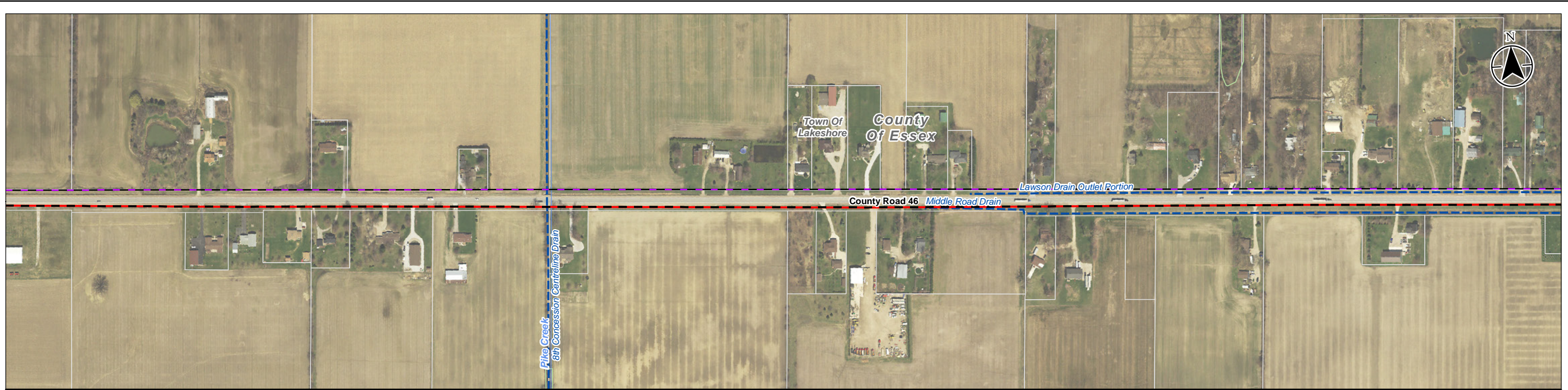
**DRAFT**

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

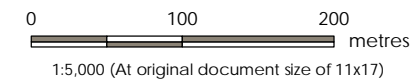
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell





- Legend**
- Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.5  
 Title: Mitigation Photomosaic

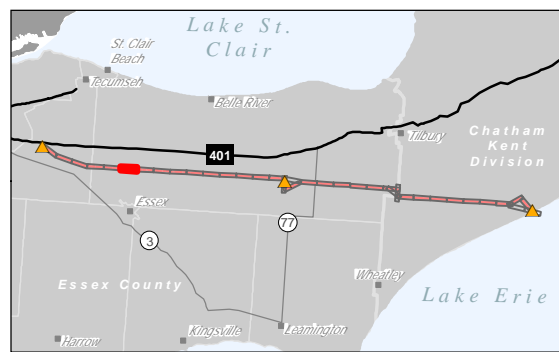
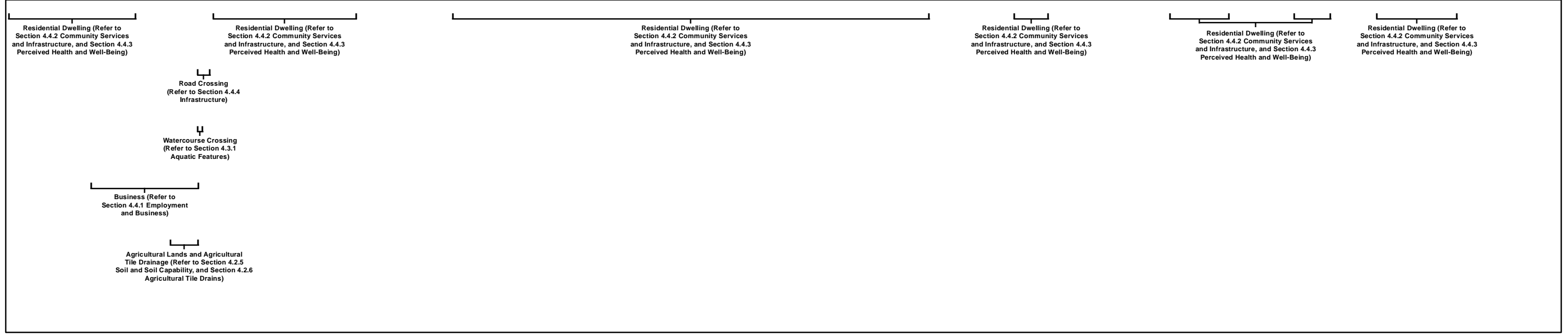
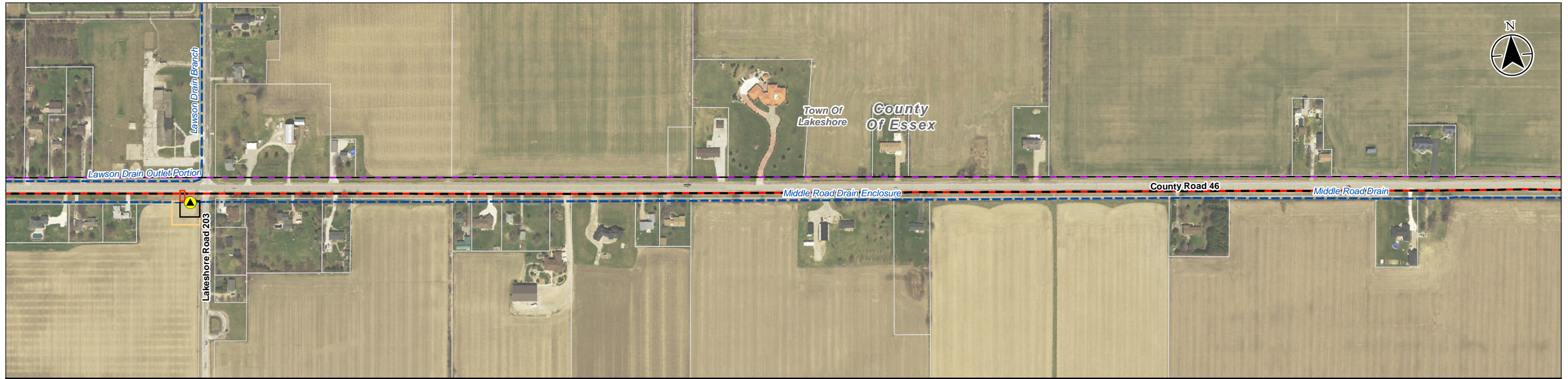
**DRAFT**

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

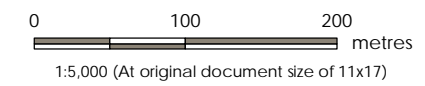
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd120-02\01\609\active\160961289\03\_data\gis\assessment\permitting\report\_fig1\_mitigation\_photomosaic.mxd  
 Revised: 2019-06-18 By: p.worsell





- Legend**
- Proposed New Station
  - Preferred Route
  - Access Road
  - Proposed Easement
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

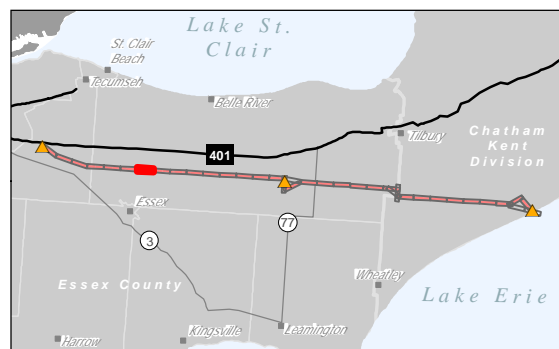
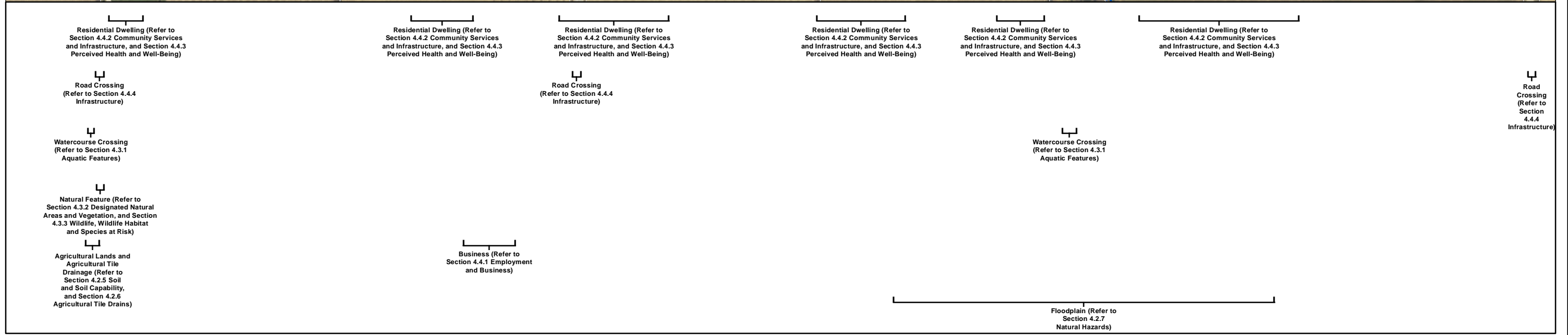
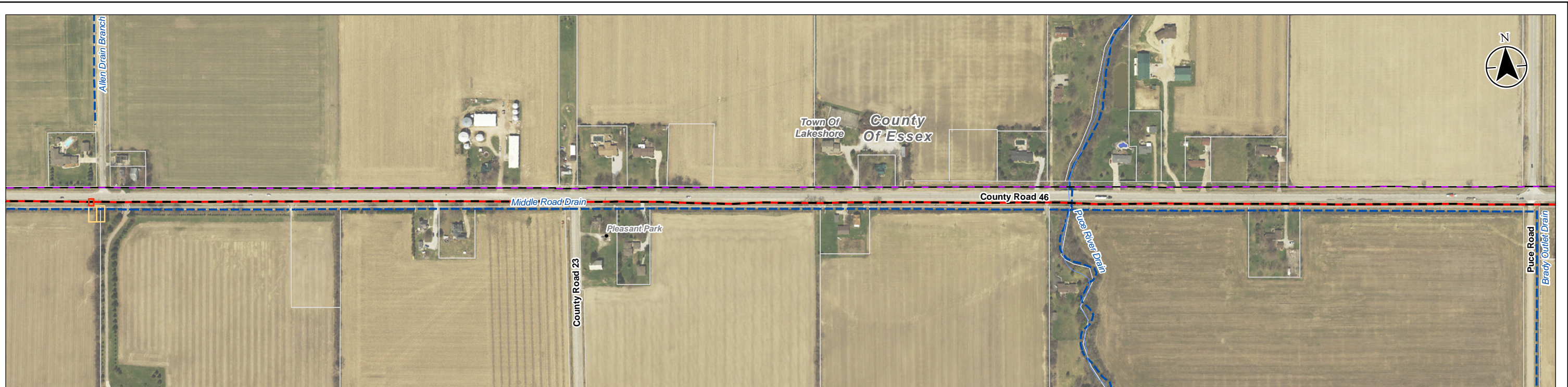
Figure No. 1.6  
 Title: Mitigation Photomosaic

**DRAFT**

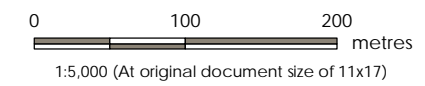
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Preferred Route
  - Access Road
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.7

Title: Mitigation Photomosaic

**DRAFT**

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

C:\cd1220-02\01\609\active\160961289\_03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

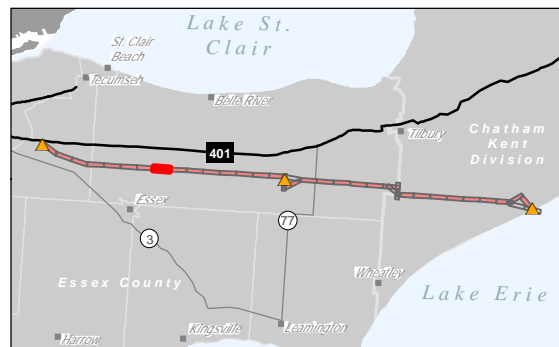
Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

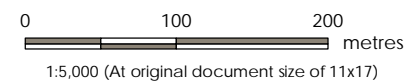
Business (Refer to Section 4.4.1 Employment and Business)

Business (Refer to Section 4.4.1 Employment and Business)

Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)



- Legend**
- Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.8

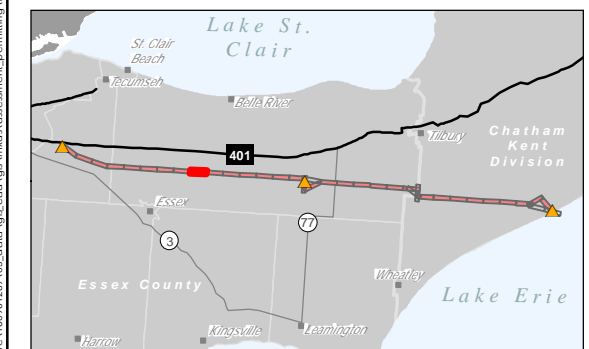
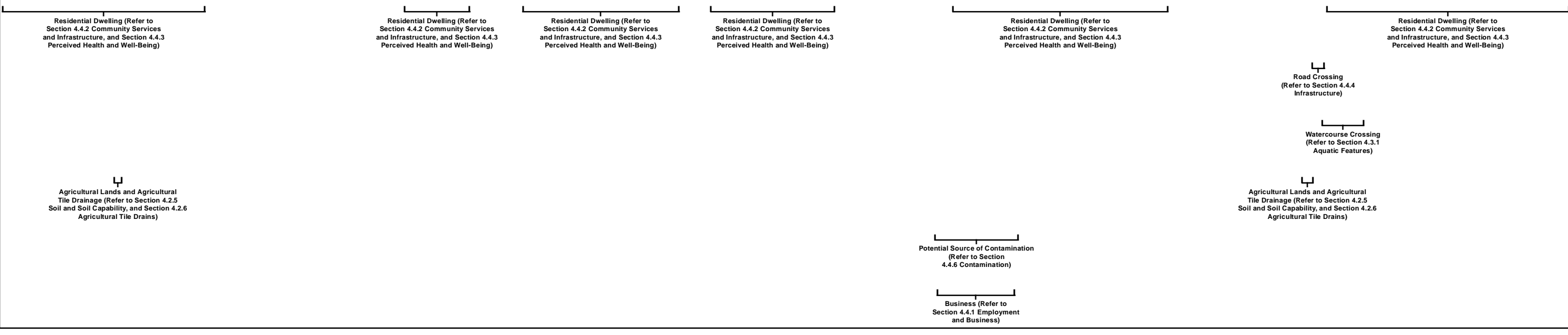
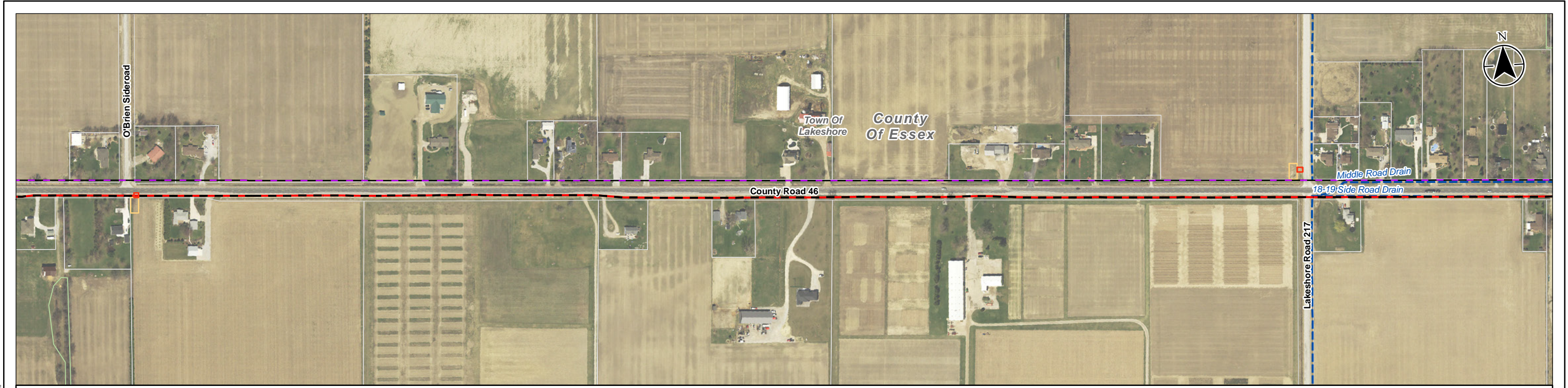
**DRAFT**

Title: Mitigation Photomosaic

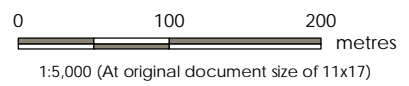
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

C:\cd\2020-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitted\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd  
 Revised: 2019-06-18 By: p.worsell



- Legend**
- - - Preferred Route
  - Access Road
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14  
 160961289 REVA

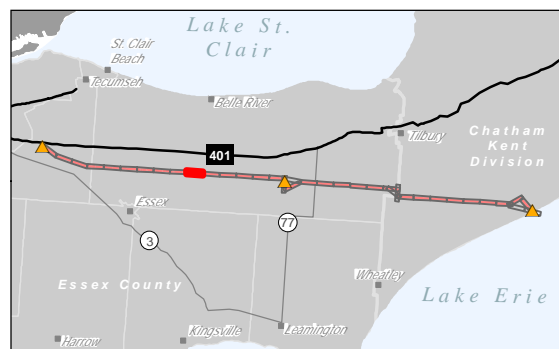
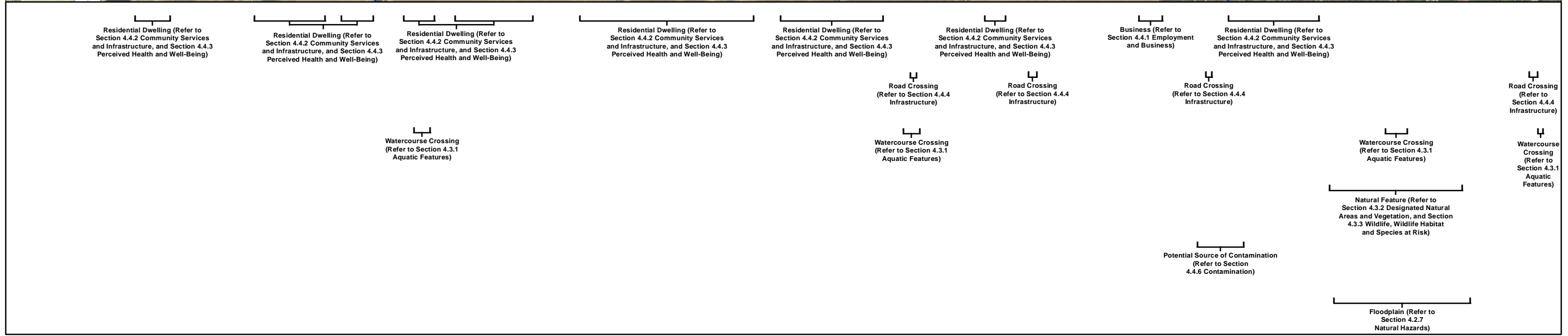
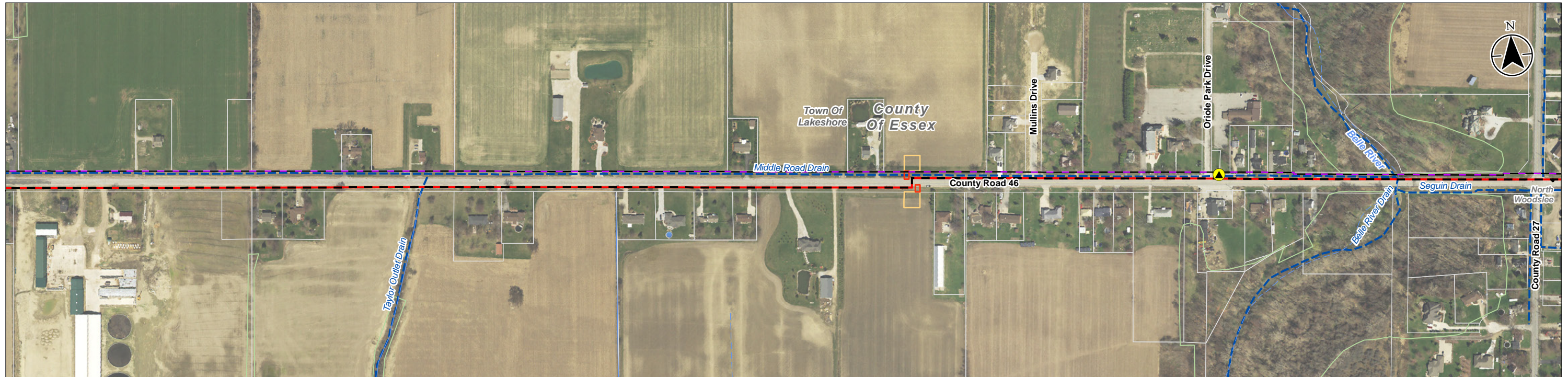
Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.9  
 Title: Mitigation Photomosaic  
DRAFT

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

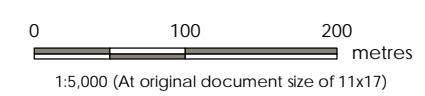
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd120102\01\609\active\160961289\03\_data\gis\mxd\assessment\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Proposed New Station
  - Preferred Route
  - Access Road
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Intermittent)
  - Watercourse (Permanent)
  - Municipal Boundary, Lower

- Municipal Boundary, Upper
- Property Line
- Wooded Area



**Stantec**

Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.10  
 Title: Mitigation Photomosaic

**DRAFT**

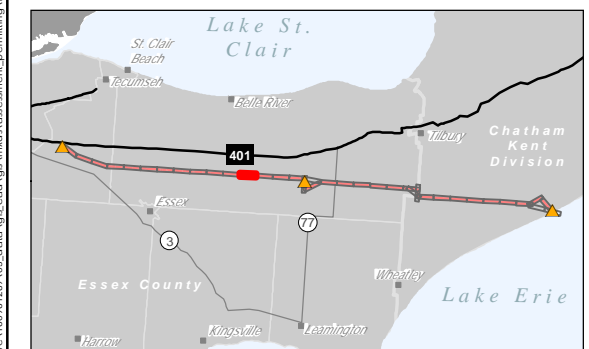
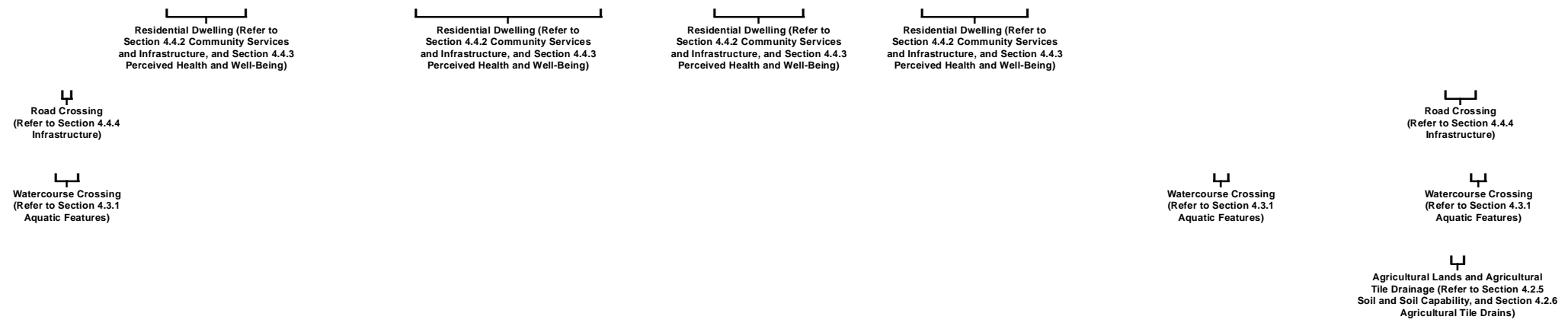
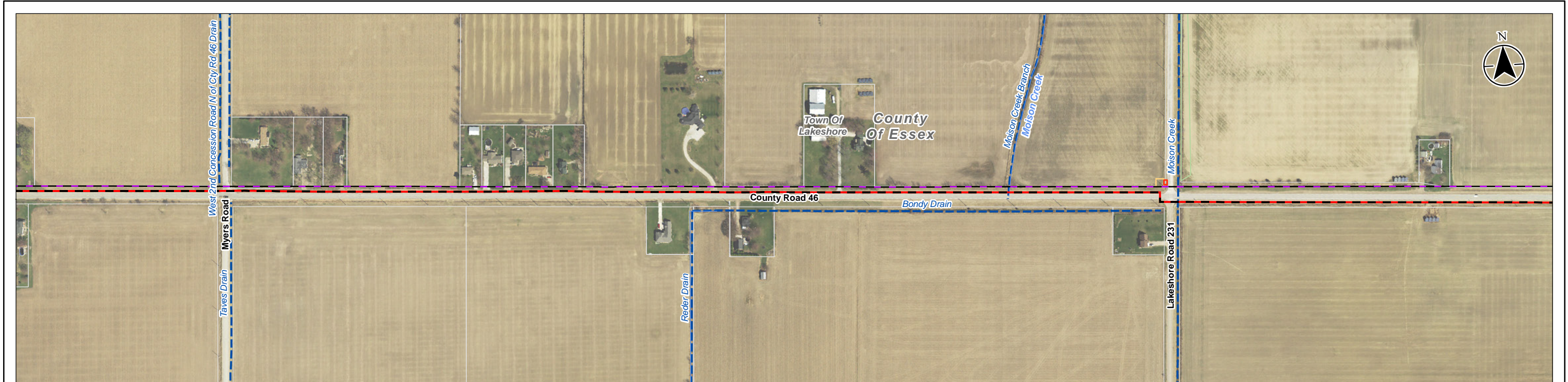
**Notes**

- Coordinate System: NAD 1983 UTM Zone 17N
- Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
- Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

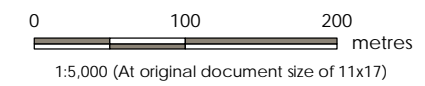
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell





- Legend**
- - - Preferred Route
  - - - Access Road
  - - - Temporary Land Use
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - - - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

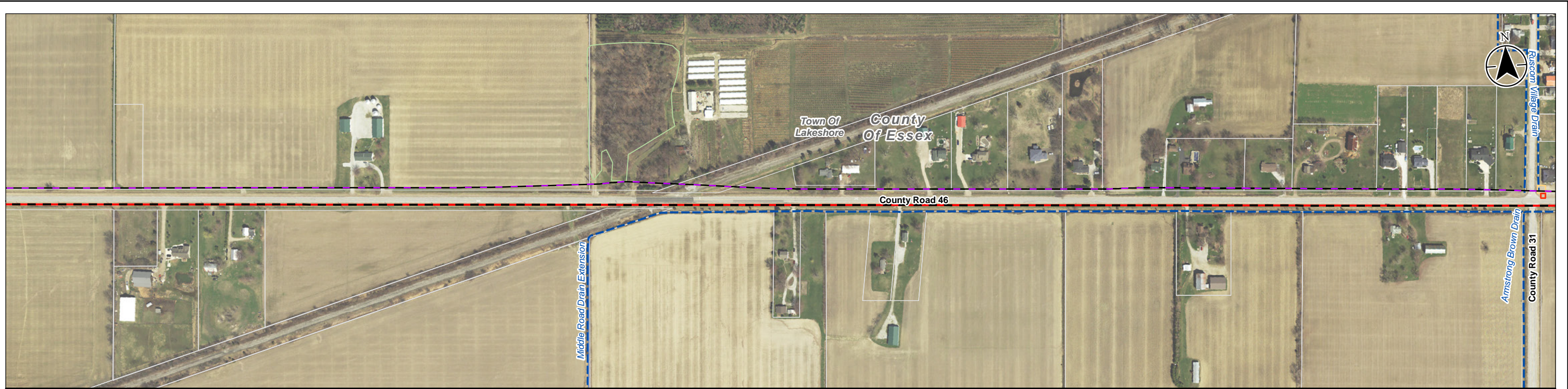
Figure No. 1.12  
 Title: Mitigation Photomosaic

**DRAFT**

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd120-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

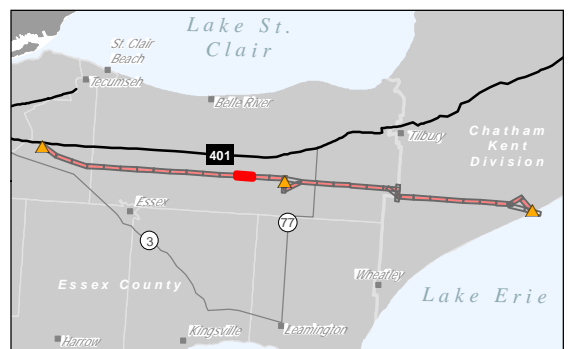
Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Natural Feature (Refer to Section 4.3.2 Designated Natural Areas and Vegetation, and Section 4.3.3 Wildlife, Wildlife Habitat and Species at Risk)

Potential Source of Contamination (Refer to Section 4.4.6 Contamination)

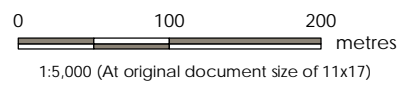
Road Crossing (Refer to Section 4.4.4 Infrastructure)

Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)



- Legend**
- Preferred Route
  - Access Road
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line

Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.13

Title: Mitigation Photomosaic

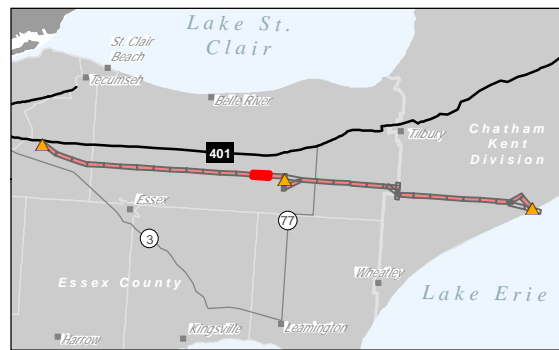
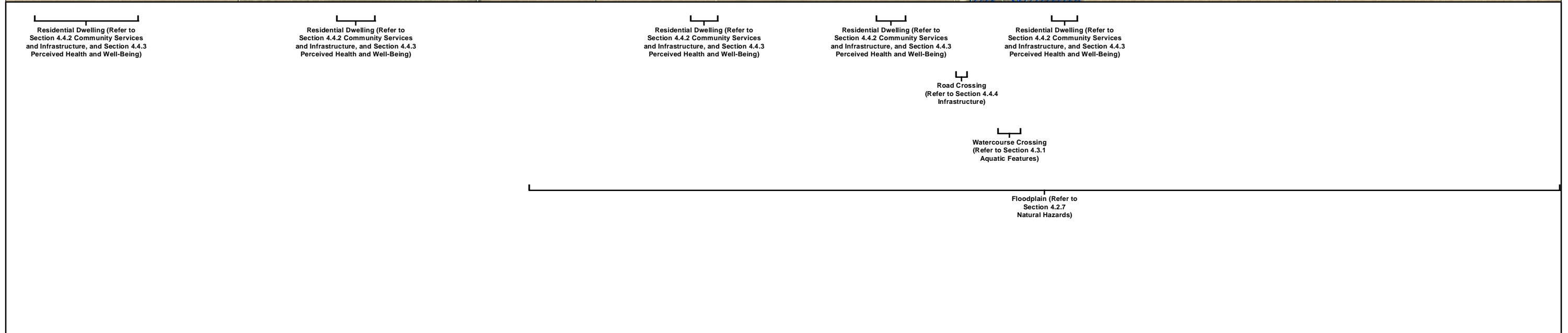
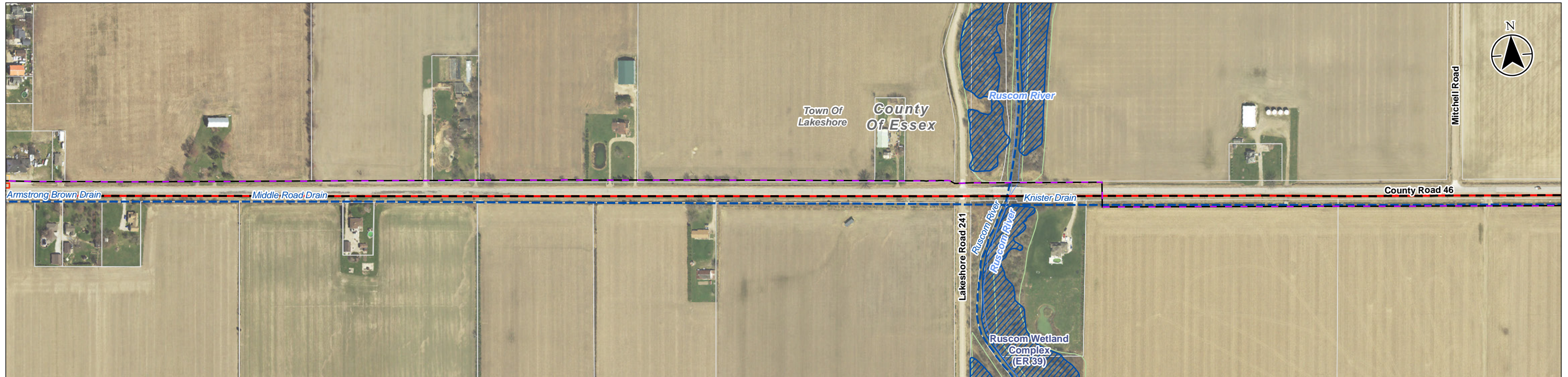
**DRAFT**

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomimagery provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

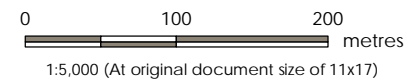
C:\cd\120-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell





- Legend**
- Preferred Route
  - Access Road
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Waterbody
  - ▨ Wetland, Provincially Significant
  - Municipal Boundary, Lower

- Municipal Boundary, Upper
- Property Line
- Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14  
 160961289 REVA

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.14 DRAFT

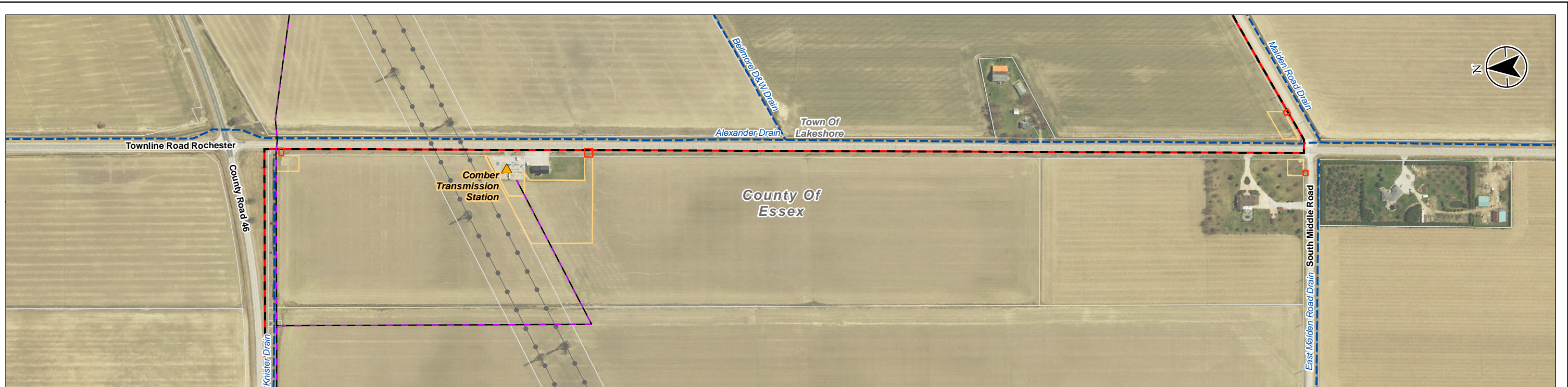
Title: Mitigation Photomosaic

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

C:\cd\120-02\01\609\active\160961289\03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd  
 Revised: 2019-06-18 By: p.worsell





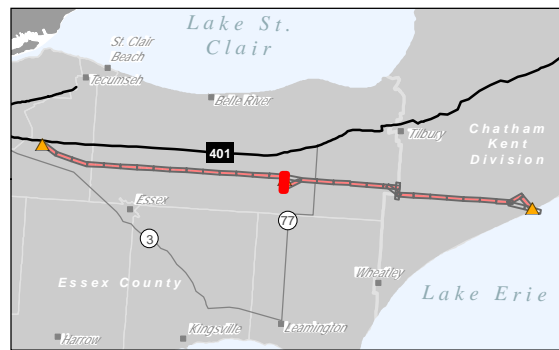
Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Road Crossing (Refer to Section 4.4.4 Infrastructure)

Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)

Existing Hydro Corridor Crossing (Refer to Section 4.4.4 Infrastructure)

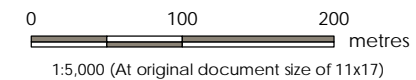
Agricultural Lands (Refer to Section 4.2.5 Soil and Soil Capacity)



**Legend**

- Existing Enbridge Station
- Preferred Route
- Access Road
- Temporary Land Use
- Existing Pipeline Proposed for Decommissioning
- Constructed Drain
- Hydro Line
- Municipal Boundary, Lower
- Municipal Boundary, Upper

Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.16

**DRAFT**

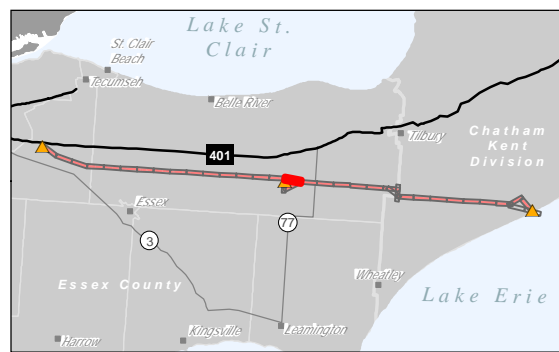
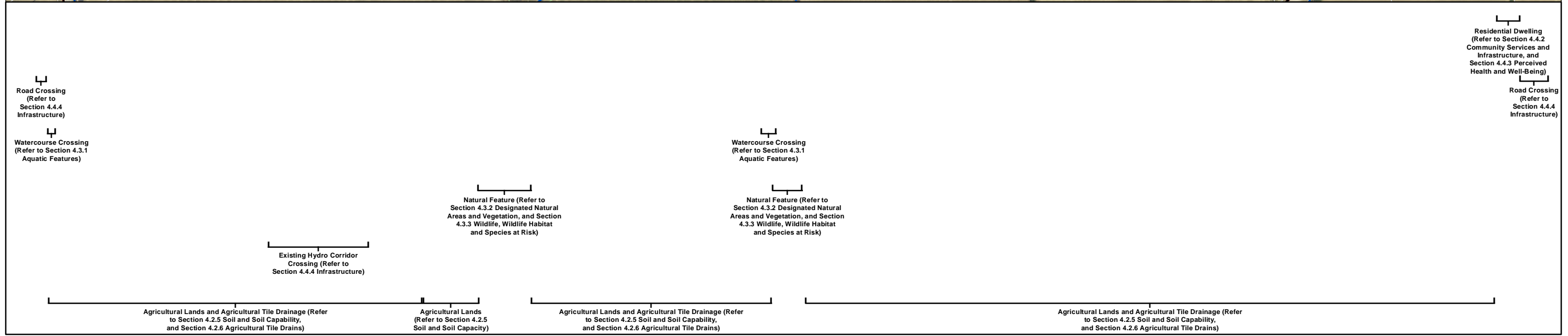
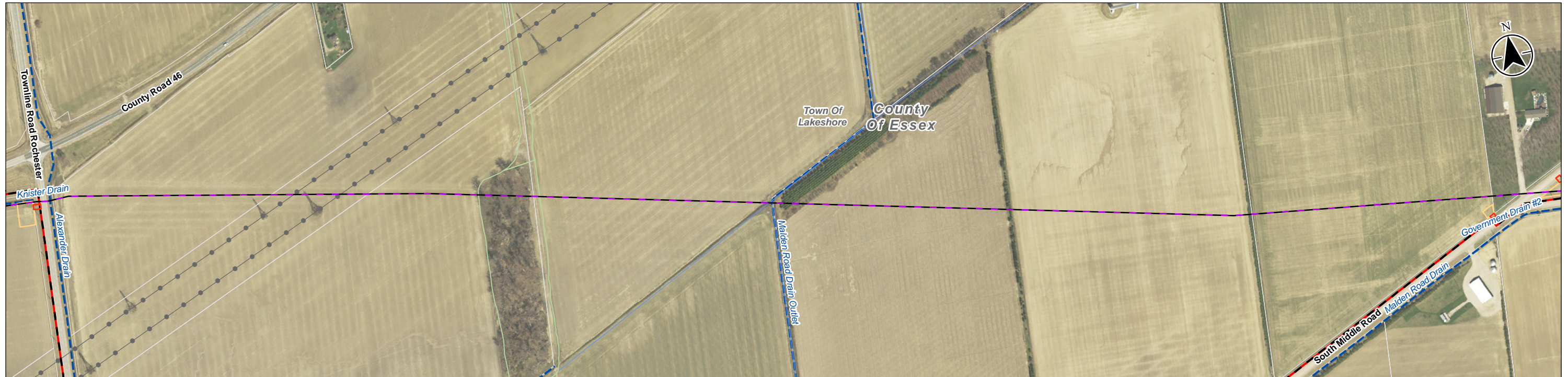
Title: Mitigation Photomosaic

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

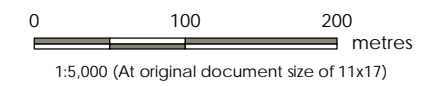
\\cd1220-02\01\609\active\160961289\03\_data\gis\cadd\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell





- Legend**
- Preferred Route
  - Access Road
  - Temporary Land Use
  - - - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Hydro Line
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper

- Property Line
- Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

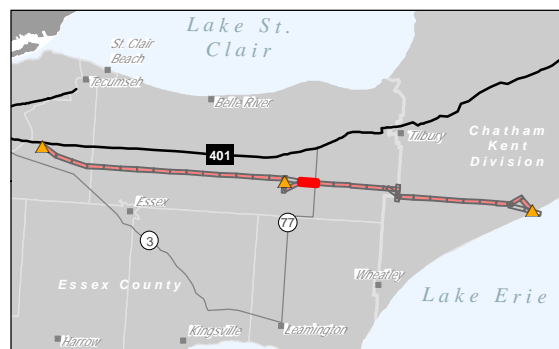
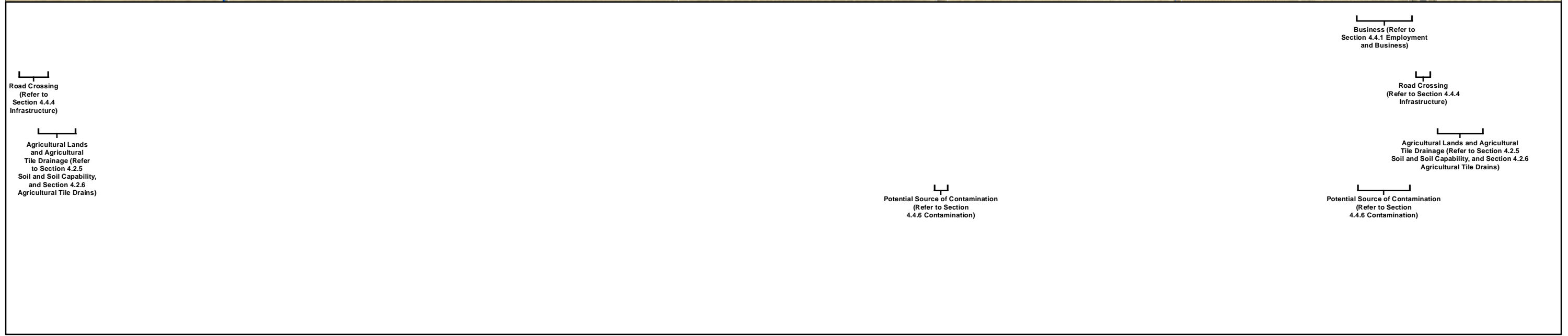
Figure No. 1.18 DRAFT

Title: Mitigation Photomosaic

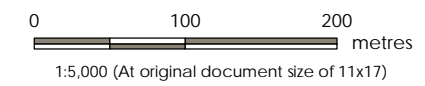
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

C:\cd\120-02\01\609\active\160961289\_03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Proposed New Station
  - Preferred Route
  - Access Road
  - Proposed Easement
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14  
 160961289 REVA

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.19

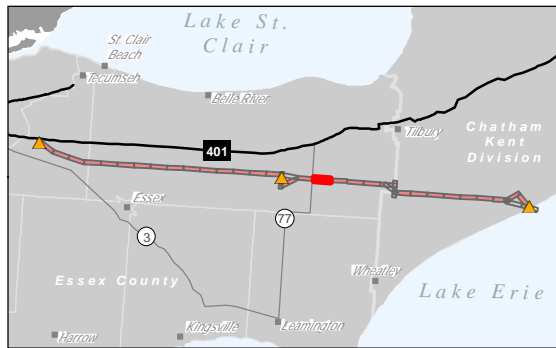
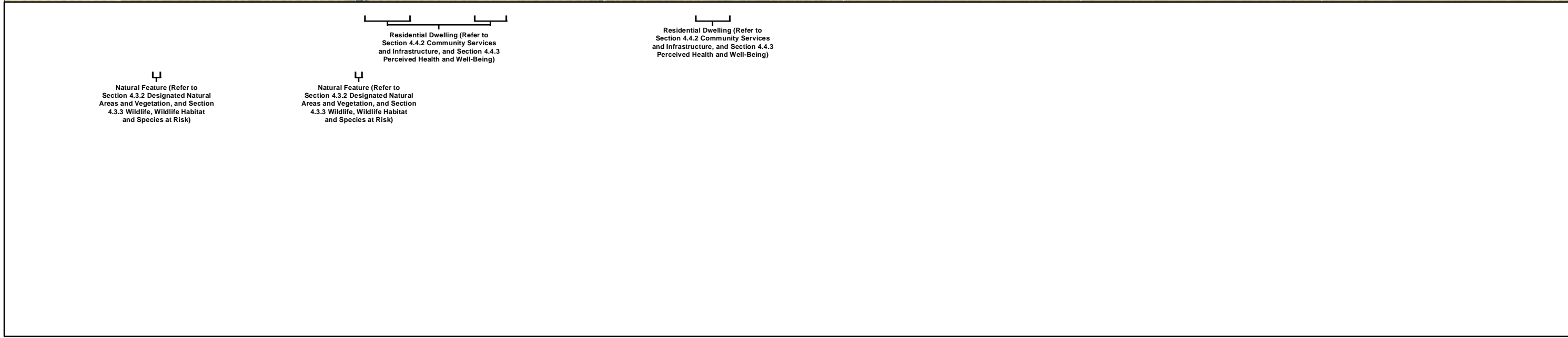
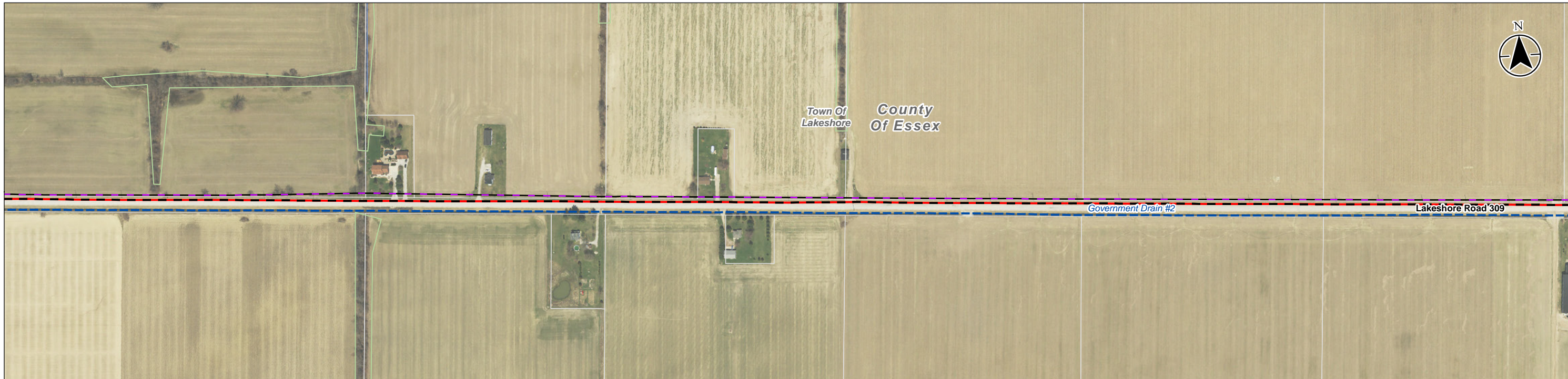
**DRAFT**

Title: Mitigation Photomosaic

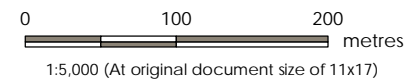
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\cadd\gis\assessment\permitting\report\_figures\mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.20

**DRAFT**

Title: Mitigation Photomosaic

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell

\\cd1220-02\01\609\active\160941289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160941289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



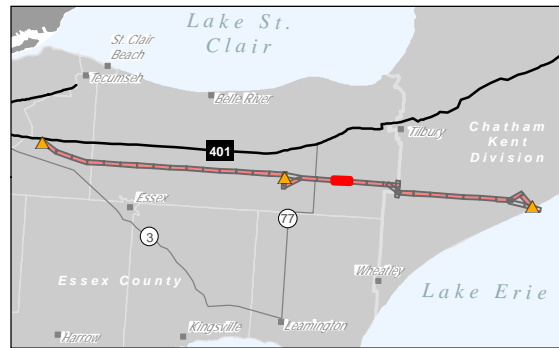
Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

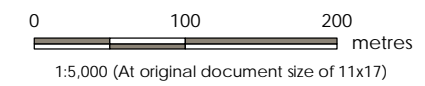
Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Road Crossing (Refer to Section 4.4.4 Infrastructure)

Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)



- Legend**
- - - Preferred Route
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.21 DRAFT  
 Title: Mitigation Photomosaic


**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.


Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.




\\cd1220-02\01\609\active\160941289\03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160941289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell

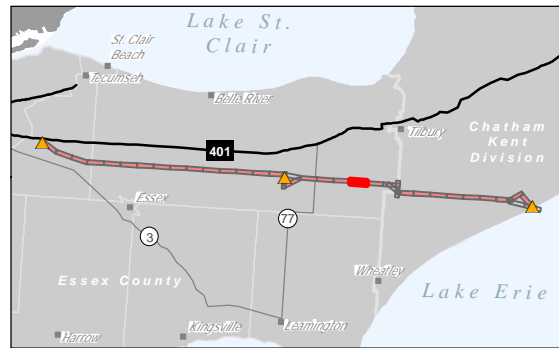










  
 Watercourse Crossing  
 (Refer to Section 4.3.1  
 Aquatic Features)

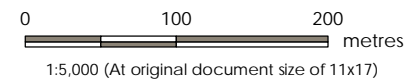
  
 Watercourse Crossing  
 (Refer to Section 4.3.1  
 Aquatic Features)

  
 Watercourse Crossing  
 (Refer to Section 4.3.1  
 Aquatic Features)

  
 Natural Feature (Refer to  
 Section 4.3.2 Designated Natural  
 Areas and Vegetation, and Section  
 4.3.3 Wildlife, Wildlife Habitat  
 and Species at Risk)



- Legend**
-  Preferred Route
  -  Existing Pipeline Proposed for Decommissioning
  -  Constructed Drain
  -  Watercourse (Permanent)
  -  Municipal Boundary, Lower
  -  Municipal Boundary, Upper
  -  Property Line
  -  Wooded Area



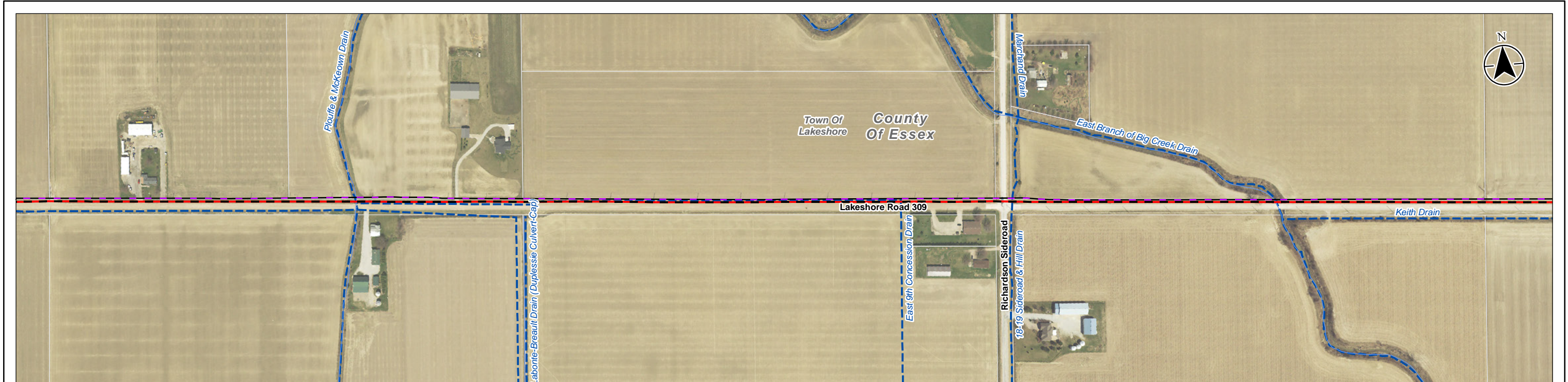
Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14  
 160961289 REVA

Client/Project:  
 ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.22  
 Title: Mitigation Photomosaic  
DRAFT

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

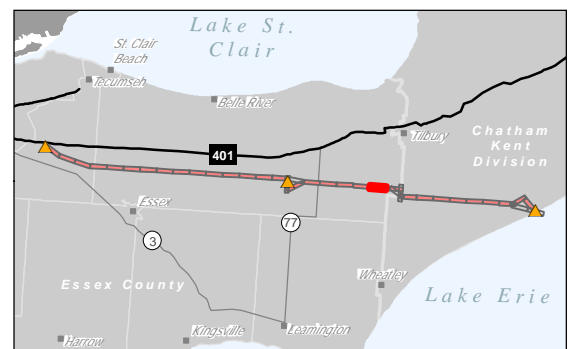
Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)

Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)

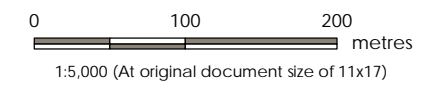
Road Crossing (Refer to Section 4.4.4 Infrastructure)

Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)

Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)



- Legend**
- - - Preferred Route
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

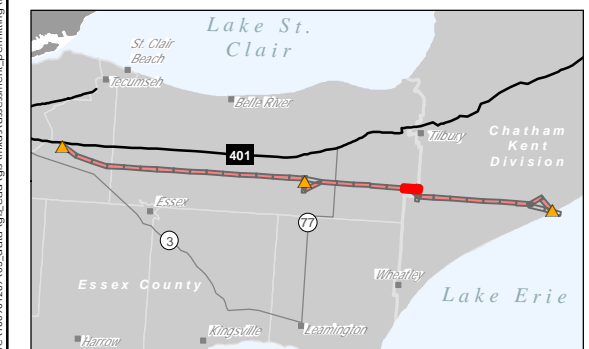
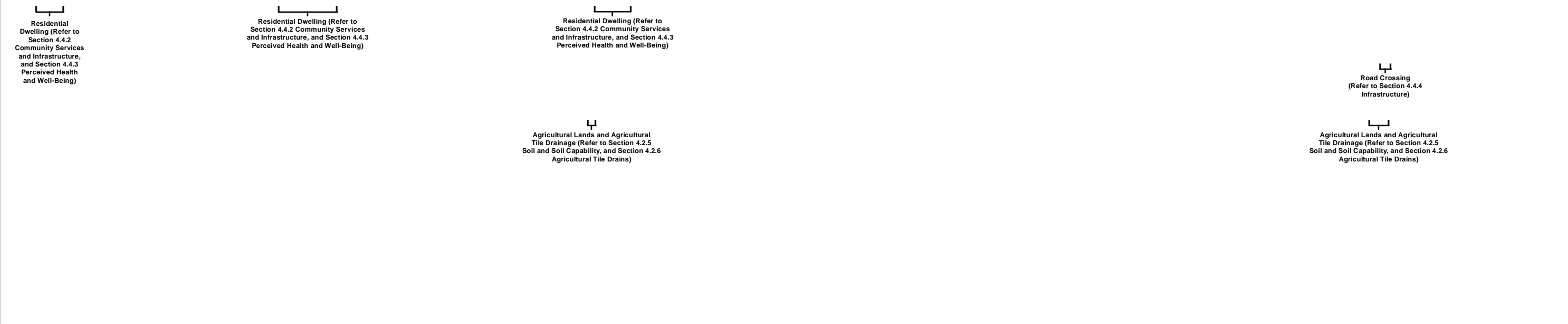
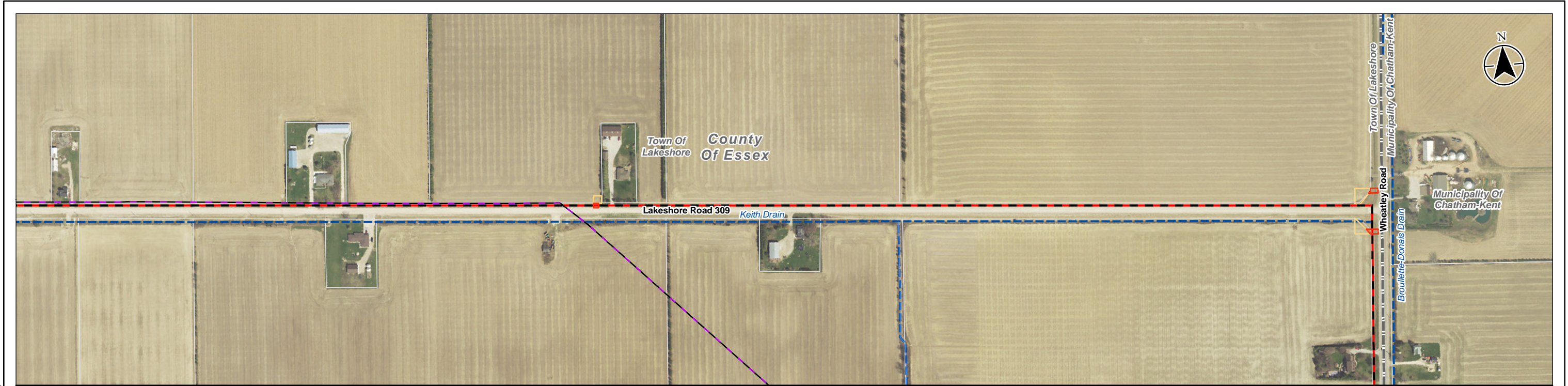
Figure No. 1.23  
 Title: Mitigation Photomosaic

**DRAFT**

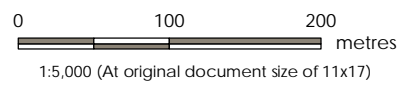
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\mxd\assessment\_permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_fig01\_mitphoto\_fig01\_mitphoto\_fig01.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Preferred Route
  - Access Road
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

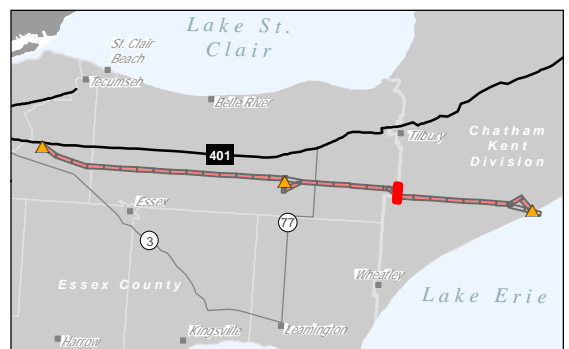
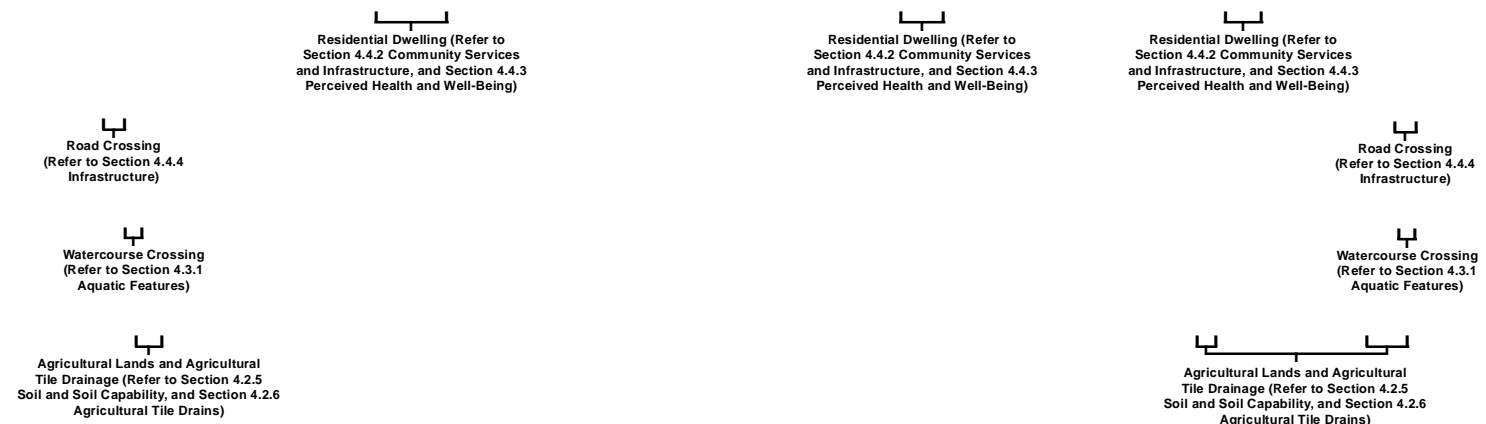
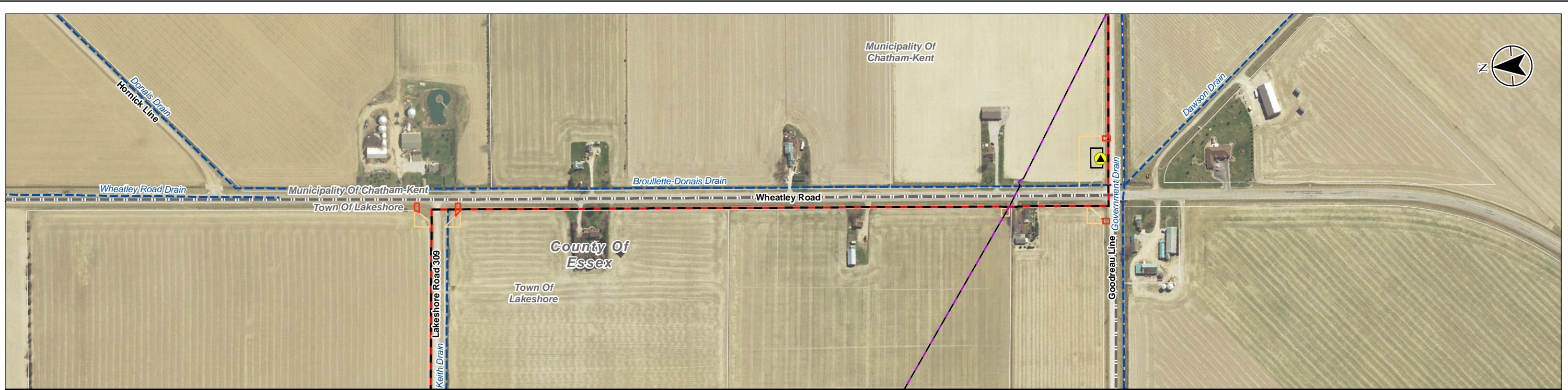
Figure No. 1.24 DRAFT

Title: Mitigation Photomosaic

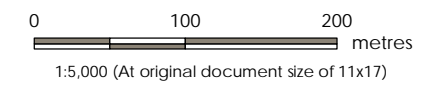
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd120-02\01\609\active\160961289\03\_data\gis\cadd\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_fig01\_mitphoto\_fig01.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Proposed New Station
  - Preferred Route
  - Access Road
  - Proposed Easement
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-18  
 160961289 REVA

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.25 **DRAFT**

Title: Mitigation Photomosaic

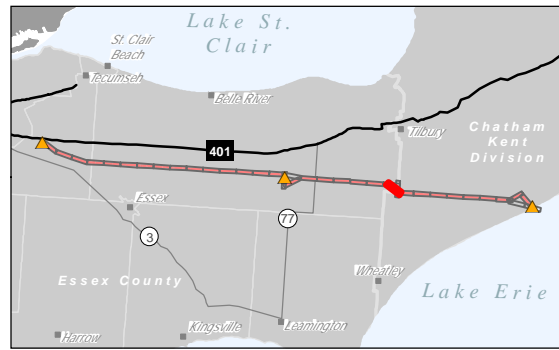
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

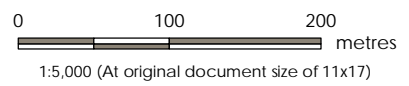
\\cd120-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Road Crossing (Refer to Section 4.4.4 Infrastructure)
- Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)
- Agricultural Lands and Agricultural Tile Drainage (Refer to Section 4.2.5 Soil and Soil Capability, and Section 4.2.6 Agricultural Tile Drains)
- Road Crossing (Refer to Section 4.4.4 Infrastructure)
- Watercourse Crossing (Refer to Section 4.3.1 Aquatic Features)



- Legend**
- Proposed New Station
  - Preferred Route
  - Access Road
  - Proposed Easement
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.26

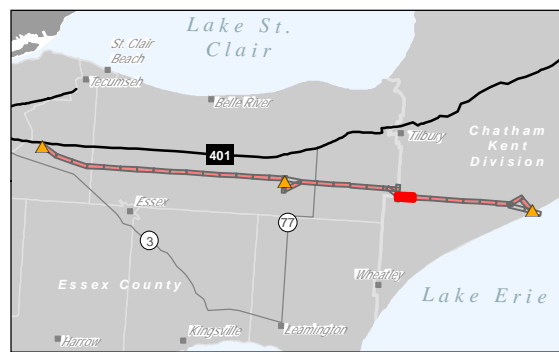
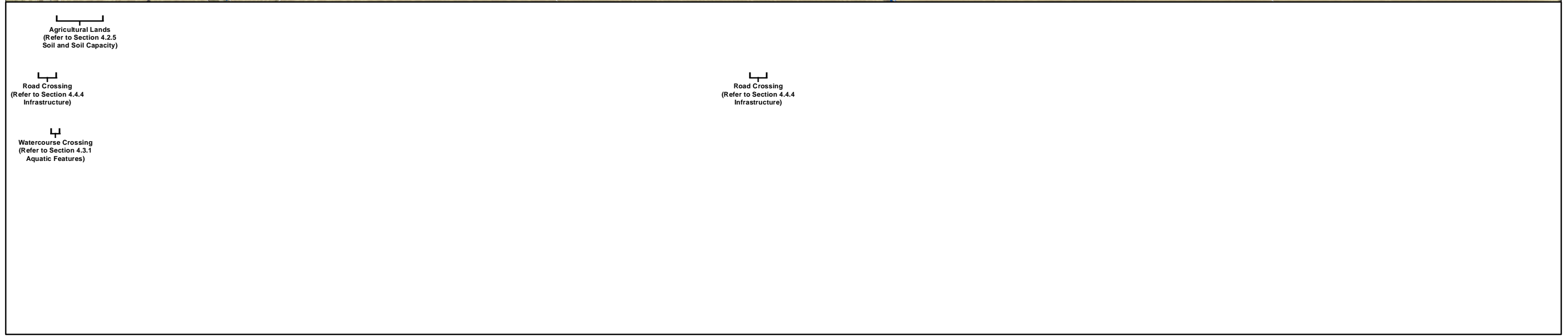
Title: Mitigation Photomosaic

**DRAFT**

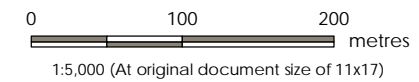
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd120-02\01\069\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- Proposed New Station
  - Preferred Route
  - Access Road
  - Proposed Easement
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Municipal Boundary, Upper
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.27

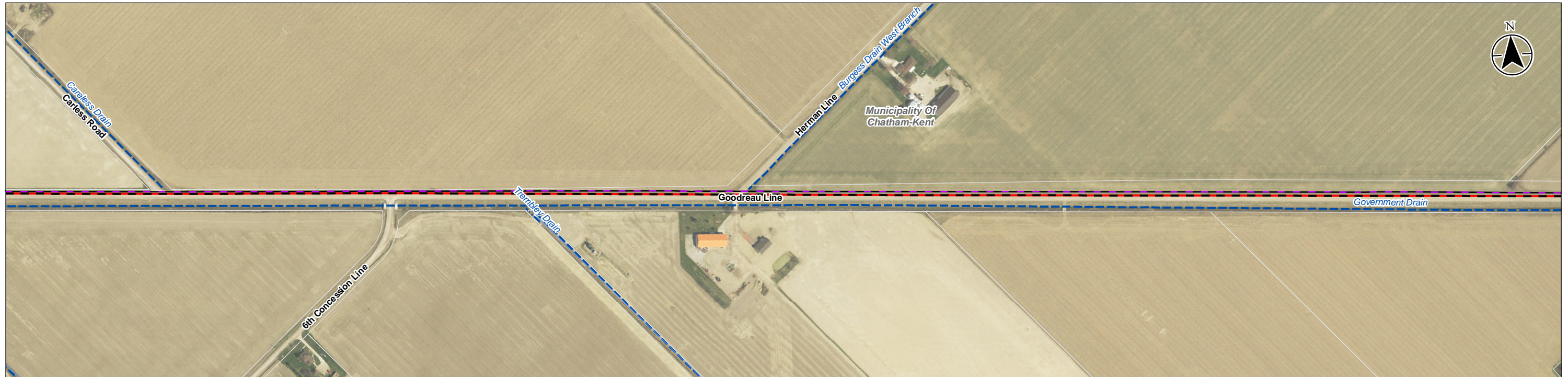
Title: Mitigation Photomosaic

**DRAFT**


**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomimagery provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.


\\cd120-02\01\609\active\160961289\03\_data\gis\cadd\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell

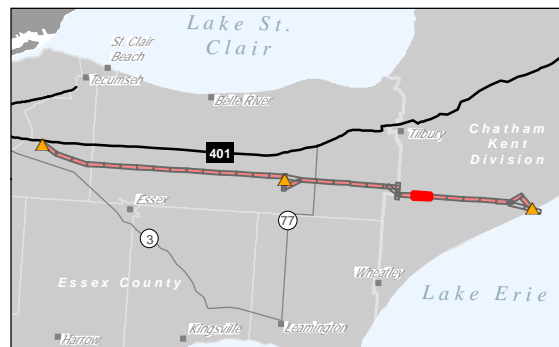









  
Road Crossing  
(Refer to Section 4.4.4  
Infrastructure)

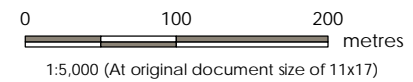
  
Watercourse Crossing  
(Refer to Section 4.3.1  
Aquatic Features)

  
Road Crossing  
(Refer to Section 4.4.4  
Infrastructure)

  
Watercourse Crossing  
(Refer to Section 4.3.1  
Aquatic Features)



- Legend**
-  Preferred Route
  -  Existing Pipeline Proposed for Decommissioning
  -  Constructed Drain
  -  Watercourse (Permanent)
  -  Municipal Boundary, Lower
  -  Property Line
  -  Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14  
 160961289 REVA

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.28

**DRAFT**

Title: Mitigation Photomosaic

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

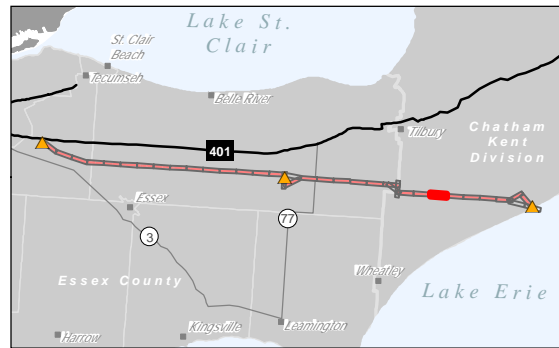
\\cd120-02\01\609\active\160961289\03\_data\gis\mxd\assessment\_permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



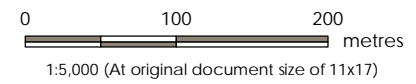
Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Road Crossing (Refer to Section 4.4.4 Infrastructure)

Road Crossing (Refer to Section 4.4.4 Infrastructure)



- Legend**
- Proposed New Station
  - Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Property Line
  - Wooded Area



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.29  
 Title: Mitigation Photomosaic

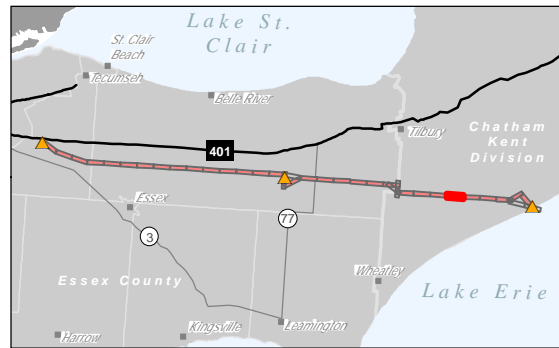
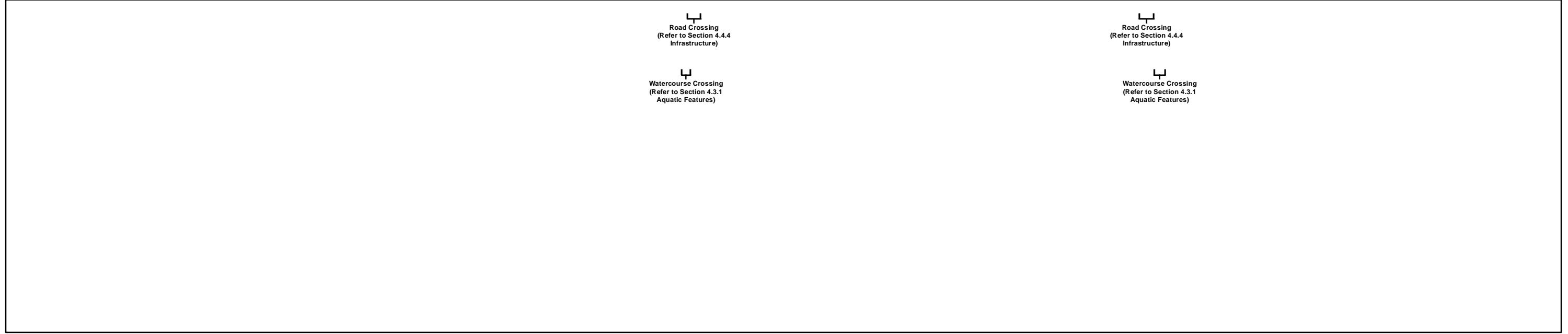
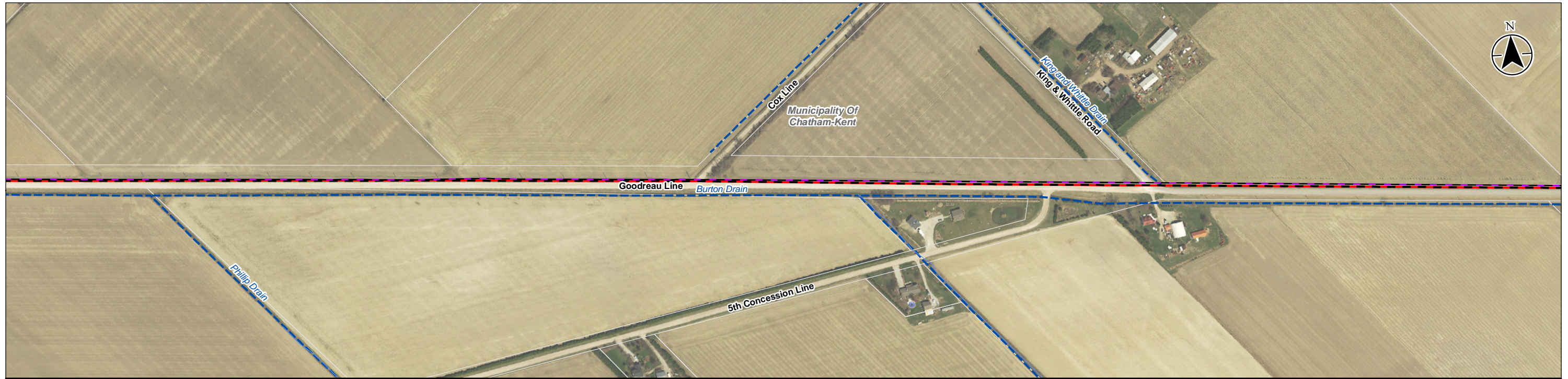
**DRAFT**

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

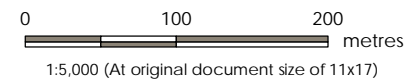
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

C:\cd\120-02\01\009\active\160941289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160941289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell





- Legend**
- - - Preferred Route
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC., WINDSOR LINE REPLACEMENT

Figure No. 1.30

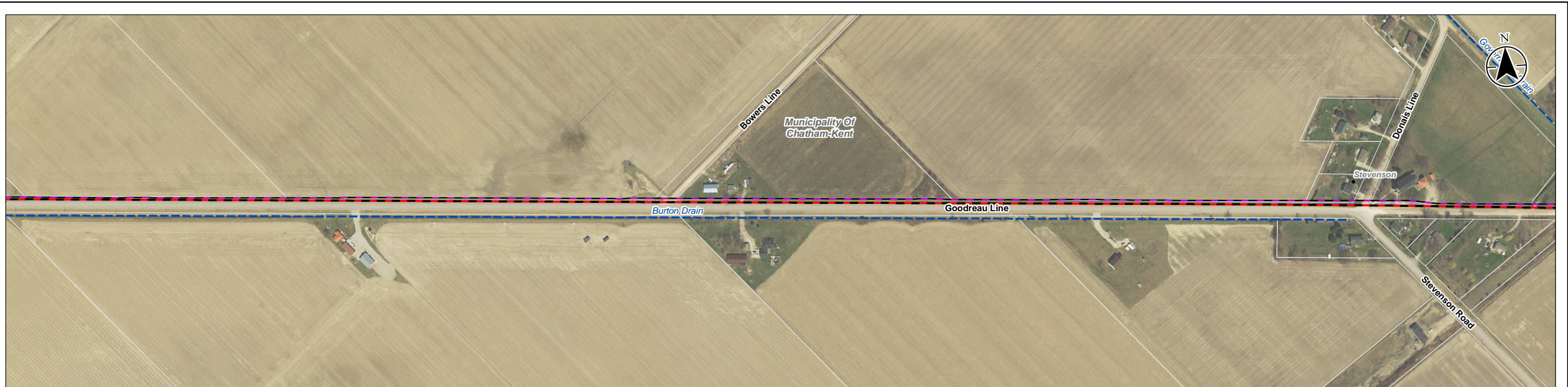
**DRAFT**

Title: Mitigation Photomosaic

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\mxd\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mipphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell

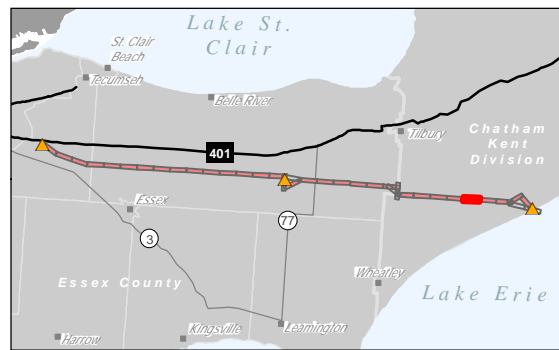


Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

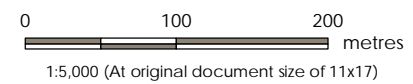
Road Crossing (Refer to Section 4.4.4 Infrastructure)

Residential Dwelling (Refer to Section 4.4.2 Community Services and Infrastructure, and Section 4.4.3 Perceived Health and Well-Being)

Road Crossing (Refer to Section 4.4.4 Infrastructure)



- Legend**
- Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Municipal Boundary, Lower
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.31

**DRAFT**

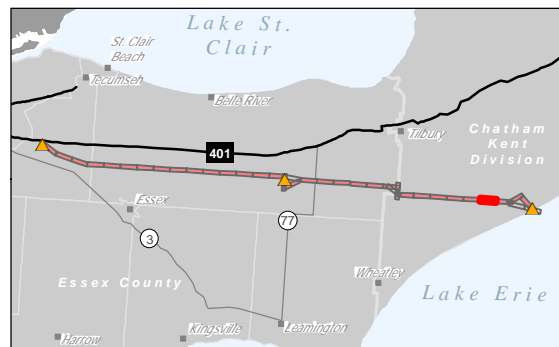
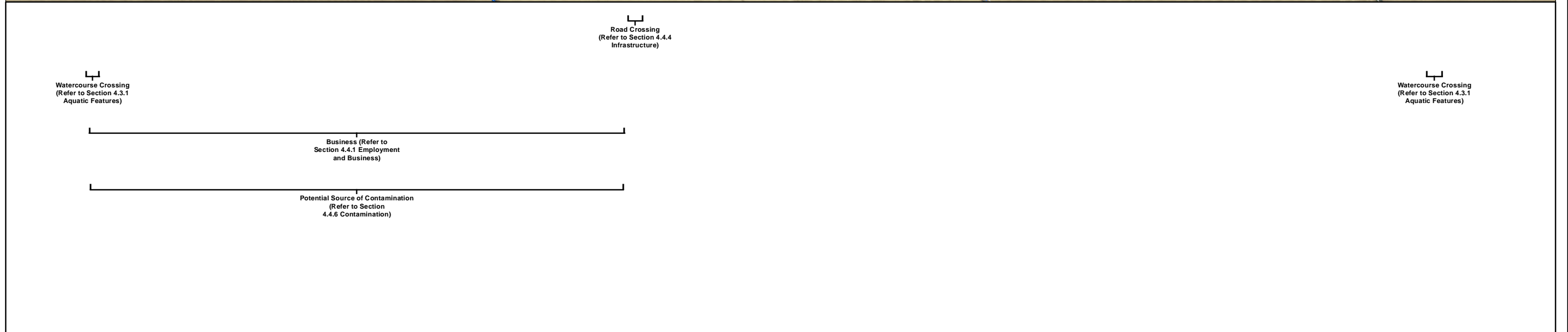
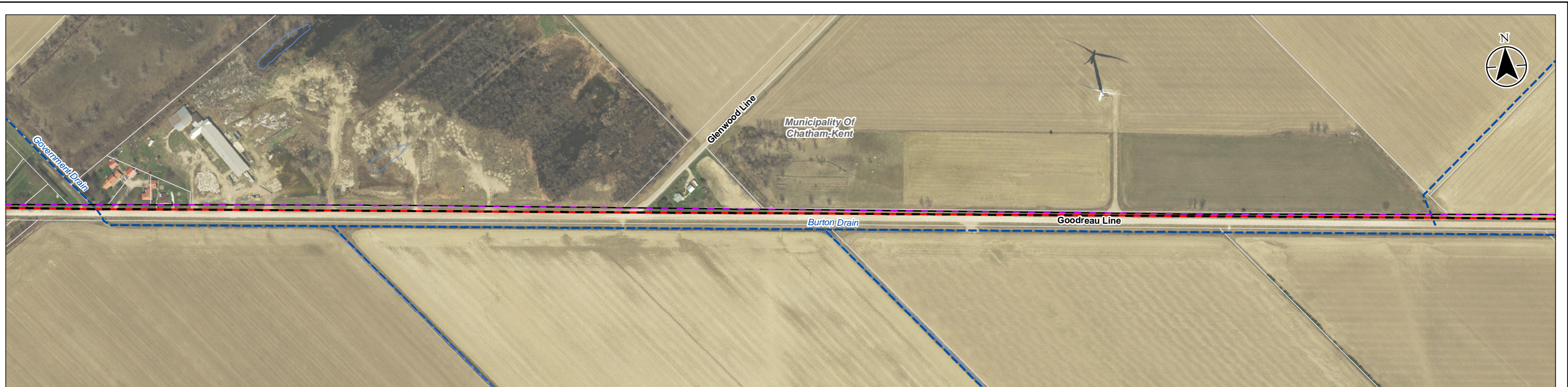
Title: Mitigation Photomosaic

**Notes**

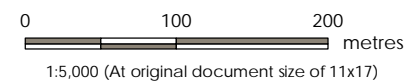
- Coordinate System: NAD 1983 UTM Zone 17N
- Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
- Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- - - Preferred Route
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Watercourse (Permanent)
  - Waterbody
  - Municipal Boundary, Lower
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC., WINDSOR LINE REPLACEMENT

Figure No. 1.32

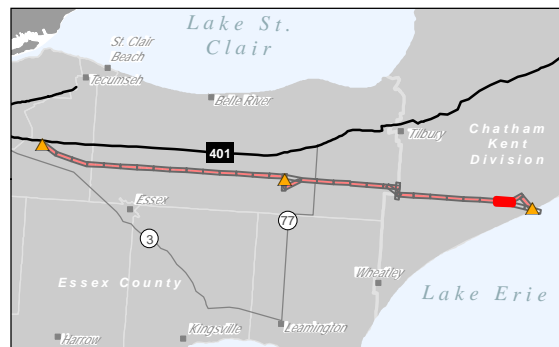
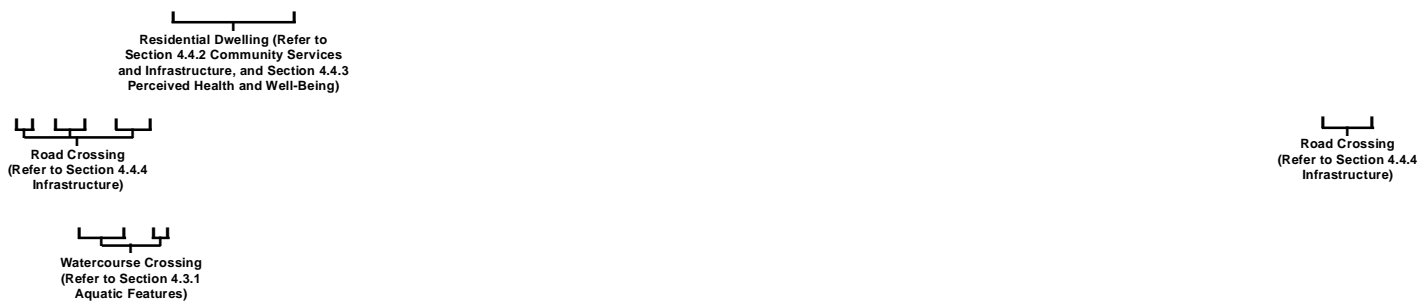
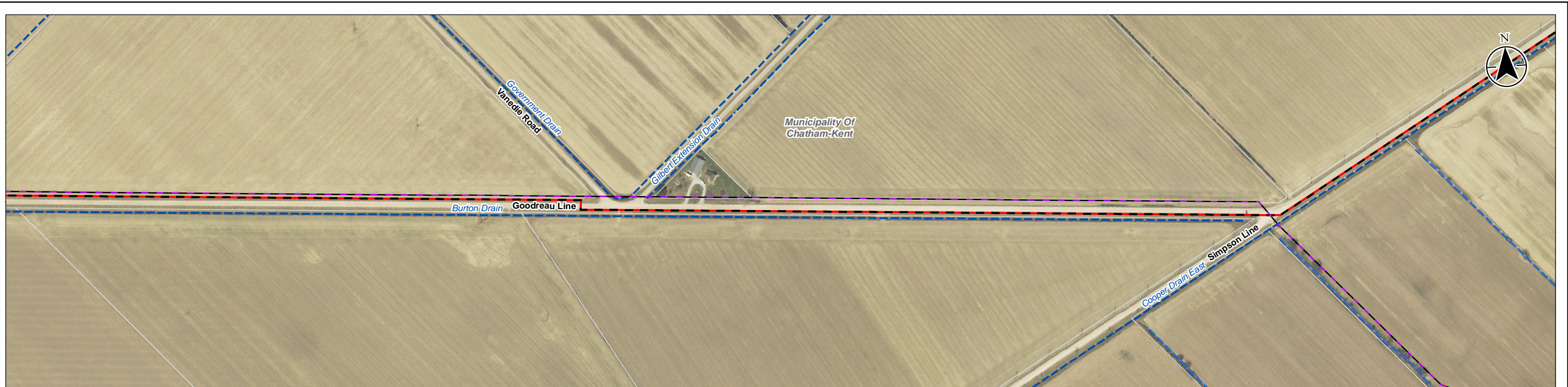
**DRAFT**

Title: Mitigation Photomosaic

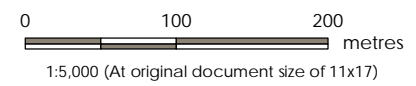
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_mipphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell



- Legend**
- - - Preferred Route
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14  
 160961289 REVA

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No. 1.33  
 Title: Mitigation Photomosaic  
DRAFT

**Notes**

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\mxd\assessment\_permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell

\\cd1220-02\01\609\active\160961289\03\_data\gis\mxd\assessment\_permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_photomosaic.mxd Revised: 2019-06-18 By: p.worsell

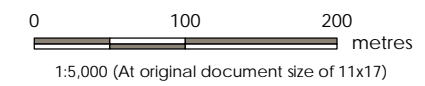


Road Crossing  
(Refer to Section 4.4.4  
Infrastructure)

Watercourse Crossing  
(Refer to Section 4.3.1  
Aquatic Features)



- Legend**
- - - Preferred Route
  - - - Existing Pipeline Proposed for Decommissioning
  - - - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Property Line



Project Location County of Essex, and Municipality of Chatham-Kent	160961289 REVA Prepared by PW on 2019-06-18 Technical Review by MK on 2019-06-14
---	--

Client/Project  
ENBRIDGE GAS INC.  
WINDSOR LINE REPLACEMENT

Figure No.  
1.34

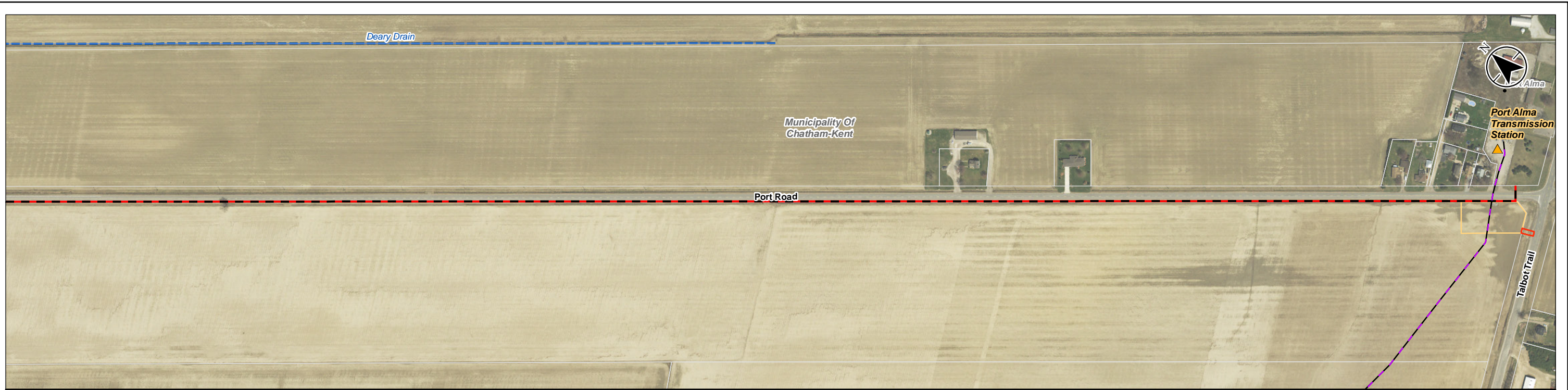
Title  
Mitigation Photomosaic

**DRAFT**

**Notes**

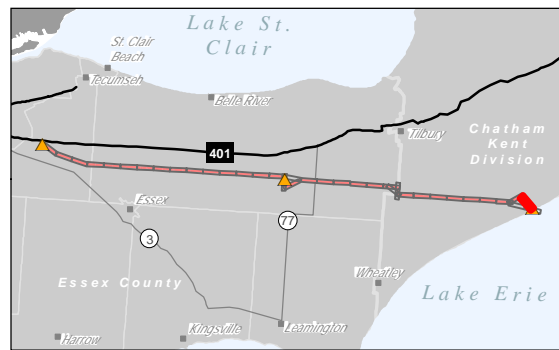
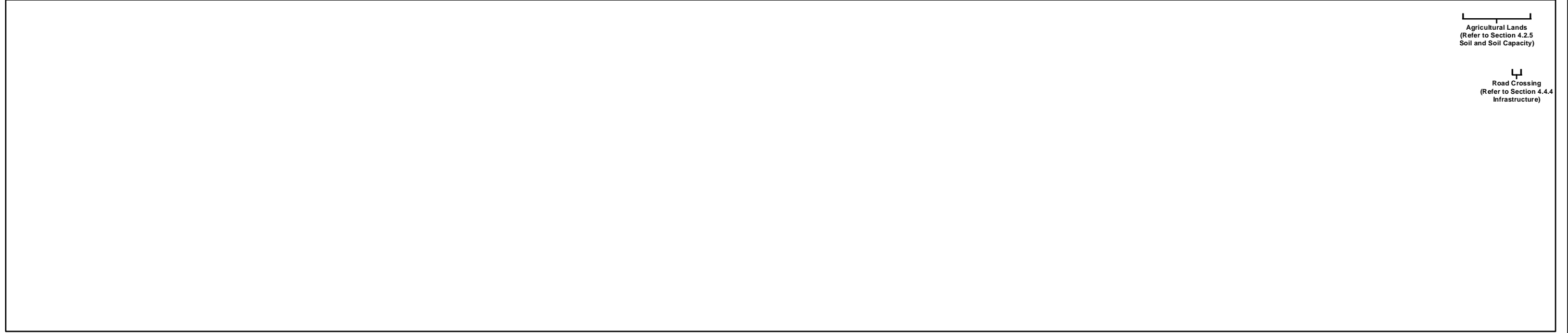
1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.
3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

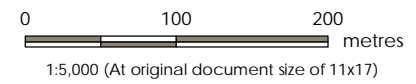


Agricultural Lands  
(Refer to Section 4.2.5  
Soil and Soil Capacity)

Road Crossing  
(Refer to Section 4.4.4  
Infrastructure)



- Legend**
- Existing Enbridge Station
  - Preferred Route
  - Access Road
  - Temporary Land Use
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC.  
 WINDSOR LINE REPLACEMENT

Figure No.  
 1.35

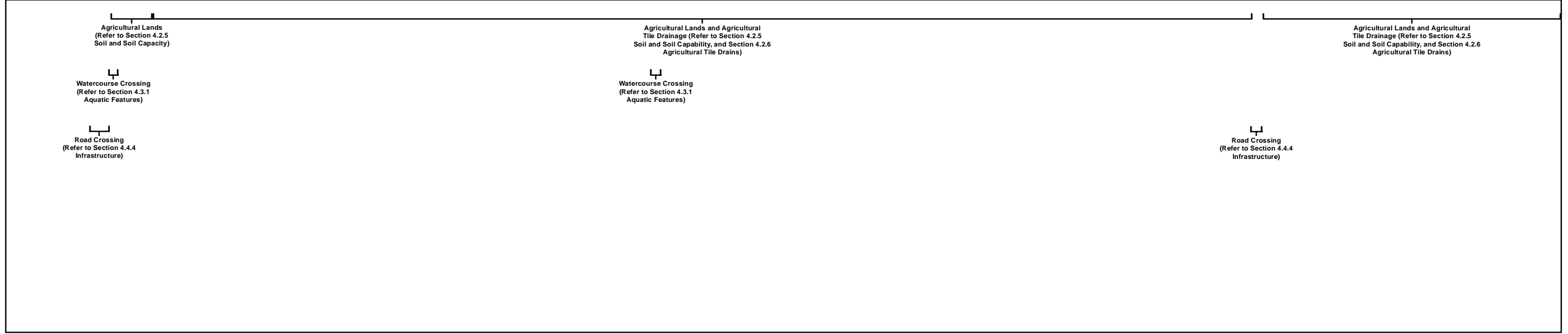
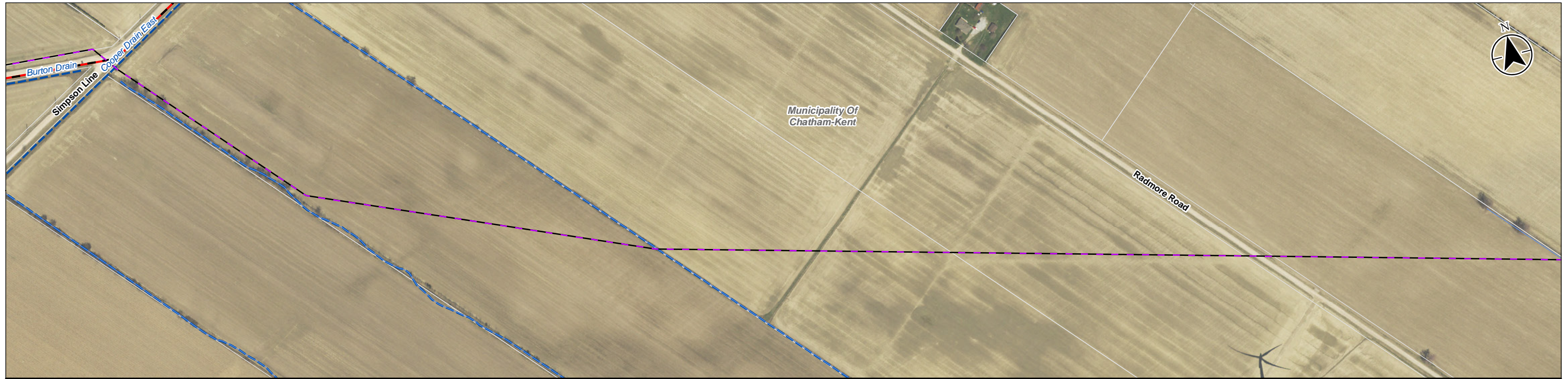
**DRAFT**

Title  
 Mitigation Photomosaic

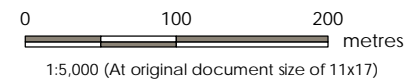
**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthomagey provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd1220-02\01\609\active\160961289\03\_data\gis\assessment\permitting\report\_figures\mitigation\_photomosaic\160961289\_milphoto\_fig01\_mitigation\_photomosaic.mxd Revised: 2019-06-18 By: pworsell



- Legend**
- Preferred Route
  - Existing Pipeline Proposed for Decommissioning
  - Constructed Drain
  - Watercourse (Permanent)
  - Municipal Boundary, Lower
  - Property Line



Project Location: County of Essex, and Municipality of Chatham-Kent  
 Prepared by PW on 2019-06-18  
 Technical Review by MK on 2019-06-14

Client/Project: ENBRIDGE GAS INC. WINDSOR LINE REPLACEMENT

Figure No. 1.36

**DRAFT**

Title: Mitigation Photomosaic

**Notes**  
 1. Coordinate System: NAD 1983 UTM Zone 17N  
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019.  
 3. Orthoimagery provided under license with Enbridge Gas Inc. from the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2019. Imagery taken in 2015.

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

\\cd120-02\01\609\active\160961289\03\_data\gis\mxd\assessment\_permitting\report\_figures\mitigation\_photomosaic\160961289\_mitphoto\_fig01\_mitphoto\_fig01\_mitphoto\_fig01.mxd Revised: 2019-06-18 By: pworsell

