London Lines Replacement Project: Environmental Report

FINAL REPORT

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Sign-off Sheet

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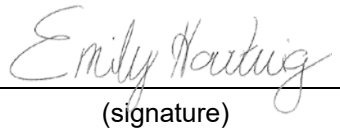
Prepared by 
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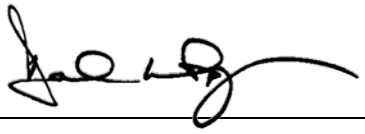
Reviewed by 
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Executive Summary

Enbridge Gas Inc. (“Enbridge”) is proposing to replace a section of London Lines pipeline. The London Lines Replacement Project (LLRP) (“the Project”) will include the construction of approximately 75 kilometers (km) of Nominal Pipe Size (NPS) 8” high Pressure steel natural gas pipeline that will replace the two pipelines known collectively as the London Lines and install a secondary new pipeline to connect the new NPS 8 pipeline to Strathroy in the Municipality of Strathroy-Caradoc (10.5 km). The pipeline will start within the Township of Dawn-Euphemia at the Dawn Centre on Bentpath Line, 300 m east of Dawn Valley Road. The pipeline will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre approximately 1 km south of the intersection of Glendon Drive and Komoka Road, and at the existing Strathroy Gate Station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc.

Enbridge has retained Stantec Consulting Ltd. (“Stantec”) to undertake an environmental study of the construction and operation of the natural gas pipeline that meets the intent of the Ontario Energy Board’s (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and facilities in Ontario, 7th Edition* (2016). The Environmental Report (ER), which summarizes the environmental study, will accompany a future Enbridge ‘Leave to Construct’ (LTC) application to the OEB for the Project.

Enbridge is also required to obtain additional permits and approvals from federal, provincial and municipal agencies that have jurisdiction within the Study Area. This ER will serve to support these permit and approval applications.

The existing route was reviewed, and potential alternative segments were identified. The existing route and alternative segments are collectively referred to as the ‘Study Area’. An extensive consultation program was conducted for the Project to engage federal and provincial agencies, conservation authorities, municipal personnel and elected officials, Indigenous communities, special interest groups, and residents and businesses within 500 metres (m) of the existing route and alternative segments. The consultation program included development and maintenance of a stakeholder contact list which was used to distribute the required notice, newspaper advertisements, agency meetings, a Virtual Open House and provision of feedback to those members of the public who had questions, issues, or concerns or positive feedback about the Project. Enbridge is committed to ongoing consultation with interested and potentially affected parties through detailed design and construction and will respond to stakeholder concerns throughout the life of the Project.

The route evaluation process was undertaken as per the OEB Environmental Guidelines (2016), which identifies the environmental and socio-economic features to take into consideration and the principles to be considered during the route evaluation. Following a comparative evaluation which considered environmental and socio-economic features and the results of the consultation program, a preferred route was identified. The location of the preferred route is shown in Appendix D, Figure D-1.

The potential effects and impacts of the Project on physical, biophysical and socio-economic features have been assessed for the Project. In the opinion of Stantec, the recommended program of supplemental studies, mitigation, protective and contingency measures are considered appropriate to protect the features encountered. Monitoring will assess that mitigation and protective measures have been effective in both the short and long term.

The potential cumulative effects of the Project were assessed by considering development that may begin during construction or that may begin sometime in the future. The Study Area boundary was used to assess potential effects of the Project and other developments on environmental and socio-economic features. As such, the cumulative effects assessment determined that, provided that ongoing consultation, appropriate mitigation and protective measures are implemented, potential cumulative effects will be of low probability and magnitude, short duration, and reversible, positive and are therefore not anticipated to be significant.

With the implementation of the recommendations in the ER, ongoing communication and consultation, and adherence to permit, regulatory and legislative requirements, potential adverse residual environmental and socio-economic impacts of this Project are not anticipated to be significant.

Abbreviations

AA	Archaeological Assessment
AMSL	above mean sea level
ANSI	Area of Natural and Scientific Interest
BGS	Below ground surface
CEA	cumulative effects assessment
CHAR	Cultural Heritage Assessment Report
CHVI	cultural heritage value or interest
CLI	Canada Land Inventory for Agriculture
CN Railway	Canadian National Railway
CP Railway	Canadian Pacific Railway
DFO	Fisheries and Oceans Canada
EASR	Environmental Activity and Sector Registry
ECCC	Environment and Climate Change Canada
LUG C&M	Legacy Union Gas Construction and Maintenance Manual
ELC	Ecological Land Classification
Enbridge	Enbridge Gas Inc.
END	Endangered
EPP	Environmental Protection Plan
ER	Environmental Report
ESA	*Endangered Species Act*
ESC	Erosion and sediment control
GIS	Geographic Information System
ha	hectares

HDD	Horizontal Directional Drill
HONI	Hydro One Networks Inc.
HWIN	Hazardous Waste Information Network
IAAC	Impact Assessment Agency of Canada
IPZ	Intake Protection Zone
km	kilometers
LFA	Lambton Federation of Agriculture
LHPWSS	Lake Huron Primary Water Supply System
LIO	Land Information Ontario
LLRP	London Lines Replacement Project
LTC	Leave to Construct
LTVCA	Lower Thames Valley Conservation Authority
m	metres
MBCA	*Migratory Birds Convention Act*
MECP	Ministry of the Environment, Conservation and Parks
MENDM	Ministry of Energy, Northern Development and Mines
MFA	Middlesex Federation of Agriculture
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MNHSS	Middlesex Natural Heritage Systems Study
MNO	Métis Nation of Ontario
MNR	Ministry of Natural Resources
MNRF	Ministry of Natural Resources and Forestry
MECP	Ministry of Environment, Conservation and Parks
MTCS	Ministry of Tourism, Culture and Sport
MTO	Ministry of Transportation
NHIC	Natural Heritage Information Centre

NPS	Nominal pipeline size
OEB	Ontario Energy Board
OGS	Ontario Geological Survey
OHA	*Ontario Heritage Act*
OHT	Ontario Heritage Trust
OPCC	Ontario Pipeline Coordinating Committee
OPP	Ontario Provincial Police
O. Reg.	Ontario Regulation
PAHs	polycyclic aromatic hydrocarbon
PHCs	petroleum hydrocarbons
PSOC	Potential Sources of Contamination
PSW	Provincially Significant Wetland
PTTW	Permit to Take Water
RoW	Right-of-way
SAR	Species at Risk
SARA	*Species at Risk Act*
SARO	*Species at Risk in Ontario*
SCRCA	St. Clair Region Conservation Authority
SGRAs	significant groundwater recharge areas
SOCC	species of conservation concern
Stantec	Stantec Consulting Ltd.
SWH	Significant Wildlife Habitat
TC	Transportation Canada
THR	Threatened
TSRCPC	Thames-Sydenham and Region Source Protection Committee
TSSA	Technical Standards and Safety Authority

TWS	temporary workspace
UTRCA	Upper Thames River Conservation Authority
WHPA	Wellhead Protection Area
WWR	Water Well Records

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

Enbridge Gas Inc. (“Enbridge”) is proposing to replace a section of London Lines pipeline. The London Lines Replacement Project (LLRP) (“the Project”) will include the construction of approximately 75 kilometers (km) of Nominal Pipe Size (NPS) 8” high Pressure steel natural gas pipeline that will replace the two pipelines known collectively as the London Lines and install a secondary new pipeline to connect the new NPS 8 pipeline to Strathroy in the Municipality of Strathroy-Caradoc (10.5 km). The pipeline will start within the Township of Dawn-Euphemia at the Dawn Centre on Bentpath Line, 300 m east of Dawn Valley Road. The pipeline will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre approximately 1 km south of the intersection of Glendon Drive and Komoka Road, and at the existing Strathroy Gate Station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc.

Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an environmental study of the construction and operation of the proposed pipeline and related facilities.

1.2 ENVIRONMENTAL STUDY

1.2.1 Objectives

A multidisciplinary team of environmental planners and scientists from Stantec conducted the environmental study. Enbridge provided environmental support and engineering expertise throughout the study.

The environmental study was completed in accordance with the OEB Environmental Guidelines, as well as relevant federal and provincial environmental guidelines and regulations.

The principal objective of the environmental study was to outline various environmental mitigation and protection measures for the construction and operation of the project while meeting the intent of the OEB Environmental Guidelines. To meet this objective, the environmental study was prepared to:

- Complete a detailed review of environmental features along the existing route and alternative segments (the “Study Area”)
- Implement a consultation program to receive input from interested and potentially affected parties
- Identify a preferred route that minimizes potential environmental impacts in areas where the existing London Lines pipelines are not located within a road allowance
- Assess potential environmental impacts of the project on the environmental features, and establish mitigation and protective measures that may be used to minimize or eliminate potential environmental impacts of the project

- Identify any necessary supplemental studies, monitoring and contingency plans

1.2.2 Process

The environmental study was divided into the following three main phases:

- Phase I: Identification of a existing route and alternative segments
- Phase II: The route evaluation and selection process
- Phase III: Confirmation of the preferred route, development of mitigation and protective measures and preparation of this ER

The maps produced during the route evaluation are included as Appendix A, maps of existing environmental and socio-economic conditions are included as Appendix C, and a map of the preferred route is included as Appendix D.

Phase I: Identification of Alternative Segments and the Study Area

The environmental study began with delineating the Study Area (as described in Section 4.2) and notifying the following entities:

- federal and provincial agencies and authorities
- municipal personnel
- special interest groups
- third party utility providers
- directly affected landowners
- residents and businesses within 500 m of the existing route and alternative segments
- Indigenous communities and the Métis Nation of Ontario (MNO)

Environmental features and conditions in the Study Area were mapped and characterized using relevant published literature, maps and digital data. Geographically based environmental features were incorporated onto a series of digital base maps. Discussions with relevant agencies and municipalities provided information for compiling the existing conditions inventory and mapping.

Route options were generated based on the routing objectives, Study Area, and environmental and socio-economic constraints and opportunities identified in Section 4.3. To assist in the generation of route options, Stantec personnel conducted site visits, reviewed aerial photography, and mapped existing environmental and socio-economic constraints and opportunities.

Phase II: Route Evaluation and Selection Process

The alternative segments were identified through an initial review of the existing route and the general study area, as described in Section 4.4. The consultation program (Section 2.0) provided opportunities to comment on the Project, the route evaluation and selection process, and the existing route and alternative segments. Feedback was sought through written correspondence from stakeholders, meetings via phone call with interested parties, newspaper notices, letters, a targeted Facebook Advertisement and a Virtual Open House held between April 20 and May 1, 2020.

Phase III: Confirmation of the Preferred Route; Environmental Report

Based on feedback received during the consultation program (Section 2.0) and the evaluation of the existing route and alternative segments, the preferred route was confirmed. Phase III concluded with the preparation of this ER as well as Environmental Alignment Sheets to identify site-specific mitigation and protective measures to be implemented during construction along the preferred route (see Appendix H).

1.2.3 The Environmental Report

The environmental study has relied on a technically sound and consistently applied approach that is replicable and transparent. As described above, the study was undertaken in accordance with the OEB Environmental Guidelines, as well as relevant federal and provincial environmental guidelines and regulations. The ER, which documents the environmental study, will form the basis for future environmental management activities related to the project.

The ER is organized into the following sections:

1.0 **Introduction:** provides a description of the project and the environmental study

2.0 **Consultation Program:** describes the consultation program

3.0 **Existing Conditions:** describes the environmental and socio-economic existing conditions

4.0 **Route Evaluation and Selection**: provides an overview of the pipeline route evaluation and selection process

5.0 **Impact Identification, Assessment and Mitigation:** predicts potential effects and impacts, recommends supplemental studies, mitigation and protective measures, and considers net impacts

6.0 **Cumulative Effects**: provides an analysis of potential cumulative effects associated with the proposed project

7.0 **Monitoring and Contingency Plans**: describes monitoring and contingency plans to address potential environmental impacts of the proposed project

8.0 **Conclusion:** provides a discussion and consideration of the potential environmental impacts associated with the proposed project

The ER also includes references, and appendices for documentation.

1.2.4 The OEB Regulatory Process

Once complete, the ER is circulated to the Ontario Pipeline Coordinating Committee (OPCC) for their review and comment. The OPCC is an inter-ministerial committee that includes provincial government ministries, boards, and authorities with potential interest in the construction and operation of hydrocarbon transmission and storage facilities. The ER will accompany a future Enbridge 'Leave-to-Construct' (LTC) application to the OEB for the proposed Project.

While the ER illustrates the general location of the preferred route, Enbridge will undertake detailed design to determine the exact location of the running line within the road allowance and cross-country routing. Detailed design will also be influenced by supplemental environmental and engineering studies and site-specific requests from landowners and agencies. Information on the engineering and other matters will be included in the application to the OEB, along with additional required information.

Upon receiving the application, the OEB will hold a public hearing. Communication about the hearing will include notices in local newspapers and letters to directly affected landowners, both of which will outline how the general public and landowners can get involved with the hearing process. If, after the public hearing, the OEB finds the project is in the public interest, it will approve construction of the project and issue an LTC order. The OEB typically attaches conditions to approved projects. Enbridge must comply with these conditions at all stages of the Project, including during construction, site restoration and post construction.

1.2.5 Additional Environmental Regulatory Processes

Enbridge will also be required to obtain additional environmental permits and approvals from federal provincial and municipal agencies and departments and provide notifications to municipalities, as outlined in Table 1-1 below. This ER will serve to support these permit and approval applications and notifications.

Table 1-1: Summary of Potential Environmental Permits/Regulatory Requirements

Permit/Approval Name	Administering Agency	Description
FEDERAL PERMITS AND APPROVALS		
Clearing of Vegetation under the *Migratory Bird Convention Act* (MBCA) (Government of Canada, 1994) *No permit is necessary; however, measures should be implemented to monitor that no breeding birds or their nests are harmed or destroyed during the bird nesting season*	Environment and Climate Change Canada (ECCC)	All vegetation clearing and removal should be completed outside the primary breeding (nesting) period for birds. The primary nesting period is defined as the period when the percent of total nesting species is greater than 10% based on the ECCC's Nesting Calendar, and due diligence mitigation measures are generally recommended (ECCC 2016); however, if vegetation removal occurs within this window (April 1 to August 31), a qualified biologist must conduct nest surveys in the marked areas to be cleared in accordance with the MBCA. If nests are found, clearing of the area will cease until the young have naturally fledged.
Authorizations under the *Fisheries* Act (Government of Canada, 1985)	Fisheries and Oceans Canada (DFO)	DFO review and possible *Fisheries Act* authorization is required at watercourse crossings containing species protected under the *Species at Risk Act* (SARA) (2002). The DFO may authorize activities that have the potential to affect fish or mussel species protected under the SARA (2002). As per Section 35 (1) of the *Fisheries Act* (1985), "No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat." As per Section 35 (2)(b) of the *Fisheries Act* (1985), there are some exceptions under which a person may carry on a work, undertaking or activity without contravening subsection (1), including an authorization from DFO, which typically includes a number of conditions. Following determination of final crossing methods, a fish habitat impact screening (self-assessment) should be completed to determine if DFO review/authorization will be required.
Permitting under the SARA (Government of Canada, 2002)	DFO	A SARA permit is required to capture, handle and relocate SARA Schedule 1 fish or mussel species during construction. As indicated in Section 32 (1) of the SARA (2002), "No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species." As indicated in Section 73 (1) of the SARA (2002), "The competent minister may enter into an agreement with a person, or issue a permit to a person, authorizing the person to engage in an activity affecting a listed wildlife species, any part of its critical habitat or the residences of its individuals."

Table 1-1: Summary of Potential Environmental Permits/Regulatory Requirements

Permit/Approval Name	Administering Agency	Description
PROVINCIAL PERMITS AND APPROVALS		
Development Permits under *Ontario Regulations 157/06* (Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses), as per the *Conservation Authorities Act* (1990)	Upper Thames River Conservation Authority (UTRCA)	Required for works within UTRCA Regulated Areas, including shorelines, watercourses, wetlands and hazardous lands (flooding and erosion hazards, and unstable soils and bedrock).
Development Permits under *Ontario Regulations 152/06* (Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses), as per the *Conservation Authorities Act* (1990)	Lower Thames Valley Conservation Authority (LTVCA)	Required for works within LTVCA Regulated Areas, including shorelines, watercourses, wetlands and hazardous lands (flooding and erosion hazards, and unstable soils and bedrock).
Development Permits under *Ontario Regulations 171/06* (Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses), as per the *Conservation Authorities Act* (1990)	St. Clair Region Conservation Authority (SCRCA)	Required for works within SCRCA Regulated Areas, including shorelines, watercourses, wetlands and hazardous lands (flooding and erosion hazards, and unstable soils and bedrock).
Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR) (surface and groundwater) under the *Ontario Water Resources Act* (1990)	Ministry of the Environment, Conservation and Parks (MECP)	Under Ontario Regulation (O. Reg.) 64/16 and O. Reg. 63/16, the MECP requires a PTTW for dewatering in excess of 400,000 L/day, and an EASR for dewatering between 50,000 and 400,000 L/day. This can include trench dewatering and taking water for hydrostatic testing from a pond, lake, etc. There are some exceptions for surface water takings where active or passive surface water diversions occur such that all water taken is returned to within another portion of the same surface water feature.

Table 1-1: Summary of Potential Environmental Permits/Regulatory Requirements

Permit/Approval Name	Administering Agency	Description
Permitting or registration under the *Endangered Species Act* (ESA) (2007)	MECP	An ESA permit or Registration is required for activities that could impact species protected under the ESA. Consultation will occur with the MECP to determine ESA permitting requirements. As indicated in Section 9 (1) a of the ESA (2007), "No person shall kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species." As indicated in Section 17 (1), "the Minister may issue a permit to a person that, with respect to a species specified in the permit that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species, authorizes the person to engage in an activity specified in the permit that would otherwise be prohibited by section 9 or 10."
Archaeological clearance under the *Ontario Heritage Act* (OHA) (1990)	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	A Stage 1 and Stage 2 archaeological assessment (AA) is required along the right-of-way (RoW) to identify areas of archaeological potential prior to any ground disturbances and/or site alterations. Depending on the results of the Stage 1 and Stage 2 AAs, Stage 3 and 4 AAs may be required. The completed archaeological assessment reports are forwarded to the MHSTCI for review and comment.
Review of Built Heritage and Cultural Landscape under the OHA (1990)	MHSTCI	A Heritage Overview Study will be completed to determine the presence of built heritage and cultural landscapes. If identified, a Heritage Impact Assessment is required to determine the effects of the project on heritage resources and recommend mitigation measures, if necessary.
Encroachment Permit under the *Public Transportation and Highway Improvement Act* (1990)	Ministry of Transportation (MTO)	An encroachment is any installation or works upon, under or within the limits of a provincial highway right-of-way place by someone other than MTO. Encroachments may include signs, survey work, banners, acceleration and deacceleration lanes, curbs, gutters, sidewalks, safety islands, sewers pipelines, coaxial or fibre optic cable, or other works or structures that may during the construction, installation or maintenance thereof, obstruct, cause material to be deposited upon, enter upon, take up, bridge over, tunnel under or in any way interfere with the land within the limits of a highway or the roadway or any structure forming a part of the highway.

Table 1-1: Summary of Potential Environmental Permits/Regulatory Requirements

Permit/Approval Name	Administering Agency	Description
MUNICIPAL PERMITS AND APPROVALS		
Noise By-Law No. 30-13	Municipality of Strathroy-Caradoc	Project activities should adhere to local noise by-laws.
Noise By-Law No. 2019-039	Municipality of Southwest Middlesex	
Noise By-Law 2016-066	Municipality of Middlesex Centre	
N/A	Township of Dawn-Euphemia	During the consultation process and preparation of the ER, no applicable by-laws for the Township of Dawn-Euphemia were noted; however, prior to the onset construction activities an additional review will be completed to ensure no by-laws are applicable to the Project.
By-Law No. 13 of 2008	County of Lambton	Prior to the placement, reconstruction or alteration of any private pipeline or related plant/appurtenance (gas, sewer, watermain, etc.) under, along or across the County road allowance, permission must be obtained from the Public Works Department in accordance with By-Law 13-2008. Each application submitted to the Public Works Department must be accompanied by the appropriate application and road use fees (Schedule A of the By-Law).
By-Law No. 88 of 1998		An Oversize and Overweight Permit is required for the transportation of goods not conforming to the standards detailed in the *Highway Traffic Act* (R.S.O. 1990, Chapter 198).
Permit – Moving Oversize Load/Weight Vehicles on Middlesex County Roads	County of Middlesex	A Moving Oversize Load/Weight Vehicles on Middlesex County Roads Permit is required under the *Highway Traffic Act* (R.S.O. 1990, Chapter 198). Note that overweight permits are not issued in March or April, or other periods when road bases are potentially soft.

Table 1-1: Summary of Potential Environmental Permits/Regulatory Requirements

Permit/Approval Name	Administering Agency	Description
OTHER PERMITS AND APPROVALS		
Pipeline Crossing / Encroachment Application	Canadian National Railway (CN Railway)	Required for crossing CN Railway lines.
Utility Access / Crossing Request	Canadian Pacific Railway (CP Railway)	Required for crossing CP Railway lines.
Crossing Approval	Hydro One Networks Inc. (HONI)	Required for crossing HONI's electric transmission corridors.

2.0 CONSULTATION PROGRAM

2.1 OBJECTIVES

Consultation is an important component of the *OEB Environmental Guidelines, 7th Edition* (2016). Consultation is the process of identifying interested and potentially affected parties and informing them about the Project, soliciting information about their values and local environmental and socio-economic circumstances, and receiving input into key Project decisions before those decisions are finalized.

The consultation program for this Project included the following objectives:

- Identify interested and potentially affected parties early in the process.
- Inform and educate interested parties about the nature of the project, potential impacts, proposed mitigation measures and how to participate in the consultation program in a clear, concise, relevant and timely manner.
- Provide a forum for the identification of issues.
- Identify how input will be used in the planning stages of the Project.
- Summarize issues for resolution and resolve as many issues, as feasible.
- Revise the program to meet the needs of those being consulted, as feasible.
- Develop a framework for ongoing communication during the construction and operation phase of the Project.
- An extensive consultation program was undertaken for the Project, including the development and maintenance of a stakeholder and Indigenous contact list. The contact list was used to identify distribution lists for notices, newspaper advertisements, agency meetings and the virtual information session. The contact list also facilitated the feedback to stakeholders who had questions, issues, concerns or positive feedback about the Project. The communication and consultation activities are described in Sections 2.2 - 2.4 below.
- As a result of the physical distancing requirements set out by the Government of Canada and the Province of Ontario due to the COVID-19 pandemic, a Virtual Open House was held in place of an in-person Open House. Public participation in the Virtual Open House was found to exceed what is typically recorded at an in-person Open House in terms of number of attendees and completed questionnaires. Virtual Open House participation levels are detailed in Section 2.4.2.
- Consultation activities with the Indigenous Communities identified as part of the MECP Duty to Consult process are briefly mentioned in this section. A comprehensive Indigenous Consultation Summary Report will be submitted as part of the LTC Application and will provide additional details on engagement activities for this Project.

2.2 IDENTIFYING INTERESTED AND POTENTIALLY AFFECTED PARTIES

The identification of interested and potentially affected parties was undertaken using a variety of sources, including the OEB's OPCC Members List, the MECP's Environmental Assessment Government Review Team Master Distribution List, and the experience of Enbridge and Stantec.

In addition, the parties listed below were among those considered when developing the initial stakeholder contact lists:

- federal and provincial agencies and authorities, including the UTRCA, LTVCA and SCRCA and members of the OPCC
- municipal personnel, including elected officials
- special interest groups
- residents and businesses within 500 m of the Study Area
- Indigenous communities identified by the Ministry of Energy, Northern Development and Mines (MENDM) through their Duty to Consult process

The initial contact list was updated as the environmental study progressed because of changes in personnel, correspondence received and attendees at meetings and Information Sessions. The final Agency and Indigenous Contact List is in Appendix B1.

Members of the public who provided feedback or who participated in the Virtual Open House were tracked in a Public Contact List.

2.3 COMMUNICATION METHODS

2.3.1 Newspaper Notices

A Notice of Study Commencement and Virtual Open House was published on April 15 and April 22, 2020 in The Herald (serving Thamesville, Dresden and Bothwell) and on April 16 and April 23, 2020 in the Strathroy-Age Dispatch. The Notice described the project, provided a map, listed project contact information, and provided a website link to access the Virtual Open House.

Copies of tear sheets from the newspaper notices are in Appendix B2.

2.3.2 Notice of Commencement and Virtual Open House, and Notice of Project Change

A hardcopy of the Notice of Commencement and Virtual Open House, as published in the newspapers, was distributed through Canada Post unaddressed admail (4,715 in total) on April 16, 2020 to all residents and businesses within 500 m of the existing route and alternative routes.

The Notice of Commencement and Virtual Open House emails were sent to all parties identified on the Agency and Indigenous Contact List, Public Contact List and Other Stakeholder List on April 8, 2020 to provide information on the project, the existing route and alternative segments, and on the Information Session. Appended to the letters and emails was a map of the existing route and alternative segments. Hardcopy letters were not mailed to the Agencies or Indigenous Communities due to COVID-19 office closures.

Through consultation with the Municipality of Strathroy-Caradoc, two additional alterative pipeline segments, Strathroy Alternative 3 and Strathroy Alternative 4, were added in the Strathroy area. A Notice of Project change dated May 8, 2020 was distributed through Canada Post unaddressed admail to all residents and businesses within 500 m of the two additional alternative routes. The Notice of Project Change was emailed to the Municipality of Southwest Middlesex, the County of Middlesex, and the Indigenous parties on the Contact List on May 15, 2020.

Generic copies of the letters noted above are included in Appendix B3.

2.3.3 Presentation Slides, Interactive Map and Exit Questionnaire

Presentation slides were developed for the Virtual Open House. The presentation slides provided information on the project, the regulatory process, the existing route and alternative segments, anticipated environmental and socio-economic impacts and mitigation, and next steps. A voiceover recording was paired with the presentation slides.

A link to an exit questionnaire and an interactive map were provided in the presentation slides. A downloadable version of the presentation slides, script and the exit questionnaire were provided in a “Resources” tab in the presentation slides. The exit questionnaire requested feedback on potential impacts, the existing route and alternative segments, and the content of the Virtual Open House. The interactive map allowed Virtual Open House attendees to view the entire preferred route and study area on a web-based map. A search function was made available on the interactive map to locate a specific address, review natural environment map layers such as waterways and wooded areas, and leave comments directly on the map.

Copies of the presentation slides, a screenshot of the interactive map and the exit questionnaire are in Appendix B4.

2.3.4 Project Webpage

A Project webpage was developed on the Enbridge website (enbridgegas.com/about-us). The webpage contains information on the project, the regulatory process and Enbridge' commitment to the environment. Communication materials were regularly updated on the webpage as the environmental study progressed. The project website was communicated to interested and potentially affected parties on the presentation slides.

2.4 CONSULTATION EVENTS

2.4.1 Meetings

Meetings regarding the Project have occurred between Enbridge, Municipalities and Conservation Authorities, key stakeholders, Indigenous communities and directly impacted landowners, and will continue as the project progresses towards detailed design and construction.

2.4.2 Virtual Open House

Due to physical distancing requirements set out by the Government of Canada and the Province of Ontario due to the COVID-19 pandemic, a Virtual Open House was hosted online and was accessible from April 20, 2020 to May 1, 2020. This two-week time period was selected to allow agencies, indigenous communities, landowners, residents and other stakeholders ample opportunity to review the project information and provide input.

The purpose of the Virtual Open House was to:

- Inform the community about the project
- Outline the existing route and alternative segments
- Provide attendees the opportunities to ask questions and comment on the project
- Respond to questions and comments

A project email address and project phone number were provided in the Virtual Open House for attendees to ask questions and leave comments. Nineteen (19) completed exit questionnaires were received as of May 21, 2020. Redacted copies of the completed exit questionnaires are included in Appendix B5.

The Virtual Open House was visited 514 times between April 20 and May 1, 2020. Participants who registered their attendance were added to the appropriate contact list to receive future Project notices. Participants were mainly directly affected landowners in the Study Area who had questions about the Project (access to natural gas, tree damage, compensation, traffic impacts, location of facilities, etc.). Public participation levels, including the total number of participants and those who completed a questionnaire, were higher than what is typically recorded for in-person Information Sessions.

2.5 INPUT RECEIVED

The consultation and engagement program allowed interested or potentially affected parties to provide input into the Project. Input was evaluated and integrated into the project. The following sections summarize key input received.

A comment-response summary table and a copy of all written comments and responses are in Appendix B5.

2.5.1 Public Input

Twenty-five (25) comments were received from the public at the time of writing this ER. The main areas of input included:

- Traffic, noise and dust impacts and mitigation measures
- Monetary compensation for loss of crops, business, landscaping and/or enjoyment of property
- Unique features along the route
- Status and removal of easements on private property

2.5.2 Agency Input

Nine (9) comments were received from agencies at the time of writing this ER. Comments were:

- The Lambton Federation of Agriculture (LFA) noted that internet access may be limited and therefore some landowners may not be able to participate in the Virtual Open House. The LFA inquired about the possibility of an in-person Open House.
- The Ministry of Transportation (MTO) provided comments regarding the LLRP, specifically regarding impacts to the travelling public and future conflicts with highways improvement projects. MTO noted Enbridge will be required to meet MTO guidelines and obtain permits, where necessary.
- The Technical Standards and Safety Authority (TSSA) requested confirmation that Enbridge will submit an Application for Review of Pipeline Project to the OEB.
- The Minister of Heritage, Sport, Tourism and Culture Industries (MHSTCI) provided a letter noting their general requirements for the project.
- Transportation Canada (TC) responded noting that proponents are asked to self-assess if their project will interact with a federal property and/or waterway, or if it will require approval and/or authorization under any Acts administered by TC.
- The Upper Thames River Conservation Authority (UTRCA) provided a letter noting their general requirements for the Project and discussed their general requirements during a phone meeting with Enbridge and Stantec.

- The Lower Thames Valley Conservation Authority (LTVCA) requested shapefiles of the project location. The LTVCA noted there are 3 watercourse crossings within their regulated boundary.
- The St. Clair Region Conservation Authority (SCRCA) discussed their general requirements during a phone meeting with Enbridge and Stantec.
- The Middlesex Federation of Agriculture (MFA) provided a letter requesting that future natural gas needs for farming operations and agricultural businesses be taken into consideration as part of the Project, and that Enbridge consider the profile and depth of the gas lines.

2.5.3 Municipal Input

Two (2) communications were received from municipalities at the time of writing this ER. Comments were:

- The Municipality of Middlesex Centre noted that Glendon Drive is a county road, and as such the County of Middlesex should be consulted as well.
- The County of Lambton noted they have received no development applications within the Study Area.

2.5.4 Indigenous Input

No comments were received from Indigenous communities at the time of writing this ER.

2.5.5 Interest Group Input

No comments were received from interest groups at the time of writing this ER.

2.6 REFINEMENTS BASED ON INPUT

At each stage of the consultation program input received was compiled, reviewed, and incorporated into the environmental study process. Responses were provided, as applicable, to questions and comments received.

Enbridge has committed to on-going consultation with directly affected and interested parties during detailed design and construction and will continue to respond to concerns through the life of the project. Input from agencies was reviewed and considered during the identification of potential impacts and determination of mitigation and protective measures.

The Enbridge lands department will work with landowners to address specific concerns they may have regarding tile drainage repairs, monetary compensation, land access during construction, field crew access, and safety. Discussions between Enbridge and Middlesex County, Lambton County, Municipality of Strathroy-Caradoc, Municipality of Southwest Middlesex, Municipality of Middlesex Centre, and the Township of Dawn-Euphemia are ongoing regarding road crossing methods and depth of cover.

It is not uncommon for residential homes to be located adjacent to natural gas pipelines. The pipeline will be designed to meet or exceed all safety regulations and codes. In addition, Enbridge has a rigorous safety and integrity program so that the pipeline is constructed and maintained to operate safely.

3.0 EXISTING CONDITIONS

3.1 METHODOLOGY

The potential effects and impacts of the project on physical, biophysical and socio-economic features have been assessed within the Study Area. With an understanding of pipeline construction and operation activities (see Sections 3.1.1 and 3.1.2), the assessment describes the environmental and socio-economic setting along the existing route and alternative segments.

The inventory of existing environmental conditions, determination of effects and impacts, and mitigation and protective measures considered:

- Comments expressed during the consultation program
- Information available from published and unpublished literature
- Maps and digital data
- Mitigation guidance documents
- Field assessments conducted by Stantec technical staff
- The pipeline development experience of Enbridge and Stantec

Specific information requests were made to several agencies throughout the project. The information collected assisted in identifying environmental features and constraints located on and adjacent to the existing route and alternative segments, the potential presence of SAR and their habitat, predicting effects and potential impacts, and developing mitigation and protective measures.

The existing conditions maps (Appendix C) have been generated from base mapping provided from Enbridge (2020) and data obtained from Land Information Ontario (LIO). A Mapbook of the Study Area is provided in Appendix C, Figure C-1. Conservation Authority regulated area data was obtained from SCRCA, UTRCA and LTVCA. Scales have been adjusted from the original source to better represent the features mapped. Stantec has digitally reproduced features added to the base maps. Additional mapping sources are identified on the respective map, and in the references.

3.1.1 Construction

The pipeline construction process includes various activities as described below and will be undertaken in accordance with Legacy Union Gas Construction and Maintenance Manual (LUG C&M), 2020:

1. Site Preparation: The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the road allowance. Safety fence is installed at the edge of the construction road allowance where public safety considerations are required, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. Clearing: The clearing crew clears brush and other vegetation on the road allowance to permit construction of the pipeline.

3. Grading and Stripping: Next, the grading crew prepares the road allowance for access by construction equipment. At this stage, the topsoil (on agricultural lands) or the duff layer (on natural lands) is stripped by bulldozers and graders then segregated so it will not be mixed with the subsoil later removed from the trench. Existing landscaping is also removed and dewatering undertaken, where necessary.

4. Stringing: The stringing crew lays pipe on rollers adjacent to the proposed trench location.

5. Horizontal Directional Drilling (HDD): The drill set up area is graded; TWS is prepared for stringing of the drill pull section and drill entry and exit pits are excavated. The pipeline is then installed utilizing HDD.

6. Trenching: Once the road allowance has been graded, a hydraulic hoe will excavate the trench to a depth of at least 1m, which will then be prepared for the installation of the new pipeline. Laneways and trails are left over the trench as long as feasible where requested by the landowner.

7. Pipe Fabrication and Lowering: Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

8. Backfilling: The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the road allowance. The trench line will be crowned to allow for soil settlement.

9. Hydrostatic Test: The pipeline is then tested hydrostatically according to procedures outlined in the Legacy Union Gas Construction and Maintenance Manual (LUG C&M) [2020]. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

10. Clean-Up and Restoration: The clean-up crew is responsible for the restoration of the road allowance and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the road allowance and restoring ditch banks, watercourse crossings, and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

3.1.2 Operation and Maintenance

Upon completion of the Project, the Project components will be transferred to Enbridge's operations for inclusion in the existing Pipeline Integrity Program. Enbridge has procedures in place to inspect and maintain the pipelines, including RoW inspection. Enbridge's Pipeline Integrity team has extensive technical, operational, and industry knowledge, and whose members remain current with industry practices. Detailed procedures and programs will be modified to include the new pipelines and to ensure the operation and maintenance activities for the Project comply with applicable provincial and federal legislation, regulations and guidelines.

Pipeline operation consists of monitoring and regulating the gas flowing through or being stored in the pipelines. Valves will serve to shut off and isolate the pipelines for maintenance and security purposes. Above-ground facilities along the pipeline, at the tie in or end point will include stations that will regulate the pressure of the gas in the pipelines.

3.2 PHYSICAL FEATURES

3.2.1 Bedrock Geology and Drift Thickness

Existing Conditions

The bedrock geology of the Study Area is comprised of limestone and shale of the Hamilton Group along the eastern portion of the route, and is comprised of shale and siltstone of the Kettle Point Formation in the western portions of the route (Armstrong and Dodge, 2001). A review of available Water Well Records (WWR) within 500 m of the existing route and alternative segments indicates the depth to bedrock is between approximately 8.5 m to 71 m below ground surface (BGS) (MECP, 2020a).

3.2.2 Surficial Geology and Physiography

Existing Conditions

The topography of the Study Area slopes gradually from approximately 240 m above mean sea level (AMSL) at the eastern end of the Study Area to 190 m AMSL at the western end. The western portion of the Study Area, between the communities of Bentpath and Oakdale is relatively flat. East of this, the topography becomes slightly undulating.

The Study Area crosses four (4) physiographic regions. In the west, the St. Clair Clay Plains is the dominant physiographic region, which is characterized by beveled till plains. East from the community of Shetland to the village of Glencoe and in the eastern portion of the Study Area, sand plains associated with the Bothwell Sand Plains and the Caradoc Sand Plains and London Annex are present. In the central portion of the Study Area, the dominant physiographic region is the Ekfrid Clay Plain (Chapman and Putnam, 2007).

Surficial geology mapping suggests that the majority of the eastern portion of the Study Area crosses fine- and coarse-textured glaciolacustrine deposits (OGS, 2010). Modern alluvial deposits of clay, silt, sand, gravel, and possible organic deposits are also present along the Study Area and is prominent on the eastern end of the Study Area. The western portion of the Study Area crosses clay to silt-textured till (OGS, 2010).

3.2.3 Hydrogeology

Existing Conditions

Based on physiographic and surficial geology mapping (Chapman and Putnam, 2007; OGS, 2010), the Study Area traverses fine- and coarse-textured glaciolacustrine deposits, clay to silt-textured till and localized modern alluvial deposits. Aquifer vulnerability mapping by the Thames-Sydenham and Region Source Protection Committee (TSRCPC) indicates that some areas of the Study Area, particularly in the eastern portion, have highly vulnerable aquifers. The eastern portion of the Study Area crosses significant groundwater recharge areas (SGRAs) with a vulnerability score of 6. The Study Area also crosses two (2) small SGRAs with vulnerability scores of 4 (TSRCPC, 2015).

The MECP WWRs within 500 m of the existing route and alternative segments indicate approximately 600 water supply wells are present. 283 of these wells are for domestic use, 145 for irrigation and livestock, 26 are monitoring or observation wells, 21 are for commercial or industrial purposes, 19 are test holes, and two (2) are for cooling and air conditioning (MECP, 2020a). The remaining wells are other, mislabelled, not used or have unknown use.

Regional groundwater flow near the Study Area in the overburden aquifer is modeled as flowing generally to the north towards Lake Huron and to the southeast towards Lake St. Clair (Waterloo Hydrogeologic Inc, 2007). Local groundwater flow conditions are impacted by surface water features.

The Study Area does not cross through any wellhead protection areas (WHPA) since there are no municipal groundwater supply systems nearby. The closest WHPA to the Study Area is approximately 8 km from the route and is associated with the London-Hyde Park WHPA. A review of nearby surface water system intake protection zones (IPZ) indicates that the Study Area does not cross any IPZ-1 or IPZ-2 for a surface water system. The nearest IPZ is in the town of Wallaceburg and is approximately 20 km from the Study Area (MECP Source Protection Atlas, 2020b).

3.2.4 Extractive Resources: Aggregates and Petroleum Pools

Existing Conditions

A review of the County of Lambton Official Plan (2019), the Township of Dawn-Euphemia Official Plan (2015), the Municipality of Southwest Middlesex Official Plan (2019), Municipality of Strathroy-Caradoc (2018), indicates that no aggregate resources are located within the Study Area. A review of the County of Middlesex Official Plan (2006) and the Municipality of Middlesex Centre Official Plan (2018) indicate the presence of aggregate resources in the most eastern extent of the Study Area. The resources appear to occur within the Study Area in the former Town of Komoka, now considered part of the Municipality of Middlesex Centre. The County of Middlesex Official Plan mapping notes that although there appears to

be an absence of aggregate resource areas in the Municipalities of Strathroy-Caradoc and Southwest Middlesex, this is “only as a result of incomplete aggregate mapping for the County”.

There are oil and gas wells within the Study Area, primarily in the Township of Dawn-Euphemia and the Municipalities of Southwest Middlesex and Strathroy-Caradoc. There are a total of 28 oil and gas wells within 100m of the existing route and alternative segments, the closest of which located approximately 13 m from the alternative segment that extends parallel to Sutherland Road in the Municipality of Strathroy-Caradoc.

A map of the aggregates and petroleum pools is in Appendix C, Figure C-5.

3.2.5 Soil and Soil Capability

Existing Conditions

There are numerous soil types identified within the Study Area. The soils types, found in The Soil Survey of Middlesex County (Hagerty and Kingston, 1992) and The Soil Survey of Lambton County (Matthews et al., 1957) are in Table 3-1 below.

Soil capability for agriculture is mapped by Agriculture and Agri-Food Canada. Lands classified as Class 1 are the most agriculturally productive, while those classified as Class 7 have the lowest capability for agriculture. Class 1 to 5 agricultural lands are generally arable. Classes 1 through 3 are defined by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) to be prime agricultural soils for common field crop production. With crop use limitations in classes 1 through 3 ranging from insignificant to moderately severe, these soils require only normal conservation practices.

Table 3-1 shows the soil types mapped within the study area, the percentage of the study area that the soil covers and the Canada Land Inventory for Agriculture (CLI) rating of each soil type. The CLI rating of most of the agricultural lands within the Study Area are Class 2. Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices (AAFC, 2005).

Table 3-1: Soil and Soil Capability Along the Existing Route and Alternative Segments

CLI Class	Soil Type(s)	% of Study Area
1	Huron Clay, Perth Clay, Berrien, Tuscola, Vittoria, Normandale	8
2	Brookston Clay, Colwood, Tavistock, Wattford, Brady Sand, Brady Sandy Loam, Beverly, St. Williams, Berrien, Wauseon, Burford, Gobles, Tuscola	56
3	Plainfield, Walsingham, Ekfrid, Kelvin, Toledo, Waterin, Bookton	32
5	Bottom Land	0.2
0 (No CLI Class)	Built up area, deep mesic organic soils, shallow mesic organic soils, valley complex, eroded channel and “not mapped”	3.7

3.2.6 Agricultural Tile Drains

Existing Conditions

Within the Study Area there are multiple properties mapped as containing agricultural tile drains. While majority of the Study Area (80%) is not mapped as containing agricultural tile drainage, systematic tile drainage covers 18% and random tile drainage covers 2% (OMAFRA, 2019).

Agricultural tile drains are mapped in Figure C-2, Appendix C.

3.2.7 Natural Hazards

Existing Conditions

Natural hazards are elements of the physical environment that have the potential to affect a project in an adverse manner. While the potential is low, natural hazards that may occur within the Study Area are seismic activity and flooding.

The Study Area lies within the southern Great Lakes Seismic Zone (Natural Resources Canada, 2019). This zone has a low to moderate level of seismicity when compared to the more active seismic zones to the east, along the Ottawa River and in Quebec. Over the past 30 years, on average, 2 to 3 magnitude 2.5 or larger earthquakes have been recorded in the southern Great Lakes region. By comparison, over the same time period, the smaller region of Western Quebec experienced 15 magnitude 2.5 or greater earthquakes per year.

Three moderately sized (magnitude 5) events have occurred in the 250 years of European settlement of this region, all of them in the United States - 1929, Attica, New York, 1986, near Cleveland, Ohio, and 1998, near the Pennsylvania/Ohio border. All three of these earthquakes were widely felt but caused no damage in Ontario.

A map of the floodplain and regulation limits of UTRCA, LTVCA and SCRCA is in Appendix C, Figure C-4.

3.3 BIOPHYSICAL FEATURES

3.3.1 Aquatic Features

The background information summarized in this section is based on online data sources. Aquatic background data were collected from the Natural Heritage Information Centre (NHIC) database (MNRF 2020a), Land Information Ontario (LIO) database (MNRF 2020b), and DFO Species at Risk Mapping (DFO 2019a).

Spring site investigations were conducted in 2020 at the proposed watercourse crossings to confirm the presence of mapped watercourses and to identify potentially unmapped crossings. Data collected during field investigations will be used to provide a preliminary identification of potential that a watercourse supports fish habitat. Additional field investigations will be conducted in summer 2020 to further refine the fish habitat designation at each crossing.

Existing Conditions

Overview of Watercourse Crossings

The existing route and alternative segment options cross two major watersheds: the Sydenham and Lower Thames. These watersheds lie within the jurisdiction of three Conservation Authorities: Upper Thames River Conservation Authority (UTRCA), Lower Thames Valley Conservation Authority (LTVCA), and St. Clair Region Conservation Authority (SCRCA).

Collectively, 115 watercourse crossings were identified from all project components associated with all route options. Fourteen of the watercourse crossings are in the Lower Thames watershed and 101 watercourse crossings in the Sydenham watershed. The route options and associated watercourse crossings are shown on Figure C-4, Appendix C, as summarized below:

- The Existing / Alternate route crosses 73 watercourses
- The Alternative Segments routes crosses 28 watercourses
- Strathroy Alternative 1 route crosses five watercourses
- Strathroy Alternative 2 route crosses three watercourses
- Strathroy Alternative 3 route crosses four watercourses
- Strathroy Alternate 4 route crosses five watercourses

Additional information used to assess habitat sensitivity included using the DFO drainage classification developed for the Municipal Drain Class Authorization Process. Drainage classification is determined by a combination of flow periodicity (i.e., permanent vs. intermittent flow regime), thermal regime, fish species present, and time since the last drain cleanout. The classification system provides an indication of fish habitat sensitivity in the drain. For the purposes of this project, drainage classification was used to identify if a watercourse crossing was identified as a drain that was classified as fish habitat and if the habitat was associated with top predators or sensitive species. Table 3-2 provides a summary of the drainage classification system (DFO 2014).

Table 3-2: Drain Classification Summary (DFO 2014)

DFO Drain Classification	Flow Regime	Thermal Regime	Fish Species	Time Since Last Cleanout
A	Permanent	Cold/Cool/Unknown	No trout or salmon	N/A
B	Permanent	Warm	Top Predators and/or Ecosystem Indicators	Less than 10 years
C	Permanent	Warm	Forage Fish	N/A
D	Permanent	Cold/Cool/Unknown	Trout and/or Salmon	N/A
E	Permanent	Warm	Top Predators and/or Ecosystem Indicators	Greater than 10 years

Table 3-2: Drain Classification Summary (DFO 2014)

DFO Drain Classification	Flow Regime	Thermal Regime	Fish Species	Time Since Last Cleanout
F	Intermittent	N/A	N/A	N/A
T	Tiled	N/A	N/A	N/A

Along the **Existing Route**, the following drain types were identified at watercourse crossings:

- Three Class C permanent drains (WC-72, WC-75, and WC-89)
- One Class D permanent drain (WC-108)
- Seven Class E permanent drains (WC-28, WC-29, WC-78, WC-79, WC-80, WC-81, and WC-86)
- Thirty Class F intermittent drains
- Six Class T tiled drains

Along the **Alternative Segments,** the following drain types were identified at watercourse crossings:

- Three Class D permanent drains (WC-105, WC-106, and WC-107)
- Twelve Class F intermittent drains
- One Class T tiled drain

Along the **Strathroy Alternate Route 1**, the following drain types were identified at watercourse crossings:

- One Class C permanent drain (WC-92)
- One Class E permanent drain (WC-95)
- One Class F intermittent drain

Along the **Strathroy Alternate Route 2**, the following drain type was identified at watercourse crossings:

- One Class F intermittent drain

Along the **Strathroy Alternate Route 3**, the following drain type was identified at watercourse crossings:

- One Class E permanent drain (WC-117)

Along the **Strathroy Alternate Route 4**, the following drain type was identified at watercourse crossings:

- One Class E permanent drain (WC-117)

Available background data for each watercourse crossing, including drains, is provided in Table 3-3.

Table 3-3: Aquatic Background Data for Watercourse Crossings in the Study Area (MNRF 2020b)

Stantec Crossing ID	Watercourse / Drain Name	Conservation Authority	Watershed	DFO Drain Classification	Thermal Regime	Project Component
WC-01	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-02	3rd Concession Road Drain	SCRCA	Sydenham	F	-	Existing Route
WC-03	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-04	Wm. Eden Drain	SCRCA	Sydenham	F	-	Existing Route
WC-05	Long Creek	SCRCA	Sydenham	NR	-	Existing Route
WC-06	11th Concession Road Drain	SCRCA	Sydenham	F	-	Existing Route
WC-07	Lowrie Irwin Drain	SCRCA	Sydenham	T	-	Existing Route
WC-08	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-09	Unnamed	SCRCA	Sydenham	NR	-	Existing Route
WC-10	Roberts Drain	SCRCA	Sydenham	F	-	Alternative Segments
WC-11	Roberts Drain	SCRCA	Sydenham	F	-	Existing Route
WC-12	Naylor Drain	SCRCA	Sydenham	F	-	Alternative Segments
WC-13	Trousdell Drain	SCRCA	Sydenham	NR	-	Alternative Segments
WC-14	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-15	Thompson Drain	SCRCA	Sydenham	T	-	Existing Route
WC-16	Thompson Drain	SCRCA	Sydenham	T	-	Alternative Segments
WC-17	Water Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-18	Evans Drain	SCRCA	Sydenham	F	-	Existing Route
WC-19	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-20	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-21	Unnamed	SCRCA	Sydenham	F	-	Existing Route

Table 3-3: Aquatic Background Data for Watercourse Crossings in the Study Area (MNRF 2020b)

Stantec Crossing ID	Watercourse / Drain Name	Conservation Authority	Watershed	DFO Drain Classification	Thermal Regime	Project Component
WC-22	Giboson Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-23	Unnamed	SCRCA	Sydenham	F	warm	Existing Route
WC-24	Unnamed	SCRCA	Sydenham	F	warm	Existing Route
WC-25	Unnamed	SCRCA	Sydenham	F	warm	Existing Route
WC-26	Unnamed	SCRCA	Sydenham	F	warm	Existing Route
WC-27	Unnamed	SCRCA	Sydenham	F	warm	Existing Route
WC-28	Sydenham River	SCRCA	Sydenham	E	warm	Existing Route
WC-29	Sydenham River	SCRCA	Sydenham	E	warm	Existing Route
WC-30	Unnamed	SCRCA	Sydenham	NR	warm	Existing Route
WC-31	Unnamed	SCRCA	Sydenham	NR	warm	Existing Route
WC-32	Unnamed	SCRCA	Sydenham	F	warm	Existing Route
WC-33	Hands-Elsom Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-34	Hands Drain	SCRCA	Sydenham	F	-	Existing Route
WC-35	Turner-Watson Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-36	Unnamed	SCRCA	Sydenham	NR	-	Existing Route
WC-37	Unnamed	SCRCA	Sydenham	NR	-	Existing Route
WC-38	Coleman-Turner Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-39	Patterson Drain	SCRCA	Sydenham	F	-	Existing Route
WC-40	Ross Drain Branch	SCRCA	Sydenham	NR	-	Existing Route
WC-41	Ross Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-42	Ross Drain Branch	SCRCA	Sydenham	NR	-	Existing Route

Table 3-3: Aquatic Background Data for Watercourse Crossings in the Study Area (MNRF 2020b)

Stantec Crossing ID	Watercourse / Drain Name	Conservation Authority	Watershed	DFO Drain Classification	Thermal Regime	Project Component
WC-43	McTaggart Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-44	Hillman Branch Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-45	Waterworth Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-46	Unnamed	SCRCA	Sydenham	NR	-	Alternative Segments
WC-47	Unnamed	SCRCA	Sydenham	NR	-	Alternative Segments
WC-48	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-49	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-50	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-51	Unnamed	SCRCA	Sydenham	NR	-	Alternative Segments
WC-52	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-53	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-55	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-56	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-57	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-58	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-59	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments
WC-60	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-61	Unnamed	SCRCA	Sydenham	NR	-	Alternative Segments
WC-62	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-63	Unnamed	SCRCA	Sydenham	F	-	Existing Route
WC-64	Unnamed	SCRCA	Sydenham	F	-	Alternative Segments

Table 3-3: Aquatic Background Data for Watercourse Crossings in the Study Area (MNRF 2020b)

Stantec Crossing ID	Watercourse / Drain Name	Conservation Authority	Watershed	DFO Drain Classification	Thermal Regime	Project Component
WC-65	Unnamed	LTVCA	Sydenham	F	-	Existing Route
WC-66	Unnamed	SCRCA	Sydenham	NR	-	Alternative Segments
WC-67	McKellar Drain	SCRCA	Sydenham	NR	-	Alternative Segments
WC-68	McKellar Drain	SCRCA	Sydenham	NR	-	Alternative Segments
WC-69	McCracken Drain	SCRCA	Sydenham	F	-	Alternative Segments
WC-70	McCracken Drain	SCRCA	Sydenham	F	-	Existing Route
WC-71	Eddie Drain	LTVCA	Lower Thames	T	-	Existing Route
WC-72	Devlin - McTaggart Drain	LTVCA	Lower Thames	C	warm	Existing Route
WC-73	Johnson Drain	LTVCA	Lower Thames	T	-	Existing Route
WC-74	Unnamed	LTVCA	Lower Thames	T	-	Existing Route
WC-75	Newbiggen Creek / Mikkelsen Drain	LTVCA	Lower Thames	C	warm	Existing Route
WC-76	Reilly Drain	LTVCA	Sydenham	T	-	Existing Route
WC-77	McMaster Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-78	Morrow Drain	SCRCA	Sydenham	E	cold	Existing Route
WC-79	Morrow Drain	SCRCA	Sydenham	E	cold	Existing Route
WC-80	North Branch of the Sutton Drain	SCRCA	Sydenham	E	cold	Existing Route
WC-81	Black Branch of the Morrow Drain	SCRCA	Sydenham	E	cold	Existing Route
WC-82	Kavelaar Drainage Works 1968	SCRCA	Sydenham	NR	-	Existing Route
WC-83	White Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-84	White Drain	SCRCA	Sydenham	NR	cold	Existing Route

Table 3-3: Aquatic Background Data for Watercourse Crossings in the Study Area (MNRF 2020b)

Stantec Crossing ID	Watercourse / Drain Name	Conservation Authority	Watershed	DFO Drain Classification	Thermal Regime	Project Component
WC-85	Unnamed	SCRCA	Sydenham	NR	cold	Existing Route
WC-86	Unnamed	SCRCA	Sydenham	E	cold	Existing Route
WC-87	Unnamed	SCRCA	Sydenham	NR	cold	Existing Route
WC-88	Unnamed	SCRCA	Sydenham	NR	cold	Existing Route
WC-89	Unnamed	SCRCA	Sydenham	C	cold	Existing Route
WC-90	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 1
WC-91	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 1
WC-92	Unnamed	SCRCA	Sydenham	C	cold	Strathroy Alternate 1
WC-93	Unnamed	SCRCA	Sydenham	F	cold	Strathroy Alternate 1
WC-94	Unnamed	SCRCA	Sydenham	F	cold	Strathroy Alternate 2
WC-95	Unnamed	SCRCA	Sydenham	E	cold	Strathroy Alternate 1
WC-96	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 2
WC-97	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 2
WC-98	Unnamed	SCRCA	Sydenham	NR	cold	Alternative Segments
WC-99	Unnamed	SCRCA	Sydenham	NR	cold	Existing Route
WC-100	Walters-Arnold Dr	UTRCA	Lower Thames	NR	warm	Existing Route
WC-101	Walters-Arnold Dr	UTRCA	Lower Thames	NR	warm	Existing Route
WC-102	Kazy Noorenberge Dr	UTRCA	Lower Thames	F	warm	Existing Route
WC-103	Walters-Arnold Dr	UTRCA	Lower Thames	NR	warm	Alternative Segments
WC-104	Walters-Arnold Dr	UTRCA	Lower Thames	NR	warm	Alternative Segments
WC-105	Walters-Arnold Dr	UTRCA	Lower Thames	D	cold	Alternative Segments

Table 3-3: Aquatic Background Data for Watercourse Crossings in the Study Area (MNRF 2020b)

Stantec Crossing ID	Watercourse / Drain Name	Conservation Authority	Watershed	DFO Drain Classification	Thermal Regime	Project Component
WC-106	Walters-Arnold Dr	UTRCA	Lower Thames	D	cold	Alternative Segments
WC-107	Crow Creek Dr	UTRCA	Lower Thames	D	cold	Alternative Segments
WC-108	Crow Creek Dr	UTRCA	Lower Thames	D	cold	Existing Route
WC-111	Naylor Drain	SCRCA	Sydenham	F	-	Alternative Segments
WC-112	Mierer Drain	SCRCA	Sydenham	NR	-	Existing Route
WC-113	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 4
WC-114	Parker Drain (1998) #1625	SCRCA	Sydenham	NR	cold	Strathroy Alternate 4
WC-115	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 3
WC-116	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 3, Strathroy Alternate 4
WC-117	Campbell Drain Extension 2001	SCRCA	Sydenham	E	cold	Strathroy Alternate 3, Strathroy Alternate 4
WC-118	Unnamed	SCRCA	Sydenham	NR	cold	Strathroy Alternate 3, Strathroy Alternate 4

Aquatic Community

Background aquatic community data (i.e., fish and mussel species records) were available for watercourses within the Study Area. Fish community is documented from background data at forty-nine watercourse crossings. Fish species by watershed are summarized in Table 3-4, and mussel species are summarized in Table 3-5. These species lists do not necessarily imply all the species are in the Study Area; however, they illustrate the aquatic community diversity which has been documented in the watersheds where the project is located.

Table 3-4: Fish Species Documented in Background Data by Watershed in the Study Area (MNRF 2020b)

Fish Species		Watershed		Species at Risk	Species of Conservation Concern
Common Name	Scientific Name	Sydenham	Lower Thames		
Black Bullhead	*Ameiurus melas*	✓			
Black Crappie	*Pomoxis nigromaculatus*	✓			
Black Redhorse	*Moxostoma duquesnei*		✓	✓	
Blackchin Shiner	*Notropis heterodon*		✓		
Blacknose Dace	*Rhinichthys atratulus*		✓		
Blackside Darter	*Percina maculata*	✓	✓		
Blackstripe Topminnow	*Fundulus notatus*	✓			✓
Bluegill	*Lepomis macrochirus*	✓	✓		
Bluntnose Minnow	*Pimephales notatus*	✓	✓		
Brassy Minnow	*Hybognathus hankinsoni*		✓		
Brindled Madtom	*Noturus miurus*	✓			
Brook Silverside	*Labidesthes sicculus*	✓			
Brook Stickleback	*Culaea inconstans*	✓	✓		
Brook Trout	*Salvelinus fontinalis*		✓		
Brown Bullhead	*Ameiurus nebulosus*		✓		
Brown Trout	*Salmo trutta*		✓		
Central Mudminnow	*Umbra limi*	✓	✓		
Central Stoneroller	*Campostoma anomalum*		✓		
Channel Catfish	*Ictalurus punctatus*	✓	✓		
Coho Salmon	*Oncorhynchus kisutch*		✓		
Common Carp	*Cyprinus carpio*	✓	✓		
Common Shiner	*Luxilus cornutus*	✓	✓		
Creek Chub	*Semotilus atromaculatus*	✓	✓		

Table 3-4: Fish Species Documented in Background Data by Watershed in the Study Area (MNRF 2020b)

Fish Species		Watershed		Species at Risk	Species of Conservation Concern
Common Name	Scientific Name	Sydenham	Lower Thames		
Eastern Sand Darter	*Ammocrypta pellucida*	✓	✓	✓	
Emerald Shiner	*Notropis atherinoides*	✓	✓		
Fallfish	*Semotilus corporalis*	✓	✓		
Fantail Darter	*Etheostoma flabellare*	✓	✓		
Fathead Minnow	*Pimephales promelas*	✓	✓		
Freshwater Drum	*Aplodinotus grunniens*		✓		
Ghost Shiner	*Notropis buchanani*		✓		
Gizzard Shad	*Dorosoma cepedianum*	✓	✓		
Golden Redhorse	*Moxostoma erythrurum*	✓	✓		
Golden Shiner	*Notemigonus crysoleucas*	✓			
Grass Pickerel	*Esox americanus vermiculatus*	✓			✓
Greater Redhorse	*Moxostoma valenciennesi*	✓			
Green Sunfish	*Lepomis cyanellus*	✓	✓		
Greenside Darter	*Etheostoma blennioides*	✓	✓		
Hornyhead Chub	*Nocomis biguttatus*	✓	✓		
Iowa Darter	(Not Applicable)		✓		
Johnny Darter	*Etheostoma nigrum*	✓	✓		
Largemouth Bass	*Micropterus salmoides*	✓	✓		
Least Darter	*Etheostoma microperca*	✓	✓		
Logperch	*Percina caprodes*	✓	✓		
Longnose Dace	*Rhinichthys cataractae*		✓		
Longnose Gar	*Lepisosteus osseus*	✓			
Longnose Sucker	*Catostomus catostomus*	✓			
Mimic Shiner	*Notropis volucellus*	✓	✓		
Mooneye	*Hiodon tergisus*	✓	✓		
Mottled Sculpin	*Cottus bairdii*	✓	✓		
Muskellunge	*Esox masquinongy*	✓	✓		
Northern Hog Sucker	*Hypentelium nigricans*	✓	✓		
Northern Madtom	*Noturus stigmosus*	✓		✓	

Table 3-4: Fish Species Documented in Background Data by Watershed in the Study Area (MNRF 2020b)

Fish Species		Watershed		Species at Risk	Species of Conservation Concern
Common Name	**Scientific Name**	**Sydenham**	**Lower Thames**		
Northern Pearl Dace	*Margariscus nachtriebi*		✓		
Northern Pike	*Esox lucius*	✓	✓		
Northern Redbelly Dace	*Chrosomus eos*		✓		
Northern Sunfish	*Lepomis peltastes*	✓			✓
Pugnose Minnow	*Opsopoeodus emiliae*	✓		✓	
Pugnose Shiner	*Notropis anogenus*	✓		✓	
Pumpkinseed	*Lepomis gibbosus*	✓	✓		
Rainbow Darter	*Etheostoma caeruleum*	✓	✓		
Rainbow Trout	*Oncorhynchus mykiss*		✓		
River Chub	*Nocomis micropogon*	✓	✓		
River Darter	*Percina shumardi*	✓	✓	✓	
Quillback	*Carpiodes cyprinus*		✓		
Redfin Shiner	*Lythrurus umbratilis*	✓			
Rock Bass	*Ambloplites rupestris*	✓	✓		
Rosyface Shiner	*Notropis rubellus*	✓	✓		
Shorthead Redhorse	*Moxostoma macrolepidotum*	✓	✓		
Silver Lamprey	*Ichthyomyzon unicuspis*	✓			✓
Silver Redhorse	*Moxostoma anisurum*	✓	✓		
Silver Shiner	*Notropis photogenis*		✓		
Smallmouth Bass	*Micropterus dolomieu*	✓	✓		
Spotfin Shiner	*Cyprinella spiloptera*	✓	✓		
Spottail Shiner	*Notropis hudsonius*	✓	✓		
Spotted Gar	*Lepisosteus oculatus*	✓		✓	
Spotted Sucker	*Minytrema melanops*	✓			✓
Striped Shiner	*Luxilus chrysocephalus*		✓		
Stonecat	*Noturus flavus*	✓	✓		
Tadpole Madtom	*Noturus gyrinus*	✓			
Trout-perch	*Percopsis omiscomaycus*	✓	✓		
Walleye	*Sander vitreus*	✓	✓		

Table 3-4: Fish Species Documented in Background Data by Watershed in the Study Area (MNRF 2020b)

Fish Species		Watershed		Species at Risk	Species of Conservation Concern
Common Name	**Scientific Name**	**Sydenham**	**Lower Thames**		
White Bass	*Morone chrysops*	✓	✓		
White Crappie	*Pomoxis annularis*	✓	✓		
White Perch	*Morone americana*	✓	✓		
White Sucker	*Catostomus commersonii*	✓	✓		
Yellow Bullhead	*Ameiurus natalis*	✓	✓		
Yellow Perch	*Perca flavescens*	✓	✓		

Table 3-5: Freshwater Mussel Species at Risk Documented from Background Information in the Study Area (DFO 2019a, MNRF 2020a)

Mussel Species		Species at Risk	Species of Conservation Concern
Common Name	**Latin Name**		
Fawnsfoot	*Truncilla donaciformis*	✓	
Kidneyshell	*Ptychobranchus fasciolaris*	✓	
Lilliput	*Toxolasma parvum*	✓	
Mapleleaf	*Quadrula quadrula*		✓
Northern Riffleshell	*Epioblasma rangiana*	✓	
Rainbow	*Villosa iris*		✓
Rayed Bean	*Villosa fabalis*	✓	
Round Hickorynut	*Obovaria olivaria*	✓	
Round Pigtoe	*Pleurobema sintoxia*	✓	
Salamander Mussel	*Simpsonaias ambigua*	✓	
Snuffbox	*Epioblasma triquetra*	✓	
Threehorn Wartyback	*Obliquaria reflexa*	✓	
Wavy-rayed Lampmussel	*Lampsilis fasciola*	✓	

Aquatic Species of Conservation Concern

There are 7 records of aquatic species of conservation concern (SOCC) in watercourses crossed by the existing route and alternative segment options, including 5 fish species and 2 mussel species (see Table 3-6 and Figure C-4, Appendix C) (DFO 2019a; MNRF 2020a). Special Concern species do not receive habitat or individual protection under species at risk legislation (ESA or SARA).

SOCC fish are known to occur at 13 watercourse crossings, including:

- **Existing Route**: 10 watercourse crossings (WC-01, WC-02, WC-03, WC-05, WC-06, WC-07, WC-08, WC-09, WC-28, WC-29
- **Strathroy Alternate 1**: one watercourse crossing (WC-93)
- **Strathroy Alternate 2**: one watercourse crossing (WC-94)
- **Strathroy Alternate 3**: one watercourse crossing (WC-116)
- **Strathroy Alternate 4**: one watercourse crossing (WC-116)

The Sydenham River is crossed on the Existing/Alternative Route at WC-28 and WC-29; two (SOCC) mussels are known to live in the Sydenham River (Table 3-6).

Aquatic Species at Risk

There are 18 records of aquatic species at risk (SAR) in watercourses crossed by the existing route and alternative segments, including 7 fish species and 11 mussel species (see Table 3-6 and Figure C-4, Appendix C) (DFO 2019; MNRF 2020a). Threatened and Endangered species receive habitat and individual protection under species at risk legislation (ESA or SARA).

SAR fish are known to occur at 7 watercourse crossings, including:

- **Existing Route**: 6 watercourse crossings (WC-01, WC-02, WC-03, WC-28, WC-29, WC-108)
- **Alternative Segments**: one watercourse crossing (WC-107)

The Sydenham River is crossed on the existing route at WC-28 and WC-29; eleven SAR mussels are known to live in the Sydenham River (Table 3-6). Critical Habitat is documented for six mussel species at the Sydenham River crossings (WC-28 and WC-29) (DFO 2019). Critical Habitat is defined under the SARA as “the habitat that is necessary for the survival or recovery of listed extirpated, endangered, or threatened species, and that is identified as Critical Habitat in a recovery strategy or action plan” (Government of Canada 2016).

Table 3-6: Fish and Mussel SAR and SOCC Documented in Background Data at Watercourse Crossings (DFO 2019a, MNRF 2020a, MNRF 2020b)

Animal Group	Common Name	Scientific Name	SAR or SOCC Listing		Watercourse Crossings with Aquatic Species at Risk (SAR) and Species of Conservation Concern (SOCC)														
			ESA	SARA	WC-01	WC-02	WC-03	WC-05	WC-06	WC-07	WC-08	WC-09	WC-28	WC-29	WC-93	WC-94	WC-107	WC-108	WC-116
Fish	Black Redhorse	*Moxostoma duquesnei*	THR	THR													✓	✓	
	Blackstripe Topminnow	*Fundulus notatus*	SC	SC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
	Eastern Sand Darter	*Ammocrypta pellucida*	END	THR									✓	✓			✓	✓	
	Grass Pickerel	*Esox americanus vermiculatus*	SC	SC									✓	✓					
	Northern Madtom	*Noturus stigmosus*	END	END									✓	✓					
	Northern Sunfish	*Lepomis peltastes*	SC	SC									✓	✓	✓	✓			✓
	Pugnose Minnow	*Opsopoeodus emiliae*	THR	THR									✓	✓					
	Pugnose Shiner	*Notropis anogenus*	THR	THR	✓	✓							✓	✓					
	River Darter	*Percina shumardi*	END	END															
	Silver Lamprey	*Ichthyomyzon unicuspis*	-	SC									✓	✓					
	Silver Shiner	*Notropis photogenis*	THR	THR													✓	✓	
	Spotted Gar	*Lepisosteus oculatus*	END	END															
	Spotted Sucker	*Minytrema melanops*	SC	SC			✓						✓	✓					
Mussel	Fawnsfoot	*Truncilla donaciformis*	END	END									✓	✓					
	Kidneyshell	*Ptychobranchus fasciolaris*	END	END									✓	✓					
	Lilliput	*Toxolasma parvum*	THR	END			✓						✓	✓					
	Mapleleaf	*Quadrula quadrula*	SC	SC									✓	✓					
	Northern Riffleshell **	*Epioblasma rangiana*	END	END									✓	✓					
	Rainbow	*Villosa iris*	SC	SC									✓	✓					
	Rayed Bean **	*Villosa fabalis*	END	END									✓	✓					
	Round Hickorynut **	*Obovaria olivaria*	END	END									✓	✓					
	Round Pigtoe **	*Pleurobema sintoxia*	END	END									✓	✓					
	Salamander Mussel **	*Simpsonaias ambigua*	END	END									✓	✓					
	Snuffbox **	*Epioblasma triquetra*	END	END									✓	✓					
	Threehorn Wartyback	*Obliquaria reflexa*	THR	THR									✓	✓					
	Wavy-rayed Lampmussel	*Lampsilis fasciola*	THR	SC									✓	✓					

** Critical Habitat for the species recorded at the watercourse crossing (DFO 2019)

3.3.2 Designated Natural Areas and Vegetation

The background information summarized in this section is based on online data sources. Terrestrial background data were collected from the NHIC database (MNRF 2020a), and Land Information Ontario (LIO) database (MNRF 2020b).

Existing Conditions

The Study Area falls within the Niagara section of the Deciduous Forest Region (Rowe 1972). The vegetation communities in the area have been significantly altered by anthropogenic activities (predominantly clearing and draining of land for agricultural purposes). Most of the lands (>90%) have been converted to agricultural use, mainly tile-drained row crop fields.

Although much of the land has historically been altered, in some locations the existing route and alternative segments come in proximity to natural areas including woodlands and wetlands. The length of each pipeline route that is adjacent (within 10 m) to woodlands or wetlands is provided in Table 3-7.

Table 3-7: Woodland and Wetland in Adjacent (10 m) to the Existing Route and Alternative Segments (MNRF 2020b)

Route	Length of Route (m)	
	Adjacent to Woodland	Adjacent to Wetland
Existing Route	8,540	1,305
Alternative Segments	2,830	1,697
Strathroy Alternate 1	1,495	0
Strathroy Alternate 2	0	0
Strathroy Alternate 3	2,790	0
Strathroy Alternate 4	3,328	0

Hayfields, pasture or fallow fields, which may provide habitat for grassland birds, may occur within the Study Area. A map of designated natural areas is provided in Appendix C, Figure C-3.

Wetlands

The Ontario Wetland Evaluation System (OWES) is used to identify Provincially Significant Wetlands (PSW). An evaluated wetland may be one contiguous unit or may be a series of smaller wetlands functioning as a whole. Evaluated wetlands that do not qualify as provincially significant may be designated as locally significant and may be protected through local planning and policy measures. There may also be unevaluated wetlands in an area.

A review of the LIO database (MNRF 2020b) and the NHIC database (MNRF 2020a) indicates that the existing route crosses or is within proximity to six PSW's: (Bobcat Swamp Wetland Complex, Komoka/South Strathroy Creek Wetland, Longwoods Woodlot Wetland Complex, McCready Woods, McPhail Tract, Melbourne Marsh). The Alternative Segments Route is in proximity to two PSW's: Bobcat Swamp Wetland Complex, and Komoka/South Strathroy Creek Wetland. Strathroy Alternative Routes do not cross or come within proximity to a PSW.

Narrow wetland features are presumably present along drains and other watercourse features, but these have not been mapped as unique features. Vegetation and Ecological Land Classification (ELC) surveys will be completed prior to construction to assess presence or absence of wetlands within 120 m of the preferred pipeline route.

Significant Woodlands

A woodland is defined as a treed area, woodlot or forested area. The Natural Heritage Reference Manual notes that the local planning authority has a responsibility for designating significant woodlands (MNR 2010).

The criteria for designating significant woodlands at a provincial level includes: woodland size; ecological function (shape, proximity to other woodlands or natural features, linkages); species diversity; uncommon characteristics; and, economic and social values (MNR 2010). in. The Official Plans of Middlesex County and Lambton County were reviewed for the criteria and identification of significant woodlands that occur within the construction footprint.

The Middlesex County Official Plan (Middlesex County 2014) identifies significant woodlands as important features on the landscape. The Middlesex Natural Heritage Systems Study (MNHSS 2014) identifies a significant woodland as "any woodland vegetation group that is greater than 4 ha and also any woodland vegetation that is within 100 m of a woodland that is greater than 4 ha." The Lambton County Official Plan (Lambton County 2019) states that significant woodlands include any forested area that:

- is 2 hectares or greater in size
- has woodland interior habitat (100 metres from all edges)
- is the largest woodland patch by landform or soil type
- is the largest woodland patch occurring on a particular valleyland
- is 0.5 hectares or greater in size and
    - is located within 30 metres of another natural heritage feature specifically identified in the Map 2 feature inventory;
    - provides linkage (a "stepping stone") between (is in a line between and within 120 metres of) two or more significant woodlands that are separated by more than 120 metres of each other;

- is located on or within 30 metres of a surface water feature, iv) is located above a highly vulnerable aquifer or significant groundwater recharge area;
- has unique woodland diversity - i.e. contains target communities for Ecodistrict 7E-2 that help to conserve the biodiversity of the Great Lakes region of Ontario as identified by The Great Lakes Conservation Blueprint (Henson et al. 2005);
- has uncommon characteristics such as unique species composition; a rare vegetation community (NHIC provincial ranking of S1, S2, or S3); rare, uncommon, or restricted woodland plant species habitat; older woodlands, or larger tree size structure; or
- has high socio-economic, cultural, historic, or educational value as identified in a local official plan

Woodland features have been mapped in Appendix C, Figure C-3, using MNRF LIO data. Field investigations will occur prior to construction to refine woodland mapping and to assess significance of woodlands using the county Official Plans.

Areas of Natural and Scientific Interest (ANSI)

Life science ANSIs are significant representative segments of Ontario's biodiversity and natural landscapes, including specific types of forests, valleys, prairies, savannahs, alvars and wetlands, their native plants and animals, and their supporting environments. They contain relatively undisturbed vegetation and landforms, and their associated species and communities. Provincially significant life science ANSIs include the most significant and best examples of the natural heritage features in the province, and many will correspond to other significant features and areas such as wetlands, valleylands and woodlands (MNR 2010).

A review of MNRF LIO mapping (MNRF 2020a) and the NHIC (MNRF 2020b) showed that there is one life science ANSIs within 120m of the Study Area: The Komoka Provincial Park.

3.3.3 Wildlife, Wildlife Habitat and Species at Risk

The background information summarized in this section is based on online data sources. Terrestrial background data were collected from the NHIC database (MNRF 2020a), Land Information Ontario (LIO) database (MNRF 2020b), and various wildlife atlases.

Significant Wildlife Habitat

Wildlife habitat is defined as an area where plants, animals and other organisms live, including areas where species concentrate at a vulnerable point in their life cycle, and areas that are important to migratory and non-migratory species (MNR 2000). Significant wildlife habitats are grouped into four categories:

1. Seasonal concentration areas
2. Animal movement corridors
3. Rare vegetation communities or specialized habitats

4. Habitats of species of conservation concern

The presence of Significant Wildlife Habitat (SWH) in the Study Area was determined in two ways. First, publicly available NHIC data was reviewed for SWH (MNRF 2020b). Second, potential SWH was identified using the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF 2015) which provide descriptions of wildlife habitats and guidance on criteria for determining the presence of SWH. Details of the significant wildlife assessment are summarized below.

Seasonal Concentration Areas

Seasonal Concentration Areas are sites where large numbers of a species gather at one time of the year, or where several species congregate. Only the best examples of these concentration areas are typically designated as SWH. Review of the NHIC (MNRF 2020b) database identified a single seasonal concentration area within the Study Area; a deer wintering area (Figure C-3, Appendix C), which is crossed by the Alternative Route. Other potential seasonal concentration areas that may occur in the Study Area are assessed in Table E-1, Appendix E.

Field investigations prior to construction will assess the presence and quality of candidate seasonal concentration areas.

Rare vegetation communities or specialized habitats

Rare vegetation communities or specialized habitats are defined as separate components of SWH. Rare vegetation communities are habitats that are considered rare or uncommon in the ecoregion, as defined in the SWH Criteria Schedules (MNRF 2015). These habitats may support wildlife species that are considered significant. Specialized habitats are microhabitats that are critical to some wildlife species. Review of the NHIC (MNRF 2020b) database did not identify any rare vegetation communities or specialized habitats within the Study Area. Potential rare vegetation communities or specialized habitats based on the SWH Criteria Schedule for Ecoregion 7E (MNRF 2015) are discussed in Table E-1, Appendix E.

Field investigations prior to construction will assess the presence and quality of rare vegetation communities or candidate specialized habitats.

Habitat for Species of Conservation Concern

Habitat for SOCC is habitat which supports provincially-rare (S1-S3 ranked species) and provincially-designated Special Concern species. Status rankings (S-ranks) for wildlife are based on the number of occurrences in Ontario and have the following meanings:

- S1: critically imperiled; often fewer than 5 occurrences
- S2: imperiled; often fewer than 20 occurrences
- S3: vulnerable; often fewer than 80 occurrences

The NHIC database was searched to obtain recent records (2000 - present) of species of conservation concern (S1-S3 ranked species and provincially-designated Special Concern species) in the Study Area.

The Ontario Breeding Bird Atlas (Cadman et al. 2007), the Ontario Reptile and Amphibian Atlas (Ontario Nature 2020), the Ontario Mammal Atlas (Dobbyn, 1994) and the Ministry of Natural Resources and Forestry Species at Risk in Ontario (SARO) list (MNRF 2019) were also searched. The exact location of species occurrences is not available from these atlases; instead, occurrences are recorded within 1 x 1 km or 10 x 10 km squares.

Based on a review of background information, SOCC are known to occur in the vicinity of the Study Area, as shown in Table E-1, Appendix E, including 6 birds, 1 insect, 4 reptiles, and 1 mammal. The potential for SOCC to be present in the Study Area is limited by habitat suitability and availability; therefore, species listed in Table E-1, Appendix E may not occur in the Study Area. An assessment of candidate habitat and/or habitat use for individual SOCC will be completed during field investigations prior to construction.

Animal Movement Corridors

Animal movement corridors are elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another (MNR 2000). Rivers, creeks, and drains may be used as movement corridors; these features were present within 120 m of the existing route and alternative segments. Hedgerows may also serve as small linkages (MNR 2000). Preliminary vegetation community classification indicates the presence of rivers, drains and linear hedgerows within 120 m of the existing route and alternative segments.

Species at Risk

For the purpose of this report, SAR are those species identified as endangered or threatened by provincial (ESA) legislation. The NHIC database was searched to obtain recent records (2000 – present) of SAR from the vicinity of the existing route and alternative segments. The Ontario Breeding Bird Atlas (Cadman et al. 2007), the Ontario Reptile and Amphibian Atlas (Ontario Nature 2020), the Ontario Mammal Atlas (Dobbyn 1994) and the MNRF SARO list (MNRF 2019) were also searched. The exact location of species occurrences is not available from these atlases; instead, occurrences are recorded within 1 x 1 km or 10 x 10 km squares.

Based on a review of background information, 30 SAR are known to occur in the vicinity of the Study Area, as shown in Table E-2, Appendix E, including 13 birds, 8 plants, 5 reptiles, and 4 mammals. An assessment of candidate habitat and/or habitat use for SAR will be completed during 2020 field investigations.

Stantec completed a desktop assessment to evaluate the existing conditions of the existing route and alternative segments. Most of the land along the existing route and alternative segments is municipal road allowance, with adjacent land being used for agricultural row crops. Woodland and wetland is within proximity (10 m) to the existing route and alternative segments as shown in Table 3-7.

3.4 SOCIO-ECONOMIC ENVIRONMENT

3.4.1 Employment and Business

Existing Conditions

The most recent economy and employment statistics are provided in the 2016 Census of Population data released by Statistics Canada. Table 3-8 summarizes the total population of persons 15 years and over, the total labour force and of those the persons employed, and the participation, employment and unemployment rates (Statistics Canada, 2017). Unemployment rates are similar between the Municipality of Southwest Middlesex, Municipality of Middlesex Centre and the Municipality of Strathroy-Caradoc and are slightly higher in the Township of Dawn-Euphemia. These rates are all substantially lower than the median Ontario unemployment rate.

Table 3-8: Labour Characteristics, Ontario, Dawn-Euphemia, Southwest Middlesex, Strathroy-Caradoc and Middlesex Centre, 2016

Location	Total Population 15 years and Over	Labour Force	Employed	Participation Rate (percent)	Employment Rate (percent)	Unemployment Rate (percent)
Ontario	11,038,440	7,141,675	6,612,150	64.7	59.9	7.4
Dawn-Euphemia (Township)	1,540	1,010	950	65.4	61.5	5.9
Southwest Middlesex (Municipality)	4,675	3,000	2,865	64.2	61.3	4.5
Strathroy-Caradoc (Municipality)	11,7005	11,235	10,695	66.1	62.9	4.8
Middlesex Centre (Municipality)	13,550	9,690	9,270	71.5	68.4	4.4

Source: Statistics Canada, 2017a.

The median income for all census households in Dawn-Euphemia, Southwest Middlesex, and Strathroy-Caradoc in 2016 were similar, $70,571, $64,000, and $71,582 respectively, which are comparable to the Ontario median income for all census households which was $74,287. The median income for Middlesex Centre was $108,971, which is significantly higher than the other communities and Ontario. The median income for individuals aged 15 years and over followed a similar trend (Table 3-9).

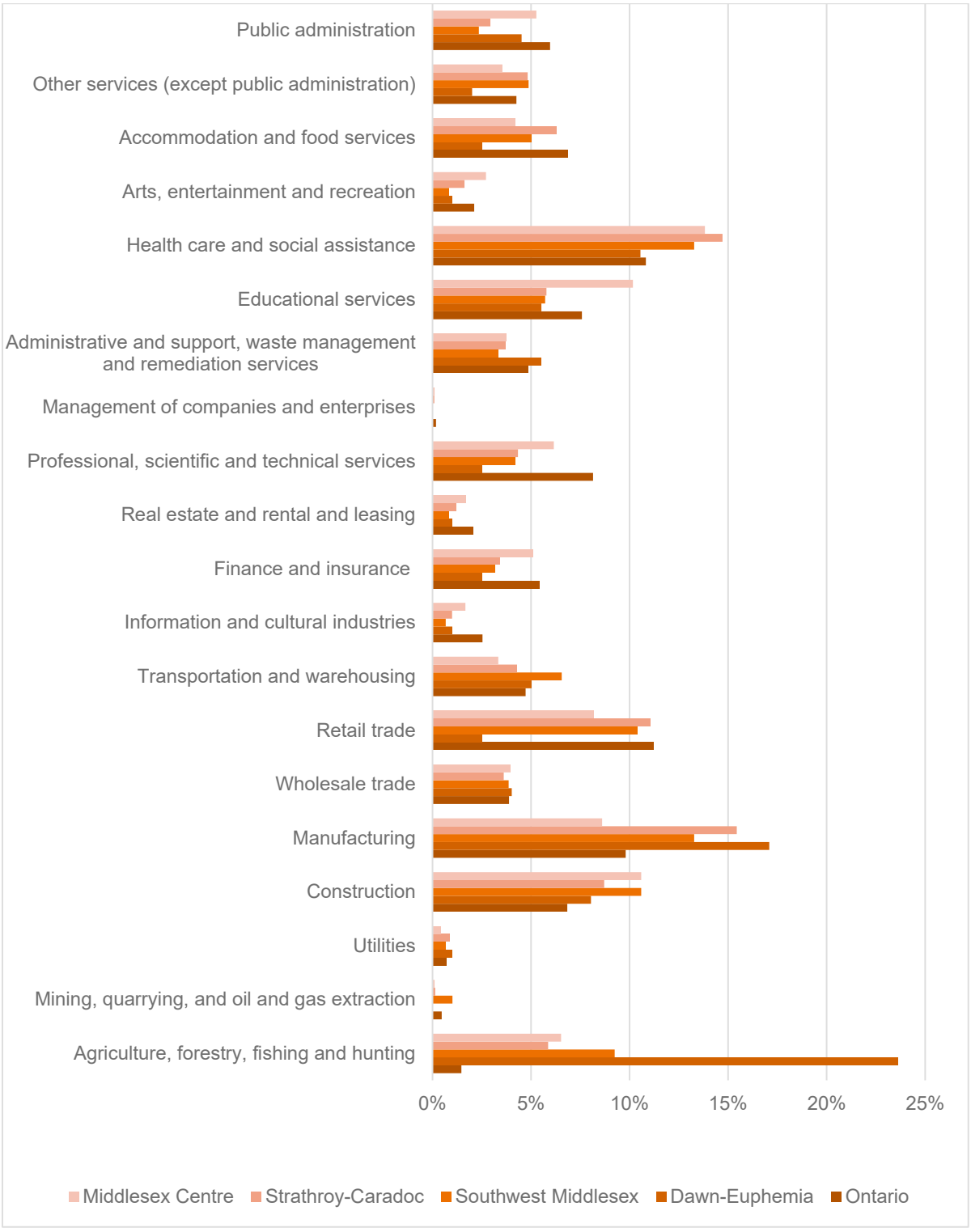
Table 3-9: Median Income, Ontario, Dawn-Euphemia, Southwest Middlesex, Strathroy-Caradoc and Middlesex Centre, 2015

Location	Median Household Total Income	Median Total Income of individuals - 15 Years and Over		
		All individuals	Male	Female
Ontario	$74,287	$33,539	$39,889	$28,676
Dawn-Euphemia (Township)	$70,571	$30,784	$37,888	$23,731
Southwest Middlesex (Municipality)	$64,000	$32,483	$38,997	$26,944
Strathroy-Caradoc (Municipality)	$71,582	$35,032	$42,192	$28,872
Middlesex Centre (Municipality)	$108,971	$45,800	$54,946	$38,694

Source: Statistics Canada, 2017a, 2017b.

Figure 3-1 shows the percentage of the employed population by industry in 2012, as released by Statistics Canada (2016).

Figure 3-1: Distribution of Workforce by Percentage (2012)



3.4.2 Community Services and Infrastructure

Existing Conditions

Demographics

In 2016, the Township of Dawn-Euphemia had a population of 1,970, the Municipality of Southwest Middlesex had a population of 5,720, the Municipality of Strathroy-Caradoc had a population of 20,870 and the Municipality of Middlesex Centre had a population of 17,265 (Statistics Canada, 2017a). Middlesex Centre experienced a modest population increase between 2011 and 2016, slightly above the population growth in Ontario. Dawn-Euphemia, Southwest Middlesex and Strathroy-Caradoc experienced modest decreases in population between 2011 and 2016 (Table 3-10).

Table 3-10: Population by Gender, Dawn-Euphemia, Southwest Middlesex, Strathroy-Caradoc, Middlesex Centre and Province, 2016

Location	Total Population	Male*	Female*	Percent Change from 2011
Ontario	13,448,494	6,559,390	6,889,105	4.6
Dawn-Euphemia	1,970	1,065	910	-4.0
Southwest Middlesex	5,720	2,845	2,880	-2.3
Strathroy-Caradoc	20,870	10,175	10,690	-0.5
Middlesex Centre	17,265	8,605	8,655	4.7

*Numbers are rounded by Statistics Canada and are reported herein exactly as they are reported by Statistics Canada. Totals may not necessarily add up as a result of rounding.

Source: Statistics Canada, 2017a; 2017c.

In 2016, the average age of the population of Dawn-Euphemia was 41.4 years, Southwest Middlesex was 43.0, Strathroy-Caradoc was 42.3 and Middlesex Centre was 41.1 while the average age of the Ontario population was 41.0.

In 2016, 15 residents of Dawn-Euphemia, 160 residents of Southwest Middlesex, 520 residents of Strathroy-Caradoc, and 195 residents of Middlesex Centre identified themselves as Indigenous. Together this represents approximately 0.2% of the provincial Aboriginal population (374,395; Statistics Canada, 2017a).

Permanent and Temporary Accommodations

In 2016, there were 767 occupied private dwellings in the Township of Dawn-Euphemia. The majority (98%) of homes were single-detached houses. In the Municipality of Southwest Middlesex there were 2,354 occupied private dwellings, and the majority (87%) of homes were single-detached houses. In the Municipality of Strathroy-Caradoc, there were 8,294 occupied private dwellings, and the majority (74%) were single-detached houses. In the Municipality of Middlesex Centre there were 5,983 occupied private dwellings, and the majority (94%) of homes were single-detached houses. In 2016, there were 10 rental households in Dawn-Euphemia, 25 in Southwest-Middlesex, 135 in Strathroy-Caradoc and 675 in Middlesex Centre (Statistics Canada 2017a).

The Township of Dawn-Euphemia, the municipalities of Southwest Middlesex, Strathroy-Caradoc and Middlesex Centre are in Provincial Tourism Region 1 (Southwest Ontario). In 2018, the occupancy rate at temporary accommodations in Region 1 was 64.2%, an increase from 50.6% in 2008 and the highest since 2008 (MTCS, 2016). In 2018 there was a total of 376 temporary accommodations within the Provincial Tourism Region 1, the majority of which being classified as hotels, motels and RV parks accounting for 23%, 21% and 22% of the total accommodations, respectively (MHSTCI, 2018).

Temporary accommodations within and adjacent to the Study Area are limited to small bed-and-breakfasts and one Motel in the Municipality of Strathroy-Caradoc, as well as one SCRCA campground (Shetland Conservation Area) located near the western extent of the preferred route, and one private campground (Trout Haven Park) located in the Municipality of Strathroy-Caradoc in the north-eastern extent of the preferred route.

Municipal Services and Infrastructure

The Township of Dawn-Euphemia is supplied water services through the Township of Enniskillen who in turn receives water from the Town of Petrolia's water treatment plant located in Brights Grove on Lake Huron. The Township of Dawn-Euphemia's Public Works Department is responsible for the operation, repair and maintenance of the distribution system, the repairs and replacement of water meters the flushing of water mains and reading the water meters (Dawn-Euphemia, n.d.).

Southwest Middlesex Utilities operates the municipal water system in the Municipality of Southwest Middlesex. This includes the Village of Glencoe, Appin, Melbourne and Wardsville and all of the rural water mains. Southwest Middlesex Utilities also operates the Glencoe Sanitary System and the Wardsville Sanitary Sewer System (Southwest Middlesex, n.d.).

The Municipality of Strathroy-Caradoc and the Municipality of Middlesex Centre are supplied water services through the Lake Huron Primary Water Supply System (LHPWSS). The LHPWSS also supplies water services to the Municipalities of London, Lambton Shores, North Middlesex, South Huron, Bluewater and Lucan-Biddulph from a water treatment plant located north of the Village of Grand Bend in South Huron. The plant has a current treatment capacity of 340 million liters per day and serves a population of approximately 375,000 people (LHPWSS, n.d.).

Health and Education Services and Infrastructure

The Township of Dawn-Euphemia is located within the Lambton Health Unit and the Municipalities of Southwest Middlesex, Middlesex Centre and Strathroy-Caradoc are located within the Middlesex-London Health Unit. In 2013 the Lambton Health Unit serviced 126,200 individuals while the Middlesex-London Health Unit serviced 439,150 individuals (Statistics Canada, 2012). There are currently two hospitals in the in or adjacent to the Study Area: The Four Counties Health Services and the Strathroy Middlesex General Hospital, both of which are part of the Middlesex Hospital Alliance.

There is one public primary school in the Township of Dawn-Euphemia (Dawn-Euphemia Public School), which is part of the Lambton Kent District School Board. The schools in the Municipalities of Southwest Middlesex, Strathroy-Caradoc and Middlesex Centre are all apart of either the Thames Valley District School Board or the London District Catholic School board. In the Municipality of Southwest Middlesex there is one public high school and two public elementary schools (Glencoe District High School, Ekcoe Central Public School and Mosa Central Public School) and one Catholic elementary school (St. Charles Catholic School). In the Municipality of Strathroy-Caradoc there are five public elementary schools (Caradoc Public School, Caradoc North Public School, Mary Wright Public School, J.S. Buchanen French Immersion, and North Meadows Public School), one public high school (Strathroy District Collegiate Institute), two Catholic elementary schools (St. Vincent de Paul and Our Lady Immaculate), and one Catholic high school (Holy Cross). In the Municipality of Middlesex Centre there are five public elementary schools (Delaware Central Public School, Parkview Public School, Valleyview Central Public School, Oxbow Public School and Centennial Central Public School), one public high school (Medway High School) and one Catholic elementary school (Our Lady of Lourdes).

There is one school located adjacent to the existing route, Dawn-Euphemia Public School, located in Dawn Euphemia. No other schools were identified within 500m of the existing route or alternative segments.

Roads, Highways and Culverts

The Public Works department of the County of Lambton is responsible for managing the County of Lambton Road system, which includes almost 650 km of roadway and over 190 bridges and major culverts. The County of Lambton is responsible for managing Bentpath Line which parallels approximately 15 km of the preferred route. The Roads Division of the Public Works department of the Township of Dawn-Euphemia is responsible for road and culvert maintenance for approximately 40 km of paved roads and 480 km of gravel roads. The Public Works Department of the Municipality of Southwest Middlesex oversees approximately 59 km of hard surface roads and over 360 km of gravel roads, 14 bridges and 67 road culverts. The Engineering and Public Works Department of the Municipality of Strathroy-Caradoc is responsible for all roads, sidewalks and storm sewers within the municipality boundaries. The road network of the Strathroy-Caradoc municipal boundary includes 323 km of roadways comprised of collector, arterial and local roads.

Policing, Fire and Emergency Response Services

The Township of Dawn-Euphemia, the Municipality of Southwest Middlesex and the Municipality of Middlesex Centre have contracted their Police Services with the Ontario Provincial Police. There are three detachments near the preferred route within Middlesex County located in Glencoe, Delaware and Strathroy (OPP, 2020). The Municipality of Strathroy-Caradoc has its own Police Service which employees 31 police officers and 13 civilian staff (Strathroy-Caradoc Police Services, n.d).

Fire Services are provided by trained volunteers in the Municipality of Southwest Middlesex, the Municipality of Strathroy-Caradoc and the Township of Dawn-Euphemia. The Strathroy-Caradoc Fire Department operates three fire stations located in Strathroy, Mount Brydges and Melbourne. The Municipality of Southwest Middlesex operates two stations, one located in Glencoe and the other in Wardsville. The Township of Dawn-Euphemia operates four fire stations, located in Dawn-Euphemia (servicing the former Dawn portion of the Township), Bothwell (servicing the southern part of the former Township of Euphemia), Inwood (servicing the westerly portion of the former Township of Euphemia) and Alvinston (servicing the eastern portion of the former Township of Euphemia). The County of Middlesex provides coordination and dispatching of fire services in these communities via 9-1-1 fire dispatch technology and a county-wide two-way radio communication system. The Municipality of Middlesex Centre maintains a fire services department which consists of five fire stations, staffed full-time by paid, professionally trained, on-call firefighters.

The County of Middlesex is responsible for providing land ambulance services to all residents of the County of Middlesex, including those in the City of London, and Lambton County is responsible for providing land ambulance services to all residents of Lambton County.

3.4.3 Culture, Tourism and Recreational Facilities

Existing Conditions

The Study Area contains numerous cultural, tourism and recreational facilities including parks and trails, golf courses, museums, community centres and agricultural halls. The Study Area contains several conservation areas and green spaces including Komoka Provincial Park, Lions Park (located in Mount Brydges), Clark Wright Conservation Area and Shetland Conservation Area, access to fishing along the Sydenham River, the Thames River and commercial fishing areas such as Komoka Spring Trout Farm and Trout Haven Park. A local tourist attraction in the area is Kustermans Family Farm, which offers pick-your-own activities for seasonal agricultural products including blueberries, strawberries, raspberries and pumpkins. Kustermans Family farm also operates a farm market, bakery, and adventure farm.

Mapped culture, tourism and recreational facilities within the Study Area are in Appendix C, Figure C-2.

3.4.4 Infrastructure

Existing Conditions

Infrastructure crossed by the existing route and alternative segments route includes roads/highways, access roads/driveways, hydroelectric lines, a railway (Canadian Pacific Railway), constructed drains and utilities. Existing conditions for roads and highways are outlined in Section 4.4.2. The existing route and alternative segments intersect and run parallel to existing overhead hydro and telecommunications utilities.

The existing route crosses an active CP railway line near CPR Drive, approximately 3 km west of the Municipality of Southwest Middlesex, at Falconbridge Drive leading into the Hydro One Networks Inc. (HONI) facility, also in the Municipality of Southwest Middlesex, at Amiens Road in the Municipality of Middlesex Centre and at Sutherland Road in the Municipality of Strathroy-Caradoc.

A variety of buried utilities such as telecommunication cables, low-voltage hydroelectric lines and watermains are located in road RoWs.

Mapped infrastructure crossed by the existing route and alternative segments route is in Appendix C, Figure C-2.

3.4.5 Air Quality and Noise

Existing Conditions

Except for the eastern end of the Study Area, which encompasses residential land within Strathroy, the landscape within and adjacent to the Study Area is almost entirely agricultural, open space or natural heritage. Agricultural operations have the potential to expel air emissions. Although the Study Area does not have a high population density, air emissions will be released through automobile use.

According to Environmental Noise Guideline (MECP 2019), the majority of the landscape within and adjacent to the Study Area would be categorized as a Class 3 area, meaning “a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as a small community; agricultural area; a rural recreational area such as a cottage or a resort area; or a wilderness area.” Portions of the landscape within the Study Area in proximity to town centers and sub-urban areas would be categorized as a Class 2 area, meaning “an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 areas” with an acoustical environmental dominated by the activities of people, usually road traffic during the day, and evening and night background sound defined by natural environment and infrequent human activity.

The area experiences a low traffic volume that represents a minimal source of noise for the majority of the existing route and alternative segments, with increased traffic volume in the vicinity of Enbridge’s Dawn Centre, southwest of the Municipality of Strathroy-Caradoc along Christina Road and Adelaide Road and north east of Mount Brydges. Other minor noise sources within the Study Area include occasional sounds due to anthropogenic agricultural activities and occasional sounds due to anthropogenic domestic activities such as property maintenance and recreation.

3.4.6 Contaminated Sites

Existing Conditions

According to MECP records, there are no landfills, contaminated sites or hazardous waste sites within 500 m of the existing route or alternative segments.

There are no contaminated sites within the Study Area according to the Federal Contaminated Sites Inventory. The closest known contaminated site is located along Side Road 4, approximately 10 km southeast of the Study Area boundary, within the Munsee-Delaware Nation. At this location contaminated media recorded included petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbon (PAHs), and other inorganics found in the soil and inorganics present in the groundwater as well.

Potentially contaminated sites, as identified by the Hazardous Waste Information Network (HWIN), located outside of the Study Area boundary but within the general Project area are noted in Figure C-2, Appendix C.

3.4.7 Waste Management

Existing Conditions

The County of Lambton currently operates a single landfill within its County boundaries: the Dawn Landfill Site, located approximately 2.5 km west of Oil Heritage Road at 4084 Langbank Line in the Township of Dawn-Euphemia. Middlesex County currently operates two Enviro Depot's; the Denfield Road Enviro Depot located at 23053 Denfeld Road, which accepts yard waste, e-waste, tires, recycling, mixed construction and demolition waste, mixed solid waste, white goods metal, large bulky items and household waste, and the Longwoods Road Enviro Depot located at 10191 Longwoods Road, which accepts yard waste, e-waste, tires and recycling. Middlesex County operates a Recycling Depot, Try Recycling Depot located at 21463 Clarke Road, which accepts yard waste, e-waste, tires, mixed construction and demolition waste, white goods, metal and large bulky items.

The Municipality of Southwest Middlesex operates a transfer station at the site of the former Trillium Landfill, closed in 2018, located at 3945 Trillium Drive. Accepted materials at the Southwest Middlesex transfer station include large household waste, whitegoods, bulk recyclables and clean wood and brush.

Active and closed landfills located outside of the Study Area but within the general Project area are noted in Figure C-2, Appendix C.

3.4.8 Land Use

Existing Conditions

The Study Area is in the Township of Dawn-Euphemia, the Municipalities of Southwest Middlesex, Strathroy-Caradoc and Middlesex Centre, and in portions of the County of Lambton and County of Middlesex. While most of the preferred pipeline is proposed to be constructed within existing RoWs, some sections cross public and private lands with various designations.

Township of Dawn-Euphemia

According to the Official Plan for the Township of Dawn-Euphemia (2015) lands that are crossed by the Study Area are designated as primarily agricultural and agricultural – no farm dwelling. The remainder of the Study Area in the Township boundary is designated as environmental protection – significant woodlot and institutional. Under Section 12.1.1 (Public Uses and Utilities) "…the following public services and facilities are permitted in all land use categories, subject to the development policies of this Plan…pipelines for the transmission of oil, gas, brine or other liquid products of the oil and gas industry, including any appurtenances thereto".

Municipality of Middlesex Centre

Within the Municipality of Middlesex Centre, the land use designations within the Study Area boundary is primarily agriculture according to the Official Plan (2018), with floodplains occurring in the area of Glendon Drive. The land use designations in the Study Area along Amiens Road, Glendon Drive and Komoka Road include parks and recreation, natural environment, settlement employment, rural commercial, settlement commercial, medium density residential and natural heritage enhancement area. Section 4.11 (Gathering Lines and Works) of the Official Plan states that "subject to consultation with the Municipality or the appropriate road authority, the routing of field or gathering pipelines along road rights-of-ways where it does not impact road safety and maintenance needs" may be allowed by council. As per Section 9.4.5 of the Plan "the construction of major electric power lines, gas or oil pipelines, and other utility lines or services should be located so as to minimize their impact on people, adjacent land uses, and the environment".

Municipality of Strathroy-Caradoc

Within the Study Area in the Municipality of Strathroy-Caradoc boundary, the primary land use designation is agricultural. A section of the Study Area, north of Mount Brydges, is designated as residential. Section 7.1 (Public Utilities and Infrastructure) of the Plan states that "the use land for the provision and maintenance of public utilities and infrastructure (e.g. water supply, sanitary sewage disposal, roads, electricity, natural gas, telecommunications) and any buildings, structures or appurtenances thereto shall be permitted in all land use designations in accordance with any and all environmental requirements and approvals without an amendment to this Plan or the Zoning By-Law".

Municipality of Southwest Middlesex

In the Municipality of Southwest Middlesex, the land use designation in the Study Area is entirely agricultural according to the Official Plan (2019). As per Section 6 (Infrastructure) of the Plan "the use of land for the provision and maintenance of public utilities and infrastructure (e.g., water supply, sanitary sewage disposal, roads, electricity, natural gas, telecommunications) and any buildings, structures or appurtenances thereto shall be permitted in all land use designations in accordance with any and all environmental requirements and approvals without an amendment to this Plan".

3.4.9 Archaeological Resources

Existing Conditions

A Stage 1 Archaeological Assessment (AA) (Appendix F) has been conducted for the route evaluation Study Area. The Stage 1 AA was completed in accordance with the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario, 2011). A copy of the completed Stage 1 AA report will be submitted to the MHSTCI for review and inclusion into the *Ontario Public Register of Archaeological Reports*.

Initial background research compiled information concerning registered archaeological resources and sites within the Study Area. A query of the *Ontario Archaeological Sites Database* identified 100 registered archaeological sites within one (1) kilometre of the Study Area, with five (5) of these sites either within, or within 50 metres, of the Study Area. Background research through a query of the *Ontario Public*

Register of Archaeological Reports identified 23 previous archaeological assessments which may document work within the broad Stage 1 AA study area or within 50 metres of it. An inspection of the study area by a licensed archaeological was completed between November 25, 2019 and June 19, 2020.

The Stage 1 AA determined that portions of Study Area retain potential for the identification and documentation of archaeological resources. Figure 17 in Appendix F provides an illustration of archaeological potential for the project.

3.4.10 Heritage Resources and Cultural Heritage Landscapes

Existing Conditions

The MHSTCI *Criteria for Evaluation Potential for Built Heritage Resources and Cultural Heritage Landscapes Checklist* (the Checklist) was completed for the Study Area. The Checklist is used to identify protected and potential heritage properties within the study area and make recommendations for future work, as appropriate.

In order to identify heritage resources, the MHSTCI, Ontario Heritage Trust (OHT), Township of Dawn Euphemia, Municipality of Southwest Middlesex, Municipality of Strathroy-Caradoc, and Municipality of Middlesex Centre were consulted. As a result of the consultation, no protected properties or heritage interests were identified. At the provincial level, Karla Barboza, Team Lead, Heritage with MHSTCI confirmed that there are no provincial heritage properties or properties designated by the Minister within or adjacent to the Study Area. Kevin De Mille, Heritage Planner with OHT, reported that there are no OHT conservation easements or Trust owned properties within or adjacent to the Study Area.

At the municipal level, Terri Towstiuc, Deputy Clerk, with the Township of Dawn Euphemia, provided a Council resolution from their regular meeting held on March 2, 2020, that the Council is to advise Stantec that to the best of their knowledge there are no municipal heritage interests within or adjacent to the study area. Shelia McCahon, Deputy Clerk, with the Municipality of Southwest Middlesex provided a link to the Middlesex County interactive map, which provides information on Significant Woodlands, Natural Heritage, SAR, Wetlands and Conservation Areas. The Municipality of Southwest Middlesex does not have any listed or designated heritage properties. Jennifer Huff, Planner, with the Municipality of Strathroy-Caradoc, confirmed that there are no protected heritage resources within or adjacent to the study area. Jake Strauss, Transportation Manager, with the Municipality of Middlesex Centre, confirmed that the municipality does not have any heritage municipal properties or interests in the study area.

The Checklist was completed for the Study Area based on the results of the background research, agency consultation, and review of historic mapping. Overall, five indicators of cultural heritage value or interest (CHVI) were identified in the Study Area. Results of the Checklist are included in Table 3-11 and the completed checklist is included in Appendix G.

Table 3-11: Screening for Known (or recognized) Cultural Heritage Value According to the MHSTCI Checklist

Indicators of Cultural Heritage Value or Interest	Identified within the Study Area
Property identified, designated or otherwise protected under the OHA as being of cultural heritage value	Not identified
A National Historic Site (or part of)	Not identified
Designated under the *Heritage Railway Stations Protection Act*	Not identified
Designated under the *Heritage Lighthouse Protection Act*	Not identified
Identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office	Not identified
Located within a United Nations Educational, Scientific and Cultural Organization World Heritage Site	Not identified
Is subject of a municipal, provincial or federal commemorative or interpretative plaque	Not identified
Has or is adjacent to a known burial site and/or cemetery	Identified
Is in a Canadian Heritage River watershed	Identified
Contains buildings or structures that are 40 or more years old	Identified
Is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area	Identified
Has a special association with a community, person or historical event	Not identified
Contains or is part of a cultural heritage landscape	Identified

3.4.11 Indigenous Interests

Existing Conditions

There are no Indigenous communities located within the Study Area, however, the MENDM identified the potential for impacts to the following Indigenous communities:

- Aamjiwnaang First Nation;
- Caldwell First Nation;
- Chippewas of Kettle and Stoney Point;
- Chippewas of the Thames First Nation;
- Oneida Nation of the Thames; and,
- Walpole Island First Nation.

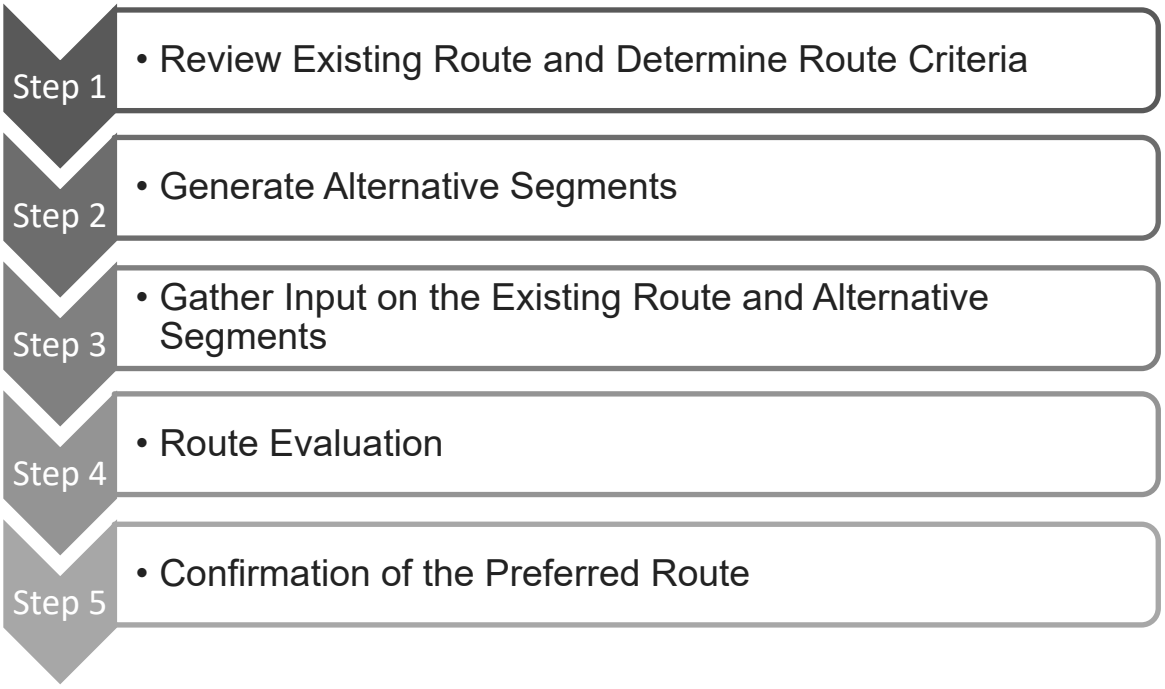
Ontario, as the Crown, has a legal duty to consult with Indigenous peoples regarding projects or decisions that may adversely impact constitutionally protected Indigenous or treaty rights.

4.0 ROUTE EVALUATION AND SELECTION

4.1 THE PROCESS

The route evaluation process was undertaken as per the *OEB Environmental Guidelines* (2016), which identify the environmental and socio-economic features to take into consideration and the principles to be considered during the route evaluation. The preferred route for the proposed project was confirmed through a five-step process, as illustrated in Figure 4-1.

Figure 4-1: Route Evaluation Methodology



4.2 STUDY AREA

The Study Area (Figure A-1, Appendix A) encompasses an area of approximately 11,921 hectares (ha) within the Township of Dawn-Euphemia, Municipalities of Southwest Middlesex, Middlesex Centre, Strathroy-Caradoc and in the Counties of Lambton and Middlesex. The Study Area is the area within which direct interactions with the socio-economic and natural environment could occur and allow for a reasonable number of alternative segments to be considered. Alternative route segments were located within the existing municipal road allowances, where possible. As such, the Study Area was established extending 500 m on either side of the existing route and alternative segments. It is within this area that desktop information on socio-economic and environmental features has been collected for assessing the potential impacts of the Project.

4.3 STEP 1: DETERMINE ROUTE CRITERIA

4.3.1 Routing Objectives

The routing methodology is influenced by Enbridge's preference to utilize existing municipal road allowance to locate the preferred pipeline route (Figure A-2, Appendix A). Stantec's role was to determine through qualitative and quantitative assessment the environmentally preferred route for the Project.

The process of developing alternative routes commenced with the identification of routing objectives. These include:

- Routes should follow a reasonably direct path between end-points from connections to existing infrastructure, thus reducing length as well as potential for socio-economic and environmental and effect.
- Routes should avoid sensitive socio-economic and environmental features to the extent possible; where they cannot be avoided routes should be located to reduce effects.
- If road allowance cannot be followed, existing linear infrastructure should be utilized to the greatest extent possible to reduce effects to previously undisturbed land and/or constrain future land development.
- Where new easements are required, existing lot/property lines should be followed to the extent possible within the Study Area.

4.3.2 Environmental and Socio-Economic Opportunities and Constraints

The route selection process was completed with consideration of the *OEB Environmental Guidelines* (2016). Chapter 4 of the *OEB Environmental Guidelines* (2016), 'Route or Site Selection', outlines the socio-economic and environmental features that should be considered during route evaluation.

A geographical information system (GIS)-based environmental inventory was compiled to identify existing features in the Study Area. Once the inventory was complete, Stantec classified the features as either pipeline routing constraints or opportunities.

Socio-economic and environmental constraints are existing features that meet the following criteria:

- The feature would require site-specific mitigation measures to reduce potential effects.
- The feature has been selected or designated for protection.
- The feature has been recognized through local, regional, provincial, or federal policy, plan, or statute, or is otherwise valued as an environmental or socio-economic resource.

Socio-economic opportunities are existing features, such as property lines or existing linear infrastructure, which provide a suitable location for the alignment of the pipeline.

Existing features were identified using published literature, maps and digital data, and discussions with agencies and the Municipalities of Strathroy-Caradoc, Middlesex Centre, Southwest Middlesex, the Township of Dawn-Euphemia, and the Counties of Lambton and Middlesex, and confirmed through field visits. The location and extent of socio-economic and environmental features are outlined in Section 3 of this ER and illustrated in Figure C-2, C-3, C-4 and C-5, Appendix C.

4.4 STEP 2: GENERATE ROUTE OPTIONS

Generation of route alternatives was based on the routing objectives, Study Area, and environmental and socio-economic constraints and opportunities identified in Step 1. Alternative route generation was conducted by staff from Stantec and Enbridge, using aerial photography interpretation, and mapping of existing environmental and socio-economic constraints and opportunities. Alternative segments were selected to follow roadways where possible, and were assigned letters to selected route sections, as shown in Appendix A, Figure A-2.

The existing route sections are comprised of sections: A through G.

The alternative route segments are comprised of segments H through Z and segment AA. These route segments were grouped into four sections, based on relative location, as described below in Sections 4.4.2 – 4.4.5.

4.4.1 Existing Route

The existing route follows the road RoWs and pipeline easements where the London Lines pipeline sections are currently located, and includes route sections A through G:

- Route section A commences at the Enbridge Dawn Centre located at 3012 Bentpath Line, proceeding along Bentpath Line, and ends at the point on Bentpath Line where the pipeline leaves the road RoW and begins to travel along the pipeline easement.
- Route section B extends from the point on Benthpath Line, extending along the pipeline easement and ending at the intersection of Mosside Line and McAuslan Road.
- Route section C beings at the intersection of Mosside Line and McAuslan Road, continuing along Mosside Line ending at the intersection of Mosside Line and Watterworth Road.
- Route section D beings at the intersection of Mosside Line and Watterworth Road and then travels along the existing pipeline easement, ending at the intersection of Falconbridge Drive and Dundonald Road.
- Route section E1 beings at the intersection of Falconbridge Drive and Dundonald Road, travelling along Falconbridge Drive and ends southeast of the intersection of Falconbridge Drive and Adelaide Road.

- Route section E2 beings southeast of the intersection of Falconbridge Drive and Adelaide Road, travelling across the pipeline easement, across Springwell Road, under Highway 402 and ending at the intersection of Amiens Road and the CN line to Amiens Road.
- Route section F extends southeast along Amiens Road then northeast along Glendon Drive, ending at the point where the pipeline easement leaves the road RoW.
- Route section G extends from Glendon Drive, along the existing pipeline easement and ending at the intersection with Komoka Road.

4.4.2 Alternative Segment 1 – Florence (F1)

Segment 1 was developed as an alternative to route section B of the existing route. Segment 1 (F1) includes route segment H:

- F1 (Route segment H) extends from the segment of Bentpath Line where the existing route begins to cross the pipeline easement, proceeding north along Forest Road then east along Mosside Line to the segment of the existing route reaches Mosside Line.

4.4.3 Alternative Segment 2 – Glencoe

Segment 2 was developed as an alternative to route section D of the existing route. Within Segment 2, three distinct routes were developed.

4.4.3.1 Glencoe 1 (G1)

The first of three distinct routes within Segment 2 (G1), includes route segments I, K, L, N, O and Q:

- Route segment I extends from the segment of Mosside Line where the existing route beings to cross the pipeline easement, proceeding south along Watterworth Road, then northeast along Oilfield Drive at the intersection with Big Bend Road.
- Route segment K extends from the intersection of Big Bend Road and Oil Field Drive, travelling along Oil Field Drive then proceeding southeast along Pratt Siding Road to the intersection with Knapdale Drive.
- Route segment L extends from the intersection of Pratt Siding Road and Knapdale Drive, travelling southeast along Pratt Siding Road then proceeding northeast along CPR Drive to the intersection with Old Airport Road.
- Route segment N extends from the intersection of Knapdale Drive and Old Airport Road, travelling southeast along Old Airport Road to the intersection with CPR Drive.
- Route segment O extends from the intersection of Knapdale Drive and Old Airport Road, travelling northeast along Knapdale Drive then at the intersection of Knapdale Drive and Dundonald Road travelling southeast to the intersection of CPR Drive and Dundonald Road.

- Route segment Q extends from the intersection of Dundonald Road and CPR Drive to the segment of the existing route at the intersection of Dundonald Road and Falconbridge Drive.

4.4.3.2 Glencoe 2 (G2)

The second of three distinct routes within Segment 2 (G2), includes route segments J, K, L, P and Q:

- Route segments J extends from the segment of Mosside Line where the existing route begins to cross the pipeline easement, proceeding north along Watterworth Road, then northeast along Argyll Drive, then south along Big Bend Road to the intersection with Oil Field Drive.
- Route segments K extends from the intersection of Big Bend Road and Oilfield Drive, travelling along Oilfield Drive then proceeding southeast along Pratt Siding Road to the intersection with Knapdale Drive.
- Route segments L extends from the intersection of Pratt Siding Road and Knapdale Drive, travelling southeast along Pratt Siding Road then proceeding northeast along CPR Drive to the intersection with Old Airport Road.
- Route segments P extends from the intersection of CPR Drive and Old Airport Road, travelling northeast along CPR Drive to the intersection with Dundonald Road.
- Route segments Q extends from the intersection of Dundonald Road and CPR Drive to the segment of the existing route at the intersection of Dundonald Road and Falconbridge Drive.

4.4.3.3 Glencoe 3 (G3)

The third distinct route within Segment 2 (G3), includes route segments I, K, M, N, P and Q:

- Route segment I extends from the segment of Mosside Line where the existing route beings to cross the pipeline easement, proceeding south along Watterworth Road, then northeast along Oil Field Drive at the intersection with Big Bend Road.
- Route segment K extends from the intersection of Big Bend Road and Oil Field Drive, travelling along Oil Field Drive then proceeding southeast along Pratt Siding Road to the intersection with Knapdale Drive.
- Route segment M extends from the intersection of Knapdale Drive and Pratt Siding Road, travelling northeast along Knapdale Drive to the intersection with Old Airport Road
- Route segment N extends from the intersection of Knapdale Drive and Old Airport Road, travelling southeast along Old Airport Road to the intersection with CPR Drive.
- Route segment P extends from the intersection of CPR Drive and Old Airport Road, travelling northeast along CPR Drive to the intersection with Dundonald Road.

- Route segment Q extends from the intersection of Dundonald Road and CPR Drive to the segment of the existing route at the intersection of Dundonald Road and Falconbridge Drive.

4.4.4 Alternative Segment 3 – Komoka (K1)

Segment 3 was developed as an alternative to route sections E2, F and G of the existing route. Segment 3 (K1) includes route segments R and S:

- Route segment R extends from the segment of Falconbridge Drive, south of Adelaide Road, where the existing route begins to cross the pipeline easement, then proceeds northeast along Falconbridge Drive, travelling under Highway 402, then proceeding along Avro Drive, then southeast along Amiens Road to the segment of the existing route at the intersection of Amiens Road and the Canadian National Railway line.
- Route segment S extends from the segment of Glendon Drive where the existing route beings to cross the pipeline easement, continuing northeast along Glendon Drive, then travelling southeast along Komoka Road to the intersection of Komoka Road and the existing route segment.

4.4.5 Alternative Segment 4 – Strathroy Extension

Three alternatives were proposed for the pipeline extension from the existing pipeline route to the Municipality of Strathroy-Caradoc.

4.4.5.1 Strathroy Extension 1 (S1)

The first of the three alternatives, Strathroy Extension 1 (S1), includes route segments U, V, Z and AA:

- Route segment U extends from the intersection of Adelaide Road and Christina Road, travelling west along Adelaide Road, then southeast along Walkers Drive to the intersection with Sutherland Road.
- Route segment V extends from the intersection of Walkers Drive and Sutherland Road, travelling northwest along Sutherland Road and then northeast along Calvert Drive.
- Route segment Z extends from the intersection of Christina Road and Olde Drive, travelling northwest along Christina Road to the intersection of Christina Road and Adelaide Road.
- Route segment AA extends from the segment of the existing route at the intersection of Falconbridge Drive and Christina Road, travelling northwest along Christina Road to the intersection of Olde Drive and Christina Road.

4.4.5.2 Strathroy Extension 2 (S2)

The second of the three alternatives, Strathroy Extension 2 (S2) includes route segments T, U and V:

- Route segment T extends from the segment of the existing route at the intersection of Adelaide Road and Falconbridge Drive, travelling west along Adelaide Road to the intersection with Christina Road.
- Route segment U extends from the intersection of Adelaide Road and Christina Road, travelling west along Adelaide Road, then southeast along Walkers Drive to the intersection with Sutherland Road.
- Route segment V extends from the intersection of Walkers Drive and Sutherland Road, travelling northwest along Sutherland Road and then northeast along Calvert Drive.

4.4.5.3 Strathroy Extension 3 (S3)

The third of three alternatives, Strathroy Extension 3 (S3), includes route segments AA, X, W and V:

- Route segment AA extends from the segment of the existing route at the intersection of Falconbridge Drive and Christina Road, travelling northwest along Christina Road to the intersection of Olde Drive and Christina Road.
- Route segment X extends from Christina Road along Olde Drive, to the intersection with Sutherland Road.
- Route segment W extends from the intersection of Sutherland Road and Olde Drive, proceeding northwest along Sutherland Road to the intersection of Sutherland Road and Walkers Drive.
- Route segment V extends from the intersection of Walkers Drive and Sutherland Road, travelling northwest along Sutherland Road and then northeast along Calvert Drive.

4.4.5.4 Strathroy Extension 4 (S4)

Through consultation with the Municipality of Strathroy-Caradoc, further alternative segments were added along Sutherland Road and Olde Drive. The routes were reviewed internally by Enbridge's Engineering and Operations groups and the routes were determined to be feasible. These alternative segments, collectively called S4, were identified as route segments W, X and Y:

- Route segment W extends from the intersection of Sutherland Road and Olde Drive, proceeding northwest along Sutherland Road to the intersection of Sutherland Road and Walkers Drive.
- Route segment X extends from the intersection of Olde Drive and Sutherland Road, travelling northeast along Olde Drive to the intersection of Olde Drive and Christina Road.
- Route segment Y extends from the segment of the existing route at the intersection of Falconbridge Drive and Sutherland Road, travelling northwest along Sutherland Road to the intersection of Sutherland Road and Olde Drive.

No feasible alternatives were determined for route sections A, C or E1. These three route sections were carried forward when developing the preferred route and were therefore not included in the route evaluation in Section 4.5 below.

4.5 STEP 3: ROUTE EVALUATION

4.5.1 Evaluation Methodology

The existing route and alternative segments underwent a comparative evaluation to predict the potential environmental and socio-economic effects of constructing and operating each route section and to determine which route was preferred from both an environmental and socio-economic perspective. The following are criteria were included in the comparative evaluation:

- **Agricultural:** Length of prime agricultural land and artificial agricultural drainage traversed. While the pipeline will be largely constructed within the road allowance there may be instances where TWS may affect agricultural land adjacent to the route section.
- **Route Length:** Length (m).
- **Aquatic:** Number of watercourses crossed.
- **Registered Archeological Sites:** Number of registered archaeological sites within 500 m.
- **Groundwater Resources:** Number of water wells (domestic and livestock wells only) within 150 m of the route sections.
- **Socio-Economic – Infrastructure:** Infrastructure traversed (roads and utility lines).
- **Oil and Gas Wells:** Oil and Gas wells within 100 m of the route sections.
- **Terrestrial Resources:** Total length of PSWs traversed (within 10 m) and total length of CA regulated areas (m).

The buffers that were used were chosen based on the likelihood of the Project to impact these features. The route evaluation features selected to determine the preferred route from the existing route and alterative segments are summarized in the table below.

4.5.2 Agricultural

The soils in the Study Area are classified by the CLI as predominantly Class 2. Soils in Class 2 have moderate limitations that reduce the choice of crops or require moderate conservation practices. For this evaluation criteria, soils classified in CLI 1, CLI 2 and CLI 3 were considered as prime agricultural lands.

Table 4-1: Agricultural Summary Table

Route Sections and Route Segments	Prime Agricultural Land (km)
Segment 1 – Florence	
Existing Route (ER) (section B)	**4.4**
F1 (segment H)	5.5
Segment 2 – Glencoe	
ER (section D)	**9.4**
G1 (segments I, K, L, N, O, Q)	15.9
G2 (segments J, K, L, P, Q)	13.2
G3 (segments I, K, M, N, P, Q)	14.4
Segment 3 – Komoka	
ER (sections E2, F, and G)	7.7
K1 (segments R and S)	**6.6**
Segment 4 – Strathroy Extension	
S1 (segments U, V, Z, AA)	9.6
S2 (segments T, U, V)	11.4
S3 (segments AA, X, W, V)	9.7
S4 (segments V, W, Y)	**8.3**

Note: Bolded numbers indicate the preferred option.

The length of prime agricultural land along route sections B and D is less than the alternatives in Segment 1 – Florence and Segment 2 – Glencoe. In Segment 3 – Komoka and in Segment 4 – Strathroy Extension K1 and S4, respectively, parallel the least amount of prime agricultural land.

4.5.3 Route Length

Comparing the total length of route sections and route segments is appropriate as a broad scoping tool that yields a measurement relating to total disturbed area. Typically, shorter routes have fewer environmental and socio-economic impacts. The following table compares the route lengths of the existing route sections and alternative segments in Segments 1 through 4:

Table 4-2: Route Length Summary Table

Route Sections and Route Segments	Route Length (km)
Segment 1 – Florence	
ER (section B)	**4.4**
F1 (segment H)	5.5
Segment 2 – Glencoe	
ER (section D)	**3.1**
G1 (segments I, K, L, N, O, Q)	17.5
G2 (segments J, K, L, P, Q)	13.4
G3 (segments I, K, M, N, P, Q)	14.7
Segment 3 – Komoka	
ER (sections E2, F, and G)	**8.4**
K1 (segments R and S)	9
Segment 4 – Strathroy Extension	
S1 (segments U, V, Z, AA)	10.4
S2 (segments T, U, V)	11.4
S3 (segments AA, X, W, V)	10.9
S4 (segments V, W, Y)	**8.5**

Note: Bolded numbers indicate the preferred option.

The distance of the route sections in Segment 1 – Florence, Segment 2 – Glencoe and Segment 3 – Komoka is less than their respective alternatives. In Segment 4 – Strathroy Extension, S4 is the shortest route out of the four alternatives.

4.5.4 Aquatic Characteristics

Minimizing the number of watercourse crossings along the preferred route reduces the potential impact of pipeline construction on watercourse features. A comparative summary of the route section and route segments is provided in Table 4-3 below.

Table 4-3: Aquatic Characteristics Summary Table

Route Sections and Route Segments	Watercourses Crossed (#)
Segment 1 – Florence	
PPR (section B)	**4**
F1 (segment H)	6
Segment 2 – Glencoe	
PPR (section D)	**8**
G1 (segments I, K, L, N, O, Q)	11
G2 (segments J, K, L, P, Q)	9
G3 (segments I, K, M, N, P, Q)	10
Segment 3 – Komoka	
PPR (sections E2, F, and G)	**4**
K1 (segments R and S)	6
Segment 4 – Strathroy Extension	
S1 (segments U, V, Z, AA)	5
S2 (segments T, U, V)	**4**
S3 (segments AA, X, W, V)	7
S4 (segments V, W, Y)	5

Note: Bolded numbers indicate the preferred option.

In Segment 1 – Florence, Segment 2 – Glencoe, and Segment 3 – Komoka, the route sections cross fewer watercourses than the respective alternatives. In Segment 4 – Strathroy Extension, S2 crosses the least number of watercourses in comparison to the other alternatives.

4.5.5 Registered Archaeological Sites

Table 4-4: Registered Archaeological Sites Summary Table

Route Sections and Route Segments	Registered Archaeological Sites (#) within 500 m
Segment 1 – Florence	
PPR (section B)	0
F1 (segment H)	0
Segment 2 – Glencoe	
PPR (section D)	0
G1 (segments I, K, L, N, O, Q)	0
G2 (segments J, K, L, P, Q)	0
G3 (segments I, K, M, N, P, Q)	0
Segment 3 – Komoka	
PPR (sections E2, F, and G)	21
K1 (segments R and S)	**14**
Segment 4 – Strathroy Extension	
S1 (segments U, V, Z, AA)	5
S2 (segments T, U, V)	5
S3 (segments AA, X, W, V)	6
S4 (segments V, W, Y)	**3**

Note: Bolded numbers indicate the preferred option.

While no registered archaeological sites exist within 500 m of the route sections in Segment 1 – Florence and Segment 2 – Glencoe, there are sites present within Segment 3 – Komoka and Segment 4 – Strathroy Extension. In Segment 3 – Komoka, K1 in the contains less registered archaeological sites than the route sections, while S4 in Segment 4 – Strathroy Extension contains less registered archaeological sites than the other alternatives.

4.5.6 Groundwater Resources

The number of water wells within 150 m of the route sections and route segments was determined using data provided by the MECP. A number of abandoned, test or wells with an unknown classification are present within the Study Area. For this reason, only domestic and livestock wells were considered in this evaluation. The 150 m buffer was used as this is considered a maximum zone of influence from construction dewatering and possible blasting activities that could potentially impact water wells. It is very unlikely that impacts to water well beyond this distance would be expected. Table 4-5 below provides a comparison of the number of groundwater wells within 150 m of each of the alternatives.

Table 4-5: Groundwater Resources Summary Table

Route Sections and Route Segments	Water Wells Within (#) within 150 m
Segment 1 – Florence	
PPR (section B)	9
F1 (segment H)	**6**
Segment 2 – Glencoe	
PPR (section D)	**4**
G1 (segments I, K, L, N, O, Q)	18
G2 (segments J, K, L, P, Q)	14
G3 (segments I, K, M, N, P, Q)	18
Segment 3 – Komoka	
PPR (sections E2, F, and G)	**7**
K1 (segments R and S)	26
Segment 4 – Strathroy Extension	
S1 (segments U, V, Z, AA)	37
S2 (segments T, U, V)	49
S3 (segments AA, X, W, V)	30
S4 (segments V, W, Y)	**16**

Note: Bolded numbers indicate the preferred option.

There were fewer groundwater wells present within the 150 m of the route sections in Segment 2 – Glencoe and Segment 3 – Komoka, while in the Segment 1 – Florence the route segment contained fewer groundwater wells. In the Segment 4 – Strathroy Extension S4 contained fewer groundwater wells than the other alternatives.

4.5.7 Socio-Economic – Infrastructure

Table 4-6 below provides a comparison of the number of roads traversed and utility lines crossed by the route sections and the route segments.

Table 4-6: Socio-Economic – Infrastructure Summary Table

Route Sections and Route Segments	Roads Traversed (#)	Utility Lines (#)
Segment 1 – Florence		
PPR (section B)	3	**0**
F1 (segment H)	**2**	**0**
Segment 2 – Glencoe		
PPR (section D)	**7**	**0**
G1 (segments I, K, L, N, O, Q)	10	**0**
G2 (segments J, K, L, P, Q)	11	**0**
G3 (segments I, K, M, N, P, Q)	**7**	**0**
Segment 3 – Komoka		
PPR (sections E2, F, and G)	**8**	**0**
K1 (segments R and S)	10	**0**
Segment 4 – Strathroy Extension		
S1 (segments U, V, Z, AA)	23	**1**
S2 (segments T, U, V)	**17**	**1**
S3 (segments AA, X, W, V)	35	**1**
S4 (segments V, W, Y)	27	3

Note: Bolded numbers indicate the preferred option.

The total number of roads crossed along the route sections and route segments in Segment 1 – Florence, Segment 2 – Glencoe and Segment 3 – Komoka were all very similar. In Segment 4 – Strathroy Extension S2 crossed only 17 roads while alternatives S1, S3 and S4 crossed between 23-35 roads. No utility lines appear to be crossed in Segment 1 – Florence, Segment 2 – Glencoe or Segment 3 – Komoka, while Segment 4 – Strathroy Extension alternatives S1, S2 and S3 all cross a single utility line and alternative S4 crosses 3 utility lines.

4.5.8 Oil and Gas Wells

Table 4-7 below provides a comparison of the number of oil and gas wells within 100 m of each of the route sections and route segments.

Table 4-7: Petroleum Wells Summary Table

Route Sections and Route Segments	Petroleum Wells Within (#) 100 m
Segment 1 – Florence	
PPR (section B)	**0**
F1 (segment H)	2
Segment 2 – Glencoe	
PPR (section D)	6
G1 (segments I, K, L, N, O, Q)	**4**
G2 (segments J, K, L, P, Q)	7
G3 (segments I, K, M, N, P, Q)	7
Segment 3 – Komoka	
PPR (sections E2, F, and G)	**0**
K1 (segments R and S)	1
Segment 4 – Strathroy Extension	
S1 (segments U, V, Z, AA)	**0**
S2 (segments T, U, V)	**0**
S3 (segments AA, X, W, V)	2
S4 (segments V, W, Y)	**0**

Note: Bolded numbers indicate the preferred option.

4.5.9 Terrestrial Characteristics

Table 4-8 below provides a comparison of the length of CA regulated areas crossed and the length of PSWs within 10 m of each of the route sections and route segments.

Table 4-8: Terrestrial Characteristics Summary Table

Route Sections and Route Segments	CA Regulated Areas (m)	Wetlands (m)
Segment 1 – Florence		
PPR (section B)	**1,503.7**	n/a
F1 (segment H)	3,665.2	n/a
Segment 2 – Glencoe		
PPR (section D)	3,074.5	271
G1 (segments I, K, L, N, O, Q)	3,505	298
G2 (segments J, K, L, P, Q)	2,670.2	**137**
G3 (segments I, K, M, N, P, Q)	**2,631.3**	298
Segment 3 – Komoka		
PPR (sections E2, F, and G)	**2,565.3**	**511**
K1 (segments R and S)	4,283.7	1,262
Segment 4 – Strathroy Extension		
S1 (segments U, V, Z, AA)	1,918.4	n/a
S2 (segments T, U, V)	**1,156.4**	n/a
S3 (segments AA, X, W, V)	1,801	m/a
S4 (segments V, W, Y)	1,403.4	n/a

Note: Bolded numbers indicate the preferred option.

4.5.10 Discussion of Assessment

A review of potential impacts along all existing route sections and alternative segments was conducted on the criteria of eight (8) environmental and socio-economic components. Within Segments 1-4, each route section and route segment were compared and ranked for the features assessed. The rankings were then totaled with the lowest number given as 1 and highest number given as a 2, 3 or 4 if there are three or four alternatives. For example, when comparing the total length of the route section and the route segment in Segment 1 – Florence, the route section (section B, 4.4 km) would receive a score of 1 and the route segment (segment H, 5.5 km) would receive a score of 2 as the section B is 1.1 km shorter than segment H.

Table 4-9 shows the results of the evaluation for the segments.

Table 4-9: Assessment Summary Table

Evaluation Feature	Ranking of Sections and Segments											
	Segment 1 – Florence		Segment 2 – Glencoe				Segment 3 – Komoka		Segment 4 – Strathroy Extension			
	PPR	S1	PPR	G1	G2	G3	PPR	K1	S1	S2	S3	S4
Agricultural	1	2	1	4	2	3	2	1	2	4	3	1
Route Length	1	2	1	4	2	3	1	2	2	4	3	1
Aquatic Characteristics	1	2	1	4	2	3	1	2	2	1	3	2
Registered Archaeological Sites	1	1	1	1	1	1	2	1	2	2	3	1
Groundwater Resources	2	1	1	3	2	3	1	2	3	4	2	1
Infrastructure - Roads	2	1	1	2	3	1	1	2	2	1	4	3
Infrastructure – Utility Lines	1	1	1	1	1	1	1	1	1	1	1	2
Petroleum Wells	1	2	2	1	3	3	1	2	1	1	2	1
Terrestrial Characteristics – CA Area	1	2	3	4	2	1	1	2	4	1	3	2
Terrestrial Characteristics - Wetlands	1	1	2	3	1	3	2	1	1	1	1	1
TOTALS	**12**	15	**14**	27	19	22	**13**	16	20	20	25	**15**

Note: Bolded numbers indicate the preferred option.

Based on the route ranking results, as noted above, the preferred route should consist of route sections A, B, C, D, E1, F and G and route segments Y, W, and V. As a result of consultation with the municipalities and conservation authorities, responses provided during the Virtual Open House, and internal review by the Enbridge Engineering and Operations groups, it was determined that sections C, D, F and G were not viable. These results are discussed in Section 4.6 below.

4.6 STEP 4: INPUT ON THE EXISTING ROUTE AND ALTERNATIVE SEGMENTS

During pre-consultation for the Project, the Municipality of Strathroy-Caradoc proposed route alternatives to those initially established by Enbridge and Stantec. The route alternatives (route segments Y, W and V) were added to the Project.

During a meeting with the County of Middlesex and the Municipality of Middlesex Centre, discussions were held regarding a recent Environmental Study for road improvement work along Glendon, including the intersection at Komoka. At the intersection of Glendon and Komoka, the County noted they are planning for a road widening, increasing to four lanes, and adding a boulevard, as well as a 2-lane entry roundabout. To avoid a future request from the County that the pipeline be relocated so that the planned municipal road work could occur, Enbridge will pursue obtaining easements in this specific intersection to install the pipeline, therefore for Segment 3 – Komoka the alternative segment K1 will be included in the preferred route instead of the existing route sections F and G.

At the intersection of Bentpath Line and Oakdale Road intermediate pressure gas mains run on the north and south side of Bentpath Line, from west of 5669 Bentpath through the intersection of Oakdale Road and into the pressure regulating station on the east side of the intersection. Both the north and south side of the road allowance have existing gas mains installed to maintain safe proximity from the existing intermediate pressure mains and to avoid proposing to install under the travelled road way for this length, it was decided that the new pipeline would follow the route of the existing pipeline in easement.

Although the analysis of the route sections and the route segments determined that the route section in Segment 1 – Florence, and the route section in Segment 2 – Glencoe were the preferred choices, Enbridge will proceed with the option to construct the pipeline along the alternative segments, through the road RoW as this will reduce the potential impacts to prime agricultural land, groundwater resources, roadways and potential negative impacts to landowners and residents.

From a distribution operations perspective, installing the pipeline in the road RoW is preferred, as providing customer connections and future maintenance will be easier, and significantly less maintenance such as tree clearing is involved, in comparison to installing the pipeline in the easements. Pipeline installation in the road RoW also lessens the potential for impacts on landowners and adjacent agricultural fields. Locating the pipeline in the road RoW also provides access to natural gas for additional customers.

The analysis of the route sections and route segments for Segment 1 – Florence deemed that the scoring for the alternative segment was very close to the result for the route section (15 vs. 12, respectively). The analysis of the route sections and route segments for Segment 2 – Glencoe deemed that the scoring for alternative G2 was very close to the route section result (19 vs. 14, respectively). Therefore, the preferred route includes F1 in Segment 1 – Florence, and G2 in Segment 2 – Glencoe.

A Virtual Open House was held between April 20, 2020 to May 1, 2020 to provide details on the Project and to receive feedback on the existing route and alternative segments. Comments and/or concerns submitted on the routing included the following:

- Concerns regarding the existing London Lines, and if these sections of pipeline will be abandoned in place or removed.
- Concerns regarding impact to high value crops, depth of the pipeline and how this will impact tilling and other agricultural activities if the final preferred pipeline route travels across agricultural fields instead of within existing road RoWs.

4.7 STEP 5: CONFIRMATION OF THE PREFERRED ROUTE

Following the comparative evaluation (Section 4.5) and based on input received (Section 4.6), the route sections and route segments in the preferred route include:

- Route section A
- Route segment H
- Route section C
- Route segment J
- Route segment K
- Route segment L
- Route segment P
- Route segment Q
- Route section E1
- Route segment R
- Route segment S
- Route segment Y
- Route segment W
- Route segment V

The confirmed preferred route is shown in Appendix D, Figure D-1.

The preferred route is currently illustrated within existing route easements and road RoWs; Enbridge will undertake detailed design to determine the exact location of the pipeline within and adjacent to the road allowances. Detailed design will also be influenced by supplemental studies (i.e., geotechnical investigations, etc.) and site-specific requests from landowners, businesses, the municipalities and agencies. This information will be used to locate the pipeline to further minimize environmental and socio-economic impacts to the extent possible. Information on the detailed design to that point will be provided in the application to the OEB.

5.0 POTENTIAL IMPACTS, MITIGATION AND PROTECTIVE MEASURES AND NET IMPACTS

5.1 METHODOLOGY

The potential effects and impacts of the project on physical, biophysical and socio-economic features have been assessed within the Study Area upon review of the existing conditions as noted in Sections 3.2 - 3.4.

This assessment:

- Predicts the effects and associated impacts of pipeline construction and operation activities
- Recommends supplemental studies, mitigation and protective measures (including pipeline construction methods and timing, site-specific mitigation, environmental protection measures, and compensation measures)
- Outlines the remaining net impacts

The determination of effects, impacts, and mitigation and protective measures considered:

- Comments expressed during the consultation program
- Information available from published and unpublished literature
- Maps and digital data
- Mitigation guidance documents
- Field assessments conducted by Stantec technical staff
- The pipeline development experience of Enbridge and Stantec

There are instances where field investigations are recommended along the preferred pipeline route before construction, as noted below in Table 5-1. Given the location of the project components and experience of Stantec in providing environmental services for natural gas pipelines, these supplemental studies are not expected to change the conclusions regarding potential adverse residual impacts.

Table 5-1 below notes the potential impacts, mitigation and protective measures, including recommended supplemental studies, and net impacts for the existing conditions as described in Sections 3.2 - 3.4.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
PHYSICAL FEATURES			
Bedrock Geology and Drift Thickness *Section 3.2.1*	The planned excavation depth of the project is approximately 1 m below grade, with the potential to exceed this depth for watercourse, road crossings and other sensitive features. Based on the shallow nature of the excavations and the depth to bedrock, bedrock is not expected to be encountered. As such, no potential impacts are anticipated.	N/A	No significant adverse residual impacts to bedrock geology and drift thickness are anticipated.
Surficial Geology and Physiography *Section 3.2.2*	Disturbance to the overburden within the Study Area may cause surface soil erosion and trench slumping during construction or post-construction at areas that may require further rehabilitation.	Surface soil erosion can occur in the absence of vegetative cover. Where there is potential for soil erosion, the need for and location of erosion and sediment control (ESC) measures should be determined by an inspector with appropriate qualifications and installed prior to the commencement of work in the area. When land is exposed, the exposure should be kept to the shortest practical period. Natural features should be preserved to the extent practical. Temporary vegetation and mulching should be used to protect areas as appropriate. Where required, natural vegetation should be re-established as soon as practical. The contractor must obtain adequate quantities of materials to control erosion. Additional supplies should be maintained in a readily accessible location for maintenance and contingency purposes. ESC structures should be monitored to maintain their effectiveness through the life of construction and post-construction rehabilitation. Even with ESC measures, extreme precipitation events could result in collapse of silt fencing, overflow or bypass of barriers, and other situations which could	With the implementation of the mitigation and protective measures, no significant adverse residual impacts to or from the overburden material are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		lead to erosion. When site conditions permit, permanent protection measures should be installed on erosion susceptible surfaces. If the erosion is resulting from a construction-related activity, the activity should be halted immediately until the situation is rectified. To avoid the trench from slumping, trench walls should be sloped and should be monitored during wet conditions for the potential to slump. Slope stability should be reviewed at watercourse crossing locations. Watercourse banks should be seeded and stabilized immediately following crossing. ESC and stabilization measures should be maintained during construction, restoration, and rehabilitation until vegetative cover is established. Where evidence of erosion exists, corrective control measures should be implemented as soon as conditions permit. Permits obtained under O. Reg. 152/06 from LTVCA, O. Reg. 157/06 from UTRCA or O. Reg. 171/06 from SCRCA may contain conditions pertaining to ESC.	
Hydrogeology *Section 3.2.3*	<u>Hydrostatic Testing and Dewatering/Sand-Pointing</u> The pipeline will be hydrostatically tested before commissioning. Select sections of pipe may also be pre-tested, such as at road crossings. Water required for the testing may be obtained from a municipal or natural source. Before the withdrawal of water from a municipal source, the municipality will be contacted to confirm the maximum rate of withdrawal. Where trenches encounter shallow groundwater conditions or following a large precipitation event, removing water	<u>Hydrostatic Testing and Dewatering/Sand-pointing</u> For groundwater dewatering, the MECP allows registration under the EASR for construction dewatering projects where groundwater takings will be greater than 50,000 L/day and less than 400,000 L/day; however, should groundwater takings exceed 400,000 L/day, a PTTW may be required from the MECP. If surface water is used as the source water for the hydrostatic test, a PTTW application would be required and would include an assessment of the capacity of the source to provide the required water without impacting the ecosystem, and recommendations for mitigation measures such as screened water intakes to limit intake of debris and organisms and energy	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on groundwater are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	from the trench (known as dewatering) may be necessary. It is also anticipated that sand-pointing (temporarily lower the water table during construction) may be necessary in select locations where shallow groundwater may be encountered. During trench dewatering, discharge water will be released to the environment. An uncontrolled discharge of water could cause downstream flooding, erosion, sedimentation, or contamination. Other potential effects of uncontrolled discharge may include introduction of foreign aquatic organism to a drainage basin and introduction of hazardous materials or pollutants to soils or bodies of water. <u>Private Water Wells</u> There are approximately 600 water supply wells within 500 m of the existing route and alternative segments, 370 of which are domestic. Of the 160 WWR mapped within a 50-m radius, which have the most potential to be impacted by the pipeline installation, 110 were screened within the overburden at depths ranging from 4 m BGS to 44 m BGS. Depending on the proximity to wells, the depth of the well installation and the groundwater levels encountered during excavation, trench dewatering has the potential to impact water well quality or quantity at some of the overburden supply wells. <u>Municipal Water Supply</u>	dissipation/erosion control measures during discharge to limit erosion and sedimentation. To reduce the potential for erosion and scouring at discharge locations during construction dewatering/sand-pointing and/or hydrostatic testing, energy dissipation techniques should be used. Discharge piping should be free of leaks and should be properly anchored to prevent bouncing or snaking during surging. Protective measures may include dewatering at low velocities, dissipating water energy by discharging into a filter bag or diffuser and utilizing protective riprap or equivalent. If energy dissipation measures are found to be inadequate, the rate of dewatering should be reduced or dewatering discontinued until satisfactory mitigation measures are in place. Discharge should be monitored to make sure that no erosion or flooding occurs. To assess the potential for introduction of contaminated water to soils or bodies of water, testing of hydrostatic and trench dewatering discharge water should be considered. Testing requirements can be influenced by the nature and quality of the source water used, any additives to the test water, the nature of the pipeline, and pipeline contents. An environmental consultant should be consulted to determine what testing is necessary for the discharge water. <u>Private Water Wells</u> A private well survey should be conducted to assess domestic groundwater use near the pipeline route and a private well monitoring program may be recommended for residents who rely on overburden groundwater supply for domestic use. This monitoring program may include pre--construction water quality monitoring as well as water level monitoring, if	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	The Study Area does not extend through any WHPAs associated with any municipal groundwater supply system or any IPZ associated with any municipal surface water supply systems. Based on the Clean Water Act (2006), the construction activities related to the installation of the preferred pipeline route do not pose a threat to the drinking water supply.	available. Should a private water well be affected by project construction, a potable water supply should be provided, and the water well should be repaired or restored as required. <u>Municipal Water Supply</u> There are no nearby municipal supply wells, and therefore additional mitigation measures are not required to protect groundwater drinking supply sources. During construction, the primary concern to surface water quality is the potential for a contaminant spill during a large storm event. To address this concern, the following mitigation measures are proposed: • Refueling of equipment should be undertaken 100 m from wetlands and watercourses to reduce potential impacts to surface water and groundwater quality if an accidental spill occurs. If a 100 m refueling distance is not possible, under approval from on-site environmental personnel, special refueling procedures for sensitive areas should be undertaken that include, at a minimum, using a two-person refueling system with one worker at each end of the hose. • To reduce the impact of potential contaminant spills, the contractor should implement spill management protocols such as secondary containment of any temporary fuel storage and preparation of a spill response plan. • Work should be limited or stopped during and immediately following significant precipitation events (i.e. 100-year storm event), at the discretion of on-site environmental personnel.	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Extractive Resources: Aggregates and Petroleum Pools *Section 3.2.4*	No impacts anticipated.	N/A	No significant adverse residual impacts on extractive resources are anticipated.
Soil and Soil Capability *Section 3.2.5*	The preferred pipeline will be primarily constructed within existing municipal road allowances and existing easement, with some temporary lands required for construction purposes. Where temporary lands are required limited impacts to agricultural lands may occur. Where there is interaction with agricultural land, there are potential impacts to topsoil as a result of construction including compaction, loss of organic matter and degraded soil structure. Where feasible, topsoil will not be removed from the site. Excess subsoil may be removed from the site. Trenching and construction activities across agricultural land have the potential to affect soil quality and agricultural capability. The movement of heavy machinery on wet soil may cause rutting, compaction, and mixing of topsoil with subsoil. When exposed, soils are more prone to erosion due to the loss of vegetative cover. Improperly salvaged topsoil can result in topsoil and subsoil mixing, compaction, rutting, and erosion, which can potentially decrease crop yields. Where equipment is moving from one agricultural field to another there is the	<u>Excess Soil</u> Should excess soil be generated on-site during construction activities that will require off-site management, or if contaminated soils are suspected (e.g., if observed material contains anthropogenic substances, petroleum hydrocarbons odours/staining, and debris/waste), representative soil samples should be collected in accordance with O. Reg. 406 /19, and submitted for chemical analysis to determine management options and-appropriate handling and health and safety guidelines. Soils that cannot be reused on site may be reused off-site in accordance with O. Reg. 406/19. <u>Wet Soil Shutdown</u> To the extent feasible, construction activities should occur during drier times of the year. Agricultural lands affected by heavy rainfall events should be monitored for wet soil conditions, to avoid the potential for topsoil and subsoil mixing and loss of structure. Construction activities should be temporarily halted on lands where excessively wet soil conditions are encountered. Enbridge's on-site inspection team should determine when construction activities may be resumed. If a situation develops that necessitates construction during wet soil conditions, soil protection measures should be implemented, such as confining construction activity to the narrowest area practical, installing surface protection measures, and using wide tracked or low ground pressure vehicles.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on soil or soil capability are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	potential for the spread of soil pests/diseases to previously unimpacted fields.	<u>High Winds</u> During construction activities, weather should be monitored to identify the potential onset of high wind conditions and to preserve topsoil. In the event that high winds occur, the contractor should implement protective measures such as: • Suspend earth moving operations • Apply dust suppressants or vegetate the piles • Protect soil stockpiles with a barrier or windscreen In conjunction with the above measures, all required materials and equipment should be readily accessible and available for use as required. <u>Soil Stripping</u> Within agricultural lands Enbridge should discuss with the landowner the proposed method of handling topsoil on their property. Landowner requests, and preferences for additional stripping or no stripping, should be accommodated where practicable. Topsoil depths should be measured prior to stripping so that the proper depth of topsoil is removed and replaced. Where stripping is undertaken on agricultural lands, topsoil and subsoil should be stripped and stockpiled separately to avoid mixing. Where the pipeline crosses woodlands the organic and duff layer should be stripped where feasible, given local substrate conditions. Where stripping is undertaken in woodlots, organic material and subsoil should be stripped and stockpiled separately to avoid mixing. If clean-up is not practical during the construction year, it should be undertaken in the year following construction, starting once the soils have sufficiently dried. Interim soil protection measures should be	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		implemented in sensitive areas to stabilize the RoW for over-wintering. Soil Compaction Within agricultural lands where soil has been compacted by the construction process, an agrologist should determine where decompaction may be necessary. Compaction can be alleviated by using farm equipment such as an agricultural subsoiler prior to replacing the topsoil. Sub-soiling with an agricultural subsoiler, followed by discing, chisel ploughing and cultivating, to smooth the surface, should be considered on agricultural lands. In high traffic areas of the RoW where deep compaction persists, additional deep tillage or subsoiling may be required on a site-specific basis. Soil density and/or penetrometer measurements on and off the easement may be used as a means of assessing the relative degree of soil compaction caused by construction along the RoW as well as determining that the RoW has been sufficiently decompacted. Soil Pests/Diseases In consultation with the landowner and an agrologist, Enbridge will develop and implement an agricultural soil sampling plan for potential pests and/or diseases that are known to the area. If the results indicate an issue or concern, in consultation with the landowner, Enbridge will work with the agrologist to develop a best practice protocol. Any imported topsoil used for rehabilitation will also have a composite sample analyzed for identified concerns before it is placed on the easement.	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Agricultural Tile Drains *Section 3.2.6*	The preferred pipeline will be constructed within existing municipal road allowances and existing easements, with some temporary lands required for construction purposes. Where temporary lands are required limited impacts to agricultural lands may occur. Where there is interaction with agricultural land, construction activities, including trenching and the movement of heavy machinery, have the potential to crush and/or sever agricultural tile drains.	Enbridge should undertake consultation with landowners of agricultural fields to confirm where systematic tile drainage is present. If tile drainage is present, Enbridge should undertake standard mitigation during trenching, including: • Develop site specific tile plans with an independent tile contractor • Conduct pre-tiling, and install header tile to maintain tile system function • Excavate the pipeline trench to a depth that allows clearance between the top of the pipeline and the bottom of existing drainage systems • Record and flag severed or crushed tile drains • If a main drain, header drain, or large diameter drain is severed, maintain field drainage and prevent flooding of the work area and adjacent lands through temporary repairs • Cap the downstream side of severed drains that cross the trench to prevent the entry of soil, debris and rodents, as required • Repair damaged and severed drains following construction • After repair and before backfilling, invite the landowner to inspect and approve the repair	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on agricultural tile drains are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Natural Hazards *Section 3.2.7*	The probability of significant seismic activity in the Study Area is low; therefore, no potential impacts are anticipated. The likelihood of a flooding event interfering with pipeline construction is reduced by construction occurring outside of the spring freshet. A flooding event during construction could result in construction delays, soil erosion, sedimentation of a watercourse, trench slumping, and damage or loss of construction equipment and contamination of a watercourse as a result of equipment entering a watercourse. The nature of these impacts would depend on the spatial extent, duration, and magnitude of the flooding event.	If flooding necessitates a change in the construction schedule, affected landowners and regulatory agencies should be notified and construction should continue at non-affected locations. Temporary workspaces should be located above the floodplain to the extent practical, unless necessary for watercourse crossings. All work in the floodplains will be subject to a permit under O. Reg.157/06 from UTRCA, O. Reg.152/06 from LTVCA or O. Reg. 171/06 from SCRCA.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from natural hazards are anticipated.
BIOPHYSICAL FEATURES			
Aquatic Features *Section 3.3.1*	The existing route and alternative segments cross 115 watercourses, including 7 watercourses that support habitat for fish and mussel species at risk. Industry standard watercourse crossing methods that meet the requirements of DFO for fish and fish habitat protection will be used during construction. These plans include "isolated" watercourse crossing methods such as the Dam and Pump crossing method, and trenchless crossing methods such as the HDD method. <u>Dam and Pump Crossing</u>	Mitigation and protective measures for erosion and sediment control are outlined in this table in *Surficial Geology and Physiography* and for accidental spills in *Hydrogeology.* Temporary vehicle crossings and dam and pump pipeline crossings should be completed following the measures outlined in industry standards and company specifications for construction. The following general mitigation measures, or equivalent, are recommended at watercourse crossings along the preferred pipeline route. Additional, activity-specific measures related to the crossing methods are provided following the general mitigation measures. All measures presented are intended to be	With the implementation of the mitigation and protective measures, no significant adverse residual impacts to aquatic features are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	The Dam and Pump Crossing method isolates water flow from the construction area and also avoids the majority of the technical risks inherent in other crossing techniques, such as damage to pipe integrity, achieving good cathodic protection, being accessible for maintenance, and increased cost and schedule. Construction of an open cut crossing has the potential to affect fish directly through impacts on water quality (erosion, sedimentation, and accidental spills), disruption/harassment (vibration and noise) and loss of habitat. Indirect impacts include restrictions to habitat use and fish passage. Long term impacts can include changes to habitat such as substrate, increased erosion potential, loss of in-stream cover and riparian shading. <u>Horizontal Directional Drilling</u> HDD may be utilized to install the preferred pipeline underneath a watercourse at select crossing locations. The HDD process involves drilling a pilot bore hole underneath the watercourse and back-reaming the bore hole to the drill rig while pulling the pipe along through the hole. This process typically uses the freshwater gel mud system composed of a mixture of freshwater as the base, bentonite (clay-based drilling lubricant) as the viscosifier, and synthetic polymers. Potential impacts that may result from HDD include the escape of	consistent with DFO's measures to protect fish and fish habitat (DFO 2019b), but DFO's website (https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html) should be consulted immediately prior to construction to confirm that the construction plan is consistent with the most up-to-date list of DFO avoidance measures. <u>General Mitigation Measures</u> • In-water work for warmwater habitats is typically permitted from July 1 to March 15 (no work from March 16 to June 30) (MNRF 2013). Warmwater habitats are documented at 17 watercourse crossings. In-water work for coldwater habitats is typically permitted from June 1 to September 30 (restricted from October 1 – May 31) (MNRF 2013). Coldwater habitats are documented from background data at 30 watercourse crossings (WC-105, WC-106, WC-107, WC-108). The remaining 68 watercourse crossings in the Study Area did not have a documented thermal regime. • Watercourses should not be obstructed in a way that impedes the free movement of water and fish. • Prior to removal of the vegetation cover, effective mitigation techniques for erosion and sedimentation should be in place to protect water quality. Disturbance to the area during construction should be limited and grubbing activities should be delayed until immediately prior to grading operations. • Soil exposure should be reduced prior to commencing construction, and the period that soil remains exposed for grading should be limited. Exposed soils surrounding watercourses should be seeded immediately following construction.	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	drilling mud into the environment, tunnel collapse, or the inadvertent release of fluid to the surface. HDD may also result in excessive disturbance of riparian vegetation and sedimentation and erosion due to operation of equipment on the shoreline.	• Temporary erosion and sediment control measures should be maintained and kept in place until work within or near a watercourse has been completed and stabilized. Temporary sediment control measures should be removed at the completion of the work but not until permanent erosion control measures have been established. • Construction material, excess material, construction debris and empty containers should be stored a minimum of 30 m from watercourses and watercourse banks. • Equipment maintenance and refueling should be controlled to prevent entry of petroleum products or other deleterious substances, including any debris, waste, rubble or concrete material, into a watercourse, unless otherwise specified in the contract. • Deleterious substances (fuel, oil, spoil) should be stored >30 m from the watercourse. Any such material that inadvertently enters a watercourse should be removed in a manner satisfactory to the environmental inspector. • In the unlikely event of a spill, spills containment and clean-up procedures should be implemented immediately. Enbridge will contact the MECP Spills Action Centre. The MECP Spills Action Centre is the first point of contact for spills at the provincial and federal level. • Conditions of water crossing permit(s), if applicable, will be adhered to. • Additional supplies should be maintained on-site, in a readily accessible location, for maintenance and contingency purposes. Prior to construction, adequate quantities of the materials listed below, or comparable substitutions, should be on site to control erosion and sediment deposition:	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		– Sediment control fencing – Sediment control logs (i.e., SiltSoxx™) – Straw bales – Wooden stakes – Sand bags – Water energy dissipater – Filter cloth – Water pumps (including stand-by pumps and sufficient lengths of hose) – Culvert <u>Horizontal Directional Drill Mitigation Measures</u> HDD construction methods for pipeline water crossings that do not support habitat for fish or mussel species at risk will not require DFO review or Authorization under the *Fisheries Act* provided measures to protect fish and fish habitat are followed during construction. These measures include locating entry and exit points at sufficient distance to avoid disturbance to the bed and banks, locating the drill path at an appropriate depth below the channel and installation of appropriate sediment and erosion control measures (i.e., silt fencing around disturbed areas, development of a contingency plan, etc.). If these measures are followed, a project of this nature is low risk to fish and can proceed without DFO review. Mitigation measures as they relate to employing the HDD method are as follows: • Standard erosion and sediment control measures should be implemented around drill and pipe staging areas. • Prior to initiating an HDD, appropriate geotechnical data should be obtained to assist in determining the drill path.	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• Drilling equipment (e.g., drill rig, support equipment, sump) should be set up a minimum of 30 m from the edge of watercourses, where possible. • Clearing of vegetation or grading of watercourse banks should not occur within 30 m from the edge of watercourses, if possible. • A drilling mud release contingency plan should be prepared and kept on-site. • Environmental inspectors should be present during crossing of the seven watercourses supporting aquatic species at risk. The Environmental inspectors will be present to monitor for accidental mud release into these watercourses during HDD activities. • Suitable drilling mud tanks or sumps should be installed to prevent contamination of watercourses. • Berms or check dams should be installed downslope from drill entry and anticipated exit points to contain the release of any drilling mud. • Drilling mud should be disposed in accordance with the appropriate regulatory authority requirements. <u>Bore Path Collapse Mitigation Measures</u> The following mitigation measures should be applied as recommended by geotechnical studies to prevent HDD borehole collapse from occurring in susceptible soils: • Fluid volumes, annular pressure and cutting returns should be strictly monitored to ensure bore hole plugging and fluid losses are detected and addressed immediately. • Alternative drill paths should be evaluated to minimize exposure to challenging soil materials.	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• Drilling mud should be maintained in the borehole until the pipeline is installed. This can be facilitated by positioning the entry and exit points in areas with cohesion less soils (e.g., silt-sand zones). <u>Drilling Mud Release (Inadvertent Returns) Mitigation Measures</u> The following mitigation measures should be employed to reduce the risk of lost drilling mud circulation: • Install appropriate berms, silt fencing and secondary containment measures (i.e., plastic tarp) around drilling and drilling mud management equipment at both bore entry and bore exit locations to contain operational spills. • Clean up operational spills daily to prevent mobilization of drilling mud off site during rain events. • Design the directional drill so that drilling slurry pressure is minimized, and the drilling rate is reduced in porous materials to minimize the chance of loss of circulation of the drilling slurry. • Maintain smooth operation of the drilling string and slurry pumping systems to avoid pressure surges. • Reduce slurry viscosity through appropriate filtering of drilled material to reduce the pressure gradient along the drill path due to frictional effects. • Continually monitor slurry volumes to enable a quick response to any indications of lost circulation. • Immediately contain any drilling mud that escapes onto land and transfer it into an on-site containment system. The following materials should readily available during drilling operations and prepared to employ them in the	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		event of a drilling mud spill or inadvertent return: sandbags, straw bales, silt fencing and a hydrovac truck. <u>Additional Measures</u> The following measures are applicable to trenched crossings: <u>*Flow Diversion/Dewatering*</u> If in-water works are required, the work area should be isolated from the remainder of the surface water feature. Downstream flows should be maintained using dam and pump techniques. When dewatering the work area, dewatering operations should be managed to prevent erosion and/or release of sediment laden or contaminated water to the waterbody (e.g. settling basin, filter bag, energy dispersion measures). An isolation/contamination plan should be designed and implemented to isolate temporary in-water work zones and maintain flow around the work zone. Maintenance of downstream flow should avoid potential upstream flooding and desiccation of downstream aquatic habitat and organisms. <u>*Fish Rescue Plan*</u> Prior to dewatering the work zone, fish trapped in the construction area should be collected and moved using capture, handling, and release techniques to reduce harm and stress. The intakes of pumping hoses should be equipped with an appropriate device to avoid entraining and impinging fish (see Interim code of practice: End of pipe fish protection screens for small water intakes in freshwater at the following DFO website https://www.dfo-mpo.gc.ca/pnw-ppe/codes/screen-ecran-eng.html). Fish rescue plans should be developed on a site-specific basis and implemented by qualified professionals with the	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		appropriate licence in place (i.e. MNRF Licence to Collect Fish for Scientific Purposes). *Site Restoration and Riparian Planting* Following construction, the bed and banks of the crossing locations should be restored to pre-construction conditions to the extent possible in accordance with environmental permits. Bank slopes should be restored to match existing grades; however, alterations may be made to maintain slope stability and limit future erosion. Exposed banks should be re-vegetated with native plants to provide riparian cover and aid in erosion and sediment control. Stream beds should be restored to maintain slopes and tie in with existing grades. Bed material should be replaced to match pre-construction conditions. *Permitting* On August 28, 2019 provisions of the amended Fisheries Act came into force including new protections for fish and fish habitat. The Fisheries Act prohibits causing death of fish or the HADD of fish habitat unless authorized by the DFO. This applies to work being conducted in or near watercourses and water bodies that support fish or fish habitat. If potential impacts can be mitigated, then a review by DFO is not required. If impacts cannot be fully mitigated and/or where aquatic species at risk habitat is identified, a Request for Project Review will need to be submitted to DFO for their review and approval, and comment on whether construction of the pipeline will result in a HADD of fish habitat. The pipeline route will be located within the regulated boundary of the LTVCA, UTRCA, and SCRCA. Permits under Ontario Regulation 152/06, 157/06 and 169/06 and 171/06, respectively, will be required prior to	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		construction activities in the regulated boundaries. Due to the presence of endangered and threatened aquatic SAR at WC-01, WC-02, WC-03, WC-28, WC-29, WC-107 and WC-108, the HDD drill entry and exit pits must be located at least 30 m from bankfull width to avoid requiring a permit under the SARA. If activities are required below the normal highwater mark, then the DFO must be contacted to determine if a SARA Permit is required. If crossings supporting aquatic SAR cannot be crossed using HDD, then the alternative crossing methods should be reviewed by DFO to determine if a permit under SARA is required.	
Designated Natural Areas and Vegetation *Section 3.3.2*	The existing route and alternative segments occur primarily in municipal road allowance, however the routes cross or come in proximity to woodlands and wetlands, including six and two provincially significant wetlands along the Existing/Alternative and Alternative Segments Routes, respectively. Field surveys will be conducted prior to construction to refine the mapping of wetlands. ELC and botanical surveys will be conducted prior to construction to assess the significance and boundaries of vegetation communities and to identify vascular plant species, including plant species of concern. The results of the surveys will be used to confirm mitigation and protection measures. Where there is natural vegetation within or adjacent to the existing routes and alternative segments, potential impacts include the removal of native vegetation, introduction or spread of invasive	Environmental mitigation and protective measures during construction include the following: • Provide notice to the Counties and UTRCA, LTVCA and SCRCA prior to clearing. • Clearing should be minimized to the extent possible in sensitive areas such as woodlots, along watercourses, and in areas of significant groundwater recharge. • The limits of clearing should be surveyed and staked in the field, to allow for the protection of off-site natural areas and vegetation. • Brush and trees should be felled within the project footprint. • Clearing should be done during dry soil conditions to the extent practical to limit disturbance to vegetation and terrain. • A screening field program of wetlands and riparian areas should be undertaken prior to construction, to determine where precautionary measures (e.g. equipment washing before site access) may be necessary to mitigate for the spread of non-native species.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on designated natural areas and vegetation are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	species, and indirect effects such as dust, erosion, and accidental spills.	• A re-vegetation program should be initiated for all vegetated temporary work areas. Enbridge should consult with landowners, UTRCA, LTVCA and SCRCA to confirm replanting plans. • All applicable municipal and county tree clearing, and re-vegetation by-laws will be followed • Seeding of the disturbed temporary work areas and permanent easement should be done with a native seed mix reviewed by UTRCA, LTVCA or SCRCA. Replaced soils containing native seed bank, assisting in successful revegetation. • One year following construction, planted vegetation should be inspected for survival; in areas of severe dieback, dead and diseased planted vegetation should be replaced. Mitigation and protective measures for dust are outlined in *Soil and Soil Capability*, for erosion in *Surficial Geology and Physiography*, and for accidental spills in *Hydrogeology*.	
Wildlife, Wildlife Habitat and Species at Risk *Section 3.3.3*	Due to the presence of woodlots, wetlands, hedgerows, watercourses and open fields in proximity to the existing route and alternative segments, field surveys will be undertaken before construction to assess the presence or absence of wildlife and wildlife habitat, including SAR. Planned surveys include a botanical inventory, mammal surveys (bat habitat assessment), breeding bird surveys and SAR habitat assessments. The results of all surveys, including any additional appropriate mitigation or protection measures, will be summarized in a report and shared with	Environmental mitigation and protective measures during construction include the following: • Detailed design of the preferred pipeline should be reviewed to avoid and reduce the likelihood of impact upon wildlife habitat to the extent possible, and in particular habitats of endangered, threatened, special concern and rare species. • Equipment and vehicles should yield the RoW to wildlife. • Trench operations should be followed as closely as practical with backfill operations, to facilitate the movement of wildlife across the trench. • Gaps in stockpiles should be created, in consultation with a biologist, to allow for the potential movement of wildlife across the RoW.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on wildlife, wildlife habitat and SAR are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	the MECP to determine any regulatory requirements. Potential impacts on wildlife and wildlife habitat from construction include direct mortality from construction vehicles, habitat damage through vegetation removal, habitat degradation through spills and sensory disturbance of wildlife during construction.	• Fencing should be erected around deep excavations to prevent wildlife entrapment. • The contractor should inform their personnel to not threaten, harass or injure wildlife. • If wildlife are encountered during construction, personnel are required to move away from the animal and wait for the animal to move off the construction site. • Where practical, avoid construction in the vicinity of areas that may provide habitat for amphibians during the amphibian breeding season (March 1 – June 30). • Habitat assessments and species occurrence surveys will be conducted for SAR. A report will be prepared to document results and recommend mitigation measures. • Areas of potential bat maternity roosting habitat will be identified during field investigations. Tree removal in identified areas should be limited to the extent possible and will avoid the active season for bats (mid-April to mid-September). Mitigation recommendations for SAR bats will be prepared upon consultation with MECP. • Construction activities with the potential to remove migratory bird habitat, such as vegetation clearing, should be avoided during the breeding season which is generally from April 1- August 31 in southern Ontario (Environment Canada, 2017). Should vegetation clearing activities be unavoidable during this window, a mitigation program should be developed, which includes measures to reduce and avoid impacts to migratory birds and their nests (Government of Canada, 2018). This program should include preventative and mitigation measures but may	

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		also include avoidance of clearing during key sensitive periods and in key locations. • If SAR are found along the preferred pipeline route Enbridge will undertake consultation with the MECP regarding the potential need for a permit under the ESA and/or species-specific mitigation. Mitigation and protective measures are outlined in Section 4.3.2 for vegetation removal and Section 4.2.3 for accidental spills.	
SOCIO-ECONOMIC ENVIRONMENT			
Employment and Business *Section 3.4.1*	Project demands for labour and goods and services can result in both beneficial and adverse effects. Positive effects may not be evenly distributed among populations, with some residents in a better position to receive economic benefits than others. Similarly, adverse effects may affect some residents more than others. Residual effects on employment are related to the project's labour demand compared to the labour supply. Three types of employment are considered: • Direct employment: labour that is hired directly for the project • Indirect employment: labour hired by companies in order to produce and provide goods and services needed for the project • Induced employment: labour hired by industries that produce and provide consumer items and services purchased by people who	It is expected that the project will generally result in positive effects on employment by employing local and Indigenous people, and by reducing the unemployment rate in the region. These positive effects do not require mitigation, but Enbridge will identify and implement various mechanisms to enhance project benefits. The potential effects of the project as a result of purchasing labour, goods and services is expected to be positive during construction and operation, so no mitigation will be required. However, Enbridge has and will continue to work with local and Indigenous businesses to enhance their potential for successfully bidding on project contracts regarding the supply of goods and services, particularly for the operation phase. One initiative to help encourage further local and Indigenous content on the project is to post project purchasing requirements in advance, so that businesses can position themselves to effectively bid to supply goods and services needed for construction and operation. Increased participation of local and Indigenous businesses will enhance positive local economic effects. With respect to potential adverse effects on agricultural and non-agricultural businesses, Enbridge will engage	With the above initiatives to encourage local and Indigenous participation on the Project, it is anticipated that the effects from project on employment and business will be positive, including creating positive economic activity through new direct, indirect, and induced employment. Project expenditures on local businesses and suppliers also have the potential to positively affect the local economies. Consultation with residents, businesses and landowners will address any concerns to their operations. With the implementation of the mitigation and protective measures, no significant

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	are directly or indirectly employed by the project Labour conditions will be affected by direct, indirect and induced employment during all project phases. The project could affect business through purchases of labour, goods and services from local businesses, including businesses owned by Indigenous peoples, and will result in increased local employment income and municipal government revenue. Local businesses will likely benefit from supplying the project with goods and services. Land clearing and other construction-related project activities could adversely affect agricultural productivity. Other potential adverse effects on industries include impairment to the use and enjoyment of property, disruption of livestock production and issues with farm machinery and other vehicular movement.	with landowners and municipalities to address access to the project area, the portion of land that will be altered as part of site preparation, and long-term changes to agricultural and non-agricultural land.	adverse residual impacts on Employment and Business are anticipated.
Community Services and Infrastructure *Section 3.4.2*	The presence of temporary workers in the local communities during the construction period has the potential to increase the demand for housing and local community services and infrastructure. Non-local project workers are expected to stay in temporary accommodations, including hotels, motels, and campgrounds. As there are limited temporary accommodations	Project employees might require medical attention while staying in the area. The contractor and Enbridge will have emergency response equipment and trained personnel on-site during construction. In addition, an Emergency Response Plan will be developed and implemented, which will address field health services, emergency call-out procedures and fire response plans. Safety fencing will be used where necessary to separate the work area.	Community services and infrastructure appear to have additional capacity to absorb potential increased temporary demands that may result from the project. Adverse effects on traffic will be minimal because the preferred pipeline route intersects mainly rural communities where roads

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	available within or adjacent to the Study Area, it is anticipated that non-local project workers will stay in accommodations closer to larger towns and cities, such as the City of London. Non-local project workers may also choose to rent cottages or apartments. The vacancy rate for temporary rentals will likely be able to accommodate the temporary increase. The short duration that the workers will reside near any one community, as well as the structure of the work shifts, will limit the need for workers to use the services and infrastructure in local communities. The transportation of project goods, services and workers has the potential to lead to increased use of existing transportation infrastructure. Also, increased traffic volumes along local road networks could increase travel times and reduce road safety, which might lead to increased use of local emergency services due to potential vehicle accidents and workplace accidents. In addition, the production of project-related waste could place additional stress on the capacity of local landfills. During operation, the workforce will remain the same as current operations with no planned changes as the project is a replacement of the existing pipeline. Some operation workers might already reside in the local area; however, some might need to come from outside	Environmental mitigation will be in place to reduce the likelihood of emergency events and to prepare for the management of emergency events on site. If an emergency incident were to occur, it is anticipated that the comprehensive mitigation, contingency plans, and safety strategies will result in a localized and low-intensity response. A Traffic Management Plan will be in place for all roads affected by construction, which at a minimum outlines measures to: • Control the movement of materials and personnel to and from the construction site • Post signs to warn oncoming motorists of construction activity • Control traffic at road crossings • Reduce on-road disturbance and land closures • Store equipment as far from the edge of the road as practical • Install construction barricades at road crossings Traffic disruptions during construction will be reduced by adherence to the Traffic Management Plan. Guidelines will be developed for vehicular use on the RoW and associated access roads to avoid traffic congestion and accidents. Access to existing transportation infrastructure will be addressed through standard mitigation and will be reversible once the construction phase ends. The capacity of waste disposal sites will be considered and if project needs are not easily accommodated, alternative disposal locations will be considered. Enbridge will provide project information to local communities and service providers so that they are prepared for any possible demand on community services and infrastructure related to a temporary	currently have low levels of traffic and alternative routes are readily accessible. Given the available capacity of the local community services and infrastructure, along with the implementation of the mitigation and protective measures, no significant adverse residual impacts on community services and infrastructure are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	communities and may use local community and emergency services.	population increase. Additional consultation with residents and businesses adjacent to the preferred pipeline route will be held in advance of construction commencement to discuss potential specific impacts to the property or business. Contact information for a designated Enbridge representative will be available to address questions and concerns during construction. Consultation has been initiated and will continue with municipal personnel.	
Culture, Tourism and Recreational Facilities *Section 3.4.3*	Cultural, tourism, and recreational facilities may experience noise, dust, and equipment exhaust associated with construction activity. Construction activities will temporarily affect the aesthetic landscape of the construction area and could impede property access. Potential safety concerns also exist at locations where properties, visitors, and vehicles come close to construction activities.	It is recommended additional consultation with residents and businesses adjacent to the preferred pipeline route occur in advance of construction commencement. Contact information for a designated Enbridge representative should be available prior to and during construction to address questions and concerns. While pipeline construction activities and machinery have the potential to temporarily affect street aesthetics, restoration of the construction area will leave little evidence that a pipeline exists. Construction should be conducted as expeditiously as possible, to reduce duration of activities. Vegetative buffers at watercourse and road crossings should be restored where feasible. Access to businesses and residential properties should be maintained always. If required, signs will be used to direct people to correct access. Safety fence should be installed at the edge of the construction area where public safety considerations are required. A traffic management plan should be implemented for all roads affected by construction, which at a minimum outlines measures to: • control the movement of materials and personnel to and from the construction site	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on cultural, tourism, and recreational facilities are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• post signs to warn oncoming motorists of construction activity • control traffic at road crossings • reduce on-road disturbance and land closures • store equipment as far from the edge of the road as practical • install construction barricades at road crossings	
Infrastructure *Section 3.4.4*	The preferred pipeline will be constructed within existing municipal road allowances and existing easement, with some temporary lands required for construction purposes. Where temporary lands are required limited impacts to agricultural lands may occur. The existing route and alternative segments have the potential to interact with buildings, roads/highways, hydroelectric lines, and buried and overhead utilities. Potential impacts include damage to the infrastructure and harm to personnel.	Mitigation and protective measures for roads and railways are outlined in this table under *Community Services and Infrastructure.* Consultation is ongoing with Infrastructure Ontario, Hydro One and CN and CP Railways regarding easements to cross the existing overhead hydroelectric lines and railways. The contractor will be responsible for locating and exposing existing pipelines and utilities on lands that will be affected by construction activities. During construction, machine operators will be informed where electrical transmission lines are present overhead. Lines that may interfere with the operation of construction equipment will be identified with warning poles and red flags.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on infrastructure are anticipated.
Air Quality and Noise *Section 3.4.5*	Residential and business properties may experience noise, dust and equipment exhaust associated with construction activity. During operation, no substantial air or noise emissions are anticipated to occur.	During construction, motorized construction equipment should be equipped with appropriate mufflers and silencers as available. Company and construction personnel should avoid excessive idling of vehicles; vehicles and equipment should be turned off when not in use unless required for operation. To the greatest extent practical, activities that could create noise should be restricted to daylight hours and adhere to local noise by-laws. Sources of continuous noise, such as portable generators, should be shielded or located so as to reduce disturbance to residents and businesses.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from air quality and noise are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		The contractor should implement site practices during construction that are in line with the Environment Canada document 'Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities' (Cheminfo Services Inc., 2005), which may include: • Maintaining equipment in compliance with regulatory requirements • Protecting stockpiles of friable material with a barrier or windscreen in the event of dry conditions and dust • Dust suppression of source areas • Covering loads of friable materials during transport Watering for dust control must not result in the formation of puddles, rutting by equipment or vehicles, the tracking of mud onto roads or the siltation of watercourses.	
Contaminated Sites *Section 3.4.6*	The existing route and alternative segments are not expected to cross or be in the vicinity of lands that may have contaminants of concern, however the application of road salt for de-icing activities along the roadways within the Study Area represent a potential source of contamination. The removal of structures during construction is not anticipated, therefore, the potential presence of building materials of concern, such as asbestos, lead, and silica, related to structures in the investigated area (i.e., within privately owned buildings, concrete culverts, bridge decks, etc.) was not	Based on the findings, the following recommendations are provided: • Should contaminated soils be encountered during construction, Enbridge should implement their Suspect Soils Program (sew LUG C&M 2020 for further details). • Should excess soil be generated on-site during construction activities that will require off-site management, or if contaminated soils are suspected (e.g., if observed material contains anthropogenic substances, petroleum hydrocarbons odours/staining, and debris/waste), representative soil samples should be collected in accordance with O. Reg. 406 /19, and submitted for chemical analysis to determine management options and appropriate handling and health and safety guidelines.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from contamination are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	confirmed, as an assessment of structures was not completed.	• Soils that cannot be reused on site may be reused off-site in accordance with O. Reg. 406/19. • A Phase I ESA, and Phase II ESA (if recommended as part of the Phase I ESA) should be considered for any property that will be acquired by Enbridge and a site-specific evaluation of PSOCs should be completed. If building demolition will be required, designated substance surveys should be completed for buildings or structures prior to demolition.	
Waste Management *Section 3.4.7*	Improper disposal of waste material generated during construction may result in contamination to soil, groundwater, and/or surface water resources on and off the construction RoW. Litter generated during construction may also become a nuisance to landowners and/or surrounding residents if not contained.	All construction wastes should be disposed of in accordance with LUG C&M 2020. Additionally, Enbridge should undertake responsible management of excess fill. When details on excess fill volumes are known, disposal locations should be determined, and appropriate permitting obtained. A site-specific waste collection and disposal management plan should be implemented, which may include: • Waste materials, sanitary waste, and recycling transported off-site by private waste contractors licensed by the MECP. • Contractors required to remove their excess materials from the site. • Labelling and storage of hazardous and liquid wastes in a secure area that would contain material in the event of a spill. • Implementation of a waste management program consisting of reduction, reuse, and recycling of materials.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from waste management are anticipated.
Land Use *Section 3.4.8*	As noted above, natural gas pipelines are permitted facilities in the various municipal land uses, and thus no	Mitigation and protective measures for agricultural soils, agricultural tile drains and for employment and businesses are discussed in this table under *Soil and*	With the implementation of the mitigation and protective measures, no significant

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	impacts to municipal land use designations will occur. Potential impacts on agricultural land is discussed in Section 3.2.5 (Soil and Soil Capability) and 3.2.6 (Agricultural Tile Drains). Potential impacts on employment and businesses are discussed in Section 3.4.1. Potential impacts on uses of land will be interruption to access or use.	*Soil Capability*, *Agricultural Tile Drains* and *Employment and Business.* Consultation has been initiated, and will continue, with municipalities and counties as well as landowners within the Study Area in order to identify methods of minimizing disturbance to property and maintaining access to lands, to the extent possible. Enbridge should incorporate feedback from landowners when determining whether to abandon the existing pipeline by removing the pipe or abandoning the pipe in place, where feasible. Where work is to occur within conservation authority regulated areas, permits will be obtained from the UTRCA as per O. Reg. 157/06, LTVCA as per O. Reg. 152/06 and SCRCA as per O. Reg. 171/06.	adverse residual impacts on land use are anticipated.
Archaeological Resources *Section 3.4.9*	The Stage 1 AA has determined that portions of the Study Area retain potential for the identification and documentation of Indigenous and Euro-Canadian archaeological resources.	Based on the findings of the Stage 1 AA, further necessary stages of archaeological assessment, i.e., Stage 2 AA, are required. The objective of Stage 2 AA is to identify archaeological resources within the Study Area to be impacted by the project. The results of the Stage 2 AA will provide recommendations for further assessment, protection, and mitigation of archaeological resources which retain further cultural heritage value or interest based on MHSTCI standards. Where feasible for the project, archaeological sites that are determined to retain further cultural heritage value and interest should be mitigated in whole or in part by avoidance and protection/preservation measures. Where avoidance and protection/preservation measures are not feasible, archaeological resources may be mitigated in whole or in part by excavation. For Indigenous archaeological resources retaining further cultural heritage value or interest and which may be subject to impact by the project, Stage 3 AA and Stage 4 archaeological mitigation options will be evaluated in	With the implementation of the archaeological assessment and mitigation measures, including avoidance and protection/preservation (where feasible) and excavation, no significant adverse residual impacts on archaeological resources are anticipated.

Table 5-1: Potential Impacts and Recommended Mitigation and Protective Measures

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		discussions with the appropriate Indigenous communities.	
Heritage Resources and Cultural Heritage Landscapes *Section 3.4.10*	The completion of the Checklist included the identification of five indicators of CHVI. Given the findings of the Checklist, it is recommended that additional technical studies are required. Specifically, a Cultural Heritage Assessment Report (CHAR) is required prior to Project construction.	If required, prior to construction, the above-referenced CHAR will be undertaken and submitted to the MHSTCI for their review and comment. The CHAR will contain mitigation measures for potential impacts, if required.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on heritage resources or cultural heritage landscapes are anticipated.
Indigenous Interests *Section 3.4.11*	Although not known to occur, the project may affect traditional territories of Indigenous communities and during construction harvesting and hunting in the construction RoW could be impeded. A Stage 2 Archaeological Assessment may result in the identification of Indigenous archaeological resources.	Enbridge has sought input from the identified Indigenous communities and will continue engaging with Indigenous communities as the project moves forward. Enbridge will also continue to work with their respective Economic Development departments and Enbridge's contractors to find opportunities for their participation in providing goods and services during construction. Information on the current state of Indigenous engagement will be provided in the application to the OEB. Mitigation and protective measures for archaeology are discussed in this table under *Archaeological Resources.*	By undertaking the engagement and archaeological assessments, no significant adverse residual impacts on Indigenous interests are anticipated.

6.0 CUMULATIVE EFFECTS ASSESSMENT

The recognition of cumulative effects assessment as a best practice is reflected in many regulatory and guidance documents. Regarding the development of hydrocarbon pipelines in Ontario, the *OEB Environmental Guidelines* (2016) note that cumulative effects of pipeline construction should be identified and discussed in the ER as an integral part of the assessment.

Building upon the intent of the *OEB Environmental Guidelines* (2016), the OEB has specified that only those effects that are additive or that interact with effects that have already been identified as resulting from the Project are to be considered under cumulative effects. In such cases, it will be necessary to determine whether these effects warrant mitigation measures such as alterations in routing, timing of construction, or other measures that can address the cumulative effects. The cumulative effects assessment (CEA) has been prepared with consideration of this direction from the OEB.

6.1 METHODOLOGY

This assessment describes the potential cumulative effects resulting from the interaction of residual effects of the construction and operation of the preferred pipeline with the effects of other unrelated projects. The other projects assessed are those that are either existing or approved and that have a high likelihood of proceeding.

Cumulative effects include the temporal and spatial accumulations of change that occur within an area or system due to past, present, and future activities. Change can accumulate within systems by either an additive (i.e., cumulative) or interactive (i.e., synergistic) manner. Positive residual effects, such as an increase in the supply of natural gas, employment or in property taxes, have not been assessed in the CEA.

By applying the principles of avoidance, minimization, and compensation to limit project-specific effects, potential adverse residual effects on environmental and socio-economic features have been greatly limited before accounting for the effects of other unrelated projects.

The cumulative effects assessment methodology is designed to evaluate and manage the additive and interactive effects from the following sources:

- Existing infrastructure, facilities, and activities as determined from available data sets
- The preferred pipeline
- Future activities where the undertaking will proceed, or has a high probability of proceeding

Although rare in occurrence, it is plausible that accidents or emergency events may arise due to an unforeseen chain of events during the project's construction or operational life. Due to the rarity and magnitude of such events, they have not been assessed here, as they are extreme in nature when compared to the effects of normal construction and operation activities and require separate response

plans. The decommissioning and abandonment of the preferred pipeline is another event that is beyond the temporal boundaries of the cumulative effects assessment and therefore has not been assessed.

6.2 STUDY BOUNDARIES

Spatial

The spatial study boundaries discussed in this ER were contained within the Study Area. These boundaries are appropriate when considering the surrounding land uses and the preferred pipeline. The CEA used the same boundaries to identify potential effects from the Project.

The Study Area boundary is beyond the zone of influence of Project construction and operation activities (e.g., dust and noise) for the preferred pipeline, and consequently, the identified effects will have diminished to background levels at the edges of the Study Area. The Study Area is also considered conservative in terms of managing both effects and risks in that it considers all those features and areas that could be affected by construction.

Temporal

The temporal boundaries for the cumulative effects assessment reflect the nature and timing of project activities, and the availability of information surrounding future projects with a high probability of proceeding. The project schedule identifies three key milestone activities:

1. ER and technical design – 2020
2. Construction – 2021/2022
3. Operation and Maintenance – 2023 to 2073*

**Fifty years of operation is used as an assumption, although the pipeline may be operational beyond fifty years.*

Based upon these milestone activities, two time periods were selected for evaluation: 2021/2022 and 2025. The year 2021/2022 was selected to represent the construction period, and the year 2025 was selected to represent the operation and maintenance period. Forecasting beyond 2025 increases the uncertainty in predicting whether projects will proceed, and the effects associated with these projects.

6.3 PROJECT INCLUSION LIST

The Project inclusion list was developed by reviewing publicly available information for projects and activities with the potential for effects to interact with the identified effects of the preferred pipeline within the spatial and temporal study boundaries. The following resources were reviewed:

- Impact Assessment Agency of Canada, Canadian Impact Assessment Registry (IAAC, 2020)
- Government of Ontario, Environmental Assessment Projects by Category (Government of Ontario, 2020)

- Government of Ontario, Infrastructure Ontario Projects (Infrastructure Ontario, n.d.)
- MTO, Southern Highways Program (2017-2021) (MTO, n.d.)
- Canada Energy Regulator, Major Facilities Applications (CER, 2020)
- OEB Applications Currently Before the Board (facilities applications only) (OEB, 2020)

Based on the review of publicly available resources, the project inclusion list in Table 6-1 included the following project for consideration of cumulative effects:

Table 6-1: Project Inclusion List for Cumulative Effects

Project Name	Project Location	Proponent	Schedule	Project Description	Interaction with the Preferred Pipeline
Improvements to Glendon Drive Corridor[1]	City of London boundary at the Thames River to the 402 Highway interchange	County of Middlesex, Municipality of Middlesex Centre	2018 - 2038	Capital planning project for the Glendon Drive Corridor in the Municipality of Middlesex Centre. The Environmental Assessment, completed by Stantec, recommended that sections of the roadway be expanded to 4 or 5 lanes, a roundabout be installed at the Komoka Road intersection, and the installation of bicycle lanes and other pedestrian facilities.	Intersection of Amiens Road and Glendon Drive, along Glendon Drive to the intersection with Komoka Road, along Komoka Road (all within the Municipality of Middlesex Centre).

1. Glendon Drive Streetscape Schedule C Municipal Class Environmental Assessment, 2018

In addition to the above, it is assumed that on-going improvements, upgrades and maintenance to municipal infrastructure such as bridges, culverts, drains or roads will occur within the spatial and temporal study boundaries.

6.4 ANALYSIS OF CUMULATIVE EFFECTS

Sections 3.2-3.4 of the ER consider the potential impacts of the project on specific features and conditions and propose mitigation and protective measures to eliminate or reduce the potential impacts. The cumulative effects assessment evaluates the significance of residual impacts (after mitigation) of the project along with the effects of other unrelated projects.

6.4.1 Construction – Year 2021/2022

Residual project impacts which may occur during project construction are outlined in Sections 3.2 - 3.4. To consider the additive and interactive effects at their maximum intensity, the cumulative effects assessment assumes that construction of other unrelated projects and the proposed pipeline construction will occur concurrently.

Potential cumulative effects resulting from the proposed pipeline construction and the concurrent projects are additive effects on soil, vegetation, wildlife and wildlife habitat, air quality and the acoustic environment.

Soil

Soil erosion and reduced soil capability is a potential residual effect associated with construction of the project. Mitigation and protective measures for soil are outlined in Section 3.2.2. Provided that concurrent projects follow mitigation measures like those outlined in this report, the probability of erosion control failure occurring concurrently is low and based on the nature of the proposed projects the magnitude of such an event would be low. As such, adverse cumulative residual effects on the natural environment from erosion are not anticipated to be significant, and cumulative effects on soil capability are not anticipated to occur.

Vegetation

Where there is natural vegetation within or adjacent to the proposed pipeline route, potential impacts include the removal of native vegetation, and indirect effects such as dust, erosion, and accidental spills. However, with the implementation of the mitigation and protective measures outlined in this report, such as following any applicable tree clearing and/or re-vegetation by-laws, and provided that concurrent projects follow mitigation measures similar to those outlined in this report, adverse cumulative residual effects on vegetation are not anticipated to be significant.

Wildlife and Wildlife Habitat

Potential residual effects on wildlife and wildlife habitat associated with construction of the project are accidental direct mortality, habitat removal and sensory disturbance. Mitigation and protective measures for wildlife and wildlife habitat are outlined in Section 3.3.3. In the event of project-related wildlife deaths, the MNRF will be contacted. If mortality occurs between concurrent projects for similar species, the Ministry will be able to note the occurrences and coordinate with Enbridge to adjust construction activities. Potential cumulative effects resulting from sensory disturbance (i.e., noise, air pollution and dust) are discussed below.

Provided that the above measures are undertaken, and provided that concurrent projects follow mitigation measures similar to those outlined in this report, adverse cumulative residual effects on wildlife and wildlife habitat will be of low probability and will be mitigated as coordinated through the MNRF, and therefore are not anticipated to be significant.

Air Quality and Acoustic Environment

Potential residual effects on air quality associated with construction of the project and concurrent projects are an increase in noise and air pollutants from operation of vehicles and equipment, and an increase in dust from construction activities. Mitigation and protective measures for air quality and the acoustic environment are outlined in Section 3.4.5. Provided that the concurrent projects follow mitigation measures like those outlined in this report, cumulative effects will be of low magnitude and reversible. Therefore, adverse residual cumulative effects on air quality and the acoustic environment are not anticipated to be significant.

6.4.2 Operation and Maintenance – Year 2025

Development and maintenance activities which have a probability of proceeding during operation and maintenance of the project include:

- Road works: Future road rehabilitation and resurfacing, including the Glendon Drive corridor capital program
- Water works: Future installation of water and wastewater pipelines
- Pipeline construction and maintenance: Future pipeline construction and maintenance of existing hydrocarbon pipelines

Operation and maintenance activities undertaken by Enbridge will be completed in co-ordination with the Enbridge Environmental Planning Team and will consider potential impacts on natural heritage and socio-economic environment. Appropriate mitigation measures will be developed and implemented based on the proposed maintenance work. Enbridge will obtain all necessary agency permits and approvals, as required. Given the limited scale of impact of any potential operation and maintenance activities, it is anticipated that residual impacts will be minimal and that should any interaction occur with other projects, significant adverse residual effects are not anticipated to be significant.

6.5 SUMMARY OF CUMULATIVE EFFECTS

The potential cumulative effects of the project were assessed by considering development that has a high probability of proceeding just prior to or concurrent with construction of the project. A 100 m boundary around the project site was used to assess the potential for additive and interactive effects of the project and other developments on environmental and socio-economic features.

Municipal projects may contribute to cumulative effects within the study boundaries. Improvements to municipal infrastructure such as bridges, culverts, drains or roads may occur during the operational phase of the project. The cumulative effects assessment determined that, provided the mitigation and protective measures outlined in this report are implemented and that concurrent projects implement similar mitigation and protective measures, potential cumulative effects are not anticipated to occur, or if they do occur are not anticipated to be significant.

7.0 MONITORING AND CONTINGENCY PLANS

7.1 MONITORING

The primary objective of compliance and effects monitoring is to check that mitigation and protective measures are effectively implemented and to measure the impacts of activities associated with construction on environmental and socio-economic features. Ultimately, the knowledge gained from monitoring is used to avoid or reduce issues which may arise during construction of subsequent pipeline projects.

Previous pipeline construction experience, and a review of post-construction monitoring reports from other projects, indicates that impacts from pipeline construction are for the most part temporary. The mitigation and protective measures to eliminate or reduce impacts are well known and have been shown to be effective. Accordingly, Enbridge should adhere to the following general monitoring practices:

- Trained personnel should be on-site to monitor construction and should be responsible for checking that the mitigation and protective measures and monitoring requirements within the ER are executed. Enbridge should implement an orientation program for inspectors and contractor personnel to provide information regarding Enbridge's environmental program and commitments, as well as safety measures.
- An Environmental Protection Plan (EPP) will be developed that provides site and feature specific mitigation for the construction of the Project. This document should become part of the construction specification as noted in section 5.8.4 of the OEB Guidelines.
- Recommendations and commitments made in this ER and other applicable permits and reports should be incorporated into construction activities.
- A walking inspection of the entire pipeline route should be done approximately one year after construction to determine whether areas require further rehabilitation or as required by OEB Conditions of Approval.

The following sections list specific environmental monitoring activities recommended for the Project.

7.1.1 Exposed Soils

Where soils are exposed for construction activities, potential effects may include surface soil erosion, trench slumping, and sedimentation of watercourses. The movement of heavy machinery on wet soil may cause excessive rutting, compaction, and mixing of topsoil and subsoil. Improperly salvaged topsoil can result in mixing topsoil with subsoil, compaction, rutting and erosion, which can potentially decrease crop yields. Improper water discharge can lead to erosion, sedimentation or flooding. Monitoring of potential effects on exposed soils should occur during construction by Enbridge's on-site inspection team. Restored bank slopes should be inspected one year after construction for erosion, and restoration measures should be implemented as necessary.

7.1.2 Water Wells

Before construction, a private water well survey should take place to assess domestic groundwater use near the proposed pipeline route and determine the need for a water well monitoring program, as outlined in Section 5.1.

7.1.3 Watercourse Crossings

Watercourse crossings have the potential to affect fish, fish habitat, and water quality. Enbridge's on-site inspection team should oversee all watercourse crossings and confirm that work is conducted as outlined in Section 2.3.1, and as per the conditions of relevant permits (see Section 1.2.5).

7.1.4 Vegetation and Wetlands

For at least one year after construction, planted vegetation should be inspected for survival. Dead and diseased vegetation should be replaced in areas of severe dieback or in areas with important environmental functions (e.g., riparian or slope cover).

7.1.5 Species at Risk

Should SAR be identified during vegetation, wildlife, and/or wildlife habitat field surveys, construction monitoring may need to be undertaken. The exact nature of monitoring will be determined in consultation with the MECP and DFO and will depend on the species present.

7.1.6 Cultural Heritage Resources

Any cultural heritage resources within 40 m of the proposed pipeline route will require site plan controls that will need monitoring. In addition, if a vibration mitigation measures are recommended, these will need to be monitored. Further details are provided in Section 3.4.10.

7.1.7 Residents and Businesses

Construction activities may impact directly affected landowners and surrounding residents and businesses. During construction, a designated Enbridge representative should be available to monitor and respond to requests and concerns voiced by residents and business owners. Landowners affected by construction should be notified in advance of construction activities in their area, as feasible. The notification should provide the contact information for a designated Enbridge representative. Enbridge should incorporate feedback from landowners when determining whether to abandon the existing pipeline by removing the pipe or abandoning the pipe in place, where feasible.

Enbridge's on-site inspection team should also monitor the contractors' implementation of the TMP, to see that site access to residences and businesses has been maintained and that traffic is not being unnecessarily interrupted.

While efforts should be undertaken to reduce impacts, a comment tracking system should also be implemented. An Enbridge representative should record the time and date of calls, the nature of the concern, the corrective action taken, and the time and date of follow-up contact.

Following completion of construction, Enbridge should contact residents and businesses along the easement to continue ongoing communications where necessary. During the first two years, attention should be paid to monitoring and documenting impacts associated with construction of the proposed pipeline to residents and businesses.

7.1.8 Municipal Roads

Municipal roads affected by pipeline construction should be restored to their pre-construction condition as per applicable permits and/or agreements. For a period of one year after construction (i.e., first year of operation), roads should be monitored following spring runoff to check if erosion, bank slumping, road subsidence or rutting has occurred as a result of construction activities. Affected roadside ditches and drains should also be monitored to check that they are functioning properly. Further restoration activities and subsequent monitoring should be conducted, as necessary.

7.2 CONTINGENCY

Contingency planning is necessary to prevent a delayed or ineffective response to unexpected events or conditions that may occur during construction of the proposed pipeline. An essential element of contingency planning is the preparation of plans and procedures that can be implemented if unexpected events occur. The absence of contingency plans may result in short or long term environmental or socio-economic impacts and possibly threaten public safety.

The following unexpected events require contingency planning during construction: adverse weather causing watercourse sedimentation, human error causing accidental spills, subsurface conditions causing a release of drilling fluids, and the discovery of unexpected finds. Although unexpected problems are not anticipated to occur during construction, Enbridge and the pipeline contractor should be prepared to act when unexpected events occur. Construction personnel should be made aware of and know how to implement contingency measures.

7.2.1 Inadvertent Returns during HDD

For watercourses crossed by HDD, operations should be monitored continuously by qualified personnel. An emergency response and contingency plan for inadvertent fluid release should be developed by the contractor and implemented during construction. At the very least, the plan should address containment, clean-up and remediation, alternative drilling/crossing plans, disposal of waste materials, monitoring and reporting.

7.2.2 Watercourse Sedimentation

Even with properly installed ESC measures, extreme runoff events could result in collapse of silt fencing, overflow or bypass of barriers, slope or trench failures, and other problems which could lead to sedimentation of watercourses.

If sedimentation occurs, immediate action should be taken to repair dysfunctional ESC features or install temporary measures that will contain the erosion as quickly as practical. When site conditions permit, permanent protection measures should be installed on erosion-susceptible surfaces. If the erosion and sedimentation results from a construction-related activity, the activity should be halted immediately until the situation is rectified.

7.2.3 Accidental Spills

During construction, an accidental spill of fluids may occur. The impact of the spill will depend upon the magnitude, extent, and nature of the spill and the environmental and socio-economic conditions in which it takes place. Upon release of a hydrocarbon-based construction fluid, Enbridge should immediately determine the magnitude and extent of the spill and rapidly take measures to contain it. Release of sediment should also be treated as a spill depending on the magnitude and extent. Spills should be immediately reported to Enbridge's on-site inspection team. If necessary, the MECP Spills Action Centre should be notified at 1-800-268-6060.

A Spills Response Plan should be developed, reviewed with personnel, and posted in site trailers. Spill containment equipment should be readily available, especially near watercourses. Personnel should be trained in the use of spill containment equipment.

Should a spill occur in the project area the spill response contingency plan should be implemented. Specifics of the contingency plan will be documented on site.

7.2.4 Unexpected Finds: Archaeological or Heritage Resources and Unknown Contaminated Soils

Should previously unidentified archaeological or heritage resources be uncovered or suspected of being uncovered during construction, ground disturbance in the find location should cease immediately. An archaeologist licensed in the Province of Ontario should be notified immediately. As needed, the licensed archaeologist will consult with the MHSTCI, and other relevant stakeholders, i.e., Indigenous communities, to develop a site-specific response plan. A site-specific response plan for the newly identified archaeological or heritage resource should then be employed following further investigation of the specific find. The response plan would indicate under which conditions the ground disturbance activity in the find location may resume.

In the event that human remains are uncovered or suspected of being uncovered during ground disturbance, the above measures should be implemented along with notifying local police, the coroner's office, and the Cemeteries Regulation Unit of the Ontario Ministry of Government and Consumer Services (1-800-889-9768).

If previously unknown materials or contaminated soils are uncovered or suspected of being uncovered, construction in the find location should cease immediately. In such an instance, Enbridge should retain expert advice on assessing and developing a plan to include soil sampling, handling, disposal and remediation.

8.0 CONCLUSION

The environmental study investigated data on the physical, biophysical, and socio-economic environment within the Study Area. In the opinion of Stantec, the recommended program of supplemental studies, mitigation and protective measures, and contingency measures are considered appropriate to protect the features encountered. Monitoring will assess whether mitigation and protective measures were effective in both the short and long term.

With the implementation of the recommendations in this report, on-going communication and consultation, and adherence to permit, regulatory and legislative requirements, potential adverse residual environmental and socio-economic impacts of the Project are not anticipated to be significant.

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APPENDIX A
Figures

Stantec

Legend

- Study Area
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Upper

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
A-1

Title
Study Area

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Legend

- Study Area
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Upper

Common Sections

- Route Section A
- Route Section C
- Route Section E-1

Segment 1 - Florence

- Route Section B
- Route Segment H

Segment 2 - Glencoe

- Route Section D
- Route Segment I
- Route Segment J
- Route Segment K
- Route Segment L
- Route Segment M
- Route Segment N
- Route Segment O
- Route Segment P
- Route Segment Q

Segment 3 - Komoka

- Route Section E-2
- Route Section F
- Route Section G
- Route Segment R
- Route Segment S

Segment 4 - Strathroy Extension

- Route Segment AA
- Route Segment T
- Route Segment U
- Route Segment V
- Route SegmentW
- Route Segment X
- Route Segment Y
- Route Segment Z

0 2 4 6 8 10 12 km

1:225,000 (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, 2020.

Project Location: Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
A-2

Title
Route Sections and Alternative Segments

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.

APPENDIX B
Consultation

APPENDIX B1
Contact List

Appendix B1: Contact List

TITLE	FIRST NAME	SURNAME	ORGANIZATION	DEPARTMENT	POSITION	ADDRESS	CITY/TOWN	POSTAL CODE	TELEPHONE	E-Mail
ELECTED OFFICIALS										
Mr.	Monte	McNaughton	Province of Ontario	Lambton-Kent-Middlesex	MPP	81 Front Street West	Strathroy	N7G 1X6	519-245-8696	monte.mcnaughtonco@pc.ola.org
Ms.	Lianne	Rood	Government of Canada	Lambton-Kent-Middlesex	MP	380 Albert Street	Strathroy	N7G 1W7	1-800-586-4614	Lianne.Rood@parl.gc.ca
Ms.	Peggy	Sattler	Province of Ontario	London West	MPP	106-240 Commissioners Road W	London	N6J 1Y1	519-657-3120	psattler-co@ndp.on.ca
Ms.	Kate	Young	Government of Canada	London West	MP	390 Commissioners Road West, Suite 200	London	N6J 1Y3	519-473-5955	Kate.Young@parl.gc.ca
FEDERAL AGENCIES										
Mr.	Sandro	Leonardelli	Environment and Climate Change Canada	Environmental Protection Operations - Ontario	Manager, Environmental Assessment Section	4905 Dufferin Street, 2nd Floor	Toronto	M3H 5T4	416-749-5858	sandro.leonardelli@canada.ca
Ms.	Anjala	Puvananathan	Canadian Environmental Assessment Agency	Ontario Regional Office	Director	55 York Street, Suite 600	Toronto	M5J 1R7	416-952-1575	anjala.puvananathan@canada.ca
To Whom it May Concern			Transport Canada							enviroOnt@tc.gc.ca
Mr.	Michael	Vallins	CN Rail	Public Works	Manager	1 Administration Road	Concord	L4K 1B9	905-669-3264	michael.vallins@cn.ca
PROVINCIAL AGENCIES										
Ms.	Heather	Malcolmson	Ministry of Environment, Conservation and Parks	Environmental Assessment and Permissions Branch	Director (Acting)	135 St. Clair Ave. W, 1st Floor	Toronto	M4V 1P5	416-314-0934	heather.malcolmson@ontario.ca
Ms.	Rob	Wrigley	Ministry of Environment, Conservation and Parks	London District Office	District Manager	733 Exeter Road, 1st Floor	London	N6E 1L3	519-873-5031	rob.wrigley@ontario.ca
Ms.	Crystal	Lafrance	Ministry of Environment, Conservation and Parks	Air, Pesticides and Environmental Planning	APEP Supervisor, Southwestern Region	733 Exeter Road, 1st Floor	London	N6E 1L3	519-873-5055	crystal.lafrance@ontario.ca
Mr.	Steven	McInnis	Ministry of Transportation	West Region	Manager (Acting) Engineering Office	659 Exeter Road, 4th Floor	London	N6E 1L3	519-873-4373	steven.mcinnis@ontario.ca
Mr.	Erick	Boyd	Ministry of Municipal Affairs and Ministry of Housing	Community Planning and Development	Manager (Acting)	659 Exeter Road, 2nd Floor	London	N6E 1L3	519-873-4025	erick.boyd@ontario.ca
Ms.	Karina	Cerniavskaja	Ministry of Natural Resources and Forestry	Aylmer District	District Planner	615 John St. N	Aylmer	N5H 2S8	519-773-4757	mnrf.ayl.planners@ontario.ca
Mr.	Alan	Sawyer	Infrastructure Ontario	Environmental Projects	Manager	1 Stone Road W, 4th Floor	Guelph	N1G 4Y2	519-837-6379	alan.sawyer@infrastructure.ca
Ms.	Michele	Doncaster	Ministry of Agriculture, Food and Rural Affairs	Land Use Policy & Stewardship	Manager	1 Stone Road W, Ontario Government Building 3rd Floor	Guelph	N1G 4Y2	519-766-5990	michele.doncaster@ontario.ca
Ms.	Drew	Crinklaw	Ministry of Agriculture, Food and Rural Affairs	Land Use Policy & Stewardship	Rural Planner	667 Exeter Road	London	N6E 1L3	519-873-4085	drew.crinklaw@ontario.ca
Ms.	Karla	Barboza	Ministry of Heritage, Sport, Tourism and Culture Industries	Heritage Planning Unit, Programs and Services Branch	Team Lead (Acting)	401 Bay Street, Suite 1700	Toronto	M7A 0A7	416-314-7120	karla.barboza@ontario.ca
Mr.	Dan	Minkin	Ministry of Heritage, Sport, Tourism and Culture Industries	Heritage Planning Unit, Programs and Services Branch	Heritage Planner	401 Bay Street, Suite 1700	Toronto	M7A 0A7	416-314-7147	dan.minkin@ontario.ca
Mr.	Robert	Greene	Ministry of Community Safety and Correctional Services		Director	George Drew Building, 25 Grosvenor Street, 13th Floor	Toronto	M7A 1Y6	416-314-6683	robert.greene@ontario.ca
ONTARIO PIPELINE COORDINATING COMMITTEE										
Ms.	Zora	Crnojacki	Ontario Pipeline Coordinating Committee	Ontario Energy Board		2300 Younge Street, 26th Floor, PO Box 2319	Toronto	M4P 1E4	416-440-8104	zora.crnojacki@oeb.ca
Mr.	Arthur	Churchyard	Ontario Pipeline Coordinating Committee	Ministry of Agriculture, Food and Rural Affairs		1 Stone Road West, 3rd Floor SE	Guelph	N1G 4Y2	519-826-3380	arthur.churchyard@ontario.ca
Ms.	Laura	Hatcher	Ontario Pipeline Coordinating Committee	Heritage	Team Lead	401 Bay Street	Toronto	M7A 0A7	416-314-3108	laura.e.hatcher@ontario.ca
Mr.	Tony	Difabio	Ontario Pipeline Coordinating Committee	Ministry of Transportation		301 St. Paul Street, 2nd Floor	St. Catharines	L2R 7R4	905-704-2656	tony.difabio@ontario.ca
Mr.	Kourosh	Manouchehri	Ontario Pipeline Coordinating Committee	Technical Standards and Safety Authority		345 Carlingview Drive	Toronto	M9W 6N9	416-734-3539	kmanouchehri@tssa.org
Ms.	Sally	Renwick	Ontario Pipeline Coordinating Committee	Ministry of Natural Resources and Forestry	Team Lead	300 Water Street	Peterborough	K9J 8M5	705-755-5195	sally.renwick@ontario.ca
Mr.	Scott	Oliver	Ontario Pipeline Coordinating Committee	Ministry of Municipal Affairs and Housing	Manager, Community Planning and Development	659 Exeter Road, 2nd Floor	London	N6E 1L3	519-873-4033	scott.oliver@ontario.ca
Ms.	Shannon	McCabe	Ontario Pipeline Coordinating Committee	Ministry of Energy, Northern Development and Mines	Senior Policy Advisor	77 Grenville Street, 6th Floor	Toronto	M7A 1B3	416-212-6704	shannon.mccabe@ontario.ca
Mr.	Crystal	Lafrance	Ontario Pipeline Coordinating Committee	Ministry of the Environment, Conservation and Parks	Air, Pesticides and Environmental Planning Supervisor	733 Exeter Road	London	N6E 1L3	519-873-5055	crystal.lafrance@ontario.ca
Ms.	Kathy	McDonald	Ontario Pipeline Coordinating Committee	Ministry of the Environment, Conservation and Parks	Manager, Technical Support Section	199 Larch Street, 12th Floor	Sudbury	P3E 5P6	705-564-3247	kathy.mcdonald@ontario.ca
Mr.	Patrick	Grace	Ontario Pipeline Coordinating Committee	Infrastructure Ontario		1 Dundas Street West, Suite 2000	Toronto	M5G 2L5		patrick.grace@infrastructureontario.ca
Mr.	Joseph	Vecchiolla	Ontario Pipeline Coordinating Committee	Ministry of Economic Development, Job Creation and Trade		777 Bay Street, 4th Floor, Suite 425	Toronto	M5G 2E5	416-325-1561	joseph.vecchiolla@ontario.ca
CONSERVATION AUTHORITY										
Mr.	Randall	Van Wagner	Lower Thames Valley Conservation Authority	Conservation Lands and Serviceas	Manager, Conservation Lands and Services	100 Thames Street	Chatham	N7L 2Y8	519-354-7310 ext. 230	randall.vanwagner@ltvca.ca
Ms.	Erica	Ogden	St. Clair Region Conservation Authority	Planning and Regulations	Planner	205 Mill Pond Crescent	Strathroy	N7G 3P9	519-245-3710 ext. 228	eogden@scrca.on.ca
Ms.	Tracy	Annett	Upper Thames River Conservation Authority	Environmental Planning and Regulations Unit	Manager, Environmental Planning and Regulations	1424 Clarke Road	London	N5V 5B9	519-451-2800 ext. 253	annettt@thamesriver.on.ca
INTEREST GROUPS/OTHER										
Mr.	Roman	Dorfman	Hydro One Networks Inc.		Real Estate Coordinator	185 Clegg Road	Markham	L6G 1B7	905-946-6243	roman.dorfman@hydroone.com
Ms.	Joanne	Fuller	Ontario Federation of Agriculture	Member Service Representative	Zone 6 - Lambton, Middlesex				519-264-1444	joanne.fuller@ofa.on.ca
To Whom it May Concern			Nature London			Box 24008	London	N6H 5C4	519-457-4593	info@naturelondon.ca
To Whom it May Concern			Canadian Pacific	Public Works - Eastern Canada Engineering Services						public_workseast@cpr.ca
To Whom it May Concern			Strathroy Sno Blizzards Snowmobile Club				Strathroy		519-247-3449	timmer@isp.ca
To Whom it May Concern			Syndenham Field Naturalists			PO Box 22008 Dufferin Avenue	Wallaceburg	N8A 5G4		sydenhamfn@hotmail.com
Ms.	Michelle	Kanter	Carolinian Canada Coalition		Executive Director	201 King Street E	London	N6A 1C9	519-433-7077	admin@carolinian.org
Ms.	Sarah	Jackson	Lambton Federation of Agriculture		President	3244 Mandaumin Road	Brigden	N0N 1B0	519-864-4224	info@lambtonfederation.ca
Ms.	Christina	Hyatt	Lambton Federation of Agriculture		Secretary-Treasurer	3244 Mandaumin Road	Brigden	N0N 1B0	519-864-4224	info@lambtonfederation.ca
To Whom it May Concern			Middlesex Federation of Agriculture		Director	633-4 Lions Park Drive	Mt. Brydges	N0L 1W0	519-264-9812	info@middlesexfarmers.ca
Ms.	Lucia A.	Lilbourne	Middlesex Federation of Agriculture		Coordinator	633-4 Lions Park Drive	Mt. Brydges	N0L 1W0	519-264-9812	mfa4h@bellnet.ca

Appendix B1: Contact List

TITLE	FIRST NAME	SURNAME	ORGANIZATION	DEPARTMENT	POSITION	ADDRESS	CITY/TOWN	POSTAL CODE	TELEPHONE	E Mail
MIDDLESEX COUNTY										
Ms.	Cathy	Burghardt-Jesson	Middlesex County		Warden	399 Ridout Street North	London	N6A 2P1		cbjesson@lucanbiddulph.on.ca
Ms.	Joanne	Vanderheyden	Middlesex County		Deputy Warden	399 Ridout Street North	London	N6A 2P1		jvanderheyden@strathroy-caradoc.ca
Mr.	Chris	Traini	Middlesex County		County Engineer	399 Ridout Street North	London	N6A 2P1		ctraini@middlesex.ca
Mr.	Durk	Vanderwerff	Middlesex County		Director of Planning	399 Ridout Street North	London	N6A 2P1	519-434-7321 xt 2262	dvanderwerff@middlesex.ca
Mr.	Bill	Rayburn	Middlesex County		Chief Administrative Officer	399 Ridout Street North	London	N6A 2P1	519-434-7321 ext. 2252	cao@mdlsx.ca
LAMBTON COUNTY										
Mr.	Bill	Weber	Lambton County		Warden	789 Broadway Street, Box 3000	Wyoming	N0N 1T0		bill.weber@county-lambton.on.ca
Mr.	Kevin	Marriott	Lambton County		Deputy Warden	789 Broadway Street, Box 3000	Wyoming	N0N 1T0		enniskillen@live.ca
Mr.	Ron	Van Horne	Lambton County		Chief Administrative Officer	789 Broadway Street, Box 3000	Wyoming	N0N 1T0		ron.vanhorne@county-lambton.on.ca
Mr.	Jason	Cole	Lambton County	Infrastructure and Development Services	General Manager	789 Broadway Street, Box 3000	Wyoming	N0N 1T0		jason.cole@county-lambton.on.ca
Mr.	Matt	Deline	Lambton County		Manager of Public Works	789 Broadway Street, Box 3000	Wyoming	N0N 1T0		Matt.Deline@county-lambton.on.ca
Mr.	Ben	Puzanov	Lambton County	Planning & Development Servoces	Manager	789 Broadway Street, Box 3000	Wyoming	N0N 1T0	519 845-0801 ext. 5342	planning@county-lambton.on.ca
Mr.	Stephane	Thiffeault	Lambton County	Corporate Services	General Manager, Solicitor/Clerk	789 Broadway Street, Box 3000	Wyoming	N0N 1T0	519 845-0801 ext. 5402	stephane.thiffeault@county-lambton.on.ca
MUNICIPALITY OF STRATHROY-CARADOC										
Ms.	Joanne	Vanderheyden	Municipality of Strathroy-Caradoc		Mayor	52 Frank Street	Strathroy	N7G 2R4		jvanderheyden@strathroy-caradoc.ca
Ms.	Jennifer	Huff	Municipality of Strathroy-Caradoc	Planning	Manager of Building and Planning	52 Frank Street	Strathroy	N7G 2R4	519-245-1105 ext. 250	jhuff@strathroy-caradoc.ca
Mr.	Fred	Tranquilli	Municipality of Strathroy-Caradoc	Chief Administration Office	Chief Administrative Officer/Clerk	52 Frank Street	Strathroy	N7G 2R4	519-245-1105 ext. 256	ftranquilli@strathroy-caradoc.ca
Mr.	Brad	Richards	Municipality of Strathroy-Caradoc		Deputy Mayor	52 Frank Street	Strathroy	N7G 2R4		brichards@middlesex.ca
Mr.	George	Elliot	Municipality of Strathroy-Caradoc		Director Engineering and Public Works	52 Frank Street	Strathroy	N7G 2R4		gelliott@strathroy-caradoc.ca
MUNICIPALITY OF SOUTHWEST MIDDLESEX										
Mr.	Allan	Mayhew	Municipality of Southwest Middlesex		Mayor	153 McKellar Street	Glencoe	N0L 1M0		amayhew@southwestmiddlesex.ca
Ms.	Jill	Bellchamber-Glazier	Municipality of Southwest Middlesex	Administration	Chief Administrative Officer/Clerk	153 McKellar Street	Glencoe	N0L 1M0	519-287-2015 ext. 109	cao@southwestmiddlesex.ca
Ms.	Shelia	McCahon	Municipality of Southwest Middlesex	Administration	Deputy Clerk	153 McKellar Street	Glencoe	N0L 1M0	519-287-2015 ext. 107	deputyclerk@southwestmiddlesex.ca
Ms.	Marigay	Wilkins	Municipality of Southwest Middlesex		Deputy Mayor	153 McKellar Street	Glencoe	N0L 1M0		mwilkins@southwestmiddlesex.ca
Mr.	Greg	Storms	Municipality of Southwest Middlesex		Public Works Manager	153 McKellar Street	Glencoe	N0L 1M0		gstorms@southwestmiddlesex.ca
MUNICIPALITY OF MIDDLESEX CENTRE										
Ms.	Aina	DeViet	Municipality of Middlesex Centre		Mayor	10227 Ilderton Road	Ilderton	N0M 2A0		adeviet@middlesex.ca
Mr.	Michael	Di Lullo	Municipality of Middlesex Centre	Corporate Services	Chief Administrative Officer	10227 Ilderton Road	Ilderton	N0M 2A0	519-666-0190 ext. 226	dilullo@middlesexcentre.on.ca
Ms.	Stephanie	Poirier	Municipality of Middlesex Centre	Planning Services	Planner	10227 Ilderton Road	Ilderton	N0M 2A0	519-930-1009	spoirier@middlesex.ca
Mr.	John	Brennan	Municipality of Middlesex Centre		Deputy Mayor	10227 Ilderton Road	Ilderton	N0M 2A0		jbrennan@middlesex.ca
Mr.	Robert	Cascaden	Municipality of Middlesex Centre		Director of Public Works and Engineering	10227 Ilderton Road	Ilderton	N0M 2A0		cascaden@middlesexcentre.on.ca
VILLAGE OF NEWBURY										
Ms.	Betty D.	Gordon	Village of Newbury		Clerk Treasurer	22910 Hagerty Road	Newbury	N0L 1Z0	519-693-4941	office@newbury.ca
TOWNSHIP OF DAWN-EUPHEMIA										
Mr.	Alan	Broad	Township of Dawn-Euphemia		Mayor	4591 Lambton Line	Dresden	N0P 1M0		mayor@dawneuphemia.on.ca
Ms.	Donna	Clermont	Township of Dawn-Euphemia		Administrator-Clerk	4591 Lambton Line	Dresden	N0P 1M0	519-692-5148	clerk@dawneuphemia.on.ca
Ms.	Cheryl	Ayrheart	Township of Dawn-Euphemia		Deputy Clerk / Treasurer	4591 Lambton Line	Dresden	N0P 1M0	519-692-5148	deputy.treasurer@dawneuphemia.on.ca
Mr.	Paul	Dalton	Township of Dawn-Euphemia		Public Works Superintendent	4591 Lambton Line	Dresden	N0P 1M0		roads@dawneuphemia.on.ca

Appendix B1: Contact List

TITLE	FIRST NAME	SURNAME	ORGANIZATION	POSITION	ADDRESS	CITY/TOWN	PROV	POSTAL CODE	TELEPHONE	E-MAIL
Chief	Christopher	Plain	Aamjiwnaang First Nation	Chief	978 Tashmoo Avenue	Sarnia	ON	N7T 7H5	519-336-8410 ext. 236	chief.plain@aamjiwnaang.ca
Ms.	Sharilyn	Johnston	Aamjiwnaang First Nation	Environment Coordinator	978 Tashmoo Avenue	Sarnia	ON	N7T 7H5	519-336-8410 ext. 245	sjohnston@aamjiwnaang.ca
Chief	Jason	Henry	Chippewas of Kettle and Stony Point	Chief	6247 Indian Lane	Lambton Shores	ON	N0N 1J1	519-786-2125	Jason.henry@kettlepoint.org
Mr.	Clint	Couchie	Chippewas of Kettle and Stony Point	Chief Executive Officer	6247 Indian Lane	Lambton Shores	ON	N0N 1J1	519-786-2125	clint.couchie@kettlepoint.org
Ms.	Valerie	George	Chippewas of Kettle and Stony Point	Consultation Coordinator	6247 Indian Lane	Lambton Shores	ON	N0N 1J1	519-786-2125	Valerie.George@kettlepoint.org
Chief	Jacqueline	French	Chippewas of the Thames First Nation	Chief	320 Chippewa Road	Muncey	ON	N0N 1Y0	519-289-5555 ext. 228	jfrench@cottfn.com
Ms.	Kelly	Riley	Chippewas of the Thames First Nation	Lands & Environment Director (Acting)	320 Chippewa Road	Muncey	ON	N0N 1Y0	519-289-5555 ext. 249	kriley@cottfn.com
Ms.	Fallon	Burch	Chippewas of the Thames First Nation	Consultation Coordinator	320 Chippewa Road	Muncey	ON	N0N 1Y0	519-289-5555 ext. 251	fburch@cottfn.com
Chief	Jessica	Hill	Oneida Nation of the Thames	Chief	2212 Elm Avenue	Southwold	ON	N0L 2G0		jessica.hill@oneida.on.ca
Mr.	Brandon	Doxtator	Oneida Nation of the Thames	Environment and Consultation Coordinator	2212 Elm Avenue	Southwold	ON	N0L 2G0		environment@oneida.on.ca
Chief	Mary	Duckworth	Caldwell First Nation	Chief	14 Orange Street	Leamington	ON	N8H 1P5	519-322-1766	chief@caldwellfirstnation.ca
Ms.	Nikki	Orosz	Caldwell First Nation	Director of Operations	14 Orange Street	Leamington	ON	N8H 1P5	519-322-1766	nikki.orosz@caldwellfirstnation.ca
Chief	Dan	Miskokomon	Walpole Island First Nation	Chief	117 Tahghoning Road	Walpole Island	ON	N8A 4K9	519-628-5700	dan.miskokomon@wifn.org
Dr.	Dean	Jacobs	Walpole Island First Nation	Consultation Manager	117 Tahghoning Road	Walpole Island	ON	N8A 4K9	519-627-1475 ext. 104	Dean.Jacobs@wifn.org
Ms.	Janet	Macbeth	Walpole Island First Nation	Project Review Coordinator	117 Tahghoning Road	Walpole Island	ON	N8A 4K9	519-627-1475 ext. 108	Janet.macbeth@wifn.org

Appendix B1: Contact List

FIRST NAME	ADDRESS	CITY/TOWN
Martin	Glendon Drive	Melbourne
Rob	Ilderton Road, RR2	Ilderton
Shane	Glendon Drive	Melbourne
Mark	Falconbridge Drive	Appin
Jerry and Rose	Falconbridge Drive	Mount Brydges
Mike	Naylor Road	Oil Springs
Gary	Watterworth Road	Newbury
George	Churchill	Sarnia
John	Oilfield Drive	Bothwell
Jonhston Bros Sand and Gravel	PO Box	Bothwell
Ron		
Marcel	Jane Street	
Joanne	Putnam Road	Mossley
Steven	Christina Road	Mount Brydges
Mike	Adelaide Road	Mount Brydges
Jim	Springfield Road	Appin
Steve	Springwell Road	
Jeff	Springwell Road	Mount Brydges
Ed	Falconbridge Drive	Appin
Shelly-Ann		
Ruth		
Dan		
Rob		
Ruth		
James		
David		
Tracy		
Duncan	McEvoy Road	
Jody	Troops Road	Mount Brydges
Alex	Oxbow Drive	Komoka
Emil	Falconbridge Drive	
Charmaine	Fieldstone Crescent	
John		
Vicky	Glendon Drive, RR3	Melbourne
Malcolm		
Mike	Springwell Road	Mount Brydges
Todd		
Joel		
Michael		
Dana	Glendone Drive	
Duncan		
Paula		
Matt		

Ministry of Energy, Northern Development and Mines
77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Ministère de l'Énergie, du Développement du Nord et des Mines
77, rue Grenville
6e étage
Toronto ON M7A 2C1

Ontario

VIA EMAIL

February 25, 2020

Asha Patel
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc
500 Consumers Road, North York

Re: London Lines Replacement Project

Dear Asha Patel:

Thank you for your email dated December 9, 2019 notifying the Ministry of Energy, Northern Development and Mines (ENDM) of Enbridge Gas Distribution Inc's intention to apply to the Ontario Energy Board (OEB) for Leave to Construct for the London Lines Replacement Project (the Project).

I understand that Enbridge Gas Distribution Inc has identified the need to replace approximately 75 km of Nominal Pipe Size ("NPS") 8 and 10 inch steel natural gas main with NPS 8 steel natural gas main, and the need to reinforce the delivery to Strathroy in the Municipality of Strathroy-Caradoc with approximately 12 km of NPS 8 steel natural gas main (the "Project"). The majority of the replacement pipeline route will follow the existing pipeline route to maintain gas connections with existing communities and customers. The project also involves upgrades to services and stations along the route of the proposed pipeline. The existing NPS 8 and 10 pipelines along this route will be abandoned.

The Project will require the construction of an NPS 8 steel natural gas main and the abandonment of both existing NPS 8 and NPS 10 steel natural gas mains. The Project will tie into a steel natural gas main at the Enbridge Dawn Hub on Bentpath Line, east of Dawn Valley Road on the west end of the Project (Township of Dawn-Euphemia). On the east end, the Project will tie into a regulating station located south of the intersection of Glendon Road and Komoka Road in Komoka (Municipality of Middlesex Centre), located on the periphery of Komoka Provincial Park.

On behalf of the Government of Ontario (the Crown), ENDM has reviewed the information provided by Enbridge Gas Distribution Inc with respect to the Project and assessed it against the Crown's current understanding of the interests and rights of Aboriginal communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's Constitution Act 1982 (Indigenous Communities) in the area. In doing so, ENDM has determined that the Project may have the potential to affect such Indigenous communities.

The Crown has a constitutional duty to consult and, where appropriate, accommodate Indigenous communities when the Crown contemplates conduct that might adversely impact established or asserted Aboriginal or Treaty rights. These consultations are in addition to consultation imposed by statue.

While the legal responsibility to meet the duty to consult lies with the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project Proponents. Such a delegation by the Crown to Proponents is routine practice for ENDM.

I am writing to advise you that on behalf of the Crown, ENDM is delegating the procedural aspects of consultation in respect of the Project to Enbridge Gas Distribution Inc (Proponent) through this letter. ENDM expects that the Proponent will undertake the procedural aspects of consultation with respect to any regulated requirements for the proposed Project. The Crown will fulfill the substantive aspects of consultation and retain oversight over all aspects of the process for fulfilling the Crown's duty.

Please see the appendix for information on the roles and responsibilities of both the Crown and the Proponent.

Based on the Crown's assessment of First Nation and Métis community rights and potential project impacts, the following Indigenous communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or Treaty rights that may be adversely affected by the Project.

Community	Mailing Address
Oneida Nation of the Thames	2212 Elm Avenue Southwold, ON N0L 2G0
Aamjiwnaang,	974 Tashmoo Avenue Sarnia, ON N7T 7H5
Caldwell	14 Orange Street Leamington, ON N8H 1P5
Chippewas of the Thames	320 Chippewa Road

	Muncey, ON N0L 1Y0
Chippewas of Kettle and Stony Point	6247 Indian Lane Lambton Shores, ON N0N 1J2
Bkejwanong (Walpole Island)	117 Tahgahoning Road Walpole Island, ON N8A 4K9

This rights-based consultation list is based on information that is subject to change. Consultation is ongoing throughout the duration of the project, including project development and design, consultation, approvals, construction, operation and decommissioning. First Nation and Métis communities may make new rights assertions at any time, and further project related developments can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted.

If you become aware of potential rights impacts on Indigenous communities that are not listed above at any stage of project, please bring this to the attention of ENDM with any supporting information regarding the claim at your earliest convenience.

ENDM is assuming a coordinating role within government in relation to rights-based Aboriginal consultation on the Project. We recommend contacting the following ministry representatives if you have any questions or concerns relating to a specific ministry's mandate:

Ministry/Contact	Phone/Email
Kristen Bromfield – Policy Advisor, Indigenous Energy Unit **Ministry of Energy, Northern Development and Mines**	Kristen.Bromfield@ontario.ca 416- 735-3297
Peter Brown – Consultation Advisor, Environmental Assessment and Permissions Division **Ministry of the Environment, Conservation and Parks**	peter.brown@ontario.ca 416-314-0149
Joe Vecchiolla – Policy Lead, Realty Policy Branch, **Ministry of Government and Consumer Services**	Joseph.vecchiolla@ontario.ca 647-267-3247

Acknowledgement

By accepting this letter, the Proponent acknowledges this Crown delegation and the procedural consultation responsibilities enumerated in the appendix. If you have any questions about this request, you may contact Kristen Bromfield (see above).

I trust that this information provides clarity and direction regarding the respective roles of the Crown and Enbridge Gas Distribution Inc. If you have any questions about this letter or require any additional information, please contact me directly.

Sincerely,

Dan Delaquis
Manager, Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

APPENDIX: PROCEDURAL CONSULTATION

Roles and Responsibilities Delegated to the Proponent

On behalf of the Crown, please be advised that your responsibilities as Project Proponent for this Project include:

- providing notice and information about the Project to Indigenous communities, with sufficient detail and at a stage in the process that allows the communities to prepare their views on the Project and, if appropriate, for changes to be made to the Project. This can include:
    - accurate, complete and plain language information including a detailed description of the nature and scope of the Project and translations into Aboriginal languages where appropriate;
    - maps of the Project location and any other affected area(s);
    - information about the potential negative effects of the Project on the environment, including their severity, geographic scope and likely duration. This can include, but is not limited to, effects on ecologically sensitive areas, water bodies, wetlands, forests or the habitat of species at risk and habitat corridors;
    - a description of other provincial or federal approvals that may be required for the Project to proceed;
    - whether the Project is on privately owned or Crown controlled land;
    - any information the Proponent may have on the potential effects of the Project, including particularly any likely adverse impacts on established or asserted Aboriginal or treaty rights;
    - a written request asking the Indigenous community to provide in writing or through a face-to-face meeting:
        - any information available to them that should be considered when preparing the Project documentation;
        - any information the community may have about any potential adverse impacts on their Aboriginal or treaty rights; and
        - any suggested measures for avoiding, minimizing or mitigating potential adverse impacts;
        - information about how information provided by the Indigenous community as part of the consultation process will be collected, stored, used, and shared for their approval;

- identification of any mechanisms that will be applied to avoid, minimize or mitigate potential adverse impacts;

- identification of a requested timeline for response from the community and the anticipated timeline for meeting Project milestones following each notification;

- an indication of the Proponent's availability to discuss the process and provide further information about the Project;

- the Proponent's contact information; and

- any additional information that might be helpful to the community;

- following up, as necessary, with Indigenous communities to ensure they received Project notices and information and are aware of the opportunity to comment, raise questions or concerns and identify potential adverse impacts on their established or asserted rights;

- gathering information about how the Project may adversely affect Aboriginal or treaty rights;

- bearing the reasonable costs associated with the procedural aspects of consultation (paying for meeting costs, making technical support available, etc.) and considering reasonable requests by communities for capacity funding to assist in participating in the consultation process;

- considering and responding to comments and concerns raised by Indigenous communities and answering questions about the Project and its potential impacts on Aboriginal or treaty rights;

- as appropriate, discussing and implementing changes to the Project in response to concerns raised by Indigenous communities. This could include modifying the Project to avoid or minimize an impact on an Aboriginal or treaty right (e.g. altering the season when construction will occur to avoid interference with mating or migratory patterns of wildlife); and

- informing Indigenous communities about how their concerns were taken into consideration and whether the Project proposal was altered in response. It is considered a best practice to provide the Indigenous community with a copy of the consultation record as part of this step for verification.

If you are unclear about the nature of a concern raised by an Indigenous community, you should seek clarification and further details from the community, provide opportunities to listen to community concerns and discuss options, and clarify any issues that fall outside the scope of the consultation process. These steps should

be taken to ensure that the consultation process is meaningful and that concerns are heard and, where possible, addressed.

You can also seek guidance from the Crown at any time. It is recommended that you contact the Crown if you are unsure about how to deal with a concern raised by an Indigenous community, particularly if the concern relates to a potential adverse impact on established or asserted Aboriginal or treaty rights.

The consultation process must maintain sufficient flexibility to respond to new information, and we request that you make all reasonable efforts to build positive relationships with all Indigenous communities potentially affected by the Project. If a community is unresponsive to efforts to notify and consult, you should nonetheless make attempts to update the community on the progress of the Project, the environmental assessment (if applicable) and other regulatory approvals.

If you reach a business arrangement with an Indigenous community that may affect or relate to the Crown's duty to consult, we ask that that Crown be advised of those aspects of such an arrangement that may relate to or affect the Crown's consultation obligations, and that the community itself be apprised of the Proponent's intent to so-apprise the Crown. Whether or not any such business arrangements may be reached with any community, the Crown expects the Proponent to fulfill all of its delegated procedural consultation responsibilities to the satisfaction of the Crown.

If the Crown considers that there are outstanding issues related to consultation, the Crown may directly undertake additional consultation with Indigenous communities, which could result in delays to the Project. The Crown reserves the right to provide further instructions or add communities throughout the consultation process.

Roles and responsibilities assumed directly by the Crown

The role of the Crown in fulfilling any duty to consult and accommodate in relation to this Project includes:

- identifying for the Proponent, and updating as appropriate, the Indigenous communities to consult for the purposes of fulfillment of the Crown duty;
- carrying out, from time to time, any necessary assessment of the extent of consultation or, where appropriate, accommodation, required for the project to proceed;
- supervising the aspects of the consultation process delegated to the Proponent;
- determining in the course of Project approvals whether the consultation of Indigenous communities was sufficient;

- determining in the course of Project approvals whether accommodation of Indigenous communities, if required, is appropriate and sufficient.

Consultation Record

It is important to ensure that all consultation activities undertaken with Indigenous communities are fully documented. This includes all attempts to notify or consult the community, all interactions with and feedback from the community, and all efforts to respond to community concerns. Crown regulators require a complete consultation record in order to assess whether Aboriginal consultation and any necessary accommodation is sufficient for the Project to receive Ontario government approvals. The consultation record should include, but not be limited to, the following:

- a list of the identified Indigenous communities that were contacted;

- evidence that notices and Project information were distributed to, and received by, the Indigenous communities (via courier slips, follow up phone calls, etc.). Where a community has been non-responsive to multiple efforts to contact the community, a record of such multiple attempts and the responses or lack thereof.

- a written summary of consultations with Indigenous communities and appended documentation such as copies of notices, any meeting summaries or notes including where the meeting took place and who attended, and any other correspondence (e.g., letters and electronic communications sent and received, dates and records of all phone calls);

- responses and information provided by Indigenous communities during the consultation process. This includes information on Aboriginal or treaty rights, traditional lands, claims, or cultural heritage features and information on potential adverse impacts on such Aboriginal or treaty rights and measures for avoiding, minimizing or mitigating potential adverse impacts to those rights; and

- a summary of the rights/concerns, and potential adverse impacts on Aboriginal or treaty rights or on sites of cultural significance (e.g. burial grounds, archaeological sites), identified by Indigenous communities; how comments or concerns were considered or addressed; and any changes to the Project as a result of consultation, such as:

    - changing the Project scope or design;

    - changing the timing of proposed activities;

    - minimizing or altering the site footprint or location of the proposed activity;

    - avoiding impacts to the Aboriginal interest;

- environmental monitoring; and
- other mitigation strategies.

As part of its oversight role, the Crown may, at any time during the consultation and approvals stage of the Project, request records from the Proponent relating to consultations with Indigenous communities. Any records provided to the Crown will be subject to the *Freedom of Information and Protection of Privacy Act,* however may be exempted from disclosure under section 15.1 (Relations with Aboriginal communities) of the Act. Additionally, please note that the information provided to the Crown may also be subject to disclosure where required under any other applicable laws.

The contents of what will make up the consultation record should be shared at the onset with the Indigenous communities consulted with and their permission should be obtained. It is considered a best practice to share the record with the Indigenous community prior to finalizing it to ensure it is a robust and accurate record of the consultation process.

APPENDIX B2
Newspaper Notices

ENBRIDGE GAS INC.
NOTICE OF STUDY COMMENCEMENT AND VIRTUAL OPEN HOUSE

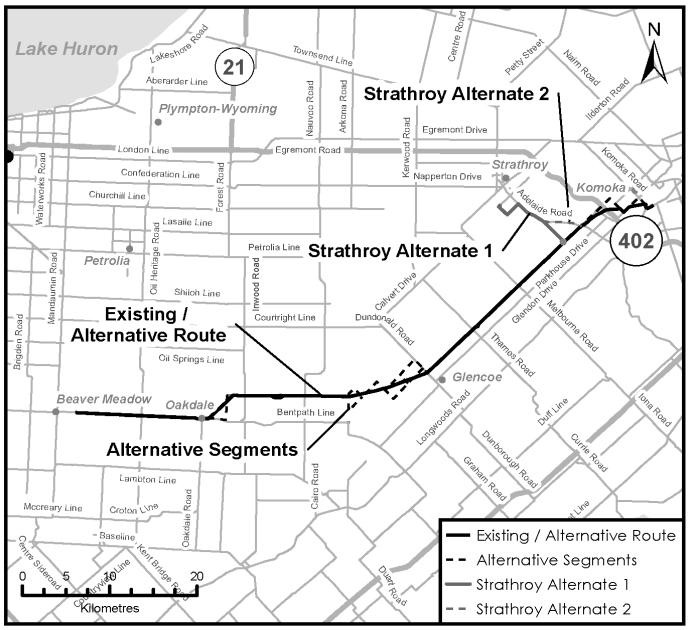
London Lines Replacement Project

Enbridge Gas is proposing to replace a section of its London Lines pipeline in the counties of Middlesex and Lambton. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometres of 8-inch high pressure natural gas pipeline. This will replace the two pipelines known collectively as the London Lines. All current services will be maintained as a result of this project. The project will also include the construction of 10.5 km of a secondary pipeline which will connect the replaced 8-inch pipeline to the community of Strathroy.

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to COVID-19, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at **www.solutions.ca/LondonLines**

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available on the Resources tab. Input received will be used to inform the selection of the preferred pipeline route, and to develop site environmental protection or mitigation measures for the Project.



As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. to undertake an Environmental Study of the construction and operation of the proposed natural gas pipeline. The Environmental Study will the requirements of the Ontario Energy Board' (OEB). Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). It is anticipated that the Environmental Report for the study will be completed in early summer 2020, after which Enbridge Gas will an application for the proposed pipeline to the OEB. The OEB's review and approval is required before the proposed project can proceed. If approved, construction of the pipeline is currently anticipated to begin in spring/summer 2021.

For any questions or comments regarding the Environmental Study or the proposed London Lines Replacement Project, please do not hesitate to contact the following:

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: 519-780-8186
Email: LondonLines@stantec.com

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive,
West Tower
Markham, ON L3R 0B8
Phone: 519-780-8186
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For more information about the proposed project please visit our project website at: https://www.enbridgegas.com/About-Us under "Projects", or dial (519) 780-8186 and leave a detailed message.

ENBRIDGE

Egg farmers scramble to donate surplus eggs to food banks, shelters

Egg farmer Dan Veldman and his daughter Megan, the farm manager at Veldman Poultry Farms, are among many egg farmers in the region who are trying to place surplus eggs on the shelves of food banks and other organizations who can use them. *GALEN SIMMONS/POSTMEDIA NETWORK*

CHRIS MONTANINI

Farmers in Southwestern Ontario sitting on a surplus of eggs as their supply lines adjust to the impact of the pandemic are trying their best to deliver extras to food banks, shelters and other agencies that can use them.

In Perth County, Dan Veldman, an Egg Farmers of Ontario board member whose family farm lies between Stratford and St. Marys, took to social media recently to let people know he has eggs to spare for people helping others in need.

"Within hours, the eggs were gone," Veldman said. "There's going to be a lot of people – a lot of families – that are going to be hurting. In agriculture, it's almost a social responsibility we have to feed the people."

His efforts caught the attention of Grey Ridge Farms in Strathroy, one of three major operations in Ontario that also grade and distribute eggs to restaurants and grocery stores across the province. Veldman said Grey Ridge appreciated the gesture so much they began sending eggs back to him and other farmers in Southwestern Ontario with instructions to keep donating.

The result was free deliveries to places like the Emily Murphy Centre in Stratford, the Huron County Food Bank Distribution Centre, and Ronald McDonald House in London and Windsor, Veldman said.

With restaurants closed or cooking only for takeout and delivery, demand for small and medium eggs has dried up in Ontario. Large and extra large eggs are more popular in grocery stores and, like a few other products, they've been snapped up quickly by consumers stocking up while most of the province remains shutdown due to COVID-19.

"There's been a definite shift," said Scott Graham, an egg farmer in St. Marys who recently stepped down from the Egg Farmers of Ontario board. "With people not eating out, it just makes sense."

"We're trying to find a balance, getting as much to the grocery stores as we can, but yet there's still certain eggs that won't go to the grocery store because of size," Veldman added. "We're going to redirect (those) to food banks. We're going to put as many eggs as we can into the food banks in the next four to five weeks that this crisis is on."

ENBRIDGE GAS INC.

NOTICE OF STUDY COMMENCEMENT AND VIRTUAL OPEN HOUSE

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Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to COVID-19, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at **www.solutions.ca/LondonLines**

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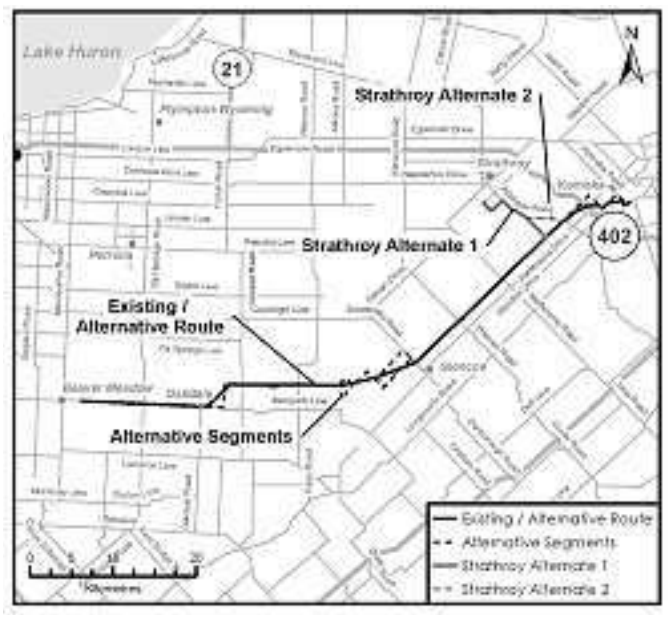

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ENBRIDGE

Digital divide highlighted by push for online learning

MAX MARTIN

As the shift from classroom to online learning due to COVID-19 continues across Ontario, one key component is still missing for some rural students: the Internet.

School boards across Southwestern Ontario are now pushing to close the digital divide, developing plans to keep rural students connected with their studies.

"We're going to make sure that no student is adversely impacted," said Mark Fisher, education director with the Thames Valley District board.

About 700 families in the public board — which serves more than 80,000 students and pupils in Middlesex, Oxford and Elgin counties — reported no regular Internet access.

To resolve this, the board is ordering 600 iPads and iPhones enabled with cellular data to distribute to families in need. They've already passed out more than 12,000 Chromebooks and tablets for families without devices.

And while most families indicating a lack of Internet live in rural areas, Fisher said about a third are in urban centres, such as London and St. Thomas, which he said highlights poverty issues there.

Until the devices arrive, the Thames Valley board is distributing print materials to students without a connection and will continue offer paper resources to families who don't want Internet access.

Fisher also reminds families that students can connect to Internet hot spots from local school parking lots.

Across Canada, more than 59 per cent of rural households don't have access to minimum Internet speed standards set by the Canadian Radio-television and Telecommunications Commission (CRTC).

Numbers are better in Ontario, where only 12 per cent of households can't access the standard — but many of those that do often report spotty or inconsistent connectivity.

"It is an equity issue from the perspective of a digital divide between urban and rural. We do see significant and substantial variation across a region like Southwestern Ontario," said Helen Hambly, a professor at the University of Guelph's Ontario Agriculture College who leads the Regional and Rural Broadband project.

"We need to future proof in terms of our policy in Canada and in rural areas. The internet is critical infrastructure," she said. "We need some strategies as soon as possible to support the pandemic and post-pandemic digital economy."

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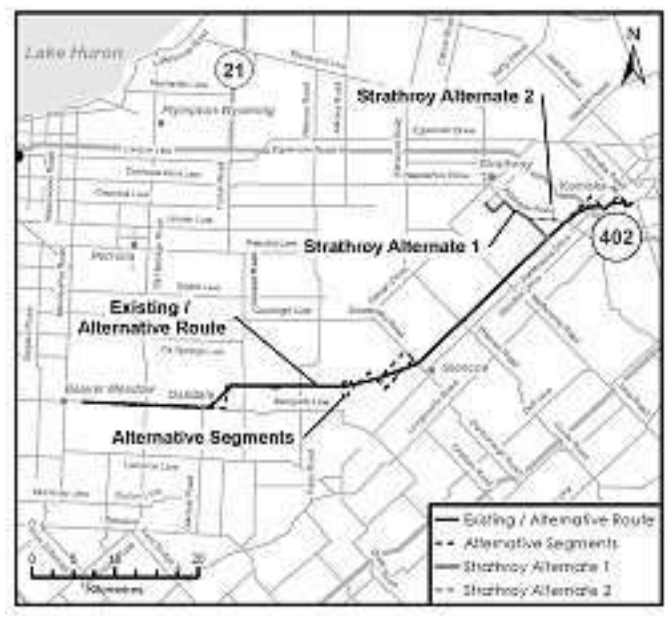

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ENBRIDGE

Police chase stolen car around South Kent, Sloans robbed of $10k of tools

Chatham-Kent police needed to use a spike belt to stop some suspects in a stolen car.

Saturday afternoon, police say a vehicle he believed was stolen around Allison Line and Fargo Road.

The vehicle didn't stop when the officer activated the lights and fled down Middle Line toward Charing Cross Road.

The vehicle turned on Horton Line where a spike belt had been laid down. The vehicle hit it and kept driving on the rim and a flat tire.

The pursuit continued to Chatham, where the vehicle ran a red light. Police stopped the chase then.

The vehicle stopped on Grand Ave West, where a number of people fled.

Police searched the area, using a drone to help, and found the one man and then arrested another.

The pair face a laundry list of charges including flight from police, dangerous driving and a number of Highway Traffic Act charges.

One man also faces drug charges after crystal meth was found inside the vehicle.

They'll be in court July 7.

•••

Chatham-Kent Police had to use a taser to stop a man wanted in an assault.

Saturday around 6 pm, police were called to a home where a woman had been assaulted. A man was arrested, but he managed to get away from police and fled.

Police chased the man to his car which he tried to get in. He continued to resist arrest so police used a taser.

The man was charged with assault, escaping custody and resisting arrest.

•••

A strange incident at a pizza place has led to charges against a Chatham man.

Police say around 10:30 pm Saturday, they were called to a Domino's Pizza where a man hitting cars with an eight-inch steel pipe. When two people tried to stop him, the man started swinging the pipe at them.

Police arrived and arrested a man. He's been charged with mischief, weapons dangerous and two counts of assault with a weapon.

•••

A man using a golf club on a hydro pole was arrested in Wallaceburg.

On April 9, police were called to the town after a man was acting erratically and hitting hydro poles with a golf club. The man ran off when police tried to arrest him.

They arrested him after a short foot chase and charged under an outstanding warrant for test, possession of stolen property and mischief. He's also facing a drug charge.

•••

A vandal did a lot of damage on Ann St. In Thamesville.

Police say a homeowner reported that someone had keyed his car. The April 6 incident caused about $4,000 damage.

•••

Sloans Christmas Tree Village in Bothwell has lost about $10,000 in tools and equipment.

Chatham-Kent Police say sometime between closing on April 7 and opening April 8, someone went into the barn on Zone Road 7 and did about $750 getting in.

Once inside they stole a 211 MIG Welder with tank and car, a 22 HP Honda motor, four STIHL MS 362 chain saws and five DeWalt drills and batteries, a Mastercraft grinder, a DeWalt grinder and a number of other tools worth about $10,000.

•••

A 22 year-old from Brampton is facing racing charges in Chatham-Kent.

OPP officers were patrolling the 401 near Communication Road April 7 and noticed a car moving at a high rate of speed. Radar registered more than 190 km/h in the 100 km/h zone.

The 22 year-old will be in court in July. His vehicle was also impounded for seven days.

•••

A 40 year-old Chatham man is dead after being struck by a train.

Just before 6 am April 6, emergency crews responded to a serious collision in the downtown.

Police say the pedestrian walked over the tracks near the King and William St. Crossing.

Ag Hall of Fame cancelled

This year's Kent Agricultural Hall of Fame awards have been cancelled this year.

Organizers announced the decision to cancel this years Induction ceremony this year because of the COVID-19 pandemic.

They hope to hold the event next year.

Kathryn Vanek says you can nominate someone for consideration through the Hall of Fame's website.

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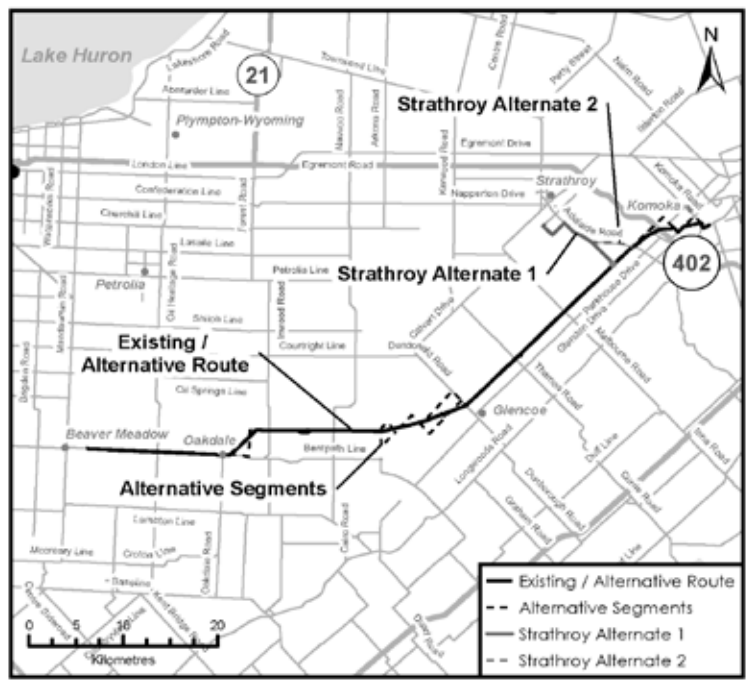

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ENBRIDGE

Dawn-Euphemia man facing charges after a chase through Chatham

Police stop a cube van in Chatham.

Photo via Facebook

A Dawn-Euphemia man is facing charges after a police chase through Chatham.

Just before 8 am Sunday, a Chatham-Kent Police officer saw a yellow cube van speeding through a red light at the corner of King and Fifth Streets in Chatham. He signalled for the van to pull over, but it didn't.

Police followed him briefly but called off the chase for public safety.

Then, police received a call from the public saying the van was speeding in a residential area. Police found the van and tried to stop it as the man drove down an alleyway and through a parking lot.

The van smashed into the side of a cruiser and he jumped out and fled on foot.

Police caught up with the man and managed to arrest him as he continued to try to fight the officers off.

Police say the van was stolen in LaSalle and the man in custody was prohibited from driving.

A 29 year-old Dawn-Euphemia man has been charged with flight from police, three counts of dangerous driving, resisting arrest, theft of a vehicle, possession of stolen goods over $5,000 and three counts of driving while disqualified.

He's being held in custody until his bail hearing.

•••

Chatham-Kent Police are looking for clues after a smash and grab at Parks Blueberries.

Sometime between close April 18 and opening April 19, someone forced their way into the store on Longwoods Road by smashing the door.

Three cash drawers were taken.

The culprits fled the scene.

Police are asking anyone with information about the crime to call Crime Stoppers or the department at 519-436-6600.

•••

Police are still looking for an outboard motor after a theft on Longwoods Road in Camden Township.

Police say someone went into trailers April 9 and stole tires, rims, a snow blower, heater, fishing equipment, and a boat motor.

The garage was also entered and an aluminum boat was taken.

The boat has been found but the outboard motor is still outstanding.

Police say the value of the items stolen is about $16,000.

•••

Vandals broke a stain glass window in Bothwell.

Chatham-Kent Police say someone threw a stone through a window on Main Street April 13 causing $500 damage.

•••

Two men have been charged with break and enter after an incident on Talbot Trail in Howard.

Police say two people went into a compound and stole vehicle parts April 12.

The pair were later arrested. The driver was also charged with impaired driving and dangerous operation of a motor vehicle.

•••

Police are looking for oil thieves in the village of Muirkirk.

Officials say someone went into a barn in Orford about two weeks ago and removed six pails of Case Akcela oil.

Then, sometime last week, someone took torches, tanks and a portable air compressor from the same barn.

Police say the total value of the equipment and oil is about $2,000.

•••

A Highgate man is facing charges of criminal harassment after an online incident.

Earlier this month, police say, a woman talked to police about a number of unwanted text and Facebook messages from an ex-boyfriend.

Police talked to the man about what he was doing and he stopped communicating with the woman.

Thursday, the woman received another harassing message.

Police have charged the 45 year-old man with criminal harassment.

•••

The discovery of a truck stolen in Bothwell has led to the arrest of three people for a number of property crimes.

Chatham-Kent Police received a call that two men had a stolen truck on Sheldon Ave in Chatham. Police learned it was taken during a break and enter in Bothwell. Property was also taken there.

Officers found the men and they were arrested.

Police also spotted some of the property stolen in Bothwell next door.

A woman who was not supposed to communicate with one of the two men under arrest, was taken into custody.

Police obtained a search warrant and went into the home on Sheldon Ave. Officer were able to find items stolen from a break and enter in Harwich Township, identification stolen from Alvinston and ammunition of a number of different calibres.

Three men from Chatham are facing a number of charges including theft of a vehicle, break and enter, four counts of being in possession of ammunition.

One man was charged with a bail offences.

ENBRIDGE GAS INC.

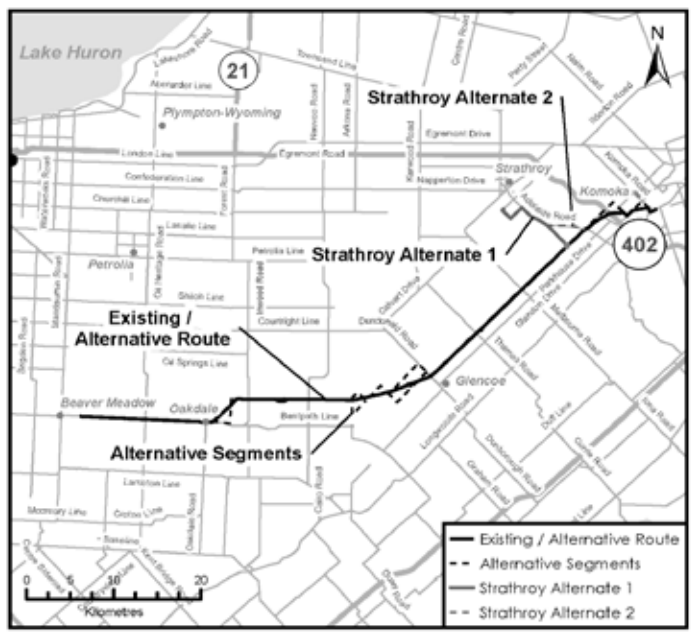
NOTICE OF STUDY COMMENCEMENT AND VIRTUAL OPEN HOUSE

London Lines Replacement Project

Enbridge Gas is proposing to replace a section of its London Lines pipeline in the counties of Middlesex and Lambton. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometres of 8-inch high pressure natural gas pipeline. This will replace the two pipelines known collectively as the London Lines. All current services will be maintained as a result of this project. The project will also include the construction of 10.5 km of a secondary pipeline which will connect the replaced 8-inch pipeline to the community of Strathroy.

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to COVID-19, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at **www.solutions.ca/LondonLines**

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.



There will be questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available on the Resources tab. Input received will be used to inform the selection of the preferred pipeline route, and to develop site environmental protection or mitigation measures for the Project.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. to undertake an Environmental Study of the construction and operation of the proposed natural gas pipeline. The Environmental Study will the requirements of the Ontario Energy Board' (OEB). Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016). It is anticipated that the Environmental Report for the study will be completed in early summer 2020, after which Enbridge Gas will an application for the proposed pipeline to the OEB. The OEB's review and approval is required before the proposed project can proceed. If approved, construction of the pipeline is currently anticipated to begin in spring/summer 2021.

For any questions or comments regarding the Environmental Study or the proposed London Lines Replacement Project, please do not hesitate to contact the following:

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: 519-780-8186
Email: LondonLines@stantec.com

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive,
West Tower
Markham, ON L3R 0B8
Phone: 519-780-8186
Email: LondonLines@stantec.com

For more information about the proposed project please visit our project website at: https://www.enbridgegas.com/About-Us under "Projects", or dial (519) 780-8186 and leave a detailed message.

ENBRIDGE

APPENDIX B3
Letters

Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: «TITLE» «FIRST_NAME» «SURNAME», «POSITION»
«ORGANIZATION»
«ADDRESS»
«CITY_TOWN» «POSTAL_CODE»

Dear «TITLE» «SURNAME»,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc.

For more details please refer to the map in the attached document.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

It is anticipated that the environmental report for the study should be completed by early summer 2020, after which Enbridge Gas will file a Leave to Construct (LTC) application with the OEB for the proposed pipeline. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an agency with jurisdiction or a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline. Specifically, Stantec is seeking information regarding planning principles or guidelines implemented by your agency that may affect routing, construction, and/or operation of the proposed pipeline. Stantec is also seeking background environmental, socio-economic, and archaeological/cultural heritage information that may be useful in compiling the inventory of the Environmental Study Area.

Finally, we request that you provide us with information regarding other proposed developments within the Environmental Study Area for incorporation into the Environmental Study and related report as a component of the cumulative effects assessment. **Please contact us to discuss the most efficient way to obtain this information.**

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the London Lines Replacement Project, please do not hesitate to contact the undersigned.

Regards,

STANTEC CONSULTING LTD.

Rooly Georgopoulos, B.Sc.
Senior Project Manager
Phone: (519) 780-8186
Fax: (905) 474-9889
LondonLines@stantec.com

Attachment: Notice of Study Commencement and Virtual Open House

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: «TITLE» «FIRST_NAME» «SURNAME», «POSITION»
«ORGANIZATION»
«ADDRESS»
«CITYTOWN» «PROV» «POSTAL_CODE»

Dear «TITLE» «SURNAME»,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. The general location and study area of the proposed pipeline is shown on the attached map.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

«ORGANIZATION» is invited to provide comments regarding the proposed pipeline. Specifically, Stantec is seeking information about any adverse impacts that the proposed project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an Indigenous community with a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline.

As part of the Environmental Study, Enbridge is in the process of contacting the following agencies:

- Indigenous and Northern Affairs Canada; and
- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

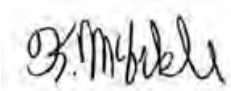
If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

Regards,

ENBRIDGE GAS INC.



Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Notice of Study Commencement and Virtual Open House

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.

Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Dear Landowner / Resident

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. For more details please refer to the map in the attached document.

You are receiving this letter because the preliminary preferred or alternative pipeline segments are located on or in proximity to your property.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

Please feel free to share this letter with your neighbours. If you are a landowner, it would also be appreciated if this letter could be shared with your tenants.

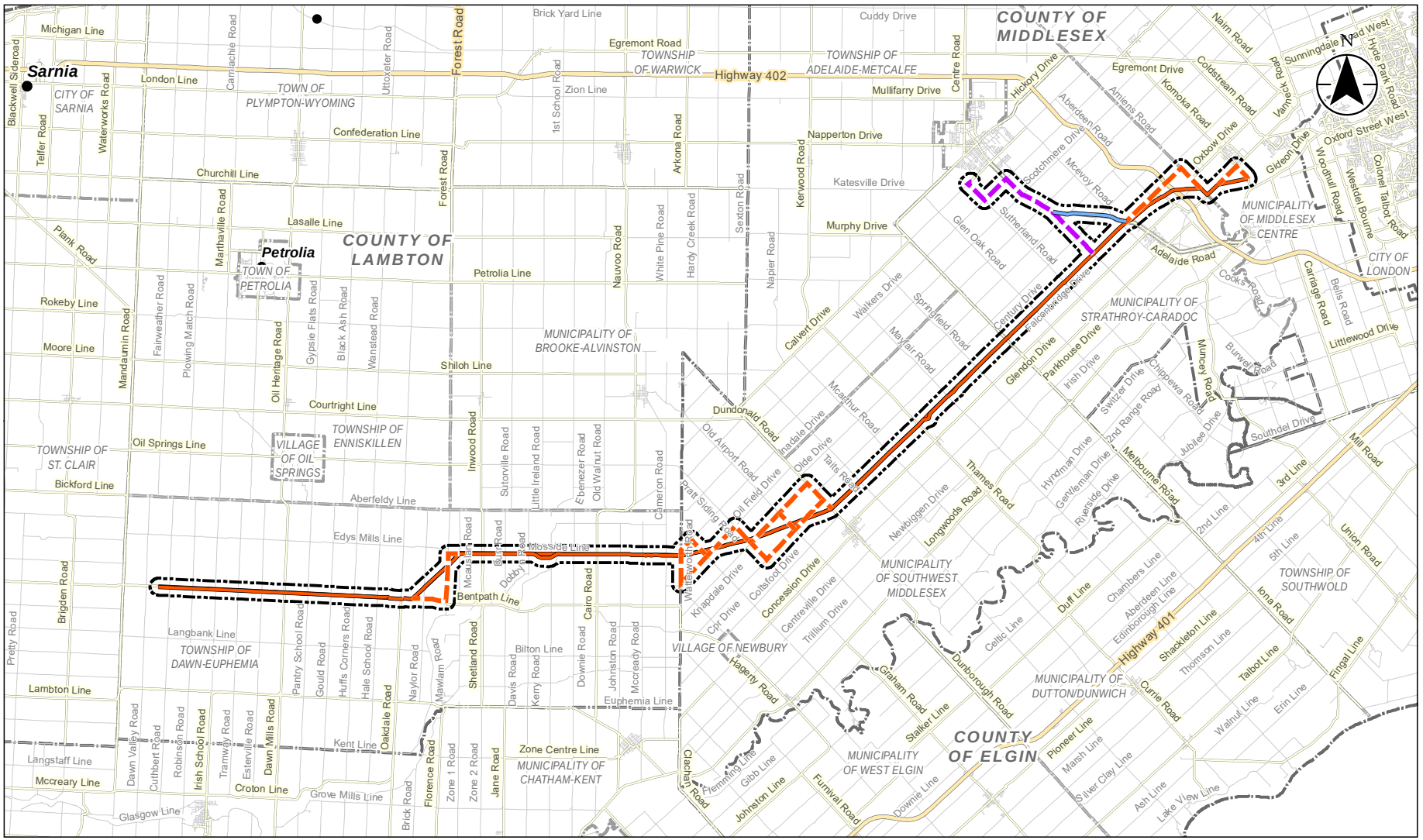
Regards,

STANTEC CONSULTING LTD.

Rooly Georgopoulos, B.Sc.
Senior Project Manager
Phone: (519) 780-8186
Fax: (905) 474-9889
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.



Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Study Area
- Municipal Boundary, Upper
- Municipal Boundary, Lower

0 7.5 15 Kilometres

1:350,000 (At original document size of 8.5x11)

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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Project Location
Counties of Lambton and Middlesex, ON

160951031 REVA
Prepared by SPE on 2020-04-08

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia, ON N7T 7H5

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Stantec

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Chippewas of Kettle and Stony Point First Nation
6247 Indian Lane
Lambton Shores, ON N0N 1J1

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Oneida Nation of the Thames
2212 Elm Avenue
Southwold, ON N0L 2G0

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (At original document size of 11x17)

Notes
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Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Chippewas of the Thames First Nation
320 Chippewa Road
Muncey, ON N0N 1Y0

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

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An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Legend
- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
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- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

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Notes
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2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Walpole Island First Nation
117 Tahghoning Road
Walpole Island, ON N8A 4K9

Dear Sir/Madam,

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LondonLines@stantec.com

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Stantec

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Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Middlesex County
399 Ridout Street North
London, ON N6A 2P1

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

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Stantec

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Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Municipality of Strathroy-Caradoc
52 Frank Street
Strathroy, ON N7G 2R4

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

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Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 8, 2020

Dear Landowner / Resident,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

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LondonLines@stantec.com

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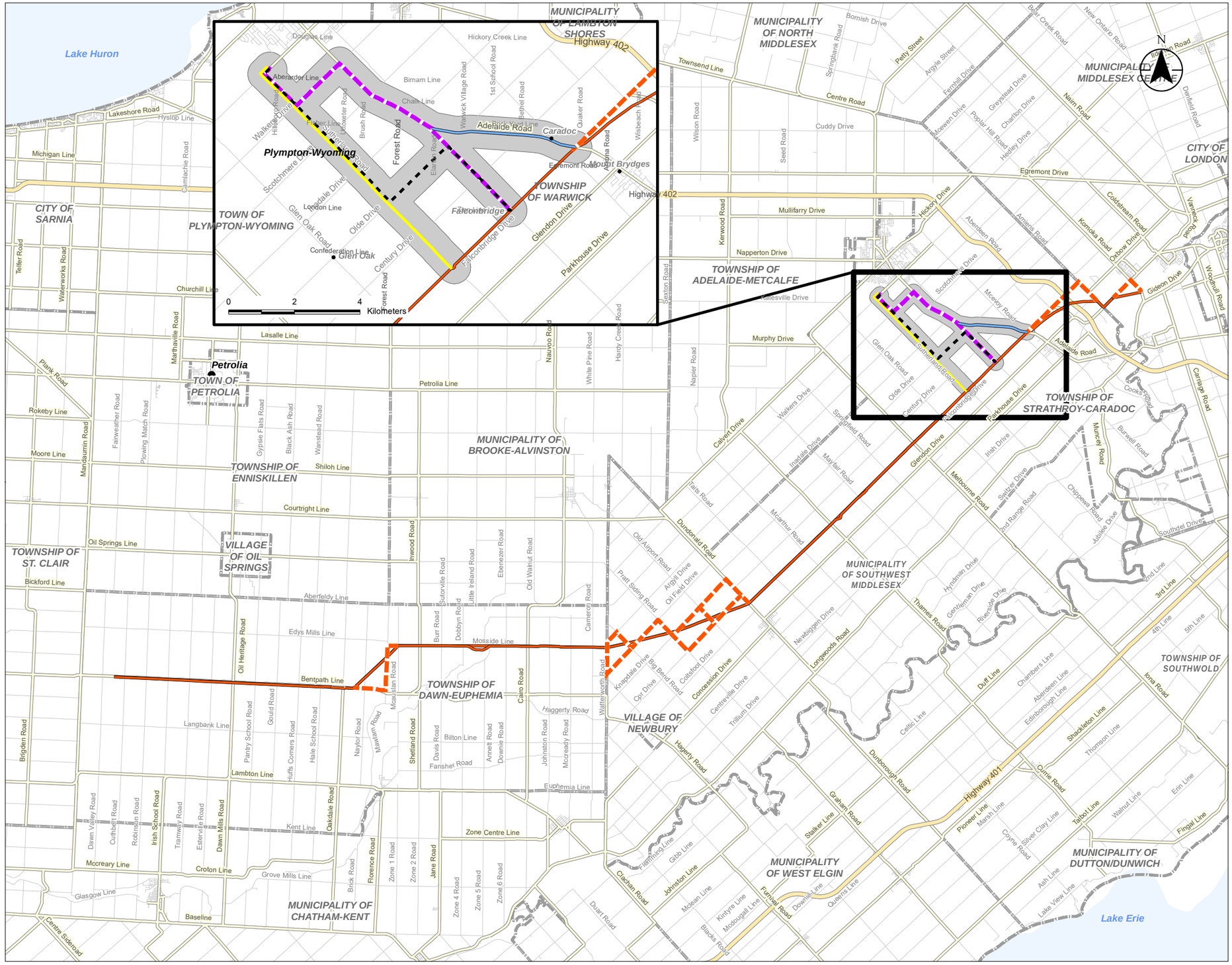

Stantec

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Counties of Lambton and Middlesex

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Prepared by SPE on 2020-05-07

Client/Project
ENBRIDGE GAS INC.

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APPENDIX B4
Virtual Open House Presentation and Questionnaire

London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters

a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area

Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation

An evaluation of the Alternative Routes will be conducted based on:

a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes

Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route

A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

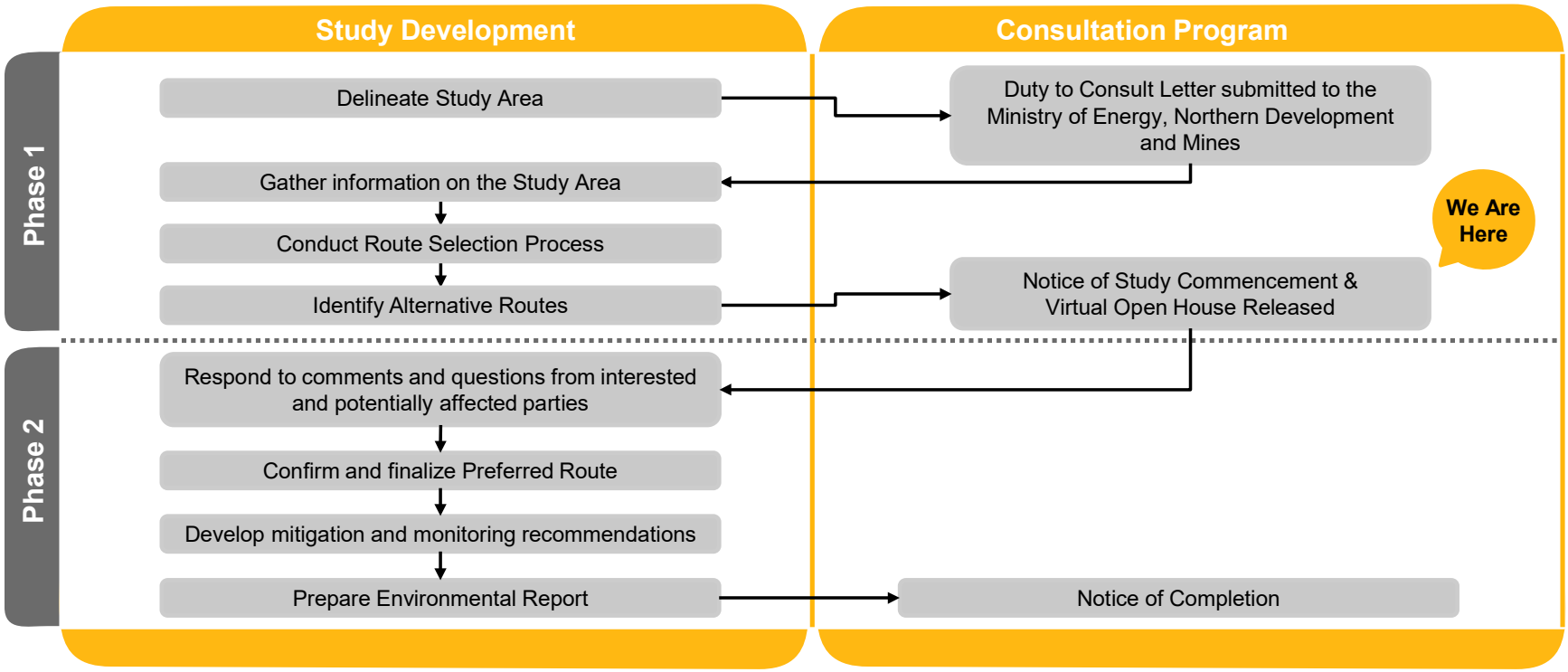
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

Aquatic Resources

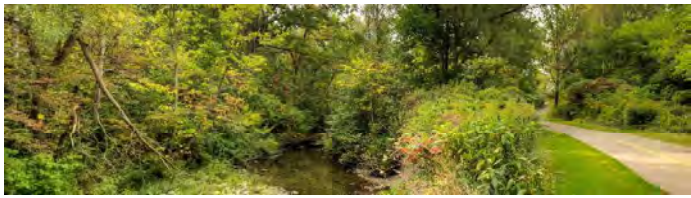
Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

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For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

Slide #	Slide Theme	Script
1	Welcome/ Our Commitment	Welcome! Thank-you for viewing the Virtual Open House for the London Lines Replacement Project. To skip a slide, please press the 'next' button. A copy of the presentation slides is available for download from the Resources Tab, located in the top right corner. Questions and comments can be submitted using the questionnaire, also found on the Resources tab. An Enbridge Gas or Stantec representative will respond to your submitted inquires. If you would like to receive future Project updates, please complete the "Contact Information" section of the questionnaire. Enbridge Gas provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario. Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner. In addition, Enbridge is committed to involving community members and effected stakeholders in their projects. By providing you with up-to-date information in an open, honest and respectful manner, we hope to foster an inclusive conversation as we take you through the various stages of this proposed Project. All of your input is welcomed and will be carefully considered by the project team.
2	Project Overview	This Project will include the construction of approximately 75 kilometers of natural gas pipeline in order to improve integrity of the pipeline network and replace the two current pipelines known collectively as "the London Lines". The Project will also include the construction of a secondary pipeline which will be approximately 10 and a half kilometers, to connect the replaced pipeline to Strathroy in the Municipality of Strathroy-Caradoc. The Project will start within the town of Dawn-Euphemia, will continue through the Municipality of Southwest Middlesex and will end at two locations. Pending approval by the Ontario Energy Board, construction is planned to begin as early as the spring of 2021 and be in service by the end of 2021.
3	Purpose of the Virtual Open House	Enbridge is committed to the health and safety of the public and its workers. In light of recent events surrounding the COVID-19 global Pandemic, Enbridge is providing a Virtual Open House as a safe alternative to an in-person information session. This Virtual Open House will follow current physical distancing requirements set out by the Province of Ontario and the Government of Canada. The Purpose of the Virtual Open House is to consult with Indigenous communities, the public and regulatory authorities regarding the proposed Preferred route and potential impacts. The Virtual Open House also

		provides an opportunity for individuals to ask any questions and provide comments to representatives from Enbridge and Stantec.
4	Environmental Study Process	The environmental study for the Project will be completed according to the Ontario Energy Board's Environmental Guidelines. The study will: • Undertake consultation to understand the views of interested and potentially affected parties. • Consult with Indigenous communities to understand interests and potential impacts. • Be conducted during the earliest phase of the Project. • Identify potential impacts of the Project. • Develop environmental mitigation and protective measures to avoid or minimize potential impacts; and, • Develop an appropriate environmental inspection, monitoring and follow-up program.
5	OEB Review and Approval Process	The Ontario Energy Board is the body that regulates the natural gas industry in Ontario in the interest of the public. Enbridge will submit an application for this Project to the Board. This application is called a Leave to Construct application, and will include comprehensive information on the Project including: • The need for the Project • An Environmental Report and mitigation measures • Facility alternatives • Project costs and economics • Pipeline design and construction • Land requirements, and • Consultation with Indigenous Communities The Ontario Energy Board will then hold a public hearing to review the Project. If the Board determines that the Project is in the public interest it will approve construction of the Project. Additional information about the Ontario Energy Board process can be found on their website.
6	Preferred Route Selection Process	Potential Routes for the proposed pipeline will be selected through a five-step process: Step 1 includes developing routing parameters such as establishing a study area and routing objectives and creating an inventory of environmental and socio-economic features.

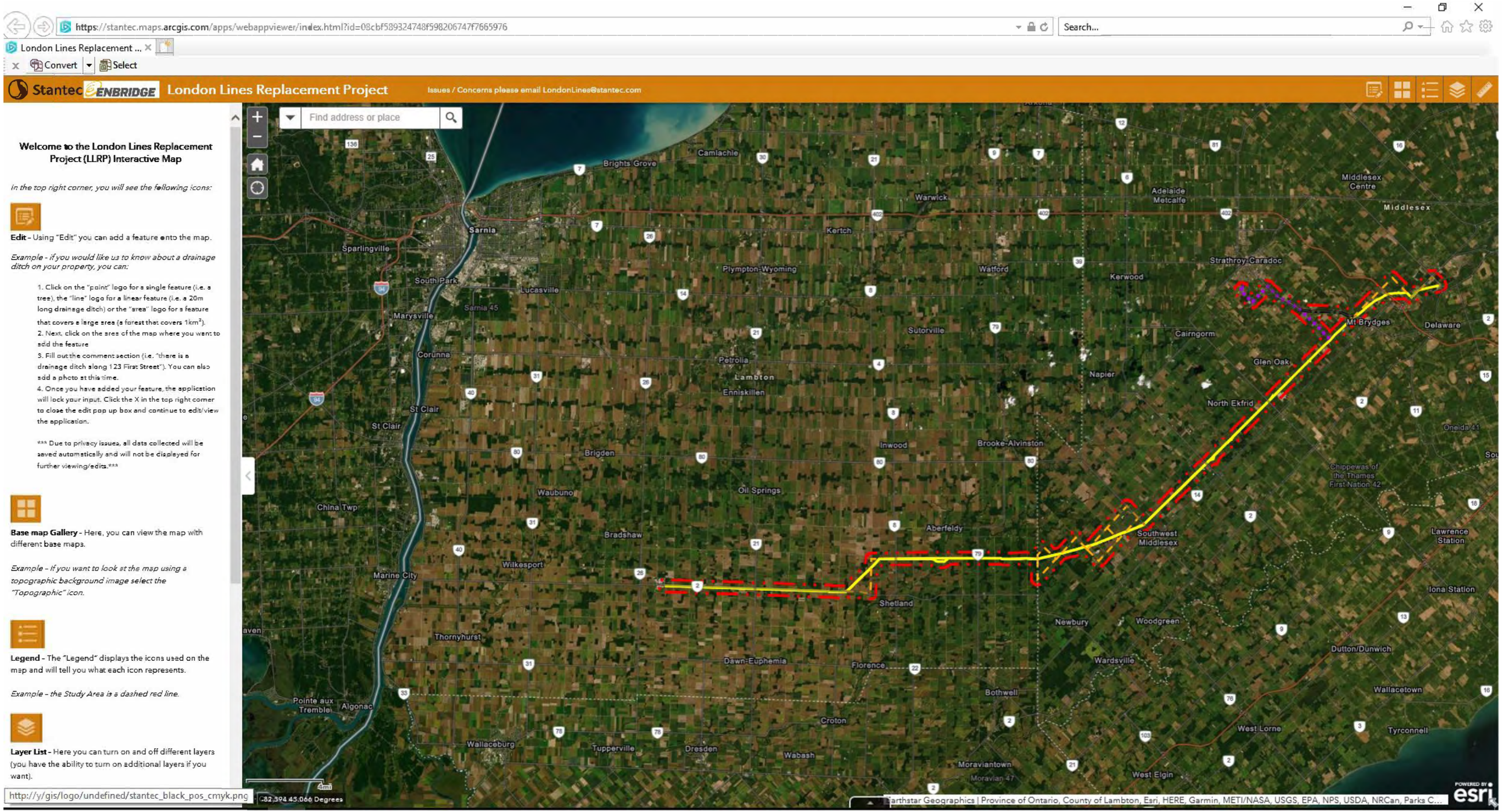
		Step 2 will Identify potential Alternative Routes in the study area using the routing parameters developed in step one. Step 3 includes a route evaluation conducted based on a quantitative and qualitative comparative evaluation of impacts to environmental and socio-economic features. Once complete potential routes will be determined. Step 4 includes gathering input on the potential routes. Step 5 will result in confirmation of a Preferred Route following consultation with Indigenous communities, the public and regulatory authorities. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.
7	Route Evaluation Methodology	A variety of pipeline routing constraints are present within the study area, including natural heritage features, slope, topography, and socio-economic features and landscapes. After creating a Geographic Information System (also known as GIS) database of opportunities and constraints, a routing exercise was undertaken that examined all constraints and opportunities to generate potential alternative segments. The alternative segments follow existing linear infrastructure where available and where possible, avoid existing environmental and socio-economic features. An interactive map that shows the proposed Route and the alternative segments can be accessed at the website found on this slide.
8	Consultation	Consultation is a key component of the Environmental Report being completed as part of the Leave to Construct Application. It helps to identify and address stakeholder concerns in the early stages of a project. Input from this Virtual Open House will be used to help finalize the preferred route and to create mitigation plans to be implemented in the final design and construction. Once the Leave-to-Construct application is submitted to the Ontario Energy Board, any party with an interest in the Project can participate in their review process. Additional information about the Ontario Energy Board process can be found on their website. www.ontarioenergyboard.ca

9	Environmental Study Process	This slide shows the environmental study process that Enbridge follows as part of the Ontario Energy Boards Environmental Guidelines. Enbridge is currently nearing the end of the first phase.
10	Indigenous Peoples Policy	Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles as seen on this slide:
11	Environment, Health and Safety Policy	Enbridge is committed to protecting the health and safety of all individuals affected by our activities. Enbridge provides a safe and healthy working environment and will not compromise the health and safety of any individual. Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement. Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment. All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.
12	Access and Land Requirements	Once a Preferred Route is selected, Enbridge will begin discussions with landowners for the appropriate land rights necessary to construct the pipeline. Enbridge will work directly with all affected landowners in anticipation of acquiring early access agreements to gather essential information, along with negotiating necessary land rights. These land rights will consist of permanent easements or temporary land rights. Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities. The Land Agent will keep all landowners informed of project progress and assist with any concerns that may arise as a result of the construction activities.
13	Agricultural Soils	Enbridge has established measures to preserve the integrity of agricultural soils throughout the construction phase. Please press “pause” to review the measures we may take. When you are ready to move onto the next slide, please press “next”.

14	Maintaining Agricultural Drainage Systems	In order to maintain agricultural drainage systems, landowners will be contacted prior to construction to confirm the location and type of existing drains and any future drainage. Field tile will temporarily be re-routed during pre-construction activities to allow for proper drainage. Any damaged or severed drains will be repaired following construction. Landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge as required.
15	Socio-economic Features	The Project may be constructed through road right of ways, private business areas, agricultural and residential land, along with land regulated by Canadian Pacific and Canadian National railways, and land regulated by Hydro One and three conservation authorities. Potential socio-economic effects of construction include temporary increases in noise, dust and air emissions, increased construction traffic, temporary impairment of property use and vegetation clearing. Some of the mitigation measures that could be implemented during construction include providing access across construction areas, restricting construction to daylight hours, adhering to applicable noise by-laws, implementing a water well monitoring program, and re-vegetating cleared areas. Additional examples are provided on this slide for your review.
16	Aquatic Resources	Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects. Potential Effects to aquatic environments include disruption and alteration to aquatic species and habitat, increased erosion, sedimentation, and turbidity resulting from removal of vegetation. The following are examples of mitigation measures that may be implemented to minimize the potential effects of construction: • Waterbody Surveys. • Obtaining all agency permits and approvals. • Limit in-channel construction, where possible, and conform to fish timing window guidelines. • For in-channel construction, protect aquatic species and manage sedimentation and turbidity. • Restore and seed areas to establish habitat and reduce erosion; and • Replant vegetation along waterways.
17	Cultural Heritage Resources	During construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals prior to construction.

		As outlined on this slide, there are several mitigation measures that will be employed to minimize the potential effects construction could have on cultural heritage, as approved by the Ministry of Heritage, Sport, Tourism and Culture Industries.
18	Terrestrial Resources	During construction, natural heritage features such as wildlife habitat and vegetated or wooded areas will need to be crossed. Potential effects include damage of vegetation and wildlife adjacent to the construction area. Prior to construction, surveys (including Species at Risk surveys) will be conducted to determine opportunities for wildlife habitat to exist. Construction areas will be clearly marked to avoid accidental damage, and affected areas will be restored or seeded to establish habitat and reduce erosion. Permits from conservation authorities, municipalities and agencies will be secured as required, and conditions outlined will be followed, in order to minimize damage and disturbance to vegetation and wildlife.
19	Pipeline Design	The high-grade steel pipeline is designed to meet or exceed the regulations of the Canadian Standards Association and the applicable regulations of the Technical Standards & Safety Association. Enbridge takes many steps to ensure safe, reliable operation of the network of natural gas pipelines, such as designing, constructing and testing pipelines to meet or exceed requirements set by industry standards and regulatory authorities, continuously monitoring the entire network, and perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.
20	Pipeline Construction	On this slide you will find a description of typical pipeline construction procedures. Please press “pause” to review these procedures. When you are ready to move onto the next slide, please press “next”.
21	Next Steps	Serving hundreds of communities in Ontario, we at Enbridge consider ourselves strong community partners who believe in and are committed to consultation. During the planning stages for this Project we have consulted and will continue to consult with Indigenous Communities, local landowners, government agencies and other interested parties that could be impacted by the Project. After this Virtual Open House is complete, we plan to complete our Environmental Report. Once the Environmental Report is complete, we will submit it to the Ontario Energy Board along with other Leave-to-Construct documents. We anticipate we’ll receive a response from the OEB in early 2021, pending approval, permitting, pipeline design and construction planning will then take place. We would plan to start construction in the spring of 2021. By early 2022, construction would conclude, the new pipeline will be in service, site clean-up and restoration will be underway and post-construction monitoring would begin.

22	Thank-you	On behalf of the Project team, thank-you for listening to the Virtual Open House presentation for the London Lines Replacement Project. If you have any questions or comments, or you would like to be kept up to date on the Project please complete the Questionnaire located in the Resources Tab. Please complete the Questionnaire by May 14, 2020 to be considered as part of the Environmental Report that will be submitted to the Ontario Energy Board. To return to a specific slide, please press the “menu” button and select the slide you wish to review. To close the presentation, please press the “save and exit” button. Thank-you!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London Lines Replacement ...
Convert
Select
Stantec ENBRIDGE
London Lines Replacement Project
Issues / Concerns please email LondonLines@stantec.com
Find address or place
Welcome to the London Lines Replacement Project (LLRP) Interactive Map
In the top right corner, you will see the following icons:
Edit - Using "Edit" you can add a feature onto the map.
Example - if you would like us to know about a drainage ditch on your property, you can:
1. Click on the "point" logo for a single feature (i.e. a tree), the "line" logo for a linear feature (i.e. a 20m long drainage ditch) or the "area" logo for a feature that covers a large area (a forest that covers 1km²).
2. Next, click on the area of the map where you want to add the feature
3. Fill out the comment section (i.e. "there is a drainage ditch along 123 First Street"). You can also add a photo at this time.
4. Once you have added your feature, the application will lock your input. Click the X in the top right corner to close the edit pop up box and continue to edit/view the application.
*** Due to privacy issues, all data collected will be saved automatically and will not be displayed for further viewing/edits.***
Base map Gallery - Here, you can view the map with different base maps.
Example - If you want to look at the map using a topographic background image select the "Topographic" icon.
Legend - The "Legend" displays the icons used on the map and will tell you what each icon represents.
Example - the Study Area is a dashed red line.
Layer List - Here you can turn on and off different layers (you have the ability to turn on additional layers if you want).
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Sarnia
Brights Grove
Camlachie
Warwick
Adelaide Metcalfe
Middlesex Centre
Middlesex
Sparlingville
Kertch
Plympton-Wyoming
Watford
Kerwood
Strathroy-Caradoc
South Park
Lucasville
Marysville
Sutorville
Cairngorm
Mt Brydges
Delaware
Corunna
Petrolia
Lambton
Enniskillen
Napier
Glen Oak
North Ekfrid
St Clair
Brigden
Inwood
Brooke-Alvinston
Oneida 41
Chippewas of the Thames First Nation 42
Waubuno
Oil Springs
China Twp
Bradshaw
Aberfeldy
Southwest Middlesex
Lawrence Station
Wilkesport
Marine City
Shetland
Iona Station
Newbury
Woodgreen
Thornyhurst
Dawn-Euphemia
Florence
Wardsville
Dutton/Dunwich
Bothwell
Wallacetown
Pointe aux Tremble
Algonac
Croton
West Lorne
Tyrconnell
Wallaceburg
Tupperville
Dresden
Wabash
Moraviantown
Moravian 47
West Elgin
-82.394 43.066 Degrees
Earthstar Geographics | Province of Ontario, County of Lambton, Esri, HERE, Garmin, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks C...
POWERED BY esri

London Lines Replacement Project Virtual Open House Quesionnaire

Your comments are appreciated. If you require any assisance or clarifcation while completing the quesionnaire, please send an email to LondonLines@santec.com or dial (519)-780-8186 and leave a detailed message. If you have a quesion that requires a response, please fll out the Contact Information section at the end of this form and a representative will respond as soon as possible.

Please complete this quesionnaire by May 14, 2020 to be considered as part of the Environmental Report submitted to the Ontario Energy Board.

1. What is your interes in this project?

- [ ] Directly afected landowner
- [ ] Surrounding landowner
- [ ] Interesed citizen
- [ ] Member of interes group
- [ ] Government ofcial
- [ ] Other (please specify)

2. What is your view of the proposed project? Please explain any issues or concerns.

3. Please indicate if the project will have any impacts to you, your property or your business that you would like addressed (i.e., access, noise, dus, trafc, etc.).

4. Please identify any features along the Preferred Route that you feel are important to consider during the environmental sudy .

5. Do you have any quesions or comments about this project that you would like to bring to our attention?

6. Did the content provided in the Virtual Open House meet your needs?

7. How did you hear about the Virtual Open House? Check all

that apply:

- [ ] Newspaper Advertisement
- [ ] Project Notifcation Letter
- [ ] Social Media Pos (i.e. Facebook)
- [ ] Word of Mouth

Thank you for completing this quesionnaire. If you would like to be informed of project updates, please provide us with your full contact information. If you have a quesion about the project that has not been addressed or for which you would like more information, please email us at LondonLines@santec.com or dial (519)-780-8186 and leave a detailed message.

8. Contact Information

Name	
Address	
Email	
Phone	

Information will be collected and used in accordance with the Freedom of Information and Protection of Privacy Act. This information will be used to assis Enbridge Gas Inc. in meeting applicable approval requirements. This material will be maintained on fle for use during the sudy and may be included in project documentation. Unless indicated otherwise, personal information and all comments will become part of the public record and may be publicly released as part of project documentation.

Done

Powered by

See how easy it is to create a survey.

Privacy & Cookie Policy

APPENDIX B5
Project Correspondence

London Lines Replacement Project
Correspondence Tracking
Government and Agencies

N/A - Not Available

Comment Number	Stakeholder Group	Stakeholder Representative Name	Method of Communication	Date of Communication	Summary of Comment	Date of Response	Summary of Response
N/A	All municipal contacts on the contact list	N/A	Email	March 31, 2020 - April 2, 2020	Enbridge sent a meeting invitation to contacts at municipalities to discuss the proposed Project.	N/A	N/A
See Appendix B1 and B3	All agencies on contact list	N/A	Email	April 8, 2020	Notice of Commencement and Information Session.	N/A	N/A
See Appendix B1	All municipal contacts on the contact list	N/A	Email	May 14, 2020	Notice of Project Change sent to all contacts at the municipalities. Notice of Project Change sent to contacts at the MENDM on May 19, 2020.	N/A	N/A
1	Ministry of Energy, Northern Development and Mines (MENDM)	Dan Delaquis (MENDM)	Email	December 9, 2019	Enbridge sent an email, including a Project Description for the London Lines Project, noting that a Leave to Construct application will be filed with the Ontario Energy Board (OEB), and inquired as to if the Project triggers the Duty to Consult process.	February 25, 2020	The MENDM responded to the inquiry sent on December 9, 2019 and provided a letter noting that the Project may have the potential to affect Indigenous communities, and provided a list of these potentially affected communities to consult with.
2	Municipality of Middlesex Centre	Rob Cascaden Director of Public Works and Engineering	Email	April 8, 2020	The Municipality of Middlesex Centre responded to the Notice of Commencement noting that Glendon Drive is a county road and as such the Notice should be sent to Middlesex County as well and provided a contact name at the County.	April 8, 2020	Stantec replied confirming that the Notice will be sent to the County of Middlesex as well.
3	County of Lambton	Ben Puzanov Manager of Planning and Development Services	Phone Call	April 14, 2020	The County of Lambton called regarding the LLRP Notice and left a voicemail. Specific to Dawn-Euphemia township representatives have noted that there are no development applications within the study area. They are also checking with their cultural services department to see if there are any items of cultural interest in the area.	N/A	N/A
4	Lambton Federation of Agriculture (LFA)	Gary Martin President	Letter via Email	April 15, 2020	The LFA provided a letter via email concerning the LLRP. The LFA noted that internet access may be limited and therefore landowners may not be able to participate in the Virtual Open House. The LFA inquired about the possibility of an in-person Open House.	April 17, 2020	Stantec responded to the emailed letter: "Thank you very much for your letter and your comments. We understand that access to internet may not be available to all residents and stakeholders within the study area of the Project. Enbridge has tried to address this limitation in a few ways to ensure all interested residents and stakeholders have the ability to provide input on the proposed Project and potential routes while protecting the health and safety of all those involved. Enbridge has a project-specific phone line that is available for any resident or stakeholder to contact at any time. A representative from Stantec would then be able to provide this resident or stakeholder with the option being emailed or of having a printed copy of the Open House information mailed to them, as well as a print out of the audio script, questionnaire and a paid postage return envelope to mail the completed questionnaire back, if needed. The Notice of Commencement was mailed to all residents and stakeholders within the study area and it was also published in The Age Dispatch (serves Strathroy-Middlesex area) and The Herald (serves Thamesville and Bothwell area). The Notices were published this week and will be published again in the same papers next week (during the week of April 20-24). The project-specific phone number is included in the notices dropped off to all stakeholders and in the published newspaper Notice of Commencement. At this time, Enbridge will not be considering an in-person public Open House, as the timeline of when this may be able to proceed is unknown. if you have any further questions or comments please feel free to reach out to the Project Team at your convenience."
5	Middlesex County	Bill Rayburn Chris Traini	Meeting (Skype)	April 15, 2020	A virtual meeting (Skype) was held to discuss the Project. On April 16, 2020 Enbridge emailed detailed mapping, the Newspaper Notice and the PowerPoint presentation that was displayed during the meeting on April 15.	N/A	N/A

London Lines Replacement Project
Correspondence Tracking
Government and Agencies

N/A - Not Available

Comment Number	Stakeholder Group	Stakeholder Representative Name	Method of Communication	Date of Communication	Summary of Comment	Date of Response	Summary of Response
6	Township of Dawn-Euphemia	Donna Clemont Paul Dalton	Meeting (Skype)	April 15, 2020	A virtual meeting (Skype) was held to discuss the Project. Enbridge emailed more detailed mapping to the Township after the meeting.	N/A	N/A
7	Municipality of Strathroy-Caradoc	George Elliot Fred Tranquili Demetri Makrakos Jake Straus Jennifer Huff	Meeting (Skype)	April 15, 2020	A virtual meeting (via Skype) was held to discuss the Project. Enbridge emailed the Newspaper Notice and a detailed map.	N/A	N/A
8	Municipality of Southwest Middlesex	Jill Bellchamber-Glazier Greg Storms	Meeting (Skype)	April 16, 2020	A virtual meeting (via Skype) was held to discuss the Project. Enbridge emailed a more detailed map to the Municipality after the meeting.	N/A	N/A
9	County of Lambton	Matt Deline Ron VanHorne Jason Cole	Meeting (Skype)	April 20, 2020	A virtual meeting (via Skype) was held to discuss the Project. Enbridge emailed the Newspaper Notice and a detailed map.	N/A	N/A
10	Municipality of Middlesex Centre	Michael Di Lullo Robert Cascaden Lee Smith	Meeting (Skype)	April 20, 2020	A virtual meeting (via Skype) was held to discuss the Project. Enbridge emailed the Newspaper Notice and a copy of the PowerPoint presentation that was displayed during the meeting on April 20. Enbridge sent a second email with a detailed map. The Municipality of Middlesex Centre thanked Enbridge for the materials and noted they would share the information.	N/A	N/A
11	Municipality of Strathroy-Caradoc	George Elliot	Email	April 21, 2020	George Elliot (Municipality of Strathroy-Middlesex) emailed Enbridge and provided information for consideration in the development of the project and the Environmental Assessment. This information included: access to Right of Ways (RoWs), request to see project infrastructure above grade prior to construction, various features along the existing route and alternative segments. and construction plans for the fall of 2020 into the end of 2021 from McEvoy Road from Adelaide to Hickory Drive.	April 29, 2020	Enbridge sent an email thanking the Municipality of Strathroy-Caradoc for providing the detailed information. Enbridge included an attachment of responses to questions and comments asked by the Municipality, as well as map showing the proposed station locations and how they may look.
12	County of Lambton	Ben Puzanov Manager of Planning and Development Services	Email	April 21, 2020	The Manager of Planning and Development Services, County of Lambton, provided cultural services information via email.	April 22, 2020	Stantec thanked the County of Lambton for providing the cultural services information.
13	Ministry of Transportation (MTO)	Amanda Rodek Program Analyst	Email	April 24, 2020	The MTO provided comments regarding the LLRP. The MTO's main concerns include: impacts to the travelling public and future conflicts with highways improvement projects. MTO noted Enbridge will be required to meet MTO guidelines and obtain permits, where necessary. The email and letter forwarded to Enbridge on April 24, 2020.	June 25, 2020	A virtual meeting (via Skype) was held between Enbridge and MTO (Michael Kilgore) to discuss the Project, specifically the crossing of Highway 402.

London Lines Replacement Project
Correspondence Tracking
Government and Agencies

N/A - Not Available

Comment Number	Stakeholder Group	Stakeholder Representative Name	Method of Communication	Date of Communication	Summary of Comment	Date of Response	Summary of Response
14	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	Joseph Harvey (on behalf of Katherine Kirzati) Heritage Planner	Email	April 24, 2020	MHSTCI provided comments on the project. The email was forwarded to Enbridge on April 27, 2020.	July 13, 2020	Stantec sent the following response: "Good afternoon Joseph, Thank-you for your letter and comments regarding the London Lines Replacement Project. Enbridge is committed to continuous consultation and receiving all applicable permits and approvals prior to construction. As part of the Environmental Report a Stage 1 Archaeological assessment was completed outlining areas of potential for further study and is appended to the ER. A cultural heritage checklist was also completed and findings were included in the Environmental Report. A Cultural Heritage Evaluation Report will be completed prior to construction. All reports and findings will be submitted to the MHSTCI for review. As part of the Ontario Pipeline Coordinating Committee, the Environmental Report will be circulated to the MHSTCI for review for 42 days prior to applying to the OEB for Leave to Construct."
15	Technical Standards and Safety Authority (TSSA)	Kourosh Manouchehri Fuels Safety	Email	April 27, 2020	The TSSA replied to the Notice of Commencement noting an application will need to be filled and submitted for review by the TSSA as part of the OPCC.	July 13, 2020	Enbridge will complete the TSSA form and submit as part of the OPCC review process.
16	Transport Canada (TC)	Environmental Assessment Program, Ontario Region	Email	April 30, 2020	TC responded noting that project proponents are requested to self-assess if their project will interact with a federal property and/or waterway, or if it will require approval and/or authorization under any Acts administered by TC.	N/A	N/A
17	Upper Thames River Conservation Authority (UTRCA)	Karen M. Winfield Land Use Regulations Officer	Email	May 1, 2020	The UTRCA provided comments on the proposed Project. Specifically, comments related to: 1. UTRCA regulated areas (requirement to obtain permit approval under 157/06, portion of the study area are within the boundaries of the UTRCA watershed, request for a more detailed map of the existing and currently proposed pipeline routes and at a more definable scale) 2. Digital Mapping (UTRCA can provide digital mapping) 3. Terrestrial and Aquatic Ecology and Aquatic Species at Risk [SAR] (detailed fish/mussel and benthic sampling records may be available, access to data that shows potential presences of federally and/or provincially protected aquatics SAR) 4. Water Quality, Woodlands, and Other Natural Heritage Features (study area lies within portions of the Komoka Creek and River Bend sub watersheds, study area contains significant natural heritage features) 5. Digital Water Source Protection (abide by regulatory requirements of Ontario Clean Water Act and local source water protection, noted highly vulnerable aquifers within study area, UTRCA may have access to mapping data for source water protection). The email and letter were forwarded to Enbridge on May 11, 2020.	May 4, 2020	Stantec thanked UTRCA for providing comments.
18	Lower Thames River Conservation Authority (LTRCA)	Randall Van Wagner Manager, Conservation Lands and Services	Email	May 12, 2020	Stantec emailed LTRCA to discuss obtaining permits for Project construction activities and to set up a date and time to hold a phone call.	May 19, 2020	LTRCA (Jason Homewood, Water Resources and Regulations Technician) responded to the email requesting a shapefile or KMZ file of the project location.
19	Ministry of Energy, Northern Development and Mines (MENDM)	Dan Delaquis (MENDM)	Email	May 14, 2020	Enbridge sent a letter via email to MENDM to inform the ministry that new alternative routes have been added to the Project.	N/A	N/A

London Lines Replacement Project
Correspondence Tracking
Government and Agencies

N/A - Not Available

Comment Number	Stakeholder Group	Stakeholder Representative Name	Method of Communication	Date of Communication	Summary of Comment	Date of Response	Summary of Response
20	Lower Thames River Conservation Authority (LTRCA)	Jason Homewood, Water Resources and Regulations Technician	Email	May 22, 2020	Stantec provided the requested shapefile and requested date and time availability to discuss the Project with LTRCA.	May 25, 2020	LTRCA responded noting that based on the shapefiles provided there are only 3 regulated watercourses crossed in LTRCA jurisdiction and that a permit would be required for each of the three crossings. LTRCA provided a cost estimate, the application form and noted the CA will need to know the location of each crossing, method and depth of each crossing and the sedimentation and erosion control plans. LTRCA typically requests that replacement pipelines are installed at least 2.5 m below the existing bottom of the watercourse or below the design depth of the watercourse if it is a municipal drain. LTRCA noted that the permitting process for this project will be easy as there are only 3 crossings proposed.
21	Lower Thames River Conservation Authority (LTRCA)	Jason Homewood, Water Resources and Regulations Technician	Email	May 26, 2020	Stantec thanked LTRCA for their response and noted that Enbridge does not need a follow-up conversation due to the limited number of crossings in LTRCA regulated area.	N/A	N/A
22	Southwest Middlesex	Mark McGill Councillor, Ward 1	Phone Call	May 14, 2020	Councillor and landowner (Mark McGill) called regarding the LLRP (519-287-3055).	May 14, 2020 May 27, 2020	Stantec returned the call. No response, voicemail left. Enbridge (Municipal Affairs and Stakeholder Relations) contacted Councillor McGill on May 27. Councillor McGill noted two farmers have reached out to say they did not receive a notice. Enbridge will provide copies of the two letters (Notice of Commencement, and the Change Notice) via email. Councillor McGill asked; if there will be crop damage payment to landowners 1. Will there be crop damage paid to landowners. Enbridge responded yes, but it will not be discussed until a route is chosen and finalized and then landowner discussions would begin. 2. Is the route going to be generally the same? Enbridge responded yes, except in the areas with proposed alternative routes to move the pipeline off farm fields into road allowances. Enbridge noted this may mean additional customers are connected and cautioned that we are still in the route study phase with Stantec. 3. Should I get a quote to extend service to my home. Enbridge responded yes, but cautioned that he should wait to do so once the final running line is chosen.
23	St. Clair Region Conservation Authority (SCRCA)	Melissa Deisley Regulations Officer	Meeting (Skype)	May 25. 2020 May 26, 2020	A virtual meeting (via Skype) was held between Enbridge Gas Inc., Stantec and SCRCA to discuss the Project and the processes and requirements to obtain SCRCA permits for construction. Meeting minutes sent via email on May 26, 2020.	N/A	N/A
24	Upper Thames River Conservation Authority (UTRCA)	Karen M. Winfield Land Use Regulations Officer	Meeting (Skype)	June 2, 2020 June 8, 2020	A virtual meeting (via Skype) was held between Enbridge Gas Inc., Stantec and UTRCA to discuss the Project and the processes and requirements to obtain UTRCA permits for construction. Meeting minutes sent via email on June 8, 2020	N/A	N/A

London Lines Replacement Project
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Government and Agencies

N/A - Not Available

Comment Number	Stakeholder Group	Stakeholder Representative Name	Method of Communication	Date of Communication	Summary of Comment	Date of Response	Summary of Response
25	Middlesex Federation of Agriculture	Lucia A. Lilbourne Coordinator	Email	June 2, 2020	"Good afternoon; I left a message this morning at (519) 780-8186 and thought I'd follow-up with this email. The Middlesex Federation of Agriculture is working on a draft letter to be reviewed at our meeting June 4th. I see by the latest correspondence letter on this project, you were requesting comments by May 29th. Due to the infrequencies of picking up mail, and holding Board meetings, we have missed that date. I wanted to let you know I will be sending a letter Friday, or early next week at the latest. Thanks."	June 2, 2020	"Good afternoon Lucia, Thank-you for your voicemail and email. We are happy to extend our comment deadline for you. If you have any questions or concerns in the meantime, please let me know. Regards"
26	Middlesex Federation of Agriculture	David Bolton President, Board of Directors Sent by Lucia Lilbourne	Letter via Email	June 8, 2020 (letter dated June 4, 2020)	The Middlesex Federation of Agriculture (MFA) noted that the expansion of the natural gas supply is positive for the members and will allow for increased access to an economical fuel source. The MFA asked that future natural gas needs for farming operations and agricultural businesses are taken into consideration and that Enbridge consider the profile and depth of the gas line. The MFA noted current issues with municipal drains being designed with siphons to go around existing pipelines. The MFA requests to be included on any and all future correspondence relating to the project.	June 9, 2020	Stantec replied thanking the MFA for their letter.

London Lines Replacement Project
Correspondence Tracking
Indigenous Communities

N/A - Not Available

Comment Number	Community	Community Representative Name	Method of Communication	Date of Communication	Summary of Comment	Date Response Provided	Summary of Response
See Appendix B1	All communities on contact list	N/A	Email	February 26, 2020	Notification letter and map sent to all communities and contacts on the Indigenous Communities contact list.	N/A	N/A
See Appendix B1	All communities on contact list	N/A	Email	March 9, 2020	An updated map was sent to all communities and contacts on the Indigenous Communities contact list.	N/A	N/A
See Appendix B1 and B3	All communities on contact list	N/A	Email	April 8, 2020	Notice of Commencement and Virtual Open House sent to all communities and contacts on the Indigenous Communities contact list.	N/A	N/A
See Appendix B1 and B3	All communities on contact list	N/A	Email	April 29, 2020	Virtual Open House presentation slides sent to all communities and contacts on the Indigenous Communities contact list.	N/A	N/A
See Appendix B1 and B3	All communities on contact list	N/A	Email	May 15, 2020	Follow-up email regarding the Notice of Commencement and Virtual Open House sent to all communities and contacts on the Indigenous Communities contact list. A Notice of Project Change letter was attached to this email as well.	N/A	N/A
1	Caldwell First Nation	Nikki Van Oirschot	Email	March 17, 2020	Nikki Van Oirschot (Caldwell First Nation) responded to the March 9, 2020 email noting that the Chief is currently on leave until September 2020, and that she will advise if Council would like to meet to discuss the Project.	March 18, 2020	Enbridge thanked Nikki Van Oirschot (Caldwell FN) and noted they will wait to hear back if a meeting with the council is approved.
2	Caldwell First Nation	Nikki Van Oirschot	Email	May 15, 2020	Nikki Van Oirschot (Caldwell First Nation) confirmed receipt of the Notice of Project Change.	N/A	N/A

London Lines Replacement Project
Correspondence Tracking
Landowners and Public

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
See Appendix B1 and B3	Landowners / Residents	Letter (Canada Post unaddressed mail)	April 16, 2020	Notice of Commencement and Virtual Open House sent to landowners within the Study Area.	N/A	N/A
See Appendix B1 and B3	Landowners / Residents	Newspaper Notice (Strathroy Age Dispatch)	April 16, 2020 April 23, 2020	Notice of Commencement and Virtual Open House published in newspaper.	N/A	N/A
See Appendix B1 and B3	Landowners / Residents	Newspaper Notice (The Herald)	April 15, 2020 April 22, 2020	Notice of Commencement and Virtual Open House published in newspaper.	N/A	N/A
1	Landowners / Residents	Email	April 9, 2020	Landowner (Ruth T) and owner of emailed ooking to confirm whether or not the LLRP line will affect either or both of the landowners properties.	April 13, 2020	Enbridge (Lands Advisor) responded via email to confirm that the project is not planned to intersect the landowners properties.
2	Landowners / Residents	Phone call	April 16, 2020	Landowner (Dan B.) called regarding the LLRP ( ). Requested a return call.	April 16, 2020	Stantec returned the call. The landowner owns a farm on Cooks Road and had received the mailed-out letter. The landowner noted that he and several of his neighbours who also have farms would like access to natural gas, and have been requesting access for a year or so. The landowner was notified of the Virtual Open House and Stantec provided the 1-866 phone number to discuss Enbridge Gas Inc. connections.
3	Landowners / Residents	Phone call	April 17, 2020	Landowner (Rob D.) called regarding the LLRP ( ). Voicemail forwarded to Enbridge on April 17, 2020	April 27, 2020	Enbridge returned the call. Landowner asked if the route was located on Century Road or if was on Falconbridge Drive. Enbridge confirmed that the route alternative is on Falconbridge Drive, and noted that feedback is currently being received on the route.
4	Landowners / Residents	Email	April 19, 2020	Landowner (Alex M) sent an email regarding the LLRP and requested a larger scale map for the Komoka/Melrose area.	April 27, 2020	Stantec responded and provided instructions and a link to access the interactive map.
5	Landowners / Residents	Phone call	April 20, 2020	Landowner (Ruth S.) called regarding the LLRP ( ).	April 20, 2020	Stantec returned the call and spoke about the Project. The landowner noted they do not have access to a computer. Stantec noted a hardcopy of the Virtual Open House materials and questionnaire would be sent in the mail (documents mailed on April 21, 2020). The landowner noted they would like to speak with someone at Enbridge. A summary email was sent to Enbridge on April 20th to follow up with Ms. .
6	Landowners / Residents	Phone call	April 20, 2020	Landowner (James C.) called regarding the LLRP ( ), and noted wanting to connect to natural gas. Voicemail forwarded to Enbridge on April 21, 2020.	May 14, 2020	Stantec returned the call and spoke with the landowner. No specific concerns raised, the landowner wanted to know if they can hook up to the natural gas. Stantec provided the 1-866 phone number to discuss Enbridge Gas Inc. connections.
7	Landowners / Residents	Email	April 20, 2020	Landowner (Tracy S) emailed regarding the LLRP and asked about the proposed routes, specifically in the area of Amiens, Avro Drive and Highway 402.	April 22, 2020	Stantec replied to the email and provided a screen shot of the interactive map showing the proposed route and alternative in the area mentioned by the landowner. Stantec also provided the landowner with the 1-866 phone number to discuss Enbridge Gas Inc. connections.
8	Landowners / Residents	Phone call	April 21, 2020	Landowner (David J) called regarding the LLRP and noted interest in connecting to natural gas ( ).	April 23, 2020	Stantec returned the call. The landowner asked about their parent's property along Falcon Bridge Drive that currently has an orchard in the front of the property, and if the route will impact the orchard. The landowner also asked about connecting their property to natural gas. Stantec noted a printed version of the orchard property will be mailed to the landowner's parents (mailed on April 27th)and provided the landowner with the 1-866 phone number to discuss Enbridge Gas Inc. connections.
9	Landowners / Residents	Phone call	April 21, 2020	Landowner (Duncan M) called regarding the LLRP ( ), and requested a more detailed map to show their property in proximity to the study area. The landowner provided an email address on the voicemail.	April 21, 2020	Stantec replied via email and provided a map of the landowner's property in relation to the study area. A link to the Virtual Open House was provided and information on the interactive map.

London Lines Replacement Project
Correspondence Tracking
Landowners and Public

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
10	Landowners / Residents	Email	April 22, 2020	Landowner (Jody K.) emailed regarding the LLRP and noted they could not find their address on the interactive map.	April 22, 2020	Stantec replied via email and provided a list of steps to use the interactive map to find their property, and provided a screenshot of the property from the interactive map program.
11	Landowners / Residents	Email	April 23, 2020	Landowner (Steve S) emailed regarding the LLRP and requested to be contacted by phone ( ).	April 23, 2020	Stantec called the landowner back. The landowner asked if there is currently a line going to Strathroy, the timing of the phases of the project, if the landowners will be kept up to date on the project activities and if a landowner's property is needed to be crossed or the line is going in front of their property, if they will be notified. Stantec confirmed Enbridge is reviewing 2 alternatives for Strathroy (1 and 2), noted the ER finalization process and submission to the OEB, and noted the landowners will be notified when the ER is complete. Stantec also told the landowner that a Enbridge land agent would be in touch to discuss both temporary and permanent land easements, if required.
12	Landowners / Residents	Phone call	April 27, 2020	Landowner (Emil P.) called regarding the LLRP ( ) and if the project will impact their properties.	April 27, 2020 April 29, 2020	Stantec returned the call. Landowner asked: 1. What side [of the road] the pipeline is being installed in 2. Landowner is building a new house and installing a new driveway and since the pipeline that crosses his property will be abandoned he is wondering if he requires a crossing easement. 3. Landowner is installing a fence for his cattle and is concerned that the new pipeline will impact his ability to install the new fence. 4. The existing gas pipeline on his property juts in about 10-15 m from Falconbridge and he indicates that his lawyer has completed a title search and apparently there is no registered easement along Falconbridge and specifically near or on his property for this natural gas pipeline. 5. Landowner asked what the plan was for the old pipeline and Stantec indicated that it would be abandoned in place. He does not have a concern but doesn't want to have to get a crossing agreement for his driveway. On April 29, Enbridge (Lands Agent) spoke with the landowner. The landowner's main concern is obtaining the contact information for third party while he builds a driveway. Enbridge noted they would try to find information for him (District's or Operations). Enbridge noted the District will need to make sure any activity is appropriate on top of the line. Landowner is confident there is no depth of cover concern in his field since he chisel ploughs 18-20 inches deep and hasn't hit anything. Discussed the lack of registered easement. Landowner understands we [Enbridge] have one and that during conversion from registry to land titles it was not brought forward. Enbridge also noted that we are not sure yet which side of the road we will be on; waiting for the ER report. Landowner builds sub-divisions so he is very familiar with the process.
13	Legal Representation for Landowners/Residents	Email	April 28, 2020	Paul M (Partner,) sent an email to Enbridge advising that has approached the law firm to provide advice and assist with any submissions with respect to the Project. Mr. stated they have advised that provides legal services to Enbridge and that as such they cannot provide services to without the consent of Enbridge.	June 4, 2020	Enbridge had a phone conversation with Mr. Paul M and stated that Enbridge would not permit representation of if they were in any way antagonistic to Enbridge's interests, however Enbridge has no objection to providing with general advice.

London Lines Replacement Project
Correspondence Tracking
Landowners and Public

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
14	Legal Representation for Landowners/Residents	Letter via Email	April 29, 2020	Paula L (Partner,) submitted a letter containing comments on the LLRP and Virtual Open House on behalf of their clients ( ). The letter noted that the client anticipates considerable disruption to the aggregate operations from project construction. It is requested that Alternative Route 6 be chosen as the preferred route. The email and letter were forwarded to Enbridge on April 29, 2020.	April 30, 2020	Stantec thanked for the letter and requested the referenced map as it was not attached in the original correspondence. Paula L ( ) provided a copy of the map via email.
15	Landowners / Residents	Email	April 30, 2020	Landowner (Charmaine) responded to the Notice. The landowner does not want any type of gas line running on or near their property. The landowner requested they receive a response by email.	May 1, 2020	Stantec responded to the email and provided a map showing the landowners property in relation to the study area and preferred route. Stantec noted that the property is located 830 m from the study area, and therefore it is not anticipated any direct impacts to the property will occur. Stantec noted temporary travel delays may occur if the landowner drives through the Project study area during construction.
16	Landowners / Residents	Email	May 1, 2020	Landowner (Charmaine) thanked Stantec for the response. The landowner noted their initial concern arose from a blue line at the end of their driveway and they were concerned this was related to the Project. The landowner asked if any construction impacts on the Catwalk, including dust, debris and noise levels.	May 1, 2020	Stantec reiterated that construction activities related to the Project will be greater than 830 m from the property and that as such the property and the Catwalk should not be impacted.
17	Landowners / Residents	Phone call	May 1, 2020	Landowner (John) called regarding the LLRP ( ). Primary concern is depth of the pipeline, what will happen to the existing pipeline once decommissioned, if there will be compensation for damaged crops and if landowners will be able to access natural gas.	May 1, 2020	Enbridge (Lands Agent) returned the call. Landowner has 2 farms with existing pipelines. Landowner provided their concerns, outlining the deficiencies, as he saw them, of the existing pipelines: shallow, leaking. Landowner informed Enbridge about the aerial crossings of the pipe in the ditch which prevents him from cleaning the ditch. Enbridge explained the project to him in general terms, and that Enbridge hopes to run the new pipeline in road allowance and once we have an abandonment plan in place he will be contacted. Noted if work on his farms is required he will be compensated but we are not sure what that looks like at this time. He was very happy to hear we plan to put the pipe in the road and that we construct these deeper with no daylighting anymore.

London Lines Replacement Project
Correspondence Tracking
Landowners and Public

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
18	Landowners / Residents	Email	May 1, 2020	Landowner (Dana) responded to the Notice, noting that they live on a property owned by The landowner provided the following comments: 1.With the proposed alternative route we would like to confirm that per your letter all services to Glendon Drive will be maintained during and after the project is complete. 2.As Glendon Drive is an active farming operation we would like specific additional details on the decommissioning plans associated with the existing lines and if Union Gas will be lifting their easement across the property after all decommissioning activities are complete. 3.We would like to know what the anticipated impacts to our active farming operations will be including but not limited to access. 4.As we currently maintain the ditch in the municipal right of way (pick up garbage, cut grass, etc.), please confirm that the ditch will be restored after the new line goes through such that we can continue to maintain the right of way. Email forwarded to Enbridge on May 4, 2020.	May 26, 2020	Enbridge responded to the landowner's email. Enbridge noted the Environmental Assessment for the project is underway and that a preferred route has not been chosen yet. Enbridge requested that if the landowner has a preference on whether they would like the pipeline to move to the road right-of-way or be replaced in the existing easement to provide such feedback to help inform the routing evaluation when choosing the preferred route. Enbridge responded to the questions posed in the landowners email: 1. With the proposed alternative route we would like to confirm that per your letter all services to Glendon Drive will be maintained during and after the project is complete. a.Correct all existing services will be maintained as part of this project. 2. As Glendon Drive is an active farming operation we would like specific additional details on the decommissioning plans associated with the existing lines and if Union Gas will be lifting their easement across the property after all decommissioning activities are complete. a.The existing lines will be decommissioned and abandoned. Decommissioning will result in either removal of the pipeline or abandonment in place decided with your consultation, easement agreement and environmental input. Consultation with municipalities, stakeholders, landowners and indigenous groups will further refine the decommissioning plan for the remainder of the project. An Enbridge Lands Agent will be in contact in the future to discuss this further. 3. We would like to know what the anticipated impacts to our active farming operations will be including but not limited to access. a.Once a preferred route is chosen the Lands agent will be in contact to discuss project impacts and access requirements for potential future activities including environmental and construction surveys and construction works if necessary. 4. As we currently maintain the ditch in the municipal right of way (pick up garbage, cut grass, etc.), please confirm that the ditch will be restored after the new line goes through such that we can continue to maintain the right of way. a.Upon the completion of construction Enbridge will restore the area to pre-construction conditions. Monitoring will then take place to ensure complete restoration.
19	Landowners / Residents	Email	May 5, 2020	Landowner (Vicky W.) responded to the Notice on behalf of her mother. The landowner asked if the proposed pipeline will run down Glendon Drive, as it does not show that it will on the map and her mother was confused as to why to received the letter.	May 5, 2020	Stantec replied to the email and noted that landowners and residents within 1km of the study area were sent the Notice of Commencement letter. Stantec confirmed that the landowners address on Glendon Drive lies within 1km of the study area but not the study area itself. Stantec noted that at this time, the route and project work are not anticipated to impact residents on Glendon Drive.
20	Landowners / Residents	Phone call	May 11, 2020	Landowner (Malcolm B.) called regarding the LLRP ( ).	May 11, 2020	Stantec returned the call. The landowner had the following comments: 1.Someone was on his farm over the last week or so spraying the ground marking the location of the lines with paint. With his farm being an organic one he is concerned that the paint will impact the status of it being organic. Enbridge to find out who was on the property spraying and we need to figure out if this impacts organic farming, maybe the folks who did the spraying of the paint will know? 2.His preferred route is for the pipeline go along Bentpath Line, up Forest Road to Mosside Line and across East, not cross country across his farm. 3.He does not want pipelines on his property because the existing ones on there now have a very shallow depth of cover (~ 11”) and he cannot deep till his land with the pipelines at that depth. 4.He would prefer that the pipelines be removed after harvest to reduce to impact to his crops, but also noted that he would like to be compensated and since organic crops are 3x more expensive he’d like that taken into consideration.

London Lines Replacement Project
Correspondence Tracking
Landowners and Public

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
21	Landowners / Residents	Phone call	May 21, 2020	Landowner (Michael C) called regarding the LLRP ( ). Landowner wanted clarification on the scope of the project.	May 22, 2020 May 25, 2020 May 26, 2020	Stantec returned the call. The landowner indicated that they were working and noted they would call Stantec back the following week. Stantec had follow up conversations with the landowner on May 25 and 26. The landowner is not impacted by any of the routes but saw the project in a newspaper ad. The landowner noted the following concerns and comments: 1. May 26 - concerned with the crossing of the Thames River (sensitive geographic feature at the east end of the study area due to the presence of a Species at Risk and also with respect to the natural environment related to the valley associated with the River. Stantec informed the landowner that the take off point is north of the Thames River and that no crossing of the Thames is needed for this project. 2. May 26 - concerned about the sections that go cross country at the east end of the Study Area, in particular between Komoka Road and Vanneck Road and Amiens Road and Falconbridge Drive. Landowner requested to know if those sections are abandoned, would they be removed? Stantec indicated that the preferred approach would be to abandon in place however if the landowner or a regulatory body requested it be removed, it would be assessed on a case by case basis. 3. May 25 - requested to know if an Environmental Assessment is being completed and under what regulatory authority. Stantec information the landowner that an Environmental Report is being completed in accordance with OEB Guidelines (2016). 4. May 25 - requested to know how they will know when the Environmental Report is completed so they can review and provide comments to the OEB. Stantec committed to the landowner that they would be added to the mailing list and be informed when the ER is completed and posted on the Project website.
22	Landowners / Residents	Phone call	May 21, 2020	Landowner (Todd E) called regarding the LLRP ( ). Landowner wanted to know if the pipeline will be going through their farm or not.	May 22, 2020 May 26, 2020	Stantec returned the call. No response. On May 26, Stantec called again. The landowner indicated they live on Amiens Road where one of the alternative routes is located near Glendon drive. The landowner would like to be notified only if the pipeline is to be located on their property. Stantec informed the landowner that the aim is to locate the pipeline within the municipal road allowance, however should the preferred route be on his property he would be notified by Enbridge. The landowner had no further concerns or questions.
23	Landowners / Residents	Phone call	May 22, 2020	Landowner (Joel B) called regarding the LLRP ( ).	May 22, 2020	Stantec returned the call. The landowner indicated that there are two gas pipelines currently on the property. The landowner asked: 1. If a different route is selected, will he retain access to natural gas? Stantec responded yes, regardless of the route selected he will maintain gas service. 2. Will the pipeline be abandoned in place? Stantec responded yes, it would be abandoned in place. 3. When the pipeline is abandoned will the life lease for the pipeline right-of-way on his property be removed? Stantec noted that an Enbridge lands agent would be in touch to provide a response.
24	Landowners / Residents	Phone call	May 22, 2020	Landowner (Matt J.) called regarding the LLRP ( ).	May 26, 2020	Stantec returned the call. The landowner noted there are no pipelines on his property, but he would like to speak with someone from Enbridge about connecting to natural gas. Stantec forwarded the contact information to Enbridge on May 26, 2020.

London Lines Replacement Project
Correspondence Tracking
Landowners and Public

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
25	Landowners / Residents	Phone call	May 29, 2020	Landowner/Business owner (Steve) called regarding the LLRP ( ).	May 29, 2020	Stantec returned the call. The landowner/business owner noted construction concerns (traffic and safety) due to their business operation, . The landowner noted they would like to discuss connecting to natural gas and noted their preference for construction to occur during the first half of September to avoid the busy tourism season for their business. Stantec provided the 1-866 phone number to discuss Enbridge Gas Inc. connections.

London Lines Replacement Project
Correspondence Tracking
Virtual Open House Participants

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
See Appendix B1 and B3	Landowners / Residents	Letter (Canada Post unaddressed mail)	April 16, 2020	Notice of Commencement and Virtual Open House sent to landowners within the Study Area.	N/A	N/A
See Appendix B1 and B3	Landowners / Residents	Newspaper Notice (Strathroy Age Dispatch)	April 16, 2020 April 23, 2020	Notice of Commencement and Virtual Open House published in newspaper.	N/A	N/A
See Appendix B1 and B3	Landowners / Residents	Newspaper Notice (The Herald)	April 15, 2020 April 22, 2020	Notice of Commencement and Virtual Open House published in newspaper.	N/A	N/A
1	Landowners / Residents	Virtual Open House Questionnaire	April 20, 2020	**Ed C , , Falconbridge Drive,** 1. What is going to happen to the existing gas lines? 2. I would like a phone call to clarify where the new line is in regards to my farm property 3. What is the ground coverage over the new line?	June 11, 2020	Enbridge (Lands Agent) spoke with the landowner. The landowner stated they do not want the pipeline on their property and would like it removed, noting it [the pipeline] is too shallow and interferes with their tiling. The landowner would like to be notified when a decision on the final preferred route has been made. The Lands Agent noted that the plan is to move the pipeline into the road allowance.
2	Landowners / Residents	Virtual Open House Questionnaire	April 20, 2020	**Jeff N , , , Springwell Road** 1. Uncertainty if existing sections where an alternative route is proposed will be decommissioned and removed, as well as easements removed from said properties. Also, if removed, will a new line be installed down the road to allow home owners currently connected to remain connected without extra charges? 2. I believe one large tree runs nearly over it [the preferred route], will it be removed in the process? 3. As a home owner that the pipeline runs through, I have not received a letter or any indication of the project, however saw in the newspaper as well as someone walking on our property to assess the line today [April 20th].	May 26, 2020	Enbridge (Lands Agent) spoke with the landowner who noted they did not receive the first letter (Notice of Commencement), but did receive the second (Change Notice). The landowner liked the Virtual Open House and wishes we offered this option all the time as well as in person traditional info sessions. He wants pipelines and easements removed. Pipelines are preventing him from developing his property. Enbridge informed the landowner that the route has not been decided yet. The decommissioning will be decided with his consultation, easement agreement and environmental input. Enbridge mentioned future possible activities on the property – surveyors, archaeology.
3	Landowners / Residents	Virtual Open House Questionnaire	April 21, 2020	**Steve K , , ,** **Springwell Road** 1. We run a tourism business and I am concerned about road closing for my customer coming to the farm. 2. We should have the opportunity for us and the neighbours to hook up to the pipeline.	May 27, 2020	"Thank you for completing the questionnaire for the London Lines Replacement Project. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. In response to your comments Enbridge considers impacts to traffic and local businesses as part of the environmental assessment, we will include mitigation measures such as utilizing road shoulders and implementing traffic control measures where needed to lessen any impacts in the area. The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address and due to the construction plans, we will not be able to include new customer attachments while installing the new main. Once the new pipeline is in and energized, new customer attachments will follow existing attachment policies. If you would like to inquire about connecting to Natural Gas you can: o Submit an inquiry thru our website at https://www.uniongas.com/switchtogas/ o Or call 1-866-772-1045 Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."

London Lines Replacement Project
Correspondence Tracking
Virtual Open House Participants

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
4	Landowners / Residents	Virtual Open House Questionnaire	April 22, 2020	**Jim K , , , Springfield Road, Appin** 1. We have a feature on the line at the corner of our property that is not shown and we are not sure if it will be impacted.	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. The feature near your property is a regulator station and is planned to be replaced as part of this project. There is expected to be a nominal impact to service during the replacement but no long-term impact to natural gas supply. Enbridge will develop mitigation measures to limit disturbance in your area. Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."
5	Landowners / Residents	Virtual Open House Questionnaire	April 22, 2020	**Mike W , , , Adelaide Road** 1. Our property would be directly affected by Strathroy Alternate 2, causing questions and concerns to be addressed. 2. Property concerns would include heavy construction near dwelling (150+ years old house), well water quality, impact to mature trees as well as safety/access.	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. In response to your comments we will note that you would be directly impacted by Strathroy Alternative 2 and would have concerns with this alternative in respect to construction disturbance, water well quality, and safety and access. Once a preferred route is chosen mitigation measures are developed to minimize impact to the public, stakeholders, environment and socio-economic features in the area. All necessary permit and approvals will be obtained, and all conditions will be adhered too. Prior to construction residents and landowners along the preferred route will be contacted to participate in a voluntary well water monitoring program to assess any impacts to water wells. Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."
6	Landowners / Residents	Virtual Open House Questionnaire	April 23, 2020	**Steven S , , , Christina Road, Mount Brydges** 1. Would like some clarification on route and property impact	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. Your address is on one route of four alternatives that are proposed to connect the replaced London Lines to the community of Strathroy. A preferred route will be chosen as part of the Environmental Assessment once the consultation period has concluded and an evaluation of Environmental and socio-economic features is complete. The proposed pipeline would be placed in the road-right-of way to limit impact to landowners, and mitigation measures will also be developed as part of the environmental assessment. Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."
7	Landowners / Residents	Virtual Open House Questionnaire	April 23, 2020	**Joanne F , , , Putnam Road, Mossley, Representative**	N/A	N/A

London Lines Replacement Project
Correspondence Tracking
Virtual Open House Participants

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
8	Landowners / Residents	Virtual Open House Questionnaire	April 23, 2020	**Marcel M , , , Jane Street** 1. As a farmer I have seen drainage issues result from previous pipelines thus I am concerned	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. In order to maintain agricultural drainage systems, landowners will be contacted prior to construction to confirm the location and type of existing drains and any future drainage. Field tile will temporarily be re-routed during pre-construction activities to allow for proper drainage. Any damaged or severed drains will be repaired following construction. Landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge as required. Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."
9	Landowners / Residents	Virtual Open House Questionnaire	April 23, 2020	**Ron M , , , Oil Springs** 1. The project may be necessary, my interest would be to make sure fellow farmers/landowners on this project are treated reasonably, fairly, pre-construction, during construction and post construction, and all future issues properly dealt with. 2. Concerned with pipeline construction and the impact on Landowners. I am on the Dawn-Trafalgar line. We have an organization who deals with Union Gas/Enbridge. Will landowners have the opportunity to organize and deal with Union/Enbridge as a group or will they try to split landowners apart? 3. How many landowners will be affected?	June 11, 2020	Enbridge Lands Agent contacted Land Owner By phone June 11, Landowner requested that they will call the Land Agent back. No response as of July 10, 2020.
10	Landowners / Residents	Virtual Open House Questionnaire	April 23, 2020	, , , **PO Box Bothwell** 1. We would like the gas line moved off our property as is an option with route 6. 2. The pipe line runs through the middle of our operational licenced gravel pits. Construction in the area would halt our business and operation as well as our farm land would be disturbed. 3.The pipe line runs right through a licenced gravel pit for safety and ease of operation and continuing operation during construction it should be moved to proposed Route 6 along Komoka Road and Glendon Road	May 25, 2020	Enbridge sent the following: "Hello, Thank you for completing the questionnaire for the London Lines Replacement Project. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. It is helpful to have the details you have provided in your comments regarding the operational impact and land impact that the construction may have.
11	Landowners / Residents	Virtual Open House Questionnaire	April 23, 2020	**John P , , , Oil Field Drive** 1. Concerned about access to portions of agricultural lands that may become land locked. 2. Will the old pipes be removed? This is preferred.	May 26, 2020	Enbridge (Lands Agent) spoke with the landowner and informed them that the route has not yet been selected. Landowner is not as concerned with the route as he is with the old pipelines. The landowner noted if the new pipeline is installed on his property it will be installed at a proper depth to not interfere with his tiling and ploughing. Noted that the existing pipelines are too shallow. Enbridge informed the landowner that the decommissioning will be decided with their consultation, easement agreement and environmental input. Enbridge mentioned future possible activities on the property - surveyors, archaeology.
12	Landowners / Residents	Virtual Open House Questionnaire	April 23, 2020	**George D , , Churchill, Sarnia**	N/A	N/A

London Lines Replacement Project
Correspondence Tracking
Virtual Open House Participants

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
13	Landowners / Residents	Virtual Open House Questionnaire	April 25, 2020	**Gary O , (, , Watterworth Road**	N/A	N/A
14	Landowners / Residents	Virtual Open House Questionnaire	April 26, 2020	**Mike B , , m, Naylor Road** 1. Is there opportunity for residence without natural gas along the route to access? 2. Will there be access issues to farmland during the farming season? 3. Will there be the ability for rural residents who do not have natural gas to three homes/businesses along or close to the proposed route be allowed to "hook into" the line for natural gas for their residence or business?	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. In response to your comments Enbridge considers impacts to traffic and local businesses as part of the environmental assessment, we will include mitigation measures such as utilizing road shoulders and implementing traffic control measures where needed to lessen any impacts in the area. The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address and due to the construction plans, we will not be able to include new customer attachments while installing the new gas line. Once the new pipeline is in and energized, new customer attachments will follow existing attachment policies. If you would like to inquire about connecting to Natural Gas you can: o Submit an inquiry thru our website at https://www.uniongas.com/switchtogas/ o Or call 1-866-772-1045 Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."
15	Landowners / Residents	Virtual Open House Questionnaire	April 26, 2020	**Jerry and Rose B , ,** **Falconbridge Drive** 1. We are a local operation that grows high value crops under contract ( ). We could loose contracts by not having the land available, with the potential of loosing future income for not continuing the contract. We have an estimated value of one million dollars in equipment which can not be used. Soil structure will be damaged from previous experience for a minimum of 10 years or as long as 20 years. The town of Mount Brydges is located on two sides of our farm. The pipeline may affect future development of the town. 2. Impacted properties: Falconbridge Drive, Falconbridge Drive, Falconbridge and Glendeon Drive in Komoka. Income in that year as well as future income as the potential to loose contracts and decreased yield on disturbed land. 3. Please follow Falconbridge Drive and do not put the line through the middle of our farm. The farm on Glendon Drive is in the study zone. There is high priced ginseng and land for future crops that would be affected if it travels through the farm.	May 27, 2020 May 29, 2020	Response to questionnaire comments sent via email. Email bounced back. Will call landowner/resident to confirm correct email address. Called landowner to confirm email address (.com instead of .ca); email sent on May 29, 2020: "Good afternoon, Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. In response to your comments, Enbridge considers impacts to local businesses as part of the environmental assessment and we will include mitigation measures such as installing the pipeline in the road right-of-way where possible, using road shoulder for construction areas and implementing traffic control measures where needed to lessen any impacts in the area. Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."

London Lines Replacement Project
Correspondence Tracking
Virtual Open House Participants

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
16	Landowners / Residents	Virtual Open House Questionnaire	April 29, 2020	**Mark H , , , Falconbridge Drive** 1. How deep in the ground will this new 8" line be? How far from the road will it be? We are on Falconbridge Drive in Appin. What's the plan with the 2 old lines?	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. In response to your comments, the proposed pipeline would be installed to a depth which is in alignment with applicable codes and regulations and Enbridge Gas Inc practices. Detailed design of the pipeline will commence once a preferred route is chosen, the location and depth of the pipeline within road right of way and easements will be confirmed at this stage. The existing lines will be decommissioned and abandoned. Abandonment will
17	Landowners / Residents	Virtual Open House Questionnaire	April 29, 2020	**Shane, , , Glendon Drive** 1. Why did I get a notice? I live at Glendon Drive and your route goes all around me! Do not like getting my nose shoved in it. 2. Why can't it connect houses on Glendon Drive? *[under "What is your interest in this project?" this landowner said "want natural to my place"]*	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. As part of the environmental assessment all landowners, stakeholders, and interested parties within the XX meters study area received a notice to ensure all comments, concerns and sensitive features that could potential be impacted by this project were identified and appropriate mitigation measure were in place to limit impacts. The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address and due to the construction plans, we will not be able to include new customer attachments while installing the new gas line. Once the new pipeline is in and energized, new customer attachments will follow existing attachment policies. If you would like to inquire about connecting to Natural Gas you can: o Submit an inquiry thru our website at https://www.uniongas.com/switchtogas/ o Or call 1-866-772-1045 Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."

London Lines Replacement Project
Correspondence Tracking
Virtual Open House Participants

N/A - Not Available

Comment Number	Stakeholder Group	Method of Communication	Date of Correspondence	Summary of Comment	Date Response Provided	Summary of Response
18	Landowners / Residents	Virtual Open House Questionnaire	May 1, 2020	**Rob C , , , Ilderton Road** 1. The extent of the work within Middlesex Centre is a relatively small portion of the project but with the proposed alternative route along Glendon Drive and Komoka Road it is important to the municipality that the running line location within the County's right of way takes future municipal servicing and road upgrades into consideration. 2. Within Middlesex Centre there will be a need to cross a natural feature (creek) on Glendon Drive (which is a municipal drain called Crow Creek Drain) as well as the Waters-Arnold Drain on Amiens Drive. We will require the depth of the installation to be sufficiently below these drains to allow for future maintenance and potential improvements. 3. Are the existing pipe lines both 8 inch? If yes then why are 2 being replaced by a single 8 inch main? Is it that the demand on this connection bas been reduced or that the pressure on the new main what will be significantly higher than on the existing mains? 4. Given this will be a high pressure main what will be the required setbacks from existing buildings or restrictions on new buildings? Will this impact existing easements which are in place? 5. I would like to know if the alternative route along Glendon Drive/Komoka Road is used whether it is Enbridge's plan to abandon the existing pipes in place that are currently on private property or if they will be removed? 6. Will Enbridge relinquish easements on private property of new routes within road right of ways are used instead of across private property? 7. Does Enbridge plan to abandon or remove the existing gas mains which are within road right of ways? I do not feel it should be the road authority's responsibility to deal with extra cost on future construction projects due to abandoned gas mains. 8. Are there any environmental risks or liabilities associated with abandoning the existing mains in place and if so will that liability remain with Enbridge? 9. Does any portion of the existing pipeline contain asbestos within the pipe or its coating?	June 17, 2020	A virtual meeting (via Skype) was held with the Municipality of Middlesex Centre to discuss the Project and the questions from Rob C .
19	Landowners / Residents	Virtual Open House Questionnaire	May 1, 2020	**Martin N , , , Glendon Drive** 1. I don't want it on my property. I have wetlands, honey bees, vineyard, ongoing paleontology dig. 2. Impacts include: access, noise, dust, woodlot damage, wildlife disruption. 3. Features along preferred route: possibility of more ice age mega fauna discoveries, well water disruption. 4. I would be willing to help with identification of any ice age bones being excavated.	May 27, 2020	"Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address and disturbance is expected to be minimal to your property. Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further."

December 9, 2019

VIA EMAIL – dan.delaquis@ontario.ca

Ministry of Energy, Northern Development and Mines
Dan Delaquis
Manager (Acting), Indigenous Energy Policy
Unit 77 Grenville St.
6th Floor
Toronto, ON
M7A 1B3

Dear Mr. Delaquis:

Re: London Lines Replacement Project

The *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition 2016* (the "Guidelines") issued by the Ontario Energy Board (the "Board") indicate that a project applicant shall provide the Ministry of Energy, Northern Development and Mines (the "Ministry") with a description of a project while in the planning process such that the Ministry can determine if there are any Duty to Consult requirements for the project.

The purpose of this letter is to inform the Ministry that Enbridge Gas Inc. ("Enbridge Gas") has identified the need to replace an existing set of pipelines which run from Enbridge Gas' Dawn Hub facility in the Township of Dawn-Euphemia, to Komoka in the Municipality of Middlesex Centre. Additionally, a new pipeline will be installed connecting the replacement pipeline to Strathroy in the Municipality of Strathroy-Caradoc. The Project will require Enbridge Gas to file a Leave to Construct application with the Board. Enbridge Gas is therefore contacting the Ministry to determine whether the Project triggers the Duty to Consult.

Attachment 1 contains a description of the Project's characteristics and its location for the Ministry's review, and to assist it with its determination as to whether it will delegate the procedural aspects of the Duty to Consult to Enbridge. While work on the Project is still in its early stages, Enbridge Gas would be pleased to discuss the Project with you should you have any questions.

Regards,

Asha Patel
Technical Manager, Regulatory Applications
Enbridge Gas Inc.
416-495-5642

Attachment 1: Project Description

1.0 Project Summary

Enbridge Gas Inc. ("Enbridge Gas") has identified the need to replace approximately 75 km of Nominal Pipe Size ("NPS") 8 and 10 inch steel natural gas main with NPS 8 steel natural gas main, and the need to reinforce the delivery to Strathroy in the Municipality of Strathroy-Caradoc with approximately 12 km of NPS 8 steel natural gas main (the "Project"). The majority of the replacement pipeline route will follow the existing pipeline route to maintain gas connections with existing communities and customers. The project also involves upgrades to services and stations along the route of the proposed pipeline. The existing NPS 8 and 10 pipelines along this route will be abandoned.

The Project will require the construction of an NPS 8 steel natural gas main and the abandonment of both existing NPS 8 and NPS 10 steel natural gas mains. The Project will tie into a steel natural gas main at the Enbridge Dawn Hub on Bentpath Line, east of Dawn Valley Road on the west end of the Project (Township of Dawn-Euphemia). On the east end, the Project will tie into a regulating station located south of the intersection of Glendon Road and Komoka Road in Komoka (Municipality of Middlesex Centre), located on the periphery of Komoka Provincial Park.

Figure 1 below shows the existing pipeline with potential alternative routes being considered.

The proposed pipeline route starts in the Township of Dawn-Euphemia on Bentpath Line, just east of Dawn Valley Road at Enbridge Gas' Dawn Hub facility. The pipeline then travels along Bethpath Line to just east of Oakdale Road.

The pipeline then travels through an easement to the intersection of Mcauslan Road and Mosside Line, where it continues east along Mosside Line to the intersection of Mosside Line and Watterworth Road. The pipe then enters the Municipality of Southwest Middlesex and continues through another easement to Big Bend Road and Knapdale Drive. From there, it travels along Knapdale Drive to Old Airport Road. At Knapdale Drive and Old Airport Road, the pipe continues along Old Airport Road to CPR Drive. The pipe follows CPR Drive to Dundonald Road. From there, the pipe runs along Dundonald Road to Falconbridge Drive. The pipe follows Falconbridge Drive, entering the Municipality of Strathroy-Caradoc, to Rougham Road.

The pipeline then travels through an easement to the intersection of Amiens Rd and Glendon Drive. The pipe runs along Glendon Drive, entering the Municipality of Middlesex Centre, then through another easement to the existing Enbridge Komoka regulating station.

At the intersection of Falconbridge Road and Adelaide Road in the Municipality of Strathroy-Caradoc, the NPS 8 pipeline will tie into the new pipeline replacement and be installed along Adelaide Road to Walkers Drive The pipe then travels along Walkers Drive to Sunderland Road. From there, the pipe runs along Sunderland Road until Calvert Drive. It then travels along Calvert Drive to the existing Enbridge Strathroy regulating station.

The existing pipeline is located in both existing road allowances as well as within easements. The replacement pipeline will be located in the same road allowances where possible to ensure existing customers are still able to have natural gas delivered. Where possible, pipeline that is currently in an easement will be moved to existing road allowances. The proposed alternative routes primarily comprise the options to relocate from the easement to the road allowance.

Temporary working space and laydown areas may also be required adjacent to these areas to facilitate the movement and storage of equipment necessary for construction. Enbridge Gas will work with regulators and landowners to identify and secure appropriate working space as required.

Preparation of an Environmental Report ("ER") for the Project has been initiated. The ER will examine the alternative routes and determine, from an environmental and socio-economic perspective, the preferred route for the Project. Engineering design is expected to be finalized during the permitting stage of the Project.

2.0 Authorizations and Recommendations Required

An ER for the Project will be prepared in accordance with the Ontario Energy Board's (the "Board") *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines in Ontario, 7th Edition* 2016. The ER will identify the potential authorizations required. Enbridge Gas' preliminary work on the Project has identified the following potential authorizations:

Federal approvals:

- Department of Fisheries and Oceans

Provincial approvals:

- Ontario Energy Board
- Lower Thames Valley Conservation Authority
- Upper Thames River Conservation Authority
- St. Clair Region Conservation Authority
- Ministry of Transportation
- Ministry of Heritage, Sport, Tourism and Culture Industries
- Ministry of Environment, Conservation and Parks
- Ministry of Indigenous Affairs

Municipal approvals:

- Township of Dawn-Euphemia
- Municipality of Southwest Middlesex
- Municipality of Strathroy-Caradoc
- Municipality of Middlesex Centre

- County of Lambton
- Middlesex County

Additionally, approval from other utilities in the area may be required. Other authorizations, notifications, permits and/or approvals may be required in addition to those identified above.

3.0 Project Activities

Planning activities for the Project commenced in 2019 and will continue until the commencement of construction in Q2 of 2021. Pursuant to the Guidelines an ER will be prepared and geotechnical and archaeological studies will be completed. The design process involves the selection of a specific running line location, appropriate materials, the selection of valves/fittings and location(s) for trenchless drilling activities. Information obtained from the geotechnical analysis, subsurface utility engineering and soil sampling is typically used to inform pipeline design.

Engineered drawings will be produced with the final design and issued to local municipalities and other regulators for approval. Once all approvals are obtained, final engineered drawings will be prepared for construction.

The pipelines and associated facilities may be installed via open-trench and/or trenchless technologies. Normal depth of ground cover over the pipeline will be 1.2 m; however, it may be installed deeper to provide additional protection in areas where it crosses underneath existing infrastructure and other sensitive environmental and/or socio-economic features.

4.0 Potential Environmental Effects and Mitigation Measures

The area in which the Project is to be constructed is within multiple municipalities. It is expected that the majority of adverse environmental and/or socio-economic effects will be construction related. These effects are expected to be temporary and transitory. The Project will also be underground once construction is complete, further limiting the potential for any long-term effects.

Mitigation measures recommended in the ER will be followed in conjunction with Enbridge Gas' Construction and Maintenance Manual. In addition, Enbridge Gas will use professional judgement, past experience, industry best practices and any additional feedback received through the consultation process when constructing the Project.

5.0 Project Benefits

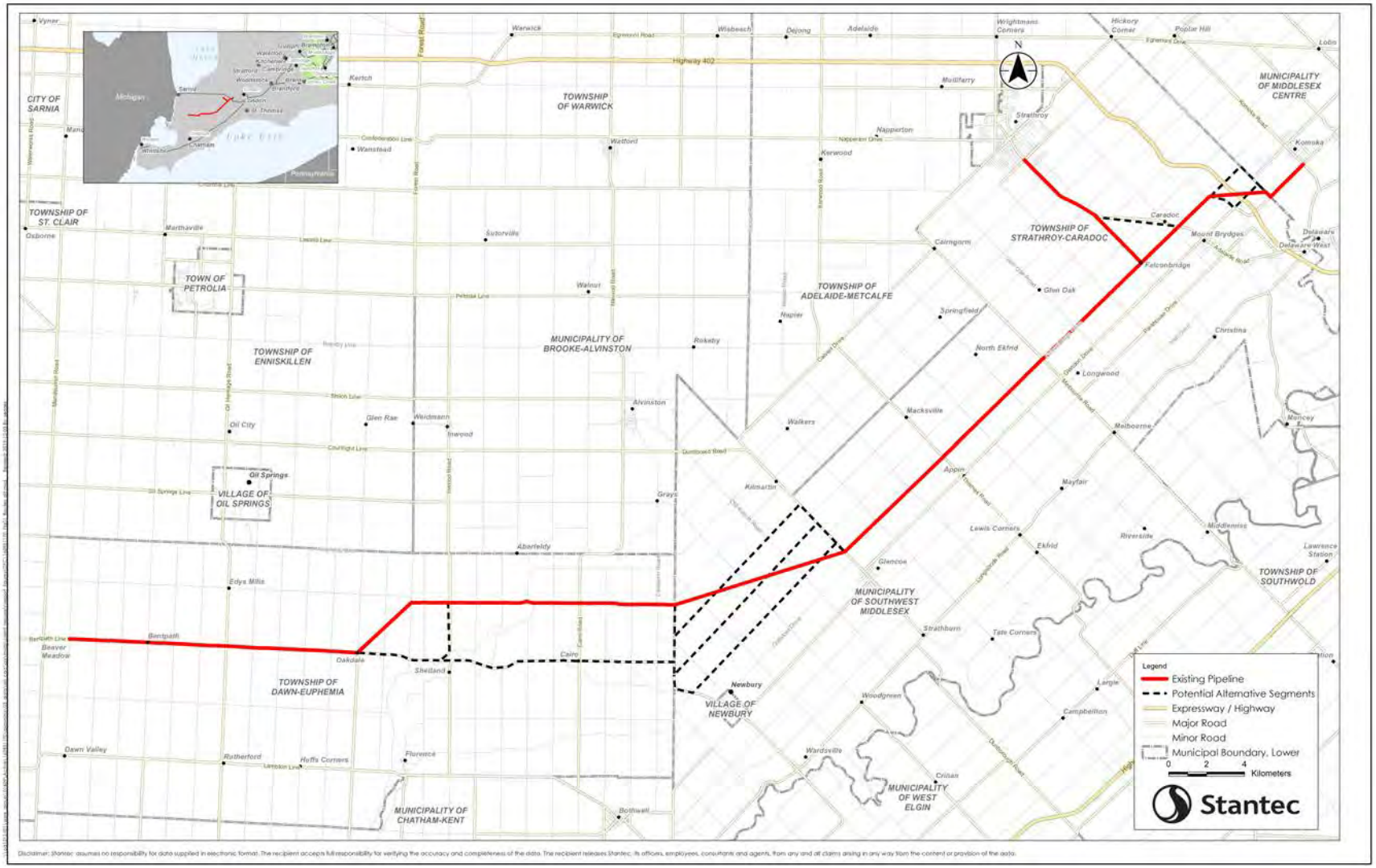
The Project will allow Enbridge Gas to continue to provide natural gas to customers in the surrounding area in a safe and reliable manner by replacing an existing pair of pipelines with known integrity issues. The Project will also provide additional capacity in the area to deliver natural gas to new customers.

6.0 Contact Information

Regulatory Applications:
Asha Patel
Asha.Patel@enbridge.com
416-495-5642

Indigenous Affairs:
Ken McCorkle
KMcCorkle@uniongas.com
519-436-4600 x5002243

Figure 1: Preliminary and potential alternative routes being considered.



Ministry of Energy, Northern Development and Mines

77 Grenville Street
6th Floor
Toronto ON M7A 2C1

Ministère de l'Énergie, du Développement du Nord et des Mines

77, rue Grenville
6e étage
Toronto ON M7A 2C1

Ontario

VIA EMAIL

February 25, 2020

Asha Patel
Technical Manager, Regulatory Applications
Enbridge Gas Distribution Inc
500 Consumers Road, North York

Re: London Lines Replacement Project

Dear Asha Patel:

Thank you for your email dated December 9, 2019 notifying the Ministry of Energy, Northern Development and Mines (ENDM) of Enbridge Gas Distribution Inc's intention to apply to the Ontario Energy Board (OEB) for Leave to Construct for the London Lines Replacement Project (the Project).

I understand that Enbridge Gas Distribution Inc has identified the need to replace approximately 75 km of Nominal Pipe Size ("NPS") 8 and 10 inch steel natural gas main with NPS 8 steel natural gas main, and the need to reinforce the delivery to Strathroy in the Municipality of Strathroy-Caradoc with approximately 12 km of NPS 8 steel natural gas main (the "Project"). The majority of the replacement pipeline route will follow the existing pipeline route to maintain gas connections with existing communities and customers. The project also involves upgrades to services and stations along the route of the proposed pipeline. The existing NPS 8 and 10 pipelines along this route will be abandoned.

The Project will require the construction of an NPS 8 steel natural gas main and the abandonment of both existing NPS 8 and NPS 10 steel natural gas mains. The Project will tie into a steel natural gas main at the Enbridge Dawn Hub on Bentpath Line, east of Dawn Valley Road on the west end of the Project (Township of Dawn-Euphemia). On the east end, the Project will tie into a regulating station located south of the intersection of Glendon Road and Komoka Road in Komoka (Municipality of Middlesex Centre), located on the periphery of Komoka Provincial Park.

On behalf of the Government of Ontario (the Crown), ENDM has reviewed the information provided by Enbridge Gas Distribution Inc with respect to the Project and assessed it against the Crown's current understanding of the interests and rights of Aboriginal communities who hold or claim Aboriginal or treaty rights protected under Section 35 of Canada's Constitution Act 1982 (Indigenous Communities) in the area. In doing so, ENDM has determined that the Project may have the potential to affect such Indigenous communities.

The Crown has a constitutional duty to consult and, where appropriate, accommodate Indigenous communities when the Crown contemplates conduct that might adversely impact established or asserted Aboriginal or Treaty rights. These consultations are in addition to consultation imposed by statue.

While the legal responsibility to meet the duty to consult lies with the Crown, the Crown may delegate the day-to-day, procedural aspects of consultation to project Proponents. Such a delegation by the Crown to Proponents is routine practice for ENDM.

I am writing to advise you that on behalf of the Crown, ENDM is delegating the procedural aspects of consultation in respect of the Project to Enbridge Gas Distribution Inc (Proponent) through this letter. ENDM expects that the Proponent will undertake the procedural aspects of consultation with respect to any regulated requirements for the proposed Project. The Crown will fulfill the substantive aspects of consultation and retain oversight over all aspects of the process for fulfilling the Crown's duty.

Please see the appendix for information on the roles and responsibilities of both the Crown and the Proponent.

Based on the Crown's assessment of First Nation and Métis community rights and potential project impacts, the following Indigenous communities should be consulted on the basis that they have or may have constitutionally protected Aboriginal or Treaty rights that may be adversely affected by the Project.

Community	Mailing Address
Oneida Nation of the Thames	2212 Elm Avenue Southwold, ON N0L 2G0
Aamjiwnaang,	974 Tashmoo Avenue Sarnia, ON N7T 7H5
Caldwell	14 Orange Street Leamington, ON N8H 1P5
Chippewas of the Thames	320 Chippewa Road

	Muncey, ON N0L 1Y0
Chippewas of Kettle and Stony Point	6247 Indian Lane Lambton Shores, ON N0N 1J2
Bkejwanong (Walpole Island)	117 Tahgahoning Road Walpole Island, ON N8A 4K9

This rights-based consultation list is based on information that is subject to change. Consultation is ongoing throughout the duration of the project, including project development and design, consultation, approvals, construction, operation and decommissioning. First Nation and Métis communities may make new rights assertions at any time, and further project related developments can occur that may require additional First Nation and/or Métis communities to be notified and/or consulted.

If you become aware of potential rights impacts on Indigenous communities that are not listed above at any stage of project, please bring this to the attention of ENDM with any supporting information regarding the claim at your earliest convenience.

ENDM is assuming a coordinating role within government in relation to rights-based Aboriginal consultation on the Project. We recommend contacting the following ministry representatives if you have any questions or concerns relating to a specific ministry's mandate:

Ministry/Contact	Phone/Email
Kristen Bromfield – Policy Advisor, Indigenous Energy Unit **Ministry of Energy, Northern Development and Mines**	Kristen.Bromfield@ontario.ca 416- 735-3297
Peter Brown – Consultation Advisor, Environmental Assessment and Permissions Division **Ministry of the Environment, Conservation and Parks**	peter.brown@ontario.ca 416-314-0149
Joe Vecchiolla – Policy Lead, Realty Policy Branch, **Ministry of Government and Consumer Services**	Joseph.vecchiolla@ontario.ca 647-267-3247

Acknowledgement

By accepting this letter, the Proponent acknowledges this Crown delegation and the procedural consultation responsibilities enumerated in the appendix. If you have any questions about this request, you may contact Kristen Bromfield (see above).

I trust that this information provides clarity and direction regarding the respective roles of the Crown and Enbridge Gas Distribution Inc. If you have any questions about this letter or require any additional information, please contact me directly.

Sincerely,

Dan Delaquis
Manager, Indigenous Energy Policy

C: Ontario Pipeline Coordinating Committee (OPCC)

APPENDIX: PROCEDURAL CONSULTATION

Roles and Responsibilities Delegated to the Proponent

On behalf of the Crown, please be advised that your responsibilities as Project Proponent for this Project include:

- providing notice and information about the Project to Indigenous communities, with sufficient detail and at a stage in the process that allows the communities to prepare their views on the Project and, if appropriate, for changes to be made to the Project. This can include:
    - accurate, complete and plain language information including a detailed description of the nature and scope of the Project and translations into Aboriginal languages where appropriate;
    - maps of the Project location and any other affected area(s);
    - information about the potential negative effects of the Project on the environment, including their severity, geographic scope and likely duration. This can include, but is not limited to, effects on ecologically sensitive areas, water bodies, wetlands, forests or the habitat of species at risk and habitat corridors;
    - a description of other provincial or federal approvals that may be required for the Project to proceed;
    - whether the Project is on privately owned or Crown controlled land;
    - any information the Proponent may have on the potential effects of the Project, including particularly any likely adverse impacts on established or asserted Aboriginal or treaty rights;
    - a written request asking the Indigenous community to provide in writing or through a face-to-face meeting:
        - any information available to them that should be considered when preparing the Project documentation;
        - any information the community may have about any potential adverse impacts on their Aboriginal or treaty rights; and
        - any suggested measures for avoiding, minimizing or mitigating potential adverse impacts;
        - information about how information provided by the Indigenous community as part of the consultation process will be collected, stored, used, and shared for their approval;

- identification of any mechanisms that will be applied to avoid, minimize or mitigate potential adverse impacts;
- identification of a requested timeline for response from the community and the anticipated timeline for meeting Project milestones following each notification;
- an indication of the Proponent's availability to discuss the process and provide further information about the Project;
- the Proponent's contact information; and
- any additional information that might be helpful to the community;

- following up, as necessary, with Indigenous communities to ensure they received Project notices and information and are aware of the opportunity to comment, raise questions or concerns and identify potential adverse impacts on their established or asserted rights;
- gathering information about how the Project may adversely affect Aboriginal or treaty rights;
- bearing the reasonable costs associated with the procedural aspects of consultation (paying for meeting costs, making technical support available, etc.) and considering reasonable requests by communities for capacity funding to assist in participating in the consultation process;
- considering and responding to comments and concerns raised by Indigenous communities and answering questions about the Project and its potential impacts on Aboriginal or treaty rights;
- as appropriate, discussing and implementing changes to the Project in response to concerns raised by Indigenous communities. This could include modifying the Project to avoid or minimize an impact on an Aboriginal or treaty right (e.g. altering the season when construction will occur to avoid interference with mating or migratory patterns of wildlife); and
- informing Indigenous communities about how their concerns were taken into consideration and whether the Project proposal was altered in response. It is considered a best practice to provide the Indigenous community with a copy of the consultation record as part of this step for verification.

If you are unclear about the nature of a concern raised by an Indigenous community, you should seek clarification and further details from the community, provide opportunities to listen to community concerns and discuss options, and clarify any issues that fall outside the scope of the consultation process. These steps should

be taken to ensure that the consultation process is meaningful and that concerns are heard and, where possible, addressed.

You can also seek guidance from the Crown at any time. It is recommended that you contact the Crown if you are unsure about how to deal with a concern raised by an Indigenous community, particularly if the concern relates to a potential adverse impact on established or asserted Aboriginal or treaty rights.

The consultation process must maintain sufficient flexibility to respond to new information, and we request that you make all reasonable efforts to build positive relationships with all Indigenous communities potentially affected by the Project. If a community is unresponsive to efforts to notify and consult, you should nonetheless make attempts to update the community on the progress of the Project, the environmental assessment (if applicable) and other regulatory approvals.

If you reach a business arrangement with an Indigenous community that may affect or relate to the Crown's duty to consult, we ask that that Crown be advised of those aspects of such an arrangement that may relate to or affect the Crown's consultation obligations, and that the community itself be apprised of the Proponent's intent to so-apprise the Crown. Whether or not any such business arrangements may be reached with any community, the Crown expects the Proponent to fulfill all of its delegated procedural consultation responsibilities to the satisfaction of the Crown.

If the Crown considers that there are outstanding issues related to consultation, the Crown may directly undertake additional consultation with Indigenous communities, which could result in delays to the Project. The Crown reserves the right to provide further instructions or add communities throughout the consultation process.

Roles and responsibilities assumed directly by the Crown

The role of the Crown in fulfilling any duty to consult and accommodate in relation to this Project includes:

- identifying for the Proponent, and updating as appropriate, the Indigenous communities to consult for the purposes of fulfillment of the Crown duty;
- carrying out, from time to time, any necessary assessment of the extent of consultation or, where appropriate, accommodation, required for the project to proceed;
- supervising the aspects of the consultation process delegated to the Proponent;
- determining in the course of Project approvals whether the consultation of Indigenous communities was sufficient;

- determining in the course of Project approvals whether accommodation of Indigenous communities, if required, is appropriate and sufficient.

Consultation Record

It is important to ensure that all consultation activities undertaken with Indigenous communities are fully documented. This includes all attempts to notify or consult the community, all interactions with and feedback from the community, and all efforts to respond to community concerns. Crown regulators require a complete consultation record in order to assess whether Aboriginal consultation and any necessary accommodation is sufficient for the Project to receive Ontario government approvals. The consultation record should include, but not be limited to, the following:

- a list of the identified Indigenous communities that were contacted;

- evidence that notices and Project information were distributed to, and received by, the Indigenous communities (via courier slips, follow up phone calls, etc.). Where a community has been non-responsive to multiple efforts to contact the community, a record of such multiple attempts and the responses or lack thereof.

- a written summary of consultations with Indigenous communities and appended documentation such as copies of notices, any meeting summaries or notes including where the meeting took place and who attended, and any other correspondence (e.g., letters and electronic communications sent and received, dates and records of all phone calls);

- responses and information provided by Indigenous communities during the consultation process. This includes information on Aboriginal or treaty rights, traditional lands, claims, or cultural heritage features and information on potential adverse impacts on such Aboriginal or treaty rights and measures for avoiding, minimizing or mitigating potential adverse impacts to those rights; and

- a summary of the rights/concerns, and potential adverse impacts on Aboriginal or treaty rights or on sites of cultural significance (e.g. burial grounds, archaeological sites), identified by Indigenous communities; how comments or concerns were considered or addressed; and any changes to the Project as a result of consultation, such as:

    - changing the Project scope or design;

    - changing the timing of proposed activities;

    - minimizing or altering the site footprint or location of the proposed activity;

    - avoiding impacts to the Aboriginal interest;

- environmental monitoring; and
- other mitigation strategies.

As part of its oversight role, the Crown may, at any time during the consultation and approvals stage of the Project, request records from the Proponent relating to consultations with Indigenous communities. Any records provided to the Crown will be subject to the *Freedom of Information and Protection of Privacy Act,* however may be exempted from disclosure under section 15.1 (Relations with Aboriginal communities) of the Act. Additionally, please note that the information provided to the Crown may also be subject to disclosure where required under any other applicable laws.

The contents of what will make up the consultation record should be shared at the onset with the Indigenous communities consulted with and their permission should be obtained. It is considered a best practice to share the record with the Indigenous community prior to finalizing it to ensure it is a robust and accurate record of the consultation process.

From:	Hartwig, Emily
To:	Robert Cascaden
Cc:	Lauren.Whitwham@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; LondonLines
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 8, 2020 8:00:30 PM
Attachments:	

Good evening Robert,

Thank-you for your prompt reply. I can confirm that we have sent the Notice of Commencement and Virtual Open House to individuals at Middlesex County, including Chris Traini.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Robert Cascaden <cascaden@middlesexcentre.on.ca>
Sent: Wednesday, April 8, 2020 7:36 PM
To: Hartwig, Emily <Emily.Hartwig@stantec.com>
Cc: Lauren.Whitwham@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Hi Emily,

Thank you for the information. You are likely fully aware but I thought I should point out that Glendon Drive is a county road and as such you should circulate this to Middlesex County as well. I only point this out as there have been several instances of confusion between Middlesex County and the Municipality of Middlesex Centre. The contact at the county is Chris Traini, County Engineer.

Thanks
Rob

Rob Cascaden, P.Eng.
Director of Public Works and Engineering
Middlesex Centre | cascaden@middlesexcentre.on.ca

10227 Ilderton Road, RR#2 | Ilderton, Ontario, N0M 2A0
Tel: 519.666.0190 Ext. 245 | Fax: 519.666.0271

Please consider your environmental responsibility before printing this e-mail.

From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 7:19 PM
To: Robert Cascaden <cascaden@middlesexcentre.on.ca>
Cc: Lauren.Whitwham@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

CAUTION: This email originated from outside of the Middlesex Centre email system. Please use caution when clicking links or opening attachments unless you recognize the sender and know the content is safe.

Sent on behalf of Rooly Georgopoulos (Stantec Consulting Ltd.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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CONTACT RECORD

NAME(S):	Ben Puzanov	**PROJECT NO.:**	160951170
	County of Lambton	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:		**DATE/TIME:**	4/14/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☐ **CALL PLACED** ☐ **MEETING**

NOTES:

The County of Lambton called regarding the LLRP Notice and left a voicemail. Specific to Dawn-Euphemia township, representatives have noted that there are no development applications within the Study Area. The County is checking with their cultural services department to see if there are any items of cultural interest in the area.

From: Lambton Federation of Agriculture
To: Hartwig, Emily
Subject: Re: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 15, 2020 4:58:00 PM
Attachments: 200415 Letter to Stantec Consulting Ltd.pdf

Good afternoon,

Please find attached, a letter to Rooly Georgopolous, Senior Project Manager, regarding the Notice of Commencement and Virtual Open House for the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Sincerely,
Gary Martin, President
Lambton Federation of Agriculture

On Wed, Apr 8, 2020 at 8:01 PM Hartwig, Emily <Emily.Hartwig@stantec.com> wrote:

> **Sent on behalf of Rooly Georgopoulos (Stantec Consulting Ltd.)**
>
> ---
>
> Good evening,
>
> Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).
>
> Regards,
>
> Emily Hartwig B.Sc., EP.
>
> Environmental Consultant, Assessment and Permitting
>
> Direct: 519 780-8186
> Mobile: 226 979-4457
> Emily.Hartwig@stantec.com
>
> Stantec
> 1-70 Southgate Drive
> Guelph ON N1G 4P5

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Lambton Federation of Agriculture
3244 Mandaumin Road
Brigden, ON N0N 1B0
Tel: (519) 864-4224
info@lambtonfederation.ca

Officers

GARY MARTIN
President/PAC Member

DARCY FULLER
1st Vice President

MIKE BELAN
2nd Vice President

JOANNE FULLER
Member Service Rep.

CRISPIN COLVIN
Zone Director

CHRISTINA HYATT
Treasurer

KAYTIE CLARKE
Office Administrator

Directors

BRADEY COUWENBERG
Director

GEORGE DICKENSON
Director

CHLOE DUFFY
Director

DOUG KRALL
Director

DON MCCABE
Director

MATT MCRAE
Director

BURT MCKINLAY
Director/PAC Member

LAUREN VAN EWYK
Director/PAC Member

April 15, 2020

Rooly Georgopoulos, B.Sc.
Senior Project Manager
Stantec Consulting Ltd.
300W-675 Cochrane Drive
Markham, ON L3R 0B8

Dear Rooly Georgopolous,

With respect to your instructions for those without the capability to participate in your "Virtual Open House" due to a lack of internet, or sufficient internet connectivity:

RE: from your letter dated April 8, 2020

> *If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.*

We would like to inquire what your plans are to host an in-person public Open House whenever feasible, to accommodate those who are unable to participate online.

We also want to know if this “Virtual Open House” will be the only consultation you host, or if you plan on hosting a second public meeting later this year.

Also, have you advertised this meeting in local newspapers and sent notices via mail to affected land owners?

As you may or may not know, some within the catchment area of the London Lines Replacement Project (LLRP) do not have reliable options for internet of sufficient speed to participate online, and some may not have internet at all.

Reliable internet access is the norm in urban areas of Ontario, but continues to be a problem in many rural areas of the province, often only a few miles from major cities. Access to high speed internet in rural and remote areas of Ontario is an ongoing struggle.

We would like to make sure that all have an opportunity to participate in your required consultation.

Sincerely,

Gary Martin, President

Lambton Federation of Agriculture

From: Georgopoulos, Rooly
To: info@lambtonfederation.ca
Cc: LondonLines; Allison Chong; Kelsey Mills
Subject: FW: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Friday, April 17, 2020 4:41:23 PM

Good afternoon Gary,

Thank you very much for your letter and your comments.

We understand that access to internet may not be available to all residents and stakeholders within the study area of the Project. Enbridge has tried to address this limitation in a few ways to ensure all interested residents and stakeholders have the ability to provide input on the proposed Project and potential routes while protecting the health and safety of all those involved.

Enbridge has a project-specific phone line that is available for any resident or stakeholder to contact at any time. A representative from Stantec would then be able to provide this resident or stakeholder with the option being emailed or of having a printed copy of the Open House information mailed to them, as well as a print out of the audio script, questionnaire and a paid postage return envelope to mail the completed questionnaire back, if needed.

The Notice of Commencement was mailed to all residents and stakeholders within the study area and it was also published in The Age Dispatch (serves Strathroy-Middlesex area) and The Herald (serves Thamesville and Bothwell area). The Notices were published this week and will be published again in the same papers next week (during the week of April 20-24). The project-specific phone number is included in the notices dropped off to all stakeholders and in the published newspaper Notice of Commencement.

At this time, Enbridge will not be considering an in-person public Open House, as the timeline of when this may be able to proceed is unknown.

if you have any further questions or comments please feel free to reach out to the Project Team at your convenience.

Regards,
Rooly

From: Lambton Federation of Agriculture <info@lambtonfederation.ca>
Sent: Wednesday, April 15, 2020 4:56:25 PM
To: Hartwig, Emily <Emily.Hartwig@stantec.com>
Subject: Re: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Good afternoon,

Please find attached, a letter to Rooly Georgopolous, Senior Project Manager, regarding the Notice of Commencement and Virtual Open House for the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Sincerely,
Gary Martin, President
Lambton Federation of Agriculture

On Wed, Apr 8, 2020 at 8:01 PM Hartwig, Emily <Emily.Hartwig@stantec.com> wrote:

> **Sent on behalf of Rooly Georgopoulos (Stantec Consulting Ltd.)**
>
> ---
>
> Good evening,
>
> Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).
>
> Regards,
>
> Emily Hartwig B.Sc., EP.
>
> Environmental Consultant, Assessment and Permitting
>
> Direct: 519 780-8186
> Mobile: 226 979-4457
> Emily.Hartwig@stantec.com
>
> Stantec
> 1-70 Southgate Drive
> Guelph ON N1G 4P5
>
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From: Lauren Whitwham
To: Bill Rayburn; Chris Traini
Cc: Kelsey Mills; LondonLines; Brian Lennie
Subject: London Lines Proposed Route and contact information
Date: Thursday, April 16, 2020 4:43:54 PM
Attachments: NOC_51170_20200408_newspaper.pdf
London Lines Proposed route Southwest Middlesex 20200408.pdf
London Lines Proposed route Middlesex Centre 20200408.pdf
London Lines Propsed route Strathroy Caradoc20200408.pdf
London Lines Proposed roads Middlesex county 20200408.pptx

Good afternoon Bill and Chris,

Thank you for taking the time to meet with us yesterday to discuss the early stages of the London Lines Replacement project. We look forward to working with the County on this project.

In follow up to the call, I would like to provide you with some information.

- Detailed description of the road route as it travels through your county.
- A notice that you can use on the County website is attached.
- The Project team contact information is below. Please feel free to reach out to them if you have any questions or concerns.
- Also below is the information for you for residents that would like to reach out to Enbridge about connecting to natural gas along the route.

London Lines Replacement Project team:

Allison Chong	Project lead	allison.chong@enbridge.com
Kelsey Mills	Environment	kelsey.mills@enbridge.com
Addie White	Permitting and Lands	addie.white@enbridge.com
Alicja Pagaduan	Permitting	alicja.pagaduan@enbridge.com

General Southwest contacts:

James Whittaker	Regional Manager, Construction	James.whittaker@enbridge.com
Nick Jones	Supervisor, Construction	nick.jones@enbridge.com
Brian Lennie	Senior Advisor, Municipal Affairs	brian.lennie@enbridge.com
Lauren Whitwham	Analyst, Municipal Affairs	lauren.whitwham@enbridge.com

Environmental Assessment:
If there are any questions or concerns regarding the environmental assessment or proposed routes please contact:
Phone: (519) 780-8186
Email: Londonlines@Stantec.com

Connecting to Gas/New Customer:

If any residents would like to inquire about connecting to Natural Gas please contact us at:
https://www.uniongas.com/switchtogas/
Phone: 1-866-772-1045

Please feel free to reach out to any of us with questions, concerns or issues you might have.

Again, thank you for your time. Take care.

Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From: Kelsey Mills
To: Lauren Whitwham
Cc: LondonLines
Subject: RE: London Lines : Follow up to our call today
Date: Thursday, April 16, 2020 1:20:50 PM

Great – thanks Lauren!

Kelsey Mills
—
TEL: 905-927-3145 I CELL: 416-454-9539

From: Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Sent: Thursday, April 16, 2020 1:16 PM
To: Kelsey Mills <Kelsey.Mills@enbridge.com>
Cc: londonlines@stantec.com
Subject: FW: London Lines : Follow up to our call today

Hi Kelsey,

I sent this yesterday after the meeting. I will cc you and the London lines email going forward as I reach out to the other municipalities.

Thanks,
Lauren

From: Lauren Whitwham
Sent: Wednesday, April 15, 2020 3:39 PM
To: Donna Clermont <Clerk@dawneuphemia.on.ca>; roads@dawneuphemia.on.ca
Cc: Brian Lennie <Brian.Lennie@enbridge.com>
Subject: London Lines : Follow up to our call today

Hi Donna and Paul,

Thank you much for meeting with us today to discuss the London Lines Replacement Project. We look forward to working with the Township on the project.

In following up to the call, I would like to provide you with some information.

- The notice that you can use on your township website is attached.
- The contact information for the project team is below. Please feel free to reach out to them if you have any questions or concerns.
- Also below is the contact information for you in case residents would like to reach out about connecting to natural gas.

London Lines Replacement Project team:

Allison Chong	Project lead	allison.chong@enbridge.com
Kelsey Mills	Environment	kelsey.mills@enbridge.com
Addie White	Permitting and Lands	addie.white@enbridge.com
Alicja Pagaduan	Permitting	alicja.pagaduan@enbridge.com

General Southwest contacts:

James Whittaker	Regional Manager, Construction	James.whittaker@enbridge.com
Nick Jones	Supervisor, Construction	nick.jones@enbridge.com
Brian Lennie	Senior Advisor, Municipal Affairs	brian.lennie@enbridge.com
Lauren Whitwham	Analyst, Municipal Affairs	lauren.whitwham@enbridge.com

Environmental Assessment:
If there are any questions or concerns regarding the environmental assessment or proposed routes please contact:
Phone: (519) 780-8186
Email: Londonlines@Stantec.com

Connecting to Gas/New Customer:
If any residents would like to inquire about connecting to Natural Gas please contact us at:
https://www.uniongas.com/switchtogas/
Phone: 1-866-772-1045

Feel free to reach out if you have any questions or concerns. Again, thanks for taking the time.

Take care and all the best,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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From: Lauren Whitwham
To: Donna Clermont
Cc: Kelsey Mills; LondonLines
Subject: FW: Presentations
Date: Thursday, April 16, 2020 1:49:33 PM
Attachments: 160951170_Fig01_Routes_MunMapbook_20200408_Dawn-Euphemia.pdf

---

Hi Donna,

Further to my email yesterday, please find attached the zoomed in map for your township.

Thank you,

Lauren

From: Lauren Whitwham
To: George Elliott; Fred Tranquilli; Demetri Makrakos; Jake Straus; Jennifer Huff
Cc: Brian Lennie; Kelsey Mills; LondonLines
Subject: RE: London Lines : Follow up to our call
Date: Wednesday, April 29, 2020 4:47:11 PM
Attachments:

Stations for Strathroy-Caradoc.pdf
Enbridge responses to Strathroy Caradoc email April 21.pdf

Good afternoon George,

Thank you for the email last week. You provided us some valuable feedback that was taken to the Project team for their consideration.

I have attached responses to the questions, concerns and comments you provided us. The Project team looks forward to continuing the conversation with you on these areas.

I have also attached a map with the proposed stations locations and examples of how they would look.

Thanks again,

Lauren

From: George Elliott <gelliott@strathroy-caradoc.ca>
Sent: Tuesday, April 21, 2020 12:12 PM
To: Lauren Whitwham <Lauren.Whitwham@enbridge.com>; Fred Tranquilli <ftranquilli@strathroy-caradoc.ca>; Demetri Makrakos <dmakrakos@strathroy-caradoc.ca>; Jake Straus <jstraus@strathroy-caradoc.ca>; Jennifer Huff <jhuff@strathroy-caradoc.ca>
Cc: Brian Lennie <Brian.Lennie@enbridge.com>; Kelsey Mills <Kelsey.Mills@enbridge.com>; londonlines@stantec.com
Subject: [External] RE: London Lines : Follow up to our call

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Kelsey Mills / Lauren Whitwham

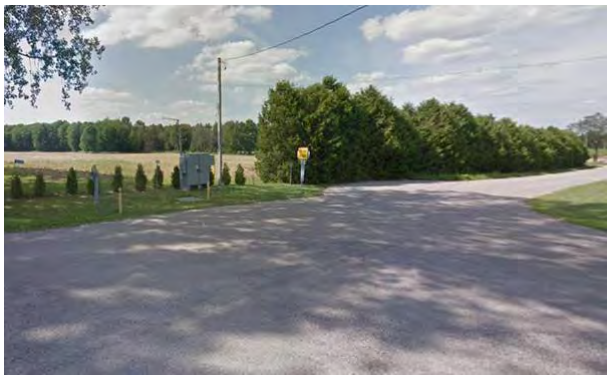
Thanks for the conference call last week. We have accessed and viewed your virtual open house information as well.

From the EA level of study perspective, Strathroy-Caradoc does not have any concerns and supports your initiative.

To assist you going forward with the project, the following are a number of items and points for your possible consideration.

1. For the purpose of providing Municipal Consent access to our right of ways, we will need the typical drawing submissions identifying location of infrastructure in the right of way with offsets from property lines and other features. A set of typical cross sections would be ideal to assist in this review. We would also welcome the opportunity for pre-consultation during the design phase and would look to support you through the preliminary and final designs as well.
2. We would like to see all locations and details of any infrastructure that is above grade (test ports, pressure reducers, valves, markers etc)
3. For the section of works on Falconbridge Drive between Melbourne Road and Rougham Road, there is one railway siding that crosses the road going into the Ontario Hydro sub-station (crossing agreement?)
4. Below is a rough sketch of the pipeline across the north end of the Mount Brydges community. The piping is within the settlement boundary of the community. We have had pre-consultations on two parcels of land shown below regarding residential subdivisions. The pipeline relocation out of these lands onto Falconbridge Drive will have positive development benefits. We can assist with making contact with the developers if you need.

5. Also shown in the picture above, our Public Works yard has the pipeline bisecting the property. The relocation of the pipe will also benefit our operations.
6. At the intersection of Falconbridge Dr and Springwell Road, there is our trunk waterline feed from the Lake Huron Water Supply system. It has a control panel and valve/meter chamber to avoid. The picture below is that panel.



7. As well at this intersection, the configuration of the intersection is currently being considered for a possible realignment. The main flow of traffic from Springwell to Falconbridge heading toward Mount Brydges has been identified as a possible improvement need. The gas pipeline works may need to consider future realignment of the road works.

8. Your pipeline location proposal shows the alignment turning onto Amiens Road at Avro Drive. Amiens Road is a boundary road with Middlesex Centre. The maintenance and control of this section of Amiens Road is under their jurisdiction and control.
9. The gas line route on Amiens Road will cross the CN Tracks. This road crossing is grade separated with an old, narrow low height bridge. It is anticipated that your new pipe crossing would best be placed under the tracks well offset the road allowance to be clear of any future bridge abutment construction that may be planned in the future. Being a low height bridge (3.7 m), it may also pose a construction barrier to equipment crossing to both sides of the tracks. There is a significant history of collisions with this structure.

10. Regarding the north south leg of piping to connect to Strathroy, the alignment on Sutherland Road may be more viable. It is a low volume rural gravel road. We would support options to use this corridor to avoid the higher traffic County Road.
11. Similarly, the proposed alternative alignment on Christina Road may be more viable due to the lower traffic volumes and existing corridor uses. Christina Road is a tar & chip road. Although there is no current plan for its widening and upgrading to asphalt, it is a definite candidate for these types of improvements.
12. We would like to make Enbridge aware as well that McEvoy Road from Adelaide Road to Hickory Drive (full length) we be under construction from the fall of 2020 through to the end of 2021 with a widening and resurfacing project. The works will also include Inadale Drive from McEvoy to Adelaide Road. If there is a desire to use this alignment for the north south pipe line to connect Strathroy, please advise ASAP and we can link you to our project design team.
13. From the business service connections perspective, there are numerous long existing agriculture sites that could be serviced within the lands between Mount Brydges and Strathroy. We would be interested in seeing your proposed business case of which properties may be possible to connect. One recent new development that Enbridge may not be aware of is the WeedMD plant on Inadale Drive near Adelaide Road. It may have significant service demands for natural gas.

Lastly, copied to this email are our team contacts noted previous.

- Jake Straus, Manager of Public Works (Roads)
- Jennifer Huff, Manager of Planning
- Demetri Makrakos, Economic Development Officer

We look forward to working with you.

Regards

George Elliott, P.Eng.
Director of Engineering & Public Works
Phone: 519-245-1105 ext. 270

Municipality of Strathroy-Caradoc
52 Frank Street | Strathroy, ON | N7G 2R4
Visit us online at www.strathroy-caradoc.ca

From: Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Sent: April 20, 2020 11:26 AM
To: Fred Tranquilli <ftranquilli@strathroy-caradoc.ca>; George Elliott <gelliott@strathroy-caradoc.ca>; Demetri Makrakos <dmakrakos@strathroy-caradoc.ca>; Jake Straus <jstraus@strathroy-caradoc.ca>
Cc: Brian Lennie <Brian.Lennie@enbridge.com>; Kelsey Mills <Kelsey.Mills@enbridge.com>; londonlines@stantec.com
Subject: London Lines : Follow up to our call

Greetings,

Thank you for taking the time to meet with us to discuss the early stages of the London Lines Replacement project. We look forward to working with your Municipality on this project.

In follow up to the call, I would like to provide you with some information.

- A notice and map that you can use on your municipal website is attached.
- The Project team contact information is below. Please feel free to reach out to them if you have any questions or concerns.
- Also below is the information for you for residents that would like to reach out to Enbridge about connecting to natural gas along the route.

London Lines Replacement Project team:

Allison Chong	Project lead	allison.chong@enbridge.com
Kelsey Mills	Environment	kelsey.mills@enbridge.com
Addie White	Permitting and Lands	addie.white@enbridge.com
Alicja Pagaduan	Permitting	alicja.pagaduan@enbridge.com

General Southwest contacts:

James Whittaker	Regional Manager, Construction	James.whittaker@enbridge.com
Nick Jones	Supervisor, Construction	nick.jones@enbridge.com
Brian Lennie	Senior Advisor, Municipal Affairs	brian.lennie@enbridge.com
Lauren Whitwham	Analyst, Municipal Affairs	lauren.whitwham@enbridge.com

Environmental Assessment:
If there are any questions or concerns regarding the environmental assessment or proposed routes please contact:
Phone: (519) 780-8186
Email: Londonlines@Stantec.com

Connecting to Gas/New Customer:
If any residents would like to inquire about connecting to Natural Gas please contact us at:
https://www.uniongas.com/switchtogas/
Phone: 1-866-772-1045

Please feel free to reach out to any of us with questions, concerns or issues you might have.

Again, thank you for your time. Take care.

Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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From: Lauren Whitwham
To: Jill Bellchamber-glazier; gstorms@southwestmiddlesex.ca
Cc: Kelsey Mills; LondonLines; Brian Lennie
Subject: London Lines : Follow up to our call today
Date: Thursday, April 16, 2020 4:25:23 PM
Attachments: NOC_51170_20200408_newspaper.pdf
London Lines Proposed route Southwest Middlesex 20200408.pdf

Greetings Jill and Greg,

Thank you for taking the time to meet with us today to discus the early stages of the London Lines Replacement project. We look forward to working with your Municipality on this project.

In follow up to the call, I would like to provide you with some information.

- The notice that you can use on your township website is attached.
- The Project team contact information is below. Please feel free to reach out to them if you have any questions or concerns.
- Also below is the information for you for residents that would like to reach out to Enbridge about connecting to natural gas along the route.

London Lines Replacement Project team:

Allison Chong	Project lead	allison.chong@enbridge.com
Kelsey Mills	Environment	kelsey.mills@enbridge.com
Addie White	Permitting and Lands	addie.white@enbridge.com
Alicja Pagaduan	Permitting	alicja.pagaduan@enbridge.com

General Southwest contacts:

James Whittaker	Regional Manager, Construction	James.whittaker@enbridge.com
Nick Jones	Supervisor, Construction	nick.jones@enbridge.com
Brian Lennie	Senior Advisor, Municipal Affairs	brian.lennie@enbridge.com
Lauren Whitwham	Analyst, Municipal Affairs	lauren.whitwham@enbridge.com

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https://www.uniongas.com/switchtogas/
Phone: 1-866-772-1045

Please feel free to reach out to any of us with questions, concerns or issues you might have.

Again, thank you for your time. Take care.

Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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From: Lauren Whitwham
To: ron.vanhorne@county-lambton.on.ca; jason.cole@county-lambton.on.ca; Matt Deline
Cc: Brian Lennie; Kelsey Mills; LondonLines
Subject: London Lines : Follow up to our call
Date: Monday, April 20, 2020 11:37:09 AM
Attachments: NOC_51170_20200408_newspaper.pdf
London Lines Proposed route Dawn Euphemia 20200408.pdf

Greetings,

Good morning,

Thank you for taking the time to meet with us to discuss the early stages of the London Lines Replacement project. We look forward to working with your County on this project.

In follow up to the call, I would like to provide you with some information.

- A notice and map that you can use on your County website is attached.
- The Project team contact information is below. Please feel free to reach out to them if you have any questions or concerns.
- Also below is the information for you for residents that would like to reach out to Enbridge about connecting to natural gas along the route.

London Lines Replacement Project team:

Allison Chong	Project lead	allison.chong@enbridge.com
Kelsey Mills	Environment	kelsey.mills@enbridge.com
Addie White	Permitting and Lands	addie.white@enbridge.com
Alicja Pagaduan	Permitting	alicja.pagaduan@enbridge.com

General Southwest contacts:

James Whittaker	Regional Manager, Construction	James.whittaker@enbridge.com
Nick Jones	Supervisor, Construction	nick.jones@enbridge.com
Brian Lennie	Senior Advisor, Municipal Affairs	brian.lennie@enbridge.com
Lauren Whitwham	Analyst, Municipal Affairs	lauren.whitwham@enbridge.com

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Phone: (519) 780-8186
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Connecting to Gas/New Customer:
If any residents would like to inquire about connecting to Natural Gas please contact us at:
https://www.uniongas.com/switchtogas/

Phone: 1-866-772-1045

Please feel free to reach out to any of us with questions, concerns or issues you might have.

Again, thank you for your time. Take care.

Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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From: Michael Di Lullo
To: Lauren Whitwham; Robert Cascaden; Lee Smith
Cc: Brian Lennie; Kelsey Mills; LondonLines
Subject: RE: London Lines : Follow up to our call
Date: Monday, April 20, 2020 1:25:34 PM
Attachments:

Hi Lauren

Thanks for sharing, we have informed our Council about this project and will post information to share the notice / open houses that will be taking place as well.

As discussed during the presentation last week, when the time is right to attend council – please contact Ann Wright, Municipal Clerk at wright@middlesexcentre.on.ca to confirm arrangements.

Thanks
Michael

Michael Di Lullo, MPA, CMM III
Chief Administrative Officer
Middlesex Centre | dilullo@middlesexcentre.on.ca
10227 Ilderton Road, RR#2 | Ilderton, ON N0M 2A0
Tel: 519.666.0190 Ext. 226 | Fax: 519.666.0271

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Thank you for your co-operation and assistance

From: Lauren Whitwham [mailto:Lauren.Whitwham@enbridge.com]
Sent: April 20, 2020 11:25 AM
To: Michael Di Lullo <dilullo@middlesexcentre.on.ca>; Robert Cascaden <cascaden@middlesexcentre.on.ca>; Lee Smith <smith@middlesexcentre.on.ca>
Cc: Brian Lennie <Brian.Lennie@enbridge.com>; Kelsey Mills <Kelsey.Mills@enbridge.com>; londonlines@stantec.com
Subject: RE: London Lines : Follow up to our call

CAUTION: This email originated from outside of the Middlesex Centre email system. Please use caution when clicking links or opening attachments unless you recognize the sender and know the content is safe.

My apologies. I attached the deck. Here is the map.

From: Lauren Whitwham
Sent: Monday, April 20, 2020 11:18 AM
To: Michael Di Lullo <dilullo@middlesexcentre.on.ca>; Robert Cascaden

<cascaden@middlesexcentre.on.ca>; Lee Smith <smith@middlesexcentre.on.ca>
Cc: Brian Lennie <Brian.Lennie@enbridge.com>; Kelsey Mills <Kelsey.Mills@enbridge.com>; londonlines@stantec.com
Subject: London Lines : Follow up to our call

Greetings,

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In follow up to the call, I would like to provide you with some information.

- A notice and map that you can use on your municipal website is attached.
- The Project team contact information is below. Please feel free to reach out to them if you have any questions or concerns.
- Also below is the information for you for residents that would like to reach out to Enbridge about connecting to natural gas along the route.

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Allison Chong	Project lead	allison.chong@enbridge.com
Kelsey Mills	Environment	kelsey.mills@enbridge.com
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Lauren Whitwham	Analyst, Municipal Affairs	lauren.whitwham@enbridge.com

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Email: Londonlines@Stantec.com

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https://www.uniongas.com/switchtogas/
Phone: 1-866-772-1045

Please feel free to reach out to any of us with questions, concerns or issues you might have.

Again, thank you for your time. Take care.

Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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From: Hartwig, Emily
To: Ben Puzanov
Cc: Lauren.Whitwham@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; LondonLines; Laurie Webb; Andrew Meyer; "Donna Clermont"; Ezio Nadalin; Matt Deline; Jason Cole; Corrine Nauta; Terrie Dewsbury
Subject: RE: [EXTERNAL] Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 22, 2020 1:37:18 PM
Attachments:

Good afternoon Mr. Puzanov,

Thank-you for providing the information noted below.

Should we have any questions, I will reach out to Laurie Webb.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Ben Puzanov <Ben.Puzanov@county-lambton.on.ca>
Sent: Tuesday, April 21, 2020 2:42 PM
To: Hartwig, Emily <Emily.Hartwig@stantec.com>
Cc: Lauren.Whitwham@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Laurie Webb <laurie.webb@county-lambton.on.ca>; Andrew Meyer <Andrew.Meyer@county-lambton.on.ca>; 'Donna Clermont' <Clerk@dawneuphemia.on.ca>; Ezio Nadalin <ezio.nadalin@county-lambton.on.ca>; Matt Deline <Matt.Deline@county-lambton.on.ca>; Jason Cole <jason.cole@county-lambton.on.ca>; Corrine Nauta <Corrine.Nauta@county-lambton.on.ca>; Terrie Dewsbury <terrie.dewsbury@county-lambton.on.ca>
Subject: FW: [EXTERNAL] Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Ms. Hartwig,

Further to your request of April 8th and my subsequent voice message to you, please see below. Should you have any questions or require additional information, please contact Laurie Webb, Manager of Museums, Gallery & Archives (cc'd on this email).

Thank you,

Ben Puzanov, MPL, MPA, MCIP, RPP
Manager of Planning and Development Services
County of Lambton
(519) 845-0809 x5342
ben.puzanov@county-lambton.on.ca

From: Andrew Meyer
Sent: April 21, 2020 2:29 PM
To: Ben Puzanov; Laurie Webb
Subject: FW: [EXTERNAL] Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Ben,

Further to your email last week, Laurie did some excellent research on the path of the LLRP project. Please see below. Please let us know if you have any questions.

Best regards,

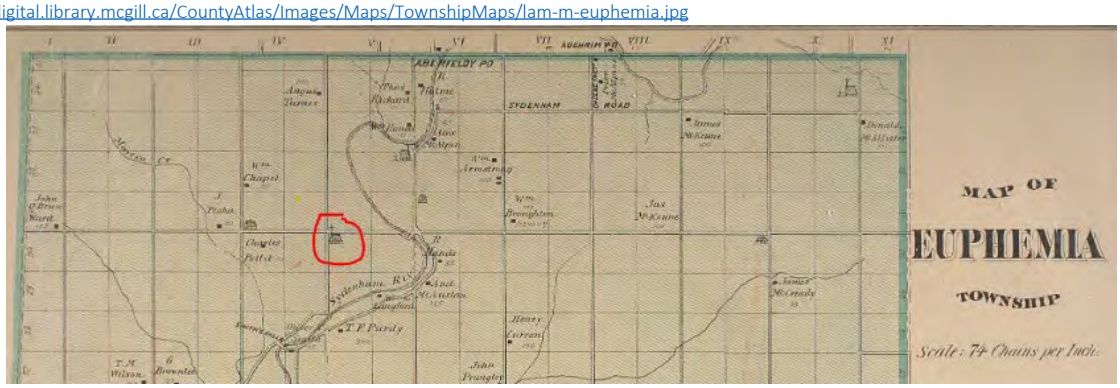
Andrew Meyer
General Manager, Cultural Services Division
The Corporation of the County of Lambton
789 Broadway Street, Box 3000
Wyoming, ON N0N 1T0
Tel: 519.845.0809 x5236
Fax: 519.845.0818
Email: andrew.meyer@county-lambton.on.ca

From: Laurie Webb
Sent: April 21, 2020 2:01 PM
To: Andrew Meyer
Subject: RE: [EXTERNAL] Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Hey Andrew,

Sorry for the delay in sending this, but I did a bit of research and found the following they may want to be aware of:

1. According to the book "Euphemia Township History, 1849 - 1999", published in 1999, and the Belden's Atlas of 1878 there was once a church located at the SE corner of Mosside Line & Dobbyn Road (Con. 5, Lot 30 Euphemia).
   http://digital.library.mcgill.ca/CountyAtlas/Images/Maps/TownshipMaps/lam-m-euphemia.jpg



   a. Euphemia Township History (p.6) states that "black settlers" lived on the north side of the Sydenham River and had a small church at this location. It also mentions that "grave stones . . . still survive" (presumably in 1999) which indicates that there was a cemetery there at some point. This is the only mention I could find of a cemetery at this location in the materials I have access to. I could check the land records at LCA and delve deeper into this if it is warranted. There is no record on the County GIS of a cemetery there, and from Google street view it seems to be a plowed field now.

2. The Euphemia Township book discusses Indigenous (p.3) use of the area in the Archaic and late Woodland periods and specifically mentions camps along the flood plains of the Sydenham River, particularly between Alvinston and Florence. There is a photo in the book of an archaeological dig near Shetland, further south than the area under study now, but there could have been digs closer (I have no access to information to tell me where digs have been completed). They also indicate that the area shows evidence of shared territory between the Iroquoian and Western Basin communities, which could be of significance if any materials were found. I could ask Nicole to check to see if there are known sites, I believe she has access to the Provincial databases.

3. Just south of the SE corner of Bentpath Line & Oakdale Road the book "Oakdale 100 Years of Heritage 1879-1979" shows a map on p.86 with an oil pump house just south of where the general store once stood (Con 13, Lot 25 Dawn). I am not certain if anything survives from the oil extraction that took place briefly in the area, but if it does it could be important to the overall oil story of the County.

I've attached scans of the relevant maps and documentation from the books. If you feel there is reason for me to dig into anything further, please let me know.

Thanks,
Laurie

From: Andrew Meyer
Sent: April-10-20 11:54 AM
To: Laurie Webb
Subject: Fwd: [EXTERNAL] Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Laurie,

Please see below - I am not aware of anything of historical significance in the path of the LLRP. We can review and respond next week.

Take care.

Andrew Meyer
General Manager, Cultural Services Division

The Corporation of the County of Lambton
789 Broadway Street, Box 3000
Wyoming, ON N0N 1T0
Tel: 519.845.0809 x5236
Fax: 519.845.0818
Email: andrew.meyer@county-lambton.on.ca

Begin forwarded message:

From: Ben Puzanov <Ben.Puzanov@county-lambton.on.ca>
Date: April 9, 2020 at 3:50:00 PM EDT
To: Andrew Meyer <Andrew.Meyer@county-lambton.on.ca>
Subject: FW: [EXTERNAL] Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Andrew,

I hope all is well. I am compiling information for Stantec stemming from its request on behalf of Enbridge Gas. I've contacted Dawn-Euphemia regarding any heritage properties that may be located within the study area and also wanted to reach out to you to check if there are any cultural heritage resources here that Stantec should be made aware of.

Please call or e-mail if you'd like to discuss.

Thanks,

Ben Puzanov, MPL, MPA, MCIP, RPP
Manager of Planning and Development Services
County of Lambton
(519) 845-0809 x5342
ben.puzanov@county-lambton.on.ca

From: Hartwig, Emily [mailto:Emily.Hartwig@stantec.com]
Sent: April 8, 2020 7:18 PM
To: Planning.Public
Cc: Lauren.Whitwham@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; LondonLines
Subject: [EXTERNAL] Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

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Sent on behalf of Rooly Georgopoulos (Stantec Consulting Ltd.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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519-845-0801 extension 5405 or email itsupport@county-lambton.on.ca.

From:	Rodek, Amanda (MTO)
To:	Hartwig, Emily
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Friday, April 24, 2020 10:53:21 AM
Attachments:	(April 23, 2020) MTO Comments - Enbridge London Line Replacement.pdf

Hi Emily,

I hope you are doing well.

Stantec's, April 8, 2020 email to Tony Di Fabio regarding the Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP), has been forwarded to my attention for review and response.

Please see attached comments from the Ministry of Transportation for your consideration regarding the proposed pipeline.

The comments were provided by Michael Kilgore, Highway Corridor Management Officer in our West Region office. Michael is requesting you contact him directly at Michael.Kilgore@ontario.ca to set up a teleconference to discuss this project further.

Have a great day!

Thanks.

Amanda Rodek
Program Analyst
Ministry of Transportation
Highway Standards Branch
Corridor Management and Property Office
301 St. Paul Street
St. Catharines, ON L2R 7R4
Tel. (905) 704-2916

From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: April-08-20 7:58 PM
To: Di Fabio, Tony (MTO) <Tony.DiFabio@ontario.ca>
Cc: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

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Sent on behalf of Rooly Georgopoulos (Stantec Consulting Ltd.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Ministry of Transportation

Operations Office
Corridor Management Section
West Region

659 Exeter Road
London, Ontario N6E 1L3
Telephone: (226) 973-7021
Facsimile: (519) 873-4228

Ministère des Transports

Bureau du génie
Section de gestion des couloirs routiers
Région de l'Ouest

659, chemin Exeter
London (Ontario) N6E 1L3
Téléphone: (226) 973-7021
Télécopieur:(519) 873-4228

Ontario

April 23, 2020

Stantec Consulting Ltd.
300W-675 Cochrane Drive
Markham, ON L3R 0B8

Attn: Rooly Georgopoulos, Senior Project Manager

RE: MTO Comments – Class EA for the Planned Enbridge London Line Replacement Project

The Ministry of Transportation (MTO) has completed a review of the proposed work noted in the Class EA distribution. The proposal has been considered in accordance with the requirements of the *Public Transportation and Highway Improvement Act* (PTHIA), MTO's Highway Access Management Manual (HAMM) and all related policies. The following outlines our comments:

The proposed Enbridge London Line corridor crosses Highway 402 and is within MTO's ownership. As identified in the PTHIA portions of this work fall within the MTO's Permit Control Area (PCA). MTO permits are required before any demolition, grading, construction or alteration to the site commences.

MTO's main concerns with the proposed work are the potential impacts to the travelling public and future conflicts with highway improvement projects. To ensure MTO's concerns are addressed, Enbridge will be required to meet the following conditions:

- MTO permits will be required for any work within 45m of any limit of a provincial highway right-of-way or within 395m of the centre point of an intersection on a highway.
- Crossing or parallel installations on a highway should be avoided if possible.
- If crossings are unavoidable, they will need to be installed through trenchless methods. Highway crossings may be required to be fully encased within the highway right-of-way and installed at a minimum depth of 5m below the bottom of ditch.
- Details of the highway crossings must be submitted for our review and approval prior to the proposed pipeline's construction. This should include, but not be limited to, Geotechnical Investigation reports, plans and cross sections indicating the location, depth, and method of crossing for the pipe, etc.

Additionally, as part of the permit application, MTO will require the following information;

- Detailed site drawings, including offset dimensions from proposed sending and receiving pits to MTO property limits and vertical profile information (cross section) at crossings locations.
- Method proposed to complete trenchless installation of new pipeline, as well as safety measures to be utilized, and the duration of work.
- Proposed construction access locations/routes for work area. Direct highway access will not be permitted, alternative access shall be secured.

To avoid delays to the Enbridge proposed work, a meeting held early in the design process is recommended to ensure MTO concerns can be addressed. Please contact the undersigned to schedule a meeting between MTO and Enbridge staff to discuss this proposal further.

Yours truly,

Michael Kilgore
Corridor Management Officer
Corridor Management Office, West Region
Cell: 226-973-7021
E-mail: Michael.Kilgore@ontario.ca

From: allison.chong@enbridge.com on behalf of Alicja Pagaduan
To: LondonLines
Subject: FW: Enbridge London Lines Project - Hwy 402 Crossing
Start: Thursday, June 25, 2020 1:00:00 PM
End: Thursday, June 25, 2020 2:00:00 PM
Location: Skype Meeting

For LTC Consultation Log Purposes.

-----Original Appointment-----
From: Alicja Pagaduan <Alicja.Pagaduan@enbridge.com>
Sent: Thursday, June 4, 2020 7:28 AM
To: Alicja Pagaduan; Allison Chong; Azhar Ahmed; Addie White; Kilgore, Michael (MTO)
Cc: Kelsey Mills
Subject: Enbridge London Lines Project - Hwy 402 Crossing
When: Thursday, June 25, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Skype Meeting

Hello,

I have booked the time a lot as discussed. Michael I understand you will call into the number below. We will send you any files we'll be discussing in advance so you can follow along.

Please include anyone else from the MTO that you feel should attend.

I will include an agenda prior to the meeting.

Thanks again.

.....

Join Skype Meeting <https://meet.uniongas.com/apagaduan/0YQ4EDBE>

Trouble Joining? Try Skype Web App <https://meet.uniongas.com/apagaduan/0YQ4EDBE?sl=1>

Join by phone

+1-403-910-1272 Calgary, AB,,582672# (All - Enbridge (condensed)) English (United States)

+1-226-312-2069 Chatham, ON,,582672# (All - Enbridge (condensed)) English (United States)

+1-587-773-1984 Edmonton, AB,,582672# (All - Enbridge (condensed)) English (United States)

+1-647-317-0410 Toronto, ON (GTA),,582672# (All - Enbridge (condensed)) English (United States)

+1-713-904-7540 Houston, TX,,582672# (All - Enbridge (condensed)) English (United States)

+1-715-718-3265 Superior, WI,,582672# (All - Enbridge (condensed)) English (United States)

+1-855-342-0119 Toll Free North America,,582672# (All - Enbridge (condensed)) English (United States)

*CONF (*2663) - Enbridge Cisco Phone,,582672# (All - Enbridge (condensed)) English (United States)

Find a local number <https://dialin.enbridge.com?id=582672>

Conference ID: 582672

Forgot your dial-in PIN? <https://dialin.enbridge.com> |Help <https://o15.officeredir.microsoft.com/r/rlidLync15?clid=1033&p1=5&p2=2009>

From:	Georgopoulos, Rooly
To:	LondonLines
Cc:	Kelsey Mills
Subject:	FW: Leave to Construct Application - London Lines Replacement
Date:	Friday, April 24, 2020 12:44:13 PM
Attachments:	2020-04-24_EnbridgeLondonLinesReplacement_MHSTCI-Ltr.pdf

From: Harvey, Joseph (MHSTCI) <Joseph.Harvey@ontario.ca>
Sent: Friday, April 24, 2020 12:15 PM
To: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Cc: Kelsey.Mills@enbridge.com; Kirzati, Katherine (MHSTCI) <Katherine.Kirzati@ontario.ca>; Barboza, Karla (MHSTCI) <Karla.Barboza@ontario.ca>; zora.crnojacki@oeb.ca
Subject: Leave to Construct Application - London Lines Replacement

Rooly Georgopoulos,

Please find attached, our initial comments on the above referenced application. Contact the undersigned with any further questions or concerns.

Joseph Harvey
On behalf of

Katherine Kirzati
Heritage Planner
Heritage Planning Unit
Katherine.Kirzati@Ontario.ca

From:	Hartwig, Emily
To:	Joseph.Harvey@ontario.ca
Cc:	Kirzati, Katherine (MTCS); Karla.barboza@ontario.ca; Georgopoulos, Rooly; Kelsey Mills; Allison Chong
Bcc:	londonlines@stantec.com
Subject:	FW: Leave to Construct Application - London Lines Replacement
Date:	Monday, July 13, 2020 1:17:00 PM

Sent on behalf of Rooly Georgopoulos (*Stantec Consulting Ltd.)*

Good afternoon Joseph,

Thank-you for your letter and comments regarding the London Lines Replacement Project. Enbridge is committed to continuous consultation and receiving all applicable permits and approvals prior to construction.

As part of the Environmental Report a Stage 1 Archaeological assessment was completed outlining areas of potential for further study and is appended to the ER. A cultural heritage checklist was also completed and findings were included in the Environmental Report. A Cultural Heritage Evaluation Report will be completed prior to construction. All reports and findings will be submitted to the MHSTCI for review.

As part of the Ontario Pipeline Coordinating Committee, the Environmental Report will be circulated to the MHSTCI for review for 42 days prior to applying to the OEB for Leave to Construct.

If you have any further comments please don't hesitate to reach out.

Best,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Harvey, Joseph (MHSTCI) <Joseph.Harvey@ontario.ca>
Sent: Friday, April 24, 2020 12:15 PM
To: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Cc: Kelsey.Mills@enbridge.com; Kirzati, Katherine (MHSTCI) <Katherine.Kirzati@ontario.ca>; Barboza, Karla (MHSTCI) <Karla.Barboza@ontario.ca>; zora.crnojacki@oeb.ca
Subject: Leave to Construct Application - London Lines Replacement

Rooly Georgopoulos,

Please find attached, our initial comments on the above referenced application. Contact the undersigned with any further questions or concerns.

Joseph Harvey
On behalf of

Katherine Kirzati
Heritage Planner
Heritage Planning Unit
Katherine.Kirzati@Ontario.ca

From: Kourosh Manouchehri
To: Kelsey.Mills@enbridge.com
Cc: Georgopoulos, Rooly; LondonLines; Hartwig, Emily
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Monday, April 27, 2020 8:34:12 AM
Attachments:

Hi Kelsey,

Thank you for the provided information about this project. An application needs to be filled and submitted for the review of this project by TSSA as part of Ontario Pipeline Coordinating Committee. Please fill Application for Review of Pipeline Project and send it to the email address provided on the form.

If you have any question, please contact me.

Regards,

Kourosh Manouchehri, P.Eng., PMP | Engineer
Fuels Safety
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1-416-734-3539 | | Fax: +1-416-231-7525 | E-Mail: kmanouchehri@tssa.org
www.tssa.org

From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: April 8, 2020 19:58
To: Kourosh Manouchehri <KManouchehri@tssa.org>
Cc: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

[CAUTION]: This email originated outside the organisation.
Please do not click links or open attachments unless you recognise the source of this email and know the content is safe.

Sent on behalf of Rooly Georgopoulos (Stantec Consulting Ltd.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: EnviroOnt
To: Hartwig, Emily
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Thursday, April 30, 2020 12:01:00 PM

Hello,

Thank you for your correspondence.Please note Transport Canada **does not** require receipt of all individual or Class EA related notifications. We are requesting project proponents to self-assess if their project:

1. Will interact with a federal property and/or waterway by reviewing the Directory of Federal Real Property, available at at www.tbs-sct.gc.ca/dfrp-rbif/; **and**
2. Will require approval and/or authorization under any Acts administered by Transport Canada* available at http://www.tc.gc.ca/eng/acts-regulations/menu.htm.

Projects that will occur on federal property prior to exercising a power, performing a function or duty in relation to that project, will be subject to a determination of the likelihood of significant adverse environmental effects, per Section 82 of the *Impact Assessment Act, 2019*.

If the aforementioned does not apply, the Environmental Assessment program should not be included in any further correspondence and future notifications will not receive a response. If there is a role under the program, correspondence should be forwarded *electronically* to: EnviroOnt@tc.gc.ca with a **brief description of Transport Canada's expected role**.

*Below is a summary of the most common Acts that have applied to projects in an Environmental Assessment context:

- ***Canadian Navigable Waters Act (CNWA)*** – the Act applies primarily to works constructed or placed in, on, over, under, through, or across navigable waters set out under the Act. The Navigation Protection Program administers the CNWA through the review and authorization of works affecting navigable waters. Information about the Program, CNWA and approval process is available at: http://www.tc.gc.ca/eng/programs-621.html. Enquiries can be directed to NPPONT-PPNONT@tc.gc.ca or by calling (519) 383-1863.

- ***Railway Safety Act (RSA)*** – the Act provides the regulatory framework for railway safety, security, and some of the environmental impacts of railway operations in Canada. The Rail Safety Program develops and enforces regulations, rules, standards and procedures governing safe railway operations. Additional information about the Program is available at: https://www.tc.gc.ca/eng/railsafety/menu.htm. Enquiries can be directed to RailSafety@tc.gc.ca or by calling (613) 998-2985.

- ***Transportation of Dangerous Goods Act (TDGA)*** – the transportation of dangerous goods by air, marine, rail and road is regulated under the TDGA. Transport Canada, based on risks, develops safety standards and regulations, provides oversight and gives expert advice on

dangerous goods to promote public safety. Additional information about the transportation of dangerous goods is available at: https://www.tc.gc.ca/eng/tdg/safety-menu.htm. Enquiries can be directed to TDG-TMDOntario@tc.gc.ca or by calling (416) 973-1868.

- ***Aeronautics Act*** – Transport Canada has sole jurisdiction over aeronautics, which includes aerodromes and all related buildings or services used for aviation purposes. Aviation safety in Canada is regulated under this Act and the Canadian Aviation Regulations (CARs). Elevated Structures, such as wind turbines and communication towers, would be examples of projects that must be assessed for lighting and marking requirements in accordance with the CARs. Transport Canada also has an interest in projects that have the potential to cause interference between wildlife and aviation activities. One example would be waste facilities, which may attract birds into commercial and recreational flight paths. The *Land Use In The Vicinity of Aerodromes* publication recommends guidelines for and uses in the vicinity of aerodromes, available at: https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-menu-1418.htm. Enquires can be directed to at tc.aviationservicesont-servicesaviationont.tc@tc.gc.ca or by calling 1 (800) 305-2059 / (416) 952-0230.

Please advise if additional information is needed.

Thank you,

Environmental Assessment Program, Ontario Region
Transport Canada / Government of Canada / 4900 Yonge St., Toronto, ON M2N 6A5
EnviroOnt@tc.gc.ca / Facsimile : (416) 952-0514 / TTY: 1-888-675-6863

Programme d'évaluation environnementale, Région de l'Ontario
Transports Canada / Gouvernement du Canada / 4900, rue Yonge, Toronto, ON, M2N 6A5
EnviroOnt@tc.gc.ca / télécopieur: (416) 952-0514

From: Hartwig, Emily [mailto:Emily.Hartwig@stantec.com]
Sent: Wednesday, April 08, 2020 7:57 PM
To: EnviroOnt <EnviroOnt@tc.gc.ca>
Cc: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Rooly Georgopoulos (Stantec Consulting Ltd.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From:	Georgopoulos, Rooly
To:	Karen Winfield; LondonLines
Cc:	Valerie Towsley; mdeisley@scrca.on.ca
Subject:	RE: Enbridge Gas - London Lines Replacement Project
Date:	Monday, May 4, 2020 9:01:17 AM

Thanks Karen

From: Karen Winfield <WinfieldK@thamesriver.on.ca>
Sent: Friday, May 1, 2020 4:13 PM
To: LondonLines <LondonLines@stantec.com>; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Cc: Valerie Towsley <valerie.towsley@ltvca.ca>; mdeisley@scrca.on.ca
Subject: Enbridge Gas - London Lines Replacement Project

Hi Rooly,

Please see attached UTRCA Comments regarding the Enbridge Gas - London Lines Replacement Project in the Municipalities of Middlesex Centre, Strathroy-Caradoc and Dawn-Euphemia.

Thank-you,

Karen Winfield
Land Use Regulations Officer
1424 Clarke Road London, Ontario, N5V 5B9
519.451.2800 Ext. 237 | Fax: 519.451.1188
winfieldk@thamesriver.on.ca

UPPER THAMES RIVER
CONSERVATION AUTHORITY

UPPER THAMES RIVER
CONSERVATION AUTHORITY

"Inspiring a Healthy Environment"

The Thames
A Canadian
Heritage River

May 1, 2020

Stantec Consulting Limited
300-675 Cochrane Drive, West Tower
Markham, Ontario
L3R 0B8

Attention: **Rooly Georgopoulos** – (via e-mail: Rooly.Georgopolous@stantec.com)

Dear Mr. Georgopoulos:

Re: **Enbridge Gas – London Lines Replacement Project**
Notice of Project Commencement and Virtual Open House
Municipality of Strathroy-Caradoc, Township of Dawn-Euphemia,
Municipality of Middlesex Centre

Upper Thames River Conservation Authority (UTRCA) staff have reviewed the Virtual Open House Slides and are in receipt of the associated letter (dated April 8, 2020) from Stantec to the UTRCA regarding the Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House. We are of the understanding the environmental study area for this pipeline project includes portions of the Municipality of Strathroy-Caradoc, the Township of Dawn-Euphemia and the Municipality of Middlesex Centre. We offer the following comments under Ontario Regulation 157/06 and our responsibilities as a commenting agency providing technical review and advisement related to natural heritage, water resources and natural hazard management pursuant to relevant legislation and policies set out in the UTRCA Planning Policy Manual (June 28, 2006):

General Comments

1) We would appreciate the opportunity for our technical staff to review and provide comments on any upcoming draft documents and proposed alternatives. Please note that our scope of review is based on the policies set out in the Upper Thames River Conservation Authority Planning Policy Manual (June 28, 2006). Environmental study/assessment (ES/EA) and any subsequent detail design project review for the Enbridge Gas – London Lines Replacement Project would generally be guided by, but not limited to, natural heritage, natural hazard and pollution prevention areas of concern for lands regulated within our jurisdiction.

UTRCA Regulated Areas

2) According to the enclosed project location mapping, portions of the study area occur within natural hazard and natural heritage areas regulated by the Conservation Authority. The UTRCA regulates

development within the Regulation Limit in accordance with Ontario Regulation 157/06 made pursuant to Section 28 of the *Conservation Authorities Act*. This regulation requires proponents to obtain written approval from the UTRCA prior to undertaking any works in the regulated area including filling, grading, construction, alteration to a watercourse and/or interference with a wetland.

3) A sizeable portion of the study area falls outside the boundaries of our watershed and under the jurisdiction of the St. Clair Region Conservation Authority (SCRCA) and/or the Lower Thames Valley Conservation Authority (LTVCA). We recommend you contact SCRCA & LTVCA directly regarding those portions of the project, if you haven't done so already.

4) With the scale of project mapping currently provided it is challenging to confirm the location of the existing and/or proposed pipeline routes through our watershed. Without knowing where approximately within a lot/concession the routes are proposed we are unable to feasibly comment on the alternatives proposed. Would it be possible for your office to provide a more detailed map of the existing and currently proposed pipeline routes and at a more definable scale?

Digital Mapping

5) Our staff can provide digital mapping which outlines the boundaries of the natural heritage and natural hazard features present within the UTRCA watershed/study area as well as any lands owned by the UTRCA. Our natural heritage and natural hazard features digital mapping may be obtained by contacting our GIS department (contact: Phil Simm, 519-451-2800 x 247). Please note there may be a fee involved with obtaining digital mapping of our natural heritage and natural hazard features and this may also be discussed with our GIS department.

Terrestrial and Aquatic Ecology and Aquatic Species At Risk

6) Detailed fish/mussel and benthic sampling records may be available from our office for most watercourses within our watershed and the study area. Generally there is a fee involved with obtaining this information.

7) Our data indicates the potential presence of federally and/or provincially protected aquatic (fish/mussels) species at risk (SAR) within some of the watercourses through the study area.

Water Quality, Woodlands and Other Natural Heritage Features

8) Within the UTRCA watershed the study area lies within portions of the Komoka Creek and River Bend subwatersheds. Please refer to our latest (2017) edition of the Upper Thames River Watershed Report Cards for information related to water quality, woodlands and other natural heritage features in these subwatersheds, available on our website at:

   http://thamesriver.on.ca/watershed-health/watershed-report-cards/

9) The study areas contain significant natural heritage features, identified in the 2014 Middlesex Natural Heritage Systems Study, such as wetlands and woodlands. Boundary verification and impacts to these features should be addressed as part of the site specific field work associated with proposed pipeline relocation alternatives.

Drinking Water Source Protection

10) This ES/EA is the best time to consider regulatory requirements of the Ontario *Clean Water Act* and local Source Protection Plans as well as designated vulnerable areas. The Environmental Study process offers an excellent opportunity to document how these factors have been considered in assessing pipeline route alternatives.

11) We note there are identified Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas in the approved Assessment Report for the Upper Thames River Source Protection Area through the study area. These are areas where certain activities may be a threat to drinking water. Any proposed pipeline route alternatives should consider impact to these designated vulnerable areas and features. This should include an assessment of the activities/risks related to potential drinking water threats and how these risks may be mitigated. The Tables of Drinking Water Threats (Ontario Ministry of the Environment, 2009) identify the chemicals which may make these risks/activities a threat to drinking water.

12) You may wish to contact the UTRCA to request digital mapping of the vulnerable areas which can be utilized for the project study area.

13) If the proponents have questions on how source protection and the local plan may affect the proposed alternatives they may contact UTRCA Drinking Water Source Protection (DWSP) staff or the local municipal Risk Management Officials (RMO).

Summary

Please note that given the broad study area, scale and concept proposal at this time, we are unable to provide detailed technical comments regarding the project or any proposed alternatives. However, we appreciate being contacted early in the process and are always open to meeting with you to discuss and work through any concerns or complications along the way.

Our office would like to be included in future circulations regarding this project. We would appreciate receiving information and reports as they become available in order to ensure that we can meet the project deadlines with our comments.

If you have any questions regarding the above information, please contact the undersigned.

Yours truly,
UPPER THAMES RIVER CONSERVATION AUTHORITY

Karen M. Winfield
Land Use Regulations Officer

c.c. – Kelsey Mills, Enbridge Gas Inc. – (via e-mail: LondonLines@Stantec.com)
Melissa Diesley, SCRCA – (via e-mail: mdeisley@scrca.on.ca)
Valerie Towsley, LTVCA – (via e-mail: valerie.towsley@ltvca.ca)

From: Rowland, Rob
To: Jason Homewood
Cc: Georgopoulos, Rooly; Hartwig, Emily
Subject: RE: Permitting Process for London Lines Consultation
Date: Tuesday, May 26, 2020 8:53:20 AM

Hi Jason:
Enbridge agrees we don't need a call given the few crossing in LTVCA. Once I have a definitive number and location of crossings I will submit with the information required similar to what we did for Windsor.
Thanks
RR

Rob Rowland M.Sc., P.Geo.
Associate, Environmental Services, Assessment and Permitting

Direct: 519 780-8105
Mobile: 519 820-0748
Rob.Rowland@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Jason Homewood <Jason.Homewood@ltvca.ca>
Sent: Monday, May 25, 2020 10:23 AM
To: Rowland, Rob <Rob.Rowland@stantec.com>
Cc: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>
Subject: RE: Permitting Process for London Lines Consultation

Hi Rob,

Based on the shapefile you provided on the 19th, it looks like you are only crossing three regulated watercourses in our jurisdiction. A permit would be required for each of those three. Each application would be $125 (assuming they are just water crossings). I've attached the application form. Will need to know the locations of each crossing, method of crossing, depth of crossing, and sediment and erosion control plans. Typically we like to see replacement pipelines a minimum of 2.5 m below the existing bottom of the watercourse or below the design depth of the watercourse (if it's a municipal drain). Whatever is deepest.

I'm super busy with the day-to-day stuff but my calendar is wide open for scheduled things. Any day this week and next week works at this point if you want to have a call and talk about it. This looks like it will be an easy one. So glad most of it is in St. Clair's area.

Jason

From: Rowland, Rob <Rob.Rowland@stantec.com>
Sent: Friday, May 22, 2020 1:06 PM
To: Jason Homewood <Jason.Homewood@ltvca.ca>
Cc: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>
Subject: RE: Permitting Process for London Lines Consultation

Hi Jason:
Do you have some dates for a call sometime over the next couple of weeks?
Thanks and have a good weekend.
RR

Rob Rowland M.Sc., P.Geo.
Associate, Environmental Services, Assessment and Permitting

Direct: 519 780-8105
Mobile: 519 820-0748
Rob.Rowland@stantec.com

Stantec
1-70 Southgate Drive
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From: Jason Homewood <Jason.Homewood@ltvca.ca>
Sent: Tuesday, May 19, 2020 11:54 AM
To: Rowland, Rob <Rob.Rowland@stantec.com>
Cc: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>
Subject: RE: Permitting Process for London Lines Consultation

Hi Rob,

Are you able to send me a shapefile or KMZ file of where the project location will be? I don't know if I've heard of this one yet. I think our GIS guy was providing someone with regulated area mapping a while ago, might have been for this. Will it be mainline and service lines? New or replacements?

Thanks,

Jason Homewood, P.Geo.
Water Resources and Regulations Technician
Lower Thames Valley Conservation Authority
100 Thames Street
Chatham, Ontario, N7L 2Y8
519-354-7310 x225

jason.homewood@ltvca.ca
www.ltvca.ca

From: Jason Wintermute <Jason.Wintermute@ltvca.ca>
Sent: Tuesday, May 12, 2020 3:14 PM
To: Jason Homewood <Jason.Homewood@ltvca.ca>
Subject: Fw: Permitting Process for London Lines Consultation

---

From: Randall Van Wagner <Randall.VanWagner@ltvca.ca>
Sent: Tuesday, May 12, 2020 3:01 PM
To: Jason Wintermute <Jason.Wintermute@ltvca.ca>
Cc: Mark Peacock <Mark.Peacock@ltvca.ca>
Subject: Fw: Permitting Process for London Lines Consultation

---

From: Rowland, Rob <Rob.Rowland@stantec.com>
Sent: Tuesday, May 12, 2020 11:21 AM
To: Randall Van Wagner <Randall.VanWagner@ltvca.ca>
Cc: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>
Subject: Permitting Process for London Lines Consultation

Hello Randall:
Stantec is working with Enbridge Gas Inc. (Enbridge) on the London Lines Pipeline Project. As part of that we would like the start the process of permitting construction activities in regulated areas within the Lower Thames Valley Conservation Authority watershed. We would like to take some time within the next couple of weeks to meet with LTVCA to introduce the Project, determine the CA information needs for the application(s) and discuss CA review and permitting timelines. We can set the discussion up via telephone. Attendees from the project team will be the Enbridge Project representative, Stantec Project manager and myself (permitting lead).

If you could propose some meeting times within the next couple of weeks that would much appreciated.

Thank you.
RR

Rob Rowland M.Sc., P.Geo.
Associate, Environmental Services, Assessment and Permitting

Direct: 519 780-8105
Mobile: 519 820-0748
Rob.Rowland@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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May 14, 2020

VIA EMAIL – dan.delaquis@ontario.ca; kristen.bromfield@ontario.ca

Ministry of Energy, Northern Development and Mines
Dan Delaquis, Kristen Bromfield
Manager (Acting), Indigenous Energy Policy
Unit 77 Grenville St.
6th Floor
Toronto, ON
M7A 1B3

Dear Mr. Delaquis, Ms. Bromfield:

Re: London Lines Replacement Project Update

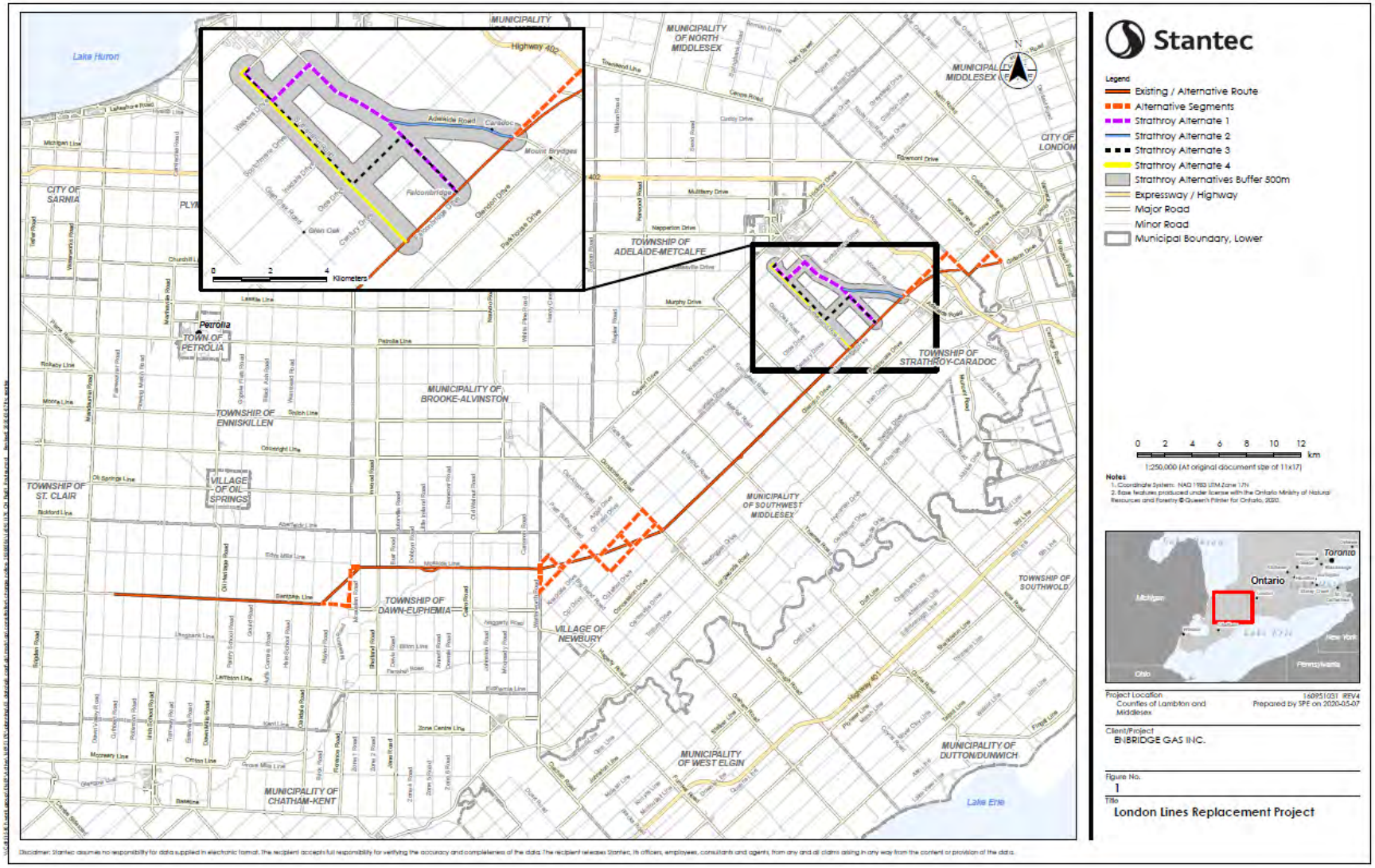
On December 9, 2019 Enbridge Gas Inc. ("Enbridge Gas") submitted a letter to the Ministry of Energy, Northern Development and Mines' ("MENDM") regarding the London Lines Replacement Project ("Project"), inclusive of a description of the Project and a request for a response from the MENDM regarding whether it would delegate the procedural aspects of any applicable Duty to Consult to Enbridge Gas.

As noted in Enbridge Gas's correction letter submitted March 24, 2020, the Project includes 12 km of nominal pipe size ("NPS") 8 to bring additional natural gas from the Strathroy-Caradoc area to the main London Lines project. Subsequent to Enbridge Gas's March 24, 2020 letter, the Municipality of Strathroy-Caradoc expressed concerns relating to constructability and coordination between Project work and municipal work scheduled to occur within the same timeframe. On this basis, Enbridge has proposed alternative routes in consultation with the Municipality of Strathroy-Caradoc. Please find attached an updated project map depicting the alternate routes.

Enbridge Gas requests confirmation from the MENDM that the update provided above does not alter the requirements or direction laid out in the MENDM's February 25, 2020 Project Delegation Letter. Should you have any questions regarding the above please contact the undersigned.

Sincerely,

Brandon Ott
Technical Manager, Regulatory Applications
Enbridge Gas Inc.
416-495-7468
cc: Asha Patel (asha.patel@enbridge.com)



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CONTACT RECORD

NAME(S):	Mark McGill Glencoe	**PROJECT NO.:** **REPRESENTING:**	160951170 Stantec Consulting Ltd.
TELEPHONE:	519-287-3055	**DATE/TIME:**	5/14/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☐ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP.

Stantec called back on May 14, no response (left a voicemail). Enbridge (Municipal Affairs and Stakeholder Relations) contacted Councillor McGill on May 27. Councillor McGill noted two farmers have reached out to say they did not receive a notice. Enbridge will provide copies of the two letters (Notice of Commencement, and the Change Notice) via email. Councillor McGill asked; if there will be crop damage payment to landowners

1. Will there be crop damage paid to landowners. Enbridge responded yes, but it will not be discussed until a route is chosen and finalized and then landowner discussions would begin.

2. Is the route going to be generally the same? Enbridge responded yes, except in the areas with proposed alternative routes to move the pipeline off farm fields into road allowances. Enbridge noted this may mean additional customers are connected and cautioned that we are still in the route study phase with Stantec.

3. Should I get a quote to extend service to my home. Enbridge responded yes, but cautioned that he should wait to do so once the final running line is chosen

From: Hartwig, Emily
To: Melissa Deisley; Kelsey Mills; Allison Chong; Georgopoulos, Rooly; Rowland, Rob
Subject: Enbridge Gas Inc. LLRP - SCRCA Meeting Minutes
Date: Tuesday, May 26, 2020 11:12:00 AM
Attachments: not_51170_LLRP_SCRCA_20202521.pdf

Good morning everyone,

Please find attached the meeting minutes from our call yesterday afternoon.

If you have any questions or concerns, please let me know.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec

Meeting Notes

Enbridge Gas Inc. (EGI) meeting with St. Clair Region Conservation Authority (SCRCA)

London Lines Replacement Project (LLRP) / 160951170

Date/Time:	May 25, 2020 / 2:30 PM
Place:	Skype
Next Meeting:	N/A
Attendees:	Melissa Deisley (SCRCA), Allison Chong (EGI), Kelsey Mills (EGI), Rob Rowland (Stantec), Rooly Georgopoulos (Stantec), Emily Hartwig (Stantec)
Absentees:	N/A
Distribution:	All Attendees

Item:	Action:
Introduction Rooly Georgopoulos (**RG**) introduced the attendees on the call.	N/A
Presentation - Overview Allison Chong (**AC**) discussed the information on slides 1 – 7; provided an overview of the project, discussed the need for the project, and provided a timeline for the project activities including submission to the OEB.	N/A
Presentation – Environmental Report **RG** provided a general overview of the Environmental Report including an estimated date for finalization.	N/A
Presentation – Stantec/EGI Requests **RG** noted the natural environmental features within the SCRCA regulated boundaries (i.e. the number of watercourses and wetlands crossed, thermal regime of the watercourses etc.) Melissa Deisley (**MD**) – Are most of the crossings going to be done by Horizontal Directional Drilling (HDD)? **AC** – We have not settled on the construction methods yet; the methods will be shaped by the environmental studies as part of the Environmental Report **MD** – If the trenching method is to be used, we (SCRCA) would need to see proper damning etc.; if HDD is used we would want to see the location of entry and exit pits, a profile of how far under the waterbed the drill will be (typically 1.5 m below the bed of the watercourse and 10 – 15 m from the edge of the watercourse). This may vary between entry and exit points. As for wetlands, depending on the crossing method, there might be some instances where the wetland edge meets the road. Depending on the feature and how close the pipeline will lay you may need to follow directional drilling requirements.	MD to provide Stantec/Enbridge with a list of the municipal drainage superintendents. Stantec to provide borehole locations for the geotechnical program to SCRCA once the preferred route is selected.

Item:	Action:
Rob Rowland (**RR**) – Maybe we can triage the permits according to sensitivity (i.e. combine relevant permits)?	
MD – We ask that the permits are grouped by roads. The SCRCA would be willing to work with the Project team to determine the areas that can be started first.	
MD – There may be instances where you need to cross the floodplain areas; the SCRCA would need to see that the land is returned to its natural condition, remove the excess fill etc. (typical remediation measures).	
RR – In the event that some of the watercourses are designated as a municipal drain, how would we proceed?	
MD – Municipal drain crossing permit requests would go through the municipality's drainage superintendent, then the CA will get involved at the municipality's direction. **MD** to provide a list of the municipal drainage superintendents.	
RG – Once we have determined the preferred route, we will start the geotechnical portion of the project. Is there a permit that Enbridge will be required to obtain to conduct this work?	
MD – There is no permit per-say, but the CA would request an email noting the borehole locations to ensure there are no concerns.	
SCRCA Application Review Timeline	N/A
RR – Are there impacts on your review timelines due to COVID-19?	
MD – Permits are still being processed, no foreseeable issues with timing.	

The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

Stantec Consulting Ltd.

Emily Hartwig

Emily Hartwig B.Sc., EP.
Environmental Consultant

Phone: (519) 780-8186
Cell: (226) 979-4457
Emily.Hartwig@stantec.com

From: Karen Winfield
To: Hartwig, Emily
Cc: Allison Chong; Kelsey Mills; LondonLines
Subject: EXTERNAL EXTERNAL RE: EXTERNAL EXTERNAL LLRP - Meeting Minutes (June 02, 2020)
Date: Thursday, June 11, 2020 10:04:47 AM
Attachments:

Thanks Emily!

Karen W.

>>> "Hartwig, Emily" <Emily.Hartwig@stantec.com> 6/10/2020 3:21 PM >>>
Good afternoon Karen,

Thank-you for your edits – I have revised the meeting minutes (see attached).

Please let me know if any other edits are required.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Karen Winfield <WinfieldK@thamesriver.on.ca>
Sent: Tuesday, June 9, 2020 1:02 PM
To: Hartwig, Emily <Emily.Hartwig@stantec.com>
Cc: Allison Chong <allison.chong@enbridge.com>; Kelsey Mills <Kelsey.Mills@enbridge.com>; LondonLines <LondonLines@stantec.com>
Subject: Re: EXTERNAL EXTERNAL LLRP - Meeting Minutes (June 02, 2020)

Hi Emily,

Appreciate you providing the minutes. I have attached a number of minor comments for clarification purposes. Let me know if you can't view.

Thank-you,

Karen Winfield

Land Use Regulations Officer
1424 Clarke Road London, Ontario, N5V 5B9
519.451.2800 Ext. 237 | Fax: 519.451.1188
winfieldk@thamesriver.on.ca

UPPER THAMES RIVER
CONSERVATION AUTHORITY

>>> "Hartwig, Emily" <Emily.Hartwig@stantec.com> 6/8/2020 2:50 PM >>>
Good afternoon Karen,

Please find attached the meeting minutes from our call last week.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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Stantec

Meeting Notes

Enbridge Gas Inc. (EGI) meeting with Upper Thames River Conservation Authority (UTRCA)

London Lines Replacement Project (LLRP) / 160951170

Date/Time:	June 2, 2020 / 11:00 AM
Place:	Skype
Next Meeting:	N/A
Attendees:	Karen Winfield (UTRCA), Allison Chong (EGI), Kelsey Mills (EGI), Rob Rowland (Stantec), Rooly Georgopoulos (Stantec), Emily Hartwig (Stantec)
Absentees:	N/A
Distribution:	All Attendees

Item:	Action:
Introduction Rooly Georgopoulos (**RG**) introduced the attendees on the call.	N/A
Presentation - Overview Allison Chong (**AC**) discussed the information on slides 1 – 6; provided brief history of the London Lines, overview of the proposed project, discussed the need for the project, and provided a timeline for the project activities including submission to the OEB.	N/A
Presentation – UTRCA regulated boundary and Project interaction **RR** discussed the project overlap with the UTRCA regulated boundary and noted that the Project is likely to cross a total of 11 watercourses (6 warmwater, 4 coldwater and 1 unknown thermal regime) and 1 Provincially Significant Wetland (PSW).	N/A
UTRCA Questions Karen Winfield (**KW**) – what is included in the decommissioning process underneath a watercourse? Is there a possibility for a sinkhole to occur if the soil is too shallow? **AC** – typically abandonment in place is the standard process, but the choice to decommission or abandon in place is made on a case-by-case basis. **KW** – When you submit your permit application, can you provide a brief statement on the process for decommissioning below a watercourse (i.e. will a pipe abandoned in place be filled in, grouted etc.)? The permit application form is available on the UTRCA website. We are asking that your provide details on where the proposed lines will be located and if they will be going underneath any watercourse, the watercourse undercrossing depth (i.e. so that there is no pipeline exposure in the future, and in the event a culvert or bridge needs to be updated in the future, it can be done so safely). The UTRCA request the pipeline is installed at least 1.2 – 1.5 m below small streambeds. If you are dealing with a municipal drain You will want to check with the municipal	Stantec/Enbridge – will provide all requested information on the permit application(s).

Item: **Action:**

drainage superintendent as to what the engineered watercrossing depth is supposed to be... as it may have changed over time... but would have to be dredged out again in the future... making the watercourse channel depth deeper/closer to the pipeline. For larger watercourses we ask that it should be deeper than 1.5 m but kept within geotechnical feasibility. In the Komoka area groundwater exists close to the surface.

KW – if you are using a horizontal directional drill (HDD) method, we would want to see a hydraulic fracture contingency plan (Enbridge has provided these in the past).

KW – if you need to open trench through a watercourse, we will want to know how the water will be pumped and/or piped. We also want to know that the pipes can handle at a minimum a 2-year storm. Request that you do not use sandbags, use pea or gravel bags.

KW – for the segments that are not going through the right-of-way (RoW), please contact me to go over details of these specific areas.

KW - a lot of the watercourses in this area become cold water streams (be aware of the potential species at risk [SAR] in these streams).

KW –Matthew Stephenson is the Drainage Superintendent for the Municipality of Strathroy-Caradoc. The Municipality is looking to do drain work on the Municipality of Middlesex Centre side of the drain (Waters-Arnold Municipal Drain), local fishing group is opposed.

KW – Dan Anderson is the Drainage Superintendent for Middlesex Centre.

KW – UTRCA requests that sediment erosion plans are submitted during detailed design phase.

RG – most CA's do not require a permit for borehole drilling, does UTRCA?

KW – generally no. As long as you are not clearing land to conduct the borehole drilling, and there are no concerns. Please send an email a day ahead of the work so that the CA is aware there will be staff on site.

<u>UTRCA Application Review Timeline</u>

RG – Are there impacts on your review timelines due to COVID-19?

KW – we are receiving many emails every day and a large volume of permit application requests, please allow for enough lead-time to process the application(s) (1 month is preferred). If you know that you are not going along the RoW and need to go through a wetland or other regulated area, please flag it and contact me to discuss in detail.

RR – would you like one (1) application that notes all crossings, or individual applications?

Stantec/Enbridge – will contact UTRCA if sections of the preferred route are planned to cross wetland or other regulated area.

Stantec/Enbridge – will aim to submit permit application(s) 1 month ahead of planned work.

Item:	Action:
KW – if you are going to get all of the work done in the same year, a single application is okay. Only one permit fee per project.	Stantec – will review Middlesex Centre Glendon Drive EA.
KW – Middlesex Centre recently conducted an Environmental Assessment (EA) for Glendon Drive.	

The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

Stantec Consulting Ltd.

Emily Hartwig

Emily Hartwig B.Sc., EP.
Environmental Consultant

Phone: (519) 780-8186
Cell: (226) 979-4457
Emily.Hartwig@stantec.com

From: Hartwig, Emily
To: Lucia Lilbourne
Cc: kelsey.mills@enbridge.com; LondonLines
Subject: RE: London Lines Replacement Project
Date: Tuesday, June 9, 2020 9:38:12 AM

Good morning Lucia,

Thank-you for providing the letter on behalf of the Middlesex Federation of Agriculture as noted below. We will incorporate your comments in the Environmental Report and we will ensure that the Middlesex Federation of Agriculture is included on all future project updates.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Lucia Lilbourne <mfa4h@bellnet.ca>
Sent: Monday, June 8, 2020 11:07 AM
To: Hartwig, Emily <Emily.Hartwig@stantec.com>
Cc: kelsey.mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: RE: London Lines Replacement Project

Good morning.
Please find attached, a letter from the MFA.
~Lucia

- - - - - - - - - -

Lucia A. Lilbourne, Coordinator
Middlesex Federation of Agriculture (MFA)
Middlesex Farm & Home Safety Committee
Middlesex *Get Fresh... Eat Local* Food Map
Middlesex County Agricultural Hall of Fame
www.middlesexfarmers.ca
www.eatlocalmiddlesex.ca

- - - - -

633 - 4 Lions Park Drive
Mt. Brydges, ON N0L 1W0
t: (519) 264-9812

e: mfa4h@bellnet.ca

From: Hartwig, Emily [mailto:Emily.Hartwig@stantec.com]
Sent: Tuesday, June 2, 2020 1:01 PM
To: Lucia Lilbourne <mfa4h@bellnet.ca>
Cc: kelsey.mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: RE: London Lines Replacement Project

Good afternoon Lucia,

Thank-you for your voicemail and email. We are happy to extend our comment deadline for you.

If you have any questions or concerns in the meantime, please let me know.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Lucia Lilbourne <mfa4h@bellnet.ca>
Sent: Tuesday, June 2, 2020 12:28 PM
To: LondonLines <LondonLines@stantec.com>
Cc: kelsey.mills@enbridge.com
Subject: London Lines Replacement Project

Good afternoon;
I left a message this morning at (519) 780-8186 and thought I'd follow-up with this email.

The Middlesex Federation of Agriculture is working on a draft letter to be reviewed at our meeting June 4th.
I see by the latest correspondence letter on this project, you were requesting comments by May 29th.
Due to the infrequencies of picking up mail, and holding Board meetings, we have missed that date.

I wanted to let you know I will be sending a letter Friday, or early next week at the latest.
Thanks.
~Lucia

- - - - - - - - - -

Lucia A. Lilbourne, Coordinator
Middlesex Federation of Agriculture (MFA)
Middlesex Farm & Home Safety Committee
Middlesex *Get Fresh... Eat Local* Food Map
Middlesex County Agricultural Hall of Fame
www.middlesexfarmers.ca
www.eatlocalmiddlesex.ca

- - - - -

633 - 4 Lions Park Drive
Mt. Brydges, ON N0L 1W0
t: (519) 264-9812
e: mfa4h@bellnet.ca

From: Lauren Whitwham
To: "Chris Plain"; sjohnston@aamjiwnaang.ca
Cc: Ken McCorkle; LondonLines
Subject: FW: Enbridge Gas London Lines Project
Date: Monday, March 9, 2020 2:07:20 PM
Attachments: London Lines map.pdf

Good afternoon,

Further to the email below, please find attached an updated map of the route for the Project.

We look forward to consulting with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From: Lauren Whitwham
Sent: Wednesday, February 26, 2020 2:56 PM
To: 'Chris Plain' <chief.plain@aamjiwnaang.ca>; 'sjohnston@aamjiwnaang.ca' <sjohnston@aamjiwnaang.ca>
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>
Subject: Enbridge Gas London Lines Project

Good afternoon Chief Plain,

Please find attached our notification letter and map for the Enbridge Gas Inc. London Lines Project.

We would like to set up a time to come to speak with your environment/consultation committee to discuss the project and provide you with details. Please reach out to Ken McCorkle to arrange for a time for discussion.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham

Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

—

ENBRIDGE GAS INC.

TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com

109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

Stantec

Legend
- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-03-05

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

\\Cd1215-f01\work_group\01609\Active\160951170\planning\03_data\gis_cad\gis\mxds\client_requests\report_figures\DTC\160951170_Fig01_Routes.mxd Revised: 2020-03-05 By: searles

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From:	Hartwig, Emily
To:	chief.plain@aamjiwnaang.ca
Cc:	Ken.McCorkle@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; londonlines@stantec.com
Subject:	Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 8, 2020 6:50:00 PM
Attachments:	let_160951170_Indigenous_NoC-VOH_CPlain_2020-04-08_fnl.pdf

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Chief Christopher Plain
Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia ON N7T 7H5

Dear Chief Plain,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. The general location and study area of the proposed pipeline is shown on the attached map.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Aamjiwnaang First Nation is invited to provide comments regarding the proposed pipeline. Specifically, Stantec is seeking information about any adverse impacts that the proposed project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an Indigenous community with a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline.

As part of the Environmental Study, Enbridge is in the process of contacting the following agencies:

- Indigenous and Northern Affairs Canada; and
- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

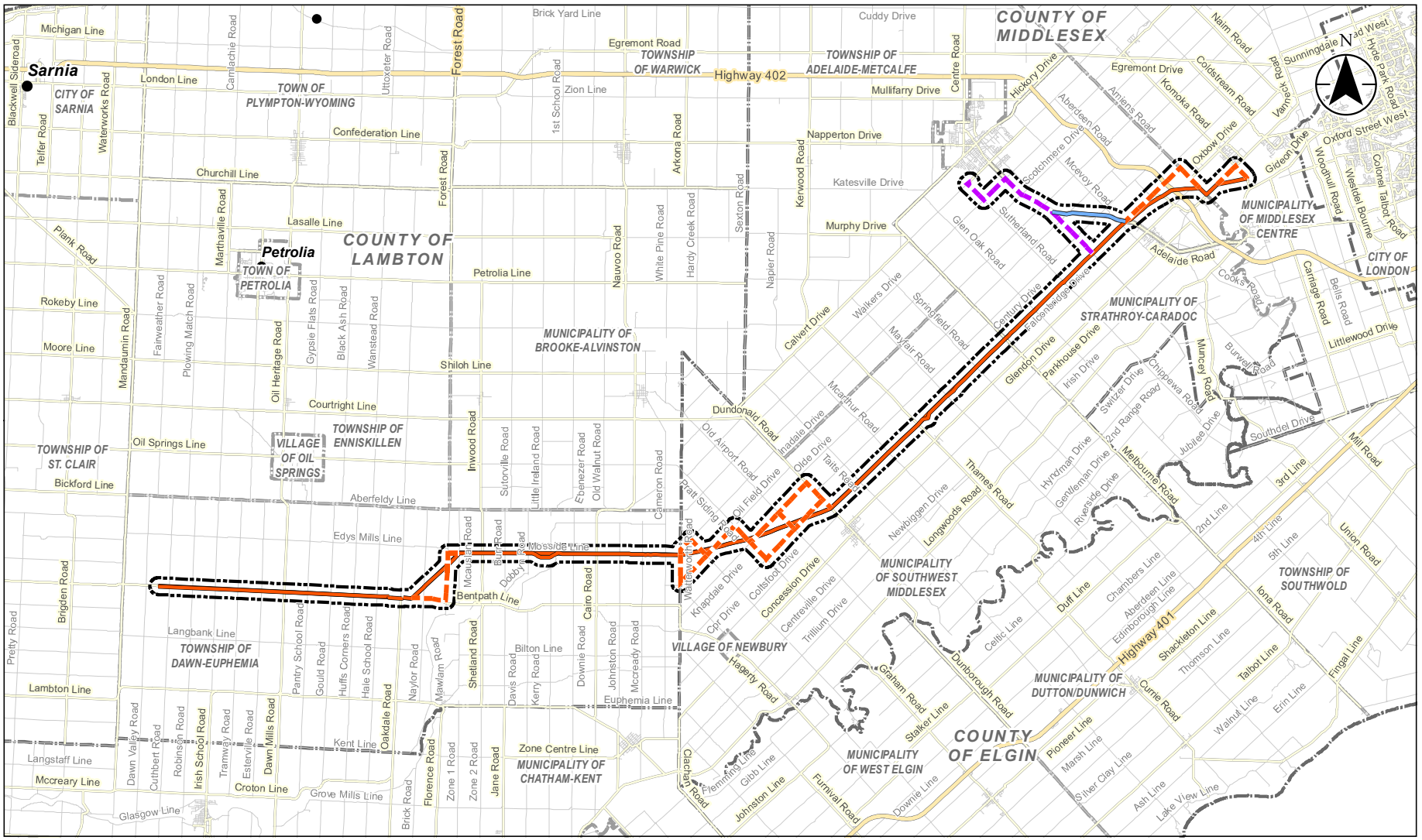
Regards,

ENBRIDGE GAS INC.

Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.



Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Study 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, 2018.

Stantec

Project Location
Counties of Lambton and Middlesex, ON

160951031 REVA
Prepared by SPE on 2020-04-08

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From:	Georgopoulos, Rooly
To:	chief.plain@aamjiwnaang.ca
Cc:	Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 29, 2020 1:04:07 PM
Attachments:	51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

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Mobile: 416-729-2300
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Sent: Wednesday, April 29, 2020 11:39 AM
To: chief.plain@aamjiwnaang.ca
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
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Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

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Sent: Wednesday, April 8, 2020 6:51 PM
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Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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Guelph ON N1G 4P5

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London Lines Replacement Project
Virtual Open House

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London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
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London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
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- Project costs and economics
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The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
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London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

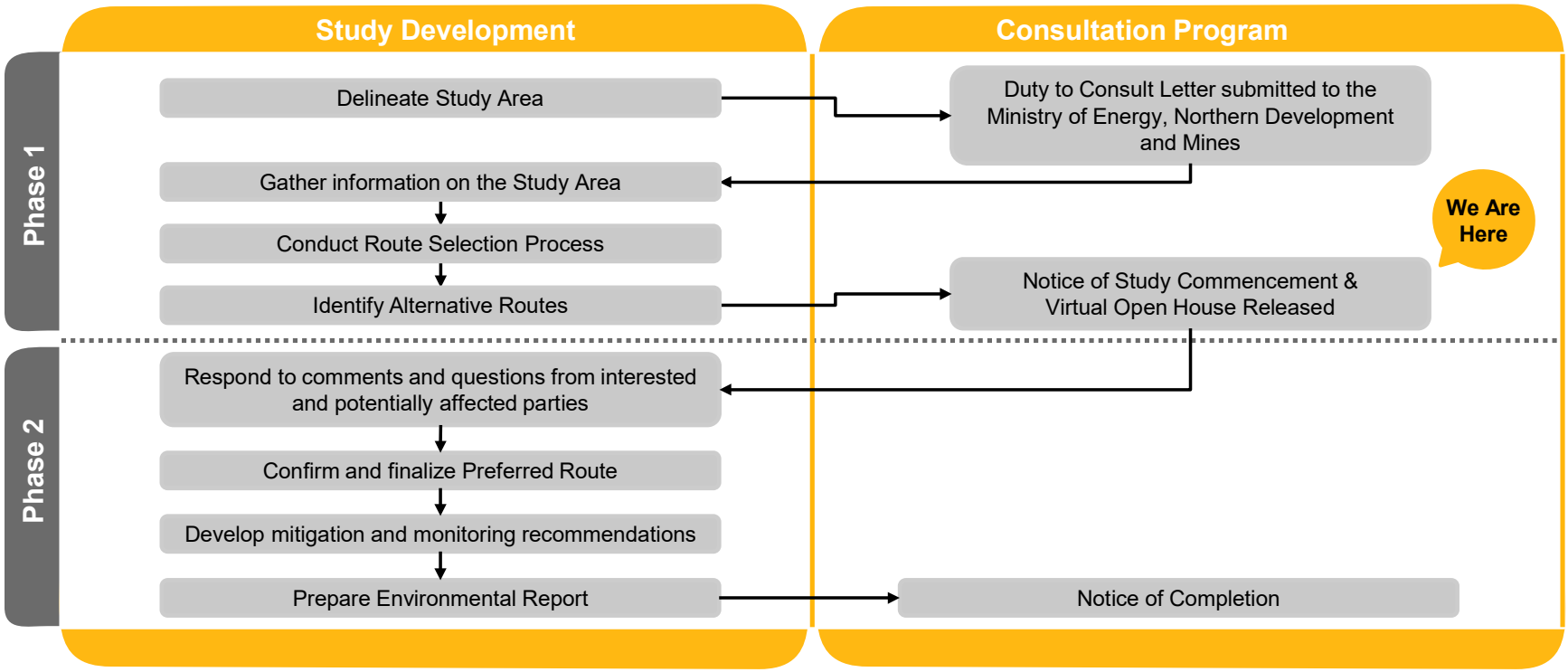
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

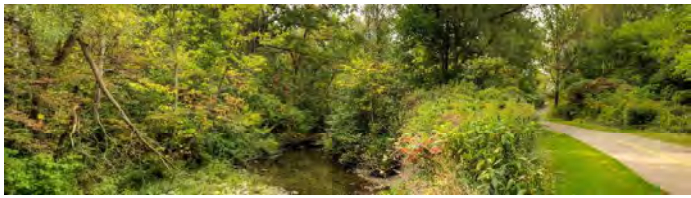
Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.

London Lines Replacement Project
Virtual Open House



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

London Lines Replacement Project
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Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

Rooly Georgopoulos
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For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

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Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

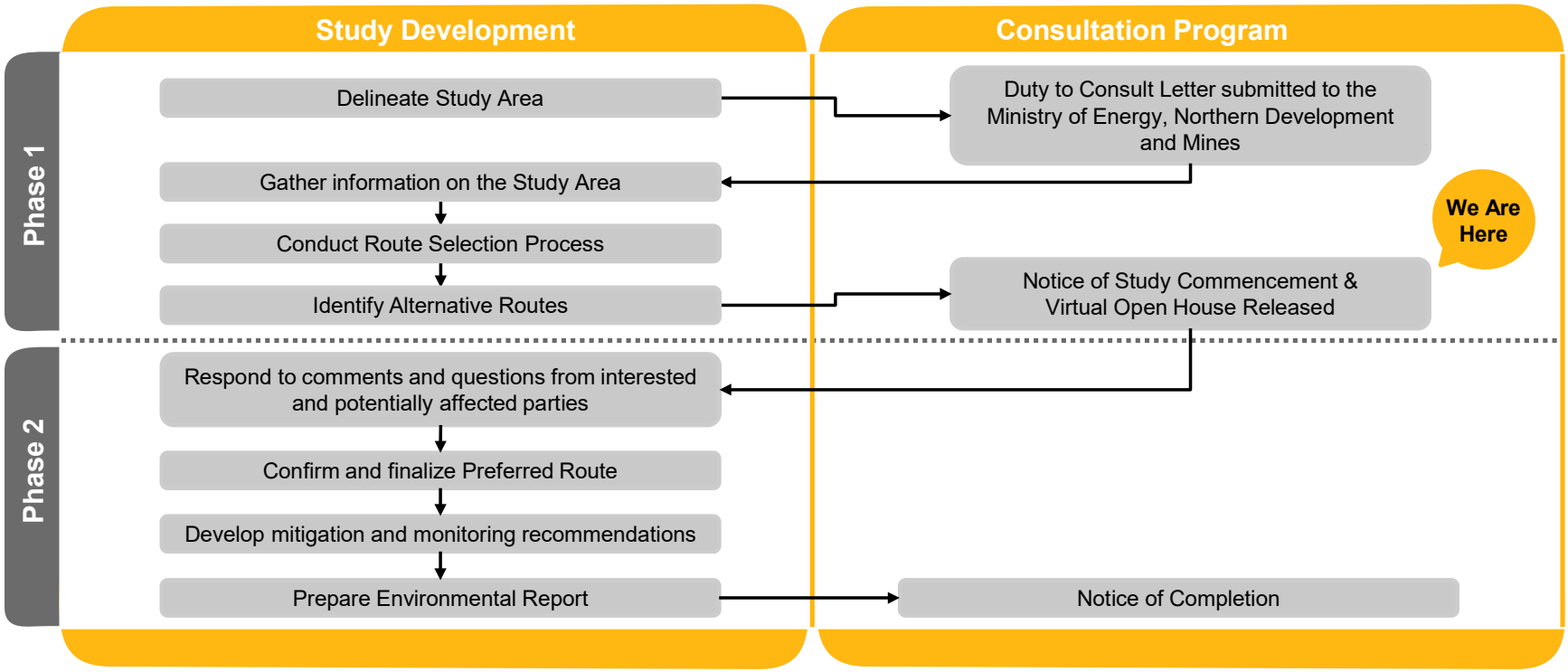
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

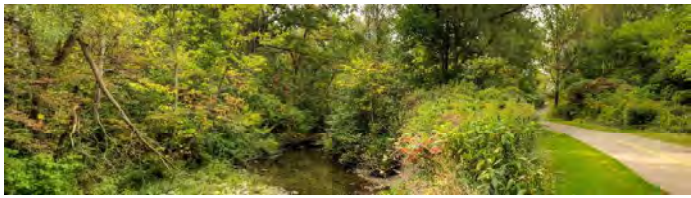
Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.

London Lines Replacement Project
Virtual Open House



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

London Lines Replacement Project
Virtual Open House

Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From: Lauren Whitwham
To: Sharilyn Johnston
Cc: Ken McCorkle; LondonLines
Subject: Enbridge Gas London Lines Project: Open House and Alternative Route
Date: Friday, May 15, 2020 9:55:00 AM
Attachments: let_160951170_Aamijwnaang_Notice-of-Change_20200513_fnl.pdf

Good morning,

We hope this finds you and your family well.

I am following up with you on the Enbridge Gas London Lines Project on two topics.

First, we just wanted to follow up to confirm if you were able to access and view the VOH (Virtual Open House) for the London Lines Project? If you had any comments or would like more follow up please do not hesitate to contact us. We will be in contact with you regarding an opportunity for you to participate in monitoring on site for the Archaeological and Environmental surveys.

Secondly, I have attached a Notice of Project Change on the Enbridge Gas London Lines Project. For this Project, a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy.

Stantec is request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to them by May 29, 2020. The contact information for Stantec is also in the attachment.

If you have any questions or concerns about these two items, please feel free to reach out to Ken McCorkle or myself and we would be happy to assist.

We hope you enjoy the long weekend and take care.

Many thanks,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia, ON N7T 7H5

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From: Lauren Whitwham
To: chief@caldwellfirstnation.ca; nikki.orosz@caldwellfirstnation.ca
Cc: Ken McCorkle; LondonLines
Subject: FW: Enbridge Gas London Lines Project
Date: Monday, March 9, 2020 2:12:14 PM
Attachments: London Lines map.pdf

Good afternoon Chief Duckworth,

Further to the email below, please find attached an updated map of the project.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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From: Lauren Whitwham
Sent: Wednesday, February 26, 2020 3:03 PM
To: 'chief@caldwellfirstnation.ca' <chief@caldwellfirstnation.ca>; 'nikki.orosz@caldwellfirstnation.ca' <nikki.orosz@caldwellfirstnation.ca>
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>
Subject: Enbridge Gas London Lines Project

Good afternoon Chief Duckworth,

Please find attached our notification letter and map for the Enbridge Gas Inc. London Lines Project.

We would like to set up a time to come to speak with your environment/consultation committee to discuss the project and provide you with details. Please reach out to Ken McCorkle to arrange for a time for discussion.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham

Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

—

ENBRIDGE GAS INC.

TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com

109 Commissioners Road West, London, ON N6A4P1

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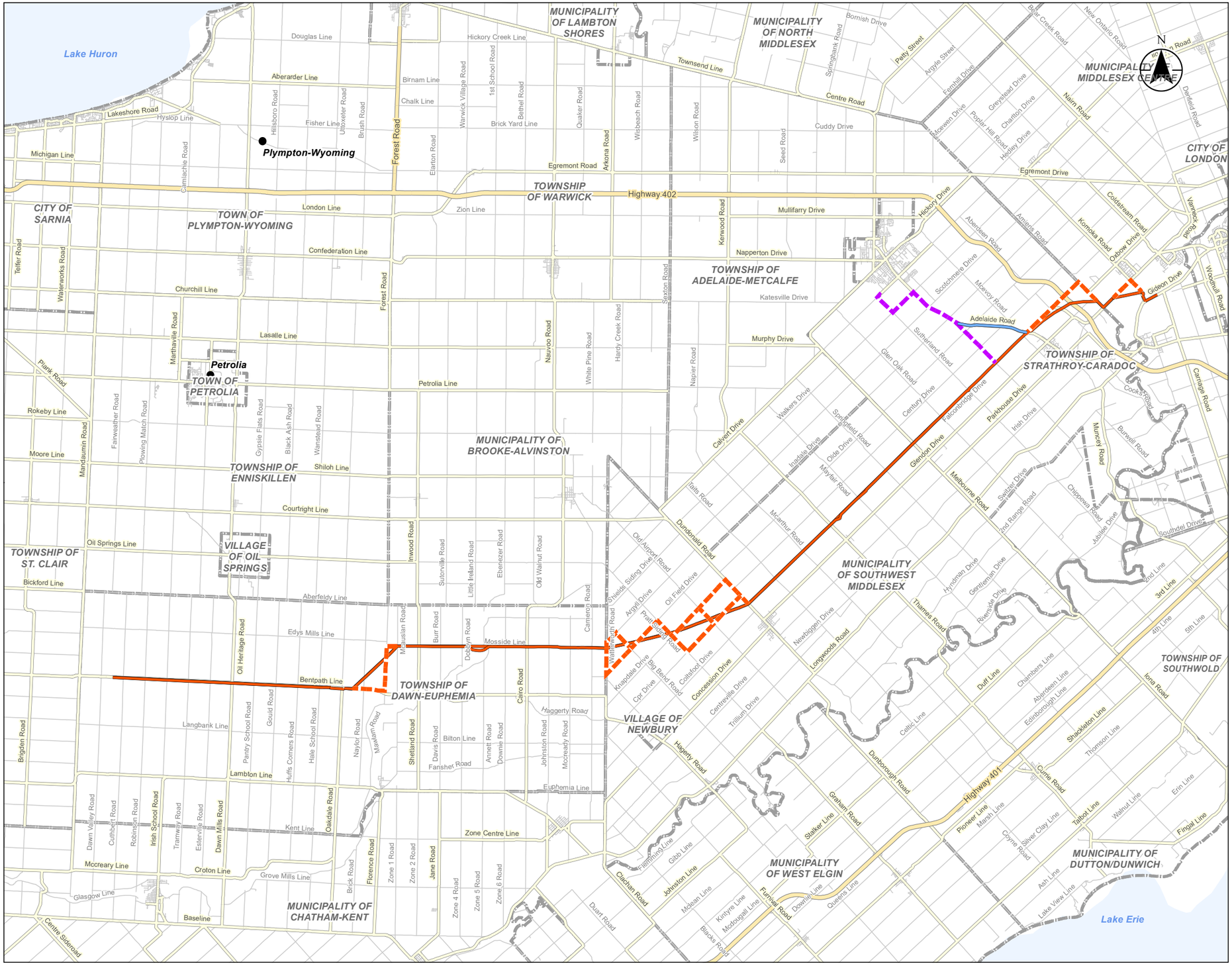

Stantec

Legend
- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
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- Expressway / Highway
- Major Road
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- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-03-05

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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\\Cd1220-f01\work_group\01692\Active\160951031\planning\03_design\gis_cad\arcgis\client_deliverables\Report_Figures\PDC\160951170_Fig01_Routes.mxd Revised: 2020-03-05 By: jasmith

From: Ken McCorkle
To: Nikki van Oirschot; Lauren Whitwham; Mary Duckworth
Cc: LondonLines; Tammy Jolicoeur; Julie Le
Subject: RE: [External] RE: Enbridge Gas London Lines Project
Date: Wednesday, March 18, 2020 11:27:31 AM

Hello Nikki:
It is great to hear from you and thank you for the follow up to our email. I will wait to hear from you regarding councils decision. In the interim please do not hesitate to contact me with any questions or concerns you may have regarding this project.

Miigwech,
Ken

From: Nikki van Oirschot <nikki@caldwellfirstnation.ca>
Sent: Tuesday, March 17, 2020 4:55 PM
To: Lauren Whitwham <Lauren.Whitwham@enbridge.com>; Mary Duckworth <chief@caldwellfirstnation.ca>
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>; londonlines@stantec.com; Tammy Jolicoeur <tammy.jolicoeur@caldwellfirstnation.ca>; Julie Le <ea@caldwellfirstnation.ca>
Subject: [External] RE: Enbridge Gas London Lines Project

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Good afternoon,

Please be advised that the Chief is on leave until September 9, 2020.

Ken – I will advise if Council wants to meet to discuss the project.

Miigwech (Thank you),

Nikki van Oirschot "Mashkawizii Nendamowin Kwe" (she/her)
Director of Operations
Caldwell First Nation
14 Orange Street | Leamington, ON N8H 1P5
Phone: 519-322-1766 | Mobile: 226-236-1108
caldwellfirstnation.ca

From: Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Sent: Monday, March 9, 2020 2:12 PM
To: chief@caldwellfirstnation.ca; nikki.orosz@caldwellfirstnation.ca
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>; londonlines@stantec.com

Subject: FW: Enbridge Gas London Lines Project

Good afternoon Chief Duckworth,

Further to the email below, please find attached an updated map of the project.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
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Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>
Subject: Enbridge Gas London Lines Project

Good afternoon Chief Duckworth,

Please find attached our notification letter and map for the Enbridge Gas Inc. London Lines Project.

We would like to set up a time to come to speak with your environment/consultation committee to discuss the project and provide you with details. Please reach out to Ken McCorkle to arrange for a time for discussion.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.

TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From:	Hartwig, Emily
To:	chief@caldwellfirstnation.ca
Cc:	Ken.McCorkle@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; londonlines@stantec.com
Subject:	Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 8, 2020 6:51:00 PM
Attachments:	let_160951170_Indigenous_NoC-VOH_MDuckworth_2020-04-08_fnl.pdf

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Chief Mary Duckworth,
Caldwell First Nation
14 Orange Street
Leamington ON N8H 1P5

Dear Chief Duckworth,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. The general location and study area of the proposed pipeline is shown on the attached map.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Caldwell First Nation is invited to provide comments regarding the proposed pipeline. Specifically, Stantec is seeking information about any adverse impacts that the proposed project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an Indigenous community with a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline.

As part of the Environmental Study, Enbridge is in the process of contacting the following agencies:

- Indigenous and Northern Affairs Canada; and
- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

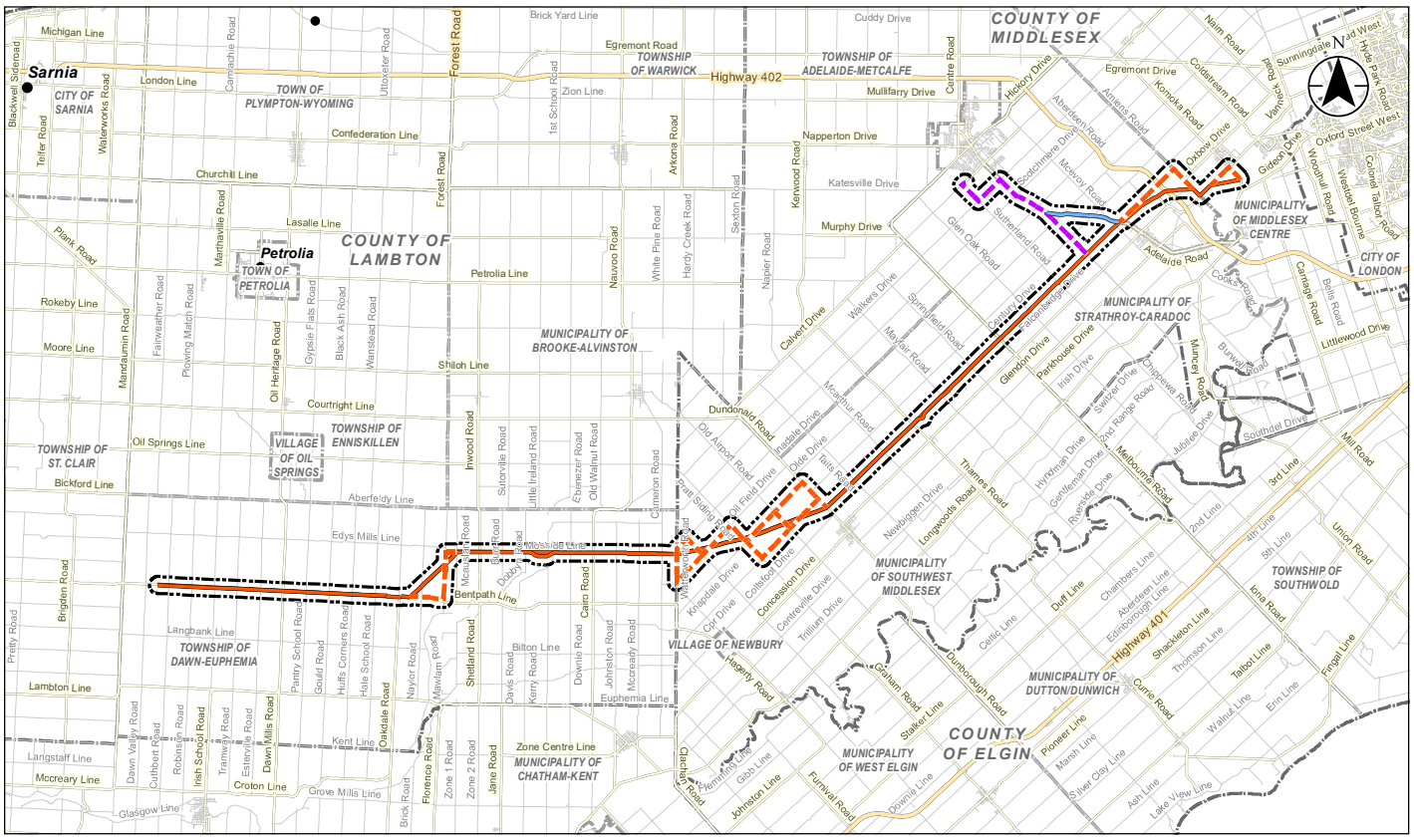
Regards,

ENBRIDGE GAS INC.

Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.



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From: Georgopoulos, Rooly
To: nikki.orosz@caldwellfirstnation.ca
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 29, 2020 1:12:43 PM
Attachments: 51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

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Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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300W-675 Cochrane Drive
Markham ON L3R 0B8

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From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:44 AM
To: nikki.orosz@caldwellfirstnation.ca
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

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Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

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Mobile: 416-729-2300
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Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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1-70 Southgate Drive
Guelph ON N1G 4P5

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London Lines Replacement Project
Virtual Open House

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Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

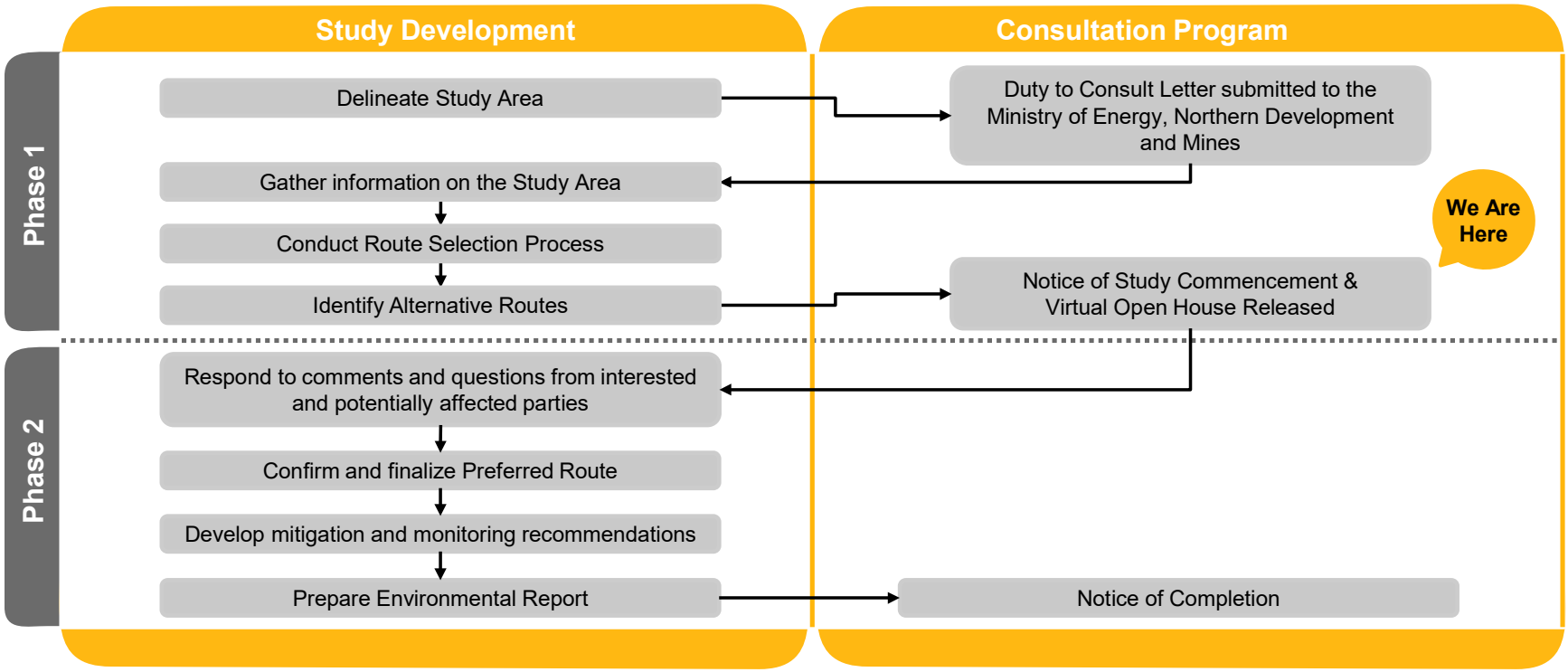
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

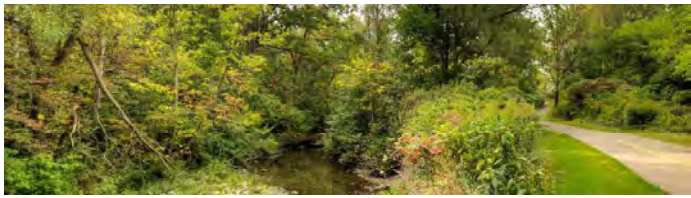
Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.

London Lines Replacement Project
Virtual Open House



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

London Lines Replacement Project
Virtual Open House

Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From:	Georgopoulos, Rooly
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Date:	Wednesday, April 29, 2020 1:13:29 PM
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Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

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Mobile: 226 979-4457
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London Lines Replacement Project
Virtual Open House

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- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

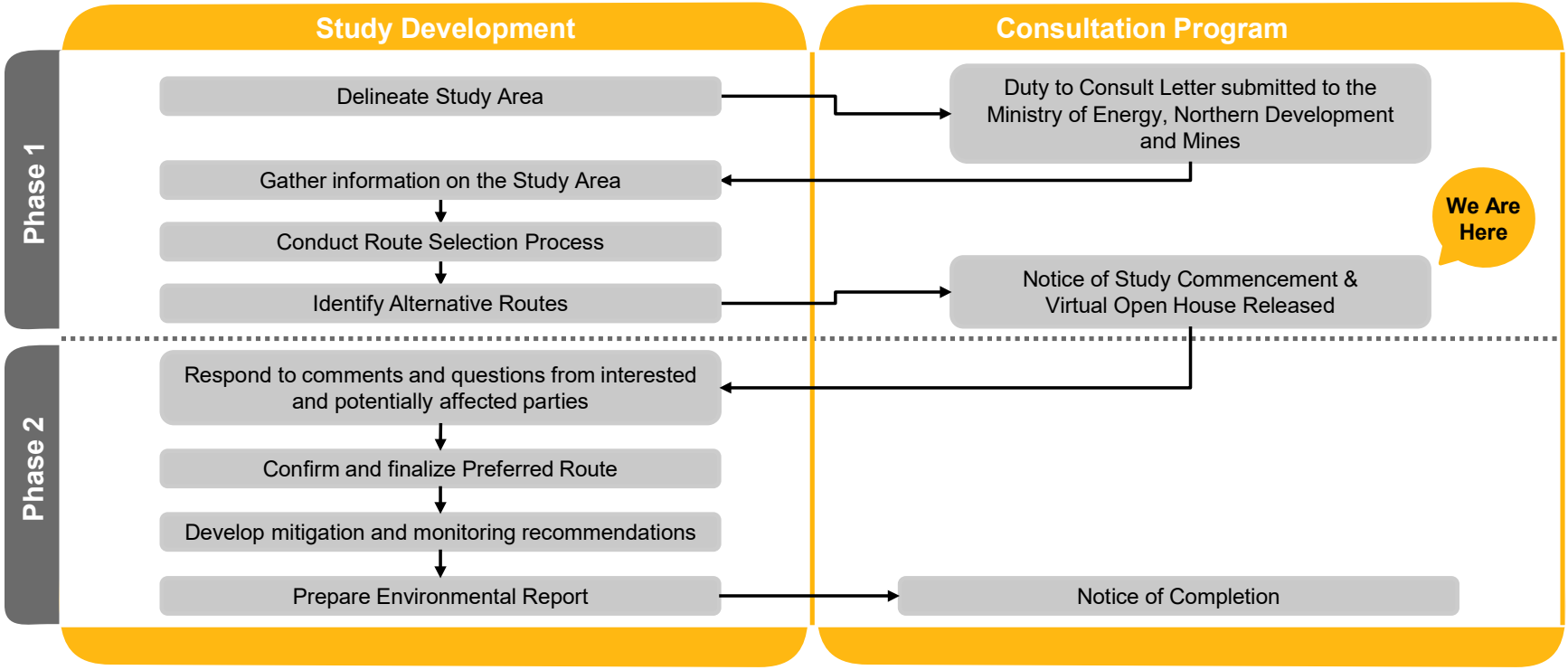
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

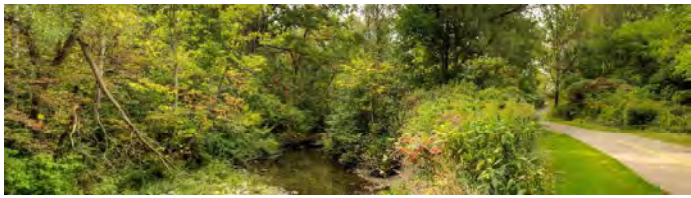
Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.

London Lines Replacement Project
Virtual Open House



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

London Lines Replacement Project
Virtual Open House

Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From: Nikki van Oirschot
To: Lauren Whitwham
Cc: Ken McCorkle; LondonLines
Subject: RE: Enbridge Gas London Lines Project: Open House and Alternative Route
Date: Friday, May 15, 2020 1:11:04 PM

Confirming receipt of email.

Miigwech (Thank you),

Nikki van Oirschot "Mashkawizii Nendamowin Kwe" (she/her)
Director of Operations
Caldwell First Nation
14 Orange Street | Leamington, ON N8H 1P5
Phone: 519-322-1766 | Mobile: 226-236-1108
caldwellfirstnation.ca

From: Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Sent: Friday, May 15, 2020 10:00 AM
To: nikki.orosz@caldwellfirstnation.ca
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>; londonlines@stantec.com
Subject: Enbridge Gas London Lines Project: Open House and Alternative Route

Good morning,

We hope this finds you and your family well.

I am following up with you on the Enbridge Gas London Lines Project on two topics.

First, we just wanted to follow up to confirm if you were able to access and view the VOH (Virtual Open House) for the London Lines Project? If you had any comments or would like more follow up please do not hesitate to contact us. We will be in contact with you regarding an opportunity for you to participate in monitoring on site for the Archaeological and Environmental surveys.

Secondly, I have attached a Notice of Project Change on the Enbridge Gas London Lines Project. For this Project, a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy.

Stantec is request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to them by May 29, 2020. The contact information for Stantec is also in the attachment.

If you have any questions or concerns about these two items, please feel free to reach out to Ken McCorkle or myself and we would be happy to assist.

We hope you enjoy the long weekend and take care.

Many thanks,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From: Lauren Whitwham
To: nikki.orosz@caldwellfirstnation.ca
Cc: Ken McCorkle; LondonLines
Subject: Enbridge Gas London Lines Project: Open House and Alternative Route
Date: Friday, May 15, 2020 10:01:24 AM
Attachments: let_160951170_Caldwell_Notice-of-Change_20200513_fnl.pdf

Good morning,

We hope this finds you and your family well.

I am following up with you on the Enbridge Gas London Lines Project on two topics.

First, we just wanted to follow up to confirm if you were able to access and view the VOH (Virtual Open House) for the London Lines Project? If you had any comments or would like more follow up please do not hesitate to contact us. We will be in contact with you regarding an opportunity for you to participate in monitoring on site for the Archaeological and Environmental surveys.

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If you have any questions or concerns about these two items, please feel free to reach out to Ken McCorkle or myself and we would be happy to assist.

We hope you enjoy the long weekend and take care.

Many thanks,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Caldwell First Nation
14 Orange Street
Leamington, ON N8H 1P5

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

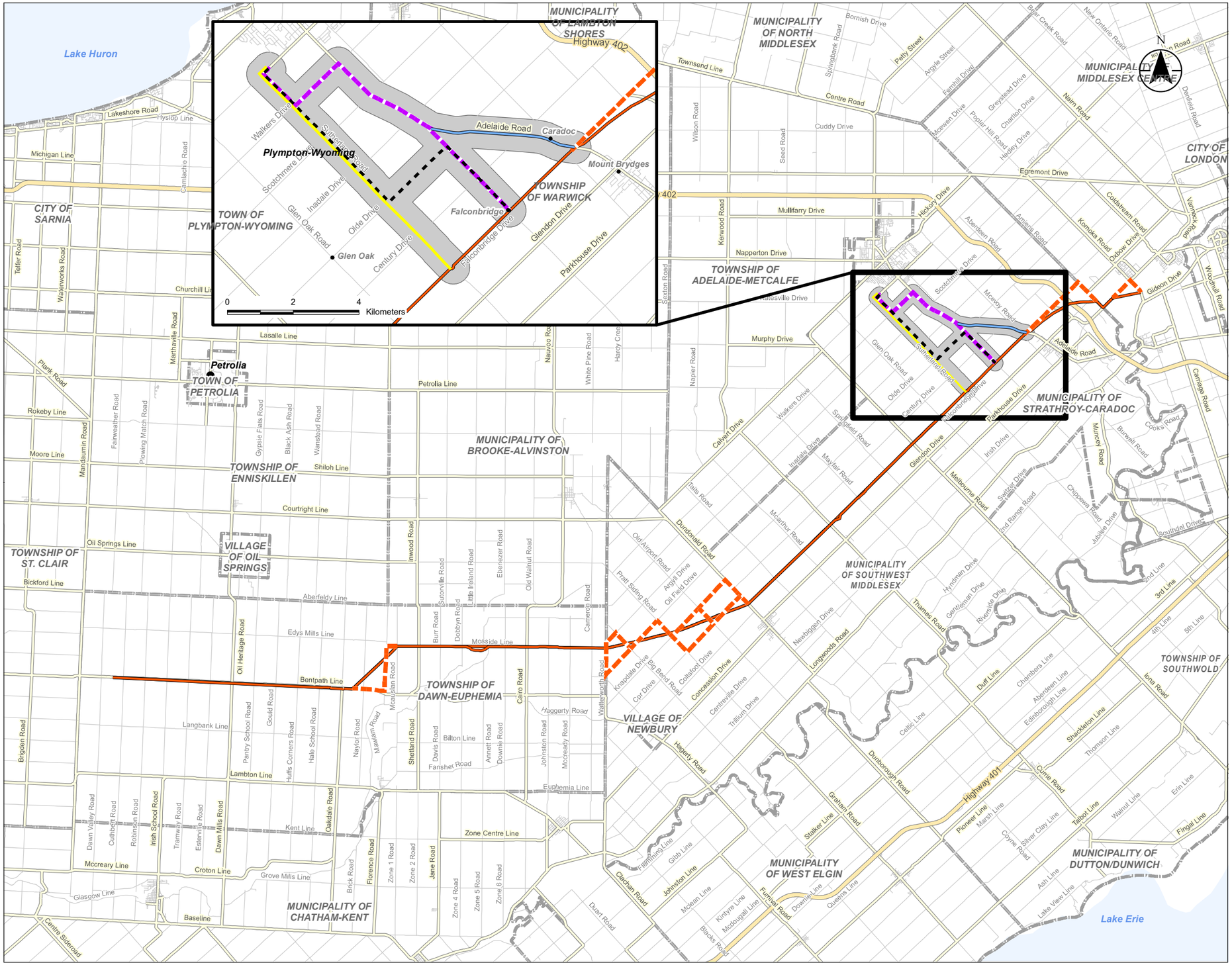
Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.



Stantec

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From: Lauren Whitwham
To: jfrench@cottfn.com; kriley@cottfn.com; fburch@cottfn.com
Cc: Ken McCorkle; LondonLines
Subject: FW: Enbridge Gas London Lines Project
Date: Monday, March 9, 2020 2:09:37 PM
Attachments: London Lines map.pdf

Good afternoon,

Further to the email below, please find attached an updated map of the route for the Project.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From: Lauren Whitwham
Sent: Wednesday, February 26, 2020 2:58 PM
To: 'jfrench@cottfn.com' <jfrench@cottfn.com>; 'kriley@cottfn.com' <kriley@cottfn.com>; 'fburch@cottfn.com' <fburch@cottfn.com>
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>
Subject: Enbridge Gas London Lines Project

Good afternoon Chief French,

Please find attached our notification letter and map for the Enbridge Gas Inc. London Lines Project.

-
We would like to set up a time to come to speak with your environment/consultation committee to discuss the project and provide you with details. Please reach out to Ken McCorkle to arrange for a time for discussion.

We look forward to working with you on this project.

Thank you,
Lauren

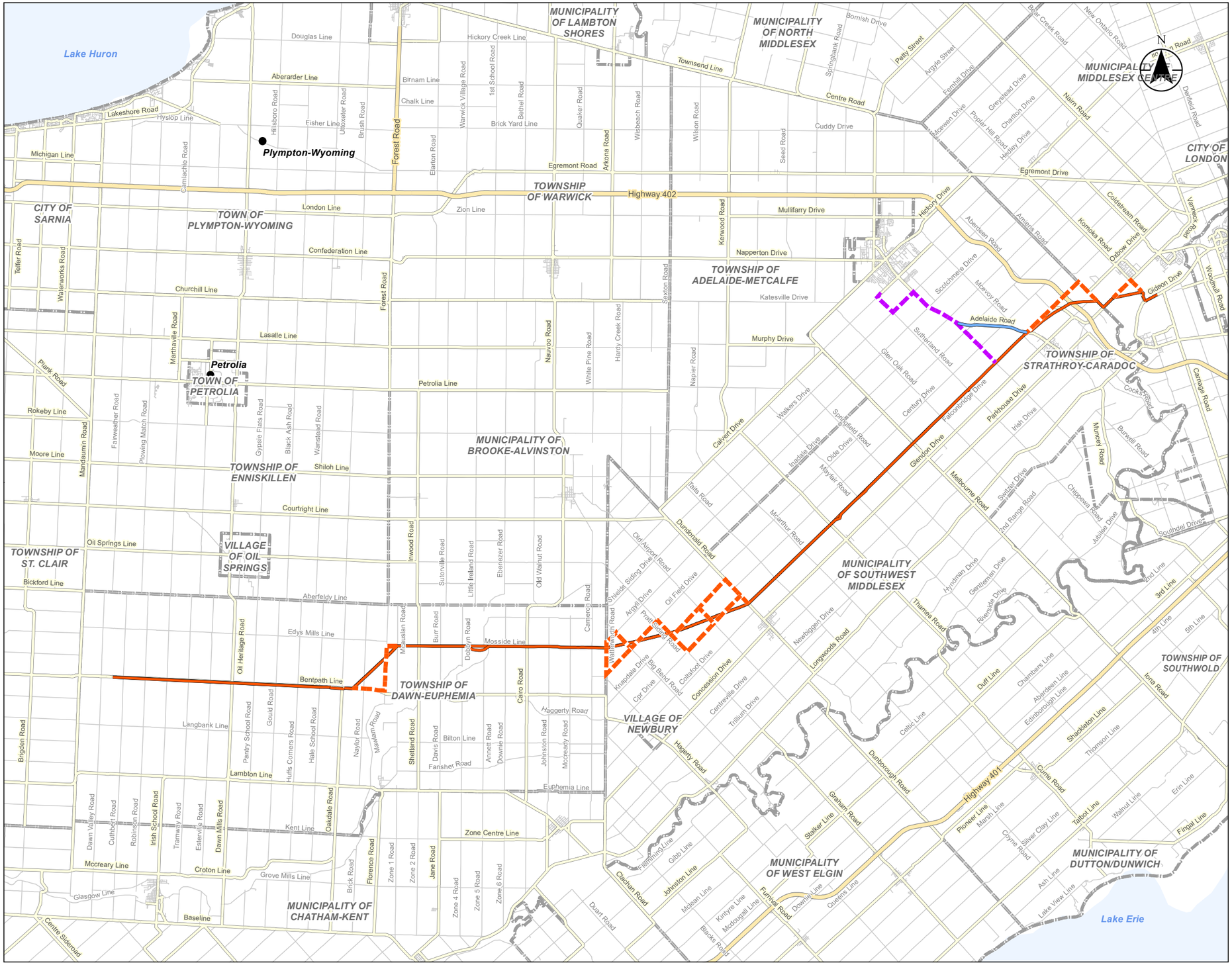
Lauren Whitwham

Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

—

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.



Stantec

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-03-05

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From: Hartwig, Emily
To: "jfrench@cottfn.com"
Cc: "Ken.McCorkle@enbridge.com"; Georgopoulos, Rooly; "Kelsey.Mills@enbridge.com"; "londonlines@stantec.com"
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 8, 2020 6:51:00 PM
Attachments: let_160951170_Indigenous_NoC-VOH_JFrench_2020-04-08_fnl.pdf

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Chief Jacqueline French,
Chippewas of the Thames First Nation
320 Chippewa Road
Muncey ON N0N 1Y0

Dear Chief French,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. The general location and study area of the proposed pipeline is shown on the attached map.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Chippewas of the Thames First Nation is invited to provide comments regarding the proposed pipeline. Specifically, Stantec is seeking information about any adverse impacts that the proposed project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an Indigenous community with a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline.

As part of the Environmental Study, Enbridge is in the process of contacting the following agencies:

- Indigenous and Northern Affairs Canada; and
- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

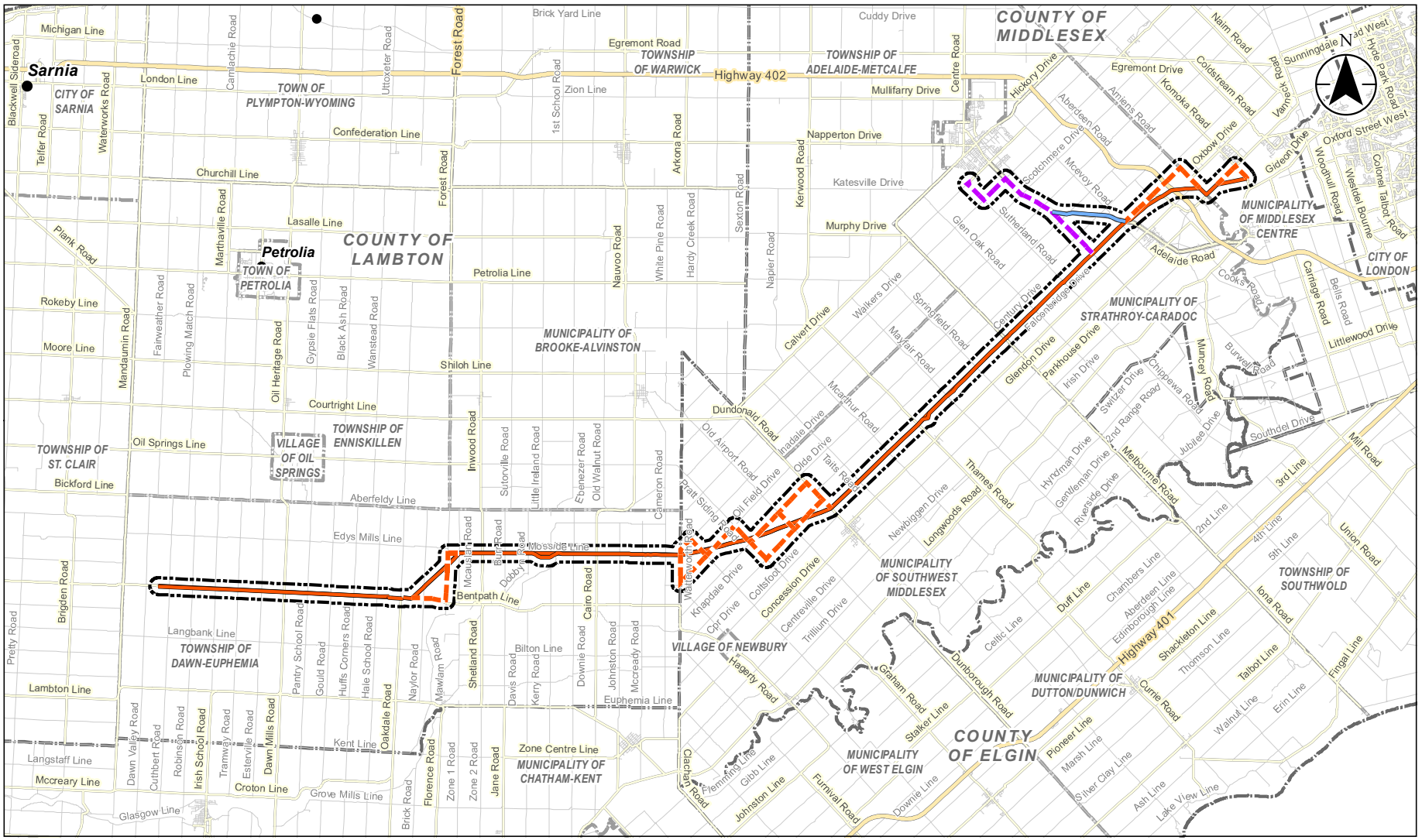
Regards,

ENBRIDGE GAS INC.

Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.



Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Study Area
- Municipal Boundary, Upper
- Municipal Boundary, Lower

0 7.5 15 Kilometres

1:350,000 (At original document size of 8.5x11)

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, 2018.

Stantec

Project Location
Counties of Lambton and Middlesex, ON

160951031 REVA
Prepared by SPE on 2020-04-08

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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\\Cd1215-f01\work_group\01609\Active\160951170\planning\03_data\gis_cad\gis\mxds\ap\consultation\landowner_notice\160951170_Fig01_Project_Map.mxd Revised: 2020-04-08 By: bcowper

From: Georgopoulos, Rooly
To: jfrench@cottfn.com
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 29, 2020 1:07:59 PM
Attachments: 51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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Stantec

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From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:50 AM
To: jfrench@cottfn.com
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good morning,

Please find attached the Virtual Open House Presentation Boards and associated script for the London Lines Replacement Project.

Regards,

Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:52 PM
To: jfrench@cottfn.com
Cc: Ken.McCorkle@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
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Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
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London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

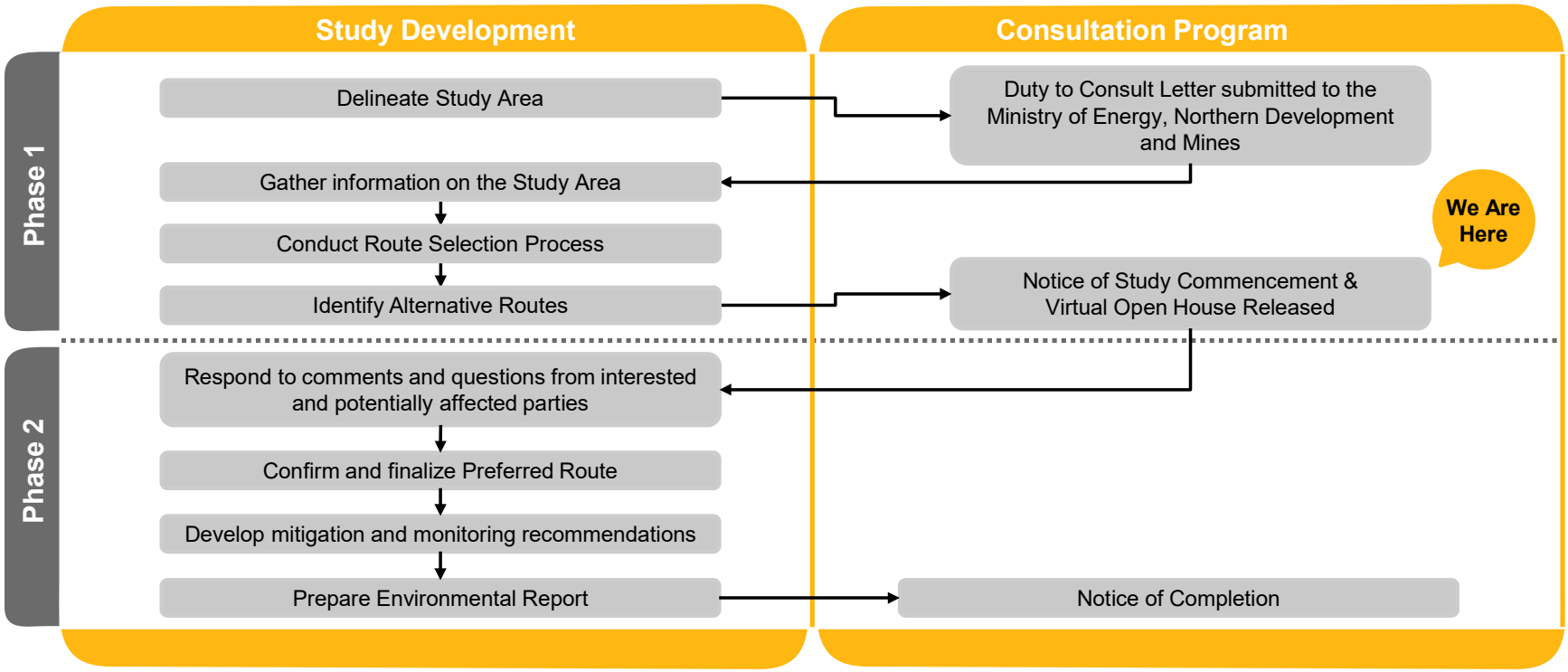
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

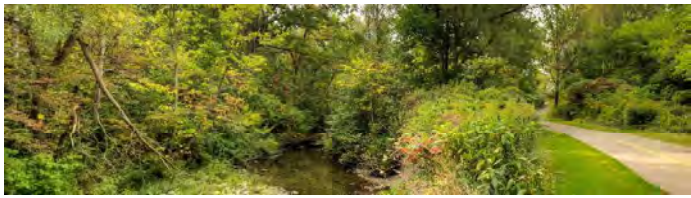
Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.

London Lines Replacement Project
Virtual Open House



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

London Lines Replacement Project
Virtual Open House

Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From:	Georgopoulos, Rooly
To:	fburch@cottfn.com
Cc:	Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
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From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:48 AM
To: fburch@cottfn.com
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good morning,

Please find attached the Virtual Open House Presentation Boards and associated script for the London Lines Replacement Project.

Regards,

Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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Stantec

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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:52 PM
To: fburch@cottfn.com
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Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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London Lines Replacement Project
Virtual Open House

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- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
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London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
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London Lines Replacement Project
Virtual Open House

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The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
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The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
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London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
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b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
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Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

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An evaluation of the Alternative Routes will be conducted based on:
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Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

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A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
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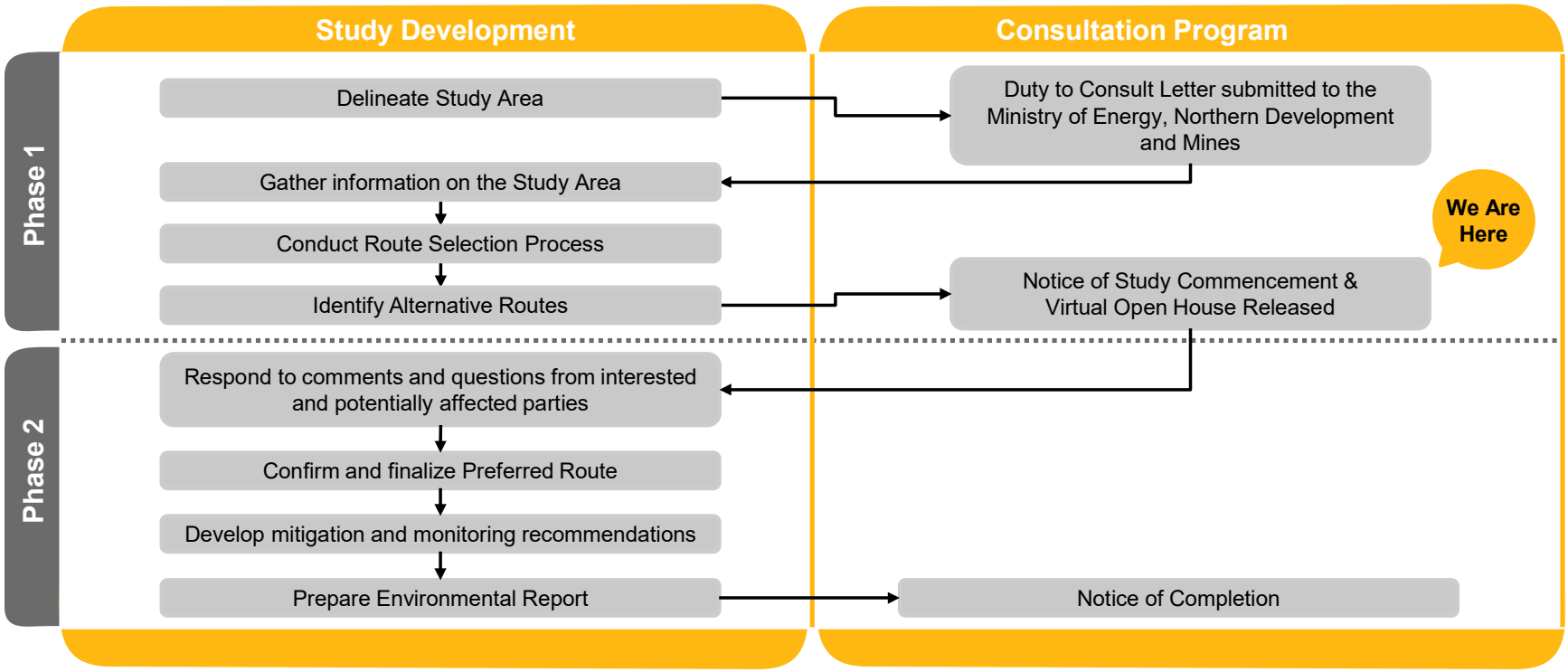
London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

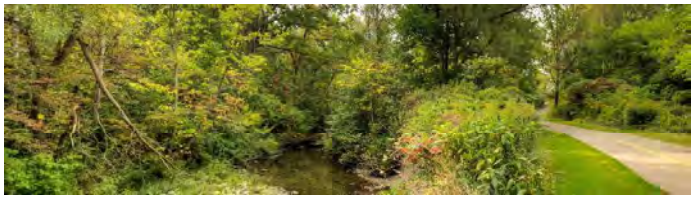
Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.

London Lines Replacement Project
Virtual Open House



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

London Lines Replacement Project
Virtual Open House

Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

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For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

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Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 29, 2020 1:08:52 PM
Attachments:	51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
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London Lines Replacement Project
Virtual Open House

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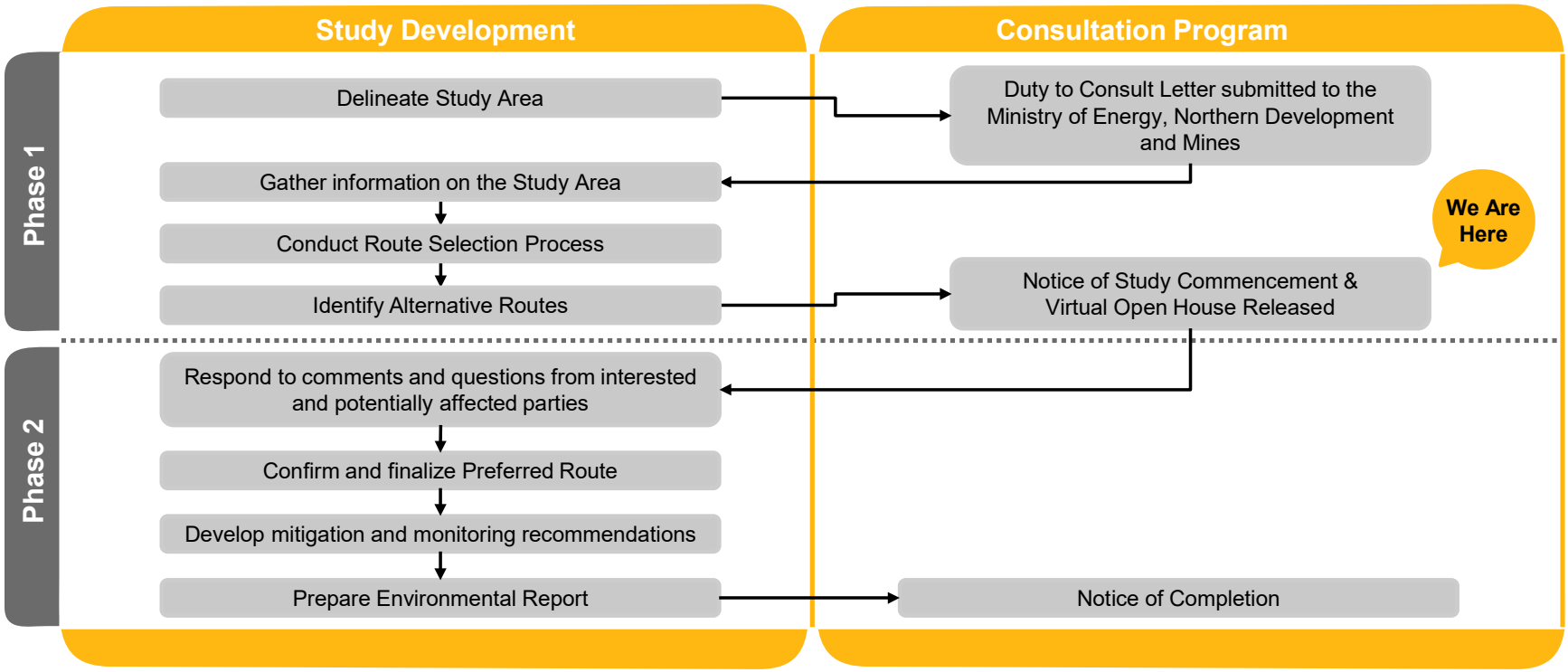


Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

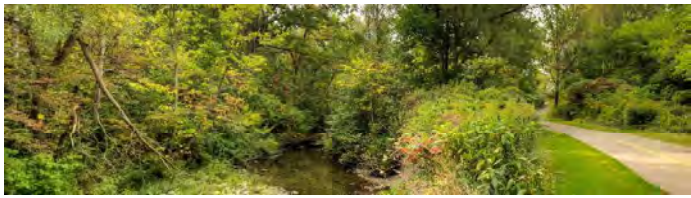
Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
- Restore and seed areas to establish habitat and reduce erosion.
- Replant vegetation along waterways.

London Lines Replacement Project
Virtual Open House



Cultural Heritage Resources

During the course of construction, cultural heritage features such as archaeological finds, buildings, fences and landscapes may be encountered. Detailed field surveys will be conducted by independent, third-party archaeologists and cultural heritage professionals.

Potential Effects

- Damage or destruction of archaeological, paleontological or historical resources.

Example Mitigation Measures

- Archaeological assessment of the construction right-of-way, with review and comment from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI).
- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
- Reporting of any previously unknown archaeological, paleontological or historical resources uncovered, or suspected of being uncovered, during excavation.

London Lines Replacement Project
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Terrestrial Resources

During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

Potential Effects

- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

Example Mitigation Measures

- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
- Restore and seed areas to establish habitat and reduce erosion.
- Secure any necessary permits and follow any conditions of approval.

London Lines Replacement Project
Virtual Open House

Pipeline Design

The high-grade steel pipeline is designed to meet and/or exceed the regulations of the Canadian Standards Association (Z662 Oil and Gas Pipeline Systems) and the applicable regulations of the Technical Standards & Safety Association (TSSA).

Pipeline Safety and Integrity

We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
- Continuously monitor the entire network, and
- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

3. **Grading and Stripping**: Next, the grading crew prepares the construction area for access by construction equipment. Existing landscaping is also removed, and dewatering undertaken, where necessary.

4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

5. **Trenching:** Once the construction area has been prepared, a hydraulic hoe will excavate the trench which will then be prepared for the installation of the new pipeline.

6. **Pipe Fabrication and Lowering:** Next, the pipe is bent as required and the welding crew welds the pipe into continuous lengths. The pipe welds are x-rayed and coated then inspected before the pipeline is lowered into the trench. Crews also install pipes under obstacles such as roads or watercourses by directional drilling. The welds are global positioning system located with locations identified on the weld map along with the identification of each pipe section for future identification.

7. **Hydrostatic Test:** The pipeline is tested hydrostatically. Water is drawn from a suitable local source based on discussions with the appropriate authorities and will be disposed of appropriately (e.g., discharged to land or sanitary sewer, or removed by an Enbridge approved waste disposal provider). Upon completion of the hydrostatic testing, the pipeline is dried, purged of air and prepared for delivery of the product.

8. **Backfilling:** The backfilling crew backfills the originally excavated subsoil over the pipe in the trench. In shallow water table areas, the pipeline may be weighted to provide negative buoyancy. Surplus backfill material will be removed from the construction area. The trench line will be crowned where necessary to allow for soil settlement.

9. **Clean-Up and Restoration:** The clean-up crew is responsible for the restoration of the construction area and other work areas. In natural areas the clean-up crew undertakes restoration including re-seeding of the area and restoring ditch banks, watercourse crossings and wetland areas, and removing erosion and sediment controls. In developed areas the clean-up crew undertakes landscaping plans developed for site restoration.

London Lines Replacement Project
Virtual Open House

Next Steps

After this Virtual Open House, we intend to pursue the following schedule of activities:

2020

Winter
- Start the environmental planning process

Spring/Summer/Fall
- Virtual Open House
- Complete Environmental Report
- Complete OEB filing application

2021

Winter/Spring
- Receive OEB approval, complete permitting, pipeline design and construction plan

Spring
- Begin construction

2022

- Conclude construction
- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
Markham, ON L3R 0B8
Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From: Lauren Whitwham
To: kriley@cottfn.com; Fallon Burch
Cc: Ken McCorkle; LondonLines
Subject: Enbridge Gas London Lines Project: Open House and Alternative Route
Date: Friday, May 15, 2020 10:06:12 AM
Attachments: let_160951170_Thames_Notice-of-Change_20200513_fnl.pdf

Good morning,

We hope this finds you and your family well.

I am following up with you on the Enbridge Gas London Lines Project on two topics.

First, we just wanted to follow up to confirm if you were able to access and view the VOH (Virtual Open House) for the London Lines Project? If you had any comments or would like more follow up please do not hesitate to contact us. We will be in contact with you regarding an opportunity for you to participate in monitoring on site for the Archaeological and Environmental surveys.

Secondly, I have attached a Notice of Project Change on the Enbridge Gas London Lines Project. For this Project, a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy.

Stantec is request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to them by May 29, 2020. The contact information for Stantec is also in the attachment.

If you have any questions or concerns about these two items, please feel free to reach out to Ken McCorkle or myself and we would be happy to assist.

We hope you enjoy the long weekend. Take care.

Many thanks,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Chippewas of the Thames First Nation
320 Chippewa Road
Muncey, ON N0N 1Y0

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Ind_18

Stantec

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From: Lauren Whitwham
To: Jason.henry@kettlepoint.org; Valerie.George@kettlepoint.org
Cc: Ken McCorkle; LondonLines
Subject: FW: Enbridge Gas London Lines Project
Date: Monday, March 9, 2020 2:10:07 PM
Attachments: London Lines map.pdf

Good afternoon,

Further to the email below, please find attached an updated map of the route for the Project.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From: Lauren Whitwham
Sent: Wednesday, February 26, 2020 2:59 PM
To: 'Jason.henry@kettlepoint.org' <Jason.henry@kettlepoint.org>; 'Valerie.George@kettlepoint.org' <Valerie.George@kettlepoint.org>
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>
Subject: Enbridge Gas London Lines Project

Good afternoon Chief Henry,

Please find attached our notification letter and map for the Enbridge Gas Inc. London Lines Project.

-
We would like to set up a time to come to speak with your environment/consultation committee to discuss the project and provide you with details. Please reach out to Ken McCorkle to arrange for a time for discussion.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham

Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

—

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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Legend
- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

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Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-03-05

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From:	Hartwig, Emily
To:	clint.couchie@kettlepoint.org
Cc:	Ken.McCorkle@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; londonlines@stantec.com
Subject:	Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 8, 2020 6:50:00 PM
Attachments:	let_160951170_Indigenous_NoC-VOH_CCouchie_2020-04-08_fnl.pdf

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Mr. Clint Couchie, Chief Executive Officer
Chippewas of Kettle and Stony Point
6247 Indian Lane
Lambton Shores ON N0N 1J1

Dear Mr. Couchie,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. The general location and study area of the proposed pipeline is shown on the attached map.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Chippewas of Kettle and Stony Point is invited to provide comments regarding the proposed pipeline. Specifically, Stantec is seeking information about any adverse impacts that the proposed project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an Indigenous community with a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline.

As part of the Environmental Study, Enbridge is in the process of contacting the following agencies:

- Indigenous and Northern Affairs Canada; and
- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

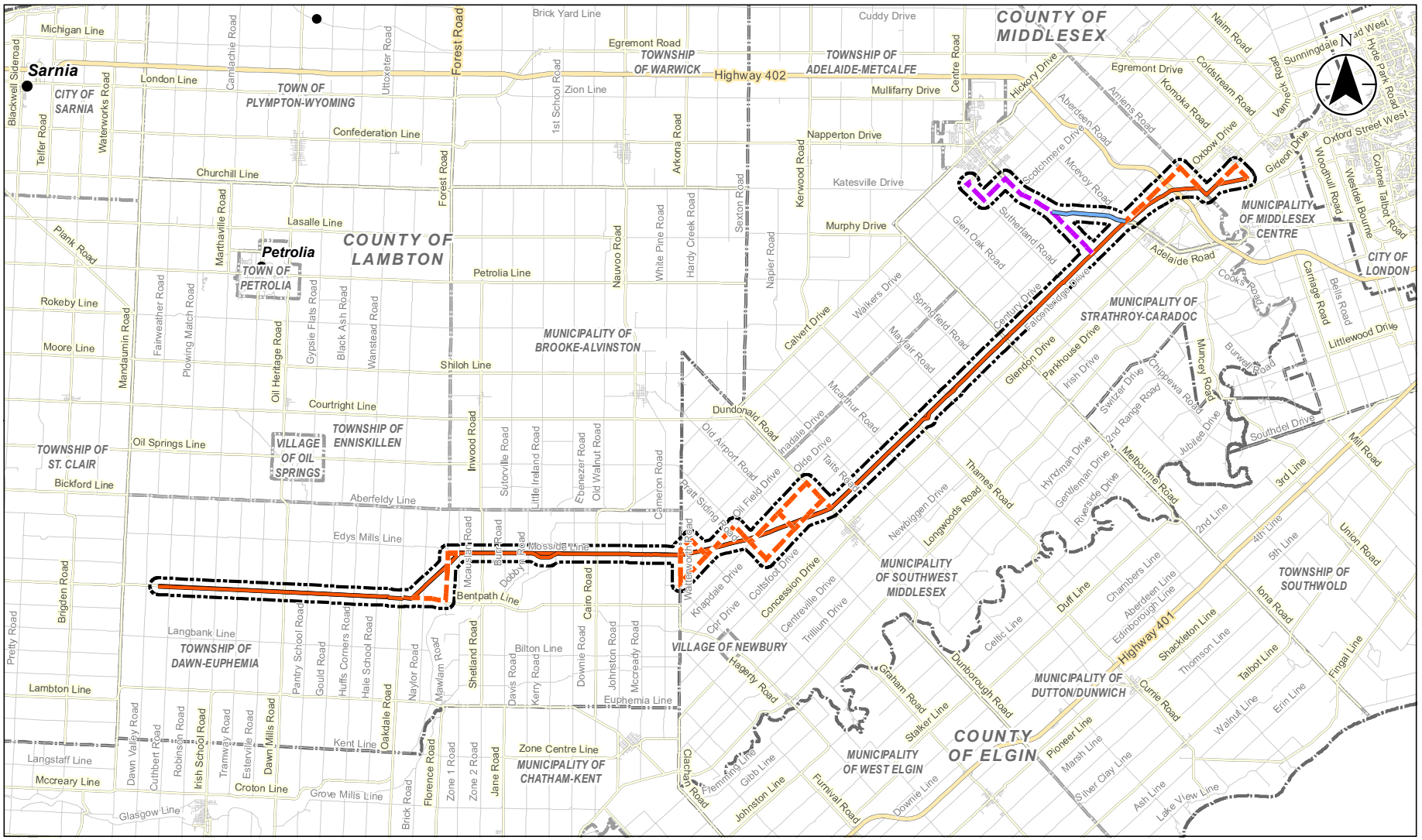
Regards,

ENBRIDGE GAS INC.

Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.



Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Study Area
- Municipal Boundary, Upper
- Municipal Boundary, Lower

0 7.5 15 Kilometres

1:350,000 (At original document size of 8.5x11)

Notes
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Project Location
Counties of Lambton and Middlesex, ON

160951031 REVA
Prepared by SPE on 2020-04-08

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From:	Hartwig, Emily
To:	Jason.henry@kettlepoint.org
Cc:	Ken.McCorkle@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; londonlines@stantec.com
Subject:	Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 8, 2020 6:50:00 PM
Attachments:	let_160951170_Indigenous_NoC-VOH_JHenry_2020-04-08_fnl.pdf

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Chief Jason Henry,
Chippewas of Kettle and Stony Point
6247 Indian Lane
Lambton Shores ON N0N 1J1

Dear Chief Henry,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

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- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

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www.solutions.ca/LondonLines

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If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

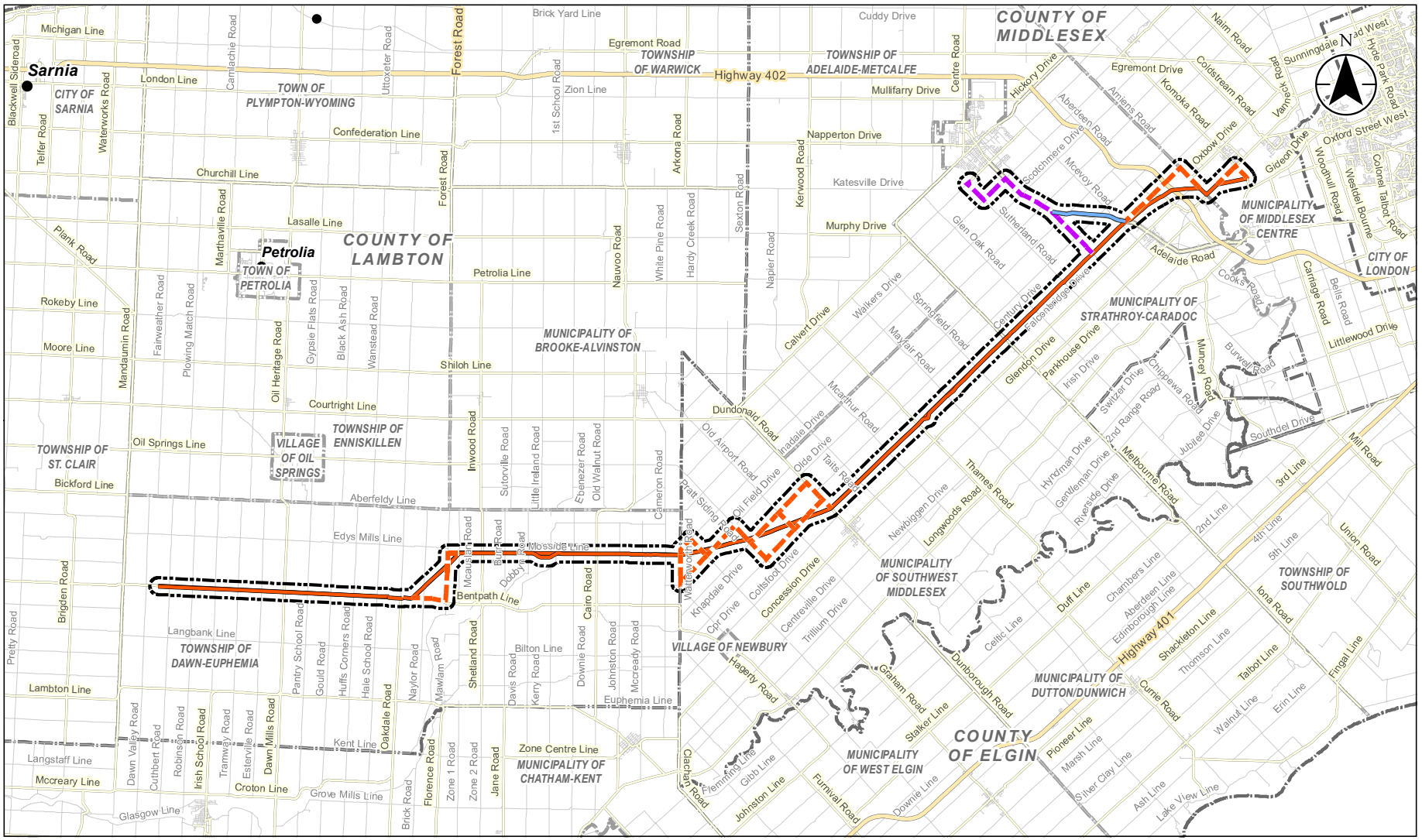
Regards,

ENBRIDGE GAS INC.

Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.



Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Study Area
- Municipal Boundary, Upper
- Municipal Boundary, Lower

0 7.5 15 Kilometres

1:350,000 (At original document size of 8.5x11)

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, 2018.

Stantec

Project Location
Counties of Lambton and Middlesex, ON

160951031 REVA
Prepared by SPE on 2020-04-08

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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\\Cd1215-f01\work_group\01609\Active\160951170\planning\03_data\gis_cad\gis\mxds\ap\consultation\landowner_notice\160951170_Fig01_Project_Map.mxd Revised: 2020-04-08 By: bcowper

From: Georgopoulos, Rooly
To: clint.couchie@kettlepoint.org
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 29, 2020 1:06:18 PM
Attachments: 51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

Stantec
300W-675 Cochrane Drive
Markham ON L3R 0B8

Stantec

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From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:51 AM
To: clint.couchie@kettlepoint.org
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:51 PM
To: clint.couchie@kettlepoint.org
Cc: Ken.McCorkle@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
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Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Chief Jason Henry,
Chippewas of Kettle and Stony Point
6247 Indian Lane
Lambton Shores ON N0N 1J1

Dear Chief Henry,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

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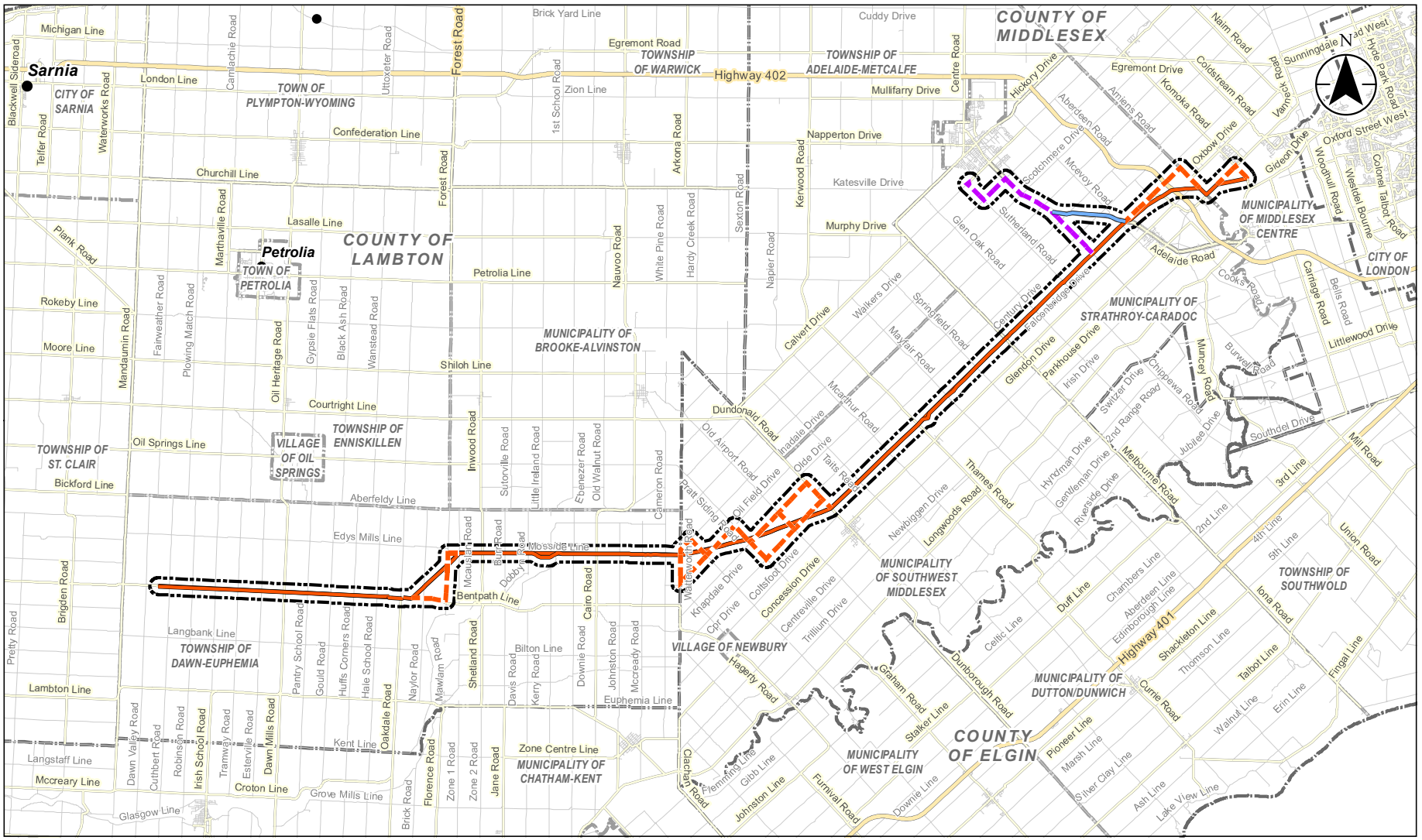

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From:	Georgopoulos, Rooly
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Cc:	Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 29, 2020 1:05:28 PM
Attachments:	51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

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Sent: Wednesday, April 29, 2020 11:41 AM
To: Jason.henry@kettlepoint.org
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London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

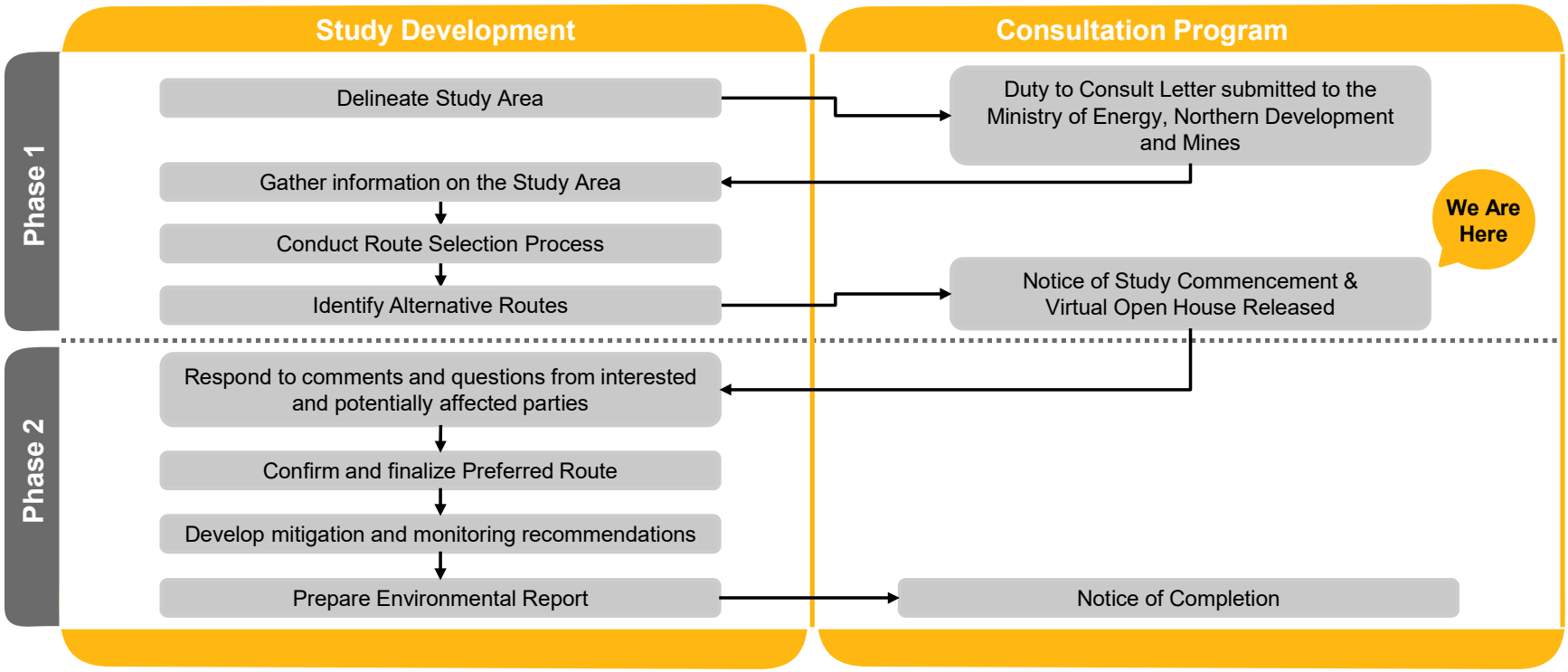
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
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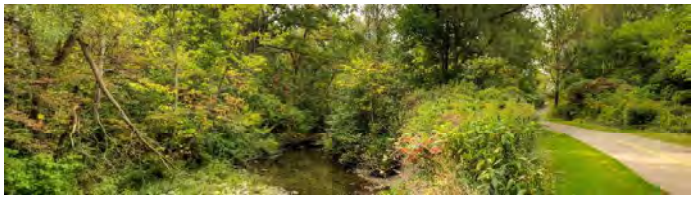
London Lines Replacement Project
Virtual Open House



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London Lines Replacement Project
Virtual Open House

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During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

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- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

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- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
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London Lines Replacement Project
Virtual Open House

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We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

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London Lines Replacement Project
Virtual Open House

Pipeline Construction

1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

2. **Clearing:** The clearing crew clears brush and other vegetation including the temporary work space to permit construction of the pipeline.

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4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

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London Lines Replacement Project
Virtual Open House

Next Steps

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- Start the environmental planning process

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London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
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Phone: (519) 780-8186
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Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
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Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From: Georgopoulos, Rooly
To: Valerie.George@kettlepoint.org
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 29, 2020 1:07:10 PM
Attachments: 51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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Stantec

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:50 AM
To: Valerie.George@kettlepoint.org
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good morning,

Please find attached the Virtual Open House Presentation Boards and associated script for the London Lines Replacement Project.

Regards,

Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:51 PM
To: Valerie.George@kettlepoint.org
Cc: Ken.McCorkle@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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Guelph ON N1G 4P5

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London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

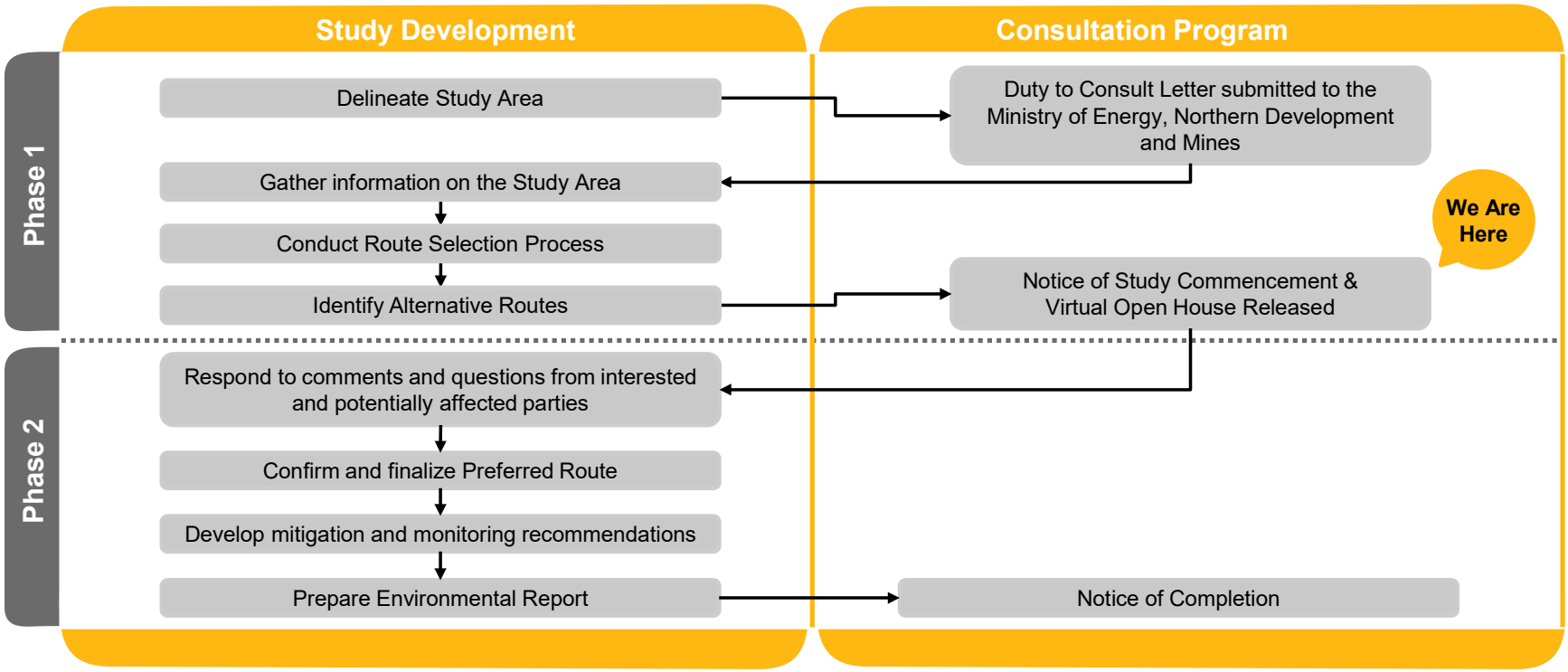
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

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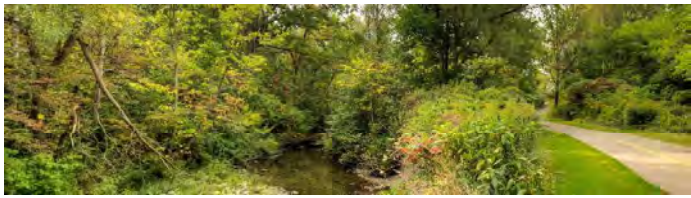

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London Lines Replacement Project
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London Lines Replacement Project
Virtual Open House

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Kelsey Mills
Environmental Advisor
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Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From: Lauren Whitwham
To: Valerie.George@kettlepoint.org
Cc: Ken McCorkle; LondonLines
Subject: Enbridge Gas London Lines Project: Open House and Alternative Route
Date: Friday, May 15, 2020 10:08:08 AM
Attachments: let_160951170_Kettle-and-Stony_Notice-of-Change_20200513_fnl.pdf

Good morning,

We hope this finds you and your family well.

I am following up with you on the Enbridge Gas London Lines Project on two topics.

First, we just wanted to follow up to confirm if you were able to access and view the VOH (Virtual Open House) for the London Lines Project? If you had any comments or would like more follow up please do not hesitate to contact us. We will be in contact with you regarding an opportunity for you to participate in monitoring on site for the Archaeological and Environmental surveys.

Secondly, I have attached a Notice of Project Change on the Enbridge Gas London Lines Project. For this Project, a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy.

Stantec is request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to them by May 29, 2020. The contact information for Stantec is also in the attachment.

If you have any questions or concerns about these two items, please feel free to reach out to Ken McCorkle or myself and we would be happy to assist.

We hope you enjoy the long weekend. Take care.

Many thanks,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Chippewas of Kettle and Stony Point First Nation
6247 Indian Lane
Lambton Shores, ON N0N 1J1

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Stantec

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From: Lauren Whitwham
To: jessica.hill@oneida.on.ca; environment@oneida.on.ca
Cc: Ken McCorkle; LondonLines
Subject: FW: Enbridge Gas London Lines Project
Date: Monday, March 9, 2020 2:08:43 PM
Attachments: London Lines map.pdf

Good afternoon,

Further to the email below, please find attached an updated map of the route for the Project.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From: Lauren Whitwham
Sent: Wednesday, February 26, 2020 2:55 PM
To: 'jessica.hill@oneida.on.ca' <jessica.hill@oneida.on.ca>; 'environment@oneida.on.ca' <environment@oneida.on.ca>
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>
Subject: Enbridge Gas London Lines Project

Good afternoon Chief Hill,

Please find attached our notification letter and map for the Enbridge Gas Inc. London Lines Project.

-
We would like to set up a time to come to speak with your environment/consultation committee to discuss the project and provide you with details. Please reach out to Ken McCorkle to arrange for a time for discussion.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham

Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

—

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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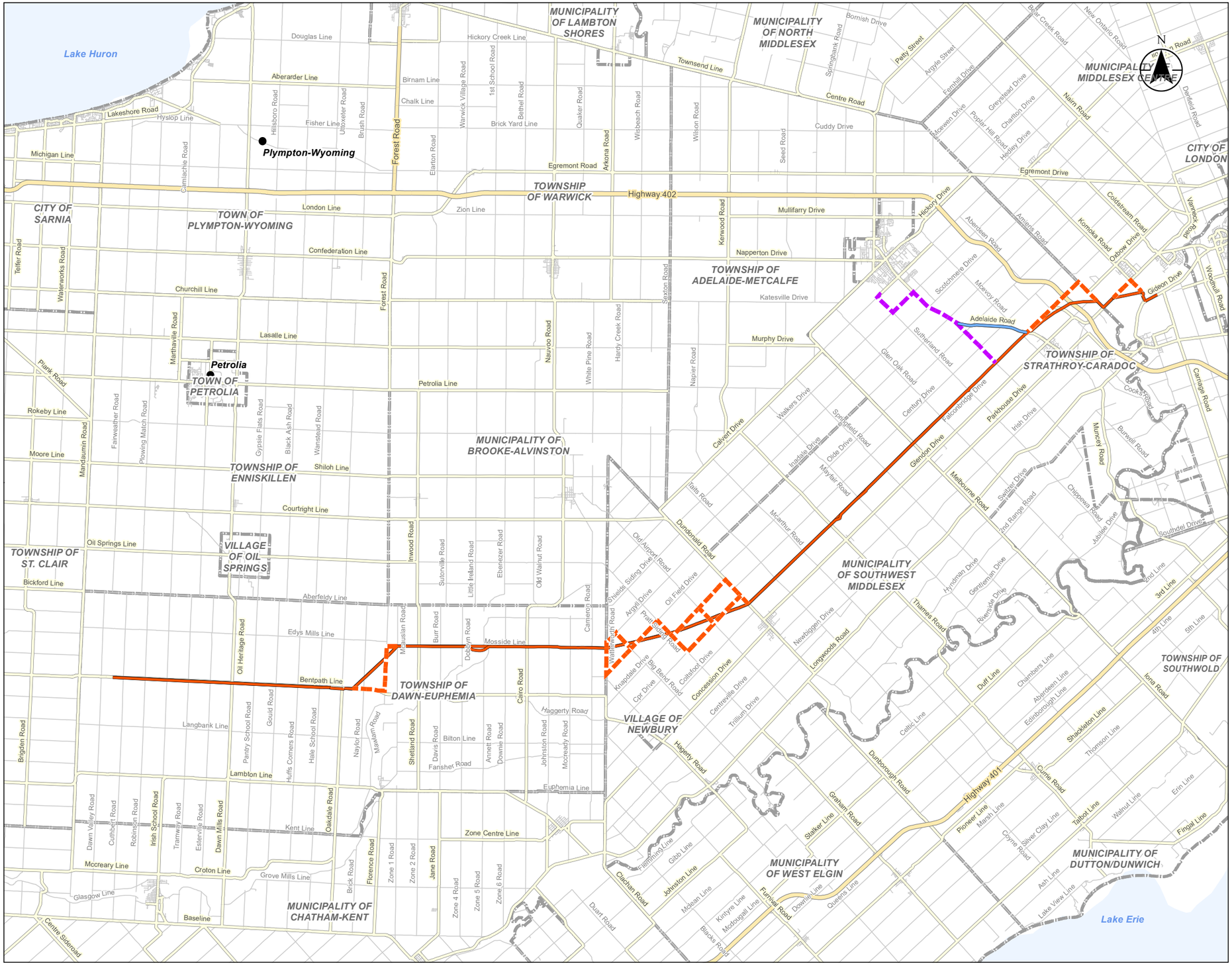

Stantec

Legend
- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-03-05

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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\\Cd1220-f01\work_group\01692\Active\160951031\planning\03_design\gis_cad\arcgis\client_deliverables\Report_Figures\PDC\160951031_Fig01_Routes.mxd Revised: 2020-03-05 By: jasmith

From:	Hartwig, Emily
To:	"jessica.hill@oneida.on.ca"
Cc:	"Ken.McCorkle@enbridge.com"; Georgopoulos, Rooly; "Kelsey.Mills@enbridge.com"; "londonlines@stantec.com"
Subject:	Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 8, 2020 6:51:00 PM
Attachments:	let_160951170_Indigenous_NoC-VOH_JHill_2020-04-08_fnl.pdf

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Chief Jessica Hill,
Oneida Nation of the Thames
2212 Elm Avenue
Southwold ON N0L 2G0

Dear Chief Hill,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. The general location and study area of the proposed pipeline is shown on the attached map.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Oneida Nation of the Thames is invited to provide comments regarding the proposed pipeline. Specifically, Stantec is seeking information about any adverse impacts that the proposed project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an Indigenous community with a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline.

As part of the Environmental Study, Enbridge is in the process of contacting the following agencies:

- Indigenous and Northern Affairs Canada; and
- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

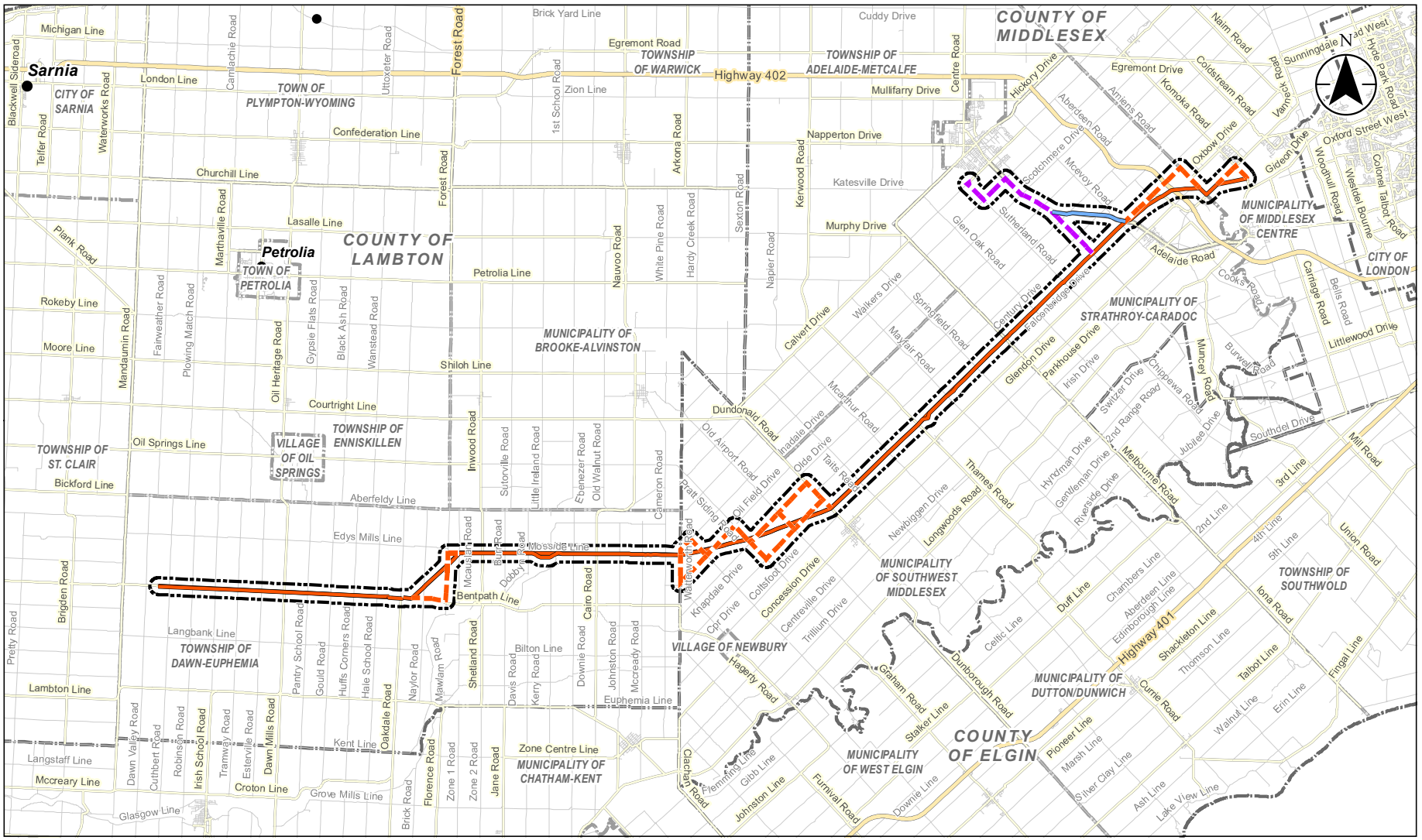
Regards,

ENBRIDGE GAS INC.

Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.



Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Study Area
- Municipal Boundary, Upper
- Municipal Boundary, Lower

0 7.5 15 Kilometres

1:350,000 (At original document size of 8.5x11)

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, 2018.

Stantec

Project Location
Counties of Lambton and Middlesex, ON

160951031 REVA
Prepared by SPE on 2020-04-08

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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\\Cd1215-f01\work_group\01609\Active\160951170\planning\03_data\gis_cad\gis\mxds\ap\consultation\landowner_notice\160951170_Fig01_Project_Map.mxd Revised: 2020-04-08 By: bcowper

From: Georgopoulos, Rooly
To: jessica.hill@oneida.on.ca
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date: Wednesday, April 29, 2020 1:10:40 PM
Attachments: 51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

Stantec
300W-675 Cochrane Drive
Markham ON L3R 0B8

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From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:47 AM
To: jessica.hill@oneida.on.ca
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good morning,

Please find attached the Virtual Open House Presentation Boards and associated script for the London Lines Replacement Project.

Regards,

Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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Markham ON L3R 0B8

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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:52 PM
To: jessica.hill@oneida.on.ca
Cc: Ken.McCorkle@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

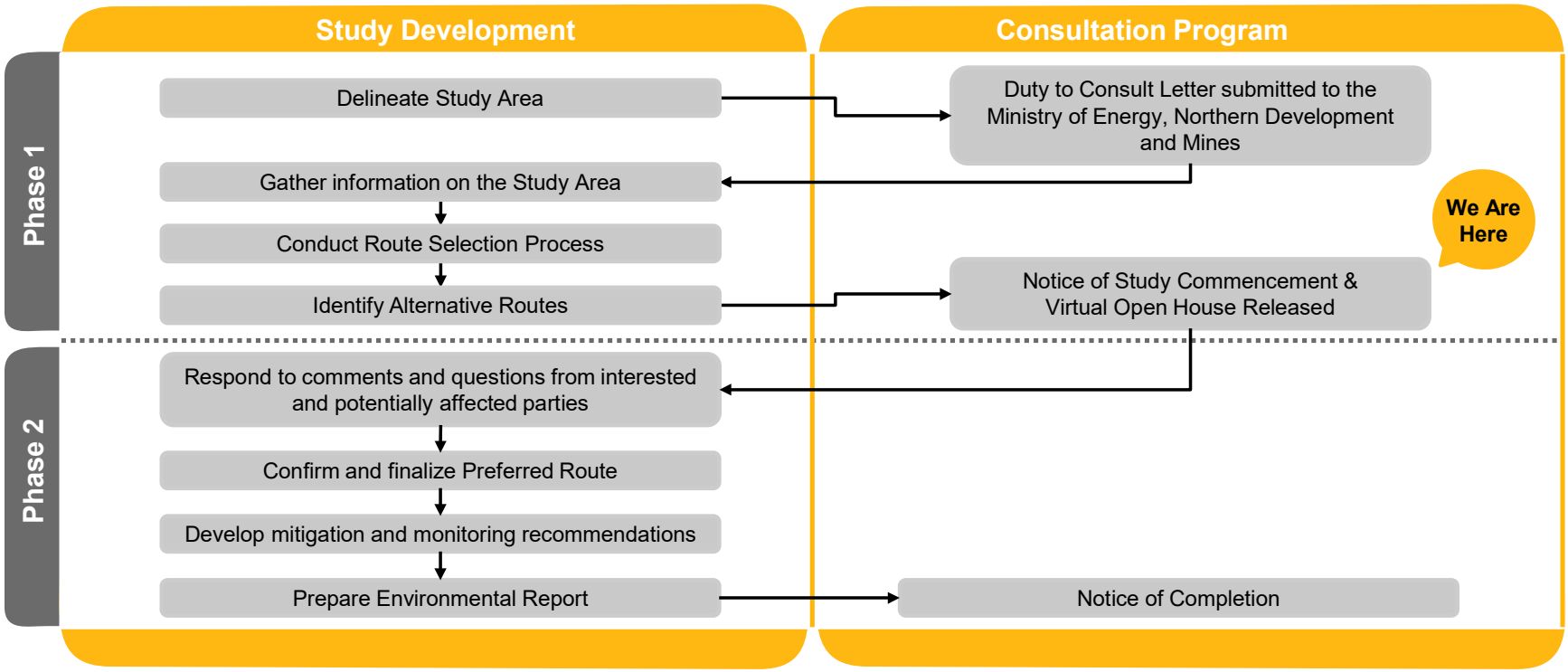
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

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Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
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Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
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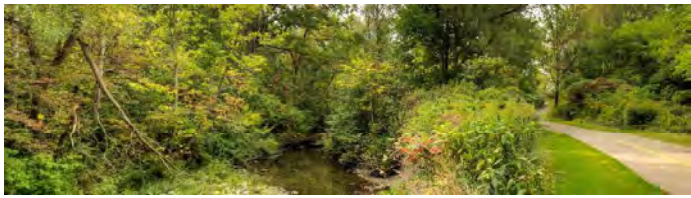
London Lines Replacement Project
Virtual Open House



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London Lines Replacement Project
Virtual Open House

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- Disturbance and/or mortality to local wildlife.

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- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
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London Lines Replacement Project
Virtual Open House

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1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

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London Lines Replacement Project
Virtual Open House

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- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
Phone: (519) 780-8186
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Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
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Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From:	Georgopoulos, Rooly
To:	environment@oneida.on.ca
Cc:	Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 29, 2020 1:11:25 PM
Attachments:	51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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Stantec

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:46 AM
To: environment@oneida.on.ca
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good morning,

Please find attached the Virtual Open House Presentation Boards and associated script for the London Lines Replacement Project.

Regards,

Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:52 PM
To: environment@oneida.on.ca
Cc: Ken.McCorkle@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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Guelph ON N1G 4P5

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London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

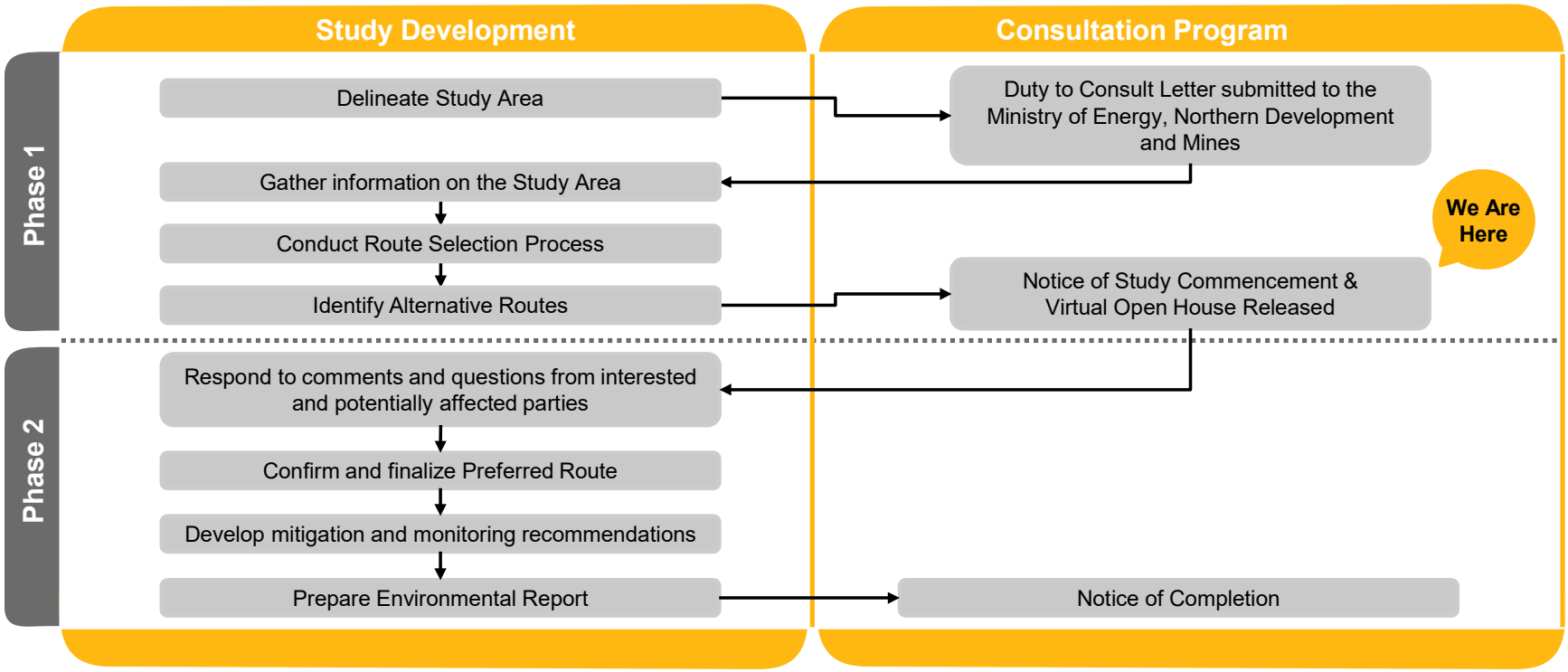
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
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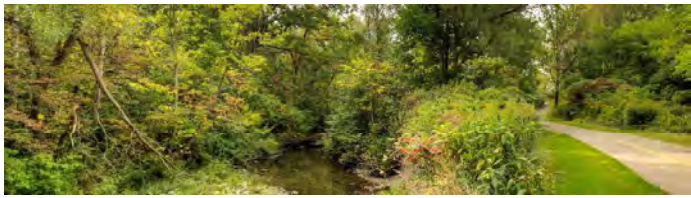

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London Lines Replacement Project
Virtual Open House

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London Lines Replacement Project
Virtual Open House

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Kelsey Mills
Environmental Advisor
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Phone: (519) 780-8186
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For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From: Lauren Whitwham
To: environment@oneida.on.ca
Cc: Ken McCorkle; LondonLines
Subject: Enbridge Gas London Lines Project: Open House and Alternative Route
Date: Friday, May 15, 2020 10:02:26 AM
Attachments: let_160951170_Oneida__Notice-of-Change_20200513_fnl.pdf

Good morning,

We hope this finds you and your family well.

I am following up with you on the Enbridge Gas London Lines Project on two topics.

First, we just wanted to follow up to confirm if you were able to access and view the VOH (Virtual Open House) for the London Lines Project? If you had any comments or would like more follow up please do not hesitate to contact us. We will be in contact with you regarding an opportunity for you to participate in monitoring on site for the Archaeological and Environmental surveys.

Secondly, I have attached a Notice of Project Change on the Enbridge Gas London Lines Project. For this Project, a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy.

Stantec is request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to them by May 29, 2020. The contact information for Stantec is also in the attachment.

If you have any questions or concerns about these two items, please feel free to reach out to Ken McCorkle or myself and we would be happy to assist.

We hope you enjoy the long weekend. Take care.

Many thanks,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Oneida Nation of the Thames
2212 Elm Avenue
Southwold, ON N0L 2G0

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Stantec

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From: Lauren Whitwham
To: dan.miskokomon@wifn.org
Cc: Ken McCorkle; LondonLines
Subject: FW: Enbridge Gas London Lines Project
Date: Monday, March 9, 2020 2:10:31 PM
Attachments: London Lines map.pdf

Good afternoon Chief Miskokoman,

Further to the email below, please find attached an updated map of the route for the Project.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

From: Lauren Whitwham
Sent: Wednesday, February 26, 2020 3:01 PM
To: 'dan.miskokomon@wifn.org' <dan.miskokomon@wifn.org>
Cc: Ken McCorkle <Ken.McCorkle@enbridge.com>
Subject: Enbridge Gas London Lines Project

Good afternoon Chief Miskokoman,

Please find attached our notification letter and map for the Enbridge Gas Inc. London Lines Project.

-
We would like to set up a time to come to speak with your environment/consultation committee to discuss the project and provide you with details. Please reach out to Ken McCorkle to arrange for a time for discussion.

We look forward to working with you on this project.

Thank you,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation

—

ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

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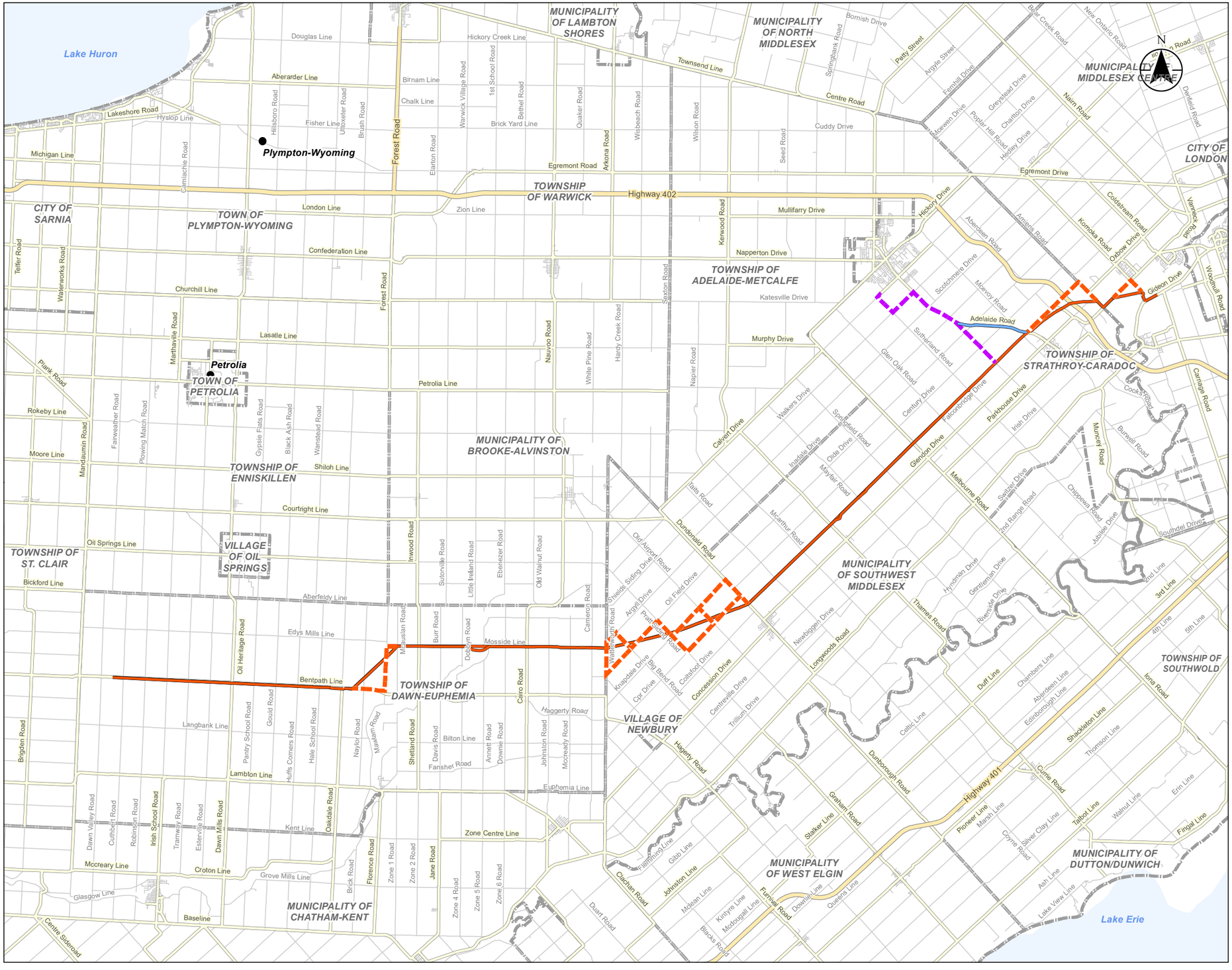

Stantec

Legend
- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
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Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-03-05

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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\\Cd1220-f01\work_group\01692\Active\160951031\planning\03_design\gis_cad\arcgis\client_deliverables\Report_Figures\PDC\160951031_Fig01_Routes.mxd Revised: 2020-03-05 By: jasmith

From:	Hartwig, Emily
To:	dan.miskokomon@wifn.org
Cc:	Ken.McCorkle@enbridge.com; Georgopoulos, Rooly; Kelsey.Mills@enbridge.com; londonlines@stantec.com
Subject:	Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 8, 2020 6:51:00 PM
Attachments:	let_160951170_Indigenous_NoC-VOH_DMiskokomon_2020-04-08_fnl.pdf

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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Stantec Consulting Ltd.
300W-675 Cochrane Drive Markham, ON L3R 0B8

April 8, 2020

Attention: Chief Dan Miskokomon,
Walpole Island First Nation
117 Tahghoning Road
Walpole Island ON N8A 4K9

Dear Chief Miskokomon,

Reference: Enbridge Gas – London Lines Replacement Project, Notice of Project Commencement and Virtual Open House

Enbridge Gas is proposing to replace a section of natural gas pipeline in order to improve the integrity of the pipeline network and to increase system flexibility. All current services will be maintained as a result of this project.

The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy. The LLRP will start within the Township of Dawn-Euphemia near Oil Heritage Road and Bentpath Lane. The pipeline project will continue through the municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre at Komoka Road and Glendon Drive; and at a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc. The general location and study area of the proposed pipeline is shown on the attached map.

As part of the planning process, Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by early summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

Walpole Island First Nation is invited to provide comments regarding the proposed pipeline. Specifically, Stantec is seeking information about any adverse impacts that the proposed project may have on constitutionally protected Aboriginal or treaty rights and any measures for mitigating those adverse impacts.

Stantec is presently compiling an environmental, socio-economic, and archaeological/cultural heritage inventory of the Environmental Study Area. As an Indigenous community with a potential interest in developments in that area, you are invited to provide or coordinate comments regarding the proposed pipeline.

As part of the Environmental Study, Enbridge is in the process of contacting the following agencies:

- Indigenous and Northern Affairs Canada; and
- Ontario Ministry of Indigenous Relations and Reconciliation.

Reference: Enbridge Gas Distribution Inc. – London Lines Replacement Project, Notice of Project Commencement and Information Session

Public consultation with Indigenous communities, landowners, government agencies, current customers serviced by the London Lines, the general public, and other interested persons is an integral component of the planning process. As a result of the social distancing requirements set out by the Government of Canada and the Province of Ontario due to **COVID-19**, a Virtual Open House will be held in place of an in-person Open House regarding the proposed LLRP. The Virtual Open House will be available beginning on **April 20, 2020** at 9:00 am EST until **May 1, 2020** at 5:00 pm EST at:

www.solutions.ca/LondonLines

If you are unable to log onto the Virtual Open House between April 20 and May 1, please dial (519) 780-8186, leave a message with your contact information, and we will respond as soon as possible.

There will be a questionnaire available at the end of the presentation and you will have the ability to submit comments and/or questions about the proposed LLRP, including proposed routes, design and the anticipated project schedule during the presentation. In addition, a copy of the open house story boards will be available to download. Input received will be used to inform the selection of the preferred pipeline route, and to develop site specific environmental protection or mitigation measures for the Project.

If you have questions or concerns regarding the Project, please do not hesitate to contact the undersigned.

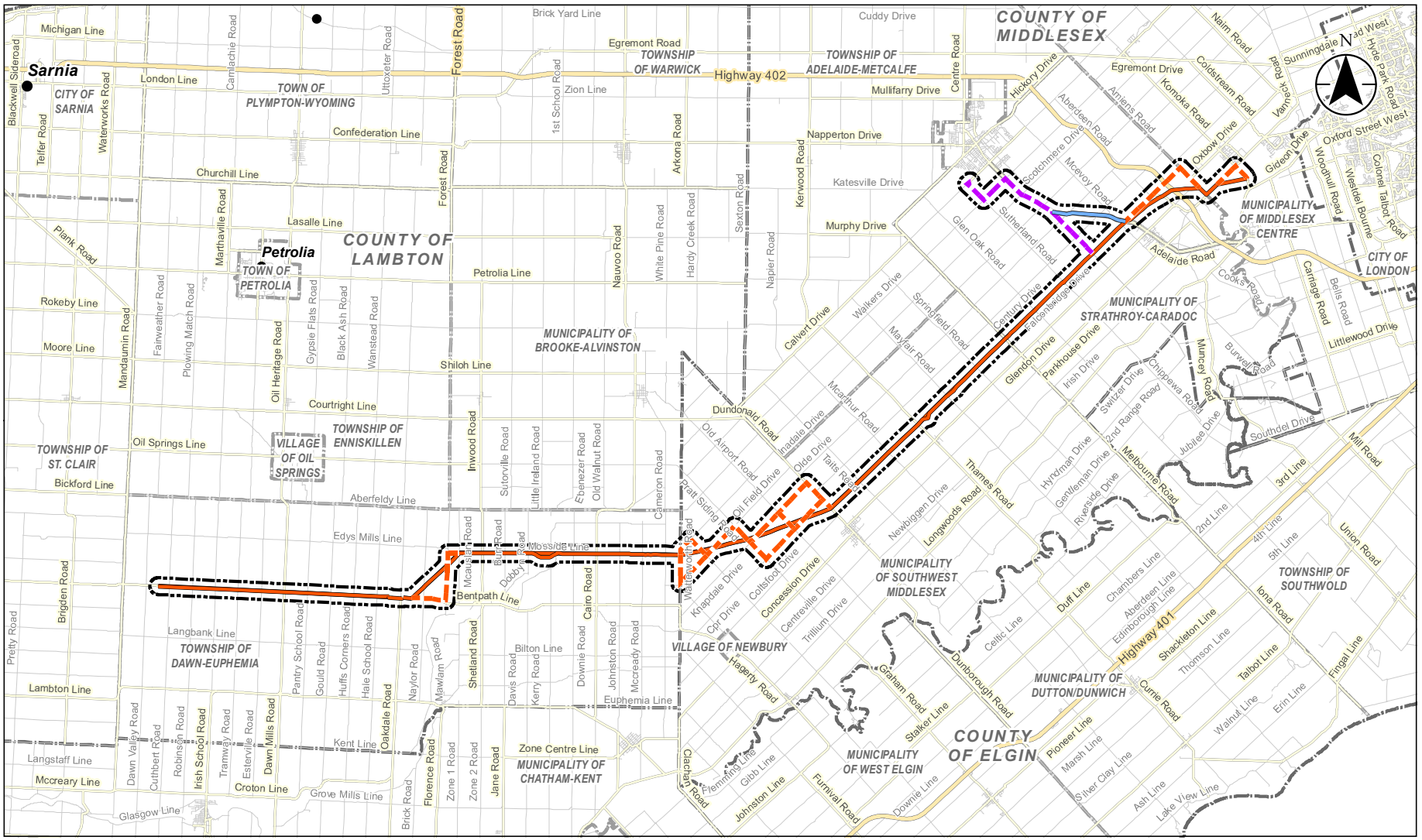
Regards,

ENBRIDGE GAS INC.

Ken McCorkle
Senior Advisor, Indigenous Affairs
Enbridge Gas Inc.
50 Keil Drive North
Chatham, ON, N7M 5M1
PH: 519-436-4600 ext. 5002243
Cell: 519-365-0584
Ken.Mccorkle@enbridge.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Sr. Environmental Analyst, Enbridge Gas Inc.
Rooly Georgopoulos, Senior Project Manager, Stantec Consulting Ltd.



Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Study Area
- Municipal Boundary, Upper
- Municipal Boundary, Lower

0 7.5 15 Kilometres

1:350,000 (At original document size of 8.5x11)

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, 2018.

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Project Location
Counties of Lambton and Middlesex, ON

160951031 REVA
Prepared by SPE on 2020-04-08

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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\\Cd1215-f01\work_group\01609\Active\160951170\planning\03_data\gis_cad\gis\mxds\ap\consultation\landowner_notice\160951170_Fig01_Project_Map.mxd Revised: 2020-04-08 By: bcowper

From:	Georgopoulos, Rooly
To:	Dean.Jacobs@wifn.org
Cc:	Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 29, 2020 1:14:55 PM
Attachments:	51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

Stantec
300W-675 Cochrane Drive
Markham ON L3R 0B8

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From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:42 AM
To: Dean.Jacobs@wifn.org
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good morning,

Please find attached the Virtual Open House Presentation Boards and associated script for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
Fax: 905-474-9889
rooly.georgopoulos@stantec.com

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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:52 PM
To: Dean.Jacobs@wifn.org
Cc: Ken.McCorkle@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

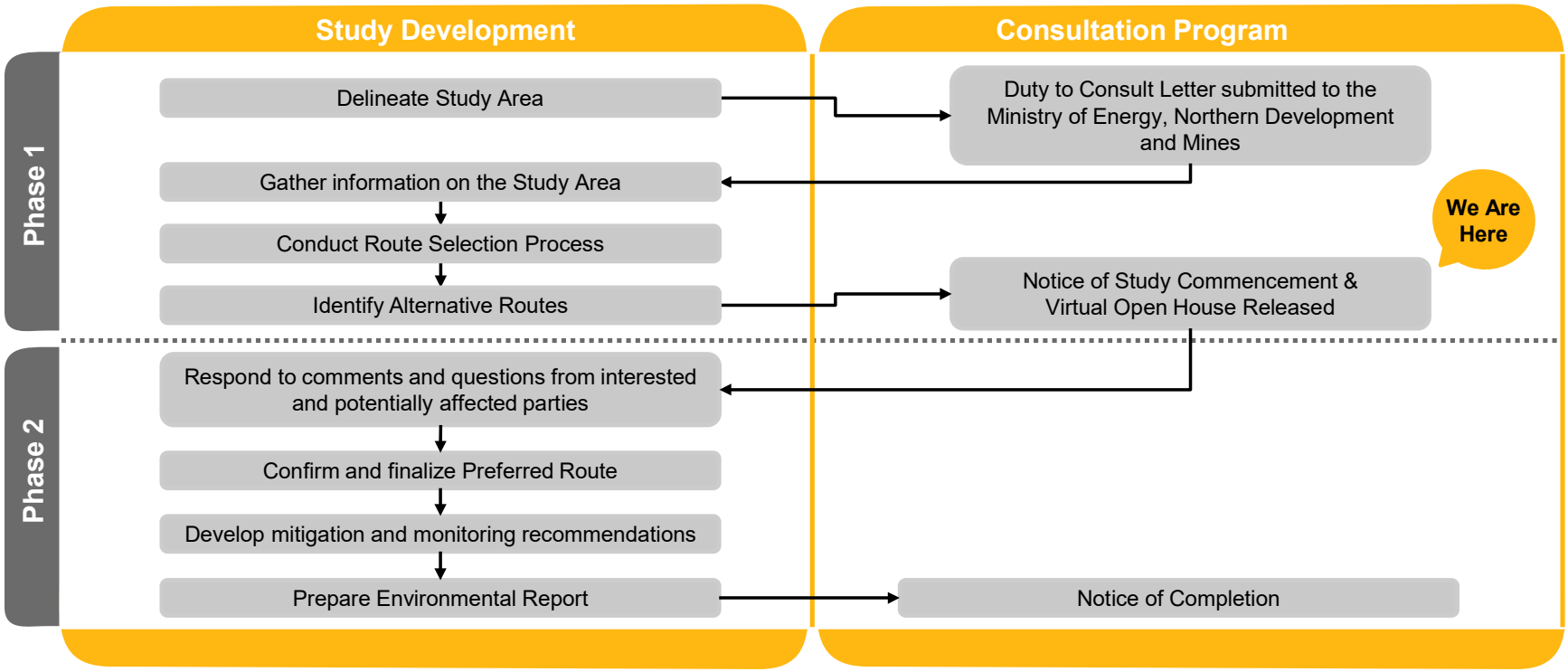
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

Socio-economic Features

The project will be constructed through road right of way, private business areas, agricultural and residential land, along with land regulated by both Canadian Pacific and Canadian National Railways, and land regulated by Hydro One, Lower Thames Valley Conservation Authority, St. Clair Region Conservation Authority, and Upper Thames River Conservation Authority.

Potential Effects

- Temporary increases in noise, dust and air emissions.
- Increased construction traffic volumes.
- Temporary impairment of the use and enjoyment of property.
- Vegetation clearing along the pipeline easement.

Example Mitigation Measures

- Provide access across the construction area.
- Restrict construction to daylight hours and adhere to applicable noise by-laws.
- Develop and implement a Traffic Control Plan.
- Place fencing at appropriate locations for safety.
- Implement a water well monitoring program.
- Making contact information for a designated Enbridge Gas representative available prior to and throughout construction.
- Dust control measures.
- Re-vegetation of cleared areas (seeding/planting).

London Lines Replacement Project
Virtual Open House

Aquatic Resources

Enbridge understands the importance of protecting wildlife during construction and therefore will implement recognized mitigation measures to minimize possible environmental effects.

Potential Effects

- Disruption and alteration to aquatic species and habitat and/or nuisance effects.
- Increased erosion, sedimentation, and turbidity resulting from removal of vegetation.

Example Mitigation Measures

- Conduct surveys of waterbodies.
- Obtain all agency permits and approvals.
- Limit in-channel construction, where possible, and conform to fish timing window guidelines.
- For in-channel construction, protect aquatic species and manage sedimentation and turbidity.
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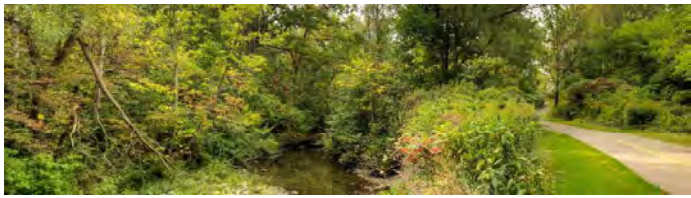
London Lines Replacement Project
Virtual Open House



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- Damage or destruction of archaeological, paleontological or historical resources.

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- Cultural heritage assessment (for built heritage features and cultural heritage landscapes) of the construction right-of-way, with review and comment from MHSTCI.
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London Lines Replacement Project
Virtual Open House

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During the course of construction, natural heritage features such as wildlife habitat and vegetated/wooded areas will need to be crossed.

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- Damage or removal of vegetation and wildlife habitat adjacent to the construction area.
- Disturbance and/or mortality to local wildlife.

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- Conduct surveys (including Species at Risk surveys) in advance of construction to determine opportunities for wildlife habitat to exist.
- Clearly mark the construction area to avoid accidental damage.
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London Lines Replacement Project
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We take many steps to ensure safe, reliable operation of our network of natural gas pipelines, such as:

- Design, construct, and test our pipelines to meet or exceed requirements set by industry standards and regulatory authorities,
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- Perform regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

London Lines Replacement Project
Virtual Open House

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1. **Site Preparation:** The first crew to enter the construction site is typically the survey and staking crew who delineate the boundaries of the construction area. When required safety fence is installed at the edge of the construction area where public safety considerations are necessary, and aspects of the traffic management plan are implemented (i.e., signs, vehicle access).

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4. **Stringing:** The stringing crew lays pipe on wooden skids or boxes adjacent to the trench area.

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London Lines Replacement Project
Virtual Open House

Next Steps

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Winter
- Start the environmental planning process

Spring/Summer/Fall
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- Complete Environmental Report
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Spring
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2022

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- Pipeline in service
- Site cleanup and restoration and post-construction monitoring

London Lines Replacement Project
Virtual Open House

Thank-you!

On behalf of the Project team, thank-you for listening to the Virtual Open House presentation. Please complete the Questionnaire, located in the Resources Tab.

Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
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Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300-675 Cochrane Drive, West Tower
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Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From:	Georgopoulos, Rooly
To:	Janet.macbeth@wifn.org
Cc:	Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines; Hartwig, Emily; Lauren Whitwham
Subject:	RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)
Date:	Wednesday, April 29, 2020 1:15:43 PM
Attachments:	51170_LLRP-Virtual-Open-House_20200416_fnl.pdf

Good afternoon, I apologize for the multiple emails, but it has been brought to my attention that the Virtual Open House Presentation Boards that I attached to my last email could not be opened. Please see attached updated version of the Virtual Open House Presentation Boards for the London Lines Replacement Project.

Regards,
Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
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Stantec

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

From: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Sent: Wednesday, April 29, 2020 11:42 AM
To: Janet.macbeth@wifn.org
Cc: Ken.McCorkle@enbridge.com; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>; Hartwig, Emily <Emily.Hartwig@stantec.com>; Lauren Whitwham <Lauren.Whitwham@enbridge.com>
Subject: RE: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good morning,

Please find attached the Virtual Open House Presentation Boards and associated script for the London Lines Replacement Project.

Regards,

Rooly

Rooly Georgopoulos B.Sc.,
Senior Associate

Direct: 905-415-6367
Mobile: 416-729-2300
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From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: Wednesday, April 8, 2020 6:53 PM
To: Janet.macbeth@wifn.org
Cc: Ken.McCorkle@enbridge.com; Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>; Kelsey.Mills@enbridge.com; LondonLines <LondonLines@stantec.com>
Subject: Enbridge Gas Inc.: Notice of Commencement and Virtual Open House - London Lines Replacement Project (LLRP)

Sent on behalf of Ken McCorkle (Enbridge Gas Inc.)

Good evening,

Please find attached a Notice of Commencement and Virtual Open House regarding the Enbridge Gas Inc. (“Enbridge”) London Lines Replacement Project (LLRP).

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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Guelph ON N1G 4P5

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London Lines Replacement Project
Virtual Open House

Welcome

- Press the next button to navigate to the next slide at any time.
- To return to the previous slide, press the previous button.
- You can mute the audio at any time by pressing the speaker icon.
- The presentation slides as well as the audio script are available for download (see the Resources tab in the top right corner).
- Questions and comments can be submitted using the questionnaire (see the Resources tab).
- If you would like to receive future Project updates, please complete the “Contact Information" section of the questionnaire.

Our commitment

- Enbridge is committed to involving community members
- We will provide up-to-date information in an open, honest and respectful manner, and will carefully consider your input.
- Enbridge provides safe and reliable delivery of natural gas to more than 3.7 million residential, commercial, and industrial customers across Ontario.
- Enbridge is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Project Overview

- Approximately 75 kilometers (km) of 8-inch, high pressure, steel, natural gas pipeline, and a secondary 10.5 km, 8-inch pipeline to connect the Town of Strathroy.
- Will replace the two current pipelines known collectively as the London Lines.
- Start within the Township of Dawn-Euphemia and will continue through the Municipality of Southwest Middlesex and will end at two locations: within the Municipality of Middlesex Centre; and at a proposed new station in the Municipality of Strathroy-Caradoc.
- If approved by the Ontario Energy Board (OEB), construction of the proposed pipeline is planned to begin as early as spring 2021 and be in service by the end of 2021.

London Lines Replacement Project
Virtual Open House

Purpose of the Virtual Open House

- Provide a safe alternative to an in-person meeting due to current social distancing requirements set out by the Province of Ontario and the Government of Canada.
- Consult with Indigenous communities, the public, and regulatory authorities regarding the proposed Preferred Route, and potential impacts.
- Provide an opportunity for these individuals and any affected landowners and the general public to review the proposed Project, and to ask any questions and/or provide comments to representatives from Enbridge and Stantec.

London Lines Replacement Project
Virtual Open House

Environmental Study Process

The environmental study and Environmental Report will be completed as per the OEB's *"Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario (2016)."*

The study will:

- Undertake consultation to understand the views of interested and potentially affected parties.
- Consult with Indigenous communities to understand interests and potential impacts.
- Be conducted during the earliest phase of the Project.
- Identify potential impacts of the Project.
- Develop environmental mitigation and protective measures to avoid or minimize potential impacts.
- Develop an appropriate environmental inspection, monitoring and follow-up program.

London Lines Replacement Project
Virtual Open House

Ontario Energy Board (OEB) Review and Approval Process

The application to the OEB will include information on the Project including:

- The need for the Project
- Environmental Report and mitigation measures
- Facility alternatives
- Project costs and economics
- Pipeline design and construction
- Land requirements
- Consultation with Indigenous Communities

The OEB will then hold a public hearing to review the Project.

If the OEB determines that the Project is in the public interest it will approve construction of the Project.

Additional information about the OEB process can be found at:
www.ontarioenergyboard.ca

London Lines Replacement Project
Virtual Open House

Preferred Route selection process

The Preferred Route for the proposed pipeline will be selected through a five-step process.

Step 1

Develop Routing Parameters
a. Establish a study area.
b. Establish routing objectives.
   i. Follow a reasonably direct path between start and end points.
   ii. Avoid sensitive environmental and socio-economic features.
   iii. Use existing linear features.
   iv. Follow existing lot and property lines.
c. Create an inventory of environmental and socio-economic features.

Step 2

Identify Alternative Routes in the Study Area
Identify reasonable and feasible routes within the study area in consideration of the routing objectives and environmental and socio-economic opportunities and constraints.

Step 3

Route Evaluation
An evaluation of the Alternative Routes will be conducted based on:
a. A quantitative comparative evaluation of impacts to environmental and socio-economic features.
b. A qualitative comparative evaluation.

Step 4

Input on the Alternative Routes
Gather input on the Alternative Routes.

We are Here

Step 5

Confirmation of the Preferred Route
A Preferred Route will be confirmed following consultation with landowners and other affected parties. The location of the Preferred Route may be refined as the Project moves forward based on pre-construction field investigations, landowner requests and/or engineering and construction considerations.

London Lines Replacement Project
Virtual Open House

Route Evaluation Methodology

- Study Area pipeline routing constraints include natural heritage features, slope, topography, and socio-economic features and landscapes.
- A GIS routing exercise was undertaken that examined all mapped routing constraints and opportunities to generate alternative segments.
- The alternative segments follow existing linear infrastructure such as road easements and avoid, to the extent possible, existing environmental and socio-economic features.

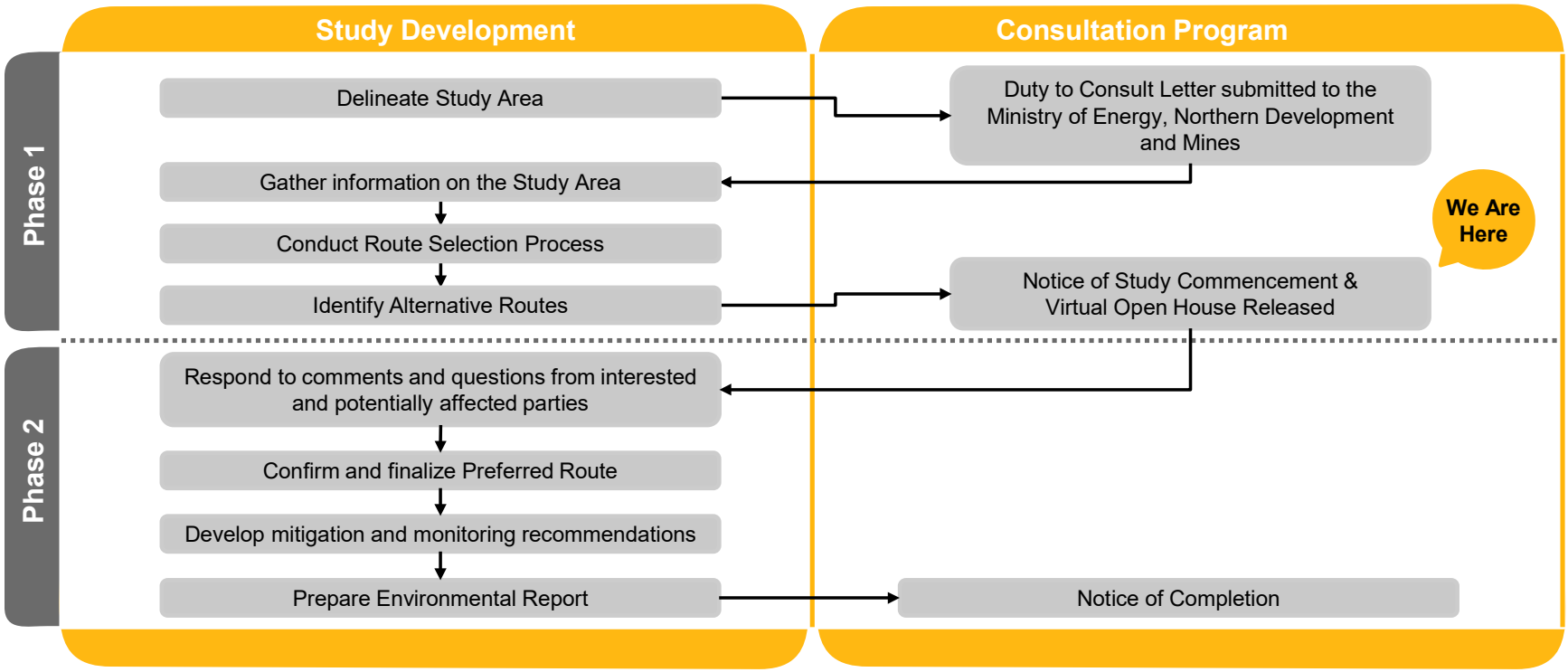
An interactive map that shows the entire proposed Route and the alternative segments can be accessed at:
https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976

London Lines Replacement Project
Virtual Open House

Consultation

- Consultation is a key component of the Environmental Report.
- The consultation program helps identify and address stakeholder concerns and issues, provides information about the Project to the stakeholders, and allow for participation in the Project review and development process.
- Input will be used to help finalize the preferred pipeline route and mitigation plans for the project.
- Once the Leave-to-Construct (LTC) application is made to the OEB, any party with an interest in the Project, including members of the public, can participate in the process.

London Lines Replacement Project
Virtual Open House



Environmental Study Process

London Lines Replacement Project
Virtual Open House

Indigenous People Policy

Enbridge recognizes the diversity of Indigenous peoples who live where we work and operate. We understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge recognizes and realizes the importance of reconciliation between Indigenous communities and the broader society. Positive relationships with Indigenous peoples, based on mutual respect and focused on achieving common goals, will create positive outcomes for Indigenous communities. Enbridge commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge conducts business. To achieve this, Enbridge will govern itself by the following principles:

- We recognize the legal and constitutional rights possessed by Indigenous peoples, and the importance of the relationship between Indigenous Peoples and their traditional lands and resources. We commit to working with Indigenous communities in a manner that recognizes and respects those legal and constitutional rights and the traditional lands and resources to which they apply. We commit to ensuring that our projects and operations are carried out in an environmentally responsible manner.
- We understand the importance of the United Nations Declaration on the Rights of Indigenous Peoples in the context of existing Canadian law and the commitments that the government has made to protecting the rights of Indigenous Peoples.
- We engage in forthright and sincere consultation with Indigenous Peoples about Enbridge's projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement help define our projects that may occur on lands traditionally occupied by Indigenous Peoples.
- We commit to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge's projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.
- We foster understanding of the history and culture of Indigenous Peoples among Enbridge's employees and contractors, in order to create better relationships between Enbridge and Indigenous communities.

This commitment is a shared responsibility involving Enbridge and its affiliates, employees and contractors. We will conduct business in a manner that reflects the above principles. Enbridge will provide ongoing leadership and resources to effectively implement the above principles, including the development of implementation strategies and specific action plans. Enbridge commits to
periodically review this policy so that it remains relevant and respects Indigenous culture and varied traditions.

London Lines Replacement Project
Virtual Open House

Environment, Health and Safety Policy

Our commitment

- Enbridge is committed to protecting the health and safety of all individuals affected by our activities.
- Enbridge will provide a safe and healthy working environment and will not compromise the health and safety of any individual.
- Our goal is to have no incidents and mitigate impacts on the environment by working with our stakeholders, peers and others to promote responsible environmental practices and continuous improvement.
- Enbridge is committed to environmental protection and stewardship and we recognize that pollution prevention, biodiversity and resource conservation are key to a sustainable environment.
- All employees are responsible and accountable for contributing to a safe working environment, for fostering safe working attitudes, and for operating in an environmentally responsible manner.

London Lines Replacement Project
Virtual Open House

Access and Land Requirements

- Once a preferred route is selected, an Enbridge Land Agent will begin discussions with landowners for the appropriate land rights necessary for the construction, decommission and/or removal of the pipeline.
- Enbridge is committed to working with all directly affected landowners in anticipation of acquiring early access agreements in order to gather essential information, including but not limited to, land survey data, environmental, archaeological and property site features, along with negotiating the necessary land rights.
- These land rights will consist of permanent easements and/or temporary land rights. The temporary land rights are only required during project construction activities.
- Enbridge will ensure that a Land Agent is available to each landowner during all pipeline construction activities.
- The Land Agent will keep all landowners informed of the progress of the project and assist with any concerns that may arise as a result of the construction activities.

London Lines Replacement Project
Virtual Open House

Agricultural Soils

Enbridge has established and tested measures to preserve the integrity of agricultural soils throughout the construction phase:

- A third-party soils specialist will determine topsoil depth prior to stripping and supervise activities so the proper depth of topsoil is removed and replaced.
- Topsoil will be stripped from the right-of-way and other work areas and stockpiled along the right-of-way. A separation will be maintained between topsoil and subsoil.
- Enbridge Gas will implement a wet soil shutdown protocol on agricultural lands to minimize soil structure damage.
- The subsoil on the stripped portion of the right-of-way will be chisel ploughed or sub-soiled during cleanup activities to alleviate compaction.
- Any agricultural drainage systems impacted by construction will be repaired.
- Enbridge Gas will develop and implement a sampling program on agricultural easements along the pipeline route for potential pests and/or diseases that are known to the area, where appropriate.
- The entire outside boundaries of the work space necessary for construction of the project will be staked at regular intervals.
- A post-construction cover crop program will be available to landowners.

London Lines Replacement Project
Virtual Open House

Maintaining Agricultural Drainage Systems

- Landowners will be contacted prior to construction to confirm the location and type of existing drains. Any future drainage plans will also be discussed with the landowner.
- Field tile will be temporarily re-routed during pre-construction activities where required to ensure proper drainage during construction.
- Damaged and severed drains will be repaired following construction. After repair and prior to backfilling, landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge Gas as required.

London Lines Replacement Project
Virtual Open House

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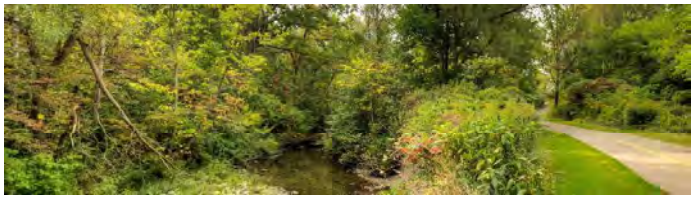

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London Lines Replacement Project
Virtual Open House

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London Lines Replacement Project
Virtual Open House

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Kelsey Mills
Environmental Advisor
Enbridge Gas Inc.
101 Honda Boulevard
Markham, ON L6C 0M6
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Phone: (519) 780-8186
Email: LondonLines@Stantec.com

For more information about the proposed project, please visit our project website at: https://www.enbridgegas.com/About-Us under “Projects”

From: Lauren Whitwham
To: dan.miskokomon@wifn.org; Janet Macbeth; Dean Jacobs
Cc: Ken McCorkle; LondonLines
Subject: Enbridge Gas London Lines Project: Open House and Alternative Route
Date: Friday, May 15, 2020 10:07:32 AM
Attachments: let_160951170_Walpole_Notice-of-Change_20200513_fnl.pdf

Good morning,

We hope this finds you and your family well.

I am following up with you on the Enbridge Gas London Lines Project on two topics.

First, we just wanted to follow up to confirm if you were able to access and view the VOH (Virtual Open House) for the London Lines Project? If you had any comments or would like more follow up please do not hesitate to contact us. We will be in contact with you regarding an opportunity for you to participate in monitoring on site for the Archaeological and Environmental surveys.

Secondly, I have attached a Notice of Project Change on the Enbridge Gas London Lines Project. For this Project, a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy.

Stantec is request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to them by May 29, 2020. The contact information for Stantec is also in the attachment.

If you have any questions or concerns about these two items, please feel free to reach out to Ken McCorkle or myself and we would be happy to assist.

We hope you enjoy the long weekend. Take care.

Many thanks,
Lauren

Lauren Whitwham
Analyst, Indigenous, Municipal Affairs & Stakeholder Relation
—
ENBRIDGE GAS INC.
TEL: 519-667-4100 x 5153545 | CELL: 519-852-3474 | lauren.whitwham@enbridge.com
109 Commissioners Road West, London, ON N6A4P1

Safety. Integrity. Respect.

Stantec Consulting Ltd.
300W-675 Cochrane Drive, Markham ON L3R 0B8

May 13, 2020

Walpole Island First Nation
117 Tahghoning Road
Walpole Island, ON N8A 4K9

Dear Sir/Madam,

Reference: Enbridge Gas Inc. – London Lines Replacement Project: Notice of Project Change

Enbridge Gas Inc. (Enbridge) is proposing to replace a section of natural gas pipeline known as the London Lines in order to improve the integrity of the pipeline network and to increase system flexibility, as indicated in Enbridge's notification on April 8, 2020. The London Lines Replacement Project (LLRP) will include the construction of approximately 75 kilometers (km) of 8-inch, high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of approximately 10.5 km of a secondary 8-inch pipeline which will connect the replaced pipeline to the community of Strathroy.

You are receiving this letter because a third and fourth alternate route have been identified and included for consideration ("Strathroy Alternate 3" and "Strathroy Alternate 4") for the secondary pipeline to the community of Strathroy. For more details, please refer to the attached map.

As part of the planning process, Enbridge has retained Stantec Consulting Ltd. (Stantec) to undertake an Environmental Study of the construction and operation for the proposed natural gas pipeline. The Environmental Study will fulfill the requirements of the Ontario Energy Board's (OEB) "Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (2016)".

An Environmental Report, summarizing the results of the Environmental Study, will accompany Enbridge's application to the OEB as part of their Leave to Construct (LTC) application. The Environmental Report for the proposed project is anticipated to be completed by summer 2020. The OEB's review and approval is required before construction of the Project can proceed. If approved, construction of the pipeline is anticipated to begin in Spring/Summer 2021.

We request that any questions and/or comments regarding the Notice of Project Change or the proposed project be sent to the following contacts by May 29, 2020.

Yours truly,

Stantec Consulting Ltd.

Rooly Georgopoulos B.Sc.
Senior Associate, Senior Project Manager
Phone: (519) 780-8186
LondonLines@stantec.com

Attachment: Figure 1: London Lines Replacement Project

c. Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.

Stantec

Legend

- Existing / Alternative Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Strathroy Alternatives Buffer 500m
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Lower

0 2 4 6 8 10 12 km

1:250,000 (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, 2020.

Project Location
Counties of Lambton and Middlesex

160951031 REV4
Prepared by SPE on 2020-05-12

Client/Project
ENBRIDGE GAS INC.

Figure No.
1

Title
London Lines Replacement Project

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From: Donna Wilson
To: Chris T[redacted]
Cc: LondonLines; Kelsey Mills
Subject: Re: [External] LLRP
Date: Monday, April 13, 2020 4:18:41 PM

Hello Ruth,

How are you? I hope you and your family are well, healthy and safe!

Thank you for reaching out to the team with your question. I have been told the project is not planned to intersect with your properties.

If there are other questions please let us know.

Thank you.
Donna Wilson
Land Advisor, Lands & ROW

Get Outlook for iOS

From: Chris T[redacted]
Sent: Thursday, April 9, 2020 9:11 PM
To: LondonLines@stantec.com
Cc: Donna Wilson
Subject: [External] LLRP

EXTERNAL: PLEASE PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe.

Deer: Kelsey Mills or Rooly Georgopoulos
My name is Ruth T[redacted] and I own[redacted] Co. and[redacted] Co. I am looking to confirm whether or not the LLRP line will affect either or both of the properties I own at[redacted] Ivan Drive Lobo Township Middlesex Center or[redacted] Coldstream Road Lobo Township Middlesex Center? The map that I have seen doesn't extend far enough to provide an answer for either of these properties. I look forward to hearing from you shortly on this matter.
Sincerely,
Ruth T[redacted]
[redacted]
H#[redacted]
C#[redacted]

CONTACT RECORD

NAME(S):	Dan B.	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/16/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP.

Stantec returned the call. The landowner owns a farm on Cooks Road and had received the mailed-out letter. Noted that he and several of his neighbors who also have farms would like access to natural gas and have been requesting it for a year or so. Directed to watch the Virtual Open House between April 20th and May 1st for more information on the Environmental Report part of the Project.

CONTACT RECORD

NAME(S):	Rob D.	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/16/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP.

Enbridge returned the call on April 27, 2020. Landowner asked if the route was located on Century Road or if was on Falconbridge Drive. Enbridge confirmed that the route alternative is on Falconbridge Drive, and noted that feedback is currently being received on the route.

From: Alex M[redacted]
To: Hartwig, Emily
Subject: Re: London Lines Replacement Project
Date: Monday, April 27, 2020 12:15:36 PM

Thank you Emily.

On Apr 27, 2020, at 10:22 AM, Hartwig, Emily <Emily.Hartwig@stantec.com> wrote:

Good morning Ms. M[redacted],

My apologies for the delayed response. Please follow the steps below to access the interactive map for the London Lines Replacement Project:

1. Open the weblink to the interactive map: https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f598206747f7665976
2. Type your address directly into the search bar in the top left corner
3. Click on the magnifying glass icon
4. The map should zoom to the location you have typed in.

If you have any trouble accessing the interactive map, or you have any further questions or concerns please do not hesitate to reach out.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Alex M[redacted]
Sent: Sunday, April 19, 2020 10:18 PM
To: LondonLines <LondonLines@stantec.com>
Subject: London Lines Replacement Project

Hello

Due to the proximity of our property to the preliminary or alternative pipeline segments for the LLRP, I received your Stantec notice pertaining to the project and virtual open house.

Would it be possible to get a larger scale map for the area (as indicated below) or an interactive map that I could zoom in to see the Komoka/Melrose area?

Thanks so much.

Alex M[redacted]
[redacted] Oxbow Drive
Komoka, ON [redacted]

<image001.png>

Stantec

CONTACT RECORD

NAME(S):	Ruth S[redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/20/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP.

Stantec returned the call. Spoke about the Project, and landowner noted they do not have access to a computer. Stantec promised to mail a printed copy of the Virtual Open House presentation, a copy of the presentation script, a hardcopy of the questionnaire and a pre-paid envelope. Documents were mailed to the landowner on April 21, 2020. Landowner requested a phone call from Enbridge. Summary of the phone call was sent to Enbridge on April 20th to follow-up with the landowner.

CONTACT RECORD

NAME(S):	James C.	**PROJECT NO.:**	160951170
	[redacted] Goldcreek Drive	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/20/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP, specifically how to connect to natural gas.

Stantec called back on May 14, 2020. No specific concerns raised; the landowner wanted to know if they can hook up to the natural gas. Stantec provided the 1-866 phone number to discuss Enbridge Gas Inc. connections.

From: Hartwig, Emily
To: Boomer [redacted]
Cc: Georgopoulos, Rooly; Kelsey Mills
Bcc: londonlines@stantec.com
Subject: RE: London lines project questions
Date: Wednesday, April 22, 2020 11:00:00 AM
Attachments: LLRP_Avro-Drive_Amiens-Road_20200422.JPG

Good morning Ms. S[redacted],

Thank-you for reaching out regarding the London Lines Replacement Project.

In the area of Avro Drive and Amiens Road (see attached) an alternative segment (orange dashed line) is being reviewed as a potential deviation off of the Existing Route (yellow solid line). At this stage of the project, we are evaluating all options to determine the route which most minimizes potential environmental and/or socio-economic impacts.

To inquire about connecting to natural gas from this line, you can submit an inquiry at https://www.uniongas.com/switchtogas/ or call 1-866-772-1045.

If you have any other questions or comments, please let me know.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Boomer [redacted]
Sent: Monday, April 20, 2020 7:06 PM
To: LondonLines <LondonLines@stantec.com>
Subject: London lines project questions

Good evening,

I was looking at the proposal for the replacement of the London gas lines project coming up. After looking at the map I have a couple questions.
What road or area exactly off of Amiens toward the 402 is the line planned to go? We live on Avro Dr and it looks like our road might be it? If it is our road, how does it work to have our property hooked up to the gas line and is there a fee involved?

Thank you for the information.

Tracy S[redacted]

Get Outlook for Android

CONTACT RECORD

NAME(S):	David J [redacted]	**PROJECT NO.:**	160951170
	Falcon Bridge Drive	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/21/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP and noted interest in connecting to natural gas.

Stantec called back on April 23, 2020. The landowner asked about their parent's property along Falcon Bridge Drive that currently has an orchard in the front of the property, and if the route will impact the orchard. The landowner also asked about connecting their property to natural gas. Stantec noted a printed version of the orchard property will be mailed to the landowner's parents (mailed on April 27th) and provided the landowner with the 1-866 phone number to discuss Enbridge Gas Inc. connections.

CONTACT RECORD

NAME(S):	Duncan M[redacted] [redacted] MacAvoy Road Concession Street N, lot [redacted] and [redacted] [redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/21/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☐ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP and requested a more detailed map to show their property in proximity to the Project. The landowner provided an email address.

Stantec sent via email (April 21, 2020) a link to the interactive map with instructions and a map of the landowner's property.

From: Hartwig, Emily
To: loudon[redacted]
Cc: londonlines@stantec.com; Georgopoulos, Rooly
Subject: London Lines Replacement Project - Map
Date: Tuesday, April 21, 2020 11:24:00 AM
Attachments: 160951170_Fig01_Site_Location_23487McEvoyRd_20200421.pdf

---

Good morning Mr. M[redacted],

Thank-you for reaching our regarding the London Lines Replacement Project. We have prepared a map (see attached) that shows your property, as noted in your voicemail, in relation to the natural gas pipeline.

We have prepared a Virtual Open House that provides an overview of the Project, and includes a website link to an Interactive Map on slide 7 (titled Route Evaluation Methodology). You can also use this Interactive Map to zoom into the area where your property is located.

If you have any questions or concerns, please let me know.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Hartwig, Emily
To: jody.k[redacted]
Cc: Georgopoulos, Rooly; Kelsey.Mills@enbridge.com
Bcc: londonlines@stantec.com
Subject: RE: project
Date: Wednesday, April 22, 2020 1:52:00 PM
Attachments: LLRP_22626_Troops-Road_20200422.JPG
160951170_Fig01_Site_Location_22626TroopsRoad_20200422.pdf

Good afternoon,

Thank-you for reaching out regarding the London Lines Replacement Project.

The following steps should allow you to see you property on the interactive map:

1. Open the weblink to the interactive map: https://stantec.maps.arcgis.com/apps/webappviewer/index.html?id=08cbf589324748f59820674 7f7665976
2. Type your address directly into the search bar in the top left corner
3. Click on the magnifying glass icon
4. The map should zoom to the location you have typed in.

If the steps above do not work, I have attached a screenshot from the interactive map of your property (as noted below) as well as a map that our GIS analyst has created.

Please let me know if you have any questions or concerns.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: jody.k[redacted]
Sent: Wednesday, April 22, 2020 7:36 AM
To: LondonLines <LondonLines@stantec.com>
Subject: project

Hi – I was on your virtual open house – I can find my address and we did receive your notice in the mail

On the map – I find the layers option that should show where the route is going to be – but it

doesn't populate on the map -with the address

I cannot tell from the map you sent or from this if the rear of our property is going to be affected by this

Our address is [redacted] Troops Road, Mount Brydges – we front onto Troops – and the rear is Glendon Drive

Can you help ?

CONTACT RECORD

NAME(S):	Steven S[redacted] Landowner [redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/23/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner sent an email to Stantec Learning asking that they be contacted by phone call regarding the LLRP.

Stantec called the landowner on April 23, 2020. The landowner asked if there is currently a line going to Strathroy, the timing of the phases of the project, if the landowners will be kept up to date on the project activities and if a landowner's property is needed to be crossed or the line is going in front of their property, if they will be notified. Stantec confirmed Enbridge is reviewing 2 alternatives for Strathroy (1 and 2), noted the ER finalization process and submission to the OEB, and noted the landowners will be notified when the ER is complete. Stantec also told the landowner that if required, an Enbridge land agent would be in touch to discuss both temporary and permanent land easements.

Stantec

CONTACT RECORD

NAME(S):	Emil P[redacted]	**PROJECT NO.:**	160951170
	[redacted] Falcon Bridge Drive	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	4/27/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner called regarding the LLRP and wanted to know if the Project will impact their properties.

Stantec returned the call on April 27, 2020. Landowner asked:
1. What side [of the road] the pipeline is being installed in
2. Landowner is building a new house and installing a new driveway and since the pipeline that crosses his property will be abandoned, he is wondering if he requires a crossing easement.
3. Landowner is installing a fence for his cattle and is concerned that the new pipeline will impact his ability to install the new fence.
4. The existing gas pipeline on his property juts in about 10-15 m from Falconbridge and he indicates that his lawyer has completed a title search and apparently there is no registered easement along Falconbridge and specifically near or on his property for this natural gas pipeline.
5. Landowner asked what the plan was for the old pipeline and Stantec indicated that it would be abandoned in place. He does not have a concern but doesn't want to have to get a crossing agreement for his driveway.

On April 29, Enbridge (Lands Agent) spoke with the landowner. The landowner's main concern is obtaining the contact information for third party while he builds a driveway. Enbridge noted they would try to find information for him (District's or Operations). Enbridge noted the District will need to make sure any activity is appropriate on top of the line. Landowner is confident there is no depth of cover concern in his field since he chisel ploughs 18-20 inches deep and hasn’t hit anything.

Discussed the lack of registered easement. Landowner understands we [Enbridge] have one and that during conversion from registry to land titles it was not brought forward. Enbridge also noted that we are not sure yet which side of the road we will be on; waiting for the ER report. Landowner builds sub-divisions, so he is very familiar with the process.

From: Georgopoulos, Rooly
To: Simone b[redacted]
Cc: LondonLines; Hartwig, Emily
Subject: Re: London Lines Replacement Project
Date: Friday, May 1, 2020 11:15:49 AM

Hi Charmaine, I understand your concerns but all construction activities related to this Project will be greater than [redacted] away from your home and as such you should not be impacted nor should the Catwalk.

All the best.

Regards and stay safe.

Rooly

From: Simone b[redacted]
Sent: Friday, May 1, 2020 10:56 AM
To: Georgopoulos, Rooly
Subject: Re: London Lines Replacement Project

Oh ok. I REALLY Appreciate your prompt and forthright answers.
Yes I think You have the correct Location.
I was just Really frustrated because there is a Blue Line at the end of the Left side of my Driveway on the Road and I wasn't sure what that meant as a portion of my Driveway would be impacted if that Blue line meant something.

Will there be any Construction in the Catwalk including Dust, Debris and Noise level from the possible Construction since currently the Catwalk is pretty busy, noisy with Pedestrian Traffic and usage currently?

On Fri., May 1, 2020, 9:55 a.m. Georgopoulos, Rooly, <Rooly.Georgopoulos@stantec.com> wrote:

> Good morning Charmaine,
>
> I had my GIS lead plot your address as it relates to the Project and I believe we have accurately located it on the attached map; it is close to the catwalk that goes from Queen Street to Fieldstone Crescent North. If what we have presented is accurate (please confirm), then your home is approximately [redacted] m away from the Project Study Area and therefore we do not anticipate any direct impacts to your property as a result of this Project. You may experience some temporary travel delays if you happen to drive through the Project Study Area during construction but that would likely be the full extent of potential impacts to you.
>
> I hope this helps and alleviates any concerns you may have had regarding the London Lines

Replacement Project. If you have any further comments or questions, please feel free to reach out to me at your convenience.

Regards and stay safe.

Rooly

From: Simone b[redacted]
Sent: Thursday, April 30, 2020 8:28 PM
To: Georgopoulos, Rooly <Rooly.Georgopoulos@stantec.com>
Subject: Re: London Lines Replacement Project

I am at [redacted] Fieldstone Crescent North Komoka. Right beside the Catwalk and I would like to know how this planned Project will potentially impact my Property

On Thu., Apr. 30, 2020, 7:51 p.m. Georgopoulos, Rooly, <Rooly.Georgopoulos@stantec.com> wrote:

> Good evening Charmaine, thank you for your email. I was wondering if you could let the project team know your address so we can have a better idea of your concerns as it relates to this project.
>
> Thanks and I look forward to hearing back from you.
>
> Regards,
>
> Rooly

From: Simone b[redacted]
Sent: Thursday, April 30, 2020 7:33 PM
To: LondonLines
Subject: London Lines Replacement Project

Good Evening,

I have a MAJOR PROBLEM if there will be Construction or any type of Gas Lines running ON or NEAR my Property.

I DO NOT NEED or WANT to be Inconvenienced ESPECIALLY if I am expected to pay High Property Taxes, Water Bills and my Driveway or any inch of my Property will be affected.

I DID NOT purchase my Home for this to OCCUR.

SOMEONE NEEDS to get in Contact with Me by responding to this Email.

Charmaine

Stantec

CONTACT RECORD

NAME(S):	Paula L[redacted] / Paul M[redacted] [redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	(Email)	**DATE/TIME:**	4/28/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

On April 28, 2020 Paul M[redacted] (Partner, [redacted]) sent an email to Enbridge advising that [redacted] had approached the law firm to provide advice and assist with any submissions with respect to the Project. On April 29, 2020 Paula L[redacted] (Partner, [redacted]) emailed a letter on behalf of their client ([redacted]).

Enbridge followed up with Paul M[redacted] on June 4, 2020. Enbridge had a phone conversation with Paul M[redacted] and stated that Enbridge would not permit representation of [redacted]. if they were in any way antagonistic to Enbridge's interests, however Enbridge has no objection to [redacted] providing [redacted] with general advice.

Stantec

CONTACT RECORD

NAME(S):	John S[redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/1/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner (John S[redacted]) called regarding the LLRP ([redacted]). Primary concern is depth of the pipeline, what will happen to the existing pipeline once decommissioned, if there will be compensation for damaged crops and if landowners will be able to access natural gas.

On May 1, 2020 Enbridge (Lands Agent) returned the call. Landowner has 2 farms with existing pipelines. Landowner provided their concerns, outlining the deficiencies, as he saw them, of the existing pipelines: shallow, leaking. Landowner informed Enbridge about the aerial crossings of the pipe in the ditch which prevents him from cleaning the ditch.

Enbridge explained the project to him in general terms, and that Enbridge hopes to run the new pipeline in road allowance and once we have an abandonment plan in place he will be contacted. Noted if work on his farms is required he will be compensated but we are not sure what that looks like at this time. He was very happy to hear we plan to put the pipe in the road and that we construct these deeper with no daylighting anymore.

From: Kelsey Mills
To: bdh[redacted]
Cc: LondonLines; Allison Chong; Donna Wilson
Subject: FW: [redacted] Comments on London Lines Replacement Project
Date: Tuesday, May 26, 2020 3:50:54 PM

Hi Dana,

Hope this email finds you well and apologies for the delay in responding to you.

Enbridge is still completing the Environmental Assessment for the London Lines Replacement Project and a preferred route has not been chosen yet. If you have a preference on whether you would like the pipeline to move to the Road right-of way or be replaced in the existing easement on [redacted] Glendon Drive we would appreciate hearing your feedback. This will help to inform the routing evaluation when choosing a preferred route.

I have included responses to your questions below that can be answered at this time. As the project progresses we will be able to gather further information for you.

1. With the proposed alternative route we would like to confirm that per your letter all services to [redacted] Glendon Drive will be maintained during and after the project is complete.
    a. Correct all existing services will be maintained as part of this project.
2. As [redacted] Glendon Drive is an active farming operation we would like specific additional details on the decommissioning plans associated with the existing lines and if Union Gas will be lifting their easement across the [redacted] property after all decommissioning activities are complete.
    a. The existing lines will be decommissioned and abandoned. Decommissioning will result in either removal of the pipeline or abandonment in place decided with your consultation, easement agreement and environmental input. Consultation with municipalities, stakeholders, landowners and indigenous groups will further refine the decommissioning plan for the remainder of the project. An Enbridge Lands Agent will be in contact in the future to discuss this further.
3. We would like to know what the anticipated impacts to our active farming operations will be including but not limited to access.
    a. Once a preferred route is chosen the Lands agent will be in contact to discuss project impacts and access requirements for potential future activities including environmental and construction surveys and construction works if necessary.
4. As we currently maintain the ditch in the municipal right of way (pick up garbage, cut grass, etc.), please confirm that the ditch will be restored after the new line goes through such that we can continue to maintain the right of way.
    a. Upon the completion of construction Enbridge will restore the area to pre-construction conditions. Monitoring will then take place to ensure complete restoration.

If you have any further questions please let us know.

Warm regards,

Kelsey Mills
Environmental Advisor
—

ENBRIDGE GAS INC.
TEL: 905-927-3145 I CELL: 416-454-9539
kelsey.mills@enbridge.com
101 Honda Blvd. Markham, Ontario L6C 0M6
enbridgegas.com
Safety. Integrity. Respect.

From: Billy & Dana H[redacted]
Sent: Friday, May 1, 2020 3:43 PM
To: LondonLines <LondonLines@stantec.com>
Subject: [redacted] Comments on London Lines Replacement Project

Hello Rooly,

My name is Dana (nee Wales) H[redacted] and I reside at [redacted] Glendon Drive on a property owned by [redacted] Our initial comments include but are not limited to the following:

1. With the proposed alternative route we would like to confirm that per your letter all services to [redacted] Glendon Drive will be maintained during and after the project is complete.
2. As [redacted] Glendon Drive is an active farming operation we would like specific additional details on the decommissioning plans associated with the existing lines and if Union Gas will be lifting their easement across the [redacted] property after all decommissioning activities are complete.
3. We would like to know what the anticipated impacts to our active farming operations will be including but not limited to access.
4. As we currently maintain the ditch in the municipal right of way (pick up garbage, cut grass, etc.), please confirm that the ditch will be restored after the new line goes through such that we can continue to maintain the right of way.

Please keep us informed as the project continues.

Sincerely,

Dana H[redacted]

Stantec

CONTACT RECORD

NAME(S):	Malcolm B.	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/11/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner (Malcolm B.) called regarding the LLRP [redacted]).

On May 11, 2020 Stantec returned the call. The landowner and Stantec discussed the following:

1. Someone was on his farm over the last week or so spraying the ground marking the location of the lines with paint. With his farm being an organic one he is concerned that the paint will impact the status of it being organic. Enbridge to find out who was on the property spraying and we need to figure out if this impacts organic farming, maybe the folks who did the spraying of the paint will know?

2. His preferred route is for the pipeline go along Bentpath Line, up Forest Road to Mosside Line and across East, not cross country across his farm.

3. He does not want pipelines on his property because the existing ones on there now have a very shallow depth of cover (~ 11”) and he cannot deep till his land with the pipelines at that depth.

4. He would prefer that the pipelines be removed after harvest to reduce to impact to his crops, but also noted that he would like to be compensated and since organic crops are 3x more expensive he’d like that taken into consideration.

CONTACT RECORD

CONTACT RECORD

NAME(S):	Michael C[redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/21/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner (Michael C[redacted]) called regarding the LLRP ([redacted]). Landowner wanted clarification on the scope of the project.

On May 22, 2020 Stantec returned the call. The landowner indicated that they were working and noted they would call Stantec back the following week.

Stantec had follow up conversations with the landowner on May 25 and 26. The landowner is not impacted by any of the routes but saw the project in a newspaper ad. The landowner noted the following concerns and comments:

1. May 26 - concerned with the crossing of the Thames River (sensitive geographic feature at the east end of the study area due to the presence of a Species at Risk and also with respect to the natural environment related to the valley associated with the River. Stantec informed the landowner that the take off point is north of the Thames River and that no crossing of the Thames is needed for this project.

2. May 26 - concerned about the sections that go cross country at the east end of the Study Area, in particular between Komoka Road and Vanneck Road and Amiens Road and Falconbridge Drive. Landowner requested to know if those sections are abandoned, would they be removed? Stantec indicated that the preferred approach would be to abandon in place however if the landowner or a regulatory body requested it be removed, it would be assessed on a case by case basis.

3. May 25 - requested to know if an Environmental Assessment is being completed and under what regulatory authority. Stantec information the landowner that an Environmental Report is being completed in accordance with OEB Guidelines (2016).

4. May 25 - requested to know how they will know when the Environmental Report is completed so they can review and provide comments to the OEB. Stantec committed to the landowner that they would be added to the mailing list and be informed when the ER is completed and posted on the Project website.

CONTACT RECORD

NAME(S):	Todd E[redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/1/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner (Todd E[redacted]) called regarding the LLRP ([redacted]). Landowner wanted to know if the pipeline will be going through their farm or not.

On May 22, Stantec returned the call. No response.

On May 26, Stantec called again. The landowner indicated they live on Amiens Road where one of the alternative routes is located near Glendon drive. The landowner would like to be notified only if the pipeline is to be located on their property. Stantec informed the landowner that the aim is to locate the pipeline within the municipal road allowance, however, should the preferred route be on his property he would be notified by Enbridge. The landowner had no further concerns or questions.

CONTACT RECORD

NAME(S):	Joel B[redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/22/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner (Joel B[redacted]) called regarding the LLRP ([redacted]).

On May 22, Stantec returned the call. The landowner indicated that there are two gas pipelines currently on the property. Stantec and the landowner discussed the following:

1. If a different route is selected, will he retain access to natural gas? Stantec responded yes, regardless of the route selected he will maintain gas service.

2. Will the pipeline be abandoned in place? Stantec responded yes, it would be abandoned in place.

3. When the pipeline is abandoned will the life lease for the pipeline right-of-way on his property be removed? Stantec noted that an Enbridge lands agent would be in touch to provide a response.

Stantec

CONTACT RECORD

NAME(S):	Matt J.	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/22/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Landowner (Matt J.) called regarding the LLRP [redacted]).

On May 26, Stantec returned the call. The landowner noted there are no pipelines on his property, but he would like to speak with someone from Enbridge about connecting to natural gas. Stantec forwarded the contact information to Enbridge on May 26, 2020.

CONTACT RECORD

NAME(S):	Steve K[redacted]	**PROJECT NO.:**	160951170
		REPRESENTING:	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/29/2020
RE:	London Lines Replacement Project (LLRP)	**RECORDED BY:**	Emily Hartwig

☒ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

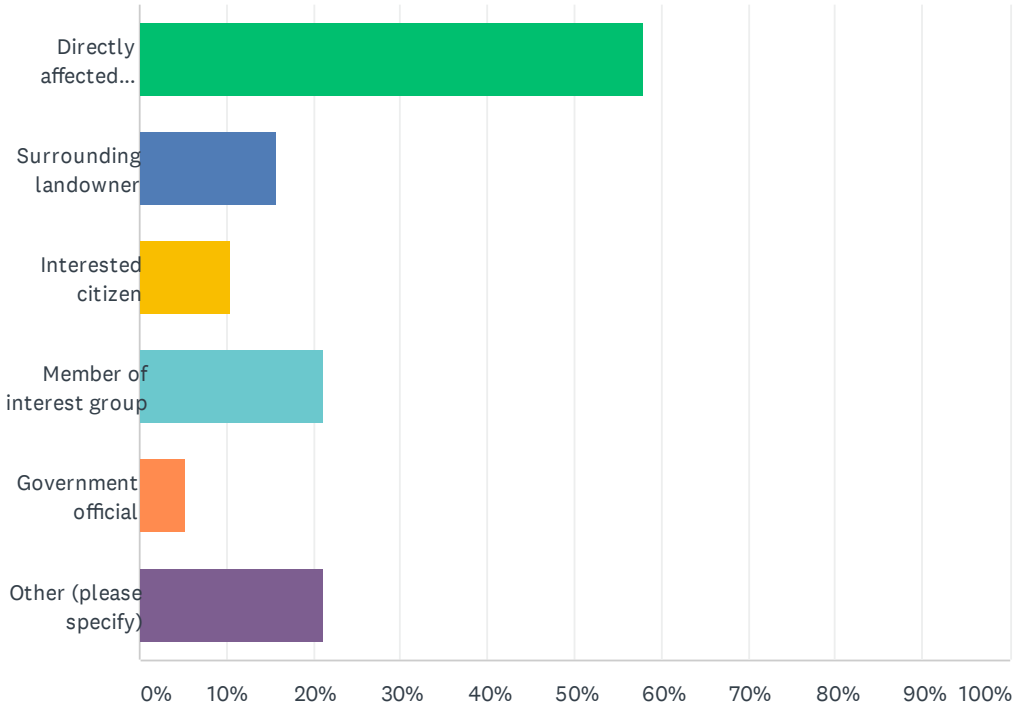
NOTES:

Landowner/Business owner (Steve K[redacted]) called regarding the LLRP [redacted]).

On May 29, Stantec returned the call. The landowner/business owner noted construction concerns (traffic and safety) due to their business operation, [redacted]. The landowner noted they would like to discuss connecting to natural gas and noted their preference for construction to occur during the first half of September to avoid the busy tourism season for their business. Stantec provided the 1-866 phone number to discuss Enbridge Gas Inc. connections.

Q1 What is your interest in this project?

Answered: 19 Skipped: 0



ANSWER CHOICES	RESPONSES	
Directly affected landowner	57.89%	11
Surrounding landowner	15.79%	3
Interested citizen	10.53%	2
Member of interest group	21.05%	4
Government official	5.26%	1
Other (please specify)	21.05%	4
Total Respondents: 19		

#	OTHER (PLEASE SPECIFY)	DATE
1	Want natural to my place	4/29/2020 10:46 AM
2	have other pipelines thru my property, and this proposal is about 5 miles south of me	4/23/2020 5:07 PM
3	OFA Member Service Representative - information and knowledge	4/23/2020 2:51 PM
4	Not sure if dirrectly affected or Surrounding Land owner	4/22/2020 11:42 AM

Q2 What is your view of the proposed project? Please explain any issues or concerns.

Answered: 15 Skipped: 4

#	RESPONSES	DATE
1	Don't want it on my property. I have wetlands, honey bees, vineyard, ongoing paleontology dig.	5/1/2020 12:29 PM
2	I understand the need to replace aging infrastructure and have no major concerns particularly with the majority of the project following the existing route.	5/1/2020 8:10 AM
3	Why did I get a notice? I live at and your route goes all around me! Do not like getting my nose shoved in it.	4/29/2020 10:46 AM
4	We are a local farm operation that grows high value crops under contract. (Ginseng, Tobacco and Hemp) We could loose contracts by not having the land available, with the potential of loosing future income for not continuing the contract. We have an estimated value of one million dollars in equipment which can not be used. Soil structure will be damaged from previous experience for a minimum of 10 years or as long as 20 years. The town of Mount Brydges is located on two sides of our farm. The pipeline may affect future development of the town.	4/26/2020 1:46 PM
5	Upgrades are necessary... is there opportunity for residence without natural gas along the route to access?	4/26/2020 11:31 AM
6	these 2 lines need replaced, im glad to see this happening.	4/23/2020 8:01 PM
7	we would like the gas line moved off our property as is an option with route 6	4/23/2020 5:25 PM
8	the project may be necessary, my interest would be to make sure fellow farmers/landowners on this project are treated reasonably, fairly, pre-construction, during construction, and post construction, and all future issues properly dealt with	4/23/2020 5:07 PM
9	as a farmer i have seen drainage issues result from previous pipelines thus I am concerned.	4/23/2020 4:33 PM
10	Would like some clarification on route and property impact.	4/23/2020 11:10 AM
11	Our property would be directly affected by Strathroy alternate #2, causing questions and concerns to be addressed.	4/22/2020 1:38 PM
12	I believe it is needed and have no objections	4/22/2020 11:42 AM
13	We ran a tourism business and i am concerned about road closing for my customer coming to the farm.	4/21/2020 7:15 PM
14	Uncertainty if existing sections where an alternative route is proposed will be decommissioned and removed, as well as easements removed from said properties. Also, if removed, will a new line be installed down the road to allow home owners currently connected to remain connected without extra charges?	4/20/2020 2:35 PM
15	1/ What is going to happen to the existing gas lines/ 2/ I would like a phone call to clarify were the new line is in regards to my farm property	4/20/2020 1:03 PM

Q3 Please indicate if the project will have any impacts to you, your property or your business that you would like addressed (i.e., access, noise, dust, traffic, etc.).

Answered: 14 Skipped: 5

1	Access, noise , dust, woodlot damage, wildlife disruption.	5/1/2020 12:29 PM
2	The extent of the work within Middlesex Centre is a relatively small portion of the project but with the proposed alternative route along Glendon Drive and Komoka Road it is important to the municipality that the running line location within the County's right of way takes future municipal servicing and road upgrades into consideration.	5/1/2020 8:10 AM
3	Nope	4/29/2020 10:46 AM
4	Income in that year as well as future income as the potential to lose contracts and decreased yield on disturbed land.	4/26/2020 1:46 PM
5	Will there be access issues to farmland during the farming season?	4/26/2020 11:31 AM
6	access to portions of agricultural lands that may become land locked.	4/23/2020 8:01 PM
7	the pipe lines run through the middle of or operational licenced grave pits consrtuction in the area would halt our business and operation as well as our farm land would be disturbed	4/23/2020 5:25 PM
8	none	4/23/2020 4:33 PM
9	Yes	4/23/2020 11:10 AM
10	Property concerns would include heavy construction near dwelling (150+ year old house), well water quality, impact to mature trees as well as safety \ access.	4/22/2020 1:38 PM
11	No issues	4/22/2020 11:42 AM
12	access to my business	4/21/2020 7:15 PM
13	The current line runs through our property, approx 30' from our home. Noise, dust, access to barn and rental income from current farming lease all factors.	4/20/2020 2:35 PM
14	yes, note above I have a farm dryer and residentual houses connected to both existing lines	4/20/2020 1:03 PM

Q4 Please identify any features along the Preferred Route that you feel are important to consider during the environmental study.

Answered: 10 Skipped: 9

#	RESPONSES	DATE
1	Possibility of more ice age mega fauna discoveries. Well water disruption.	5/1/2020 12:29 PM
2	Within Middlesex Centre there will be a need to cross a natural feature (creek) on Glendon Drive (which is a municipal drain called Crow Creek Drain) as well as the Waters-Arnold Drain on Amiens Drive. We will require the depth of the installation to be sufficiently below these drains to allow for future maintenance and potential improvements.	5/1/2020 8:10 AM
3	Nope	4/29/2020 10:46 AM
4	Please follow Falconbridge Drive and do not put the line through the middle of our farm. The farm on is in the study zone. There is high priced ginseng and land for future crops that would be affected if it travels through the farm.	4/26/2020 1:46 PM
5	the farm land and licenced aggregate pits	4/23/2020 5:25 PM
6	need to further study the information	4/23/2020 4:33 PM
7	There are non	4/22/2020 11:42 AM
8	dont know exactly where the pipeline is going. But it is between the two roads we live between.	4/21/2020 7:15 PM
9	I believe one large tree runs nearly over it, will it be removed in the process? Also a number of trees on surrounding properties.	4/20/2020 2:35 PM
10	What is the ground coverage over the new line	4/20/2020 1:03 PM

Q5 Do you have any questions or comments about this project that you would like to bring to our attention?

Answered: 15 Skipped: 4

#	RESPONSES	DATE
1	I would be willing to help with identification of any ice age bones being excavated.	5/1/2020 12:29 PM
2	1. Are the existing pipe lines both 8 inch? If yes then why are 2 being replaced by a single 8 inch main? Is it that the demand on this connection has been reduced or that the pressure on the new main will be significantly higher than on the existing mains? 2. Given this is will be a high pressure main what will be the required setbacks from existing buildings or restrictions on new buildings? Will this impact existing easements which are in place? 3. I would like to know if the alternative route along Glendon Drive/Komoka Road is used whether it is Enbridge's plan to abandon the existing pipes in place that are currently on private property or if they will be removed? 4. Will Enbridge relinquish easements on private property of new routes within road right of ways are used instead of across private property? 5. Does Enbridge plan to abandon or remove the existing gas mains which are with road right of ways? I do not feel it should be the road authority's responsibility to deal with extra cost on future construction projects due to abandoned gas mains. 6. Are there any environmental risks or liabilities associated with abandoning the existing mains in place and if so will that liability remain with Enbridge? 7. Does any portion of the existing pipeline contain asbestos within the pipe or its coating?	5/1/2020 8:10 AM
3	Why can’t it connect houses on Glendon Drive?	4/29/2020 10:46 AM
4	How deep in the ground will this new 8" line be? How far from the road will it be? We are on Falconbridge Dr. in Appin. What's the plan with the 2 old line's	4/29/2020 10:04 AM
5	Will there be the ability for rural residents who do not have natural gas to there homes/business along or close to the proposed route be allowed to "hook into " the line for natural gas for there residence or business?	4/26/2020 11:31 AM
6	will the old pipes be removed? this is much preferred.	4/23/2020 8:01 PM
7	the pipe line runs right through a licenced gravel pit for safty and easy of operation and continuing operation during construction it should be moved to propoded rout 6 along komoka rd and glendon rd	4/23/2020 5:25 PM
8	more concerned on how pipeline construction and the impact on Landowners. I am on the 4 pipe Dawn-Trafalgar line. We have an organization who deals with Union Gas/Enbridge. will land owners have the opportunity to organize and deal with Union/Enbridge as a group or will they try to split landowners apart.	4/23/2020 5:07 PM
9	not at this time but likely down the road	4/23/2020 4:33 PM
10	I would like some clarification on the route and how it is going to impact my property.	4/23/2020 11:10 AM
11	Yes,questions as outlined in question 3 above.	4/22/2020 1:38 PM
12	Not at this time	4/22/2020 11:42 AM
13	we should opportunity for us and the neighbors to hook up to the pipeline.	4/21/2020 7:15 PM
14	As a home owner that the pipeline runs through, I have not received a letter or any indication of the project, however saw in the newspaper as well as someone walking on our property to assess the line today. Same as section 2: Uncertainty if existing sections where an alternative route is proposed will be decommissioned and removed, as well as easements removed from said properties. Also, if removed, will a new line be installed down the road to allow home owners currently connected to remain connected without extra charges?	4/20/2020 2:35 PM
15	Note my replies above I do want a phone call to clarify my concerns	4/20/2020 1:03 PM

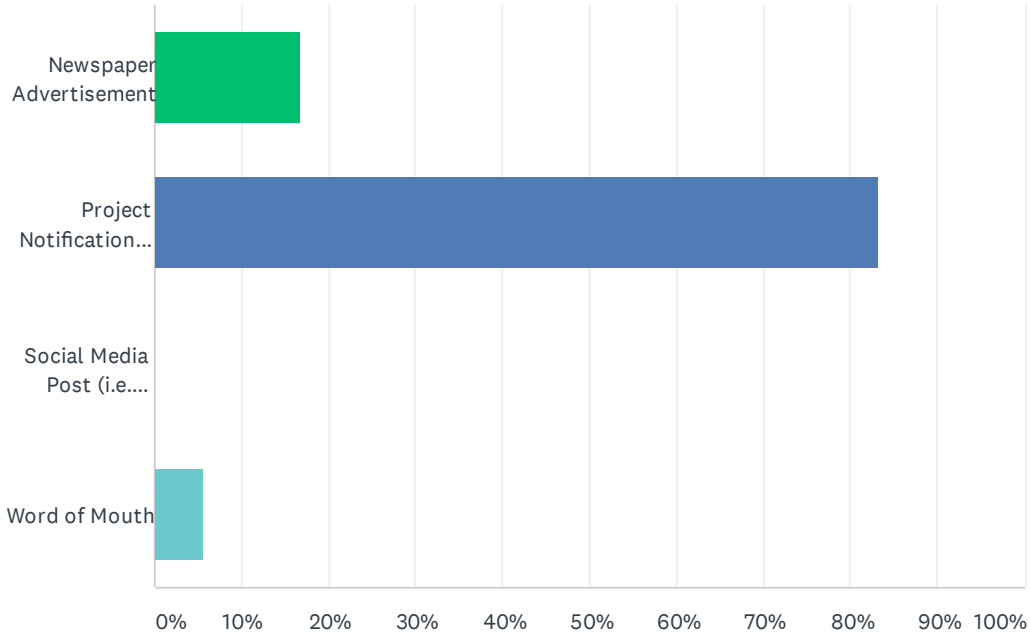
Q6 Did the content provided in the Virtual Open House meet your needs?

Answered: 14 Skipped: 5

#	RESPONSES	DATE
1	Partially.	5/1/2020 12:29 PM
2	It provided a good high level overview of the project. Once the route is determined more detailed information specific to work within smaller areas will be helpful.	5/1/2020 8:10 AM
3	Sure	4/29/2020 10:46 AM
4	Yes	4/26/2020 11:31 AM
5	yes	4/23/2020 8:01 PM
6	it was informative	4/23/2020 5:25 PM
7	Not really but I want to have landowners, especially if they have not had a pipeline before. I understand this line may vary from existing lines. Also how many landowners will be affected.	4/23/2020 5:07 PM
8	no	4/23/2020 4:33 PM
9	Very informative, but just the basics	4/23/2020 11:10 AM
10	Some good information, however follow up requested to address more specific questions and concerns (outlined in Q#3 above).	4/22/2020 1:38 PM
11	We have a feature of the line at the corner of our property that is not shown and we afre not sure if it will be impacted	4/22/2020 11:42 AM
12	sure	4/21/2020 7:15 PM
13	It was good information on the process and project	4/20/2020 2:35 PM
14	Not really, very general	4/20/2020 1:03 PM

Q7 How did you hear about the Virtual Open House? Check all that apply:

Answered: 18 Skipped: 1



ANSWER CHOICES	RESPONSES	
Newspaper Advertisement	16.67%	3
Project Notification Letter	83.33%	15
Social Media Post (i.e. Facebook)	0.00%	0
Word of Mouth	5.56%	1
Total Respondents: 18		

Q8 Contact Information

Answered: 19 Skipped: 0

ANSWER CHOICES	RESPONSES	
Name	100.00%	19
Address	100.00%	19
Email	100.00%	19
Phone	94.74%	18

#	NAME	DATE
1		5/1/2020 12:29 PM
2		5/1/2020 8:10 AM
3		4/29/2020 10:46 AM
4		4/29/2020 10:04 AM
5		4/26/2020 1:46 PM
6		4/26/2020 11:31 AM
7		4/25/2020 11:09 AM
8		4/23/2020 9:51 PM
9		4/23/2020 8:01 PM
10		4/23/2020 5:25 PM
11		4/23/2020 5:07 PM
12		4/23/2020 4:33 PM
13		4/23/2020 2:51 PM
14		4/23/2020 11:10 AM
15		4/22/2020 1:38 PM
16		4/22/2020 11:42 AM
17		4/21/2020 7:15 PM
18		4/20/2020 2:35 PM
19		4/20/2020 1:03 PM

#	ADDRESS	DATE
1		5/1/2020 12:29 PM
2		5/1/2020 8:10 AM
3		4/29/2020 10:46 AM
4		4/29/2020 10:04 AM
5		4/26/2020 1:46 PM
6		4/26/2020 11:31 AM
7		4/25/2020 11:09 AM
8		4/23/2020 9:51 PM
9		4/23/2020 8:01 PM
10		4/23/2020 5:25 PM
11		4/23/2020 5:07 PM
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13		4/23/2020 2:51 PM
14		4/23/2020 11:10 AM
15		4/22/2020 1:38 PM
16		4/22/2020 11:42 AM
17		4/21/2020 7:15 PM
18		4/20/2020 2:35 PM
19		4/20/2020 1:03 PM

#	EMAIL	DATE
1		5/1/2020 12:29 PM
2		5/1/2020 8:10 AM
3		4/29/2020 10:46 AM
4		4/29/2020 10:04 AM
5		4/26/2020 1:46 PM
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10		4/23/2020 5:25 PM
11		4/23/2020 5:07 PM
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13		4/23/2020 2:51 PM
14		4/23/2020 11:10 AM
15		4/22/2020 1:38 PM
16		4/22/2020 11:42 AM
17		4/21/2020 7:15 PM
18		4/20/2020 2:35 PM
19		4/20/2020 1:03 PM

#	PHONE	DATE
1		5/1/2020 12:29 PM
2		5/1/2020 8:10 AM
3		4/29/2020 10:46 AM
4		4/29/2020 10:04 AM
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12		4/23/2020 2:51 PM
13		4/23/2020 11:10 AM
14		4/22/2020 1:38 PM
15		4/22/2020 11:42 AM
16		4/21/2020 7:15 PM
17		4/20/2020 2:35 PM
18		4/20/2020 1:03 PM

CONTACT RECORD

NAME(S):	Ed C[redacted]	**PROJECT NO.:**	160951170
	[redacted] Falconbridge Drive	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	6/11/2020
RE:	London Lines Replacement Project (LLRP) – Virtual Open House Questions	**RECORDED BY:**	Emily Hartwig

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Enbridge (Lands Agent) spoke with the landowner. The landowner stated they do not want the pipeline on their property and would like it removed, noting it [the pipeline] is too shallow and interferes with their tiling. The landowner would like to be notified when a decision on the final preferred route has been made. The Lands Agent noted that the plan is to move the pipeline into the road allowance.

CONTACT RECORD

NAME(S):	Jeff N[redacted]	**PROJECT NO.:**	160951170
	[redacted] Springwell Road	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/26/2020
RE:	London Lines Replacement Project (LLRP) – Virtual Open House Questions	**RECORDED BY:**	Emily Hartwig

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Enbridge (Lands Agent) spoke with the landowner who noted they did not receive the first letter (Notice of Commencement) but did receive the second (Change Notice). The landowner liked the Virtual Open House and wishes we offered this option all the time as well as in person traditional info sessions. He wants pipelines and easements removed. Pipelines are preventing him from developing his property. Enbridge informed the landowner that the route has not been decided yet. The decommissioning will be decided with his consultation, easement agreement and environmental input. Enbridge mentioned future possible activities on the property – surveyors, archaeology.

From: Hartwig, Emily
To: steve[redacted]
Cc: LondonLines; Kelsey Mills; Allison Chong
Subject: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:02:54 AM

Good morning,

Thank you for completing the questionnaire for the London Lines Replacement Project. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures.

In response to your comments Enbridge considers impacts to traffic and local businesses as part of the environmental assessment, we will include mitigation measures such as utilizing road shoulders and implementing traffic control measures where needed to lessen any impacts in the area.

The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address and due to the construction plans, we will not be able to include new customer attachments while installing the new main. Once the new pipeline is in and energized, new customer attachments will follow existing attachment policies.

If you would like to inquire about connecting to Natural Gas you can:

- Submit an inquiry thru our website at https://www.uniongas.com/switchtogas/
- Or call 1-866-772-1045

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: [redacted] Jim
To: Hartwig, Emily
Cc: LondonLines; Kelsey Mills; Allison Chong
Subject: RE: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:19:23 AM

Emily
Thank you for the information.
Basically If you need more area for it is there.
We are not people that want to stand in the way of progress.

Best Regards,
Jim K[redacted]
[redacted].
Email: jk[redacted]
Phone: [redacted] Fax: [redacted]
Confidentiality Note: The information contained in this message including attachments is privileged and confidential and thus protected from disclosure. If the reader of this message is not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify this office immediately and destroy all copies. Any views or opinions expressed are solely those of the author and do not necessarily represent those of [redacted] Thank you.

From: Hartwig, Emily <Emily.Hartwig@stantec.com>
Sent: May 27, 2020 10:05 AM
To: K[redacted], Jim [redacted]
Cc: LondonLines <LondonLines@stantec.com>; Kelsey Mills <Kelsey.Mills@enbridge.com>; Allison Chong <allison.chong@enbridge.com>
Subject: London Lines Replacement Project - Questionnaire

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House.

The feature near your property is a regulator station and is planned to be replaced as part of this project. There is expected to be a nominal impact to service during the replacement but no long-term impact to natural gas supply. Enbridge will develop mitigation measures to limit disturbance in your area.

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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From: Hartwig, Emily
To: mike[redacted]
Cc: LondonLines; Kelsey Mills; Allison Chong
Subject: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:03:03 AM

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures.

In response to your comments we will note that you would be directly impacted by Strathroy Alternative 2 and would have concerns with this alternative in respect to construction disturbance, water well quality, and safety and access.

Once a preferred route is chosen mitigation measures are developed to minimize impact to the public, stakeholders, environment and socio-economic features in the area. All necessary permit and approvals will be obtained, and all conditions will be adhered too. Prior to construction residents and landowners along the preferred route will be contacted to participate in a voluntary well water monitoring program to assess any impacts to water wells.

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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From: Hartwig, Emily
To: ss[redacted]
Cc: LondonLines; Kelsey Mills; Allison Chong
Subject: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:03:32 AM

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House.

Your address is on one route of four alternatives that are proposed to connect the replaced London Lines to the community of Strathroy. A preferred route will be chosen as part of the Environmental Assessment once the consultation period has concluded and an evaluation of Environmental and socio-economic features is complete. The proposed pipeline would be placed in the road-right-of way to limit impact to landowners, and mitigation measures will also be developed as part of the environmental assessment.

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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From: Hartwig, Emily
To: meye [redacted]
Cc: LondonLines; Allison Chong; Kelsey Mills
Subject: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:03:44 AM

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures.

In order to maintain agricultural drainage systems, landowners will be contacted prior to construction to confirm the location and type of existing drains and any future drainage.

Field tile will temporarily be re-routed during pre-construction activities to allow for proper drainage. Any damaged or severed drains will be repaired following construction. Landowners will be invited to inspect and approve the repair. Any on-going field tile issues resulting from pipeline construction will be addressed by Enbridge as required.

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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CONTACT RECORD

NAME(S):	Ron M[redacted]	**PROJECT NO.:**	160951170
	[redacted]	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	6/11/2020
RE:	London Lines Replacement Project (LLRP) – Virtual Open House Questions	**RECORDED BY:**	Emily Hartwig

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Enbridge Lands Agent contacted Landowner by phone on June 11, Landowner stated that they would call the Land Agent back. No response as of July 10, 2020.

From: Allison Chong
To:
Cc: LondonLines; Kelsey Mills; Donna Wilson
Subject: London Lines Replacement Project - Virtual Open House comments
Date: Monday, May 25, 2020 2:24:24 PM

Hello,

Thank you for completing the questionnaire for the London Lines Replacement Project. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures. It is helpful to have the details you have provided in your comments regarding the operational impact and land impact that the construction may have.

We are in the process of finalizing the environmental report as well as the route selection. With regards to the future of the pipeline, the project's dedicated Land Agent will be in contact as plans are finalized.

Thank you,

Allison Chong, **MASc, P.Eng., PMP**
Advisor
Capital Development

ENBRIDGE GAS INC.
TEL: 905-458-2136 | CELL: 647-530-2294
101 Honda Blvd, Markham, ON, L6C 0H9

enbridge.com
Safety. Integrity. Respect.

CONTACT RECORD

NAME(S):	John P[redacted]	**PROJECT NO.:**	160951170
	[redacted] Oilfield Drive	**REPRESENTING:**	Stantec Consulting Ltd.
TELEPHONE:	[redacted]	**DATE/TIME:**	5/26/2020
RE:	London Lines Replacement Project (LLRP) – Virtual Open House Questions	**RECORDED BY:**	Emily Hartwig

☐ **CALL RECEIVED** ☒ **CALL PLACED** ☐ **MEETING**

NOTES:

Enbridge (Lands Agent) spoke with the landowner and informed them that the route has not yet been selected. Landowner is not as concerned with the route as he is with the old pipelines. The landowner noted if the new pipeline is installed on his property it will be installed at a proper depth to not interfere with his tiling and ploughing. Noted that the existing pipelines are too shallow. Enbridge informed the landowner that the decommissioning will be decided with their consultation, easement agreement and environmental input. Enbridge mentioned future possible activities on the property - surveyors, archaeology.

From: Hartwig, Emily
To: mikeb[redacted]
Cc: LondonLines; Allison Chong; Kelsey Mills
Subject: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:03:58 AM

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures.

In response to your comments Enbridge considers impacts to traffic and local businesses as part of the environmental assessment, we will include mitigation measures such as utilizing road shoulders and implementing traffic control measures where needed to lessen any impacts in the area.

The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address and due to the construction plans, we will not be able to include new customer attachments while installing the new gas line. Once the new pipeline is in and energized, new customer attachments will follow existing attachment policies.

If you would like to inquire about connecting to Natural Gas you can:

- Submit an inquiry thru our website at https://www.uniongas.com/switchtogas/
- Or call 1-866-772-1045

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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From: Hartwig, Emily
To: jb[redacted]
Cc: Kelsey Mills; Georgopoulos, Rooly; Allison Chong; LondonLines
Subject: Enbridge Gas Inc. London Lines Replacement Project - Questionnaire Response
Date: Friday, May 29, 2020 12:54:32 PM

Good afternoon,

Thank-you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures.

In response to your comments, Enbridge considers impacts to local businesses as part of the environmental assessment and we will include mitigation measures such as installing the pipeline in the road right-of-way where possible, using road shoulder for construction areas and implementing traffic control measures where needed to lessen any impacts in the area.

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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From: Hartwig, Emily
To: he[redacted]
Cc: LondonLines; Allison Chong; Kelsey Mills
Subject: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:04:54 AM

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House.

In response to your comments, the proposed pipeline would be installed to a depth which is in alignment with applicable codes and regulations and Enbridge Gas Inc practices. Detailed design of the pipeline will commence once a preferred route is chosen, the location and depth of the pipeline within road right of way and easements will be confirmed at this stage. The existing lines will be decommissioned and abandoned. Abandonment will result in either removal of the pipeline or abandonment in place as per all applicable codes and regulations. Consultation with municipalities, stakeholders, landowners and indigenous groups will further refine the decommissioning plan.

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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From: Hartwig, Emily
To: d[redacted]
Cc: LondonLines; Allison Chong; Kelsey Mills
Subject: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 10:05:06 AM

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures.

The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address and disturbance is expected to be minimal to your property.

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
Guelph ON N1G 4P5

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From: Hartwig, Emily
To: team[redacted]
Cc: LondonLines; Kelsey Mills; Allison Chong
Subject: RE: London Lines Replacement Project - Questionnaire
Date: Wednesday, May 27, 2020 11:29:57 AM

Good morning,

My apologies – it was brought to my attention that a distance measurement was missing in my email below. The second paragraph should read:

"As part of the environmental assessment all landowners, stakeholders, and interested parties within 1000 meters of the existing/alternative route received a notice to ensure all comments, concerns and sensitive features that could potential be impacted by this project were identified and appropriate mitigation measure were in place to limit impacts"

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

Stantec
1-70 Southgate Drive
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From: Hartwig, Emily
Sent: Wednesday, May 27, 2020 10:05 AM
To: team[redacted]
Cc: londonlines@stantec.com; Kelsey Mills <Kelsey.Mills@enbridge.com>; Allison Chong <allison.chong@enbridge.com>
Subject: London Lines Replacement Project - Questionnaire

Good morning,

Thank you for your comment as part of the London Lines Replacement Project Virtual Open House. We have taken into account your comments as part of the Environmental Assessment for this project. We will be able to consider these comments as part of the route selection and evaluation and development of mitigation measures.

As part of the environmental assessment all landowners, stakeholders, and interested parties within the XX meters study area received a notice to ensure all comments, concerns and sensitive features that could potential be impacted by this project were identified and appropriate mitigation measure were in place to limit impacts.

The project is a replacement project of the existing gas lines to ensure the continued safe operation and integrity of the natural gas distribution system. This project does not currently travel across this address

and due to the construction plans, we will not be able to include new customer attachments while installing the new gas line. Once the new pipeline is in and energized, new customer attachments will follow existing attachment policies.

If you would like to inquire about connecting to Natural Gas you can:

- Submit an inquiry thru our website at https://www.uniongas.com/switchtogas/
- Or call 1-866-772-1045

Should you have further questions regarding the project please let us know and a representative will be in contact to discuss further.

Regards,

Emily Hartwig B.Sc., EP.
Environmental Consultant, Assessment and Permitting

Direct: 519 780-8186
Mobile: 226 979-4457
Emily.Hartwig@stantec.com

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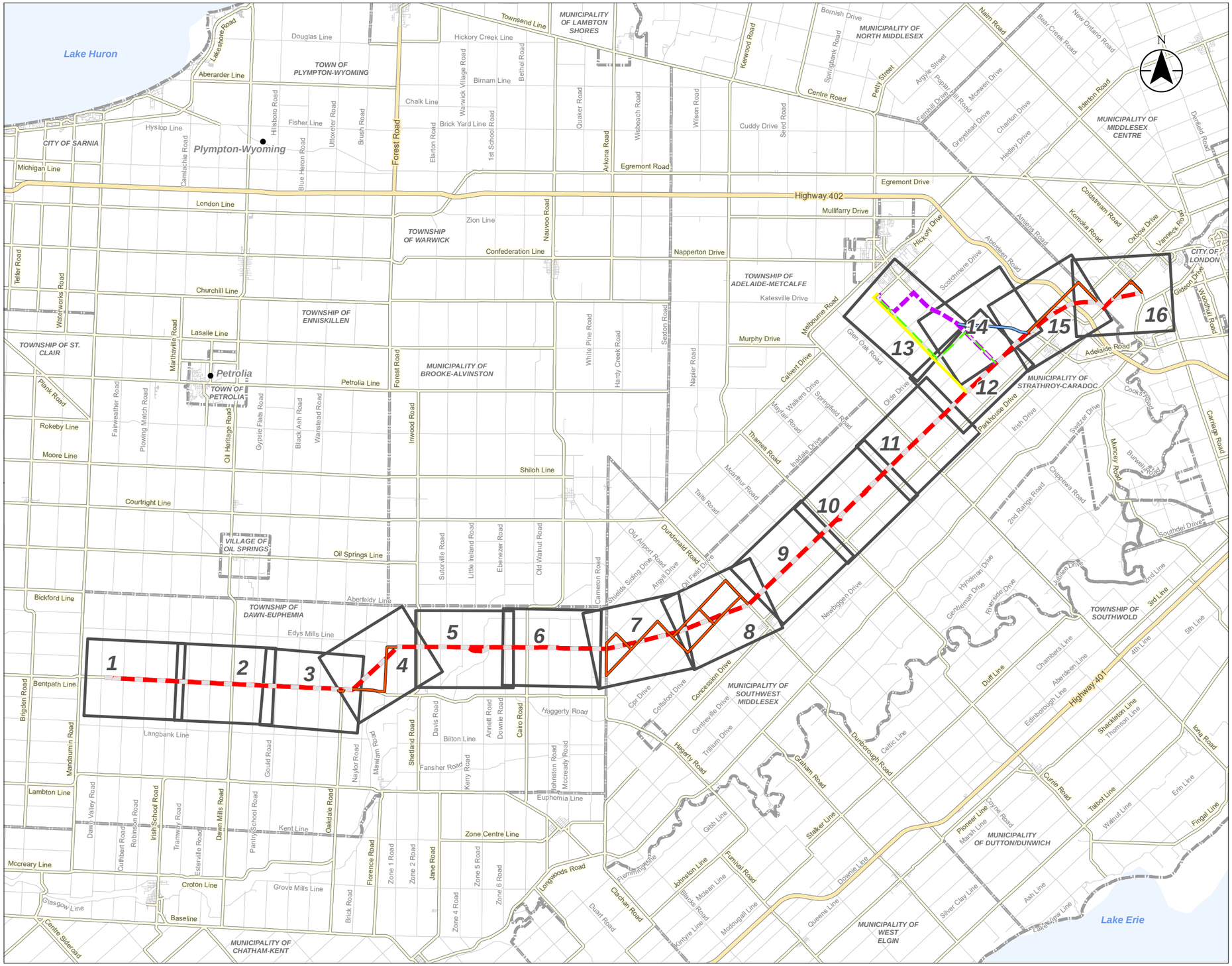
APPENDIX C
Existing Conditions Maps



Stantec

Legend

Enbridge Gas Features
- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features
- Expressway / Highway
- Major Road
- Minor Road
- Mapbook Index

0 2 4 6 8 10 12 km

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Notes
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Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-1

Title
Mapbook Overview Map

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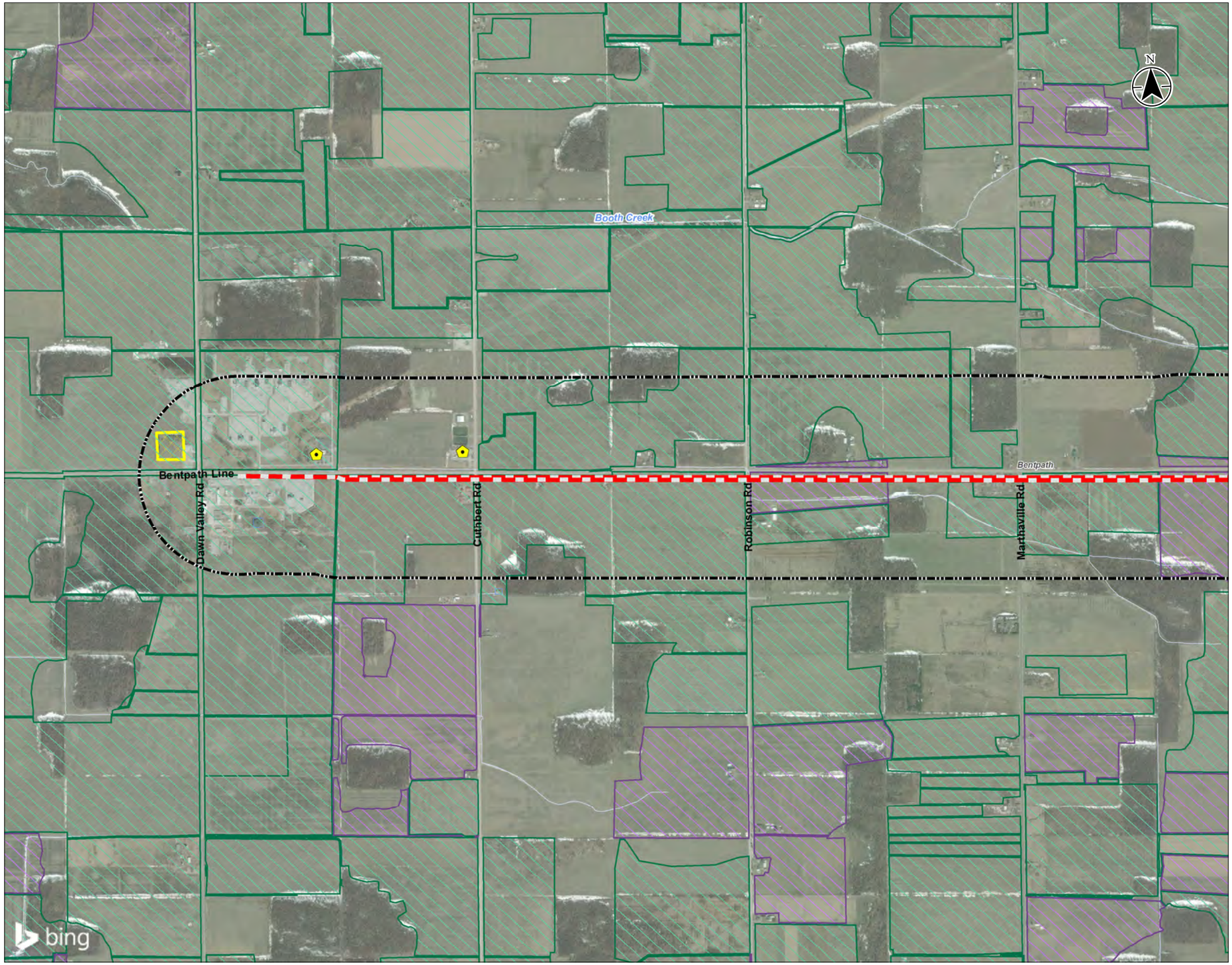

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Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody

Socio-Economic Features

- Utility
- Park Sports Field (CanVec)

0 400 800 metres

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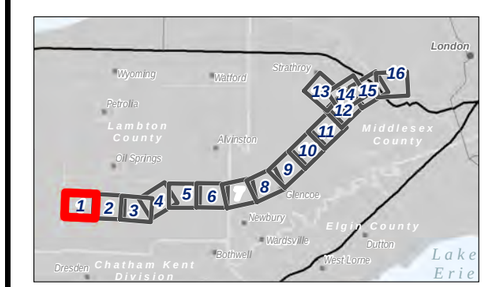

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.1

Title
Socio - Economic Features

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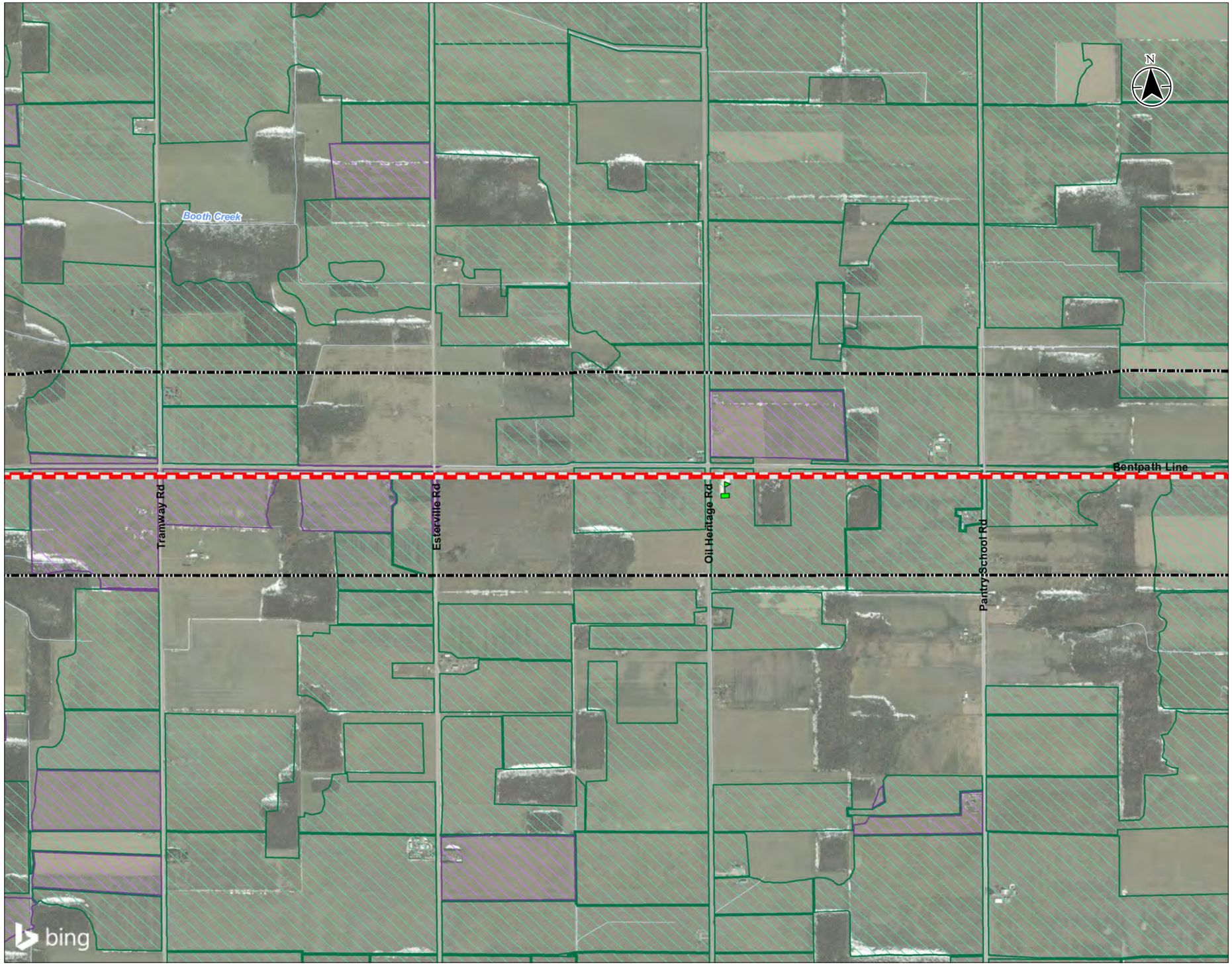

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Study Area

Enbridge Gas Features

Existing Route

Alternative Segments

Strathroy Alternate 1

Strathroy Alternate 2

Strathroy Alternate 3

Strathroy Alternate 4

Base / Environmental Features

Watercourse

Random Tile Drainage

Systematic Tile Drainage

Socio-Economic Features

School

0 400 800 metres

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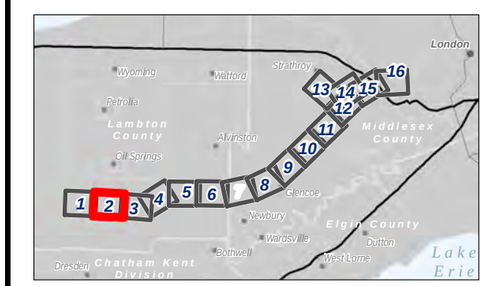

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.2

Title
Socio - Economic Features

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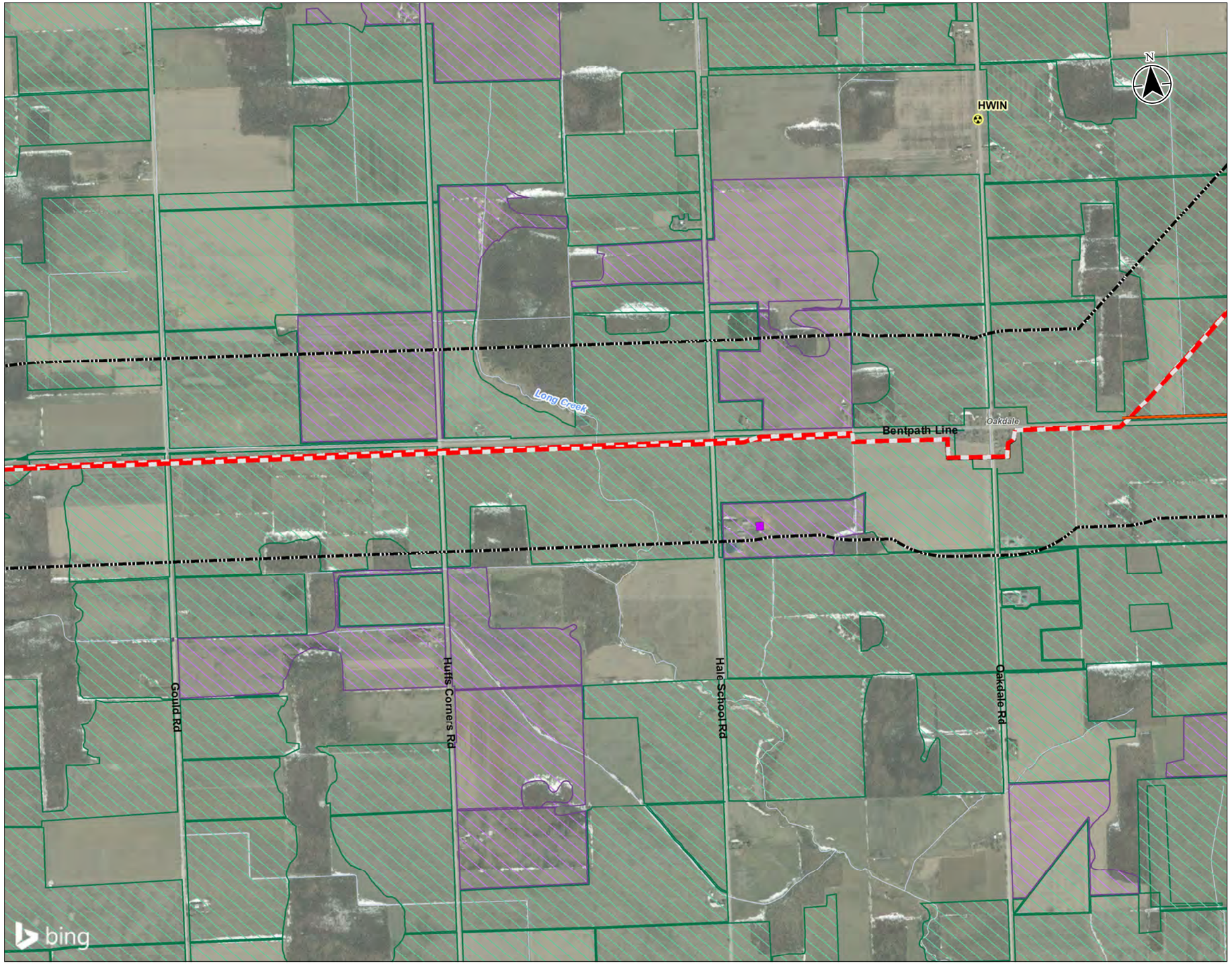

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Potentially Contaminated Sites

Socio-Economic Features

- Business

0 400 800 metres

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Notes

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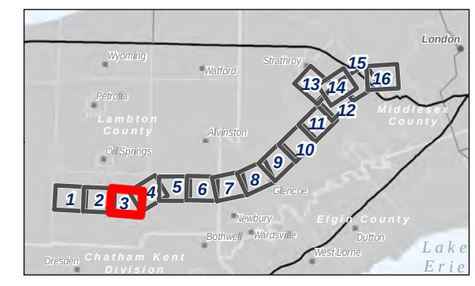

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-16
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.3

Title
Socio - Economic Features

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Stantec

Study Area

Enbridge Gas Features

Existing Route

Alternative Segments

Strathroy Alternate 1

Strathroy Alternate 2

Strathroy Alternate 3

Strathroy Alternate 4

Base / Environmental Features

Watercourse

Random Tile Drainage

Systematic Tile Drainage

Waterbody

Potentially Contaminated Sites

0 400 800 metres

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Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-16
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.4

Title
Socio - Economic Features

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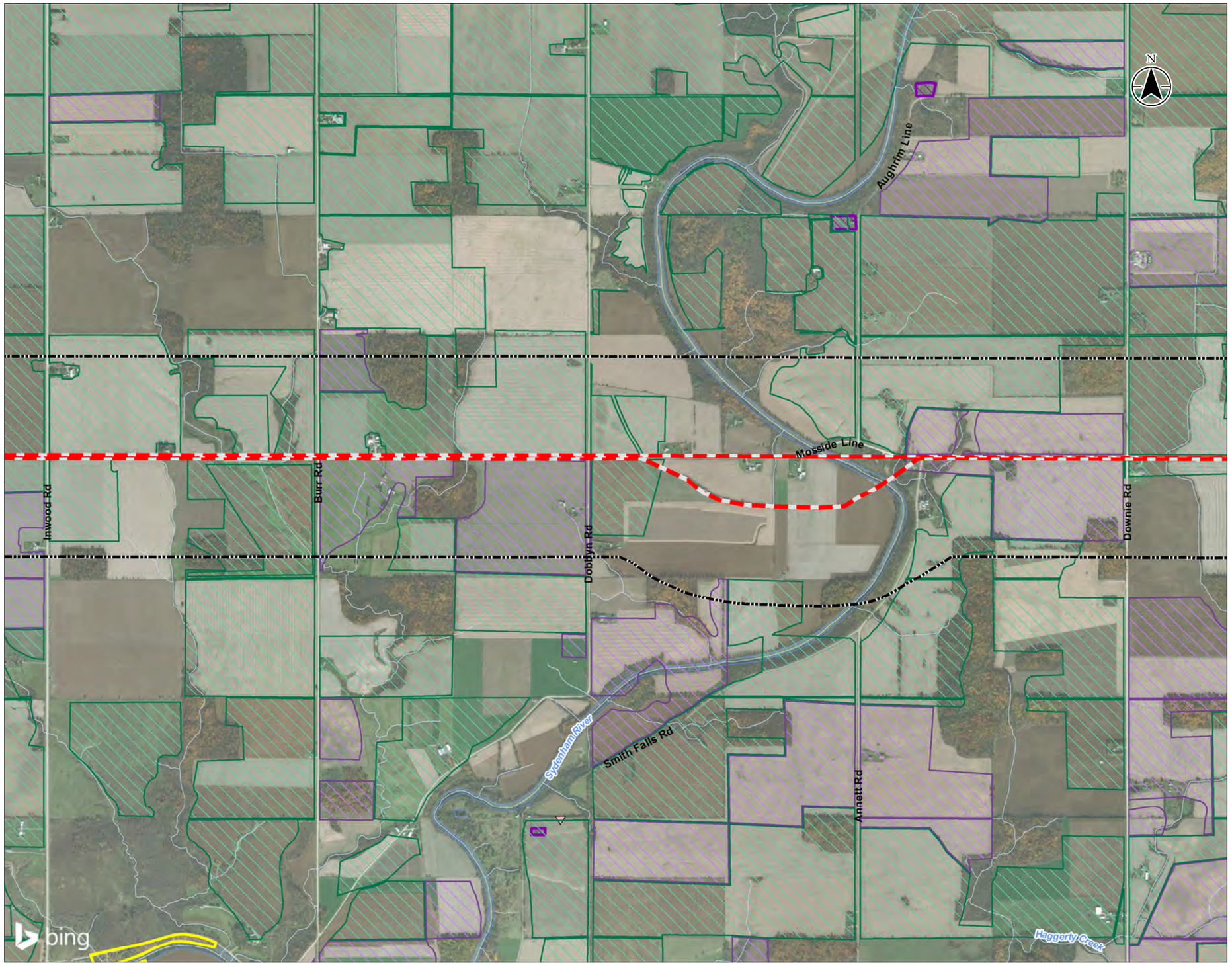

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Landfill (Closed)
- Park Sports Field (CanVec)

0 400 800 metres

1:20,000 (At original document size of 11x17)

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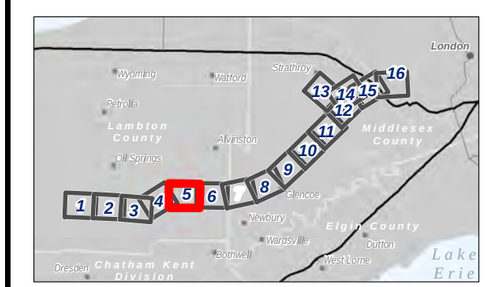

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.5

Title
Socio - Economic Features

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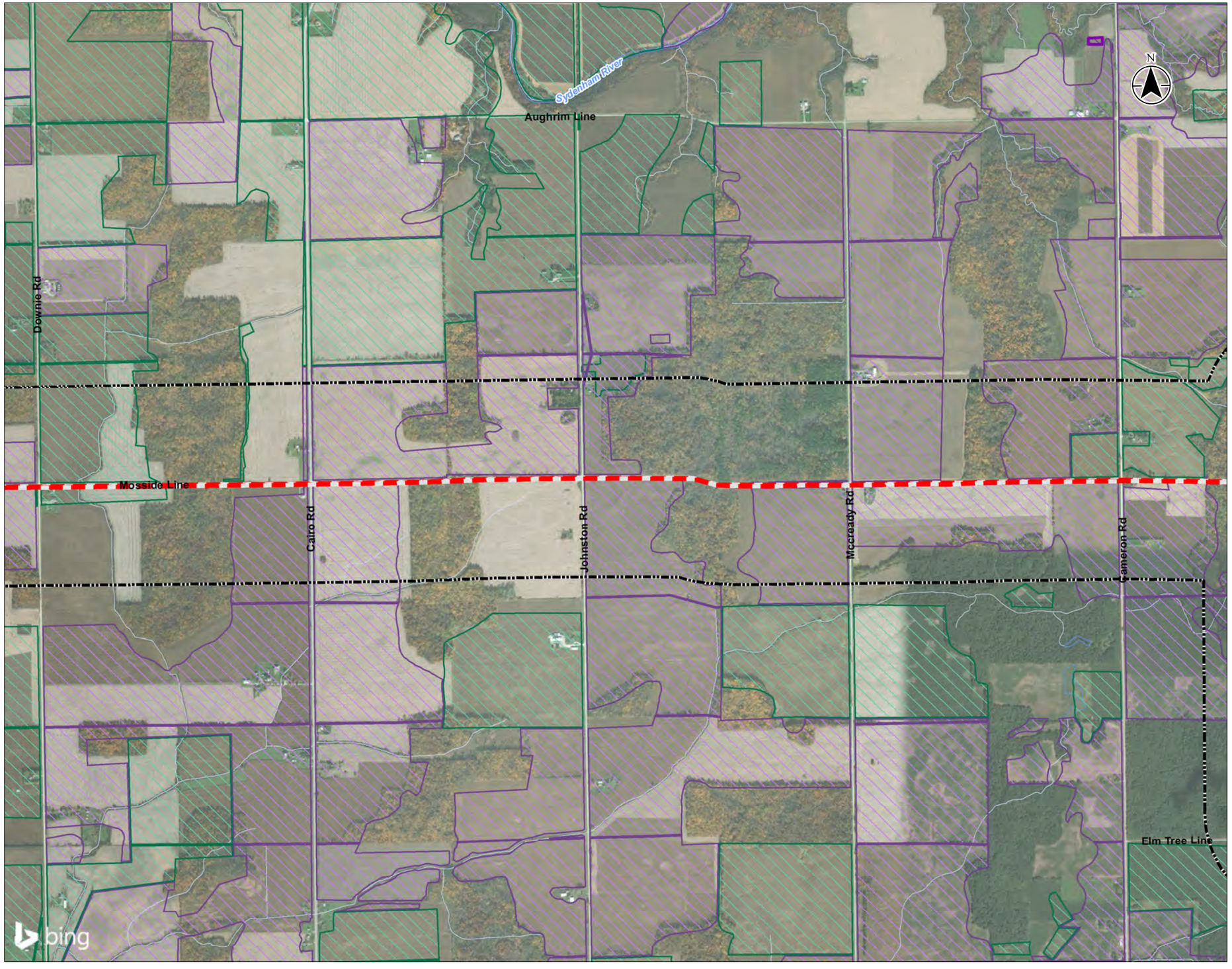

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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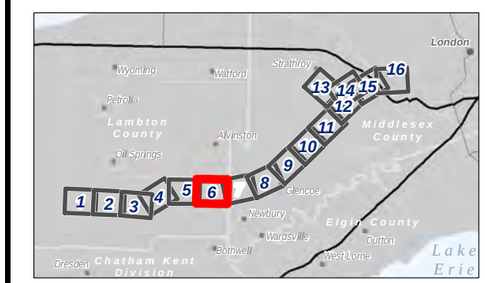

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.6

Title
Socio - Economic Features

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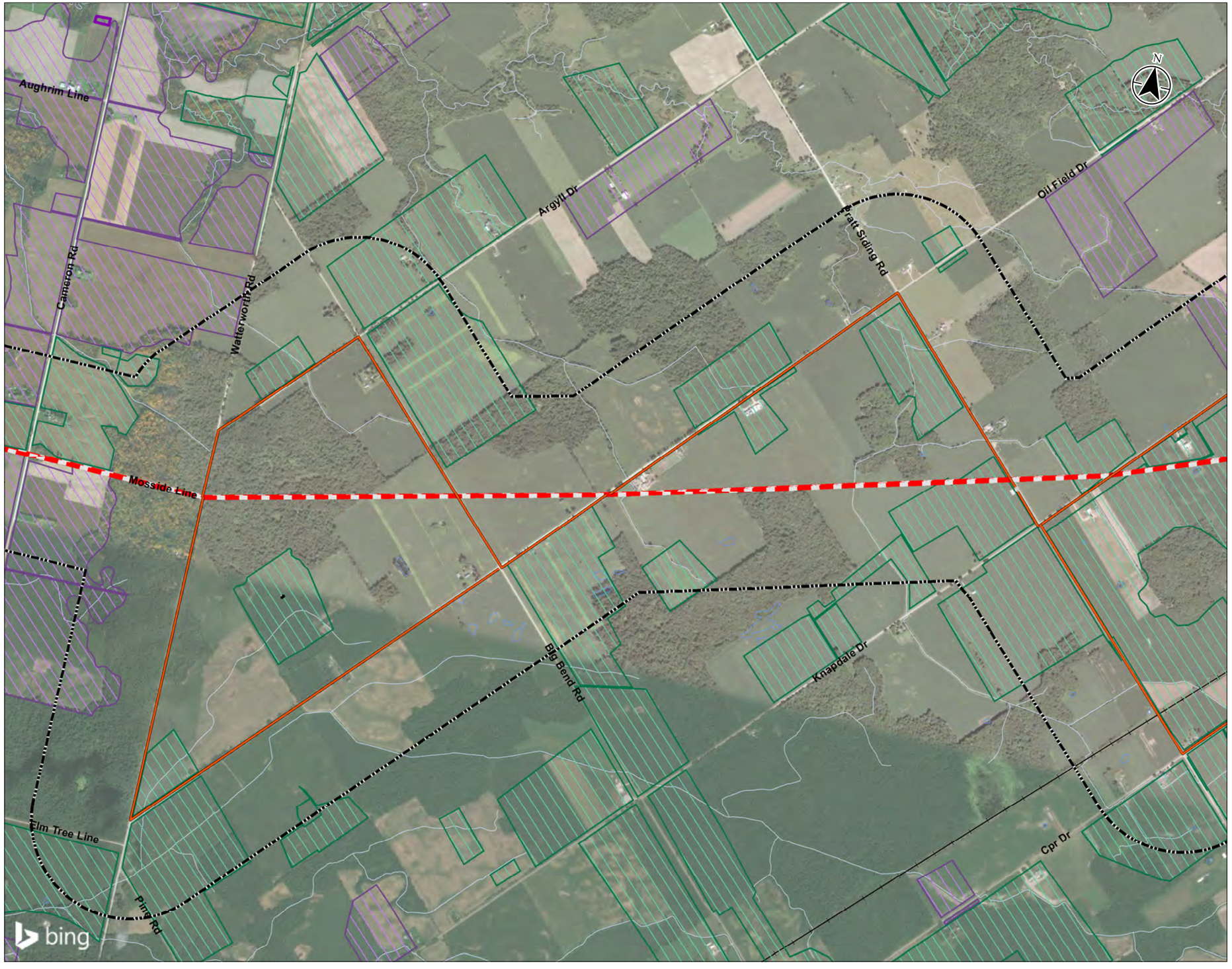

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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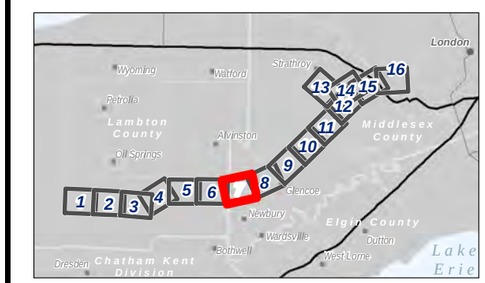

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.7

Title
Socio - Economic Features

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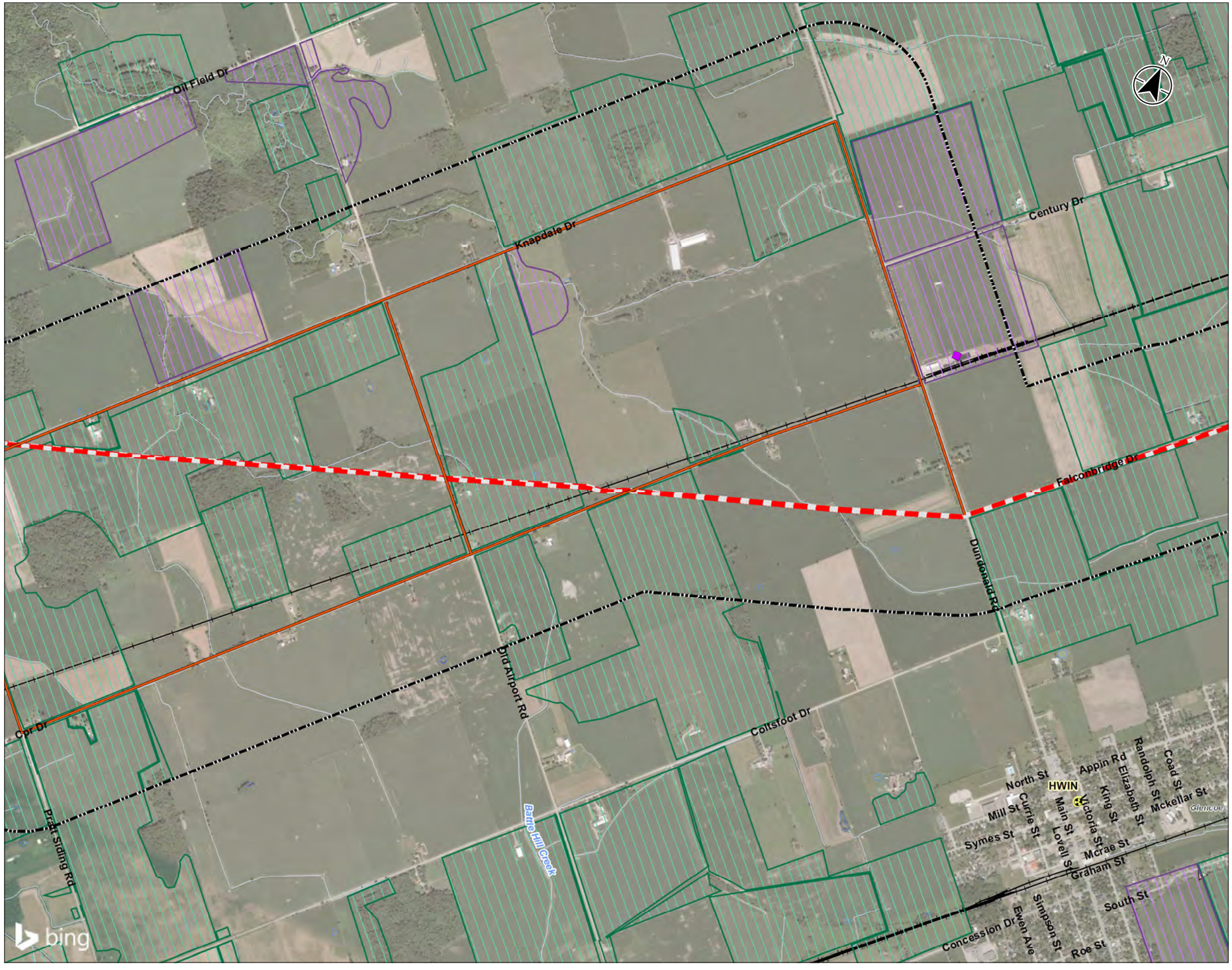

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Landfill (Closed)
- Potentially Contaminated Sites

Socio-Economic Features

- Business

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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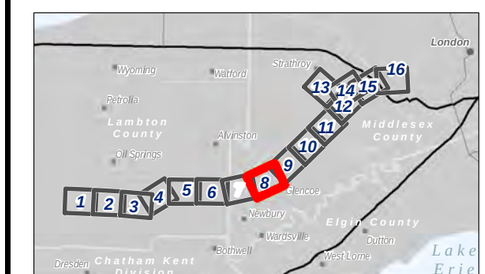

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.8

Title
Socio - Economic Features

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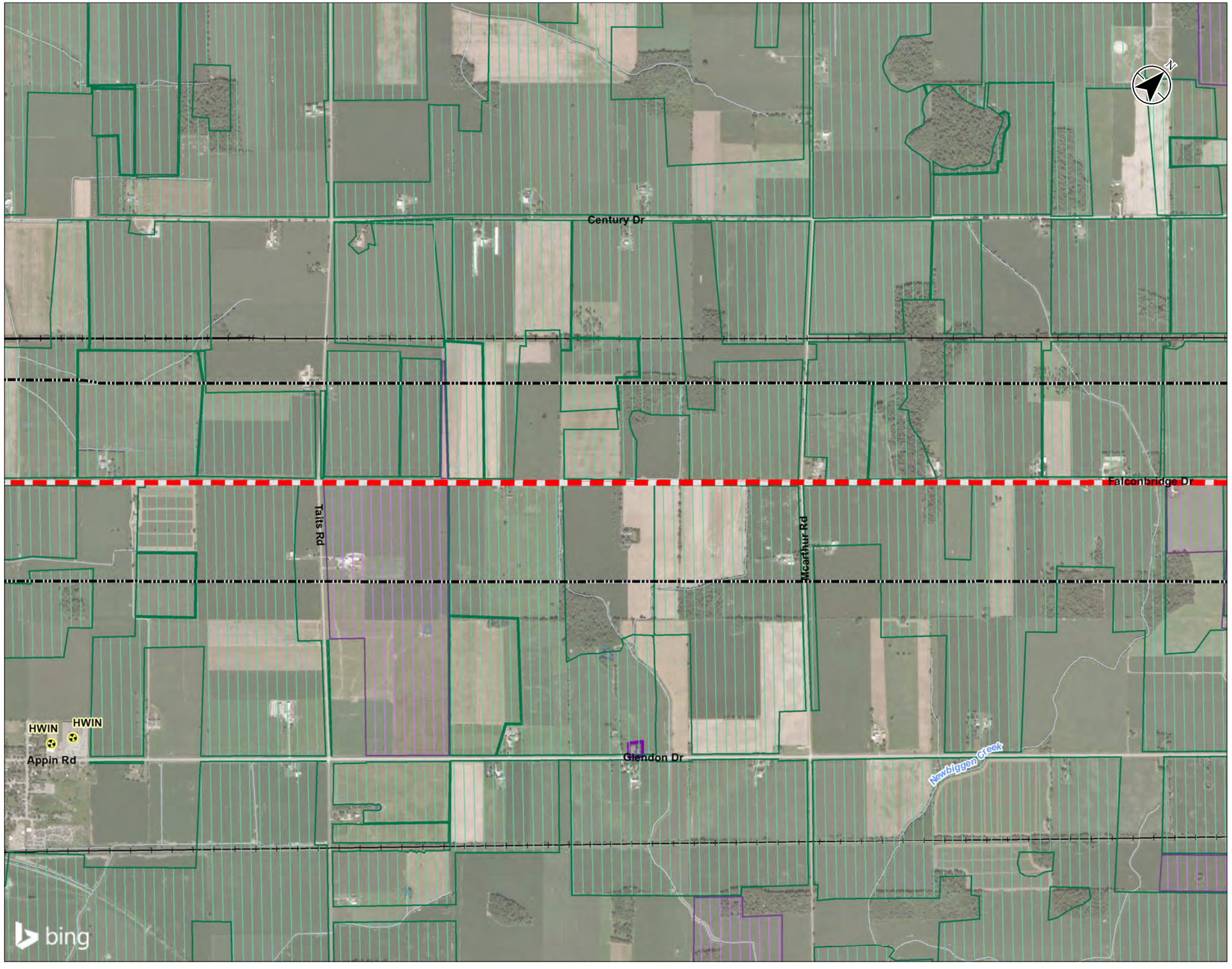

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Potentially Contaminated Sites

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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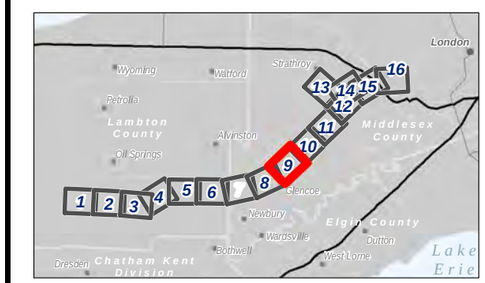

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.9

Title
Socio - Economic Features

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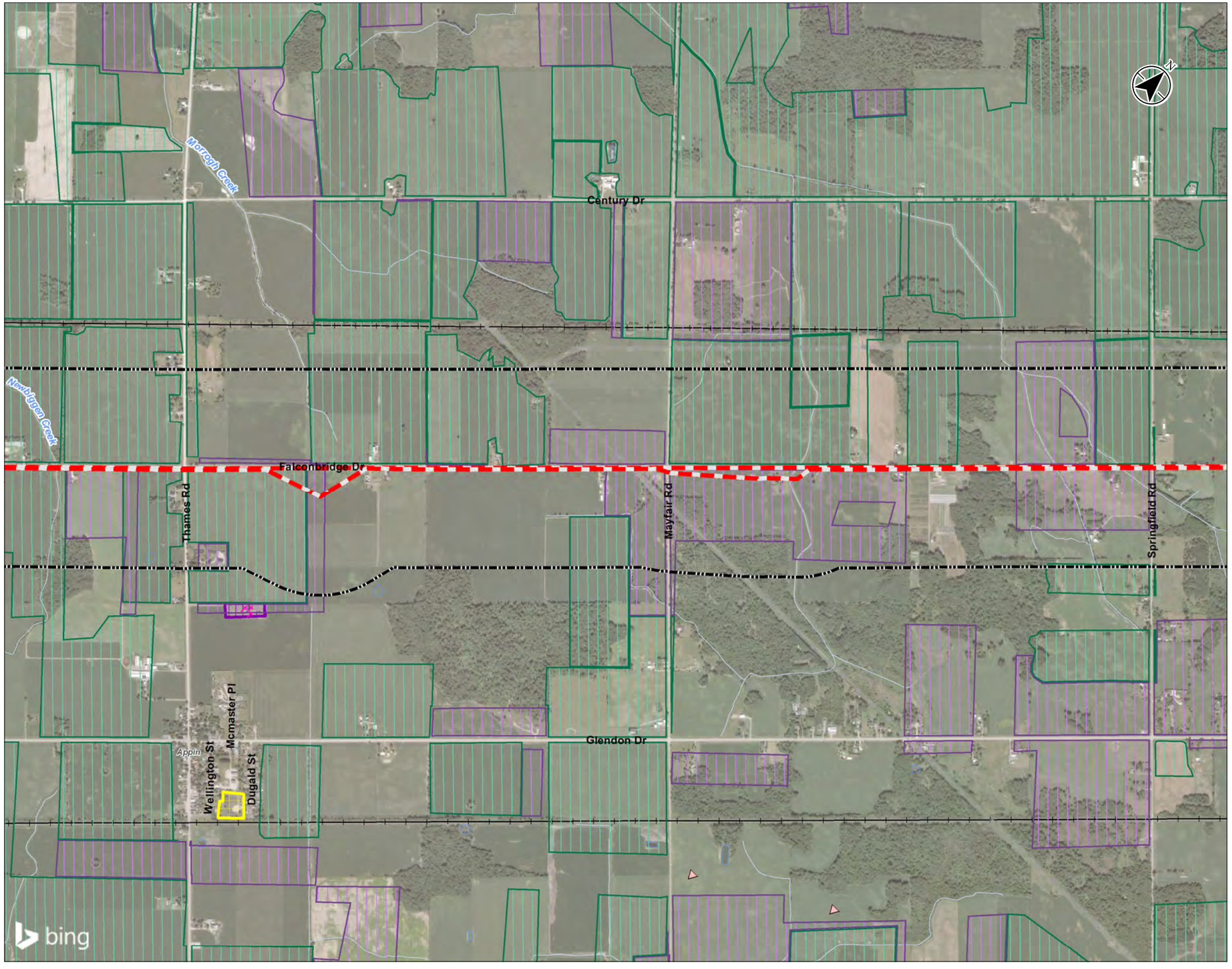

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Hydro Line
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Landfill (Closed)

Socio-Economic Features

- Cemetery
- Park Sports Field (CanVec)

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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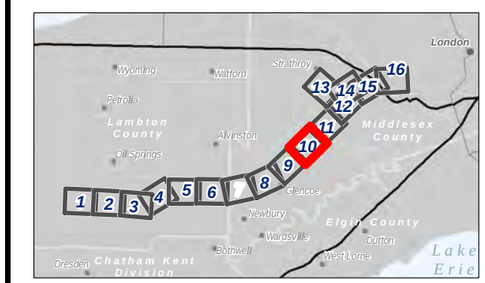

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.10

Title
Socio - Economic Features

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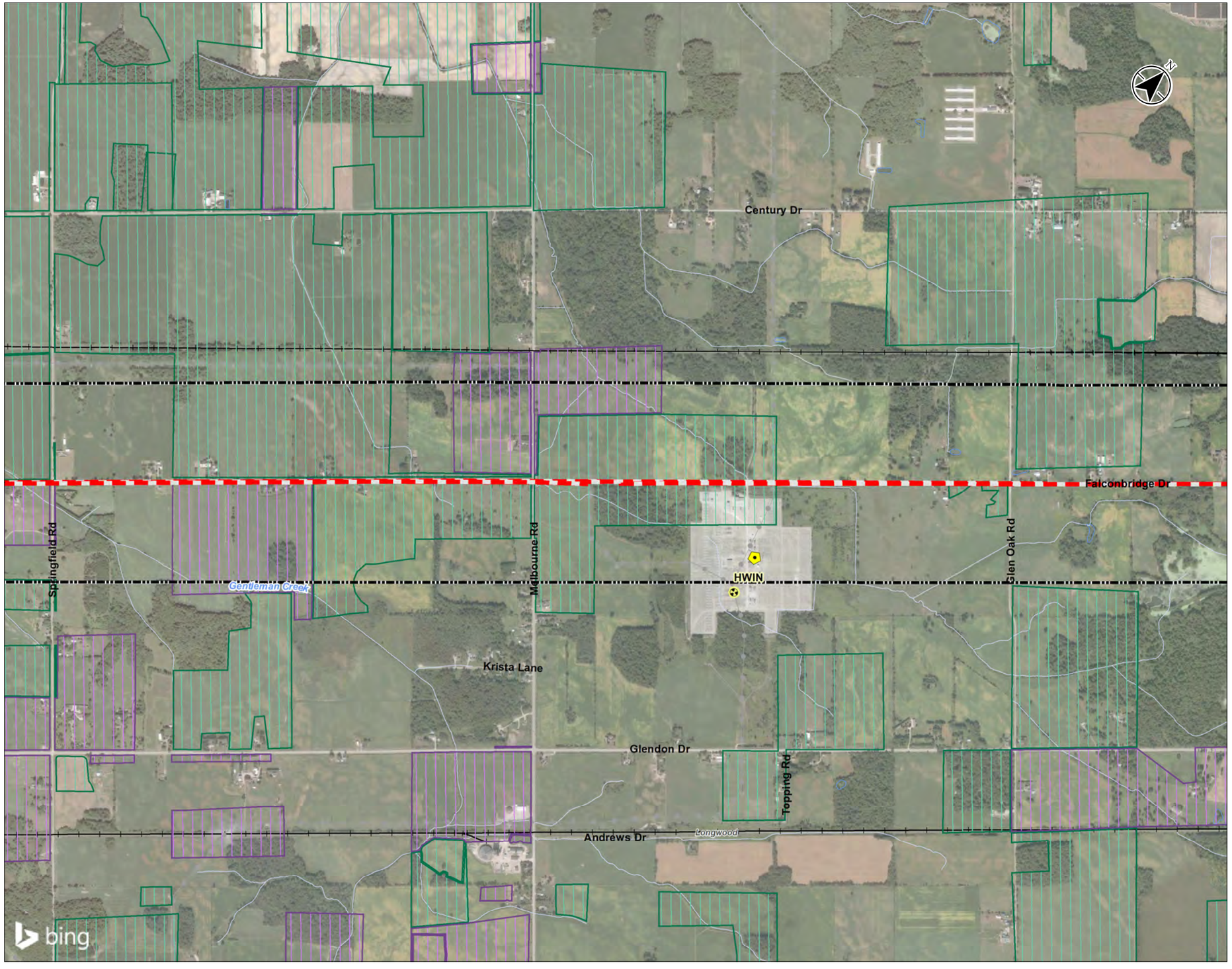

Stantec

- Study Area

Enbridge Gas Features
- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Hydro Line
- Railway - Operational

Base / Environmental Features
- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Potentially Contaminated Sites

Socio-Economic Features
- Utility

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes
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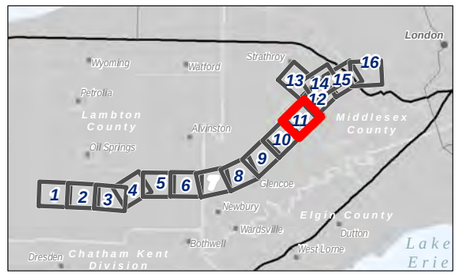

Project Location
Counties of Lambton and Middlesex

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Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.11

Title
Socio - Economic Features

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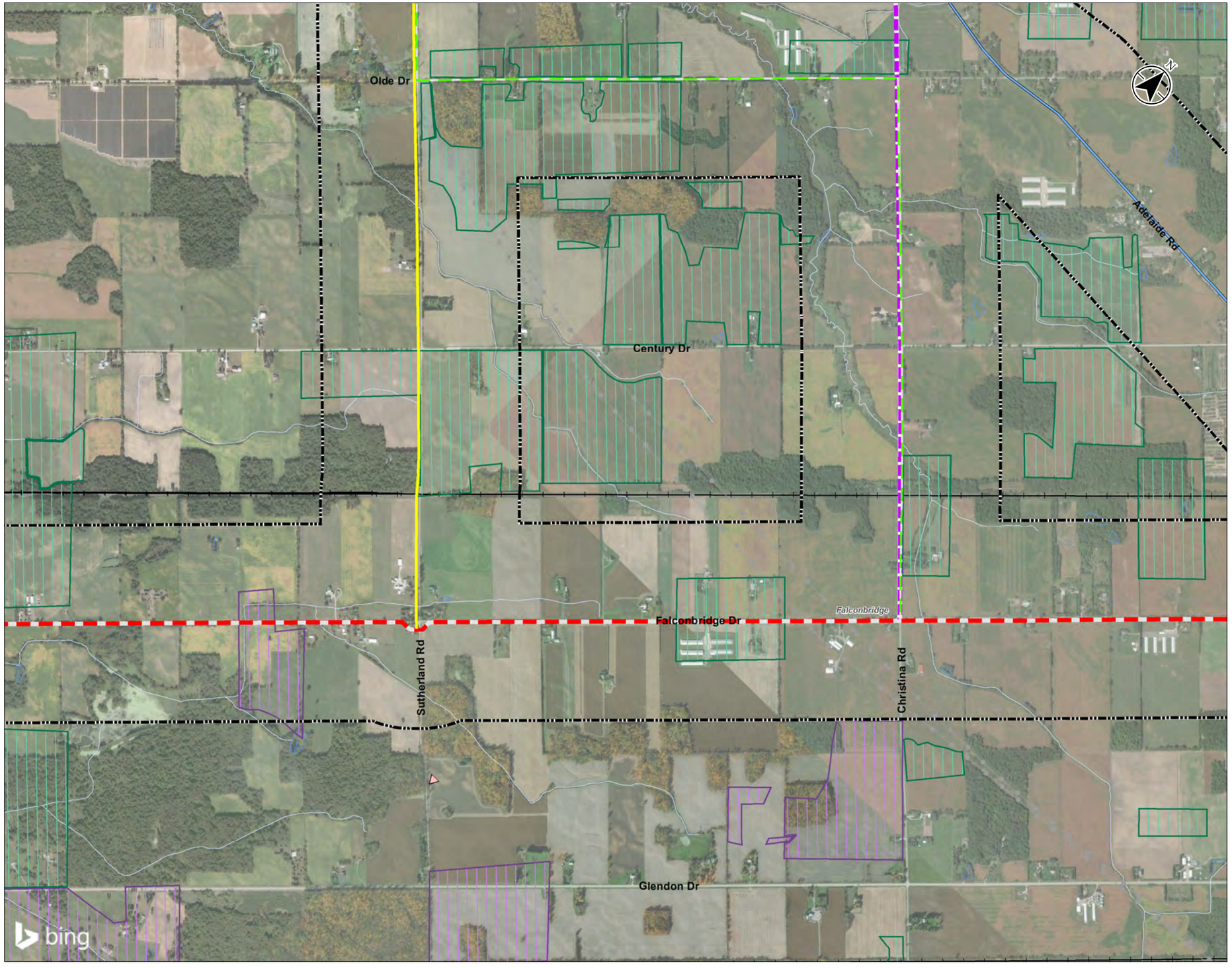

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Hydro Line
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Landfill (Closed)

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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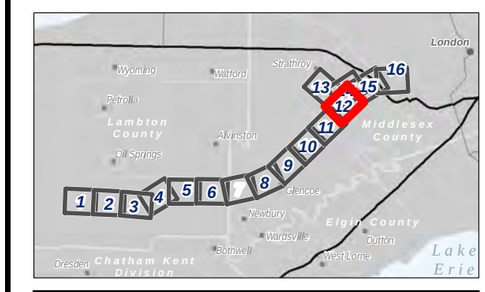

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.12

Title
Socio - Economic Features

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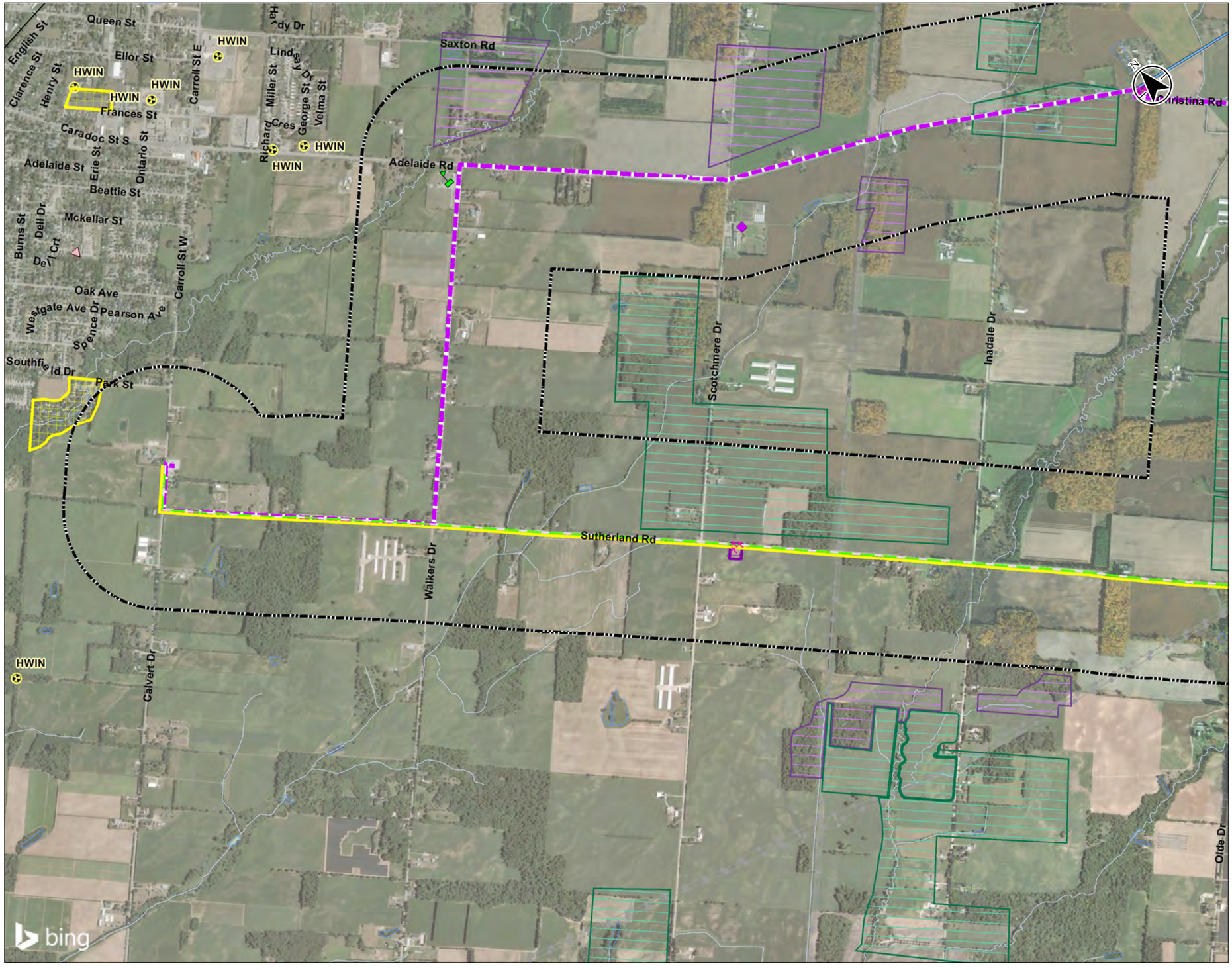

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Hydro Line
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Landfill (Closed)
- Potentially Contaminated Sites

Socio-Economic Features

- Business
- Cemetery
- School
- Park Sports Field (CanVec)

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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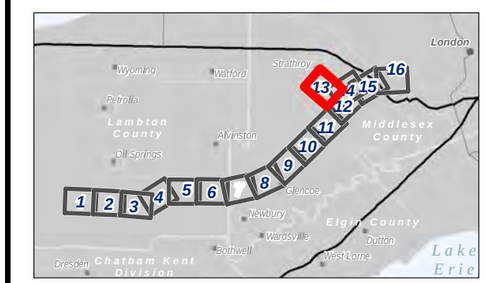

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.13

Title
Socio - Economic Features

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Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Hydro Line
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody

Socio-Economic Features

- Business
- Cemetery

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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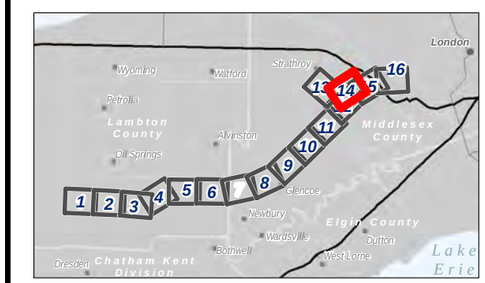

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.14

Title
Socio - Economic Features

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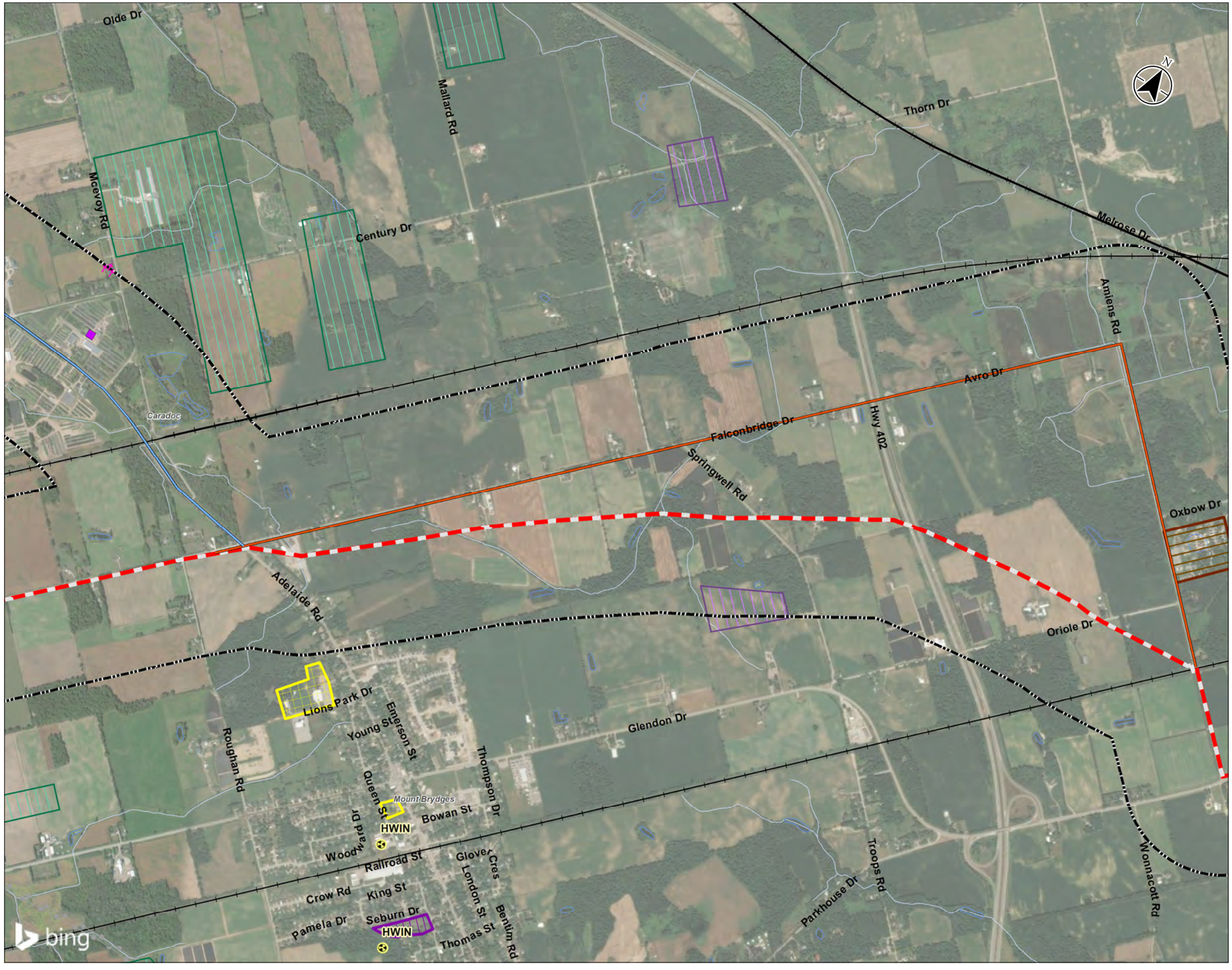

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Hydro Line
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Potentially Contaminated Sites

Socio-Economic Features

- Business
- Cemetery
- Park Sports Field (CanVec)
- Campground

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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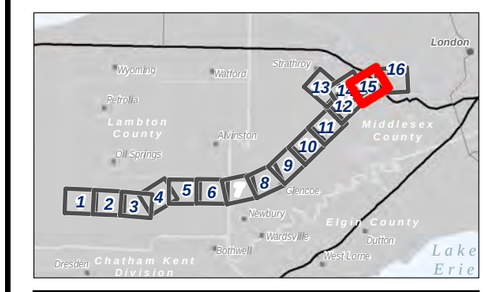

Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-2.15

Title
Socio - Economic Features

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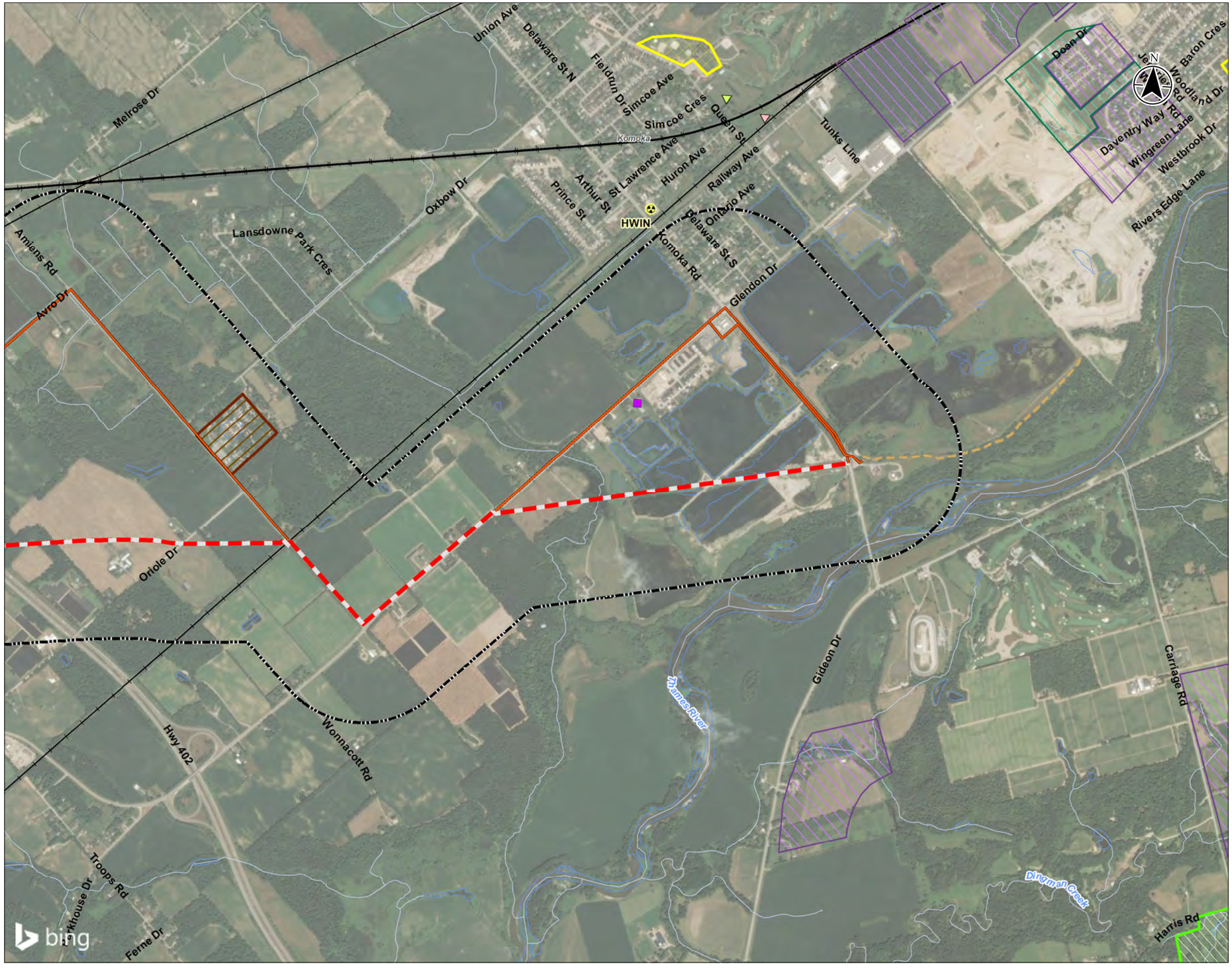

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4
- Trail
- Railway - Operational

Base / Environmental Features

- Watercourse
- Random Tile Drainage
- Systematic Tile Drainage
- Waterbody
- Landfill (Active)
- Landfill (Closed)
- Potentially Contaminated Sites

Socio-Economic Features

- Business
- Golf Course (CanVec)
- Park Sports Field (CanVec)
- Campground

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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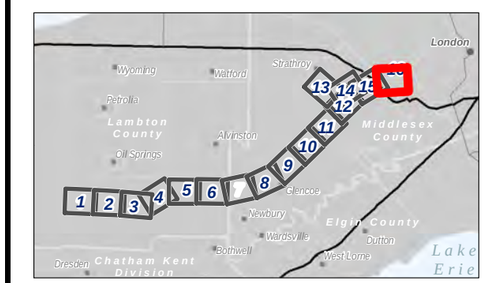

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
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Figure No.
C-2.16

Title
Socio - Economic Features

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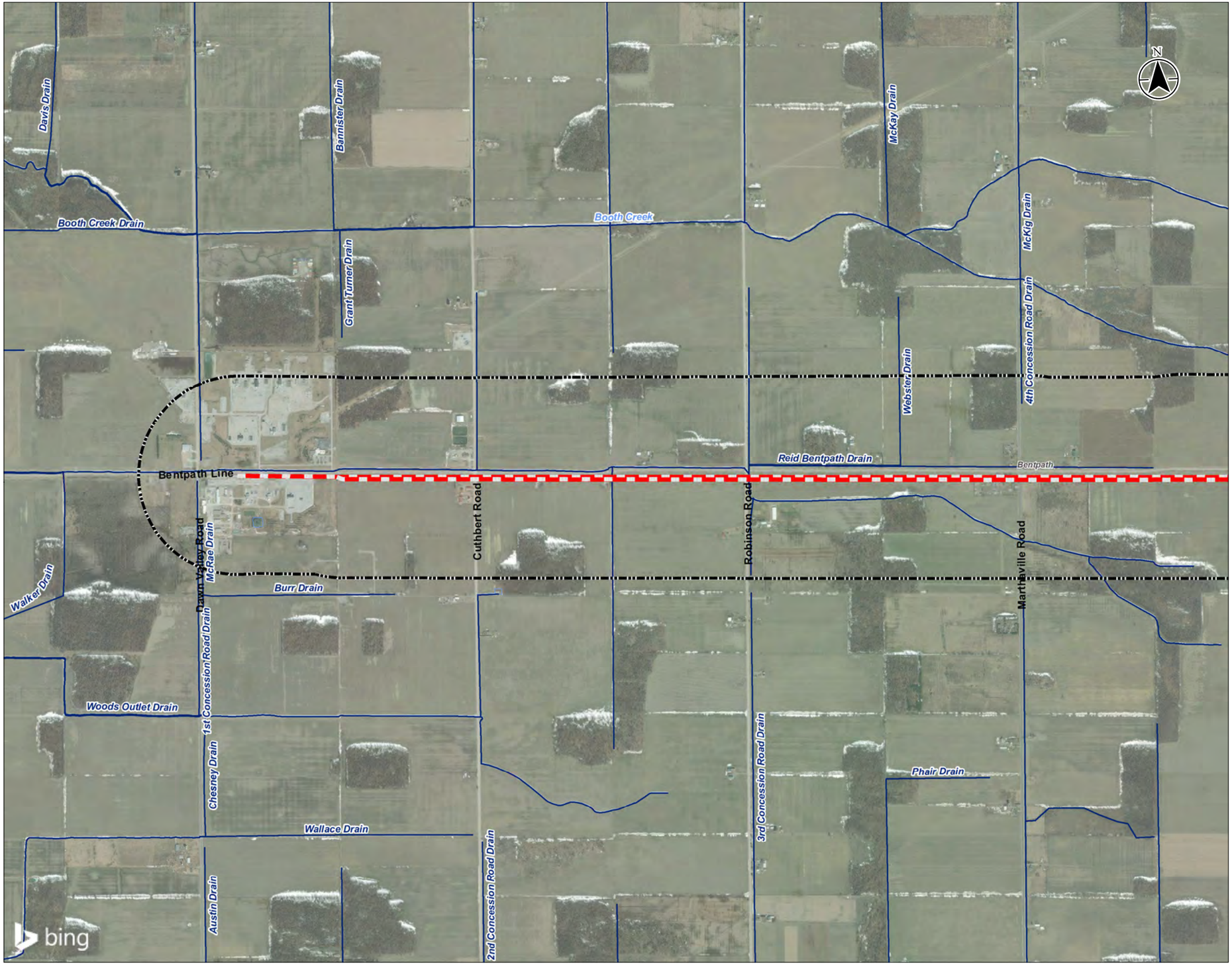

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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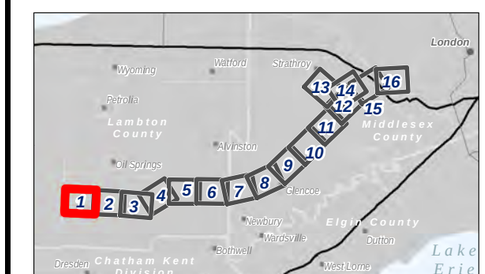
3. Middlesex natural heritage data provided on March 6, 2020.
4. Orthoimagery © 2020 Microsoft Corporation © 2020 Maxar ©CNES (2020) Distribution Airbus DS. Date of imagery unknown.



Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-3.1

Title
Natural Environment Features

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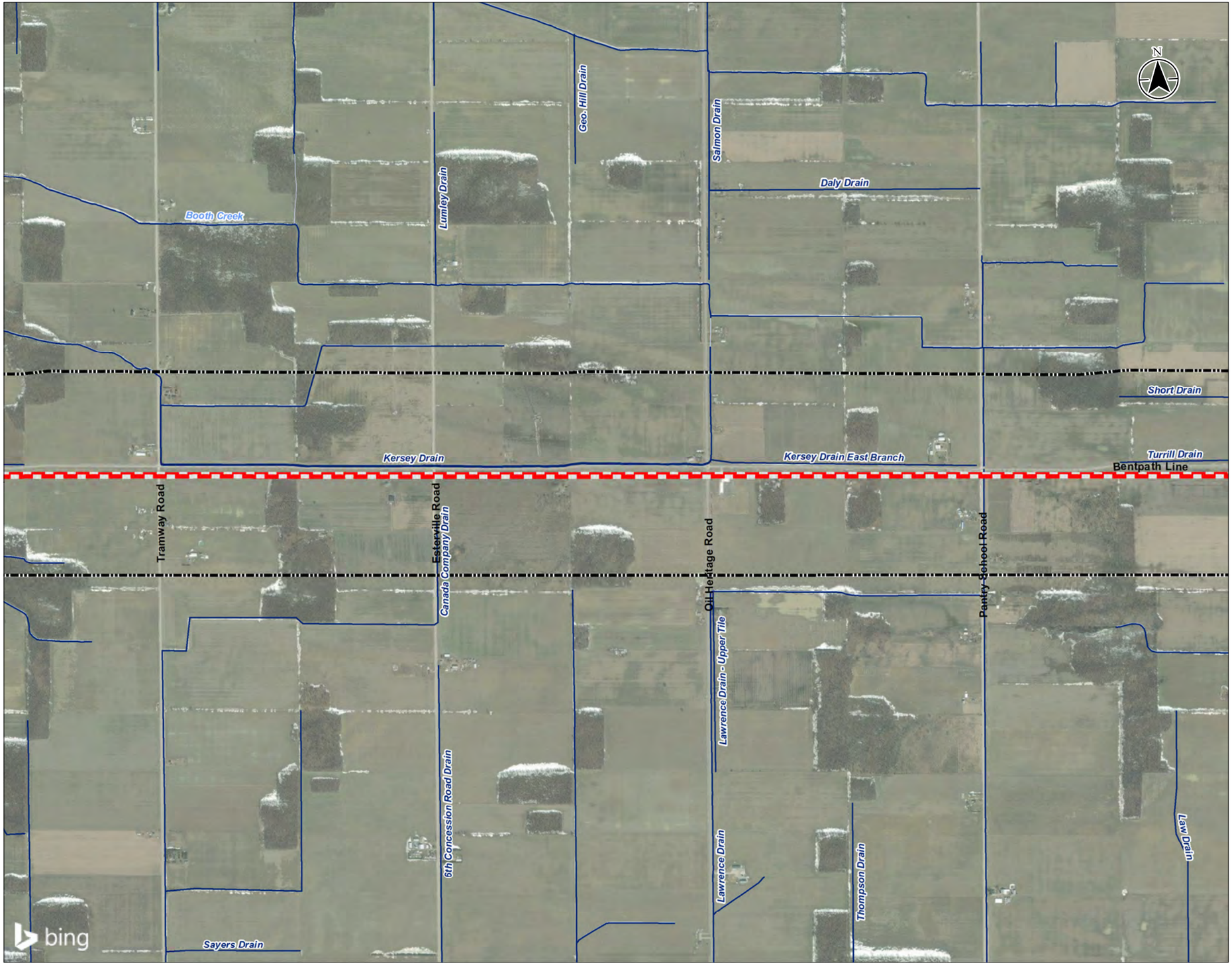

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Watercourse
- Municipal Boundary - Lower Tier

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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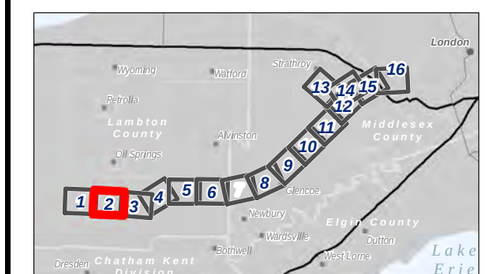

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
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Figure No.
C-3.2

Title
Natural Environment Features

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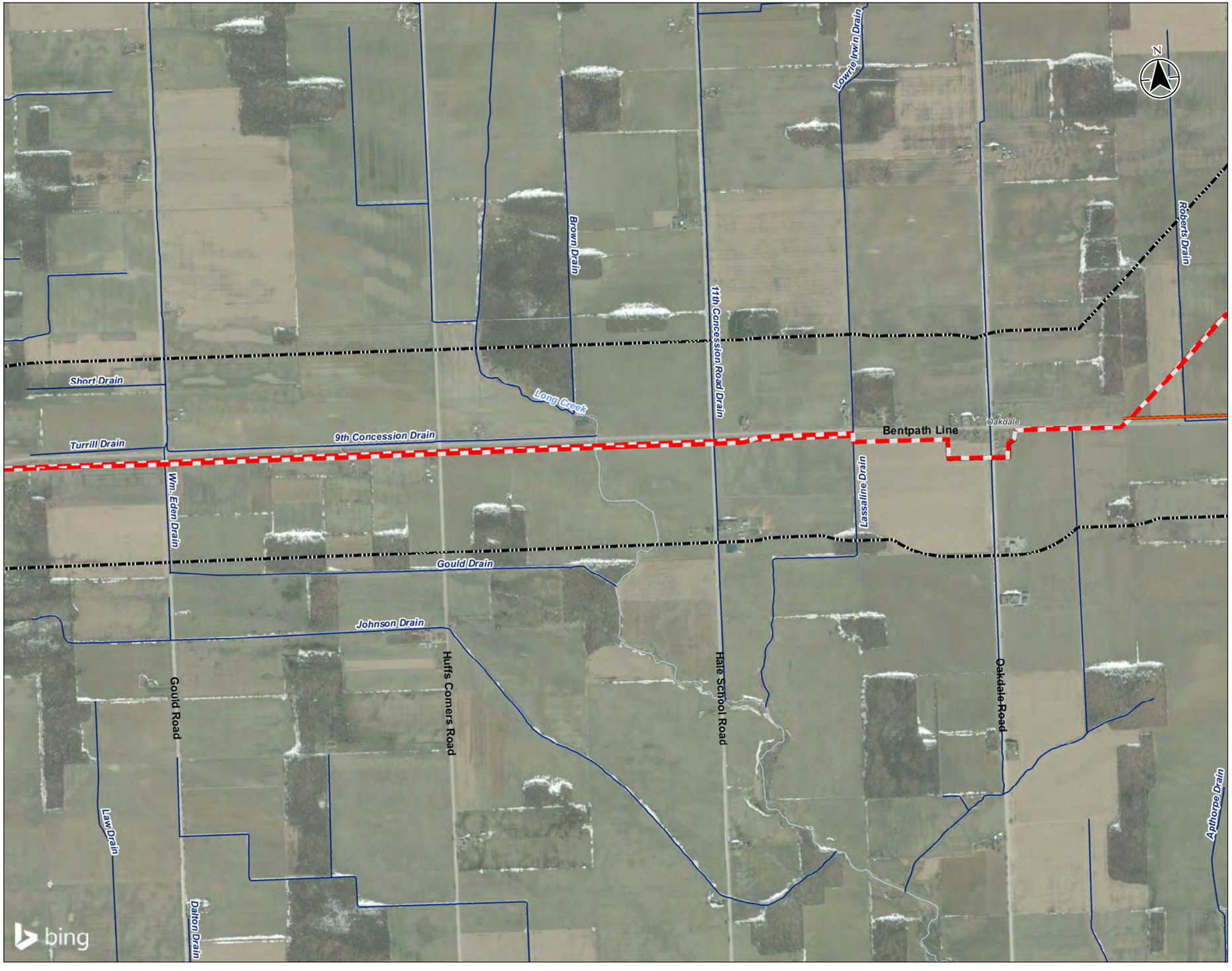

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Watercourse
- Municipal Boundary - Lower Tier

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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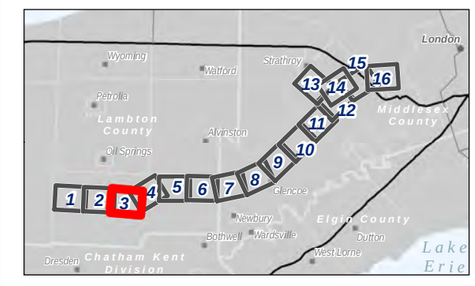

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-16
Technical Review by BCC on 2020-07-09

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ENBRIDGE GAS INC.
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Figure No.
C-3.3

Title
Natural Environment Features

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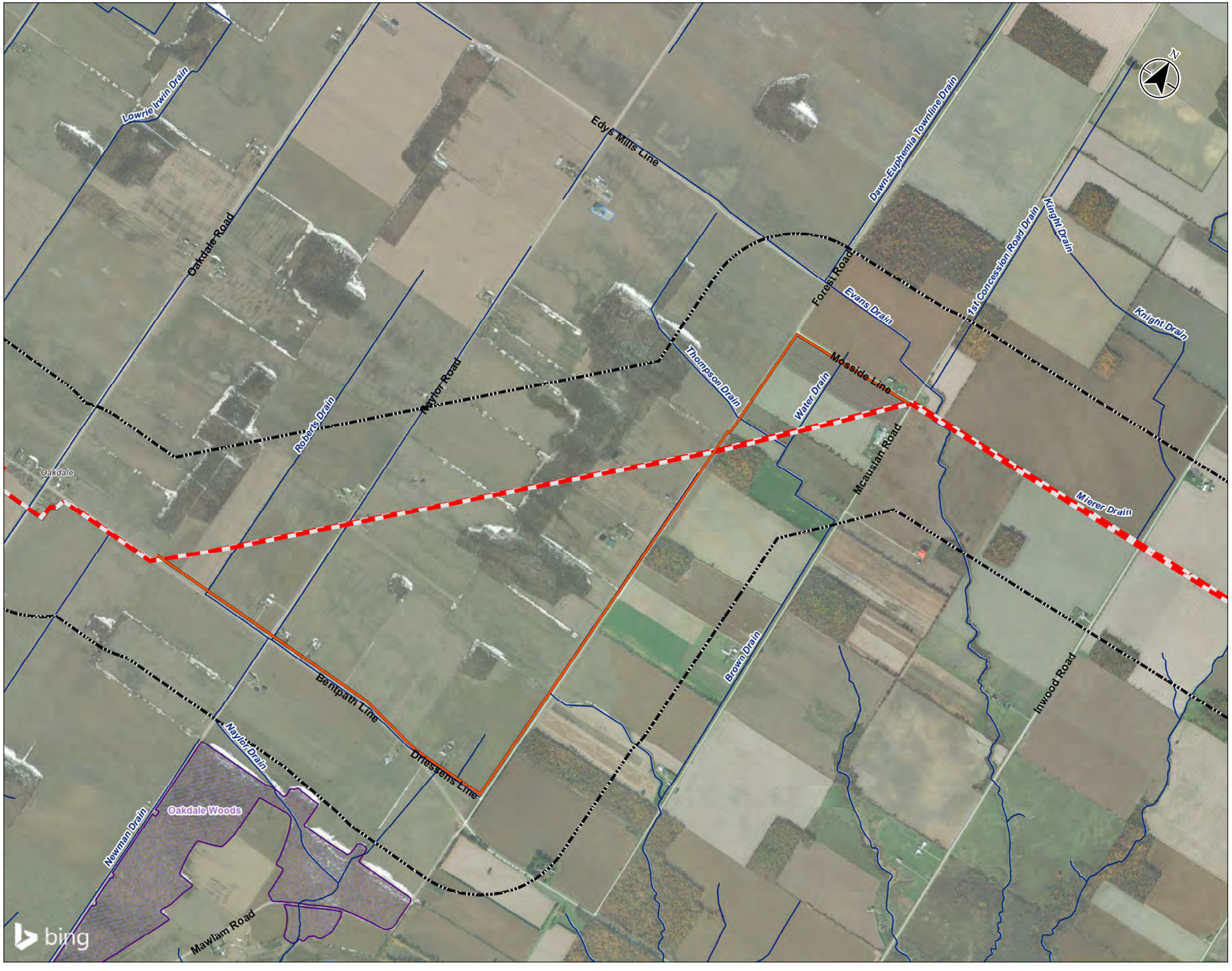

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Watercourse
- ANSI, Life Science;Regional
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

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Notes

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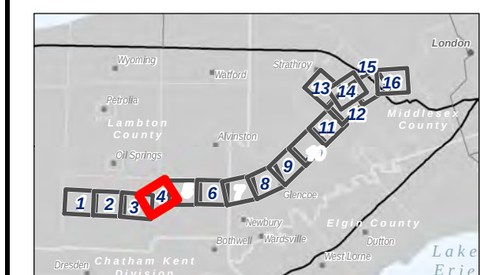

Project Location
Counties of Lambton and Middlesex

160951170 REV1
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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-3.4

Title
Natural Environment Features

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Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Watercourse
- Municipal Boundary - Lower Tier
- Other/Locally Significant Wetland
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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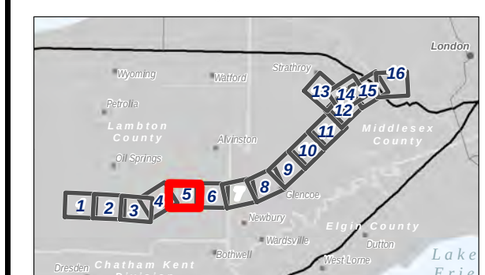

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-3.5

Title
Natural Environment Features

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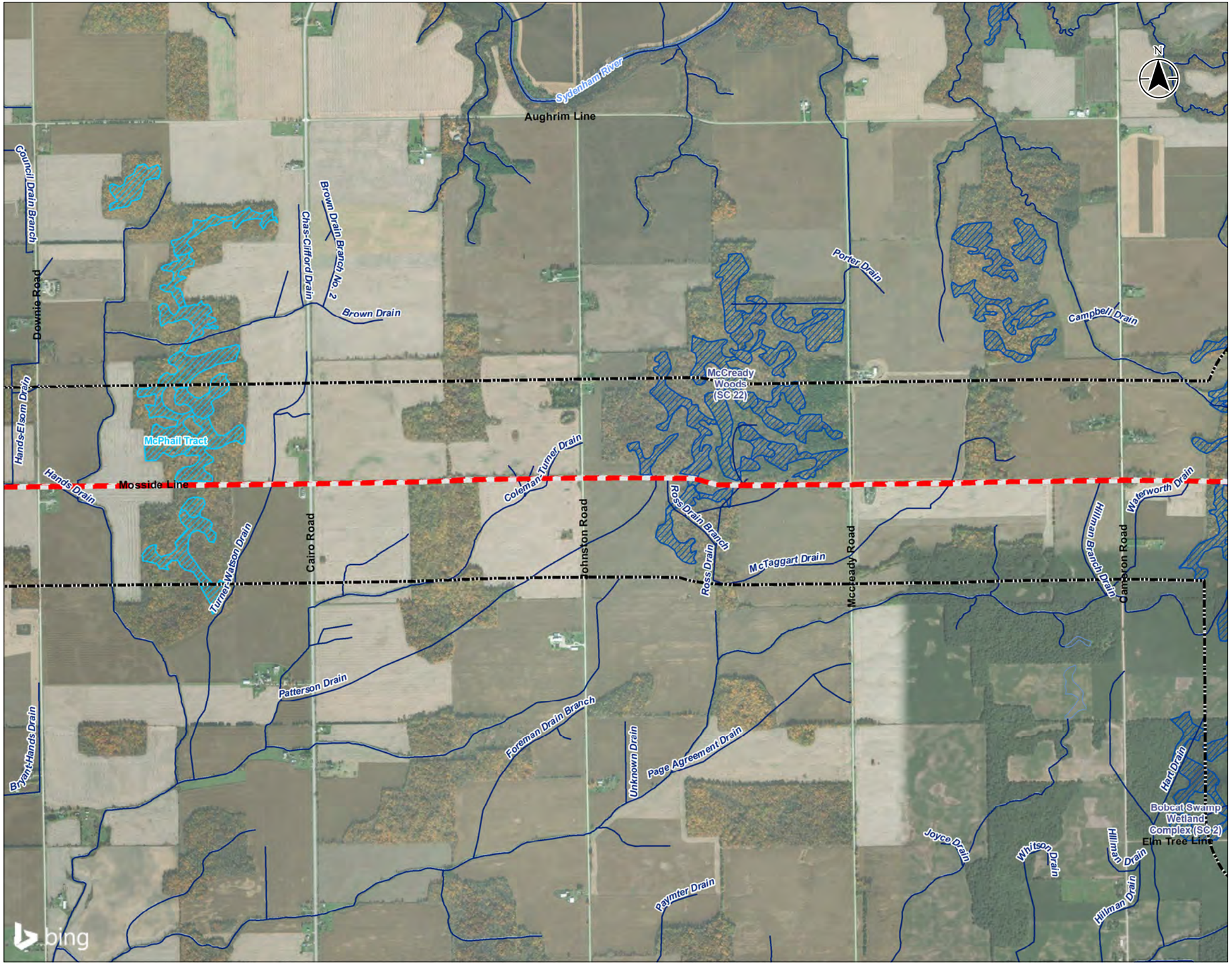

Stantec

- Study Area

Enbridge Gas Features
- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features
- Constructed Drain
- Watercourse
- Municipal Boundary - Lower Tier
- Provincially Significant Wetland
- Other/Locally Significant Wetland
- Waterbody

0 400 800 metres
1:20,000 (At original document size of 11x17)

Notes
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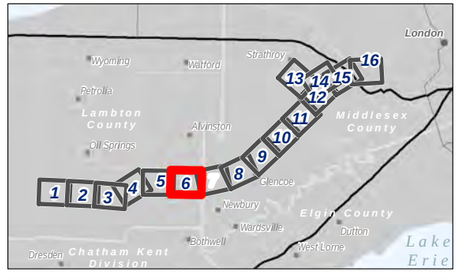

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Counties of Lambton and Middlesex

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Figure No.
C-3.6

Title
Natural Environment Features

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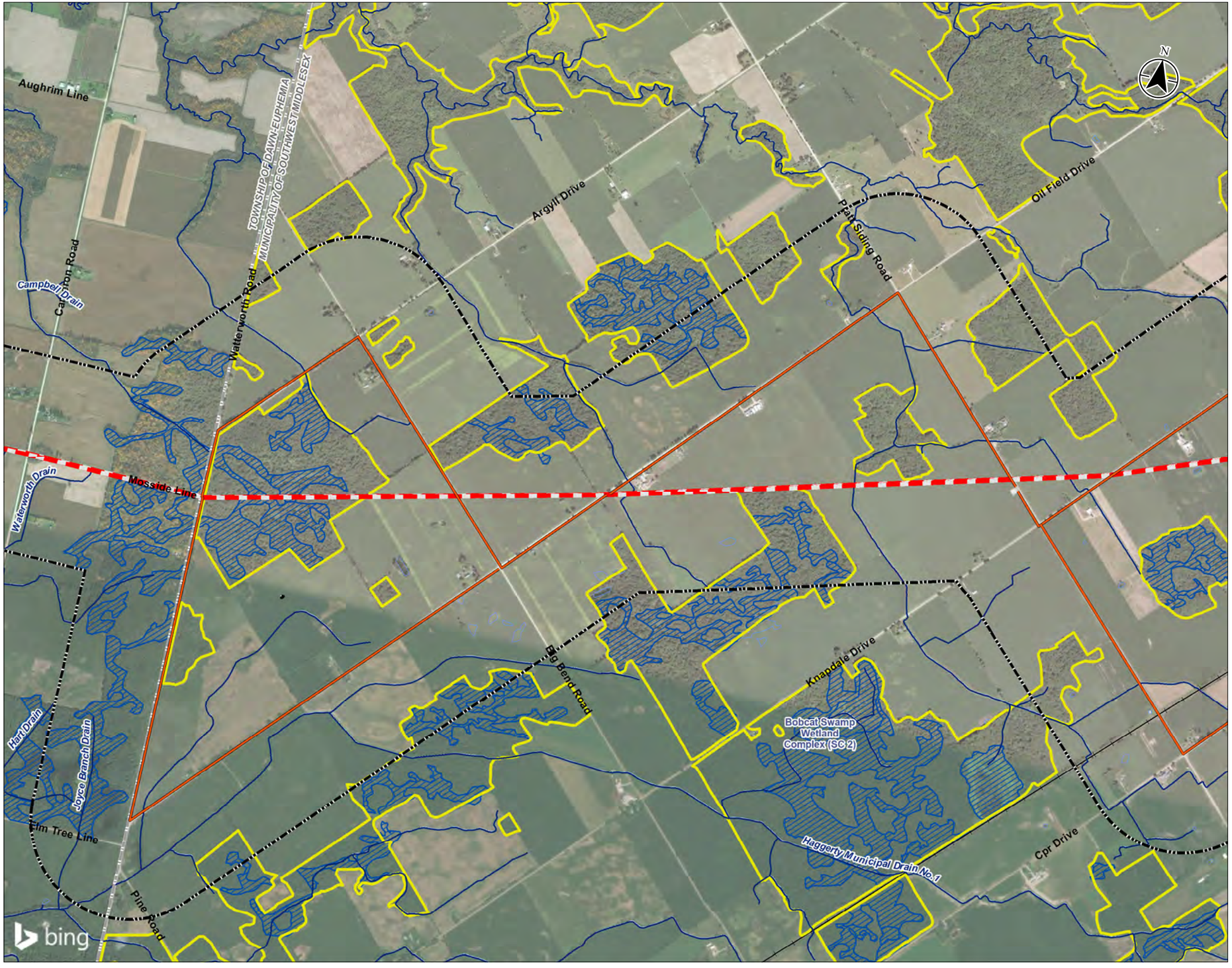

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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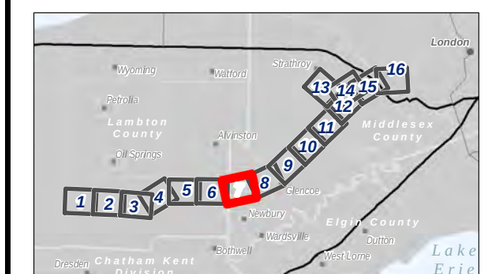

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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Figure No.
C-3.7

Title
Natural Environment Features

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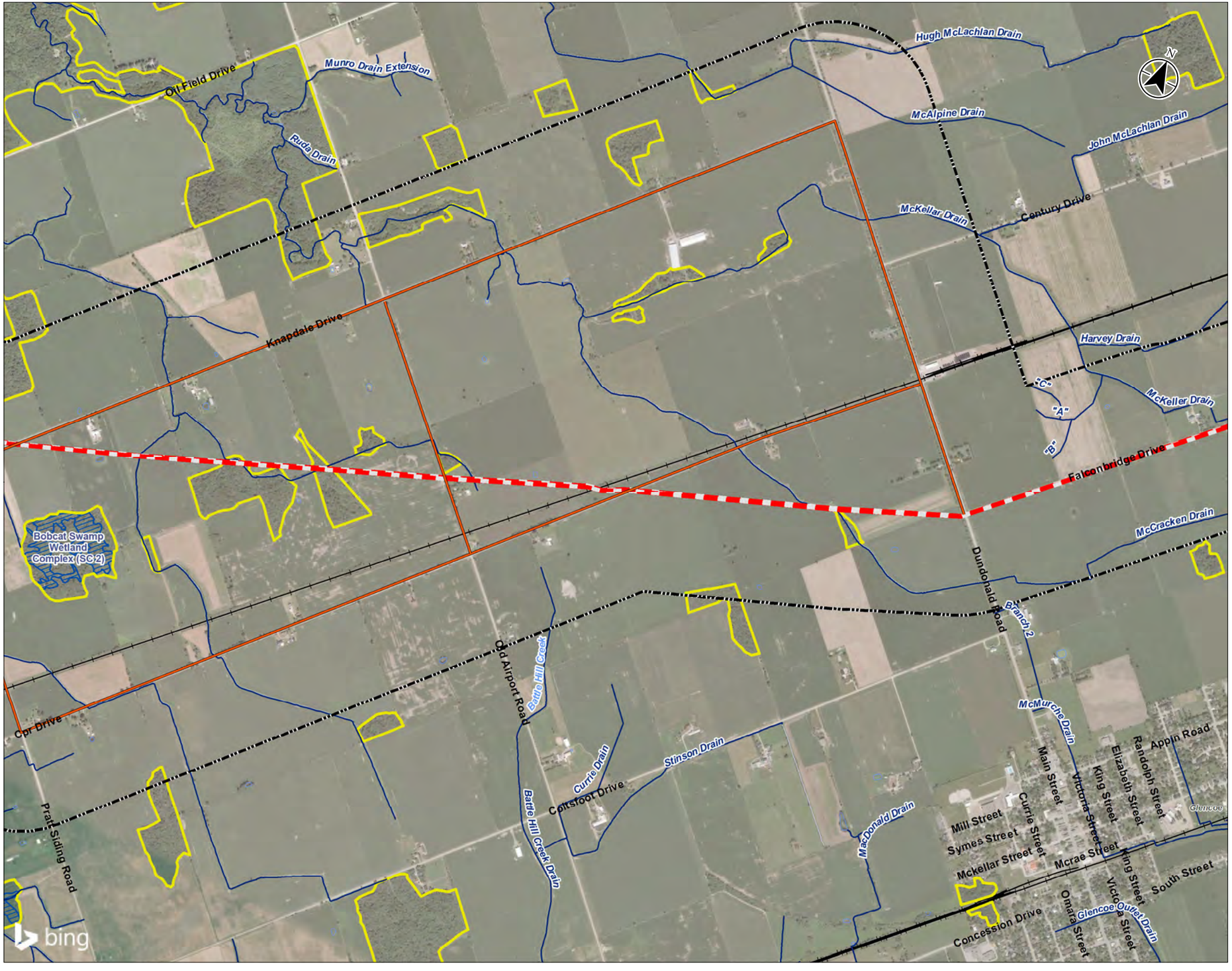

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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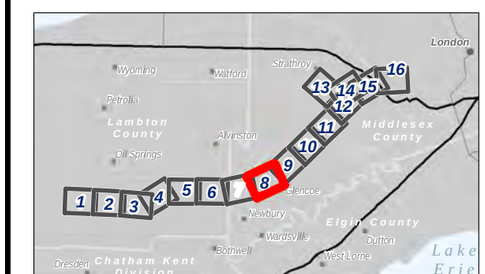

Project Location
Counties of Lambton and Middlesex

160951170 REV1
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Figure No.
C-3.8

Title
Natural Environment Features

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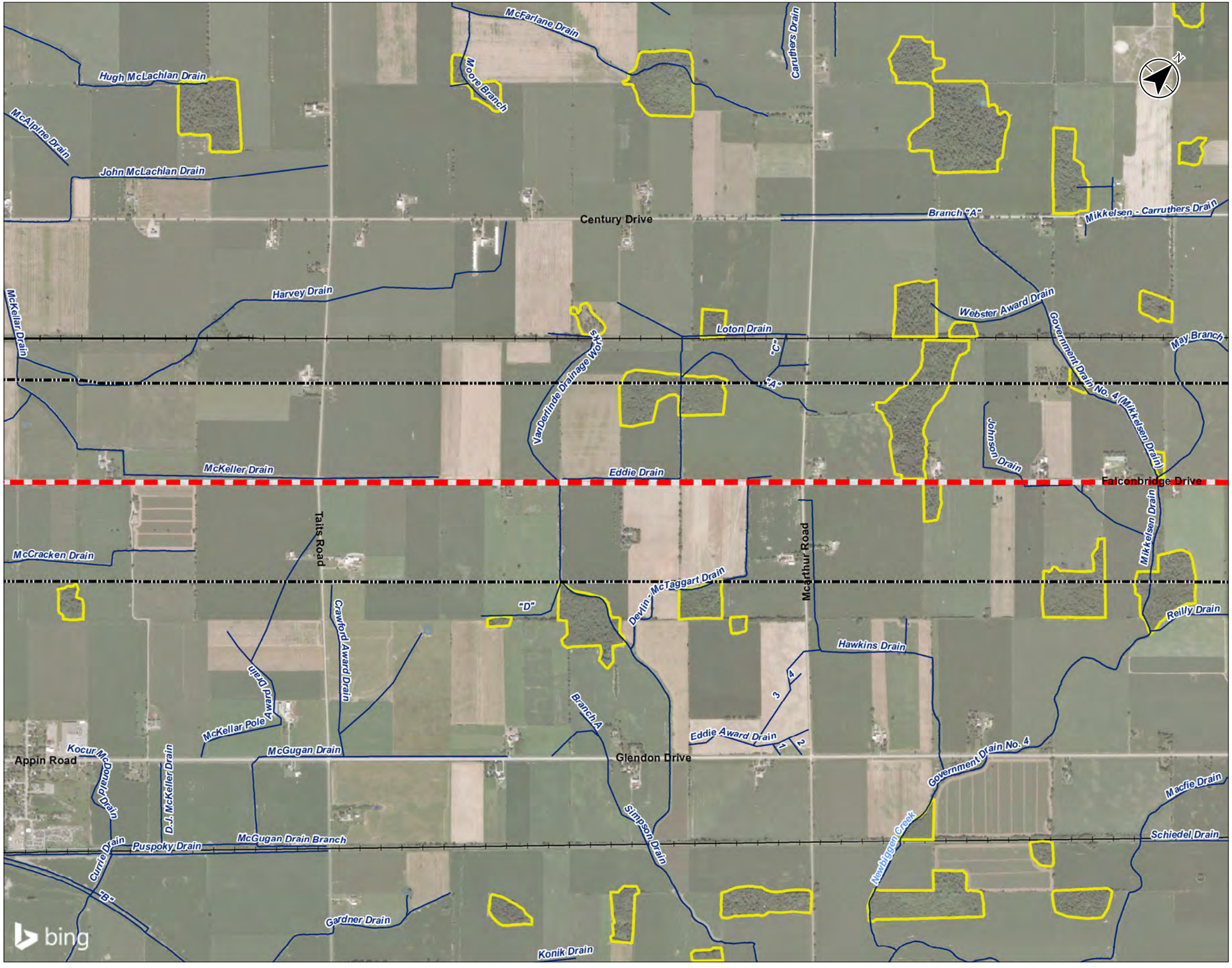

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Waterbody

0 400 800 metres

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Notes

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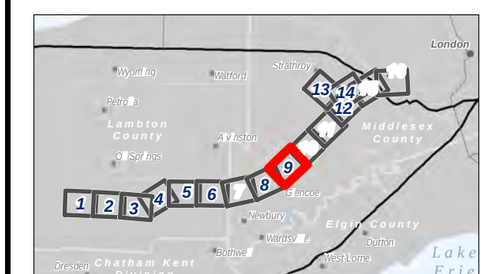

Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
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Figure No.
C-3.9

Title
Natural Environment Features

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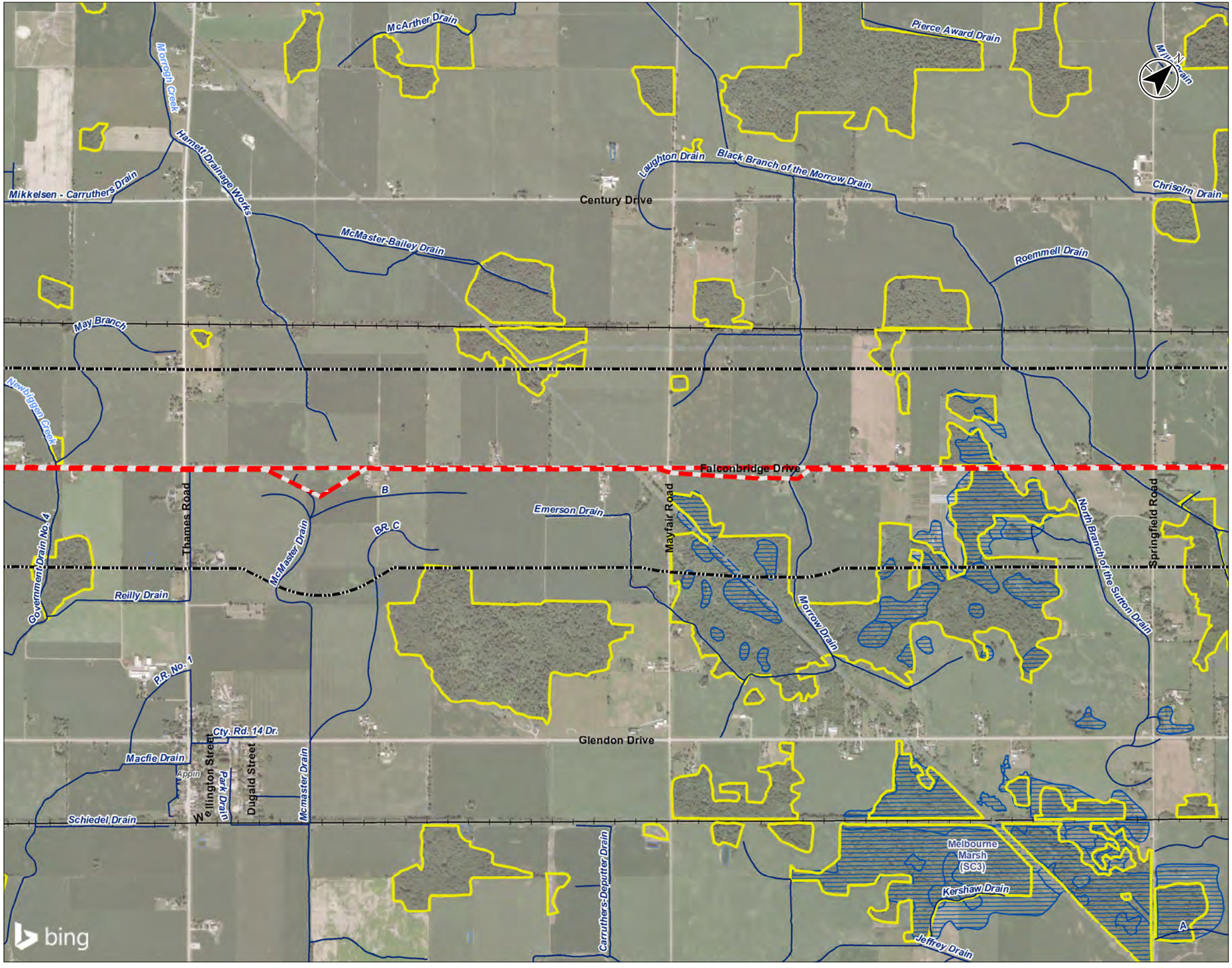

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Hydro Line
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

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Notes

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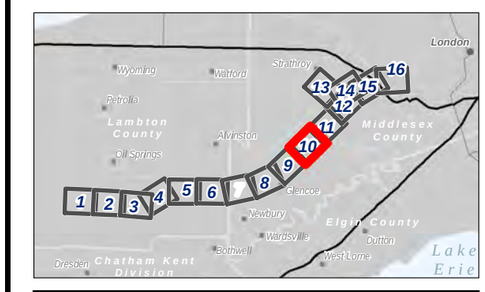

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-3.10

Title
Natural Environment Features

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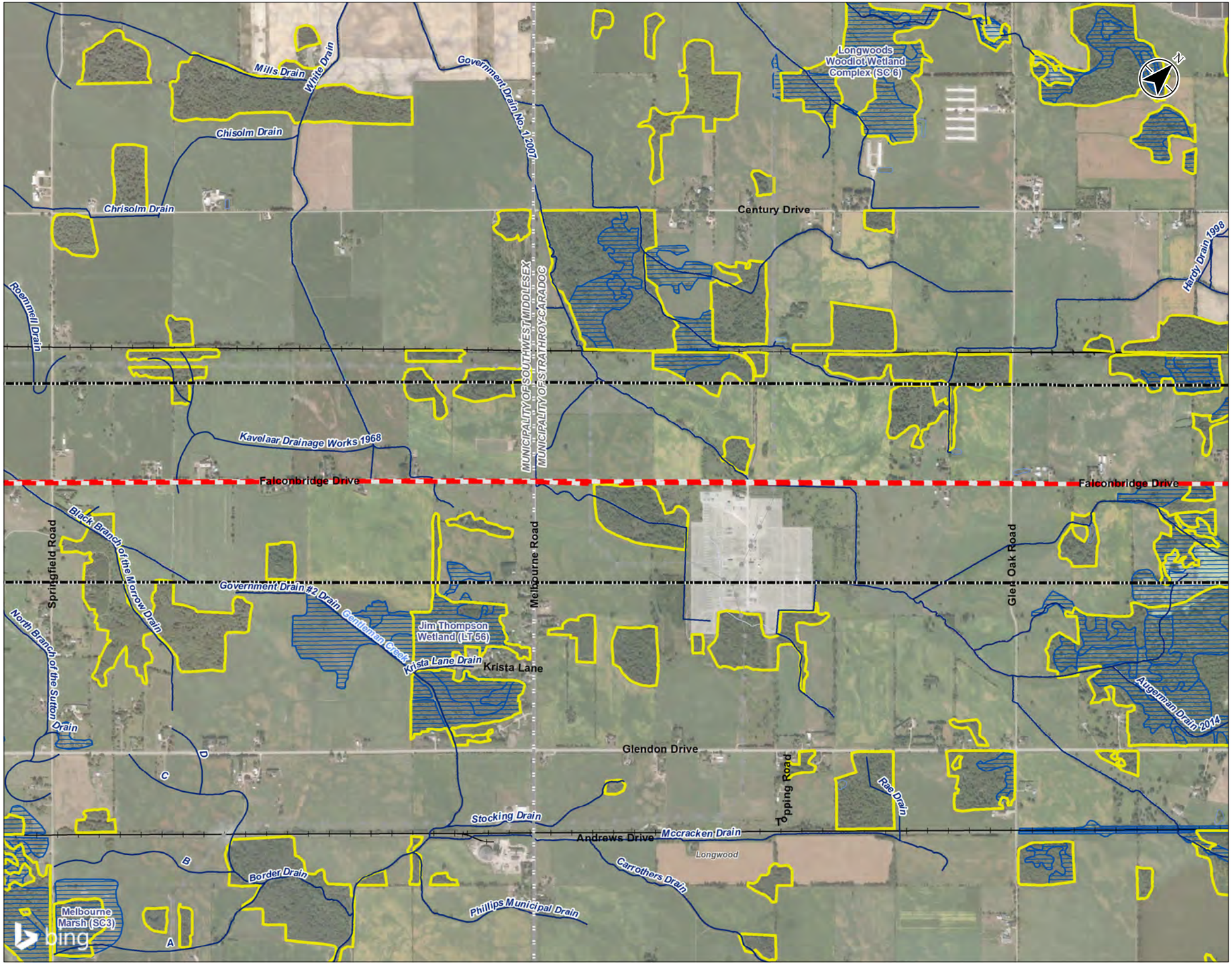

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Hydro Line
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

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Notes

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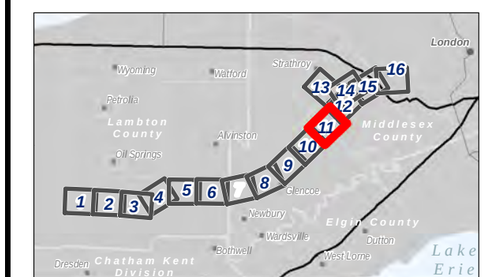

Project Location
Counties of Lambton and Middlesex

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LONDON LINES PROJECT

Figure No.
C-3.11

Title
Natural Environment Features

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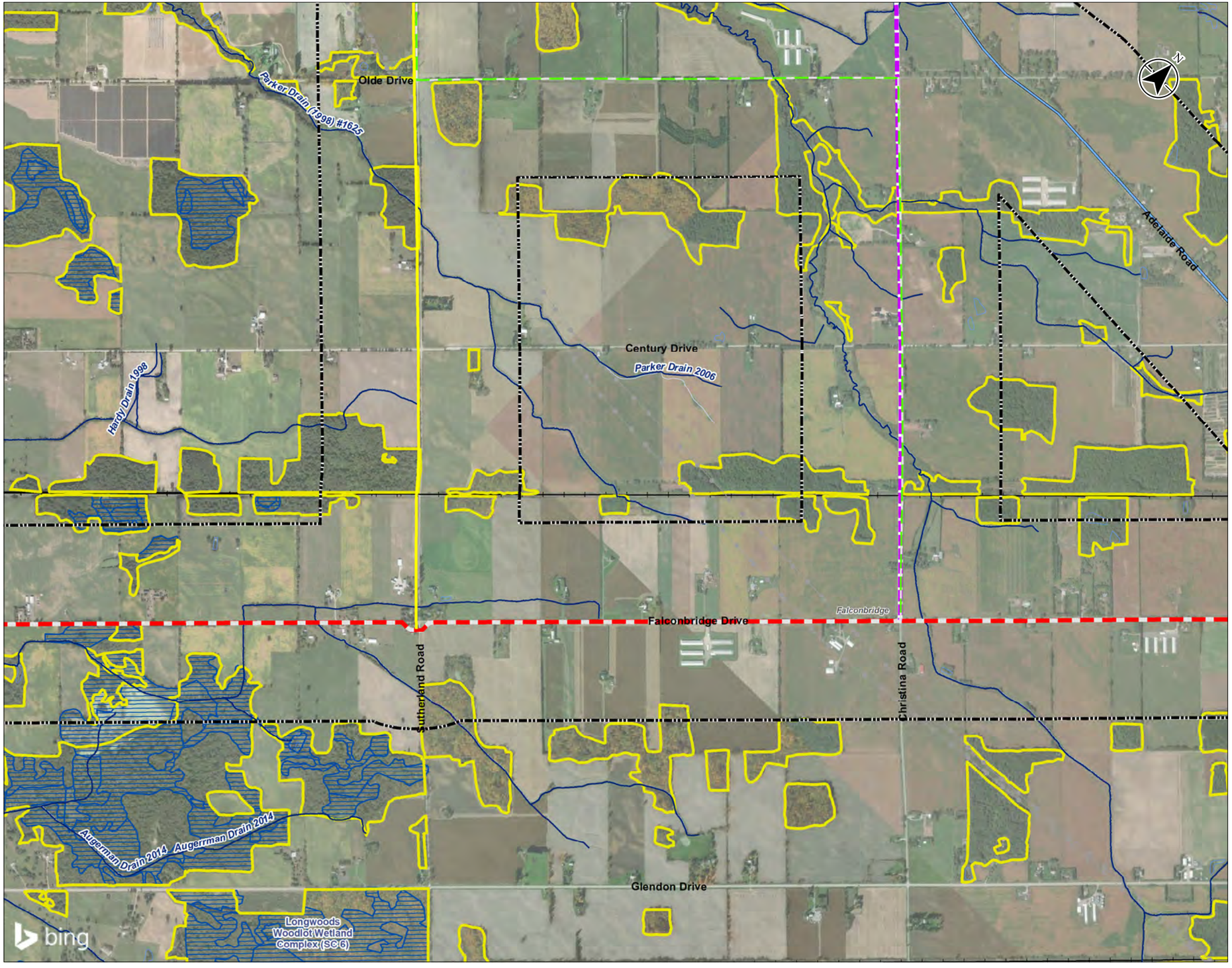

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Hydro Line
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

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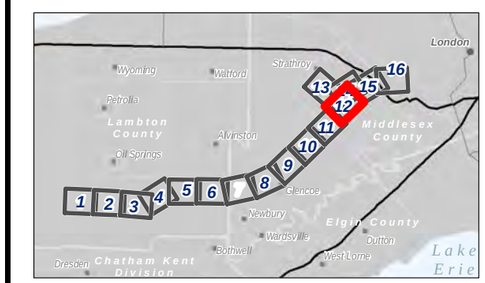

Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-3.12

Title
Natural Environment Features

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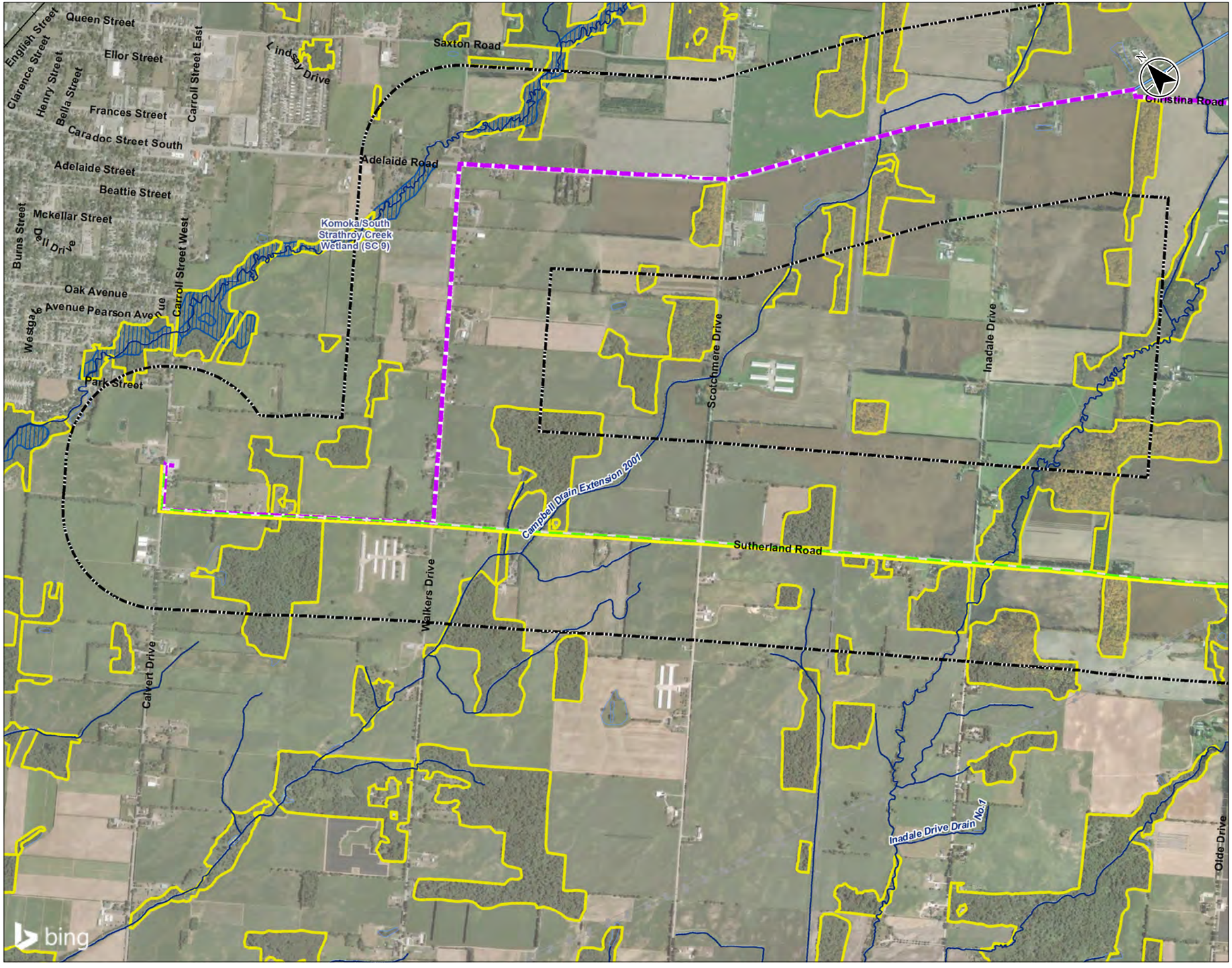

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Hydro Line
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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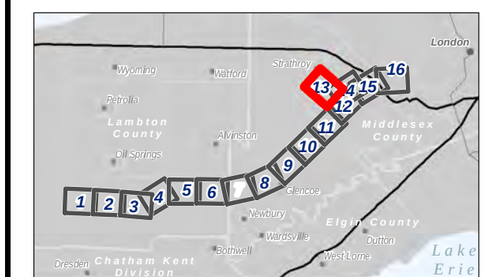

Project Location
Counties of Lambton and Middlesex

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LONDON LINES PROJECT

Figure No.
C-3.13

Title
Natural Environment Features

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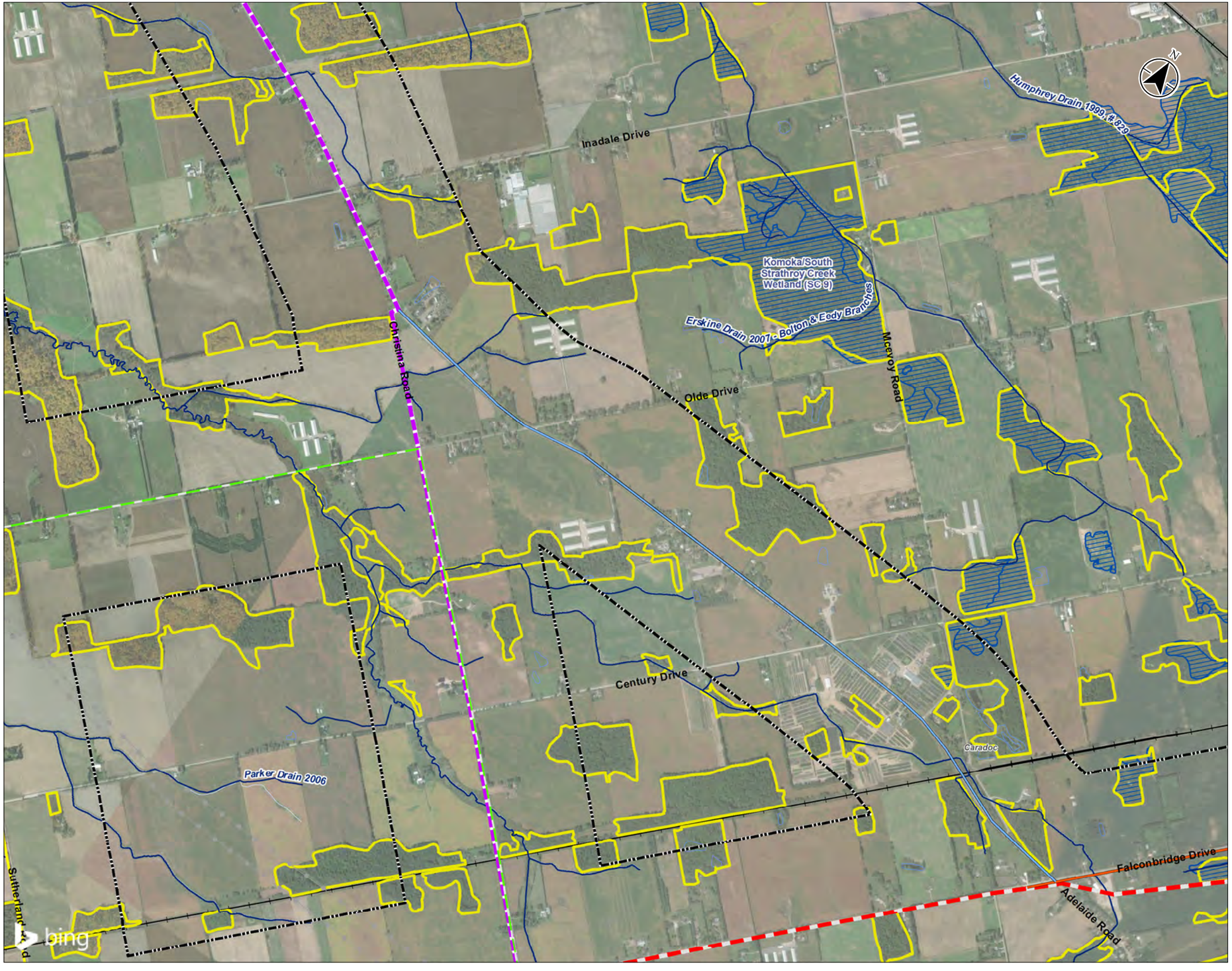

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Hydro Line
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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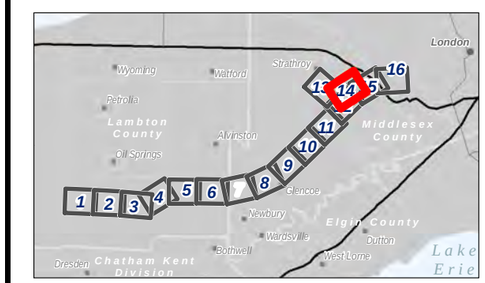

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
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Figure No.
C-3.14

Title
Natural Environment Features

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Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Hydro Line
- Railway - Operational
- Watercourse
- ANSI, Earth Science;Provincial
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

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Notes

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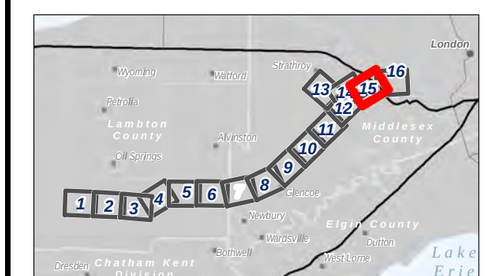

Project Location
Counties of Lambton and Middlesex

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Figure No.
C-3.15

Title
Natural Environment Features

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Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Constructed Drain
- Trail
- Railway - Operational
- Watercourse
- ANSI, Earth Science;Provincial
- ANSI, Life Science;Provincial
- Municipal Boundary - Lower Tier
- Natural Heritage (Middlesex)
- Provincial Park - Provincially Regulated
- Provincially Significant Wetland
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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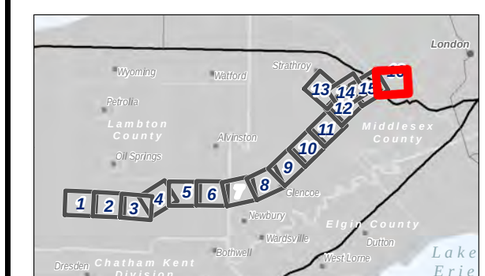

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Figure No.
C-3.16

Title
Natural Environment Features

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Stantec

Study Area

Enbridge Gas Features

Existing Route

Alternative Segments

Strathroy Alternate 1

Strathroy Alternate 2

Strathroy Alternate 3

Strathroy Alternate 4

Base / Envrionmental Features

Flow Direction

Constructed Drain

Watercourse Crossing Location

Watercourse

Thermal Regime, Warm

Waterbody

Aquatic Species at Risk Distribution

Conservation Authority Data

Fish Species

Regulation Area

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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Figure No.
C-4.1

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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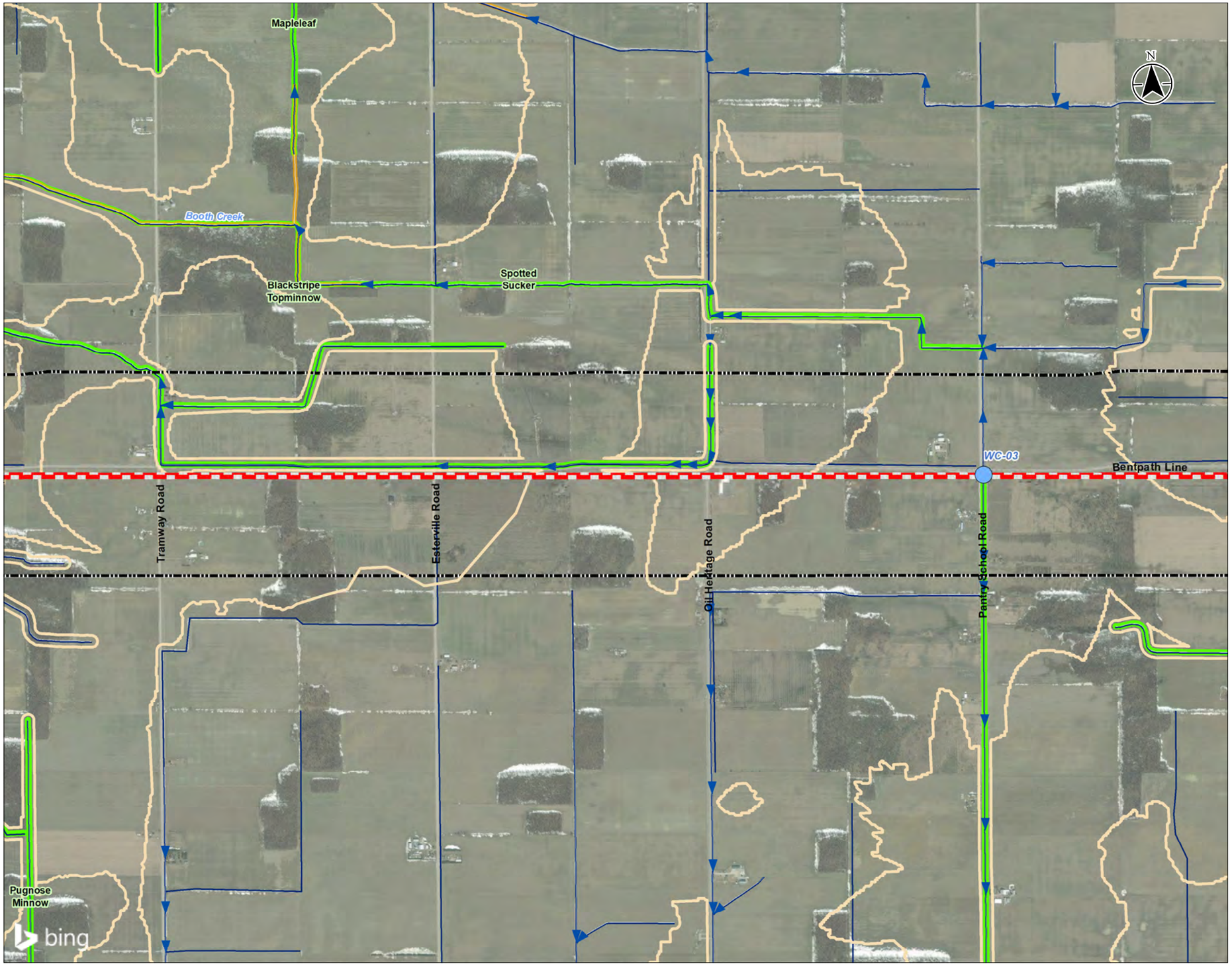

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Watercourse
- Thermal Regime, Warm
- Aquatic Species at Risk Distribution
- Regulation Area

0 400 800 metres

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Notes

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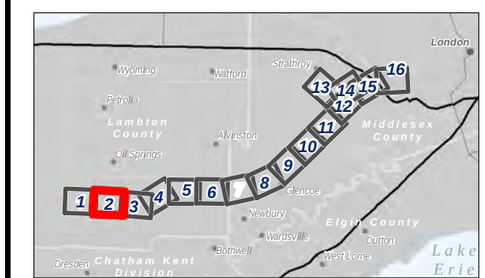

Project Location
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Figure No.
C-4.2

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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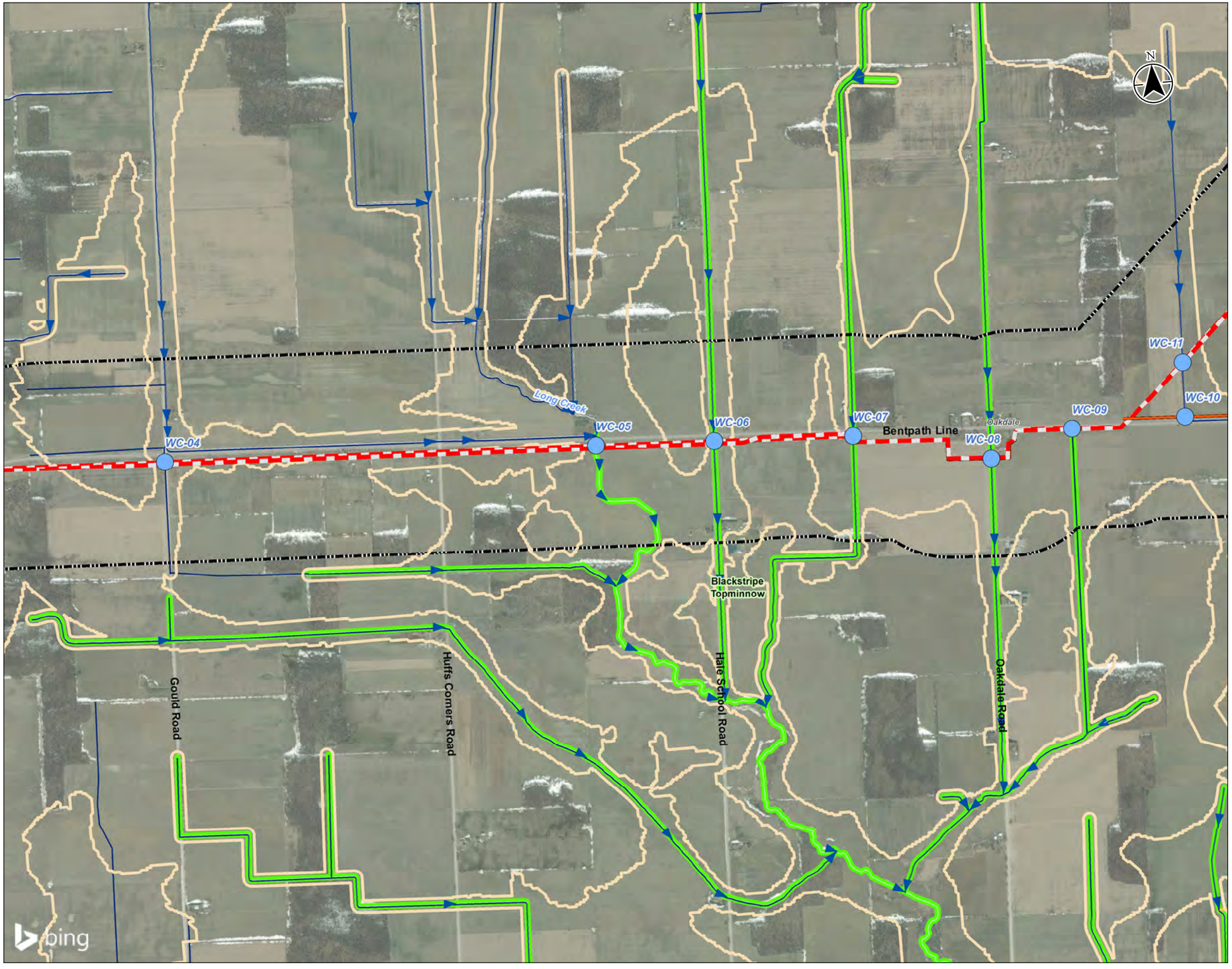

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Watercourse
- Thermal Regime, Warm
- Intermittent Watercourse
- Aquatic Species at Risk Distribution
- Regulation Area

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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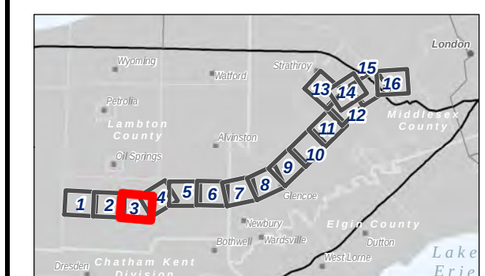

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Counties of Lambton and Middlesex

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Figure No.
C-4.3

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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Stantec

- Study Area

Enbridge Gas Features
- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features
- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Watercourse
- Thermal Regime, Warm
- Intermittent Watercourse
- Waterbody
- Aquatic Species at Risk Distribution

Conservation Authority Data
- Fish Species
- Regulation Area

0 400 800 metres
1:20,000 (At original document size of 11x17)

Notes
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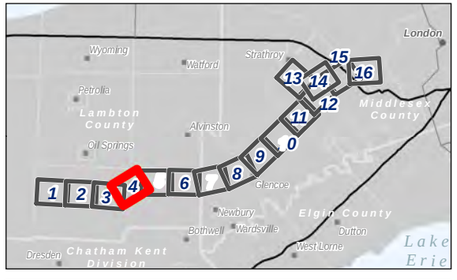

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Figure No.
C-4.4

Title
Watercourses and Preferred Route Watercourse Survey Locations

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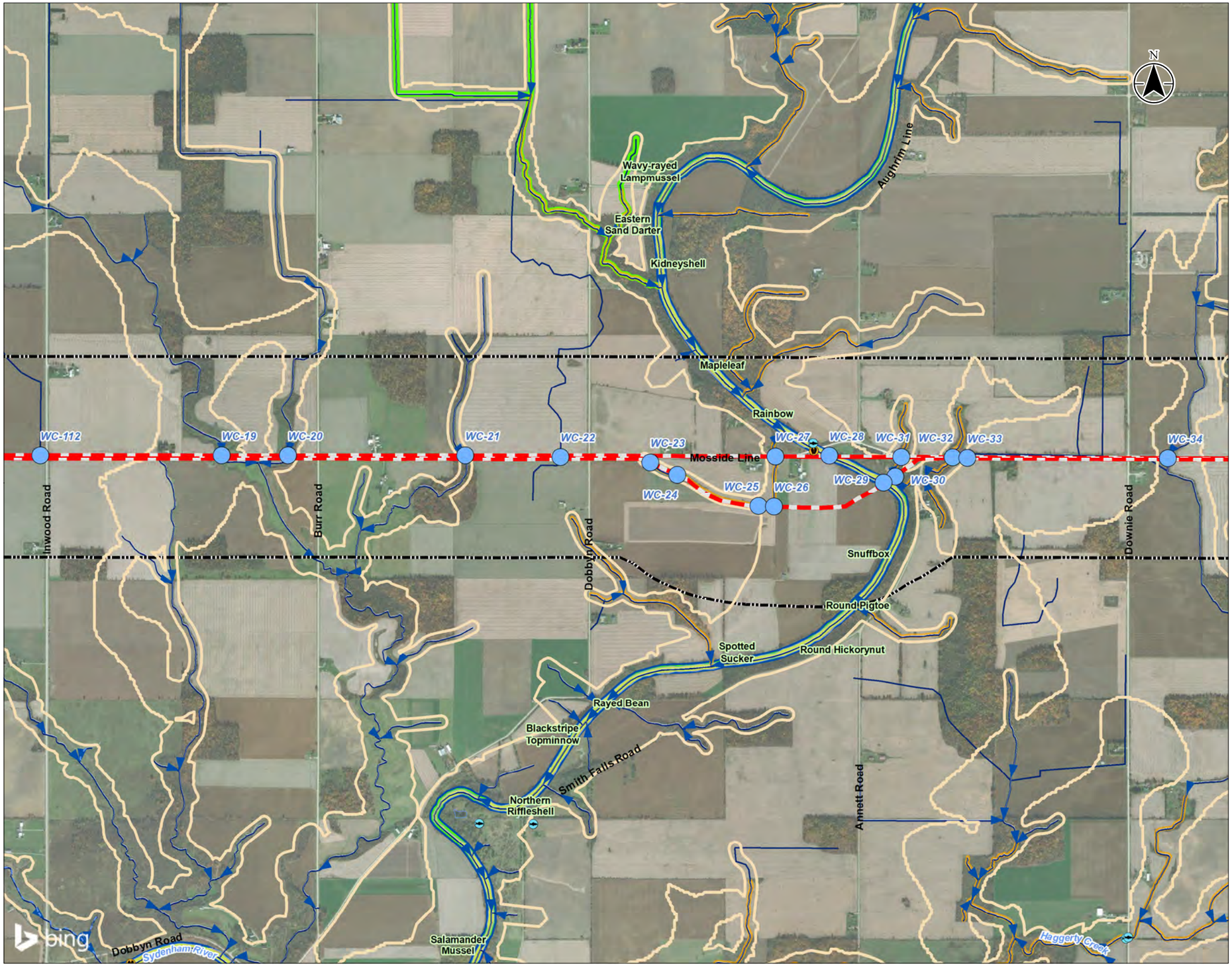

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Watercourse
- Thermal Regime, Warm
- Intermittent Watercourse
- Waterbody
- Aquatic Species at Risk Distribution
- Aquatic Species at Risk Critical Habitat

Conservation Authority Data

- Fish Species
- Mussel Species
- Regulation Area

0 400 800 metres

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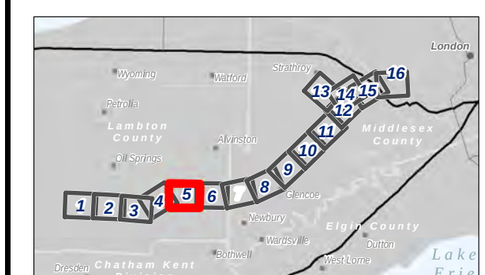

Project Location
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Figure No.
C-4.5

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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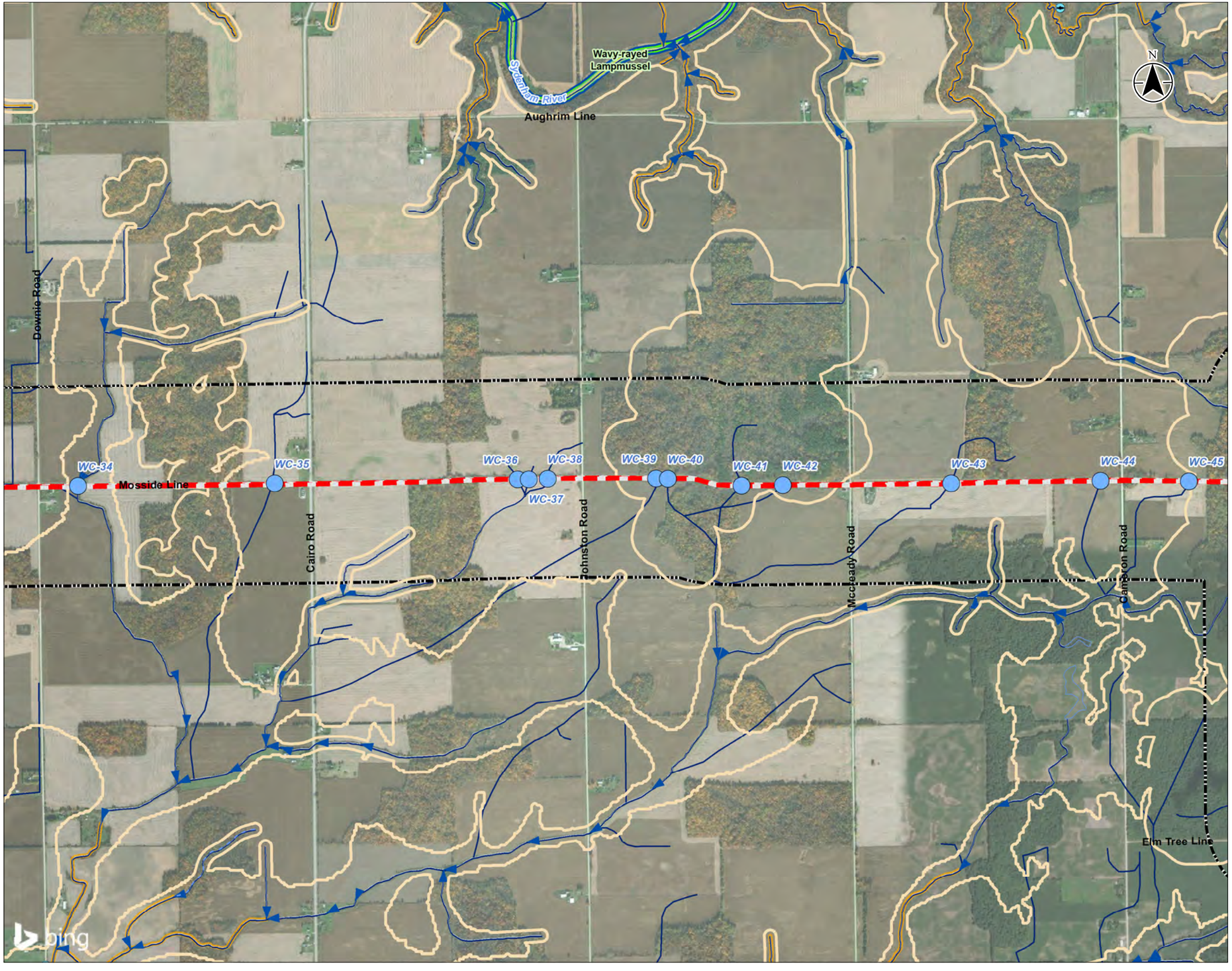

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Watercourse
- Thermal Regime, Warm
- Intermittent Watercourse
- Waterbody
- Aquatic Species at Risk Distribution
- Aquatic Species at Risk Critical Habitat

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

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Notes

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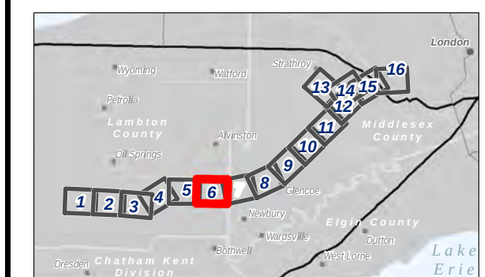

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Figure No.
C-4.6

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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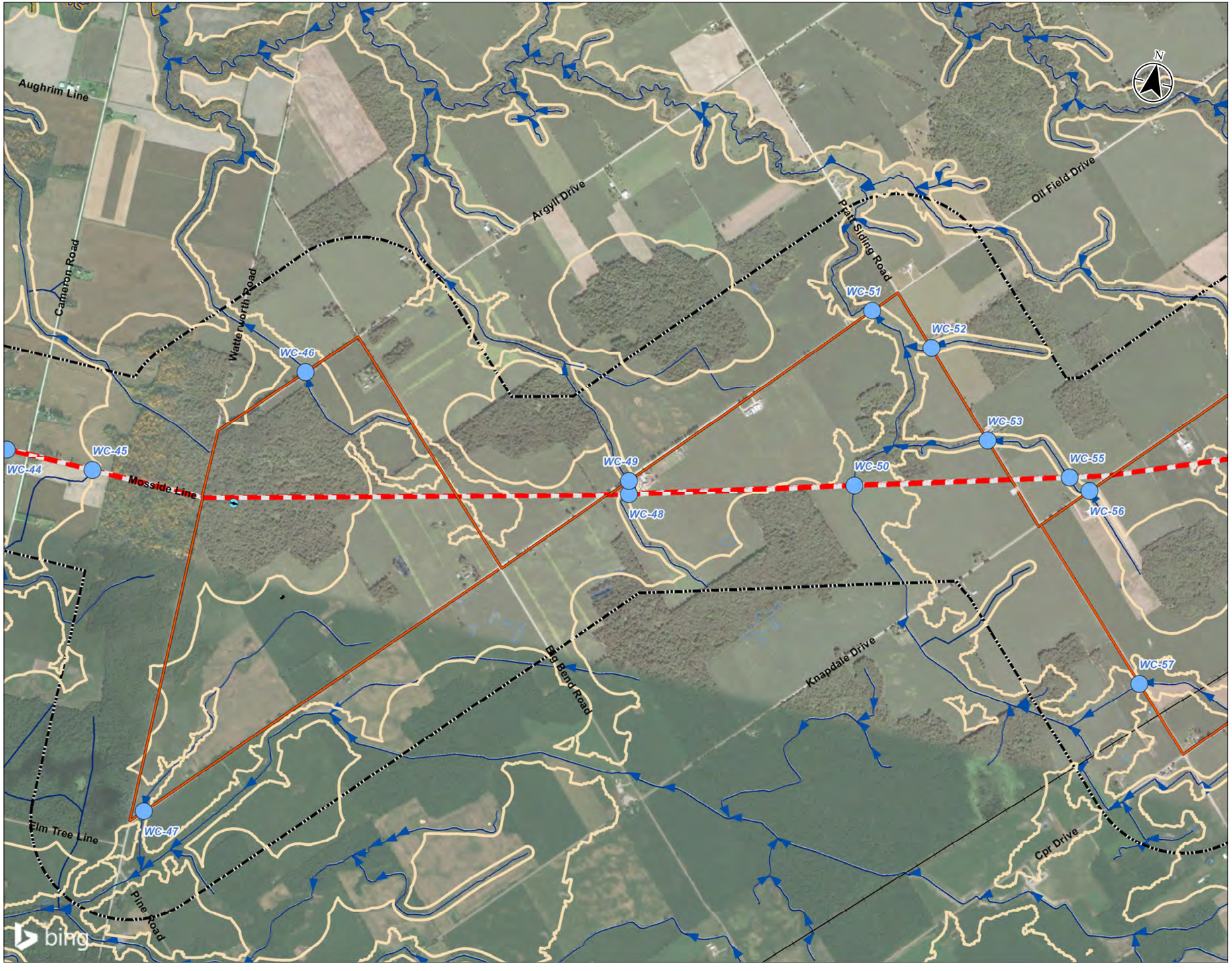

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Railway - Operational
- Watercourse
- Thermal Regime, Warm
- Waterbody

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

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Notes

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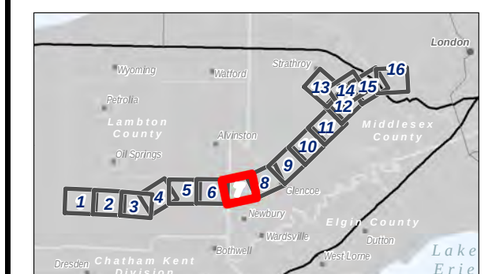

Project Location
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Figure No.
C-4.7

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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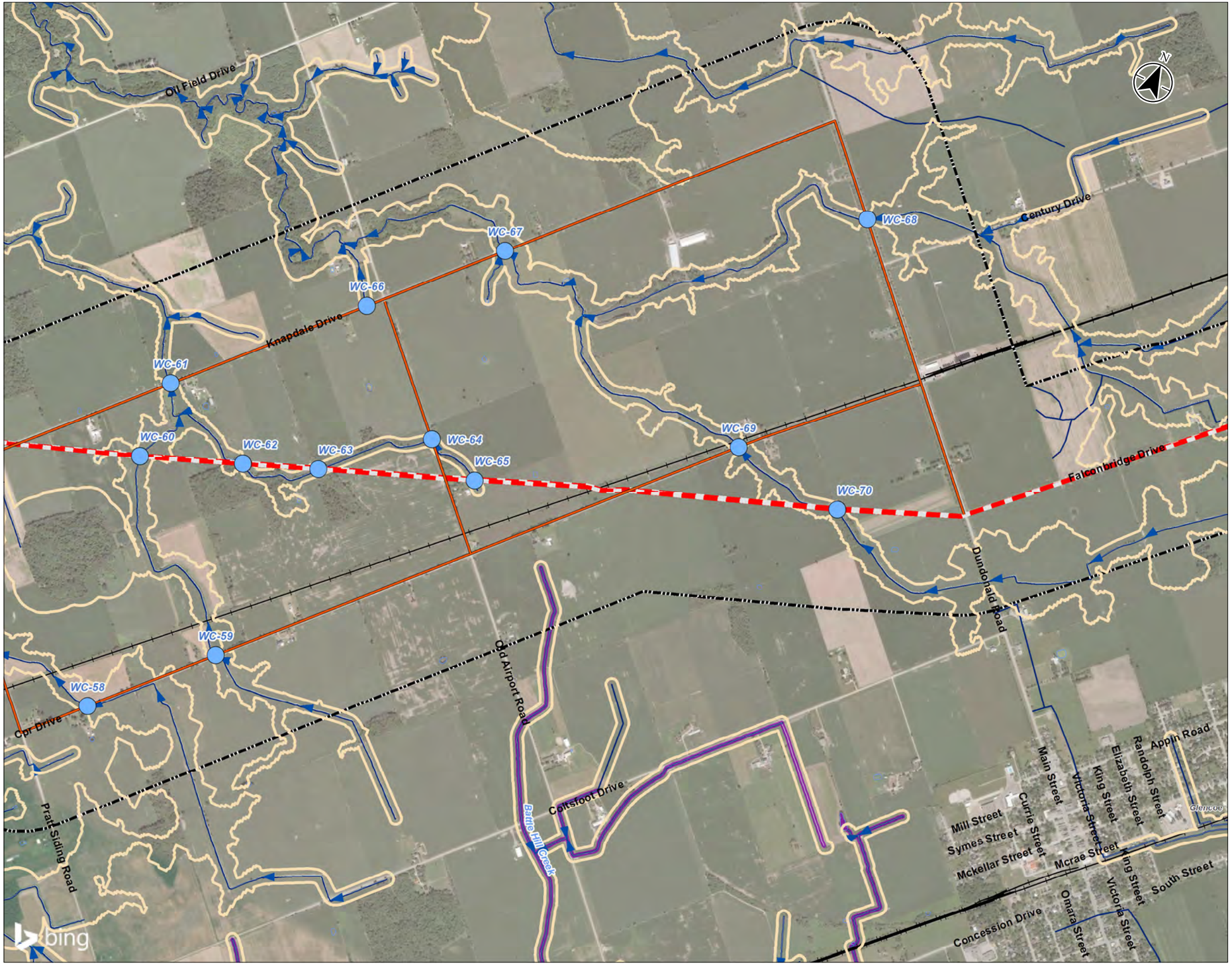

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Waterbody
- Regulation Area

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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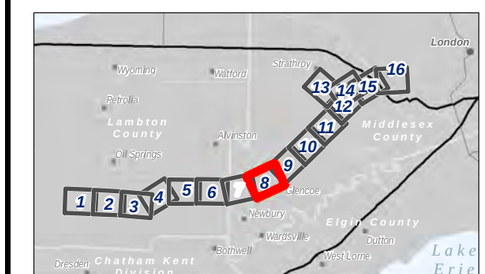

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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LONDON LINES PROJECT

Figure No.
C-4.8

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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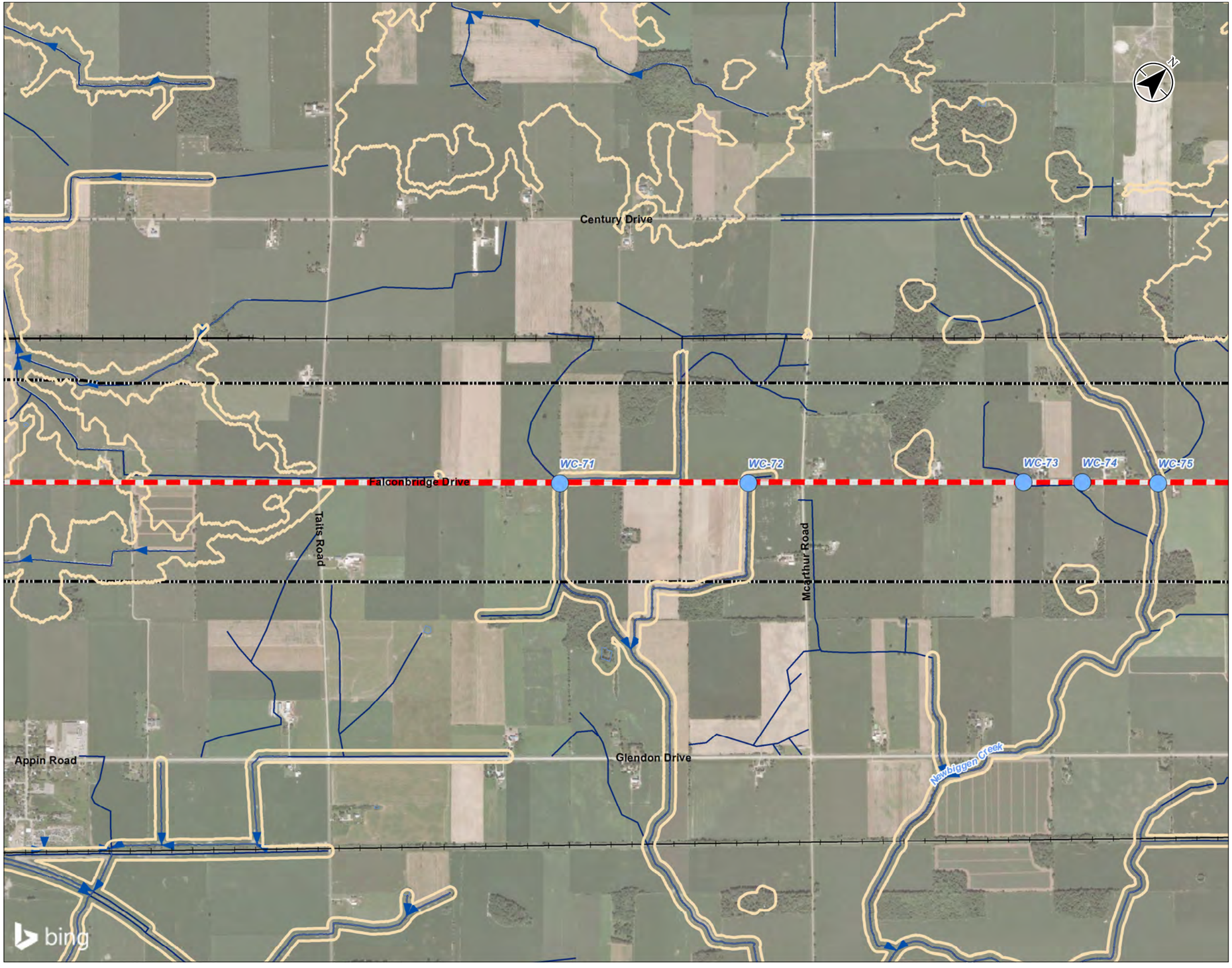

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Railway - Operational
- Watercourse
- Waterbody
- Regulation Area

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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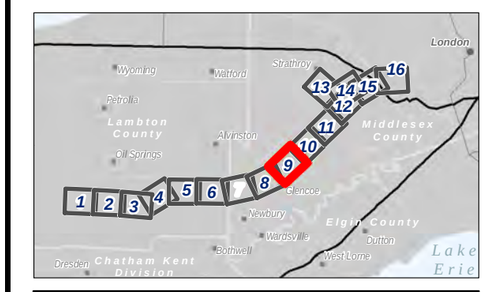

Project Location
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Figure No.
C-4.9

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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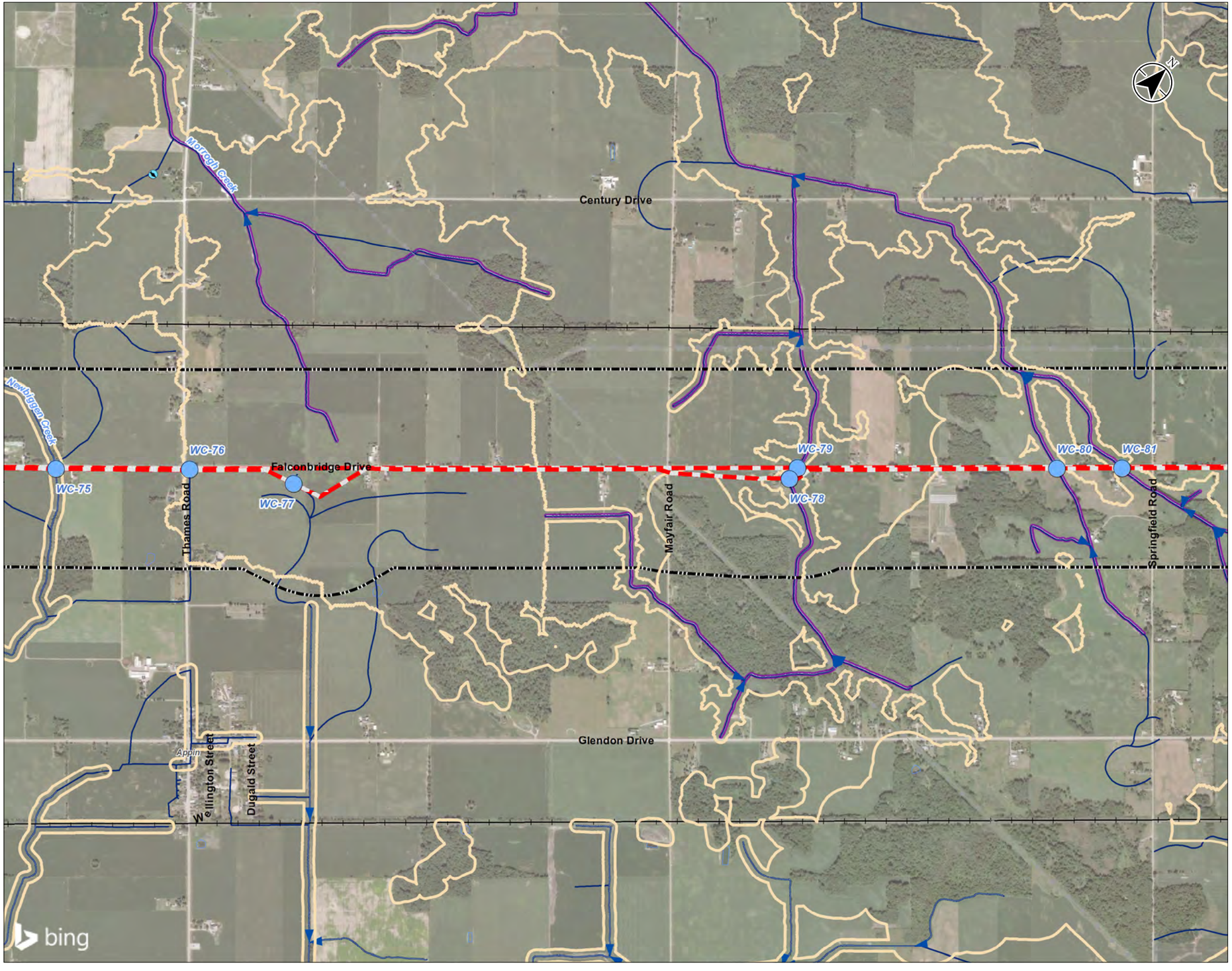

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Hydro Line
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Waterbody

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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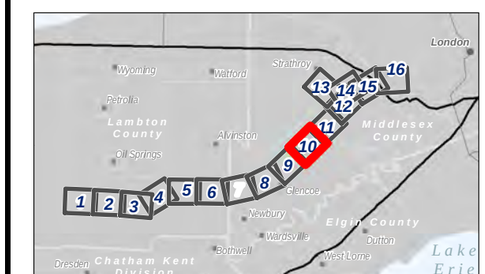

Project Location
Counties of Lambton and Middlesex

160951170 REV1
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-09

Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-4.10

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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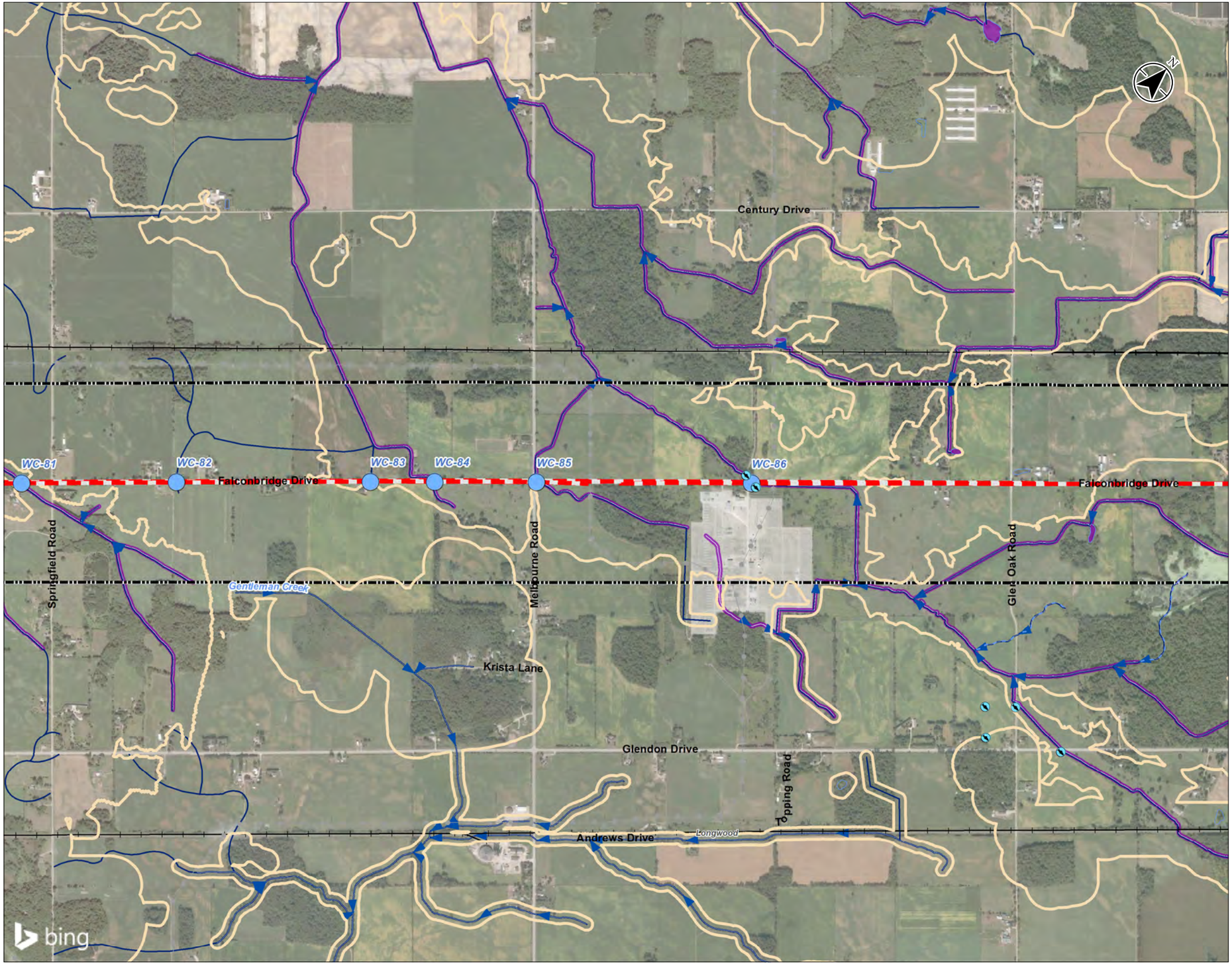

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Hydro Line
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Intermittent Watercourse
- Waterbody

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

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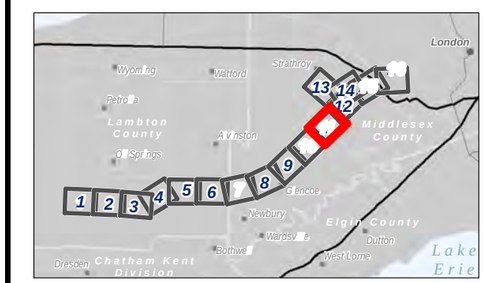

Project Location
Counties of Lambton and Middlesex

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LONDON LINES PROJECT

Figure No.
C-4.11

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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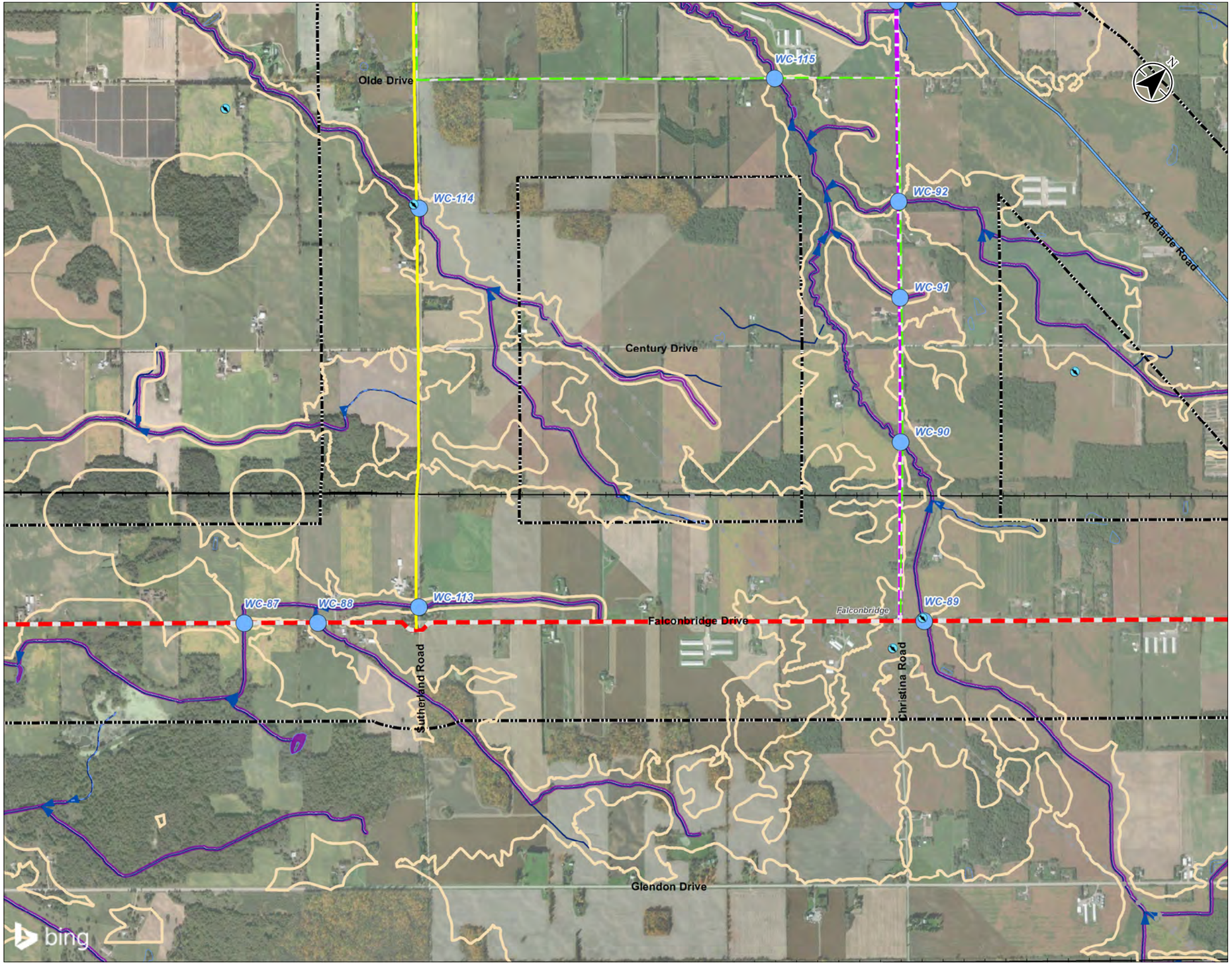

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Hydro Line
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Intermittent Watercourse
- Waterbody

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

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Notes

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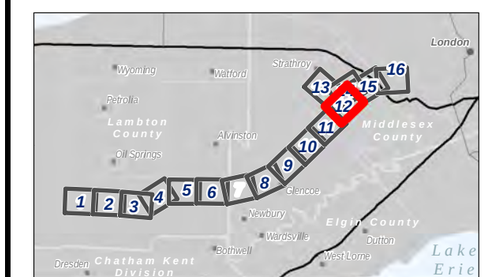

Project Location
Counties of Lambton and Middlesex

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Figure No.
C-4.12

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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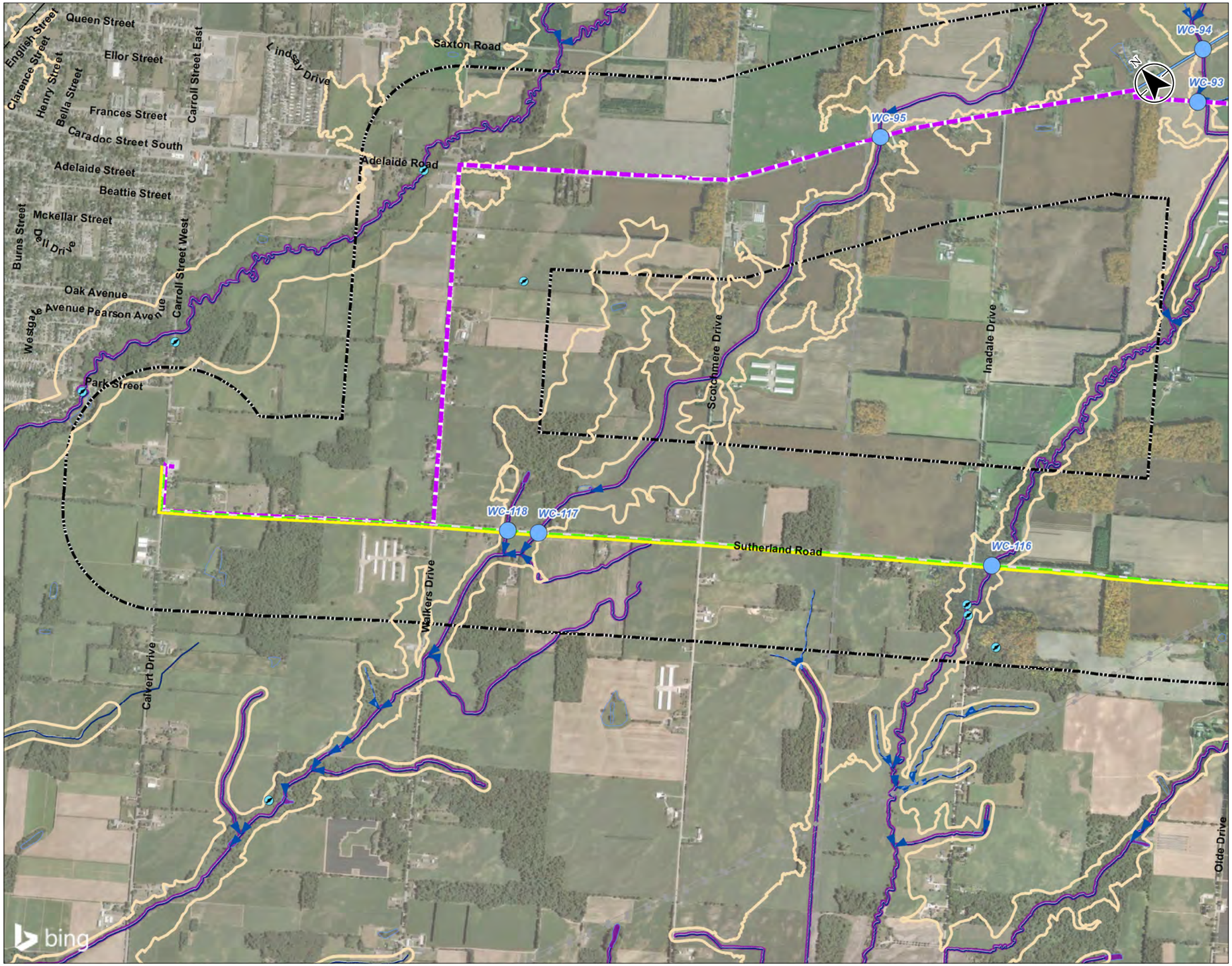

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Hydro Line
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Intermittent Watercourse
- Waterbody

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

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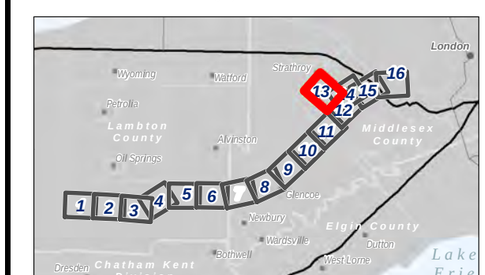

Project Location
Counties of Lambton and Middlesex

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Figure No.
C-4.13

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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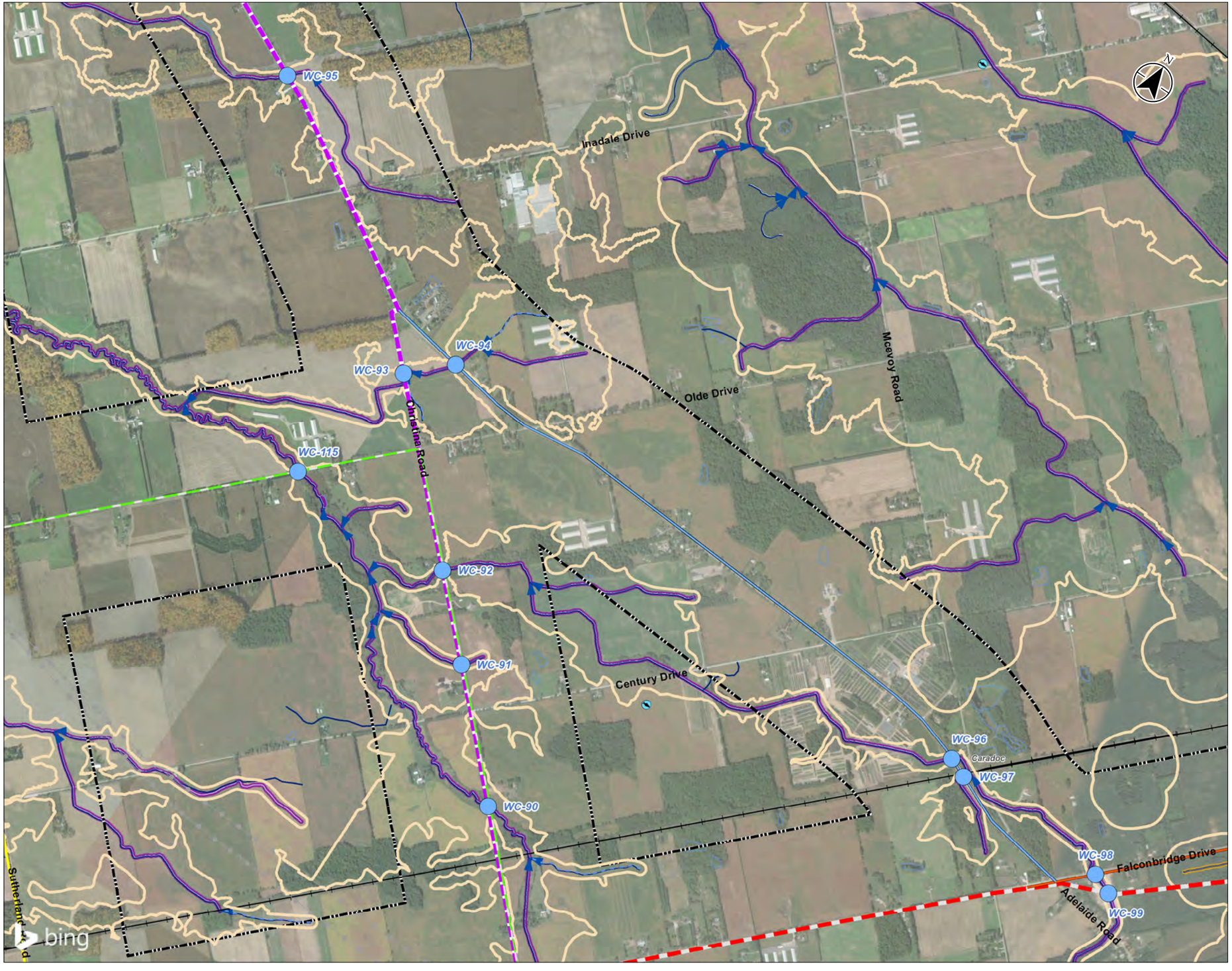

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Hydro Line
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Thermal Regime, Warm
- Intermittent Watercourse
- Waterbody

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

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Notes

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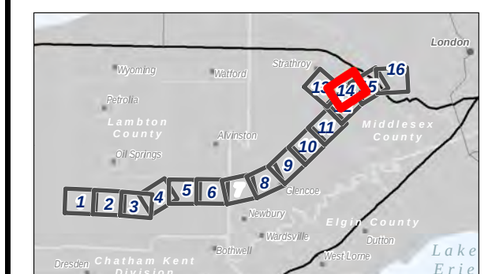

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Figure No.
C-4.14

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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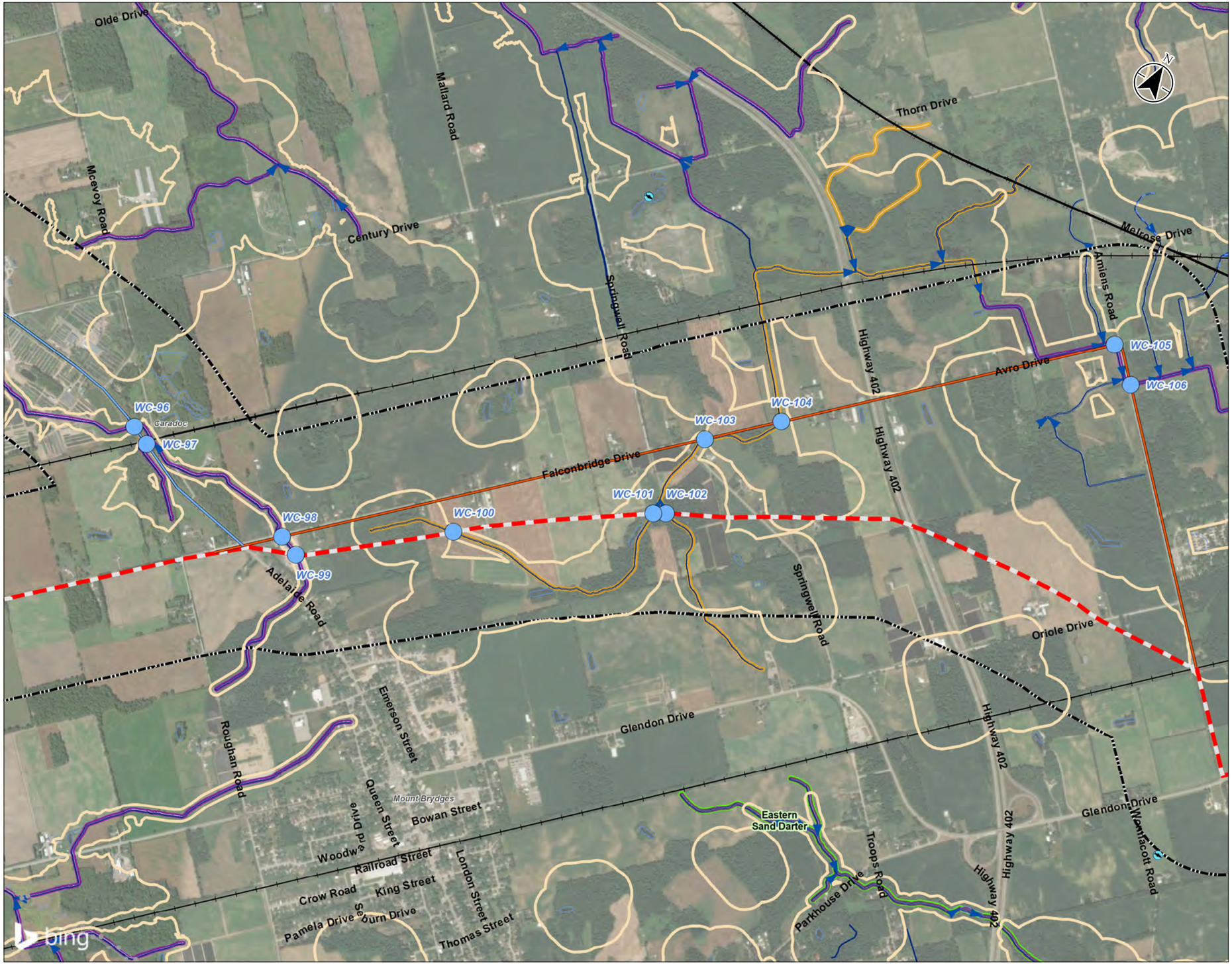

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Hydro Line
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Thermal Regime, Warm
- Intermittent Watercourse
- Waterbody
- Aquatic Species at Risk Distribution

Conservation Authority Data

- Fish Species
- Regulation Area

0 400 800 metres

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Notes

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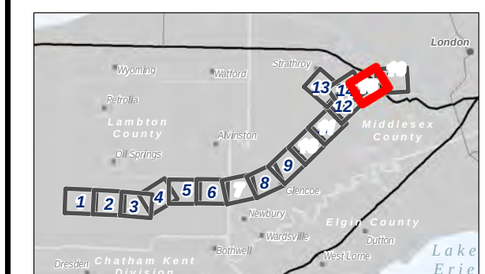

Project Location
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Figure No.
C-4.15

Title
Watercourses and Preferred Route
Watercourse Survey Locations

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Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Flow Direction
- Constructed Drain
- Watercourse Crossing Location
- Railway - Operational
- Watercourse
- Thermal Regime, Cold
- Intermittent Watercourse
- Waterbody
- Aquatic Species at Risk Distribution
- Aquatic Species at Risk Critical Habitat

Conservation Authority Data

- Fish Species
- Mussel Species
- Regulation Area

0 400 800 metres

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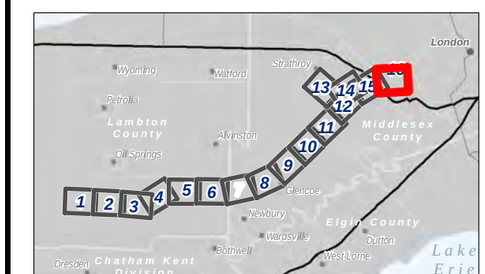

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Client/Project
ENBRIDGE GAS INC.
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Figure No.
C-4.16

Title
Watercourses and Preferred Route Watercourse Survey Locations

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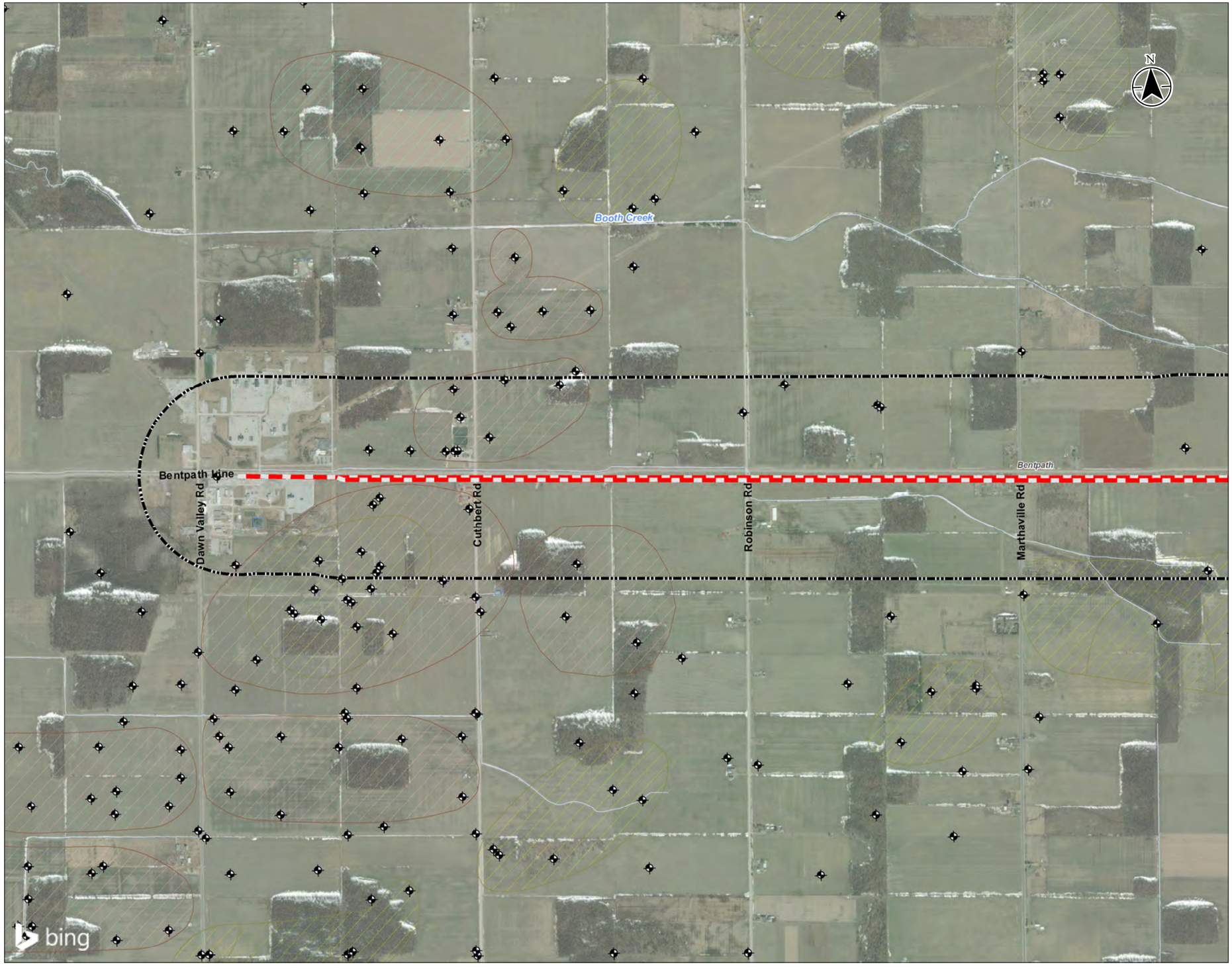

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

Petroleum Pool

- Natural Gas Storage Pool - Active
- Natural Gas Pool - Active
- Natural Gas Pool - Abandoned
- Oil Pool - Active
- Oil Pool - Abandoned

0 400 800 metres

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Notes

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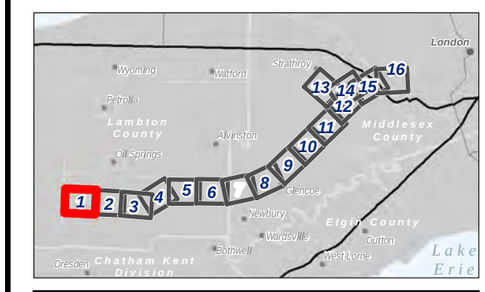

Project Location
Counties of Lambton and Middlesex

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Client/Project
ENBRIDGE GAS INC.
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Figure No.
C-5.1

Title
Aggregate and Petroleum Features

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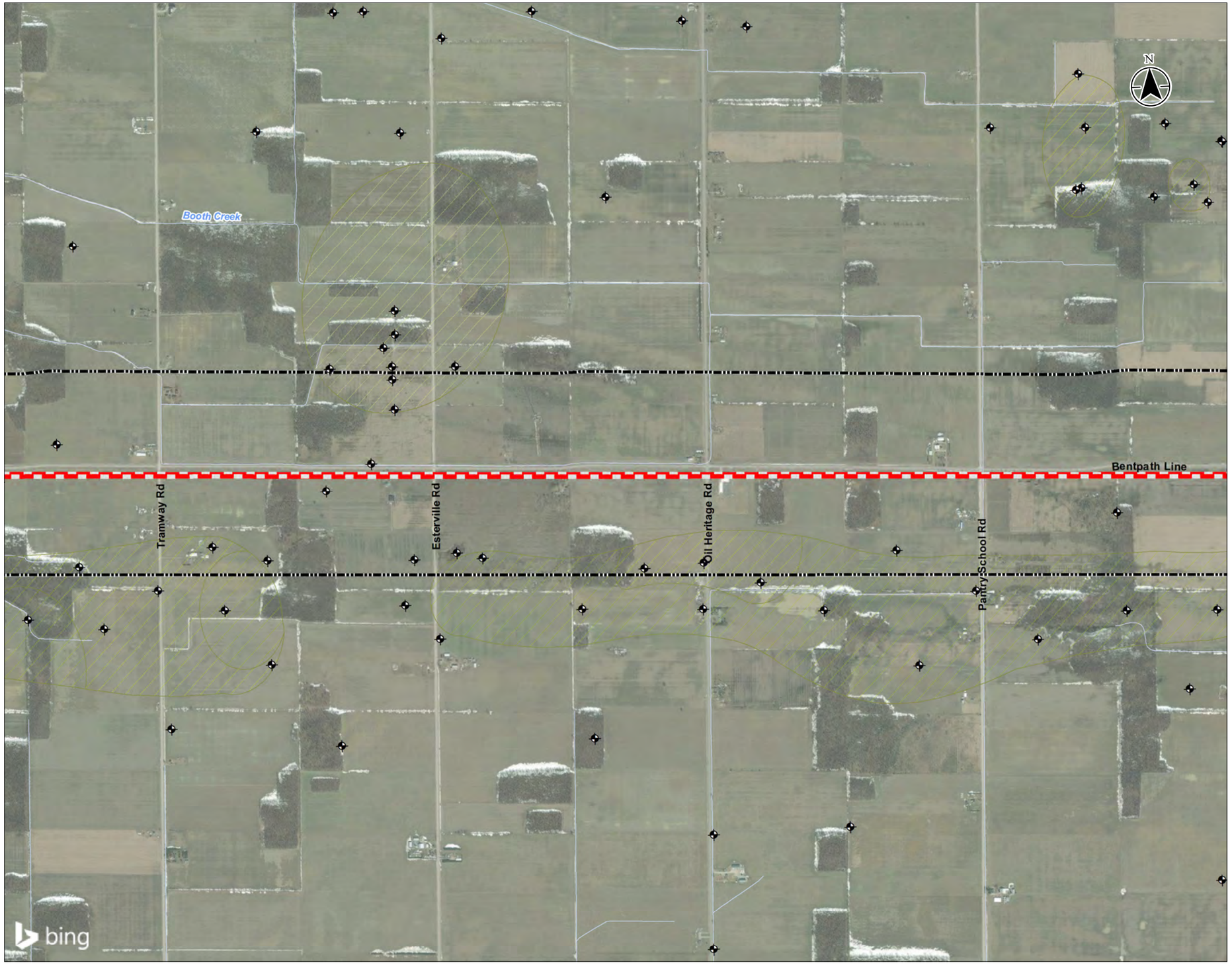

Stantec

Study Area

Enbridge Gas Features

Existing Route

Alternative Segments

Strathroy Alternate 1

Strathroy Alternate 2

Strathroy Alternate 3

Strathroy Alternate 4

Base / Envrionmental Features

Petroleum Well

Watercourse

Municipal Boundary - Lower Tier

Petroleum Pool

Natural Gas Storage Pool - Active

Natural Gas Pool - Active

Natural Gas Pool - Abandoned

0 400 800 metres

1:20,000 (At original document size of 11x17)

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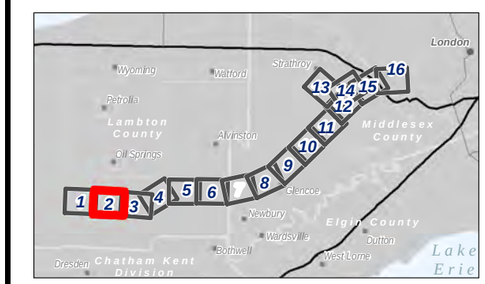

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-5.2

Title
Aggregate and Petroleum Features

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Stantec

Study Area

Enbridge Gas Features

Existing Route

Alternative Segments

Strathroy Alternate 1

Strathroy Alternate 2

Strathroy Alternate 3

Strathroy Alternate 4

Base / Envrionmental Features

Petroleum Well

Watercourse

Municipal Boundary - Lower Tier

Petroleum Pool

Natural Gas Pool - Active

Natural Gas Pool - Abandoned

0 400 800 metres

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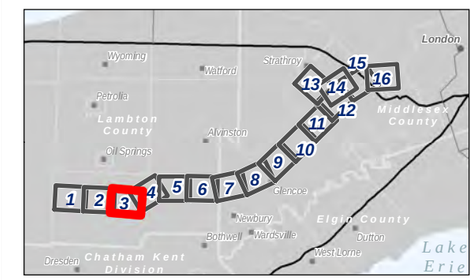

Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
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Figure No.
C-5.3

Title
Aggregate and Petroleum Features

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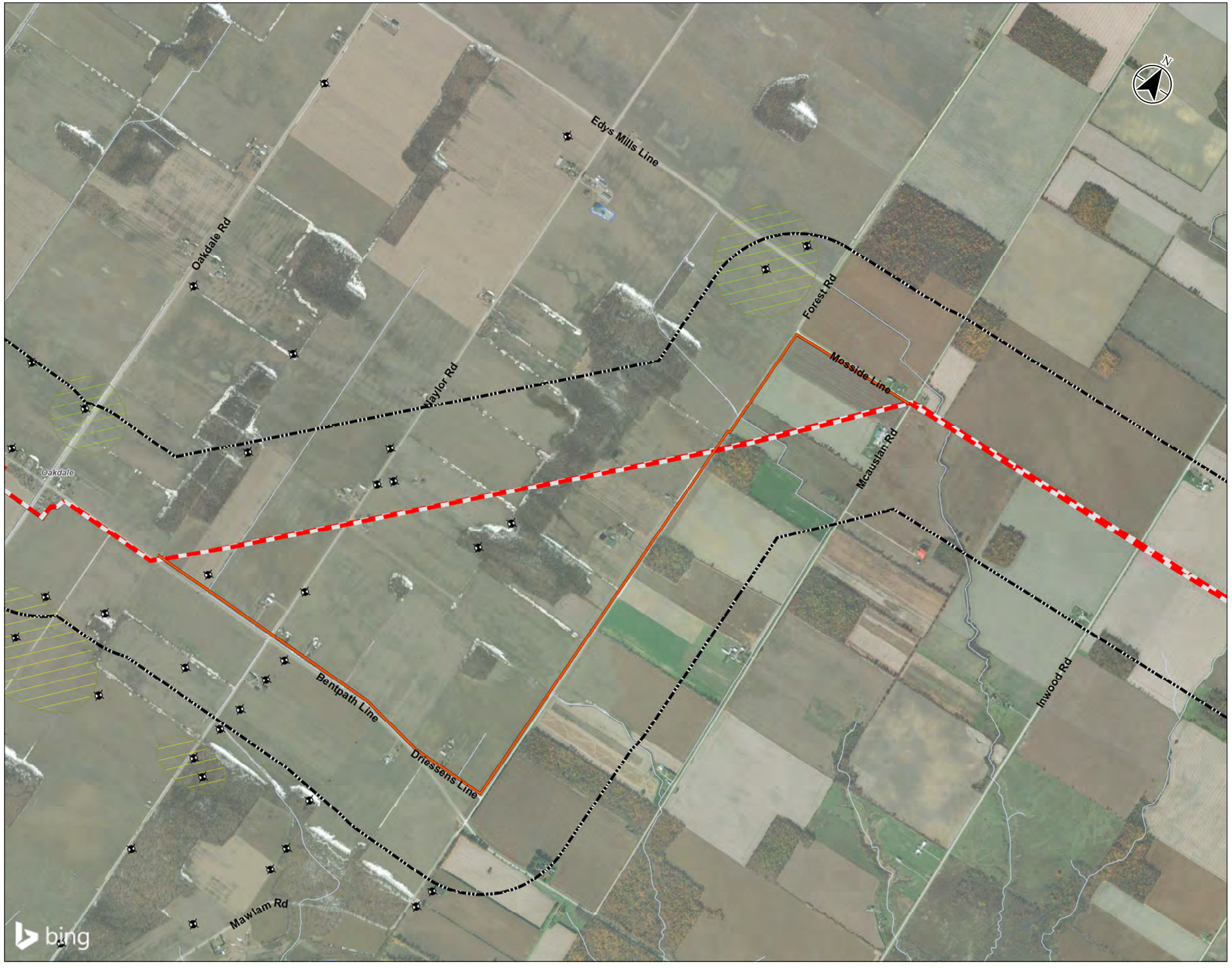

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

Petroleum Pool

- Natural Gas Pool - Active
- Natural Gas Pool - Abandoned

0 400 800 metres

1:20,000 (At original document size of 11x17)

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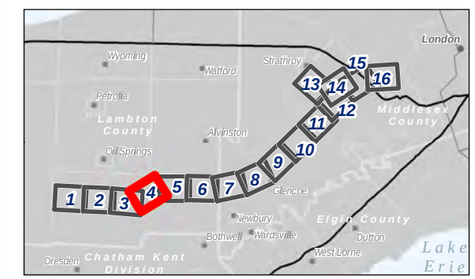

Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
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Figure No.
C-5.4

Title
Aggregate and Petroleum Features

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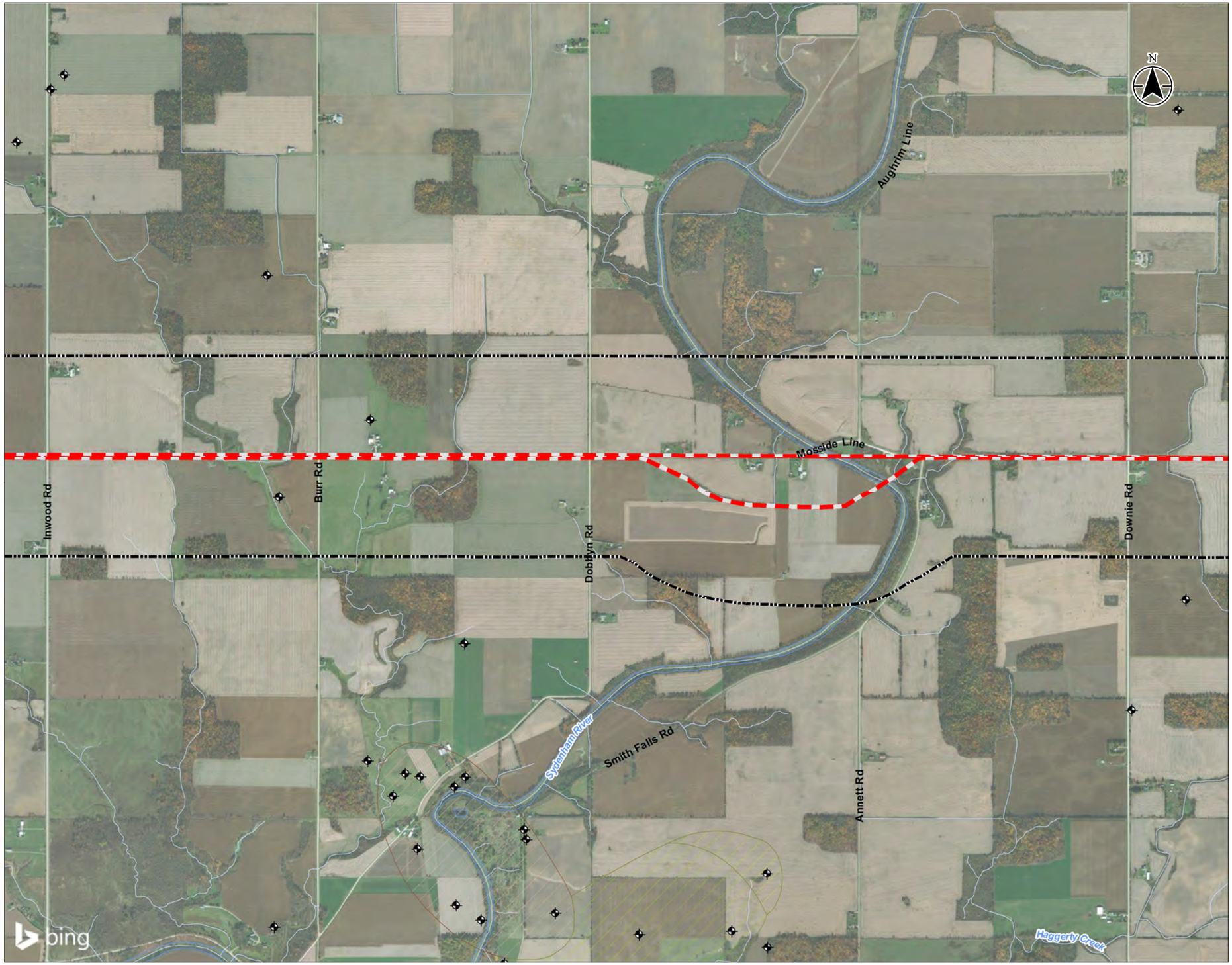

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

Petroleum Pool

- Natural Gas Pool - Active
- Natural Gas Pool - Abandoned
- Oil Pool - Abandoned

0 400 800 metres

1:20,000 (At original document size of 11x17)

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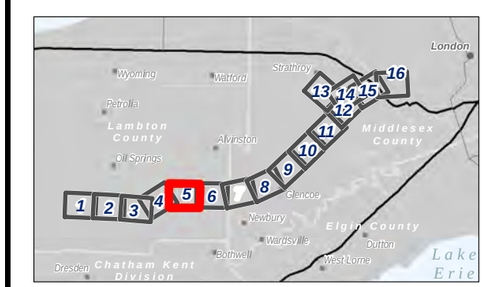

Project Location
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ENBRIDGE GAS INC.
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Figure No.
C-5.5

Title
Aggregate and Petroleum Features

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Stantec

Study Area

Enbridge Gas Features

Existing Route

Alternative Segments

Strathroy Alternate 1

Strathroy Alternate 2

Strathroy Alternate 3

Strathroy Alternate 4

Base / Envrionmental Features

Petroleum Well

Watercourse

Municipal Boundary - Lower Tier

Waterbody

Petroleum Pool

Oil Pool - Abandoned

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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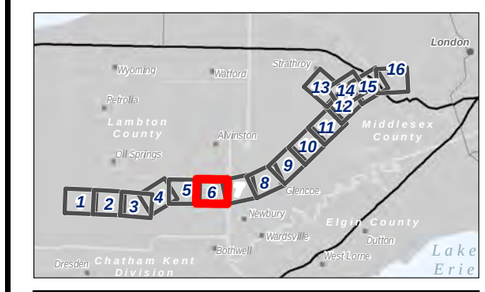

Project Location
Counties of Lambton and Middlesex

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Figure No.
C-5.6

Title
Aggregate and Petroleum Features

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Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

Petroleum Pool

- Oil Pool - Abandoned

0 400 800 metres

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Notes

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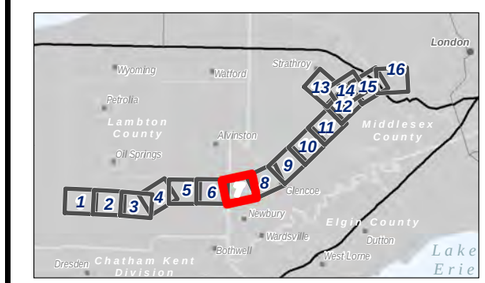

Project Location
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Figure No.
C-5.7

Title
Aggregate and Petroleum Features

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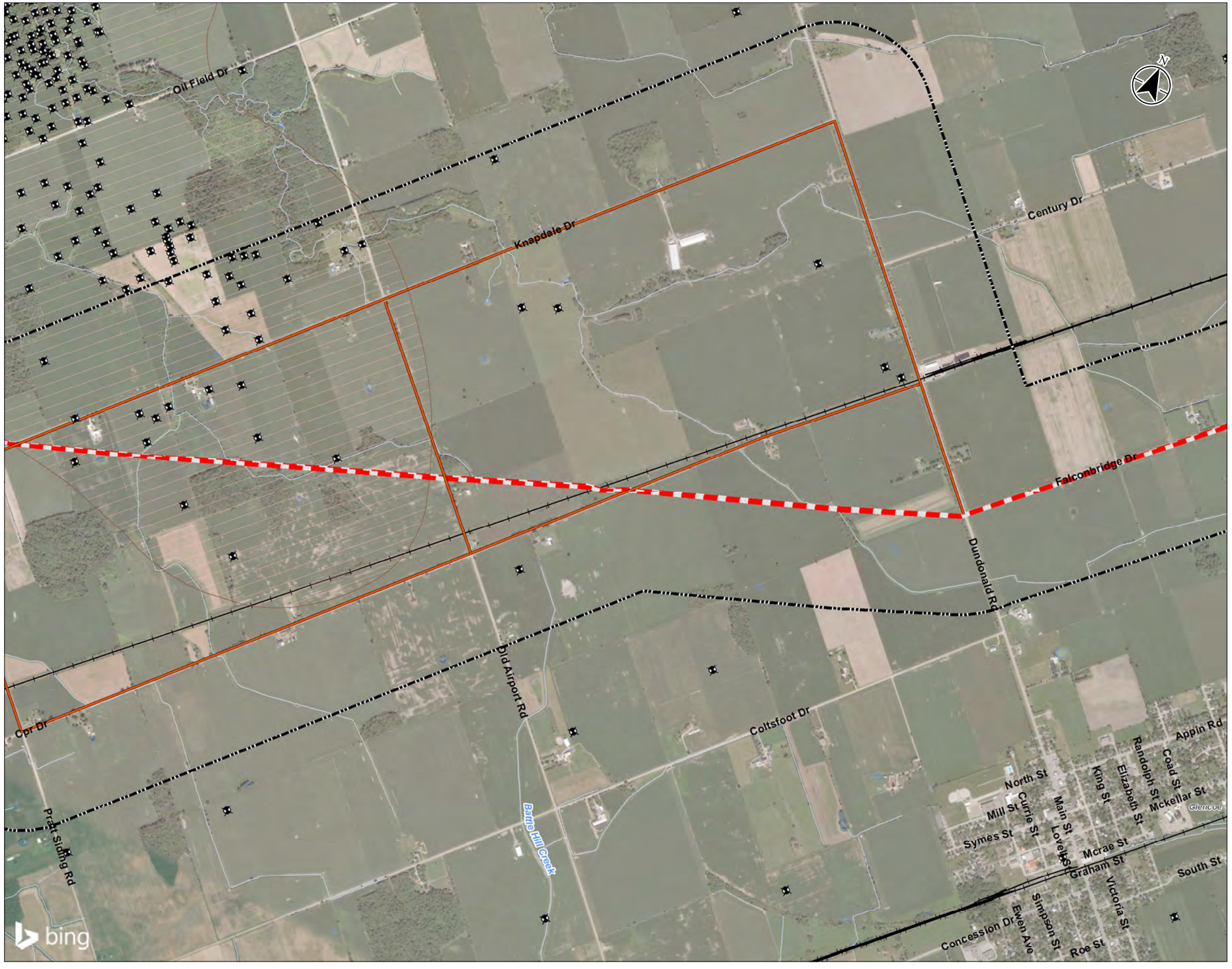

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

Petroleum Pool

- Oil Pool - Abandoned

0 400 800 metres

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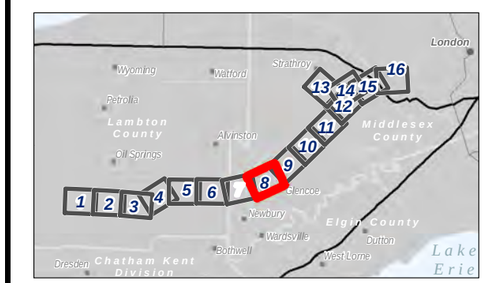

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Figure No.
C-5.8

Title
Aggregate and Petroleum Features

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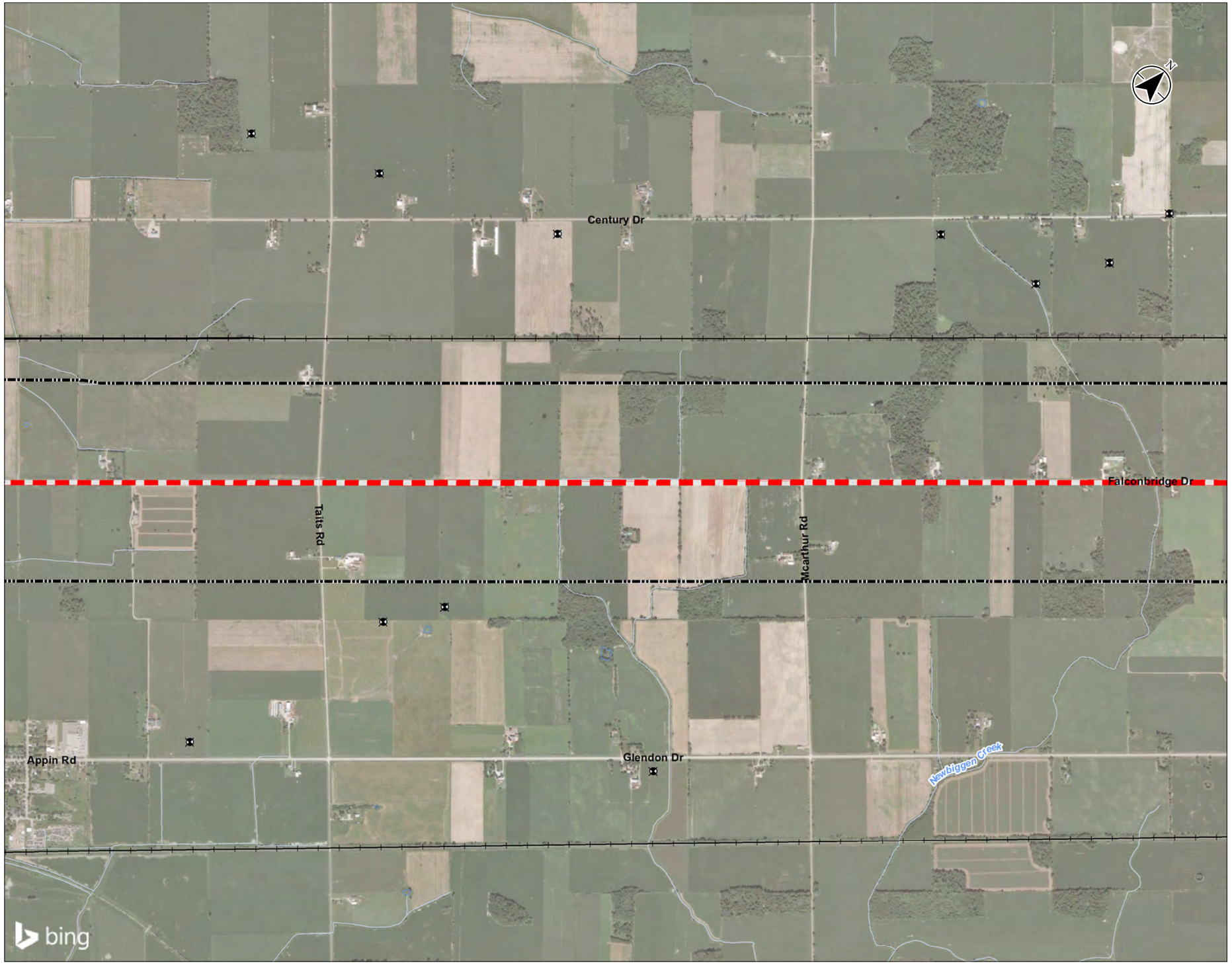

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

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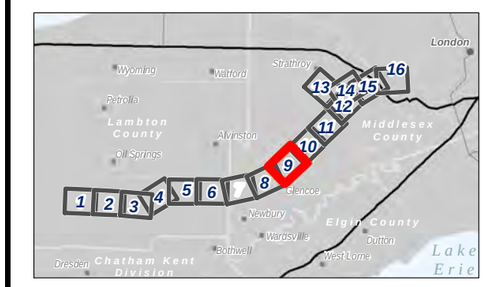

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Figure No.
C-5.9

Title
Aggregate and Petroleum Features

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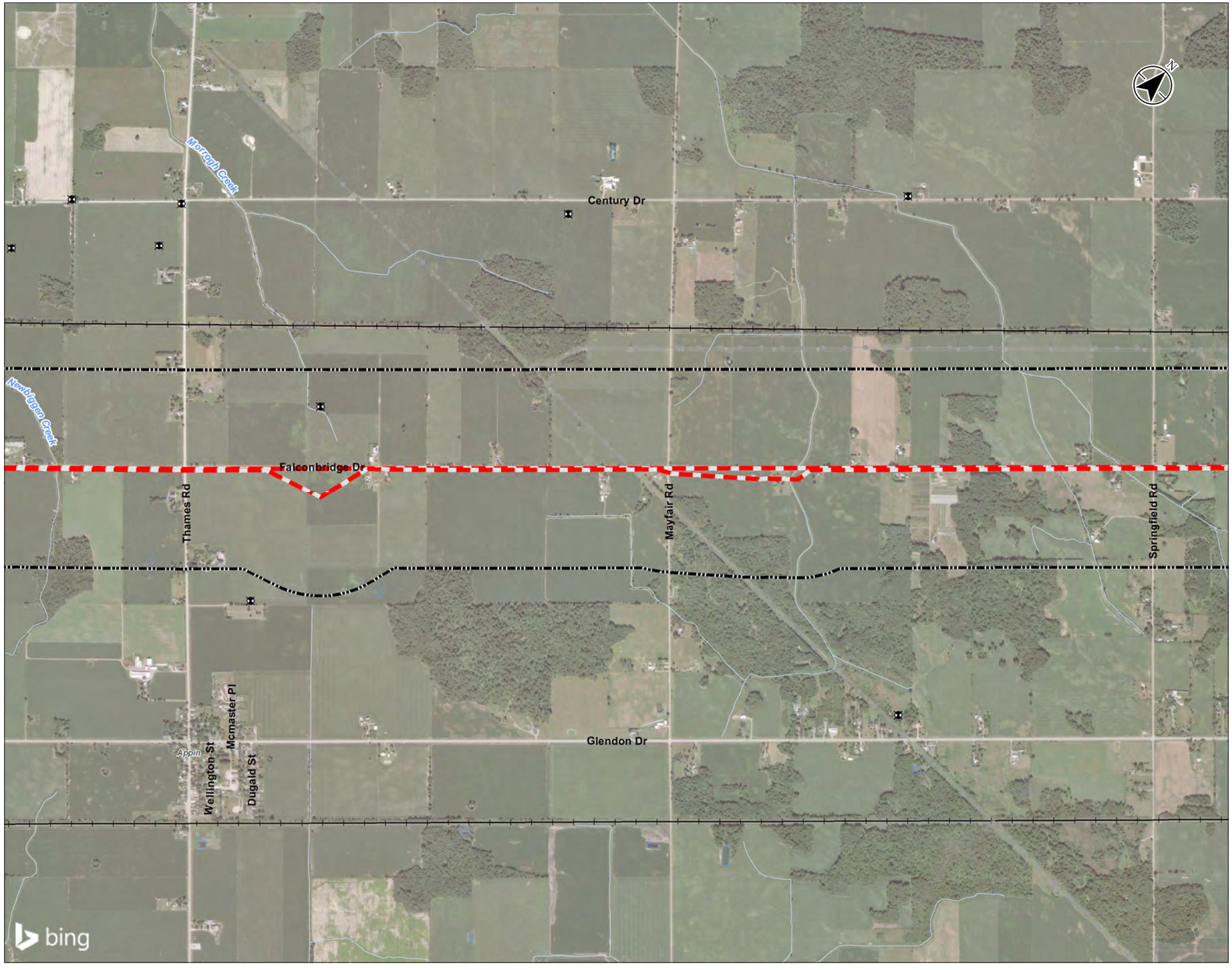

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Hydro Line
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

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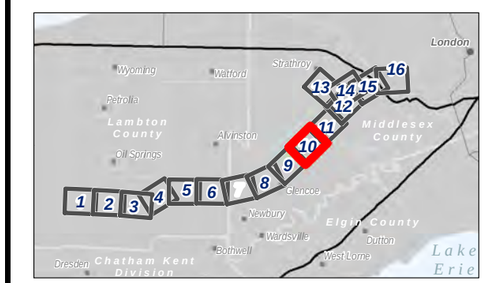

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Figure No.
C-5.10

Title
Aggregate and Petroleum Features

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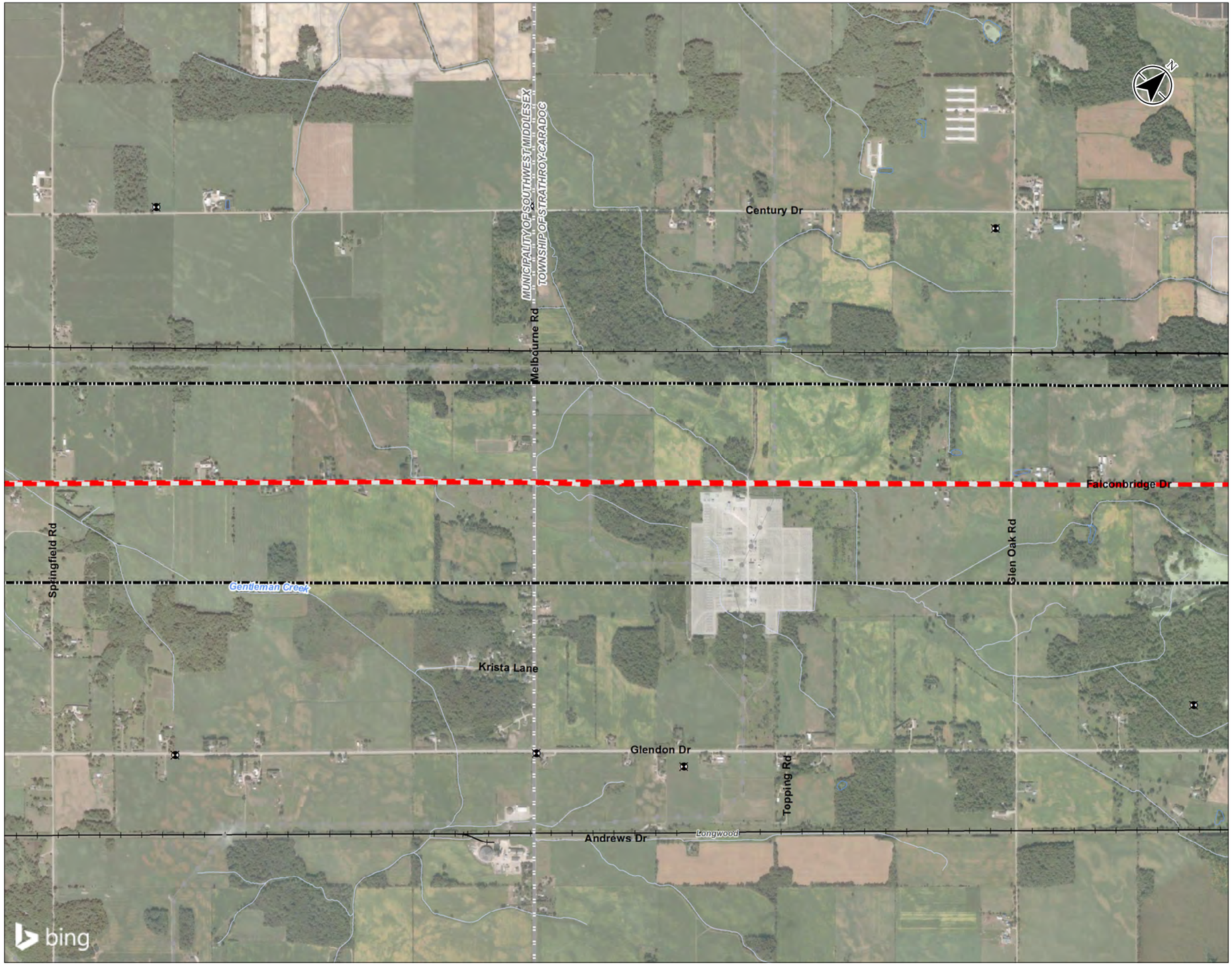

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Hydro Line
- Railway - Operational
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

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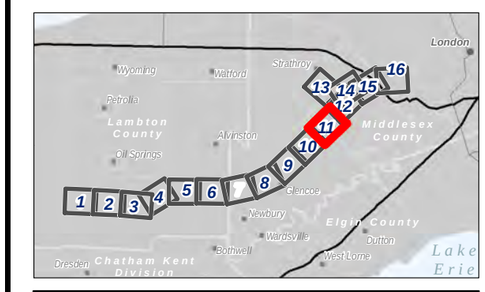

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ENBRIDGE GAS INC.
LONDON LINES PROJECT

Figure No.
C-5.11

Title
Aggregate and Petroleum Features

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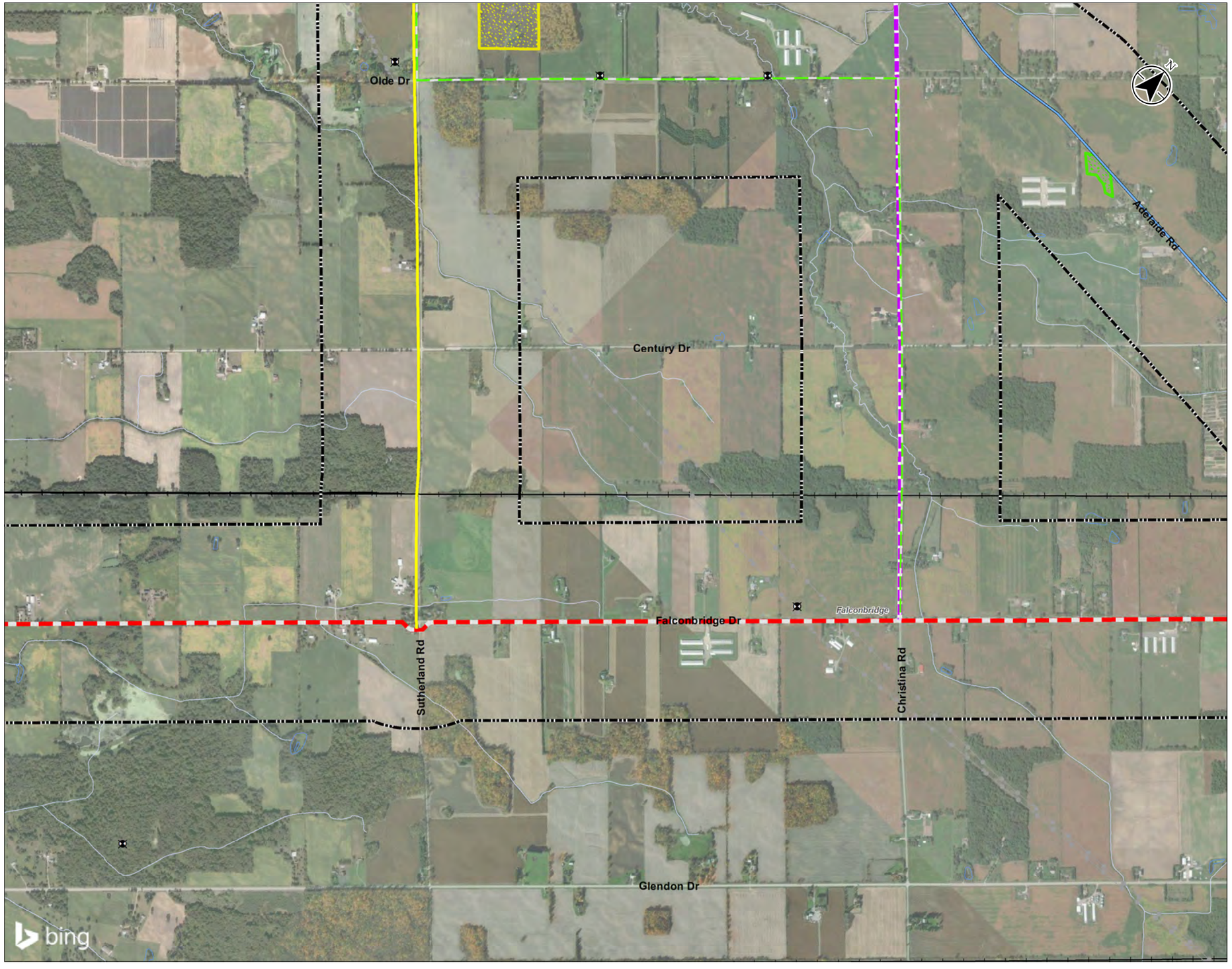

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Hydro Line
- Railway - Operational
- Watercourse
- Aggregate Site - Active
- Aggregate Site - Surrendered
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

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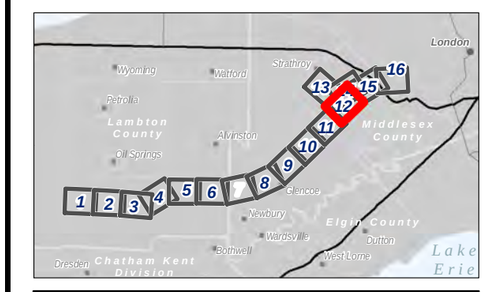

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Figure No.
C-5.12

Title
Aggregate and Petroleum Features

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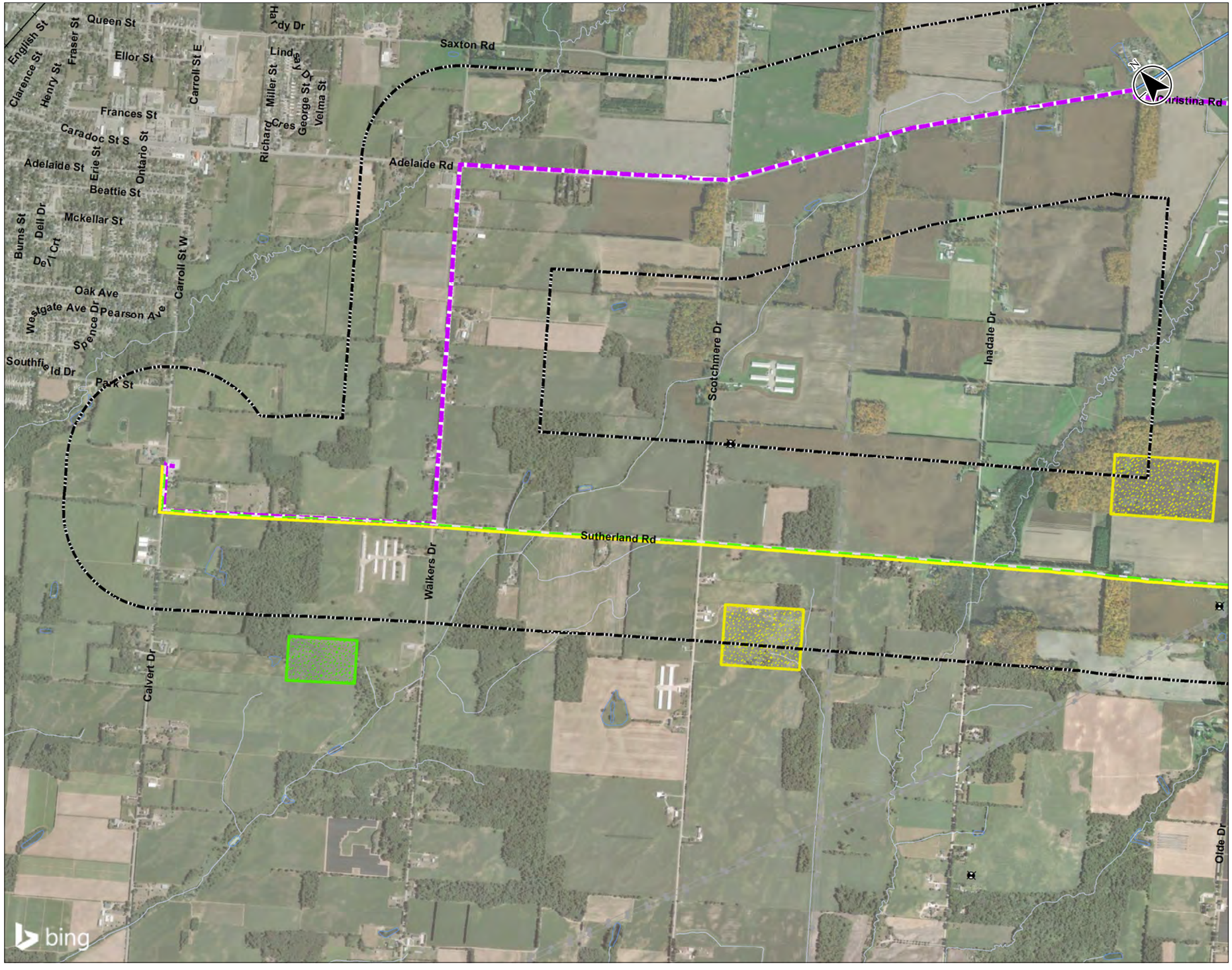

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Hydro Line
- Railway - Operational
- Watercourse
- Aggregate Site - Active
- Aggregate Site - Surrendered
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

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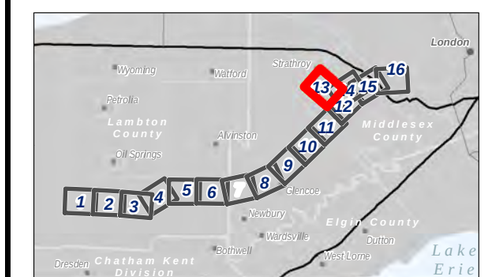

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Figure No.
C-5.13

Title
Aggregate and Petroleum Features

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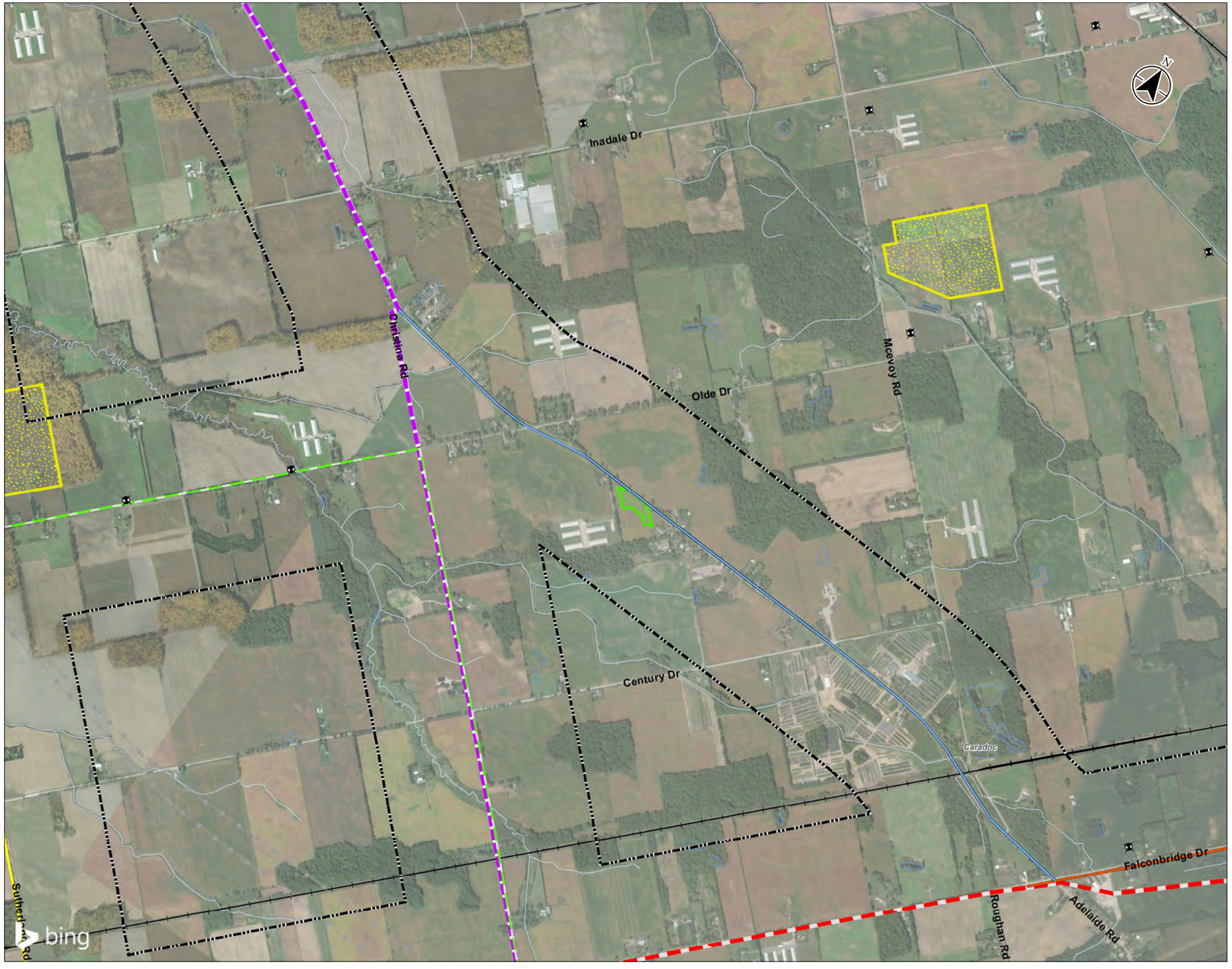

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Hydro Line
- Railway - Operational
- Watercourse
- Aggregate Site - Active
- Aggregate Site - Surrendered
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

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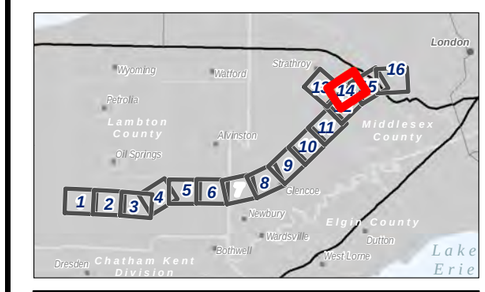

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Figure No.
C-5.14

Title
Aggregate and Petroleum Features

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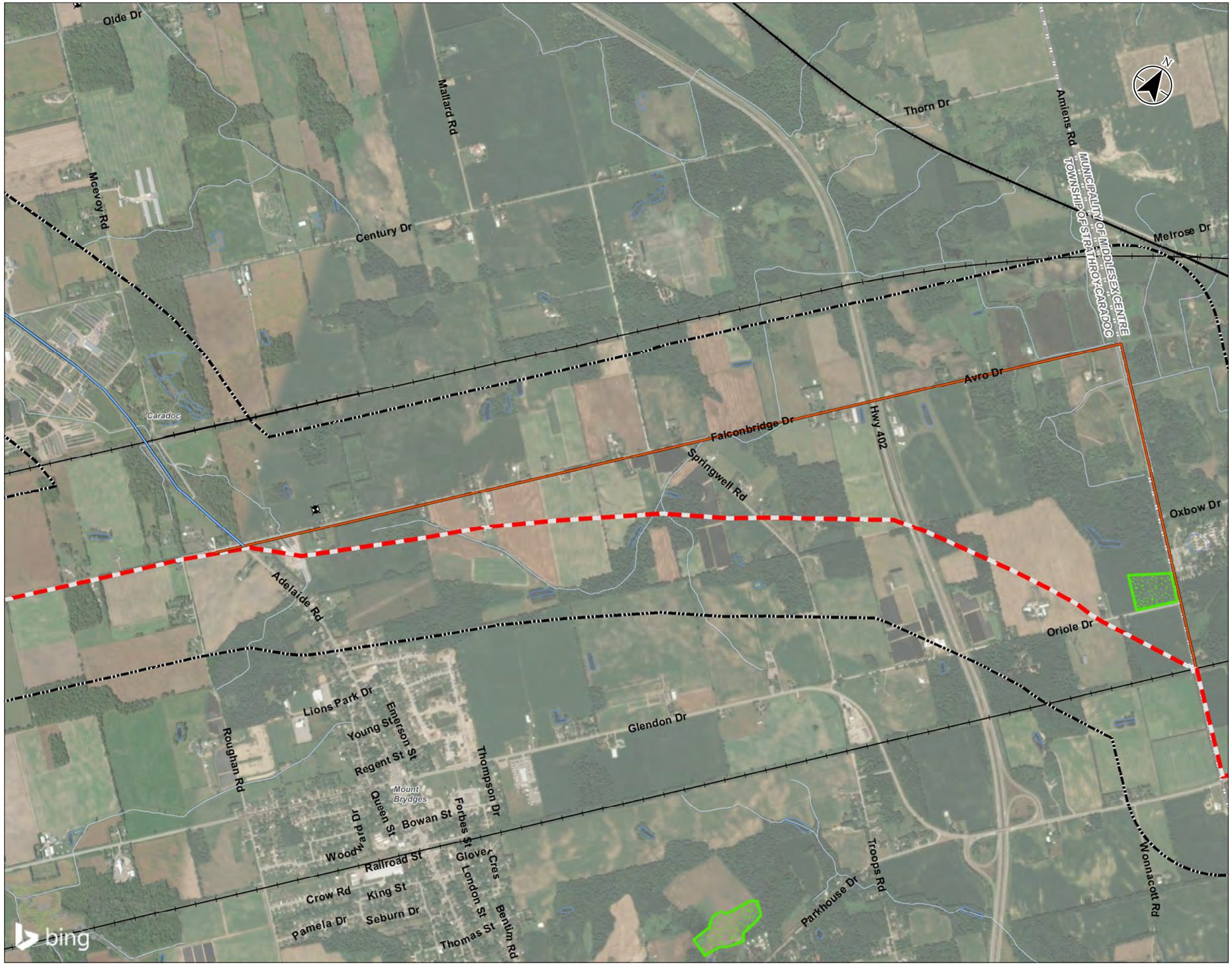

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Hydro Line
- Railway - Operational
- Watercourse
- Aggregate Site - Surrendered
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

Notes

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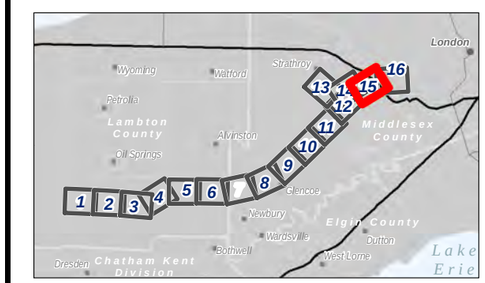

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Figure No.
C-5.15

Title
Aggregate and Petroleum Features

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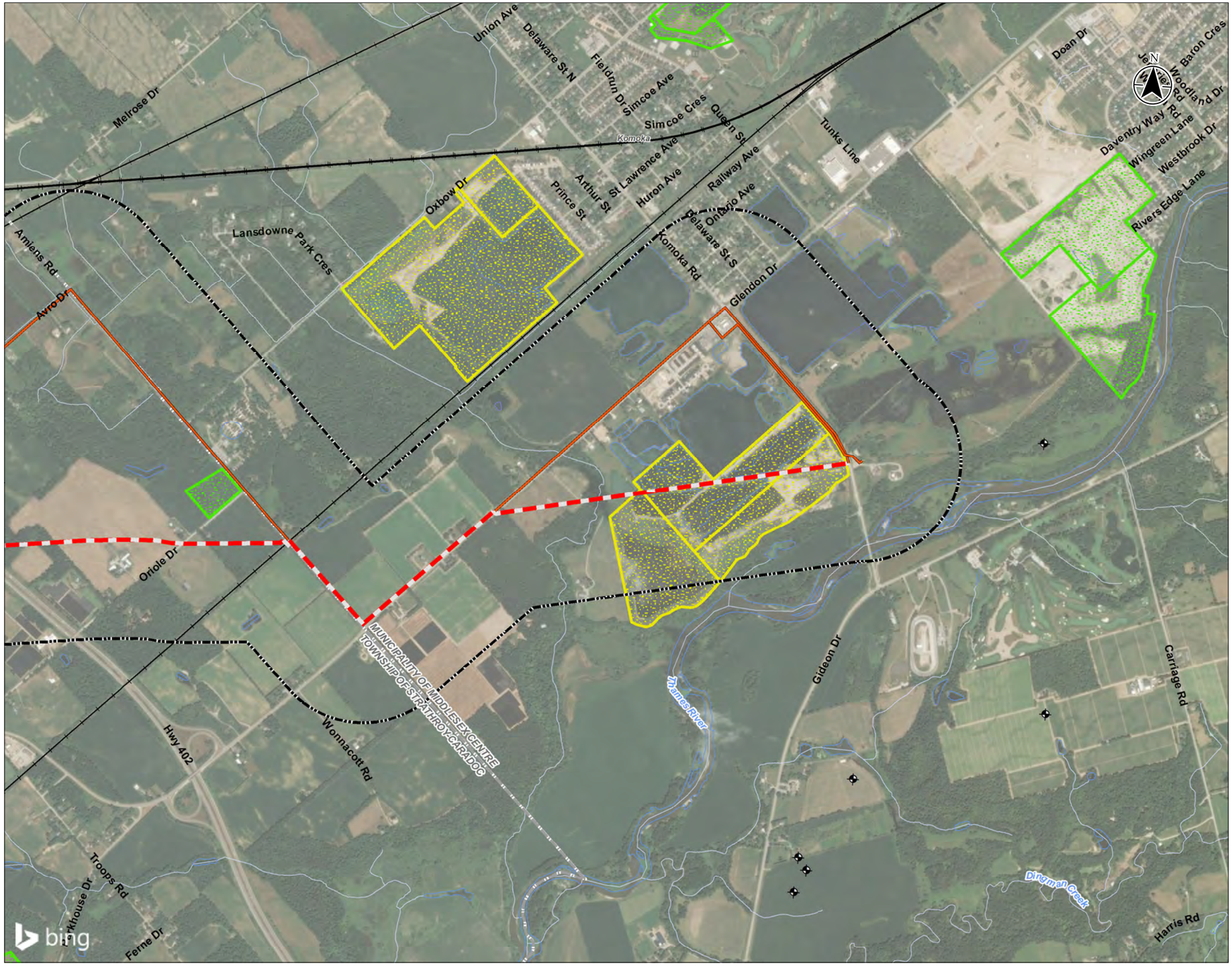

Stantec

Study Area

Enbridge Gas Features

- Existing Route
- Alternative Segments
- Strathroy Alternate 1
- Strathroy Alternate 2
- Strathroy Alternate 3
- Strathroy Alternate 4

Base / Envrionmental Features

- Petroleum Well
- Railway - Operational
- Watercourse
- Aggregate Site - Active
- Aggregate Site - Surrendered
- Municipal Boundary - Lower Tier
- Waterbody

0 400 800 metres

1:20,000 (At original document size of 11x17)

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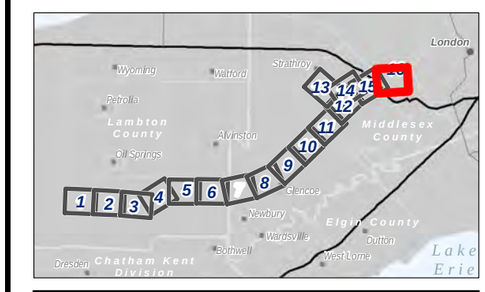

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Figure No.
C-5.16

Title
Aggregate and Petroleum Features

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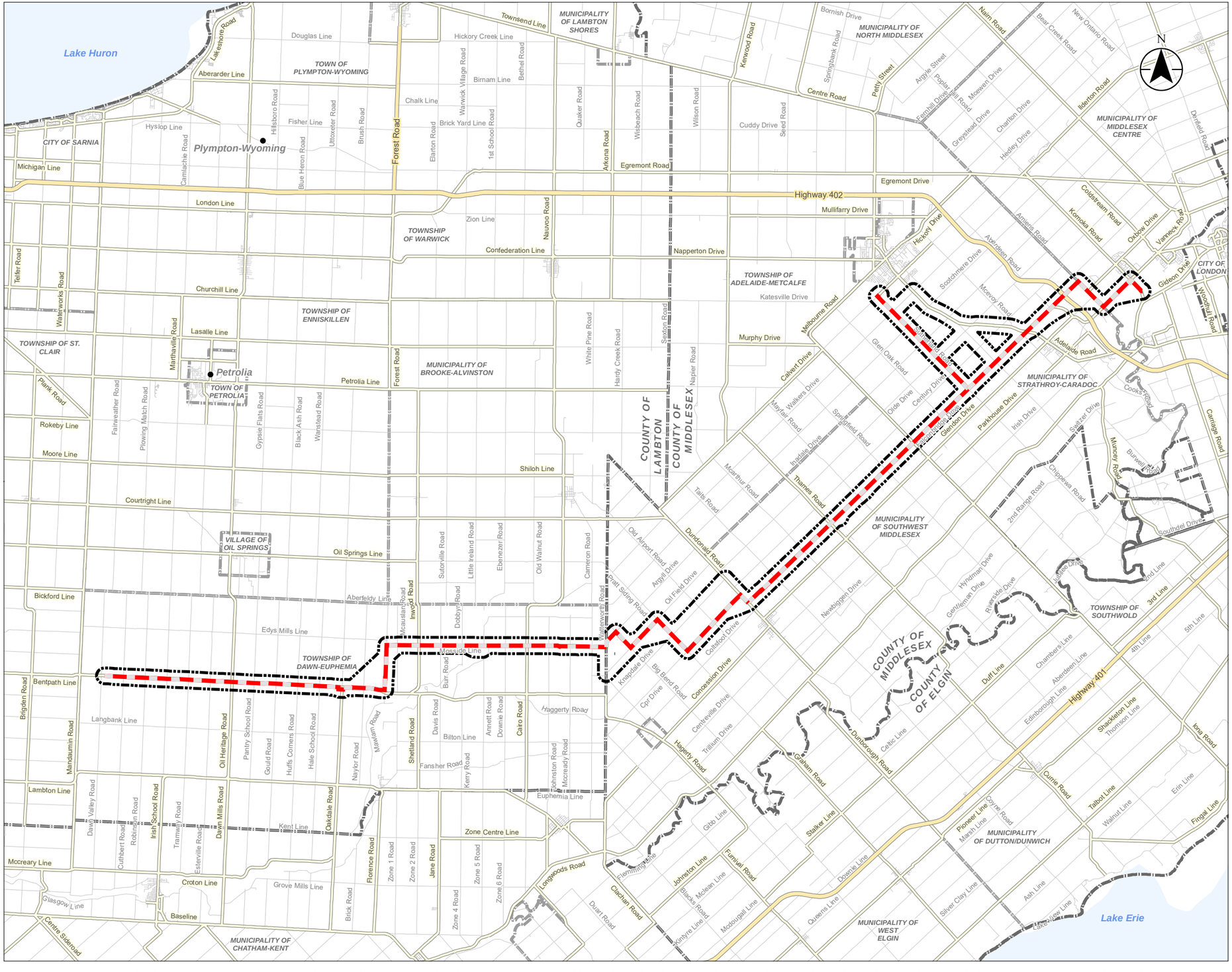
APPENDIX D

Figure D-1: Preferred Route



Stantec

Legend

- Study Area
- Preferred Pipeline Route
- Expressway / Highway
- Major Road
- Minor Road
- Municipal Boundary, Upper

0 2 4 6 8 10 12 km

1:250,000 (At original document size of 11x17)

Notes

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ENBRIDGE GAS INC.
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Figure No.
D-1

Title
Preferred Pipeline Route

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APPENDIX E
Terrestrial Habitat

Table E-1: Wildlife Habitat Assessment for the Enbridge London Lines Replacement Project (Ecoregion 7E)

Wildlife Habitat Type	Criteria	Methods	Results of Desktop Habitat Assessment	Results of Field Investigations
SEASONAL CONCENTRATION AREAS				
Waterfowl Stopover and Staging Area (Terrestrial and Aquatic)	Field with evidence of annual spring flooding from meltwater or runoff; aquatic habitats such as ponds, marshes, lakes, bays, and watercourses used during migration, including large marshy wetlands.	ELC surveys, wildlife habitat assessments, and air photo interpretation will be used to assess features within the Study Area that may support waterfowl stopover and staging areas.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Shorebird Migratory Stopover Area	Beaches and un-vegetated shorelines of lakes, rivers, and wetlands.	ELC surveys and air photo interpretation will be used to assess features within the Study Area that may support migratory shorebirds.	**Absent**. Natural unvegetated shoreline habitat was absent from the Study Area.	n/a
Raptor Wintering Area	Combination of fields and woodland (>20 ha).	ELC surveys and air photo interpretation will be used to assess features within the Study Area that may support wintering raptors.	To be determined during field investigations prior to construction**.**	To be determined during field investigations.
Bat Hibernacula	Hibernacula may be found in caves, mine shafts, underground foundations and karsts.	ELC surveys, wildlife habitat assessments, and air photo interpretation will be used to assess features within the Study Area that may support bat hibernacula.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Bat Maternity Colonies	Maternity colonies considered significant wildlife habitat are found in forested ecosites.	ELC surveys, wildlife habitat assessments, and air photo interpretation will be used to assess features within the Study Area that may support bat maternity colonies.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Turtle Wintering Areas	Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen. Water has to be deep enough not to freeze and have soft mud substrate.	ELC surveys, wildlife habitat assessments and air photo interpretation will be used to assess features within the Study Area that may support areas of permanent standing water but not deep enough to freeze.	To be determined during field investigations prior to construction.	To be determined during field investigations
Reptile Hibernaculum	Rock piles or slopes, stone fences, crumbling foundations.	ELC surveys and wildlife habitat assessments will be used to document features that may support snake hibernacula.	To be determined during field investigations prior to construction.	To be determined during field investigations
Colonial-Nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills, steep slopes, rock faces or piles.	ELC surveys, wildlife habitat assessments, and air photo interpretation will be used to assess features within the Study Area that may support colonial bird breeding habitat.	To be determined during field investigations prior to construction.	To be determined during field investigations
Colonial-Nesting Bird Breeding Habitat (Tree/Shrubs)	Dead trees in large marshes and lakes, flooded timber, and shrubs, with nests of colonially nesting heron species.	ELC surveys and wildlife habitat assessments will be used to assess features within the Study Area that may support colonial bird breeding habitat (Trees/Shrubs).	To be determined during field investigations prior to construction.	To be determined during field investigations
Colonial-Nesting Bird Breeding Habitat (Ground)	Rock islands and peninsulas in a lake or large river.	ELC surveys and air photo interpretation will be used to assess features within the Study Area that may support colonial bird breeding habitat (Ground).	**Absent**. Large lakes or rivers are absent from the Study Area.	n/a
Migratory Butterfly Stopover Areas	Meadows and forests that are a minimum of 10 ha and are located within 5 km of Lake Erie.	GIS analysis will be used to measure distance from the Lake Erie shoreline.	**Absent**. Study Area is not within 5 km of Lake Erie.	n/a
Landbird Migratory Stopover Areas	Woodlands of a minimum size located within 5 km of Lake Ontario.	GIS analysis will be used to measure distance from the Lake Erie shoreline.	**Absent**. Study Area is not within 5 km of Lake Erie.	n/a
Deer Winter Congregation Areas	Deer winter congregation’s areas are mapped by MNRF and species use surveys are not required.	The LIO database and MNRF consultation were used to identify deer winter congregation areas.	**Present**. Records of deer winter congregation areas were identified by MNRF in the Study Area.	**Present**

Table E-1: Wildlife Habitat Assessment for the Enbridge London Lines Replacement Project (Ecoregion 7E)

Wildlife Habitat Type	Criteria	Methods	Results of Desktop Habitat Assessment	Results of Field Investigations
RARE VEGETATION COMMUNITIES				
Sand Barren, Alvar, Cliffs and Talus Slopes	Sand barren, Alvar, Cliff and Talus ELC Community Classes, and other areas of exposed bed rock and patchy soil development, near vertical exposed bedrock and slopes of rock rubble.	ELC surveys and air photo interpretation will be used to assess vegetation communities in the Study Area.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Old-growth Forest	Relatively undisturbed, structurally complex; dominant trees >100 years' old.	ELC surveys and air photo interpretation will be used to assess vegetation communities in the Study Area.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Tallgrass Prairie and Savannah	Open canopy habitats (tree cover < 60%) dominated by prairie species.	ELC surveys and air photo interpretation will be used to assess vegetation communities in the Study Area.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities listed by the NHIC.	ELC surveys and air photo interpretation will be used to assess vegetation communities in the Study Area.	To be determined during field investigations prior to construction.	To be determined during field investigations.
SPECIALIZED HABITAT FOR WILDLIFE				
Waterfowl Nesting Area	Upland habitats adjacent to wetlands (within 120 m).	ELC surveys, wildlife habitat assessment, and air photo interpretation will be used to assess features within the Study Area that may support nesting waterfowl.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Bald Eagle and Osprey nesting, Foraging, and Perching Habitat	Treed communities adjacent to rivers, lakes, ponds, and other wetlands with stick nests of Bald Eagle or Osprey.	ELC surveys, air photo interpretation and wildlife habitat assessment will be used to assess features within the Study Area that may support nesting, foraging and perching habitat for large raptors.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Woodland Raptor Nesting Habitat	Forested ELC communities >30 ha with 10 ha of interior habitat.	ELC surveys, wildlife habitat assessment, and GIS analysis will be used to assess features within the Study Area that may support nesting habitat for woodland raptors.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Turtle Nesting Areas	Exposed soil, including sand and gravel in open sunny areas near wetlands.	ELC surveys, wildlife habitat assessment and air photo interpretation will be used to assess features within the Study Area that may support turtle nesting areas.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Seeps and Springs	Any forested area with groundwater at surface within the headwaters of a stream or river system.	Evidence of groundwater upwelling, including seeps and springs, will be recorded during ELC surveys.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Amphibian Breeding Habitat (Woodland and Wetland)	Treed uplands with vernal pools, and wetland ecosites.	ELC surveys will be used to assess features within the Study Area that may support breeding amphibians.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Woodland Area-sensitive Bird Breeding Habitat	Large mature forest stands, woodlots >30 ha and >200 m from the forest edge.	ELC surveys, air photo interpretation, and GIS analysis will be used to determine whether woodlots that occurred within the Study Area that Were >30 ha with interior habitat present (>200 m from edge).	To be determined during field investigations prior to construction.	To be determined during field investigations.
HABITAT FOR SPECIES OF CONSERVATION CONCERN				
Marsh Bird Breeding Habitat	Wetlands with shallow water and emergent aquatic vegetation.	ELC surveys and air photo interpretation will be used to identify marshes with shallow water and emergent vegetation that may support marsh breeding birds.	To be determined during field investigations prior to construction. .	To be determined during field investigations.
Open Country Bird Breeding Habitat	Large grasslands and fields (>30 ha).	ELC surveys, air photo interpretation, and GIS analysis will be used to identify grassland communities within the Study Area that may support area-sensitive breeding birds.	To be determined during field investigations prior to construction.	To be determined during field investigations.
Shrub/Early Successional Bird Breeding Habitat	Large shrub and thicket habitats (>10 ha).	ELC surveys, air photo interpretation and GIS analysis will be used to identify large communities that may support shrub/early successional breeding birds.	To be determined during field investigations prior to construction. .	To be determined during field investigations.

Table E-1: Wildlife Habitat Assessment for the Enbridge London Lines Replacement Project (Ecoregion 7E)

Wildlife Habitat Type	Criteria	Methods	Results of Desktop Habitat Assessment	Results of Field Investigations
Terrestrial Crayfish	Wet meadows and edges of shallow marshes.	ELC surveys will be used to identify shallow marsh and meadow marsh communities that occurred within the Study Area; searches for crayfish chimneys were conducted during wildlife habitat assessments.	To be determined during field investigations prior to construction.	To be determined during field investigations.
SPECIES OF CONSERVATION CONCERN				
Birds				
Common Nighthawk (Special Concern)	The Common Nighthawk is an aerial insectivore and forages at dawn and dusk. This species nests on the ground in open habitats with rocky or graveled substrate and will even nest on gravel roofs in the city (Cadman et al. 2007). The regeneration or succession of forest clearings and the destruction of grassland habitats appear to play a major role in this species' decline along with the non-selective spraying for mosquitoes (Cadman et al. 2007).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Eastern Wood-Pewee (Special Concern)	Eastern Wood-pewee is found in the mid-canopy layer of deciduous and mixed wood forests with open understories and is commonly associated with edges and clearings (MECP 2019a).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Golden-winged Warbler (Special Concern)	The Golden-winged Warbler is found in early-successional shrubby areas surrounded by mature forest, including field edges, hydro or utility Right-of-Ways or logged areas (COSEWIC 2006). It can also be found in dry uplands, swamp forests and marshes (COSEWIC 2006).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Grasshopper Sparrow (Special Concern)	The Grasshopper Sparrow is found in large (>5 ha) sparsely vegetated grasslands, hay fields, pastures, prairies and alvars with well-drained, sandy soil (COSEWIC 2013). The nests are typically well hidden in grasses (COSEWIC 2013).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Red-headed Woodpecker (Special Concern)	The Red-headed Woodpecker prefers open woodlands and forest edges and is often found in disturbed areas such as cemeteries, parks and golf courses (MECP 2019b). This species shows a preference for dead or dying trees and at least a few snags or large dead limbs are necessary for its presence in more open habitats (MECP 2019b).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Wood Thrush (Special Concern)	Mature deciduous and mixed forest (MECP 2019c). Well-developed undergrowth and tall trees to sing from (MECP 2019c).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Insects				
Monarch (Special Concern)	Adult Monarchs feed on nectar from wildflowers in a variety of habitats, while larvae are confined to meadows and open areas with Milkweed plants (MECP 2019d).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Monarch habitat will be recorded if observed during field investigations.	To be determined during field investigations.
Mammals				
Woodland Vole (Special Concern)	The Woodland Vole is primarily found in mature Carolinian forest with a dense leaf litter layer (COSEWIC 2010), however it may also be found in sand dunes, swamps and orchards (COSEWIC 2010). The most important factor in habitat selection is a dense herbaceous layer and friable soils with low saturation (COSEWIC 2010).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. To be determined during field investigations prior to construction.	To be determined during field investigations.

Table E-1: Wildlife Habitat Assessment for the Enbridge London Lines Replacement Project (Ecoregion 7E)

Wildlife Habitat Type	Criteria	Methods	Results of Desktop Habitat Assessment	Results of Field Investigations
Reptiles				
Eastern Ribbonsnake (Special Concern)	The eastern ribbon snake is usually found close to water and is particularly characteristic of wetlands that have an abundance of small fish and frogs (MECP 2019e). It hibernates in communal underground burrows over winter (MECP 2019e).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. To be determined during field investigations prior to construction.	To be determined during field investigations.
Eastern Milksnake	The Eastern milksnake can be found in a variety of habitats, but prefer open areas such as pastures, meadows, prairies, rock outcrops, right-of-ways, and agricultural land (COSEWIC 2014). They commonly hunt around old buildings and barns, where rodent populations are high (COSEWIC 2014). At the landscape scale, Milksnakes are most abundant in areas of Ontario with high overall forest cover (COSEWIC 2014).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. To be determined during field investigations prior to construction.	To be determined during field investigations.
Northern Map Turtle (Special Concern)	The Northern Map Turtle inhabits rivers and lakes with suitable basking sites such as deadheads, rocks and emergent vegetation (COSEWIC 2002). It requires high-quality water with abundant mollusc populations, which are the preferred prey source. The map turtle overwinters in slow-moving, deep sections of river (COSEWIC 2002).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. The Syndenham River is likely to provide habitat for the Map Turtle.	To be determined during field investigations.
Snapping Turtle (Special Concern)	Ponds, sloughs, streams, rivers, and shallow bays that are characterized by slow moving water, aquatic vegetation, and soft bottoms. Females show strong nest site fidelity and nest in sand or gravel banks at waterway edges in late May or early June (MECP 2019f).	ELC surveys, wildlife habitat assessment, botanical inventory and breeding bird surveys will be used to assess features within the Study Area that may support species of conservation concern.	Suitable habitat for the species may be present in the Study Area. Watercourses proposed for crossing may provide habitat for the Snapping Turtle.	To be determined during field investigations.
ANIMAL MOVEMENT CORRIDORS				
Amphibian Movement Corridor	Corridors may be found in all ecosites associated with water. Determined based on identifying significant amphibian breeding habitat (wetland).	Identified after Amphibian Breeding Habitat - Wetland is confirmed. Movement corridors should be considered when amphibian breeding habitat is confirmed as SWH from Amphibian Breeding Habitat (Wetland).	Suitable habitat for the species may be present in the Study Area. To be determined during field investigations prior to construction.	To be determined during field investigations.

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Table E-2: Habitat Potential in the Study Area for Threatened or Endangered Species Identified During Background Review

Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	Source	Habitat Preference	Desktop Assessment of Habitat Potential	Results from Habitat and Species Surveys
Birds							
Acadian Flycatcher	*Empidonax virescens*	S2S3B	END	MNRF	The Acadian Flycatcher typically breeds in mature deciduous forest with a dense canopy closure and ravines, or in forested swamps with maple and beech trees. This species is sensitive to disturbance and is generally found in large, undisturbed forest tracts (COSEWIC 2010a).	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Bank Swallow	*Riparia riparia*	S4B	THR	MNRF, OBBA	The Bank Swallow breeds on a variety of sites with vertical banks, including riverbanks, bluffs, aggregate pits and stockpiles of sand and soil (COSEWIC 2013a). Sand-silt substrates are preferred (COSEWIC 2013a). Nesting sites are often near open habitats used for aerial foraging (COSEWIC 2013a). Large wetlands are used as communal roosts during post-breeding, migration, and wintering periods (COSEWIC 2013a).	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Barn Owl	*Tyto alba*	S1	END	MNRF	The Barn Owl range is extremely limited in Canada, where it is found only within 50 km of the Great Lakes (COSEWIC 2010b). It lives year-round at its nest site, which can be constructed in old barns, abandoned buildings, tree cavities or holes in cliff faces (COSEWIC 2010b) The Barn Owl hunts small mammals over open areas such as fields and meadows (COSEWIC 2010b).	Suitable habitat is unlikely to be present in the Study Area due to the limited range of the species in Ontario and the requirement of 50 km distance to a Great Lake, which the project does not encounter. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Barn Swallow	*Hirundo rustica*	S4B	THR	OBBA	The Barn Swallow commonly nests on walls or ledges of barns, bridges, culverts or other man-made structures (COSEWIC 2011). Where suitable nesting structures occur, Barn Swallow often form small colonies, sometimes mixed with other swallow species (COSEWIC 2011). The Barn Swallow feeds on aerial insects while foraging over a variety of open habitats such as pastures, lawns, meadows and fields (COSEWIC 2011). It will also frequently forage in woodland clearings, over wetland habitats or open water where insect prey are abundant (COSEWIC 2011).	Suitable habitat may be present for this species along the proposed pipeline route. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	MNRF, OBBA	The Bobolink is generally referred to as a “grassland species”. It nests primarily in forage crops with a mixture of grasses and broad-leaved forbs, predominantly hayfields and pastures. Preferred ground cover species include grasses such as Timothy and Kentucky bluegrass and forbs such as clover and dandelion (COSEWIC 2010). Bobolink is an area-sensitive species, with reported lower reproductive success in small habitat fragments (COSEWIC 2010).	Suitable habitat may be present in the Study Area and where the pipeline passes through pasture, hay or meadow habitat. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Cerulean Warbler	*Setophaga cerulea*	S3B	THR	MNRF	The Cerulean Warbler is found in mature deciduous forest with large trees and an open understory (COSEWIC 2010). They can be found in moist lowland forest or drier upland forest (COSEWIC 2010).	Suitable habitat may be present along the pipeline route. The pipeline route passes through known Cerulean Warbler range in Ontario. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Chimney Swift	*Chaetura pelagica*	S4B, S4N	THR	OBBA	Chimney Swift uses chimneys for roosting and breeding, and less commonly, nest in large hollow trees. Nesting sites typically have a constant ambient temperature (COSEWIC 2007). It is an aerial insectivore, and often forages near water (COSEWIC 2007).	Suitable habitat may be present in the Study Area and where the pipeline passes through deciduous forest. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.

Table E-2: Habitat Potential in the Study Area for Threatened or Endangered Species Identified During Background Review

Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	Source	Habitat Preference	Desktop Assessment of Habitat Potential	Results from Habitat and Species Surveys
Eastern Meadowlark	*Sturnella magna*	S4B	THR	MNRF, OBBA	The Eastern Meadowlark is typically found in fields, meadows, golf courses, pastures, alfalfa fields, roadsides and other open areas. Older sites with moderately tall grass, a substantial litter layer, low forb and shrub cover and dense grass are preferred (COSEWIC 2011). Larger patch sizes (>5 ha) are also generally preferred (COSEWIC 2011).	Suitable habitat may be present in the Study Area and where the pipeline passes through pasture or meadow habitat. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Henslow's Sparrow	*Ammodramus henslowii*	SHB	END	MNRF	Henslow's Sparrow prefers open grasslands such as old fields, meadows and lightly grazed pastures but may occasionally be found on marsh edges, rights-of-way, roadsides and utility corridors (COSEWIC 2011a). They show a strong preference for large contiguous tracts of suitable habitat (COSEWIC 2011a). Nests are constructed on the ground, well concealed by tall vegetation (COSEWIC 2011a).	Suitable habitat may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Least Bittern	*Ixobrychus exilis*	S4B	THR	OBBA	The Least Bittern prefers cattail marshes but may be found in a variety of wetland habitats with stable water levels and dense vegetation interspersed with open water areas (COSEWIC 2009b). Nests are built in dense vegetation near open water for foraging (COSEWIC 2009b).	Suitable habitat for the species may be present along the pipeline route. The pipeline route passes through or in close proximity to eight different provincially significant wetlands. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Louisiana Waterthrush	*Parkesia motacilla*	S3B	THR	MNRF, OBBA	The Louisiana Waterthrush prefers headwater streams and wetlands in large tracts of mature forest (COSEWIC 2015) but may also be found in deciduous swamps with open water (MNRF 2017). It nests under fallen logs, in root masses or in niches in stream banks (MNRF 2017; COSEWIC 2015).	Suitable habitat for the species may be present along the pipeline route and in the Study Area. The pipeline route passes through the mapped range in Ontario for the Louisiana Waterthrush. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Northern Bobwhite	*Colinus virginianus*	S1	END	MNRF	The Northern Bobwhite breeds in a variety of habitat early successional habitat types, including grasslands, croplands and brushy areas (COSEWIC 2003a). Nesting occurs in grasslands in the summer (COSEWIC 2003a). Croplands are required in summer and fall for feeding, dusting, loafing and roosting, and brushy habitat is required for roosting, feeding and escape during the fall and winter (COSEWIC 2003a).	Suitable habitat for the species may be present in the Study Area. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.
Yellow-breasted Chat	*Icteria virens*	S1B	END	MNRF	The Yellow-breasted Chat requires dense, low shrubby vegetation and is usually associated with early successional shrub thickets (COSEWIC 2011b). It is typically found in abandoned agricultural fields, hydro lines, Right-of-ways, wetlands and pond edges (COSEWIC 2011b).	Suitable habitat for the species may be present along the pipeline route and in the Study Area. The pipeline route passes through the mapped range in Ontario for the Yellow-breasted Chat. Breeding bird surveys will occur prior to construction.	To be determined during field investigations.

Table E-2: Habitat Potential in the Study Area for Threatened or Endangered Species Identified During Background Review

Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	Source	Habitat Preference	Desktop Assessment of Habitat Potential	Results from Habitat and Species Surveys
Mammals							
Little Brown Myotis	*Myotis lucifugus*	S4	END	OMA	The Little Brown Myotis roosts in tree cavities and abandoned buildings, and often forms roosting colonies in barns, attics and abandoned buildings (COSEWIC 2013b). They have been found in a wide variety of deciduous and coniferous tree stands (COSEWIC 2013b). Hibernation typically occurs in caves and mines(COSEWIC 2013b).	Suitable habitat exists for this species along the pipeline route within any deciduous or mixed woodlands or buildings. Bat habitat surveys will be completed prior to construction.	To be determined during field investigations.
Small-footed Myotis	*Myotis leibii*	S2S3	END	OMA	The Eastern Small-footed Myotis roosts in a variety of habitats, including hollow trees, under rocks or in rock outcrops, in buildings, caves, mines and under bridges (MNRF 2017). Different roosting sites may be selected each day (MNRF 2017). Hibernation occurs in abandoned mines and caves (MNRF 2017).	Suitable habitat exists for this species along the pipeline route within any deciduous or mixed woodlands or buildings. Bat habitat surveys will be completed prior to construction.	To be determined during field investigations.
Northern Myotis	*Myotis septentrionalis*	S3?	END	OMA	The Northern Myotis roosts in colonies in tree cavities (COSEWIC 2013b) in a wide variety of deciduous and coniferous forest stands. Little is known about the effect of tree density on maternity roost selection for this species, but bats tend to avoid large open areas (COSEWIC 2013b). Small forest gaps, such as over streams or ponds, are used for foraging (COSEWIC 2013b).	Suitable habitat exists for this species along the pipeline route within any deciduous or mixed woodlands or buildings. Bat habitat surveys will be completed prior to construction.	To be determined during field investigations.
Tri-colored Bat	*Perimyotis subflavus*	S3?	END	OMA	The Tri-coloured Bat roosts in colonies in tree cavities (COSEWIC 2013b) in a wide variety of deciduous and coniferous forest stands. Little is known about the effect of stand composition on maternity roost selection for this species, but it is strongly associated with forest watercourses and streamside vegetation (COSEWIC 2013b).	Suitable habitat exists for this species along the pipeline route within any deciduous or mixed woodlands or buildings. Bat habitat surveys will be completed prior to construction.	To be determined during field investigations.
Plants							
American Chestnut	*Castanea dentata*	S1S2	END	MNRF	The American Chestnut prefers dry upland deciduous forest with sandy, acidic to neutral soils and is often associated with Red Oak, Black Cherry, Sugar Maple and American Beech (COSEWIC 2004). It is only found in the Carolinian zone within Ontario (COSEWIC 2004).	Suitable habitat exists for this species along the proposed pipeline route within any deciduous or mixed woodlands. A botanical inventory will be completed prior to construction.	To be determined during field investigations.
Blue Ash	*Fraxinus quadrangulata*	S2?	THR	MNRF	Blue Ash grows in three habitat types: deciduous floodplain forests and river valleys; on sandy beaches in Point Pelee Island and Point Pelee National Park, and on limestone outcrops along the shores of Lake Erie (COSEWIC 2014).	Suitable habitat exists for this species along the proposed pipeline route. Blue Ash is known to be found along the Sydenham River. A botanical inventory will be completed prior to construction.	To be determined during field investigations.
Butternut	*Juglans cinerea*	S2?	END	MNRF	The Butternut is a medium-sized tree that is commonly found in a variety of habitats including woodlands and hedgerows (COSEWIC 2017). Butternut is intolerant of shade and occurs singly or in small groups with a variety of associates (COSEWIC 2017).	Suitable habitat exists for this species along the proposed pipeline route within any deciduous or mixed woodlands and hedgerows. A botanical inventory will be completed prior to construction.	To be determined during field investigations.
Drooping Trillium	*Trillium flexipes*	S1	END	MNRF	Drooping Trillium grows on damp sandy soils in mature deciduous Carolinian forest, usually close to streams and rivers (COSEWIC 2009a). It is commonly associated with maple, White Ash, American Basswood, Hackberry, White Elm, Blue Ash; and grows alongside Ostrich Fern, Wild Ginger and Jack-in-the-Pulpit (COSEWIC 2009a).	Suitable habitat may be present for this species along the proposed pipeline route. Only two populations occur in Ontario, one of which is along the Sydenham River. A botanical inventory will be completed prior to construction.	To be determined during field investigations.

Table E-2: Habitat Potential in the Study Area for Threatened or Endangered Species Identified During Background Review

Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	Source	Habitat Preference	Desktop Assessment of Habitat Potential	Results from Habitat and Species Surveys
Eastern Flowering Dogwood	*Cornus florida*	S2?	END	MNRF	Eastern Flowering Dogwood is most often found on sandy soils under tall trees in intermediate to mature deciduous forest, but is also found on floodplains, ravines, fencerows and roadsides (COSEWIC 2007a).	Suitable habitat for the species may be present along the proposed pipeline route. A botanical inventory will be completed prior to construction.	To be determined during field investigations.
Heart-leaved Plantain	*Plantago cordata*	S1	END	MNRF	Heart-leaved Plantain is a semi-aquatic plant that typically grows in undisturbed wet forests, often along gravelly or rocky limestone beds of forest streams (COSEWIC 2000a). Common associate species are maple, Blue-beech, ash, Shagbark Hickory and Basswood (COSEWIC 2000a).	Suitable habitat for the species may be present in the Study Area. A botanical inventory will be completed prior to construction.	To be determined during field investigations.
Large Whorled Pogonia	*Isotria verticillata*	SH	END	MNRF	Large Whorled Pogonia grows on sandy soils with a dense layer of leaf litter in deciduous and mixed forests with an open canopy (COSEWIC 2000b).	Suitable habitat for the species may be present in the Study Area. The proposed pipeline route passes through the known range for the species in Ontario. A botanical inventory will be completed prior to construction.	To be determined during field investigations.
Willow-leaved Aster	*Symphyotrichum praealtum*	S2	THR	MNRF	Willowleaf Aster is found on Walpole Island and near Windsor in Ontario (COSEWIC 2003b). It grows in tallgrass prairies, oak savannahs, thickets, meadows (COSEWIC 2003b) and occasionally along roadsides, trails, rights-of-way and railways (COSEWIC 2003b).	Suitable habitat for the species may be present in the Study Area. A botanical inventory will be completed prior to construction.	To be determined during field investigations.
Reptiles							
Blanding's Turtle	*Emydoidea blandingi*	S3	THR	ORAA	The Blanding's Turtle prefers shallow water in heavily vegetated, large wetlands and lakes (COSEWIC 2016a). In Ontario it also commonly uses clear watered habitats such as streams, rivers and ponds (COSEWIC 2016a). Nests occur in a variety of loose substrates such as sand, gravel and cobblestone (COSEWIC 2016a). Blanding's Turtles can often be found hundreds of metres from the nearest aquatic habitat during the active season, as they search for mates or nest sites (COSEWIC 2016a). Overwintering sites are permanent pools approximately 1 m in depth (COSEWIC 2016a).	Suitable habitat for the species may be present in the Study Area. A reptile survey will be completed prior to construction.	To be determined during field investigations.
Eastern Hog-nosed Snake	*Heterodon platirhinos*	S3	THR	ORAA	Eastern Hog-nosed snakes inhabit areas with loose, dry, sandy soil; open vegetation cover and proximity to a water source (COSEWIC 2007b). Common habitats include open woods, forest edges, sand dunes if they have adequate cover (COSEWIC 2007b). Their primary prey is toads (COSEWIC 2007b).	Suitable habitat for the species may be present in the Study Area. A reptile survey will be completed prior to construction.	To be determined during field investigations.
Massasauga (Carolinian population)	*Sistrurus catenatus pop. 2*	S1	END	MNRF	The Massasauga requires semi-open habitats for cover and basking, including prairies, bogs, marshes, alvars, shorelines and open forests (COSEWIC 2012). Pregnant females tend to prefer dry open habitats for thermoregulation, while non-pregnant snakes favour lowland habitats for hunting (COSEWIC 2012). Hibernation occurs in rock crevices, root masses, burrows and sphagnum mats where the snakes are below the frost line but above the water table (COSEWIC 2012).	Populations of this species are extremely fragmented in Southern Ontario and only known from a few locations: Wainfleet Bog in Niagara Region, Ojibway Prairie Wetland Complex in Windsor and the Bruce Peninsula.	To be determined during field investigations.
Queensnake	*Regina septemvittata*	S2	END	ORAA	The Queensnake is an aquatic snake that is seldom found more than 3 m from streams, rivers and lakes with gravelly/rocky bottoms and an abundance of crayfish (COSEWIC 2010c). Hibernacula are generally found in bridge abutments and bedrock crevices (COSEWIC 2010c).	Suitable habitat for the species may be present in the Study Area. A reptile survey will be completed prior to construction.	To be determined during field investigations.

Table E-2: Habitat Potential in the Study Area for Threatened or Endangered Species Identified During Background Review

Common Name	Scientific Name	SRANK	Provincial Status (COSSARO)	Source	Habitat Preference	Desktop Assessment of Habitat Potential	Results from Habitat and Species Surveys
Spiny Softshell	*Apalone spinifera*	S2	END	MNRF	The Spiny Softshell is usually found in rivers and lakes, but occasionally inhabits smaller waterbodies such as streams and roadside ditches (COSEWIC 2016b). The primary habitat requirement is access to open terrestrial sand or gravel sites for nesting, soft mud substrate for burrowing, basking sites and an abundance of crayfish and other prey items (COSEWIC 2016b). The Spiny Softshell rarely travels far from aquatic habitats (COSEWIC 2016b).	Suitable habitat exists in the Study Area. The species is known to inhabit the Sydenham River.	To be determined during field investigations.

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COSEWIC. 2015. COSEWIC assessment and status report on the Louisiana Waterthrush *Parkesia motacilla* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 41 pp.

Appendix E: Terrestrial Habitat

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APPENDIX F
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Stage 1 Archaeological Assessment: London Lines Replacement Project

Parts of Various Lots and Concessions,
Multiple Lower Tier Municipalities,
Middlesex and Lambton Counties, Ontario

July 10, 2020

Prepared for:

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Project Information Form #: P256-0622-2020
Project Number: 160951170

ORIGINAL REPORT

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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete a Stage 1 archaeological assessment for the proposed London Lines Replacement Project (the Project). The study area for the Stage 1 assessment of the Project comprises approximately 766.88 hectares of various lots and concessions of the Geographic Townships of Dawn and Euphemia, now Township of Dawn-Euphemia, Lambton County; the Geographic Townships of Ekfrid and Mosa, now Municipality of Southwest Middlesex, Middlesex County; the Geographic Township of Caradoc, now Municipality of Strathroy-Caradoc, Middlesex County; and the Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, 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 1990b) 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, 7th Edition* (OEB 2016).

The Stage 1 archaeological assessment was completed under Project Information Form number P256-0622-2020 issued to Parker Dickson, MA by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). A property inspection of the study area was conducted between November 25, 2019 and June 19, 2020.

The Stage 1 archaeological assessment, involving background research and a property inspection, resulted in the determination that a portion of the study area, approximately 61.13%, retains potential for the identification and documentation of archaeological resources. Thus, in accordance with Section 1.3 and Section 7.7.4 of the MHSTCI's 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 which impacts an area of archaeological potential.**

The remaining portion of the study area, approximately 38.87%, retains low to no archaeological potential as it includes: areas of extensive land disturbance, low and permanently wet areas, and previously assessed areas. In accordance with Section 1.3.2 and Section 7.7.4 of the MHSTCI's 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 which impacts an area of low to no archaeological potential.**

Full and detailed further work recommendations are provided in the body of the report.

The MHSTCI is asked to review the results presented and accept this report into the *Ontario Public Register of Archaeological Reports*.

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

Project Personnel

Licensed Archaeologist:	Parker Dickson, MA (P256)
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Task Manager:	Parker Dickson, MA (P256)
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Independent Review:	Colin Varley, MA, RPA (P002)

Acknowledgements

Proponent Contact:	Kelsey Mills, Senior Environmental Analyst – Enbridge Gas Inc.
Ministry of Heritage, Sport, Tourism and Culture Industries:	Robert von Bitter, Archaeological Sites Database Coordinator

1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

Stantec Consulting Ltd. (Stantec) was retained by Enbridge Gas Inc. (Enbridge) to complete a Stage 1 archaeological assessment for the proposed London Lines Replacement Project (the Project) (Figures 1-0 to 1-6). The study area for the Stage 1 assessment of the Project comprises approximately 766.88 hectares of various lots and concessions of the Geographic Townships of Dawn and Euphemia, now Township of Dawn-Euphemia, Lambton County; the Geographic Townships of Ekfrid and Mosa, now Municipality of Southwest Middlesex, Middlesex County; the Geographic Township of Caradoc, now Municipality of Strathroy-Caradoc, Middlesex County; and the Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, 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 1990b) 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, 7th Edition* (OEB 2016).

To ensure the continued reliable delivery of natural gas, improve the integrity of the pipeline network, and to increase system flexibility, Enbridge is proposing to replace the existing London Lines natural gas pipeline network. The Project involves the installation of approximately 75 kilometres of new pipeline that will replace the two pipelines known collectively as the London Lines, as well as install a secondary new pipeline to connect to the Town of Strathroy. The Project will occur between the Town of Komoka and the existing Enbridge station (Dawn Hub) north of Dresden, Ontario. 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 municipal road allowances and rights-of-way (ROW), the final construction easement, or temporary land use (TLU), will be determined by Enbridge at a later date. At this phase of the Project, various routing options are being considered. Thus, the current study area for the Stage 1 archaeological assessment is large, captures several different pipeline route options, and serves to capture a broad and generalized geographic area associated with the Project. The study area was developed to include the municipal road ROW plus a five metre buffer, a 15-metre-wide corridor for proposed pipeline routes off of the ROW, and a 100 metre by 100 metre footprint for proposed stations (Figures 2-0 to 2-20).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out in the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 archaeological assessment are as follows:

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

- To evaluate the study area's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property; 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 conduct the Stage 1 visual assessment of the study area was provided by Enbridge. However, access to private lands for the purposes of the archaeological assessment was not obtained. Thus, photo documentation completed during the Stage 1 visual assessment was completed from the municipal road ROW and public lands.

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 16th century (Loewen and Chapdelaine 2016). Generally speaking, the western portions of the study area are considered to have been occupied by the Western Basin Tradition archaeological culture and as the Project moves east, the study area is considered to be more associated with Iroquoian peoples.

At the turn of the 16th century, the western portions of the study area are documented to have been occupied by people associated with the Western Basin Tradition archaeological culture (see Section 1.3.2). Following the turn of the 17th century, this region of the study area is understood to have been within the territory of the historic Fire Nation, an Algonkian group occupying the western end of Lake Erie. It is argued, however, that the Attiwandaron (Neutral) expanded extensively westward, displacing the Fire Nation (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). In 1649, the Seneca, with the Mohawk, led a campaign into southern Ontario and dispersed the Huron-Wendat, Tionontate (Petun), and Attiwandaron (Neutral) Nations and the Seneca established dominance over the region and used it as a hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345). By 1690 however, Ojibwa-speaking people had begun to displace the Seneca from southern Ontario. 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 oral tradition states that nations of the Three Fires (a political confederacy constituted of the Potawatomi,

Ojibwa, and Ottawa) have occupied the delta of the St. Clair River and the surrounding region continually for thousands of years.

From the mid-16th century until the turn of the 17th century, the eastern portion of the study area was within the extended political territory of the Iroquoian populations who were probably ancestral to those historically described as the *Neutre* Nations (by the French) or the *Attiwandaron* (by the Huron-Wendat); their autonym is not conclusively known (Birch 2015). Following the turn of the 17th century, the region of the study area seems to have been abandoned of permanent settlement and constituted a liminal territory between the historic Attiwandaron (Neutral) and the historic Fire Nation. It is argued, however, that at this time the Attiwandaron (Neutral) expanded extensively westward, displacing the Fire Nation and occupying the region of modern Chatham-Kent (Lennox and Fitzgerald 1990:418-419).

The eastern portions of the study area were also heavily influenced by the dispersal of various Iroquoian-speaking communities by the New York Stage Iroquois previously described and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Konrad 1981; Schmalz 1991). By 1690, Algonkian speakers from the north appear to have begun to repopulate Bruce County (Rogers 1978:761). This is the period in which the Mississaugas are known to have moved into southern Ontario and the lower Great Lakes watersheds (Konrad 1981). Additionally, members of the Three Fires Confederacy immigrated from areas to the west in the late 1700s (Feest and Feest 1978:778-779). At approximately 1790, the study area was occupied by populations of Ottawa, Chippewa, Pottawatomi, and Wyandot (Feest and Feest 1978:777, 779).

The Indigenous economy, since the turn of the 18th 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 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). Some populations of Wyandot (an Indigenous population of historically amalgamated Petun and Huron-Wendat individuals) also had moved to the region of Lake St. Clair at the turn of the 18th century and resided with the Three Fires nations (Tooker 1978:398).

By 1730, it is reported that a community of approximately 300 Indigenous people were living at the north end of Lake St. Clair (Rogers 1978:762). D'Anville's 1755 map (Konrad 1981: Plate 1) indicates the Mississauga (an Ojibway Nation) on the east bank of the St. Clair River. By 1760, the Chippewa community was established on the Thames River, southwest of present-day London, Ontario. By 1796, the Three Fires community of Chenail Ecarté was established (Feest and Feest 1978:777-779).

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century the progeny of these marriages began to no longer identify with either their paternal or maternal cultures, but instead as Métis. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay, however, Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2016; Stone and Chaput 1978:607-608).

Despite the dispersal and movement of Indigenous groups throughout southern Ontario during the 17th and 18th 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 19th century, the various Indigenous groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18th century, the central Algonquian-speaking peoples, among them Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of 18th 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.

Since contact with European explorers and immigrants, and later, with the establishment of provincial and federal governments (the Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Following the American Revolutionary War, Britain focused on the settlement of European immigrants into what became 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 (Figure 3). Originally identified as the Detroit Treaty, the chiefs of the Ottawa, Chippewa, Potawatomi, 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, Del[a]ware 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. The study area also falls within the 1822 treaty lands identified on Figure 3, which Morris (1943) identifies as Treaty Number 21 (Figure 4). Though not an exhaustive list, Morris (1943) provides a general outline of some of the treaties within the Province of Ontario from 1783 to 1923. Based on Morris (1943), Treaty Number 21 was made with the Chippewa on March 19, 1819. The Treaty commences:

> *…..at the northerly side of the River Thames at the south west angle of the Township of London; thence along the western boundary of the Township of London, in a course north 21 degrees, 30 minutes west, twelve miles to the north west angle of the said Township; then on a course about south 62 degrees and 30 minutes west forty-eight miles more or less until it intersects a line on a course produced north two miles from the north east angle of the Shawnee [Sombra] Township; then along the eastern boundary line of the said Township, twelve miles and a half more or less to the northern boundary line of the Township of Chatham; then east twenty-four miles more or less to the River Thames; then along the water[']s edge of the River Thames against the stream*

> *to the place of beginning, reserving a tract of land situate[d] on the northerly side of the River Thames nearly opposite to the northerly angle of the Township of Southwold and south west angle of the Del[a]ware Township containing 15,360 acres; also reserving two miles square distant about four miles above the rapids where the Indians have their improvements and nearly parallel to the Moravian Village containing 5,120 acres.*
>
> (Morris 1943:24-25)

While it is difficult to exactly delineate treaty boundaries today, Figure 4 provides an approximate outline of Treaty Number 21, (identified by the letter "R").

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, Indigenous peoples have left behind archaeological 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 though the eastern portion of Lambton County and the southwestern portion of Middlesex County. In discussing 18th and 19th 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, structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

Further, review of historic mapping has inherent accuracy difficulties due to potential error in georeferencing. Georeferencing 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, road alignments, water courses, etc.), 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 historical townships comprising the study area.

Table 1: Summary of Historical Townships Comprising the Study Area

Geographic Township	Former County	Current Lower Tier Municipality	Current Upper Tier Municipality
Dawn	Lambton	Township of Dawn-Euphemia	Lambton County
Euphemia	Lambton	Township of Dawn-Euphemia	Lambton County
Mosa	Suffolk	Municipality of Southwest Middlesex	Middlesex County
Ekfrid	Suffolk	Municipality of Southwest Middlesex	Middlesex County

Geographic Township	Former County	Current Lower Tier Municipality	Current Upper Tier Municipality
Caradoc	Suffolk	Municipality of Strathroy-Caradoc	Middlesex County
Lobo	Suffolk	Municipality of Middlesex Centre	Middlesex County

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement and establishing a constitutional government modelled after that of Britain (Petrhyshyn 1985). In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously settled lands, new lands opened for settlement, and lands not yet acquired by the Crown. These new counties stretched from Essex in the west, to Glengarry in the east.

Lambton County was part of the District of Hesse, which in 1792 was renamed the Western District. The Western District consisted of Kent (which included Lambton County) and Essex Counties. Lambton County was named after John George Lambton, first Earl of Durham. Lambton was the author of the Durham Report, which investigated the issues that led to the rebellion of 1837. The townships in Lambton County were not completely surveyed until 1835. After the Municipal Act of 1849, which provided a means of government for towns and counties, several counties amalgamated and separated over the next few years with the former Kent County, with Lambton County finally becoming independent in 1853. Lambton County was known as the ‘Last Frontier’, as Lambton was one of the last areas of southern Ontario to be settled by European immigrants (Elford 1982).

European immigrants began settling in Middlesex County in 1793 after Colonel Simcoe passed through the area on his way to visit Detroit (Page & Co. 1878). The county was initially comprised of ten townships: Aldborough, Dunwich, Southwold, Yarmouth, Malahide, Bayham, Delaware, Westminster, Dorchester, and London. By 1842, the population of Middlesex County had reached over 31,000 European inhabitants. The area developed quickly and over the next two years roughly 7,300 hectares of land was cleared for agricultural purposes and by 1844, the county’s agricultural lands exceeded 52,000 hectares (Smith 1846). Middlesex County was known for its many good roads at this time, including Talbot Road in Westminster Township (now Colonel Talbot Road). Between 1846 and 1849, Middlesex County comprised the Townships of Adelaide, Aldborough, Bayham, Caradoc, Delaware, Dorchester, Dunwich, Ekfrid, Lobo, London, Metcalfe, Mosa, Malahide, Southwold, Westminster, Williams, Yarmouth, and the Town of London. The Townships of Yarmouth, London, Lobo, Westminster, Southwold, and Malahide were the best settled, and overall, the county contained many good farms with large clearings and expansive orchards (Smith 1846).

1.2.2.1 Geographic Township of Dawn

Dawn Township was surveyed in 1821 by Shubal Park, and settlement by European immigrants officially started in 1822. Survey records obtained from the Ministry of Natural Resources and Forestry (MNRF) were examined for evidence of Indigenous and early Euro-Canadian settlements in Dawn Township (Government of Ontario n.d.). An early survey plan of the township, originally drawn in 1821, depicts numerous land grant recipients, and illustrates how land grants changed over time, with multiple names

denoted in each lot, with many overlapping each other. The 1821 survey of Dawn Township (Government of Ontario. n.d.) confirmed by an examination of the accompanying field notes, also illustrates an Indigenous presence in the township, particularly along the banks of Bear Creek, now known as the Sydenham River (Figure 5). One instance of an “Indian Clearing” and one instance of an “Indian Village” are noted on the map as well. The survey map also indicates that much of the township at that time was poorly drained, as depicted by greenish colouring along the surveyed concessions and sidelines.

Dawn Township was originally connected with three other townships to form one municipal unit, consisting of 147 taxpayers (Lauriston 1949). The township was densely wooded and had poor drainage, which held back settlement in the 1800s. The majority of land was not cleared, and most clearings were only between five and 25 acres (Lauriston 1949). By 1835, Dawn was its own municipality, although a portion of Dawn Township was lost to Kent County when Lambton and Kent Counties split in 1849. In 1850, the township still only numbered 429 people. With sawmills in use by the 1870s, growth picked up; by 1881 the population was 2,026 and by 1901 grew to 3,659 (Elford 1982). However, even by 1901, only half of the land in Dawn Township was cultivated, and reliable roadways had not been built; most concession roads could not be traversed their entire length until the 1920s (Elford 1982). After 1901, many European settlers left the township for Western Canada with the promise of 160 free acres, causing the population of Dawn Township to decrease. However, during this time, the oil and gas resources that the area became known for were starting to be developed, which also discouraged land clearance for agricultural purposes. By 1980, only 1,796 people lived in Dawn Township (Elford 1982). Drainage continues to be an issue throughout the township and much of the poorly drained land is used as pasture for beef cattle. The remaining land is use for production of corn, soybeans, hay, tomatoes and cereal crops.

The 1880 *Illustrated Historical Atlas of Lambton County, Ontario* (Belden & Co. 1880) illustrates Dawn Township in the late 19th century (Figure 6). The township is illustrated as largely being settled (at least by those who had subscribed to the atlas and had their names associated with the map) along the eastern boundaries coinciding with the location of the Sydenham River near Florence. On Lot 26, Concession 12, a church is depicted in the southwest corner of the lot, adjacent to the northern edge of the study area. No other historic features or notations related directly to the study area are illustrated on the 1880 map of Dawn Townships.

1.2.2.2 Geographic Township of Euphemia

The area near Euphemia Township was settled by European immigrants in 1792 when a group of Moravian missionaries founded Fairfield on the north shore of the Thames River. The Moravians (or United Brethren) had come to the area from the United States with approximately 170 Delaware and Iroquois. An Order of Council dated July 10, 1793 granted 50,000 acres of land to the group. The land was surveyed and given to the ‘Moravian Society’ in trust by Order of Council on February 26, 1793 (McEvoy *et al*. 1866).

Euphemia Township was originally surveyed as Zone Township in 1822 by Samuel Smith. At the time of the survey the first fourteen lot ranges north of the Thames River were reserved by the government as the ‘Indian Zone’ for the Moraviantown Delaware Nation who had, along with Moravian missionaries,

originally settled Fairfield in 1792 (Lauriston 1949). In 1848 the Township was separated into the Townships of Euphemia and Zone, Euphemia Township remained part of Lambton County and Zone Township became part of Kent County. Fairfield was destroyed by American soldiers in 1813 after the British loss at the Battle of the Thames, which also resulted in the death of Tecumseh. The site of the Battle of the Thames is located south of the study area.

The original survey of Euphemia Township (Smith 1822) depicts numerous land grant recipients, the road layout at the time, and numerous water sources (Figure 7).

The 1880 *Illustrated Historical Atlas of Lambton County, Ontario* (Belden & Co. 1880) map of the Township of Euphemia illustrates the township in the late 19th century (Figure 8). The historical atlas depicts a rural landscape with numerous landowners, structures, early transportation routes, factories, early town sites, and creeks. Industrial and religious centres are clustered around the communities of Shetland and Sutherland's Corners, as well as along Haggerty Creek. The historical atlas also highlights that the settlement pattern of the late 19th century within the township was initially dependent more on rivers than constructed roads as evidenced by landowner clustering along the Sydenham River. Table 2 summarizes illustrated features from the 1880 map in close proximity to the study area.

Table 2: Historical Features on 1880 Map of Euphemia Township in Close Proximity to the Study Area

Lot	Concession	Landowner	Structure
31	1	John O'Brien Ward	House depicted in the southeast corner of the lot, adjacent to the study area
31	3	J. Pesha	House depicted in the south portion of the lot, adjacent to the study area
31	4	Not applicable (n/a)	School depicted in the southwest corner of the lot, adjacent to the study area
30	4	Charles Pettit	House depicted in the central portion of the lot, south of the study area
30	5	n/a	Church depicted in the northwest corner of the lot, adjacent to the study area
30	6	R. Hands	House depicted in the southern portion of the lot, south of the study area
31	7	William Broughton (tenant)	House depicted in the southwest portion of the lot, north of the study area
31	8	James McKeune	No structures illustrated
30	9	n/a	School depicted in the northeast corner of the lot, adjacent to the study area

1.2.2.3 Geographic Township of Mosa

Mosa Township is triangular in shape and is located in the southwestern corner of Middlesex County, Ontario. The township is named after the latin name for the River Meuse in Belgium (Mika and Mika 1981). The township was originally surveyed by Colonel Burwell in 1820. Up until 1849, the only large

settlement within the township was located along the Thames River in Wardsville which at the time had numerous mills in operation (Mika and Mika 1981). Mosa Township developed into and largely remains an agricultural centre.

Burwell's (1820b) original survey depicts the surveyed land and road layout of the township, with very few landowner notations (Figure 9). Although not shown on Figure 9 (due to scale), the original survey map most notably illustrates the location of the War of 1812 Battle of the Longwoods as well as what appear to be Indigenous camp sites along the Thames River, well to the south of the study area (Burwell 1820b). The survey map also indicates that much of the township at that time was poorly drained, as depicted by stippling along the surveyed concessions and sidelines.

The 1878 *Illustrated Historical Atlas of the County of Middlesex, Ont.*'s (Page & Co. 1878) map of the Township of Mosa depicts a largely rural landscape with landowners, structures, early transportation routes, railroads, and early town sites (Figure 10). Residential structures and various landowners are illustrated adjacent to the study area throughout the Township of Mosa. Industrial centres are illustrated along, or adjacent to, the Great Western Railway and the Thames River. The early Euro-Canadian communities of Wardsville and Glencoe are also depicted on the historical mapping.

1.2.2.4 Geographic Township of Ekfrid

Ekfrid Township in Middlesex County was originally surveyed in 1820 by Colonel Burwell and established in 1821. The township was named after a former Northumbrian King, Ekfrid, from ancient Britain (Mika and Mika 1977). The area along the Thames River in the southern portion of the township was the first to be settled by Euro-Canadians. However, settlement of the township was slow and by 1830 most of the lands available were still covered in dense bush (Mika and Mika 1977). Transportation within the township was navigated through established Indigenous trails and along the Thames River, with the first bridge span being constructed in the 1830s. Much like Mosa Township, Ekfrid Township became and largely remains an agricultural centre (Mika and Mika 1977).

Burwell's (1820a) original survey of Ekfrid Township depicts the surveyed land and road layout of the township, with very few landowner notations (Figure 11). The original survey map most notably illustrates areas for mill seats southeast of the study area, which are places most suitable for a water mill to be constructed (Burwell 1820a).

The 1878 *Illustrated Historical Atlas of the County of Middlesex, Ont.*'s (Page & Co. 1878) map of the Township of Ekfrid depicts a largely rural landscape with numerous landowners, structures, early transportation routes, railroads, and early town sites (Figure 12). The Great Western Railroad and the Canada Southern Railroad are seen running northwest-southeast through the study area. Residential structures, various landowners, and orchards are illustrated adjacent to the study area throughout the Township of Ekfrid.

1.2.2.5 Geographic Township of Caradoc

Caradoc Township was surveyed under the supervision of Colonel Burwell between 1821 and 1822. Early European settlement of the township was focused along Longwoods Road which had been extended westward from Delaware and graded in the 1840s (Mika and Mika 1977). The northern portion of the township was slow to be settled until the Sarnia branch of the Great Western Railway was constructed in the 1850s and homesteads developed on the cleared land (Mika and Mika 1977).

There are two historical cemeteries identified within or adjacent to the study area, the Mount Carmel Cemetery and the Hess Cemetery. Mount Carmel Cemetery is within the study area on Lot 12, Concession 6. The plot of land was originally donated by John Langhorn for the site of a Methodist Church, and although the property was not opened to be a cemetery, it was being used as such from the late 1850s onwards (Ontario Genealogical Society [OGS] 1982a). The Mount Carmel Cemetery property was also the site of the original wood church, which was constructed in 1863 and was replaced by a brick structure constructed across the street in 1906 (OGS 1982a). The Hess Cemetery, also known as the OGG Cemetery or the North Caradoc Methodist Cemetery, is a Methodist Cemetery which opened in 1855 and is adjacent to the study area on Lot 8, Concession 7 (OGS 1982b).

Burwell's (1821a) original survey map of Caradoc Township has been heavily edited with multiple land tenure transactions and it is difficult to view historical features (Figure 13). The original survey map depicts numerous land grant recipients and illustrates how land grants changed over time with multiple names denoted in each lot, with many overlapping each other. The survey map also illustrates the surveyed land and road layout for the township.

The 1878 *Illustrated Historical Atlas of the County of Middlesex, Ont.*'s (Page & Co. 1878) map of the Township of Caradoc depicts a rural landscape with numerous landowners, structures, early transportation routes, railroads, and early town sites (Figure 14). The Sarnia branch of the Great Western Railway is illustrated running northeast to southwest through the study area. Numerous landowners and their associated structures are listed adjacent to the study area throughout the Township of Caradoc. The Mount Carmel and Hess Cemeteries, as mentioned previously, are also depicted on the historical atlas.

1.2.2.6 Geographic Township of Lobo

Colonel Burwell began the survey of Lobo Township in 1819-1821. Lots were divided into 200-acre parcels arranged in 13 concessions. The township was named Lobo ("wolf" in Latin) by the British general Peregrine Maitland who was appointed lieutenant governor of Upper Canada between 1818 and 1828. Shortly after the survey, the first European settlers, many from Argyllshire in Scotland, arrived in Lobo Township (Goodspeed 1889). The principal settlements were the villages of Komoka, Lobo, Coldstream, and Poplar Hill. The township's population was growing slowly and reached 2,680 in 1888 (Goodspeed 1889). In 1998, Lobo Township, together with London and Delaware townships, was amalgamated to form the Municipality of Middlesex Centre. The village of Komoka was originally defined by three official surveys: the Wellington Survey of 1853, which established the west side; the Geddes Survey of 1854, which established the east side; and the Komoka Survey of 1855. Over time, Komoka became a crossing point of several railway lines, including the Great Western Railway and the Sarnia Branch of the

Canadian National Railway (CNR), and featured several hotels, general stores, and a post office. A settlement at Kilworth began in 1798 by the Woodhull family, who had fled New York State during the American Revolutionary War (Goodspeed 1889). A post office was opened in 1851 and in the same year the population of the hamlet approached 200 (Goodspeed 1889).

Burwell's (1821b) original survey map of Lobo Township has been heavily edited with multiple land tenure transactions and it is difficult to view historical features (Figure 15). Much like Burwell's (1821a) survey of Caradoc Township, the original survey map depicts numerous land grant recipients and illustrates how land grants changed over time as multiple names are denoted in each lot, with many overlapping each other. The survey map also illustrates the surveyed land and road layout for the township.

The 1878 *Illustrated Historical Atlas of the County of Middlesex, Ont.*'s (Page & Co. 1878) map of the Township of Lobo depicts a rural landscape with numerous landowners, structures, early transportation routes, railroads, and early town sites (Figure 16). The Great Western Railroad, as well as its Sarnia Branch are illustrated running northeast to southwest through the township. The early Euro-Canadian community of Komoka appears to be well established and numerous structures and landowners are illustrated adjacent to the study area. Table 3 summarizes illustrated features from the 1878 map in close proximity to the study area.

Table 3: Historical Features on 1878 Map of Lobo Township in Close Proximity to the Study Area

Lot	Concession	Landowner	Structure
1	3	J. Wilson	Sarnia branch of the Great Western Railroad and a house depicted in the northeast corner of the lot
2	3	A. Campbell	Northeast quarter of lot, no structures illustrated. Great Western Railroad depicted running east to west through southern portion of the lot
2	3	W. Dunn	Southeast quarter of lot, house illustrated in the southwest corner of the lot adjacent to the study area, Great Western Railroad depicted running east to west through northern portion of the lot
2	3	J. Cassidy	Southwest quarter of lot, house and possible orchard illustrated in the southeast corner of the lot, adjacent to the study area
1	1	Josh Harris	Numerous houses or structures depicted in the northern portion of the lot, adjacent to the study area
2	2	James McIntosh	House and possible orchard depicted in the southeastern portion of the lot, north of the study area
2	1	Mrs. Alex McDougall	No structures illustrated
3	1	Mrs. Alex McDougall	Western half of lot, a grist mill is illustrated along a dammed creek in the northern portion of the lot, southwest of the study area
3	1	John L. McKeller	Eastern half of the lot, no structures illustrated
3	1	David S. Smith	Western half of the lot, no structures illustrated
3	2	John McGilvray	Western half of lot, house and possible orchard illustrated in the southeast corner of the lot, adjacent to the study area

Lot	Concession	Landowner	Structure
3	2	Jason Barber	Eastern half of lot, house and orchard illustrated in the southern portion of the lot, north of the study area
4	2	J. C.	Southwest portion of the lot, house and orchard illustrated in the southwest corner of the lot, adjacent to the study area
4	2	M. Graham	Southeast quarter of the lot, house and other structures illustrated in the southeast corner of the lot, adjacent to the study area
4	1	David S. Smith	Northern portion of the lot, house and orchard illustrated in the northern portion of the lot, and two other structures illustrated in the eastern portion of the lot, adjacent to the study area
5	2	n/a	Town plan of Komoka within majority of the lot, adjacent to the study area
5	1	John Snipley	House illustrated in the eastern portion of the lot, east of the study area
5	1	A. Seabrook	House illustrated in the northwest portion of the lot, east of the study area
5	1	S.J.F. Bullen	No structures illustrated
4	1	D. Tiffany	Southern portion of the lot, house and orchard illustrated in the southeast portion of the lot, adjacent to the study area

1.2.2.7 Summary

As illustrated above, the historical context of the Stage 1 study area for the Project includes numerous examples of Indigenous and early Euro-Canadian resources. In particular, the late 19th century mapping depicts numerous residential, commercial, and industrial structures adjacent to the study area. Historic cemeteries have also been identified in close proximity to the study area. The majority of 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 19th century. Portions of the study area have been cleared of forest and have had extensive drainage systems installed to reclaim swamp and marshland as agricultural field.

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area spans numerous physiographic regions, as identified by Chapman and Putnam (1984): the St. Clair Clay Plain, the Bothwell Sand Plains, the Ekfrid Clay Plain, and the Caradoc Sand Plains and London Annex physiographic regions, from west to east respectively.

The St. Clair Clay Plain physiographic region comprises the western portion of the study area. Chapman and Putnam (1984:147) describe the St. Clair Clay Plain as:

> *Adjoining Lake St. Clair in Essex and Kent County 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 500 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.*

The Bothwell Sand Plains physiographic region comprises a part of the central portion of the study area. The Bothwell Sand Plains are a large area of fine textured, water deposited sands laid down as part of the delta of the glacial Thames River. Chapman and Putnam (1984:147) describe the physiographic region as:

> *The Bothwell sand plain is the delta of the Thames River in Glacial Lake Warren…The sands were spread thinly over the clay floor, covering some 700 square miles. With only three or four feet of sand, more or less over clay, water invariably collects above the clay…*

The Ekfrid Clay Plain physiographic region also comprises a part of the central portion of the study area. Chapman and Putnam (1984:146-147) describe the Ekfrid Clay Plain as:

> *Stratified clays appear in Ekfrid and parts of nearby townships…making up an area of 360 square miles. The surface is nearly level except where cut by gullies…Here and there, knolls or low smooth ridges of sand and gravel are superimposed on the clay…The silty sediments give rise to particularly good soil, being fairly pervious and easy to till. Slow drainage is the main limitation…common dark-surfaced clay loam is a good soil when tile drained…livestock production is quite low on this little clay plain. More than half the land is in corn, soybeans and wheat…the plain is highly cleared with only 7% of land taken up by woodlots.*

The Caradoc Sand Plains and London Annex physiographic region comprises the eastern end of the study area. Chapman and Putnam (1984:146) describe the region as:

> *West and east of London there are small plains which differ from the adjacent moraines and clay plains in that they are covered with sand or other light-textured, water-laid deposits. Together they comprise about 300 square miles or 192,000 acres in which the soils are conducive to specialized agriculture.*

Generally, the study area's soil conditions would have been suitable for Indigenous and Euro-Canadian agriculture.

Major water sources close to the study area are the Sydenham River, which runs north to south through the central portion of the study area, and the Thames River which runs east to west approximately 340 metres south the eastern portion of the study area. Additionally, numerous tributaries of the Sydenham and Thames Rivers, creeks such as Haggerty Creek, Long Creek, and Newbiggen Creek, and ephemeral drainages are identified nearby or crossing through the study area (see Figures 2.1 to 2.20).

1.3.2 Pre-contact Indigenous Resources

This portion of southwestern Ontario has been occupied by Indigenous peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Much of what is understood about the lifeways of 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. The current understanding of Indigenous archaeological culture is summarized in Table 4, based on 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 4: Generalized Cultural Chronology related to the Study Area

Period	Characteristics	Time Period	Comments
Early Paleo-Indian	Fluted Projectiles	9000 – 8400 BCE	spruce parkland/caribou hunters
Late Paleo-Indian	Hi-Lo Projectiles	8400 – 8000 BCE	smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 – 6000 BCE	slow population growth
Middle Archaic	Brewerton-like Points	6000 – 2500 BCE	environment similar to present
Late Archaic	Narrow Point	2500 – 1800 BCE	increasing site size
	Broad Point	1800 – 1500 BCE	large chipped lithic tools
	Small Point	1500 – 1100 BCE	introduction of bow hunting
Terminal Archaic	Hind Points	1100 – 950 BCE	emergence of true cemeteries
Early Woodland	Meadowood Points	950 – 400 BCE	introduction of pottery
Middle Woodland	Couture Corded Pottery	400 BCE – 500 CE	increased sedentism
	Riviere au Vase Phase	500 – 800 CE	seasonal hunting and gathering
Late Woodland	Younge Phase	800 – 1200 CE	incipient agriculture
	Springwells Phase	1200 – 1400 CE	agricultural villages
	Wolf Phase	1400 – 1550 CE	earth worked villages, warfare
Contact Indigenous	Various Algonkian and Iroquoian Groups	1600 – 1875 CE	early written records and treaties
Historic	French/Euro-Canadian	1749 CE – present	European settlement

Between 9000 and 8000 BCE, Indigenous populations were sustained by hunting, fishing and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method in particular was through gift exchange, evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

By approximately 8000 BCE, evidence exists and becomes more common for the production of ground-stone tools such as axes, chisels and adzes. These tools themselves are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and arguably craft specialization. This latter statement is also supported by evidence, dating to approximately 7000 BCE, of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in social organization which permitted individuals to devote time and effort to craft specialization. Since 8000 BCE, the Great Lakes basin experienced a low-water phase, with shorelines significantly below modern lake levels (Stewart 2013: Figure 1.1.C). It is presumed that the majority of human settlements would have been focused along these former shorelines. At approximately 6500 BCE the climate had warmed considerably since the recession of the glaciers and the environment had grown more similar to the present day. By approximately 4500 BCE, evidence exists from southern Ontario for the utilization of native copper (naturally occurring pure copper metal) (Ellis 2013:42). The known origin of this material along the north shore of Lake Superior indicates the existence of extensive exchange networks across the Great Lakes basin.

At approximately 3500 BCE, the isostatic rebound of the North American plate following the melt of the Laurentide glacier had reached a point which significantly affected the watershed of the Great Lakes basin. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French-Mattawa river valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin had changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2500 BCE, the earliest evidence exists for the construction of fishing weirs (Ellis *et al*. 1990: Figure 4.1). Construction of these weirs would have required a large amount of communal labour and are indicative of the continued development of social organization and communal identity. The large-scale procurement of food at a single location also has significant implications for permanence of settlement within the landscape. This period is also marked by further population increase and by 1500 BCE evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 950 BCE, the earliest evidence exists for populations using ceramics. Populations are understood to have continued to seasonally exploit natural resources. This advent of ceramic technology correlated, however, with the intensive exploitation of seed foods such as goosefoot and knotweed as well as mast such as nuts (Williamson 2013:48). The use of ceramics implies changes in the social organization of food storage as well as in the cooking of food and changes in diet. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).

By approximately 550 CE, evidence emergences for the introduction of maize into southern Ontario. This crop would have initially only supplemented the Indigenous diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies and by approximately 900 CE permanent communities emerge which are primarily focused on agriculture and the storage of crops, with satellite locations oriented toward the procurement of other resources such as

hunting, fishing and foraging. By approximately 1250 CE, evidence exists for the common cultivation of historic Indigenous cultigens, including maize, beans, squash, sunflower and tobacco. The cultural affiliation of populations within the region of the study area at this time period is debated, whether they may have spoken a form of Iroquoian language or Algonquian (Murphy and Ferris 1990). The extant archaeological record demonstrates many cultural traits similar to historic Indigenous nations (Williamson 2013:55).

By the Late Woodland period there was a distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties, which includes the western portion of the study area. The primary Late Woodland occupants of the Windsor area were populations described by archaeologists as belonging to the 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 centered 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 into four phases based on differences in settlement and subsistence strategies and pottery attributes. By the time of increased European interaction in the last half of the 16th century and early 17th century, there were no Western Basin Tradition sites in the Essex County area, having moved west into Michigan (Ferris 2009:32-33).

The eastern portion of study area is located on the margin of the geographic extent of the Western Basin Tradition, an archaeological cultural sequence documented throughout southwestern Ontario west of London. Specifically, the Thames Valley just west of London is documented to have been occupied between 700 CE and 1000 CE (i.e., Neeb site; Murphy and Ferris 1990: Table 7.1). Between 1000 CE and until the turn of the 16th century, Western Basin Tradition site locations in Ontario focus towards the western end of Lake Erie. The study area is also located within the understood territory of the ancestral Neutral Nation (Birch 2015).

1.3.3 Registered 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 MHSTCI who maintain the *Ontario Archaeological Sites Database*. The study area under review is within Borden Blocks: AeHn, AeHm, AeHl, AeHk, AeHj, AfHj, and AfHi.

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 1990a). The release of

such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MHSTCI 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 are 100 archaeological sites registered within a one kilometre radius of the study area (Government of Ontario 2020a). Table 5 provides a summary of the previously registered archaeological sites.

Table 5: Registered Archaeological Sites within One Kilometre of the Study Area

Borden #	Site Name	Site Type	Cultural Affiliation
AeHl-36	Tower	Scatter	Indigenous
AeHm-20	Molly	Scatter	Indigenous, Early/Late Woodland
AeHn-10	Not applicable (n/a)	Dump	Euro-Canadian
AeHn-11	Location 13	Homestead	Euro-Canadian
AfHi-18	n/a	Unknown	Indigenous, Early Woodland
AfHi-19	Brodie	Scatter	Indigenous, Late Archaic/Middle Woodland
AfHi-25	Cornell	Burial	Indigenous, Late Woodland
AfHi-27	Komoka Bridge Historic 1 and 2	House	Euro-Canadian
AfHi-28	Brodie Historic 2	House	Euro-Canadian
AfHi-29	Campbell	Camp	Indigenous, Late Woodland
AfHi-31	Komoka 3	Hamlet	Indigenous, Woodland
AfHi-58	Huron Rye	Camp	Indigenous, Late Archaic/Middle Woodland
AfHi-119	Tom O'Shea	Findspot	Indigenous, Late Archaic
AfHi-133	Scott Wales	Scatter	Indigenous, Late Archaic/Early Woodland/Late Woodland
AfHi-136	Old Barn	Scatter	Indigenous, Late Archaic/Early Woodland
AfHi-168	Rob's Toss	Burial	Indigenous
AfHi-169	Spool	Scatter	Indigenous
AfHi-249	n/a	Camp	Indigenous, Late Archaic/Woodland
AfHi-250	Keith Wales	Scatter	Euro-Canadian; Indigenous
AfHi-251	n/a	Findspot	Indigenous, Late Archaic
AfHi-326	n/a	Camp	Indigenous, Late Woodland
AfHi-327	n/a	Camp	Indigenous, Late Archaic
AfHi-335	n/a	Scatter	Indigenous, Early Woodland/Middle Woodland
AfHi-382	n/a	Scatter	Indigenous

Borden #	Site Name	Site Type	Cultural Affiliation
AfHi-383	n/a	Scatter	Indigenous, Late Archaic/Middle Woodland/Late Woodland
AfHi-384	n/a	Scatter	Indigenous
AfHi-389	n/a	Scatter	Indigenous
AfHi-390	n/a	Scatter	Indigenous
AfHi-391	n/a	Scatter	Indigenous, Woodland
AfHj-13	Gripton	Burial	Indigenous
AfHj-15	Lambert	Findspot	Indigenous, Paleo-Indian
AfHj-16	Caradoc 1	Scatter	Indigenous, Early Archaic/Late Woodland
AfHj-19	MiV18	Village	Indigenous, Late Woodland
AfHj-21	Roeland I	Hamlet	Indigenous
AfHj-24	Hardy	Village	Indigenous, Early Woodland/Late Woodland
AfHj-30	n/a	Scatter	Indigenous
AfHj-31	n/a	Unknown	Unknown
AfHj-33	Roeland	Unknown	Unknown
AfHj-34	Caradoc 7	Scatter	Indigenous
AfHj-35	n/a	Camp/Homestead	Euro-Canadian; Indigenous
AfHj-36	John Kellestine II	Camp, Homestead	Indigenous, Early Archaic; Euro-Canadian
AfHj-37	n/a	Camp	Indigenous
AfHj-38	n/a	Camp	Indigenous, Late Woodland
AfHj-39	n/a	Camp	Indigenous, Middle Archaic/Middle Woodland
AfHj-40	Vrooman	Camp	Indigenous, Late Archaic
AfHj-41	n/a	Scatter	Indigenous
AfHj-42	n/a	Camp	Indigenous, Late Woodland
AfHj-43	n/a	Camp	Indigenous; Euro-Canadian
AfHj-44	n/a	Scatter	Indigenous
AfHj-45	n/a	Camp	Indigenous, Middle Archaic
AfHj-46	n/a	Scatter	Indigenous, Early Archaic
AfHj-47	n/a	Scatter	Indigenous
AfHj-48	n/a	Camp/Findspot	Indigenous, Late Archaic/Late Woodland
AfHj-49	n/a	Camp	Indigenous
AfHj-50	n/a	Camp	Indigenous, Middle Woodland
AfHj-53	n/a	Findspot	Indigenous, Woodland
AfHj-54	n/a	Camp	Indigenous, Middle Archaic
AfHj-55	n/a	Scatter	Indigenous

Borden #	Site Name	Site Type	Cultural Affiliation
AfHj-57	n/a	Findspot	Indigenous
AfHj-58	n/a	Camp	Indigenous, Late Woodland
AfHj-59	n/a	Findspot	Indigenous, Early Archaic
AfHj-60	n/a	Camp/Homestead	Indigenous, Late Archaic/Late Woodland; Euro-Canadian
AfHj-61	n/a	Findspot	Indigenous
AfHj-62	n/a	Camp	Indigenous, Woodland
AfHj-63	n/a	Findspot	Indigenous, Middle Archaic
AfHj-64	n/a	Findspot	Indigenous
AfHj-73	n/a	Findspot	Indigenous
AfHj-74	n/a	Findspot	Indigenous
AfHj-77	n/a	Scatter	Indigenous
AfHj-79	n/a	Findspot	Indigenous
AfHj-80	n/a	Findspot	Indigenous
AfHj-81	n/a	Camp	Indigenous
AfHj-82	Butler's Woods	Camp	Indigenous, Middle Woodland
AfHj-91	Strathroy PUC #1	Camp	Indigenous
AfHj-92	Strathroy PUC #2	Camp	Indigenous
AfHj-93	Strathroy PUC #3	Camp	Indigenous
AfHj-94	Strathroy PUC #4	Camp	Indigenous
AfHj-95	Strathroy PUC #5	Camp	Indigenous, Early Archaic
AfHj-96	Strathroy PUC #6	Camp	Indigenous, Early Woodland
AfHj-97	Strathroy PUC #7	Camp	Indigenous
AfHj-98	Strathroy PUC #8	Camp	Indigenous, Late Archaic/Late Woodland
AfHj-99	Strathroy PUC #9	Camp	Indigenous
AfHj-521	n/a	Scatter	Indigenous, Late Woodland
AfHj-100	Strathroy PUC #10	Findspot	Indigenous
AfHj-103	Strathroy 1	Unknown	Indigenous, Late Woodland
AfHj-109	AfHj-109	Camp	Indigenous, Middle Woodland/Late Woodland
AfHj-110	n/a	Scatter	Indigenous, Woodland
AfHj-116	n/a	Unknown	Euro-Canadian; Indigenous
AfHj-127	Brooke	Scatter	Euro-Canadian
AfHj-128	Vegso	Scatter	Indigenous
AfHj-129	Vegso	Findspot	Indigenous, Middle Woodland
AfHj-130	Vegso	Findspot	Indigenous
AfHj-131	Vegso	Findspot	Indigenous

Borden #	Site Name	Site Type	Cultural Affiliation
AfHj-522	Trout Creek 1	Camp	Indigenous, Woodland
AfHj-523	Trout Creek 2	Scatter	Indigenous
AfHj-524	Trout Creek 3	Scatter	Indigenous, Late Archaic
AfHj-525	Trout Creek 4	Scatter	Indigenous
AfHj-526	Trout Creek 5	Scatter	Indigenous, Late Archaic
AfHj-527	McEroy Site	Homestead	Euro-Canadian
AfHj-528	n/a	Scatter	Indigenous, Woodland

Of the registered archaeological sites noted above, four Indigenous sites and one Euro-Canadian archaeological site are located within 50 metres of the existing route and alternative segments for the Project. These are the Scott Wales site (AfHi-133), Keith Wales site (AfHi-250), AfHi-326, AfHi-335, and the McEroy site (AfHj-526), and are discussed further below. Tile 1 in the Supplementary Documentation provides an illustration of the registered archaeological sites within one kilometre of the study area.

In addition to the above, an examination of the *Ontario Public Register of Archaeological Reports* (Government of Ontario 2020b) has identified 23 archaeological assessments which may document work within 50 metres of the study area. Despite some previous archaeological assessments overlapping with the current Stage 1 study area, Stantec has determined that illustrating all previously surveyed areas, especially those which pre-date 2011 and include low resolution mapping, is not practical given the size and scale of the current study area. Following confirmation of the preferred route and delineation of any temporary construction easement required for the Project, the proximity of previous archaeological assessments and previously surveyed lands will be re-evaluated as part of the Stage 2 archaeological assessment for the Project. A summary of previous archaeological assessments is presented in Table 6.

Table 6: Archaeological Assessments within 50 metres of the Study Area

Company / Author	Report	Project Information Form (PIF) Number	Year
Riddell, David	*Preliminary Report on Sydenham River Survey 2*	n/a	1991
Riddell, David	*Report of the Sydenham River Survey 2*	n/a	1992
Riddell, David	*Review of Sydenham River Survey 3*	n/a	1993
Wilson, Jim	*The Middle Thames River Settlement/Subsistence Project*	1996-060	1997
Archaeologix Inc. (Archaeologix)	*Archaeological Assessment (Stages 1,2 & 3) Johnston Brothers Aggregate Pit, Part of Lot 3 & 4, Conc. 1, Lobo Township, Middlesex County, Ontario*	2000-002-059	2000
Archaeologix	*A A. (Stage 4), The Johnston Bros. Site (AfHi-249) & The Keith Wales Site (AfHi-250), Johnston Brothers Aggregate Pit, Part of Lot 3 & 4, Con. 1, Lobo Twp., Middlesex County, Ontario*	2000-002-081	2001
Archaeologix.	*A.A. (Stages 1&2), Don Young Trucking Sand Pit, Part Lot 24, Con. 3, Geo. Twp. of Caradoc, County of Middlesex, Ontario*	P001-072	2003

Company / Author	Report	Project Information Form (PIF) Number	Year
Timmins Martelle Heritage Consultants Inc. (TMHC)	*Stage 3 & 4 A. A. AfHi-250 - The Keith Wales Site, Johnston Brothers Aggregate Pit, Komoka, Ontario - Komoka, Ontario - Part of Lot 3 & 4, Conc. 1, Lobo Twp., Middlesex County, Ontario*	P064-037, P064-032	2004
Stantec	*Stage 1 Archaeological Assessment, Sydenham Wind Energy Centre, Lambton County and the Municipality of Chatham-Kent, Ontario*	P002-0194-2010	2011
D.R. Poulton & Associates Inc.	*The 2010-2011 Stage 2 Archaeological Assessment of the Proposed Sydenham Wind Energy Centre, Lambton County & Municipality of Chatham-Kent, Ontario*	P316-0099-2010; P316-0107-2011	2012
Stantec	*Stage 1-2 Archaeological Assessment: Dawn Parkway System, Dawn H Compressor Station Project, Part of Lots 25, 26, and 27 Concession 2, Geographic Township of Dawn, now Township of Dawn-Euphemia, Lambton County, Ontario*	P389-0215-2015	2015
Golder Associates Inc.	*Stage 1-2 Archaeological Assessment, Komoka Provincial Park and Proposed New Parking Areas, City of London, Middlesex County, Ontario.*	P364-0097-2015	2016
TMHC	*Revised Report: Stage 1-3 Archaeological Assessment, Johnston Brothers Aggregate Pit Expansion, Komoka, Ontario. Part of Lot 4, Concession 1, Lobo Twp. Middlesex County, Ontario*	P064-078 P064-084	2016
Stantec	*Stage 1 Archaeological Assessment: Glendon Drive Streetscape Improvements, Schedule C Municipal Class Environmental Assessment, Various Lots and Concessions, Geographic Township of Lobo, now Municipality of Middlesex Centre, and Geographic Township of Caradoc, now Township of Strathroy-Caradoc, Middlesex County, Ontario*	P256-0367-2015	2016a
Stantec	*Stage 1 Archaeological Assessment: Panhandle Reinforcement Project (Dawn-Dover), Parts of Various Lots and Concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia, and Geographic Township of Sombra, now Township of St. Clair, Lambton County; and Geographic Townships of Chatham and Dover, now Municipality of Chatham-Kent, Ontario*	P256-0388-2015	2016b
Stantec	*Stage 2 Archaeological Assessment: Panhandle Reinforcement Project (Dawn-Dover), Parts of Various Lots and Concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia, and Geographic Township of Sombra, now Township of St. Clair, Lambton County; and Geographic Townships of Chatham and Dover, now Municipality of Chatham-Kent, Ontario*	P256-0401-2016	2016c
Stantec	*Stage 1 Archaeological Assessment: Dawn-Enniskillen Pipeline Project, Parts of Various Lots and Concessions, Geographic Township of Dawn, now Township of Dawn-Euphemia and Township of Enniskillen, Lambton County, Ontario*	P083-0272-2016	2017a
Stantec	*Stage 3 Archaeological Assessment: Location 13 (AeHn-11), Panhandle Reinforcement Project (Dawn-Dover), Part of Lot 25, Concession 1, Geographic Township of Dawn, now Township of Dawn-Euphemia, County of Lambton, Ontario*	P256-0410-2016	2017b

Company / Author	Report	Project Information Form (PIF) Number	Year
TMHC	*Stage 1 & 2 Archaeological Assessment Proposed Aggregate Pit Amiens Road Part of Lots 1 and 2, Concession 2 Geographic Township of Lobo Middlesex County, Ontario*	P324-0105-2016	2018
AMICK Consultants Ltd.	*Stage 1-2 Archaeological Property Assessment of 22805 Adelaide Road, Mount Brydges, Part of the East Half of Lot 17, Concession 3 (Geographic Township of Caradoc), Township of Strathroy-Caradoc, County of Middlesex*	P038-0931-2017	2018
Stantec	*Stage 1-2 Archaeological Assessment: Proposed Land Swap between the Municipality of Middlesex Centre and Infrastructure Ontario Part of Lot 4, Concession 1, Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, Ontario*	P256-0557-2018	2019a
Stantec	*Stage 1-2 Archaeological Assessment: Proposed Booster Pumping Station and Existing Komoka Wastewater Treatment Facility, Parts of Lot 4 and Lot 5, Concession 1, Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, Ontario*	P256-0572-2019	2019b
Stantec	Stage 3 Archaeological Assessment: Scott Wales (AfHi-133), Construction Footprint for the Proposed Water Booster Pumping Station, Komoka WasteWater Treatment Facility Part of Lot 4 and 5, Concession 1, Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, Ontario	P256-0581-2019	2019c

The earliest systematic archaeological investigation in close proximity to the study area was conducted by David Riddell as part of the Sydenham River Surveys conducted over two separate field seasons from 1991 to 1993 (Riddell 1991; 1992; 1993). This survey focused on the middle Sydenham River area in an area extending from Cairo Road to one kilometre south of Alvinston, a distance of approximately 10 kilometres (following the river). Within that survey area, Riddell identified 29 archaeological resources, spanning archaeological cultures from the Late Archaic through to the Late Woodland. Riddell's goal was to provide links between contemporaneous site and Indigenous groups based on comparative samples (Riddell 2006). The survey results showed that the general area was an interface zone between the Western Basin and Iroquoian archaeological traditions and that the archaeological sites in this interface zone have important ramifications for understanding the Late Woodland period in south-western Ontario.

As part of *The Middle Thames River Settlement/Subsistence Project* in 1992 and 1993, Wilson (1997) assessed portions of land directly south of the eastern portion of the current study area along the terrace overlooking the Thames River. Pedestrian survey identified a large lithic scatter consisting of 506 pieces of chipping detritus, as well as utilized flakes, bifaces, cores, drills, and diagnostic projectile points. The archaeological site was registered with the MHSTCI as the Scott Wales site (AfHi-133). Wilson temporally affiliated the site with the Early Woodland period with numerous Meadowood and Middlesex phase artifacts. Further investigation revealed that this site had been known about and collected for years by local amateurs who had quite extensive collections, including birdstones (Wilson 1997).

Archaeologix conducted a Stage 1, 2, and 3 archaeological assessment in 2000 for a proposed aggregate pit on parts of Lots 3, and 4, Concession 1, Lobo Township, Middlesex County, Ontario (Archaeologix 2000). The Stage 2 archaeological assessment resulted in the identification of numerous archaeological sites. Portions of the Archaeologix Stage 2 archaeological assessment likely overlap with the study area for the current Project. However, due to the possible inaccuracies and larger scale of the mapping associated with the report, it is difficult to directly ascertain where those areas overlap; therefore, they have not been included on the current mapping as being previously assessed. Some of the identified archaeological sites were subject to Stage 3 archaeological investigations, two of which (Johnston Bros. site [AfHi-249] and Keith Wales site [AfHi-250]) were recommended for further Stage 4 mitigation (Archaeologix 2000). Archaeologix conducted Stage 4 mitigation of the two sites in the same year subsequent to their Stage 3 investigation (Archaeologix 2001). The Johnston Bros. site (AfHi-249) was interpreted to be a multi-component Late Archaic / Woodland camp site and was completely excavated during the Stage 4 mitigation and the site retains no further cultural heritage value or interest (Archaeologix 2001). The Keith Wales site (AfHi-250) was subject to partial Stage 4 mitigation and Archaeologix (2001) recommended further archaeological investigation should any future projects impact the remaining portions of the site.

In 2003, Archaeologix conducted a Stage 1 and Stage 2 archaeological assessment for a proposed aggregate pit on 3.5 hectares of Lot 24, Concession 3, Caradoc Township, Middlesex County, Ontario (Archaeologix 2003). The Stage 2 archaeological assessment resulted in the identification of four archaeological sites. Locations 3 and 4 were interpreted to have low archaeological significance and no further archaeological work was recommended (Archaeologix 2003). Location 1 (AfHi-326) was identified as a large, Early Late Woodland period archaeological site and Location 2 (AfHi-327) was identified as a small, Archaic period archaeological site (Archaeologix 2003). Both sites were avoided as part of the aggregate project but are recommended for further archaeological assessment (Archaeologix 2003).

In 2001 and 2004, TMHC conducted further Stage 3 and Stage 4 archaeological assessment on the Keith Wales site (AfHi-250) (TMHC 2001; 2004). The archaeological assessment in 2004 assisted in defining the archaeological site limits and mitigated the northern limits of the Keith Wales site (AfHi-250); however, TMHC recommended further archaeological assessment for the remaining portions of the site (TMHC 2004).

In 2005, TMHC conducted Stage 1, 2, and 3 archaeological assessment for a proposed aggregate pit expansion on part of Lot 4, Concession 1, Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, Ontario (TMHC 2016). The assessment resulted in the identification of a large Indigenous lithic scatter which was registered with the MHSTCI as AfHi-335. A Stage 3 archaeological assessment was subsequently conducted consisting of 89 one-metre test units, which resulted in the recovery of 2,351 Indigenous artifacts related to the Early and Middle Woodland periods (TMHC 2016). The Stage 3 confirmed evidence of a large archaeological site with intact subsurface archaeological deposits and Stage 4 archaeological mitigation was recommended to be completed prior to commencement of any ground disturbing activities associated with aggregate extraction (TMHC 2016). An examination of the *Ontario Archaeological Sites Database* site location mapping (Government of Ontario 2019a) shows the location of AfHi-335 identified by TMHC (2016) much further north than the actual site location depicted in TMHC's (2016) report. This discrepancy is possibly a coordinate mapping

error. The actual location of AfHi-335 identified by TMHC (2016) is in the same location as the Scott Wales site (AfHi-335) identified by Wilson (1997). These locations are the same archaeological site and it can be inferred that their material culture is related.

In 2010, Stantec conducted a Stage 1 archaeological assessment for a proposed Sydenham Wind Energy Centre within the Townships of Brooke-Alvinston and Dawn-Euphemia in Lambton County and the Municipality of Chatham-Kent, Ontario (Stantec 2011). The Stage 1 archaeological assessment determined that the study area retained high potential for previously undiscovered archaeological resources and recommended Stage 2 archaeological assessment of all project-related infrastructure and construction areas (Stantec 2011).

Subsequent to Stantec's Stage 1 archaeological assessment of the proposed Sydenham Wind Energy Centre, D.R. Poulton & Associates Inc. (D.R. Poulton) conducted a Stage 2 archaeological assessment for the project's study area (D.R. Poulton 2012). The Stage 2 archaeological assessment resulted in the identification of six archaeological locations. Four of the archaeological sites were pre-contact Indigenous isolated finds and no further work was recommended. The other two sites were Euro-Canadian surface scatters, one of which was considered to be an early-20th century site which did not warrant any further archaeological investigation. The other Euro-Canadian site was identified as AeHl-64 and Stage 3 archaeological assessment was recommended (D.R. Poulton 2012).

In 2015, Stantec conducted a Stage 1-2 archaeological assessment for a new compressor station for Union Gas on part of Lots 25, 26, and 27, Concession 2, Geographic Township of Dawn, now Township of Dawn-Euphemia, Lambton County, Ontario (Stantec 2015). The Stage 1-2 archaeological assessment resulted in the identification of a single 20th century Euro-Canadian refuse deposit (Location 1 [AeHn-10]), which did not meet the criteria for Stage 3 archaeological investigation and no further archaeological work was recommended (Stantec 2015). A portion of the Stage 1-2 archaeological assessment overlaps with the study area for the current Project (see Figure 17-1).

In 2015, Golder Associates Inc. (Golder) conducted a Stage 1-2 archaeological assessment for Komoka Provincial Park (Golder 2016). Golder's assessment determined that the entire area of Komoka Provincial Park has archaeological potential for Indigenous and Euro-Canadian resources and a Stage 2 archaeological assessment should be conducted prior to any ground disturbing activities (Golder 2016). Additionally, Golder conducted a Stage 2 archaeological assessment of two "access zones" which would be used to develop new parking areas within the park. An area designated as "Access Zone 2" is located within and directly east of the current study area for this Project, adjacent to Komoka Road (see Figure 17-70). A test pit assessment of this area did not result in the identification of any archaeological resources and no further archaeological work was recommended (Golder 2016).

Stantec conducted a Stage 1 archaeological assessment in 2016 for proposed streetscape improvements along Glendon Drive in Komoka, Ontario (Stantec 2016a). The Stage 1 archaeological assessment determined that much of the municipal ROW in the study area retained low to no archaeological potential as it had been subject to extensive land disturbance. Areas outside of the municipal ROW, with the exception of paved and gravel driveways, commercial frontages, industrial quarry lands, and residential

buildings, were considered to retain archaeological potential (Stantec 2016a). Portions of the Stage 1 archaeological assessment overlap with the current study area for the Project (see Figure 17-68).

Stantec also conducted a Stage 1 archaeological assessment in 2016 for a proposed pipeline (Dawn-Dover project) from the Dawn compressor station in the Geographic Township of Dawn, now Township of Dawn-Euphemia, and Geographic Township of Sombra, now Township of St. Clair, Lambton County to the Geographic Townships of Chatham and Dover, now Municipality of Chatham-Kent, Ontario (Stantec 2016b). Stantec determined the archaeological potential of the study area to be moderate to high, however, portions of the study area, particularly along the existing pipeline route, had been subject to extensive land disturbance (Stantec 2016b). Stantec recommended Stage 2 archaeological assessment for portions of the study area that retained archaeological potential (Stantec 2016b). Stantec conducted a Stage 2 archaeological assessment for the Dawn-Dover project the same year, resulting in the identification of 26 new archaeological locations (Stantec 2016c). Of these, 11 archaeological locations were recommended for further Stage 3 archaeological investigation, and 15 required no further archaeological assessment (Stantec 2016c).

In 2017, Stantec conducted a Stage 1 archaeological assessment for the proposed Dawn-Enniskillen Pipeline from the Dawn compressor station in the Geographic Township of Dawn, now Township of Dawn-Euphemia, to the Township of Enniskillen, Lambton County, Ontario (Stantec 2017a). Stantec determined that some portions of the study area retained low to no archaeological potential due to extensive land disturbance. However, Stantec determined that large portions of the study area exhibited a moderate to high potential for archaeological resources (Stantec 2017a). Stantec recommended Stage 2 archaeological assessment for portions of the study area that retained archaeological potential (Stantec 2017a).

In 2017, Stantec conducted a Stage 3 archaeological assessment of Location 13 (AeHn-11) which was previously identified during the Stage 2 archaeological assessment of the Dawn-Dover project (Stantec 2017b). The Stage 3 resulted in the documentation of a Euro-Canadian site dating from the late-19th century to the early-20th century. As 80% of the artifact assemblage did not represent a period of use that dates prior to 1870, Stantec determined the site retained no further cultural heritage value or interest and no further archaeological work was recommended (Stantec 2017b).

In 2018, TMHC conducted a Stage 1-2 archaeological assessment for approximately 24.5 hectares of parts of Lots 1 and 2, Concession 2, in the Geographic Township of Lobo, now in the Municipality of Thames Centre, Middlesex County, Ontario (TMHC 2018). The Stage 2 archaeological assessment resulted in the identification of six new archaeological locations. Of those, three were recommended for further Stage 3 archaeological assessment (TMHC 2018). At the time of this project, the proponent decided to protect the site within the area as to conduct the archaeological work at a later date (TMHC 2018). A portion of TMHC's (2018) Stage 2 assessment overlaps with the current study area for this Project (see Figure 17-68).

AMICK Consultants Ltd. (AMICK) conducted a Stage 1-2 archaeological assessment in 2017 for a proposed subdivision development on part of the East Half of Lot 17, Concession 3, Geographic Township of Caradoc, Municipality of Strathroy-Caradoc, Middlesex County, Ontario (AMICK 2018). The

Stage 2 archaeological assessment resulted in the identification of a Euro-Canadian surface scatter, identified as the McEroy Site (AfHj-527). AMICK (2018) determined the site may represent a significant, early Euro-Canadian site and recommended further archaeological assessment. At the time of writing this report it is Stantec's knowledge that a Stage 3 archaeological assessment has been conducted at the McEroy Site (AfHj-527) but the report has not been submitted or approved.

In 2018, Stantec conducted a Stage 1-2 archaeological assessment for two parcels of land involved in a proposed land swap between the Municipality of Middlesex Centre and Infrastructure Ontario on part of Lot 5, Concession 1, Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, Ontario (Stantec 2019a). The Stage 2 archaeological assessment of the study area resulted in the identification of a large archaeological site associated with the previously identified Scott Wales site (AfHi-133) (Stantec 2019a). Stantec recommended further Stage 3 archaeological assessment of the Scott Wales site (AfHi-133) (Stantec 2019a). Portions of the Stage 2 assessment overlap with the study area for the current Project (see Figure 17-70).

Based on the results of the Stage 2 archaeological assessment (Stantec 2019a), it was determined that the Scott Wales site (AfHi-133) likely extended beyond the initial land swap study area into adjacent lands which may be impacted by a proposed Booster Pumping Station (BPS), including lands within the existing Komoka Wastewater Treatment Facility (WWTF). In consultation with the MHSTCI, BPS construction work was halted until an archaeological assessment was completed for all lands involved in the BPS. Subsequently, Stantec was retained by the Municipality to complete a Stage 1-2 archaeological assessment for the additional lands (the Project) to be impacted by the construction of the BPS and the existing Komoka WWTF grounds prior to further development as per the MHSTCI's advice (Stantec 2019b). The subsequent Stage 1-2 archaeological assessment resulted in the identification of additional archaeological resources associated with the Scott Wales site (AfHi-133) (Stantec 2019b). Stantec also recommended further Stage 3 archaeological assessment for the newly identified extent of the Scott Wales site (AfHi-133) (Stantec 2019b). Portions of the additional Stage 2 assessment overlap with the study area for the current Project (see Figure 17-70).

To mitigate impacts of the proposed BPS, Stantec conducted a Stage 3 archaeological assessment for a portion of the avoidance and protection buffers associated with the Scott Wales site (AfHi-133) (Stantec 2019c). Stage 3 archaeological assessment was undertaken prior to the construction of the proposed BPS) and transfer main as part of upgrades to the existing Komoka WWTF. The Stage 3 archaeological assessment was limited to the proposed BPS construction footprint and a portion of the avoidance and protection buffers associated with the Scott Wales site (AfHi-133). The Stage 3 assessment resulted in the recovery of a small assemblage of lithic Indigenous artifacts. While the artifacts are likely associated with the Scott Wales site (AfHi-133) to the south, the site was determined to not extend into the Stage 3 investigation area as the artifacts from the Stage 3 archaeological assessment of the portion of the avoidance and protection buffers associated with the Scott Wales site (AfHi-133) were recovered from a disturbed context (Stantec 2019c). Therefore, Stantec determined that no further archaeological work was recommended for the portion of the avoidance and protection buffers associated with the site within the BPS construction footprint (Stantec 2019c). The area subject to Stage 3 archaeological assessment partially overlaps with the study area for the current Project (see Figure 17-70). Stantec also recommended that the portion of the Scott Wales site (AfHi-133) outside of the Stage 3 investigation

area, including other portions of the site's avoidance and protection buffers, retained further cultural heritage value or interest and should be subject to Stage 3 archaeological assessment (Stantec 2019c). A portion of the Scott Wales site (AfHi-133) is within the study area for the current Project (see Tile 1 and Tile 2 in the Supplementary Documentation).

1.3.4 Existing Conditions

The Stage 1 property inspection of the study area was conducted over five days between November 25, 2019 and June 19, 2020 under PIF P256-0622-2020 issued to Parker Dickson, MA by the MHSTCI. The study area for the Project comprises approximately 766.88 hectares of various lots and concessions of the Geographic Townships of Dawn and Euphemia, now Township of Dawn-Euphemia, Lambton County; the Geographic Townships of Ekfrid and Mosa, now Municipality of Southwest Middlesex, Middlesex County; the Geographic Township of Caradoc, now Municipality of Strathroy-Caradoc, Middlesex County; and the Geographic Township of Lobo, now Municipality of Middlesex Centre, Middlesex County, Ontario. The proposed Project will be conducted between the Town of Komoka and the existing Enbridge station (Dawn Hub) north of Dresden, Ontario. 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.

Broadly, much of the study area consists of municipal road ROWs and active agricultural field, smaller pockets of sparse forest, and grassy or scrubland areas. The study area is also inundated with numerous water sources, municipally constructed drains, and gravel roads. The final route and construction easement, including any temporary land use, for the Project will be determined at a later date. Thus, the current study area for the Stage 1 archaeological assessment is relatively large, captures several different pipeline route options, and serves to capture a broad and generalized geographic area associated with the Project.

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 between November 25, 2019 and June 19, 2020 under PIF P256-0622-2020 issued to Parker Dickson, MA by the MHSTCI in accordance with Section 1.2 of the MHSTCI's *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

The study area was developed to include the municipal road ROW plus a five metre buffer, a 15-metre-wide corridor for proposed pipeline routes off of the ROW, and a 100 metre by 100 metre footprint for proposed stations (see Figures 2.0 to 2.20). Permission to conduct the Stage 1 visual assessment of the study area was provided by Enbridge. However, access to private lands for the purposes of the archaeological assessment was not obtained. Thus, photo documentation completed during the Stage 1 visual assessment was completed from the municipal road ROW and public lands. The property inspection involved spot-checking the entirety of the study area to identify the presence or absence of any features of archaeological potential. During the property inspection the weather adequate for the identification of features of archaeological potential (Table 7). At no time were field, lighting, or weather conditions detrimental to the identification of features of archaeological potential.

Table 7: Weather and Field Conditions during Property Inspection

Date	Field Director	Activity	Weather	Comment
November 25, 2019	Nathan Ng (R1223)	Photo documentation	Overcast, cool	Visibility of land features and features of archaeological potential is excellent
November 26, 2019	Nathan Ng (R1223)	Photo documentation	Mainly sunny, cool	Visibility of land features and features of archaeological potential is excellent
November 27, 2019	Nathan Ng (R1223)	Photo documentation	Partly cloudy, cool	Visibility of land features and features of archaeological potential is excellent
November 29, 2019	Darren Kipping (R422)	Photo documentation	Overcast, cool	Visibility of land features and features of archaeological potential is excellent
June 19, 2020	Darren Kipping (R422)	Photo documentation	Sunny and hot	Visibility of land features and features of archaeological potential is excellent

The photography from the property inspection conducted between November 25, 2019 and June 19, 2020 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 MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Figures 17-0 to 17-70 illustrate photo locations and the archaeological potential of the study area.

The study area involves large portions of agricultural field, forest, scrubland, and manicured lawn. Approximately 61.13% of the study area retains potential for archaeological resources. Photos 1 to 18 illustrate typical examples of the areas that retain archaeological potential.

As noted elsewhere, the study area involves numerous municipal roads and ROWs from Enbridge's existing Dawn Station in the west to Komoka in the east. The study area includes the municipal ROWs, as well as private and public lands adjacent to the ROWs. Approximately 37.00% of the study area consists of modern disturbances from the existing paved roads, paved and gravel road shoulders, engineered foreslope and backslope for existing roads and ditching, gravel and paved driveways/laneways, buried utilities and municipal infrastructure (e.g., sewers, pipelines, etc.), as well as disturbance from existing commercial and residential frontages. Photos 19 to 34 illustrate typical examples of disturbance identified throughout the study area.

A small portion of the study area consists of low and permanently wet areas (approximately 0.11%). Photos 35 to 42 illustrate typical examples of low and permanently wet areas.

The remaining portion of the study area, approximately 1.76%, comprise areas which have been modernly subject to archaeological assessment and do not require re-survey (i.e., Golder 2016; Stantec 2016a; 2019a; 2019b; 2019c; TMHC 2018). These areas were not photo-documented as part of this Stage 1 archaeological assessment.

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 MHSTCI (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 (Government of Ontario 2011).

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 MHSTCI 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.

As stated in Section 1.3.1, numerous primary water sources run near, or through the study area including the Sydenham River which runs through the central portion of the study area, and the Thames River which runs east to west approximately 340 metres south of the eastern portion of the study area. Additionally, numerous tributaries of the Sydenham and Thames Rivers, creeks such as Haggerty Creek, Long Creek, and Newbiggen Creek, as well as ephemeral drainages are identified nearby or crossing through the study area. Ancient and/or relic tributaries of other primary 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 and areas of elevated topography.

An examination of the *Ontario Archaeological Sites Database* has shown that there are 93 registered Indigenous archaeological sites (or components of multi-period sites) within one kilometre of the broad

Stage 1 study area and four registered Indigenous archaeological sites are within 50 metres of the study area. Additionally, early township plans identify an Indigenous presence around the study area based on mapping notations like “Indian Clearing”, “Indian Village”, and dashed lines representing former Indigenous trails.

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 1990b) or property that local histories or informants have identified with possible historical events, activities or occupations. To determine the need for a Cultural Heritage Assessment Report (CHAR), the Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI) *Criteria for Evaluation Potential for Built Heritage Resources and Cultural Heritage Landscapes* checklist (the checklist) was completed in March 2020. Preparation of the checklist included a desktop survey and consultation with relevant agencies and municipalities including the Ontario Heritage Trust, MHSTCI, Township of Dawn-Euphemia, Municipality of Southwest Middlesex, Municipality of Strathroy-Caradoc, and Municipality of Middlesex Centre. The results of the consultations and desktop survey identified that the study area contained historical cemeteries, contained historical structures of more than 40 years old, 19th century churches, railways corridors, and hamlets, and that the study area was within the Thames River (Canadian Heritage River) watershed (MHSTCI 2020).

Historical mapping demonstrates that the study area follows the early road structure, and that numerous farmsteads, historical railways, early residential structures, churches, and industrial structures are adjacent to or within the study area. Much of the established road and agricultural settlement from the early 19th century is still visible today. The Stage 1 property inspection also identified two historical cemeteries within, or adjacent to the study area. There are 12 registered Euro-Canadian archaeological sites (or components of multi-period sites) within one kilometre of the study area and one registered Euro-Canadian site within 50 metres of the study area.

Considering these factors, the study area retains potential for the identification of Indigenous and Euro-Canadian archaeological resources. However, as noted above, extensive and deep land alteration can eradicate archaeological potential. Large portions of the study area, approximately 37.00%, have been subject to extensive land disturbance. These areas include most of the municipal road ROWs which have been subject to modern disturbance such as the existing paved and gravel roads, paved and gravel shoulders, engineered foreslope and backslope for existing roads, ditching, gravel and paved driveways/laneways, buried utilities and municipal infrastructure (e.g., sewers, pipelines, etc.), as well as disturbance from existing commercial and residential frontages. These portions of the study area retain low to no potential for archaeological resources.

The Stage 1 property inspection has determined that a large portion of the study area retains archaeological potential. These areas include agricultural fields, forests, scrubland, and manicured lawns not visually identified to be previously disturbed. Thus, these areas, comprising approximately 61.13% of the study area, are considered to retain archaeological potential. Similarly, other areas of likely modern disturbance (e.g., 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.

Low to no archaeological potential has also been determined for low and permanently wet areas which comprise approximately 0.11% of the study area.

Small portions of the study area (approximately 1.76%) have been subject to previous archaeological assessment and retain no further cultural heritage value or interest, with the exception of the portion of the study area within the Scott Wales site (AfHi-133). The areas subject to previous archaeological assessment with no identified cultural resources retain no further archaeological potential. However, the study area that overlaps with the Scott Wales site (AfHi-133), requires Stage 3 archaeological assessment if development or construction impacts cannot avoid the site or its avoidance and protection buffers.

In summary, while the entire study area was determined to retain potential for the identification of Indigenous and Euro-Canadian archaeological resources based on historical documentation, background research, and natural topographic landforms, the Stage 1 property inspection has determined that portions of the study area, approximately 61.13%, retains potential for the identification and documentation of archaeological resources. As noted above, numerous farm complexes, residences, commercial structures, and other existing features of potential disturbance (e.g., existing roads, railways, residential and commercial complexes, and buried utilities and infrastructure) are located throughout the study area; however, they were not specifically examined as part of a Stage 1 property inspection due to portions of these features being located outside of the municipal road ROW, and may still retain archaeological potential. Further, areas of steep slope may exist within the study area but were not specifically examined as part of a Stage 1 property inspection. As such, these areas have been included as part of the determination that the study area exhibits potential for the identification and recovery of archaeological resources.

However, the remaining portion of the study area, approximately 38.87%, was determined to retain low to no archaeological potential as it includes: extensive land disturbance, low and permanently wet areas, previously assessed areas, and existing Enbridge infrastructure, such as metering stations, pipelines, pumping stations, and storage facilities, are also located within the study area.

The final route and construction easement, including any temporary land use, for the Project will be determined at a later date. A refinement of archaeological potential specific to the Project's anticipated impacts will be included as part of the Stage 2 archaeological assessment for the Project. The results of the Stage 1 assessment are illustrated on Figures 17-0 to 17-70.

4.0 RECOMMENDATIONS

The Stage 1 archaeological assessment, involving background research and a property inspection, resulted in the determination that much of the study area, approximately 61.13%, retains potential for the identification and documentation of archaeological resources. Thus, in accordance with Section 1.3 and Section 7.7.4 of the MHSTCI's 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 which impacts an area of archaeological potential (Figures 17-0 to 17-70).**

The objective of the Stage 2 archaeological assessment will be to document archaeological resources within the study area and to determine whether these archaeological resources require further assessment. The Stage 2 archaeological assessment of the study area may consist of a combination of pedestrian survey and test pit survey. The pedestrian survey of agricultural fields and accessible lands will entail the systematic walking of open ploughed fields at five metre intervals as outlined in Section 2.1.1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Areas to be subjected to test pit survey will be assessed according to Section 2.1.2 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). If the archaeological field team judges 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 physical survey, but will be photographically documented instead in accordance with Section 2.1 of the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

The remaining portion of the study area, approximately 38.87%, retains low to no archaeological potential as it includes: extensive land disturbance, low and permanently wet areas, and previously assessed areas. In accordance with Section 1.3.2 and Section 7.7.4 of the MHSTCI's 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 which impacts an area of low to no archaeological potential (Figures 17-0 to 17-70).**

Additionally, a small portion of the study area overlaps with the Scott Wales site (AfHi-133) and its associated avoidance and protection buffers (see Stantec 2019c). Thus, in accordance with the recommendations of Stantec (2019c), **Stage 3 archaeological assessment is required for any portion of the Project's anticipated construction which impacts the Scott Wales site (AfHi-133) or its associated avoidance and protection buffers.** Full and detailed further work recommendations related to the Scott Wales site (AfHi-133) are provided in Stantec (2019c).

The MHSTCI is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18 (Government of Ontario 1990b). 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 study area of a development proposal have been addressed to the satisfaction of the MHSTCI, 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 1990b) 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 1990b)

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 1990b) 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 1990b)

The *Funeral, Burial and Cremation Services Act,* 2002, S.O. 2002, c.33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Government and Consumer Services is also immediately notified.

Archaeological sites recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and may not be altered, or have artifacts removed, except by a person holding an archaeological license.

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7.0 IMAGES

7.1 PHOTOGRAPHS

Photo 1: Agricultural field and municipal road ROW, facing east

Photo 2: Agricultural field and municipal road ROW, facing west

Photo 3: Manicured lawn and agricultural field, facing east

Photo 4: Agricultural field, facing southwest

Photo 5: Scrubland near water source, facing southeast

Photo 6: Scrubland near water source, facing east-northeast

Photo 7: Agricultural field near water source, facing west-northwest

Photo 8: Forested land adjacent to pipeline ROW, facing east-northeast

Images
July 10, 2020

Photo 9: Agricultural field and municipal road ROW, facing northeast

Photo 10: Agricultural field, facing east-northeast

Photo 11: Manicured lawn, facing northeast

Photo 12: Mount Carmel Cemetery, facing west

Images
July 10, 2020

Photo 13: Hess Cemetery, facing southwest

Photo 14: Manicured lawn, facing east-northeast

Photo 15: Manicured lawn, agricultural field, and municipal road ROW, facing east-northeast

Photo: 16: Agricultural field, facing west-southwest

Images
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Photo 19: Previously disturbed, paved road, facing west

Photo 20: Previously disturbed ditching and underground infrastructure, facing west

Images
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Photo 22: Previously disturbed, ROW and ditching, facing west

Photo 23: Previously disturbed, road and ROW, facing east

Photo 24: Previously disturbed, rail line, facing northeast

Photo 25: Previously disturbed, gravel road, facing northeast

Photo 26: Previously disturbed, rail line, facing northwest

Photo 27: Previously disturbed, gravel road, facing northeast

Photo 28: Previously disturbed, facing southeast

Photo 29: Previously disturbed, pump station, facing south

Photo 30: Previously disturbed, paved road and commercial frontage, facing southeast

Photo 31: Previously disturbed, ditching and underground infrastructure, facing northeast

Photo 32: Previously disturbed, Highway 402 and ROW, facing southwest

Images
July 10, 2020

Photo 33: Previously disturbed, paved road and engineered foreslope, facing northwest

Photo 34: Previously disturbed, paved road and ditching, facing southeast

Photo 35: Low and permanently wet, facing south

Photo 36: Low and permanently wet, facing southeast

Photo 37: Low and permanently wet, facing southeast

Photo 38: Low and permanently wet area, facing southeast

Photo 39: Low and permanently wet area, facing east-southeast

Photo 40: Low and permanently wet area, facing east-southeast

Images
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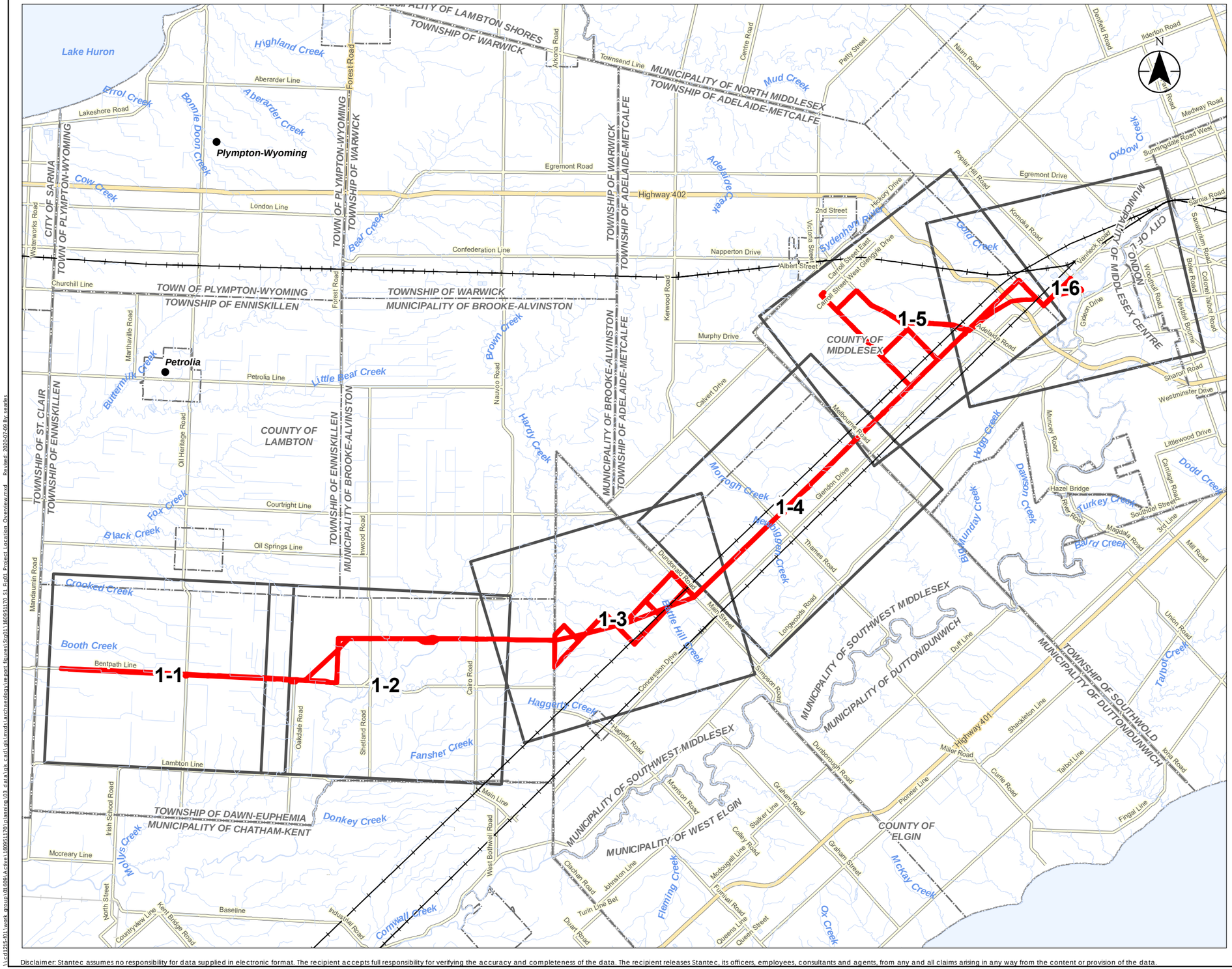
Photo 41: Low and permanently wet area, facing northeast

Photo 42: Low and permanently wet area, facing west

8.0 MAPS

General maps of the study area will follow on succeeding pages. Maps identifying exact archaeological site locations do not form part of this public report; they may be found in the Supplementary Documentation.



Stantec

Legend

- Study Area
- Railway - Operational
- Railway - Discontinued
- Expressway / Highway
- Major Road
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Waterbody

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Figure No.
1-0

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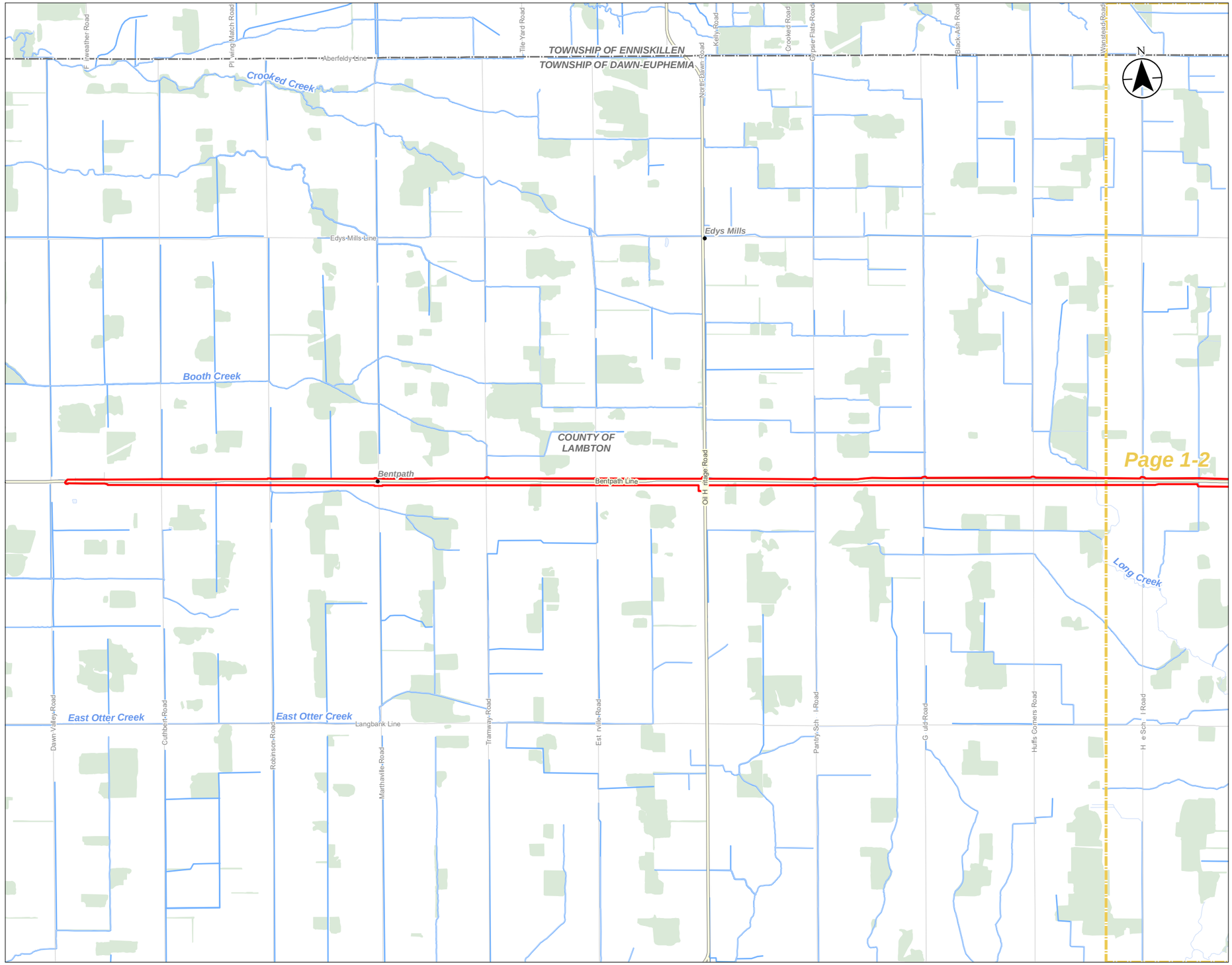

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Legend

- Study Area
- Constructed Drain
- Major Road
- Minor Road
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody
- Wooded Area

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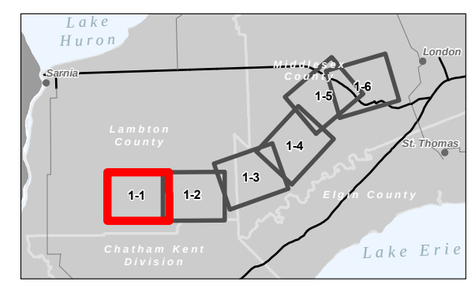

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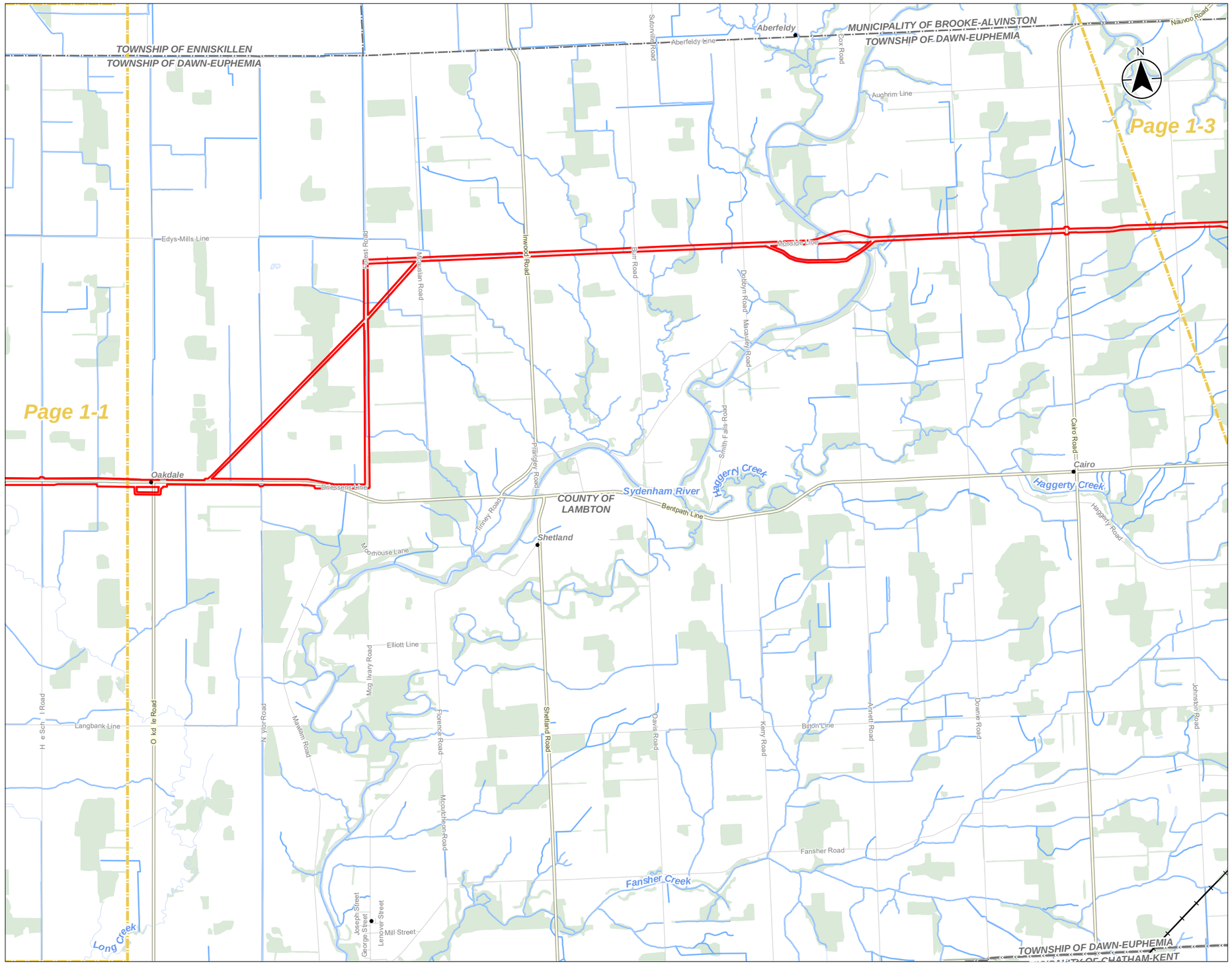

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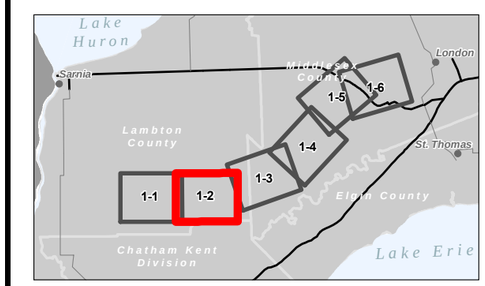

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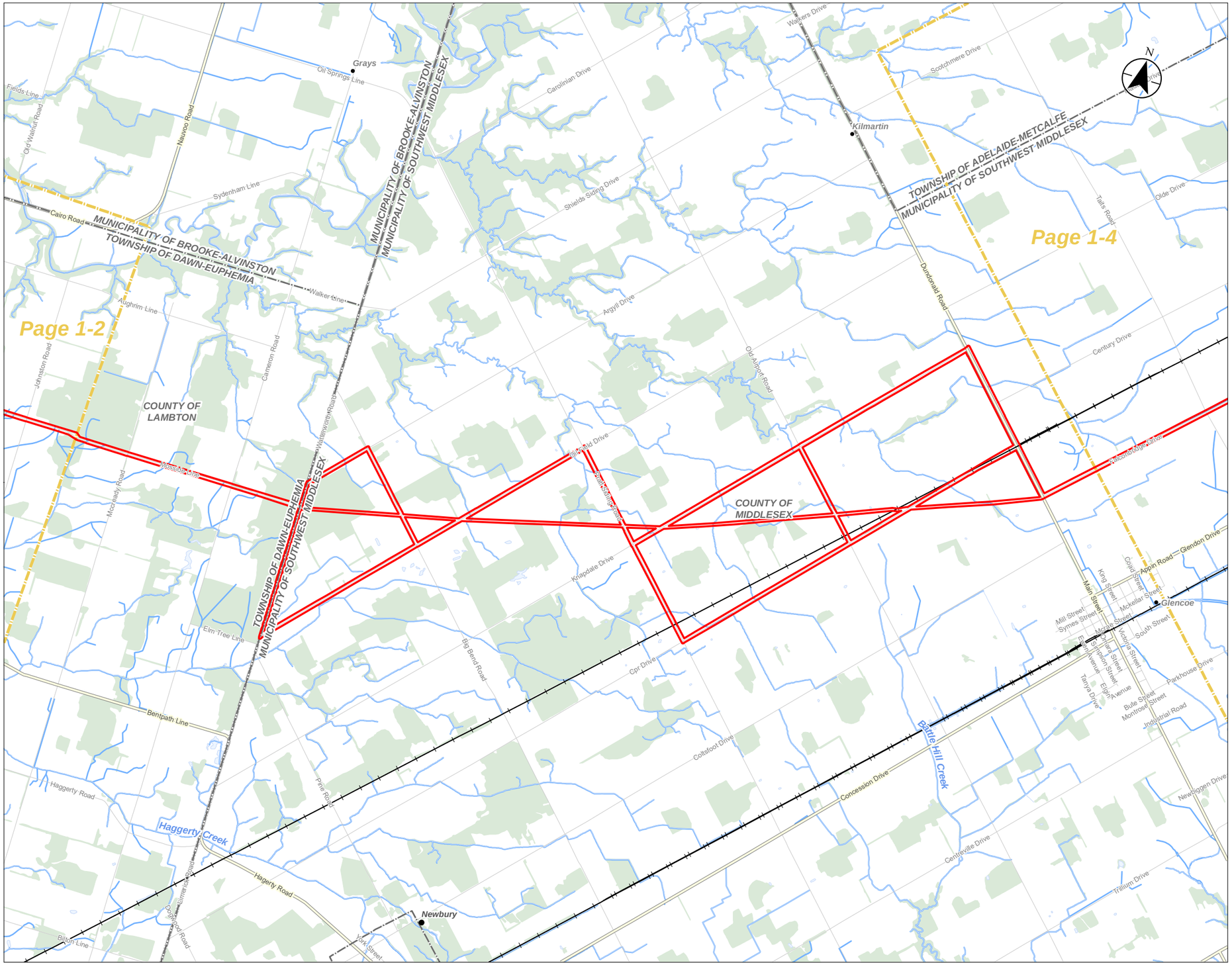

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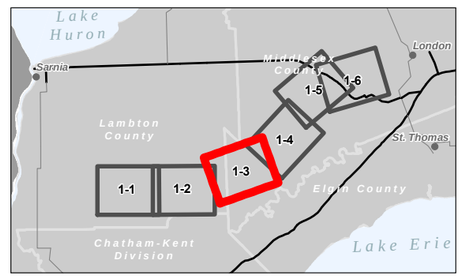

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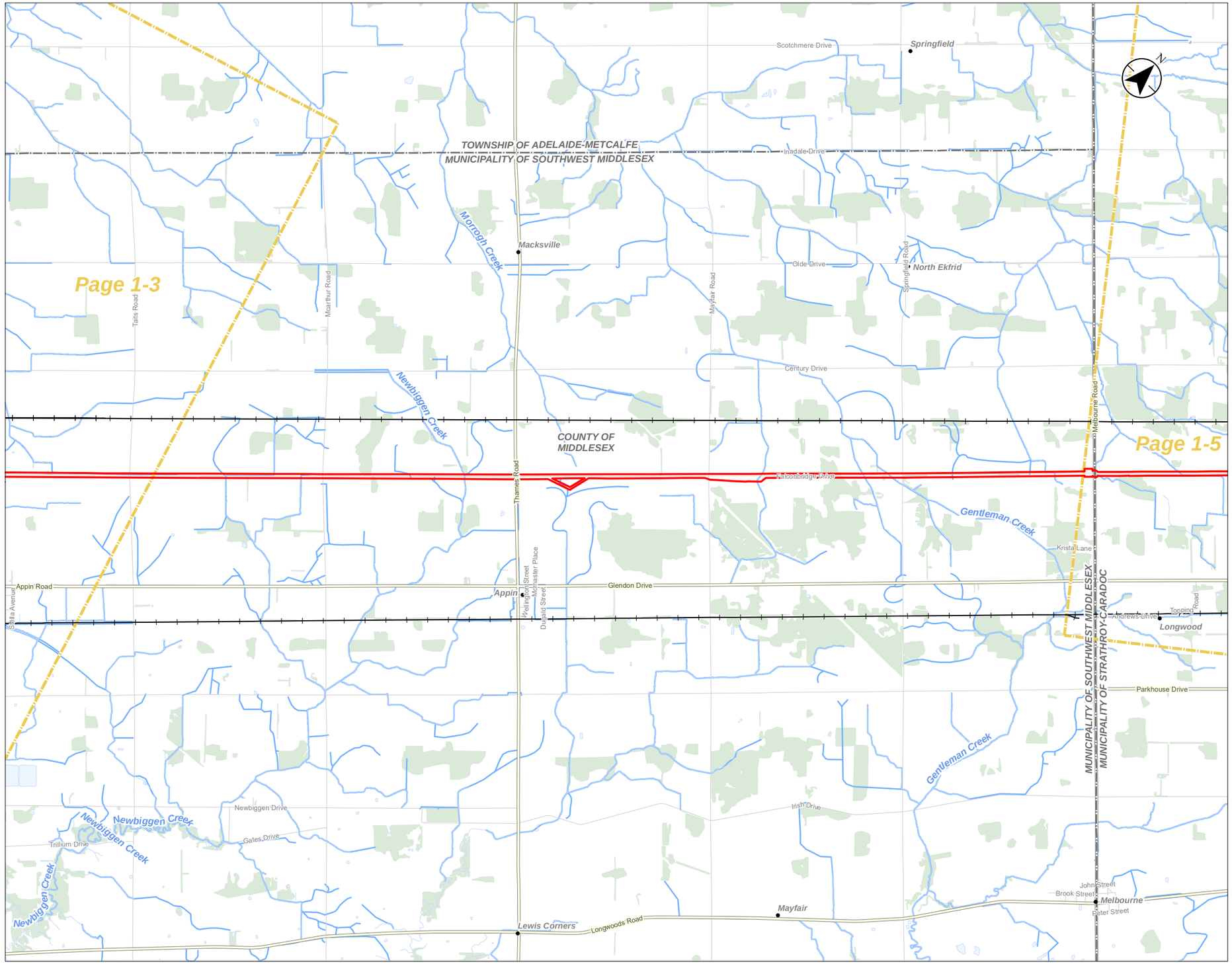

Stantec

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- Study Area
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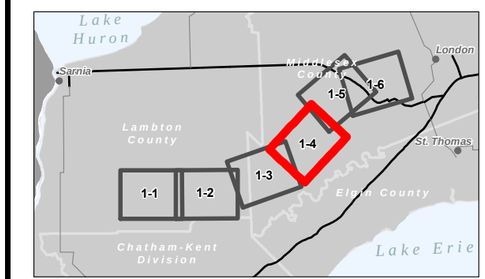

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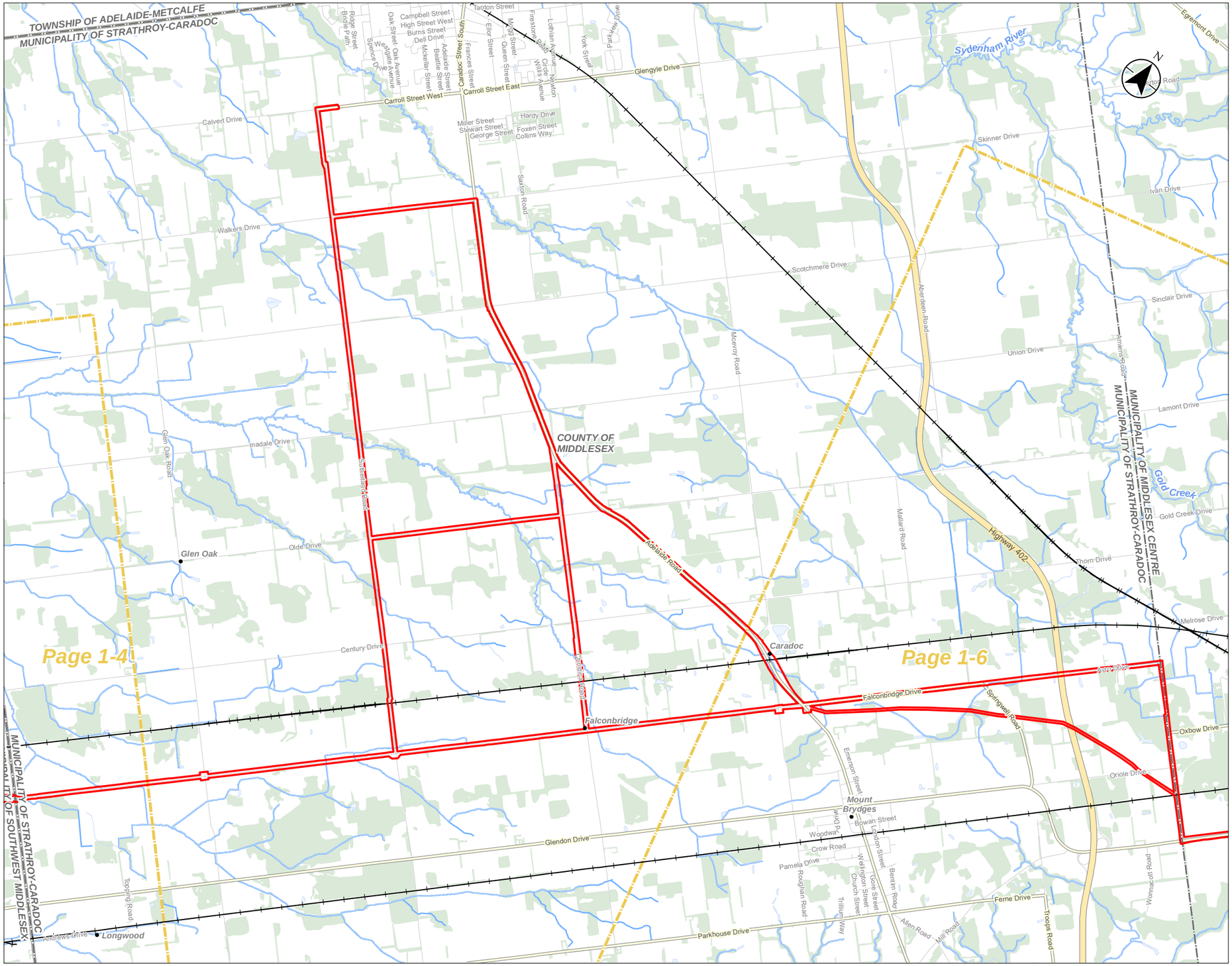

Stantec

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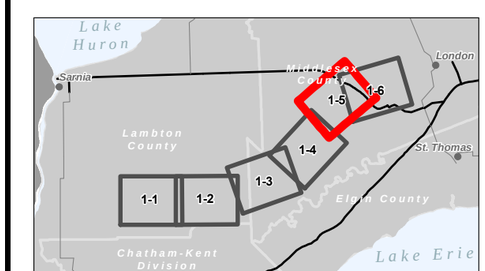

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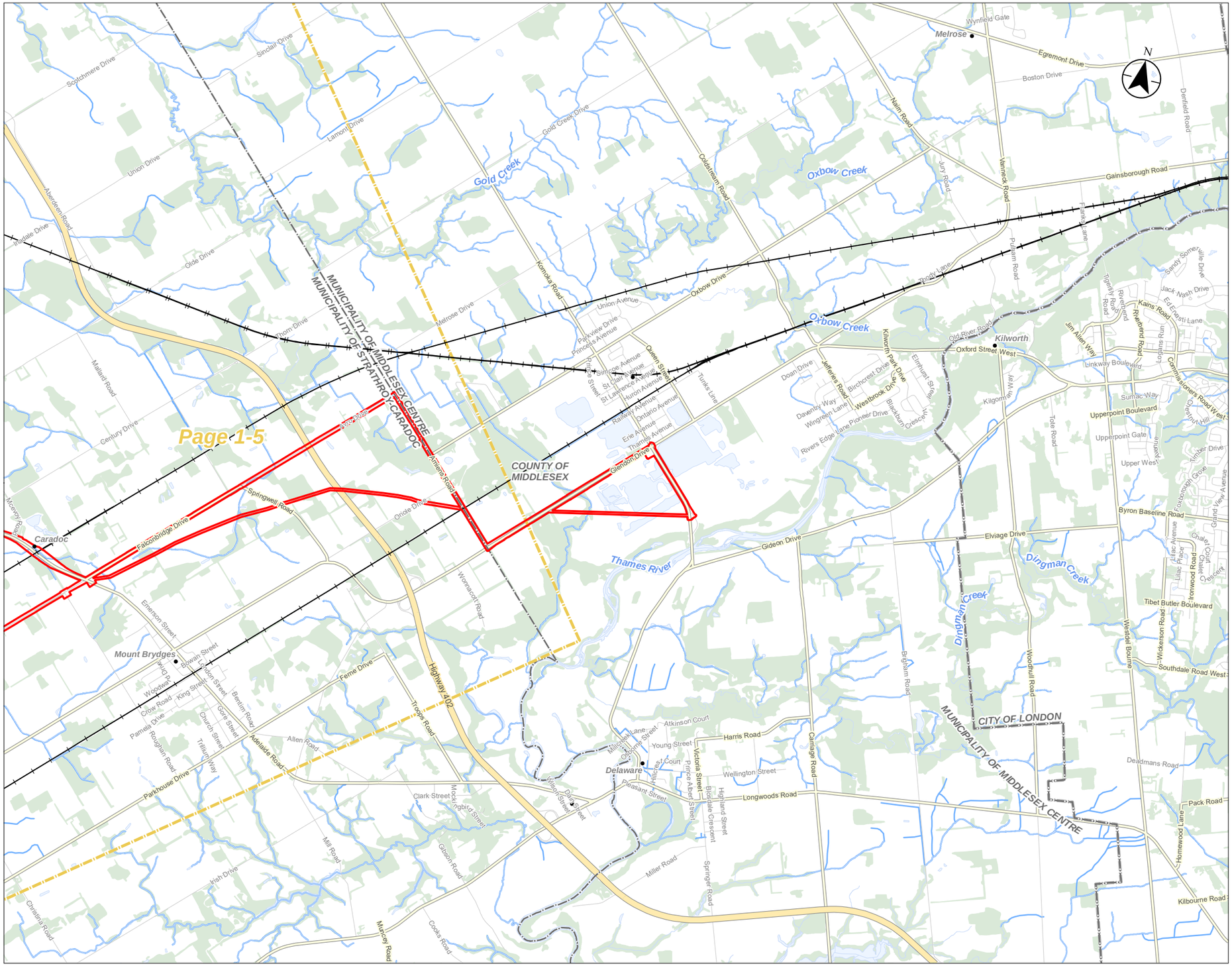

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- Waterbody
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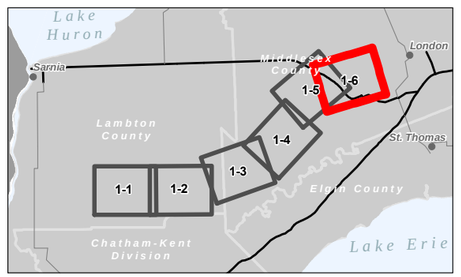

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

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1-6

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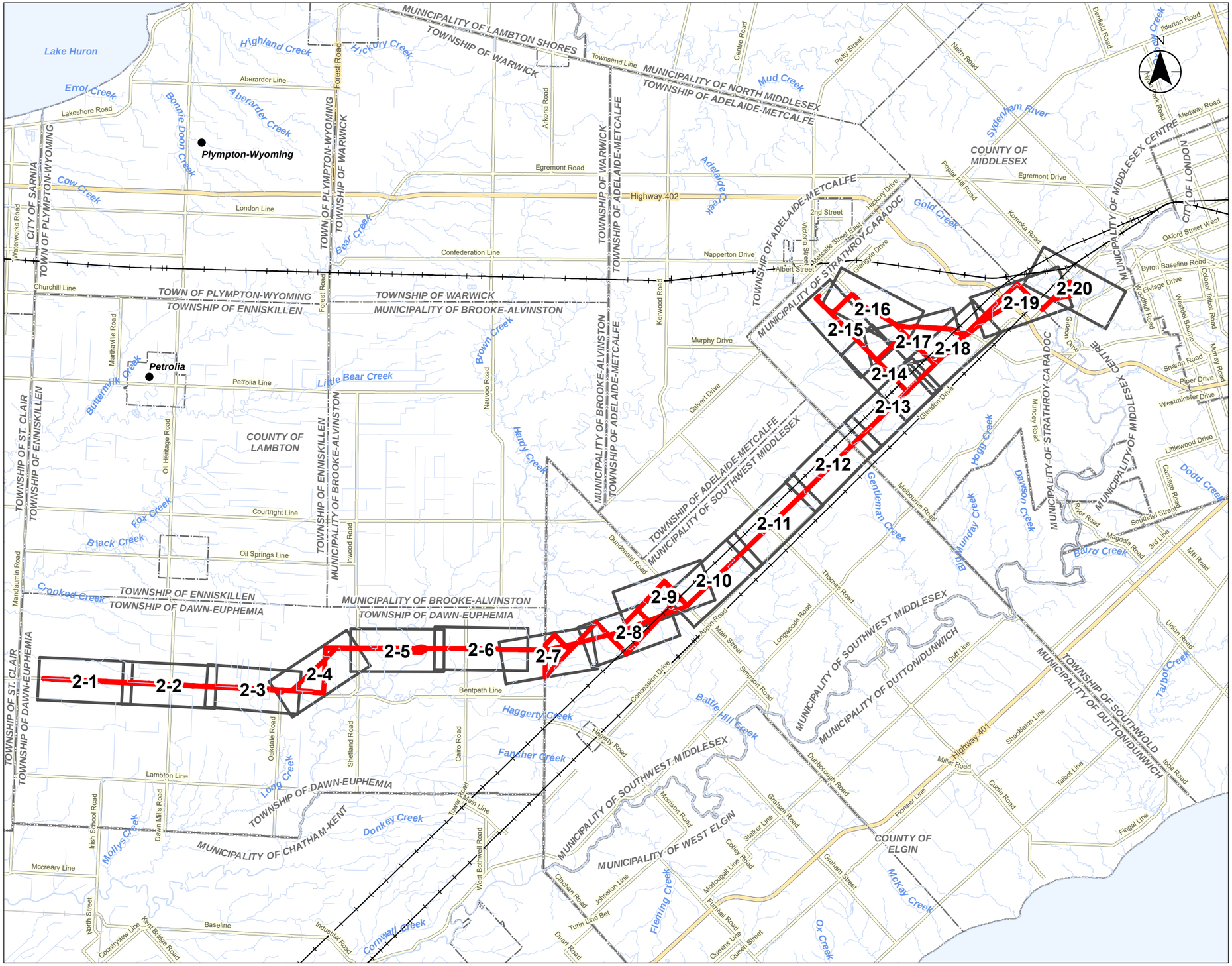

Stantec

Legend

- Study Area
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- Municipal Boundary - Lower Tier
- Waterbody

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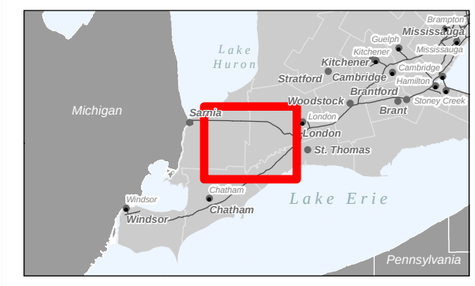

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Counties of Lambton and Middlesex

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
2-0

Title
Study Area Details - Overview

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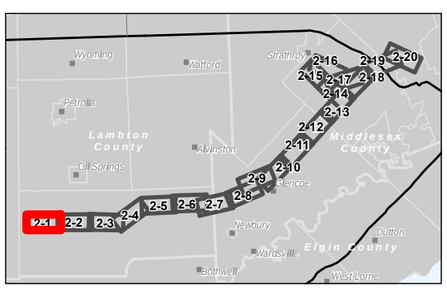

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

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Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-1

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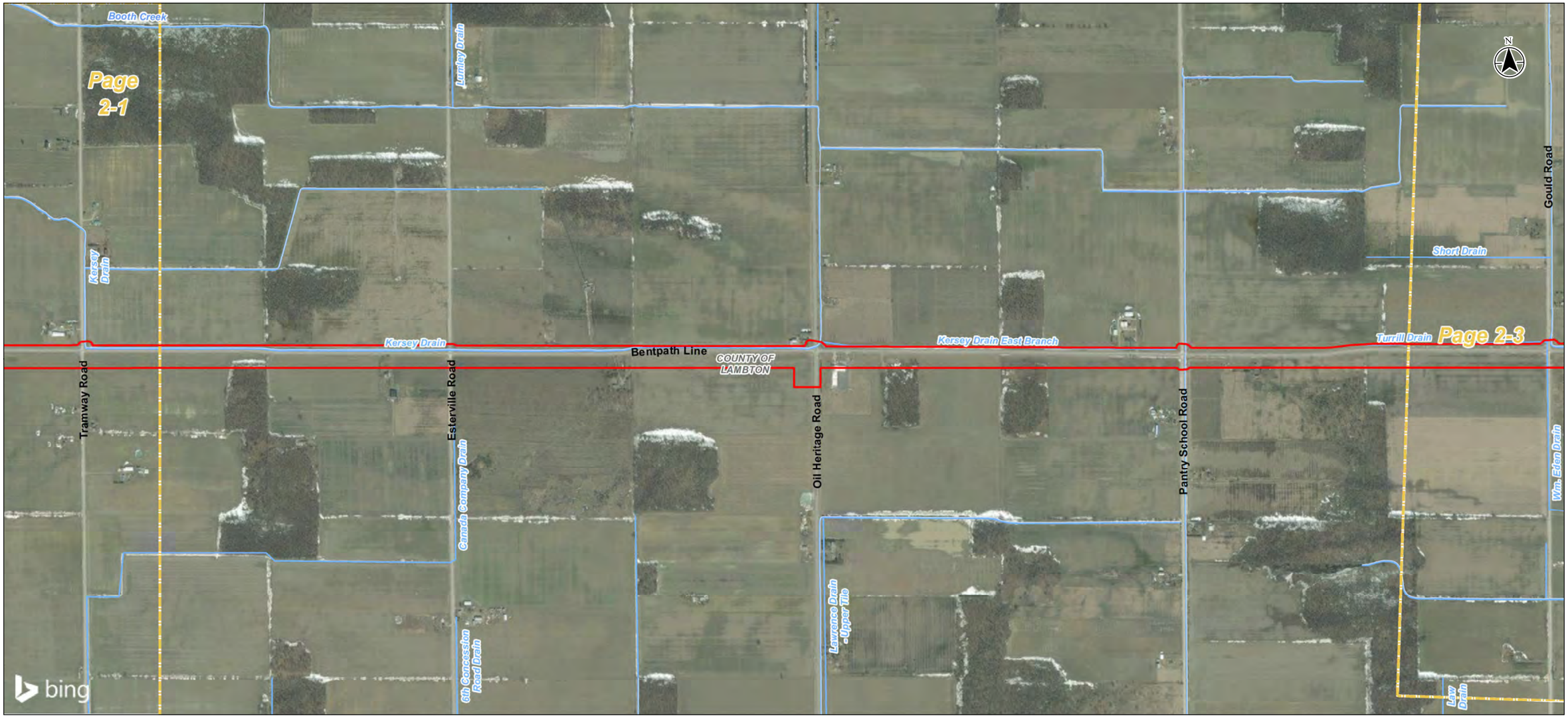

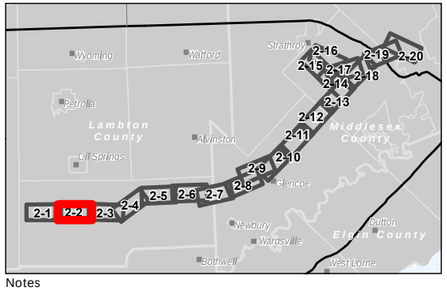

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier

0 300 600 metres

1:15,000 (At original document size of 11x17)

Notes

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-2

Title
Study Area Details - Index

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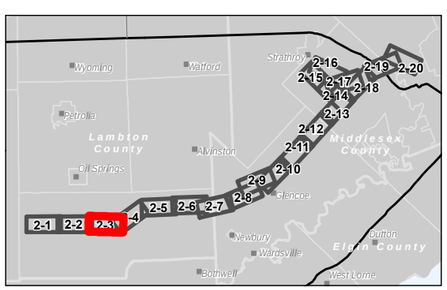

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location
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LONDON LINES REPLACEMENT PROJECT
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Figure No.
2-3

Title
Study Area Details - Index

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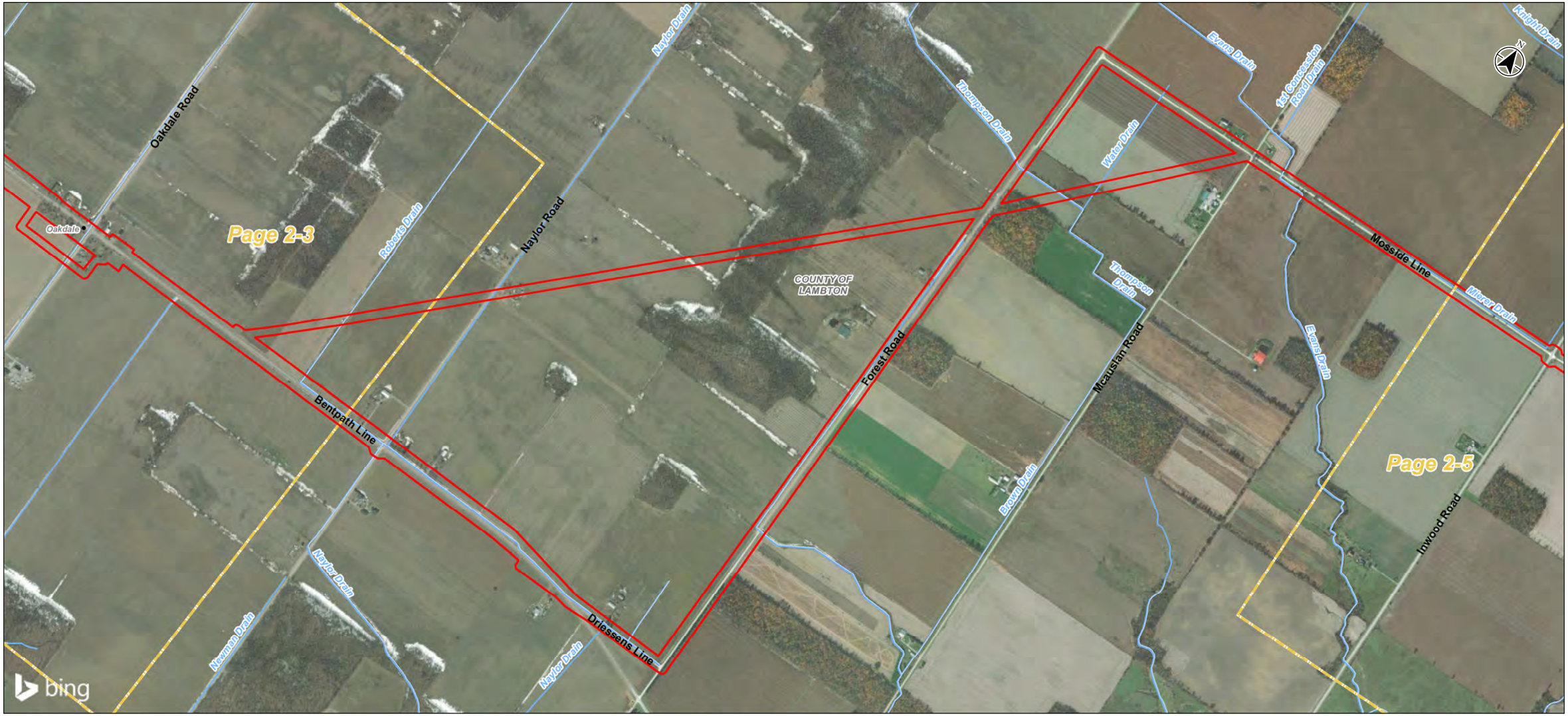

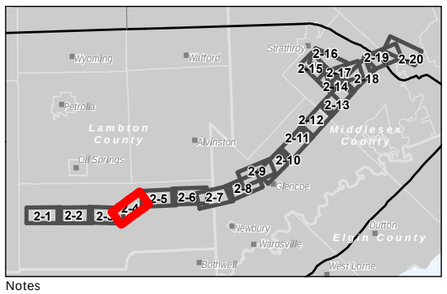

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location	160951170 REVA
Counties of Lambton and Middlesex	Prepared by SPE on 2020-07-09
	Technical Review by BCC on 2020-07-02

Client/Project

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.

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Title

Study Area Details - Index

Notes

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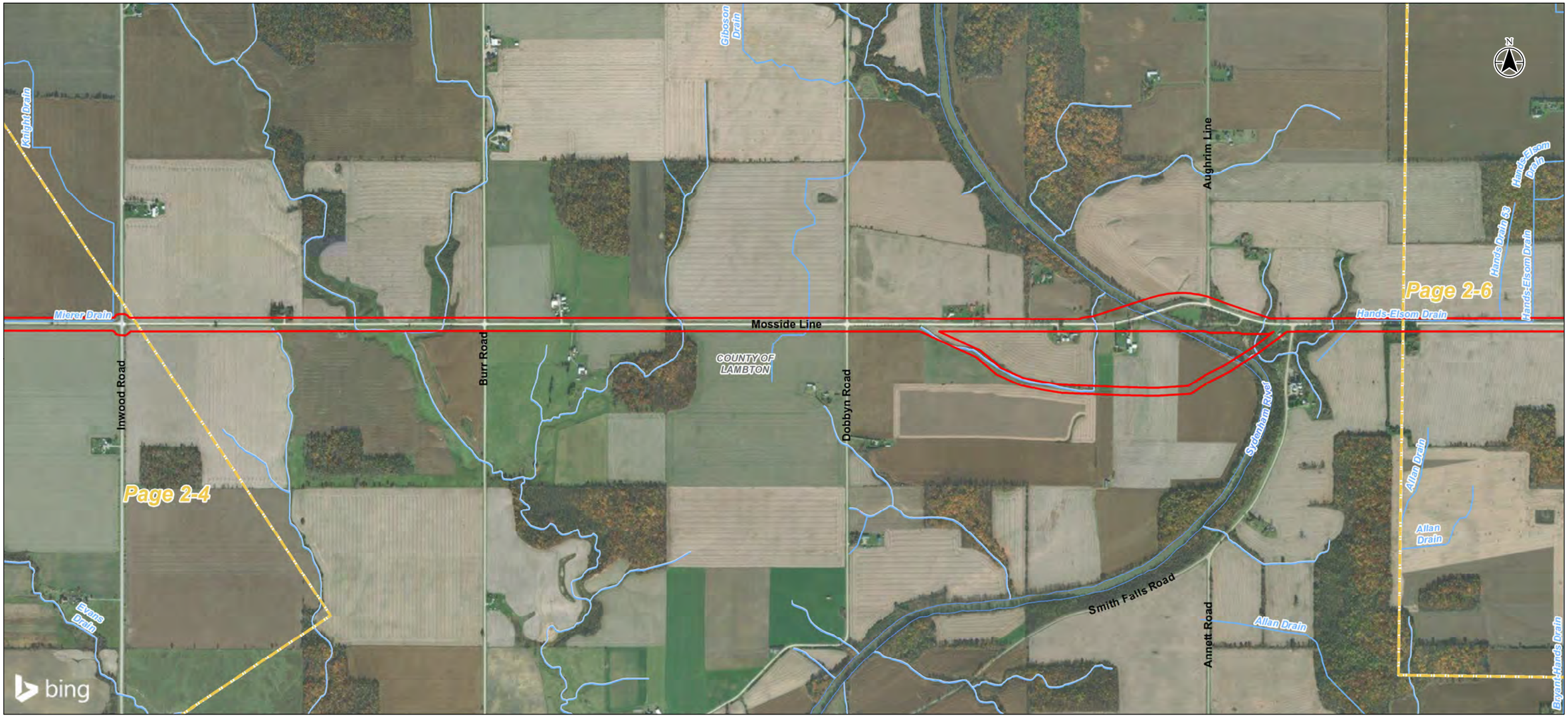

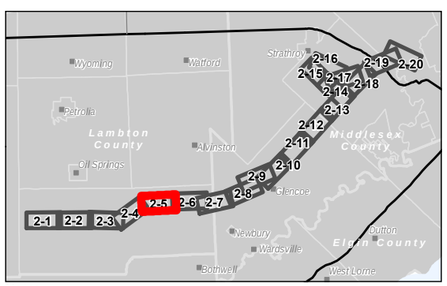

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-5

Title
Study Area Details - Index

Notes
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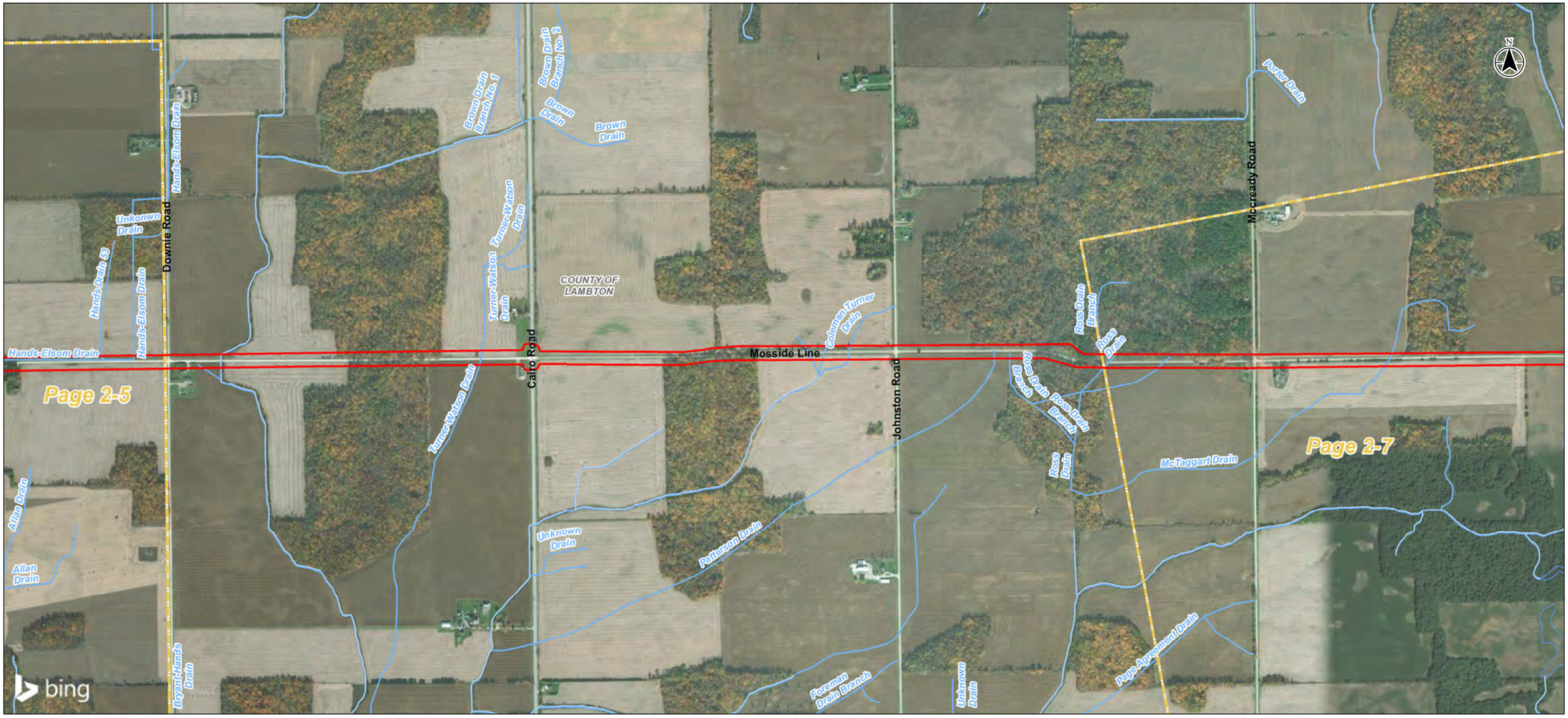

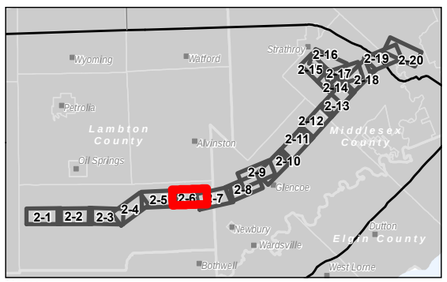

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

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Study Area Details - Index

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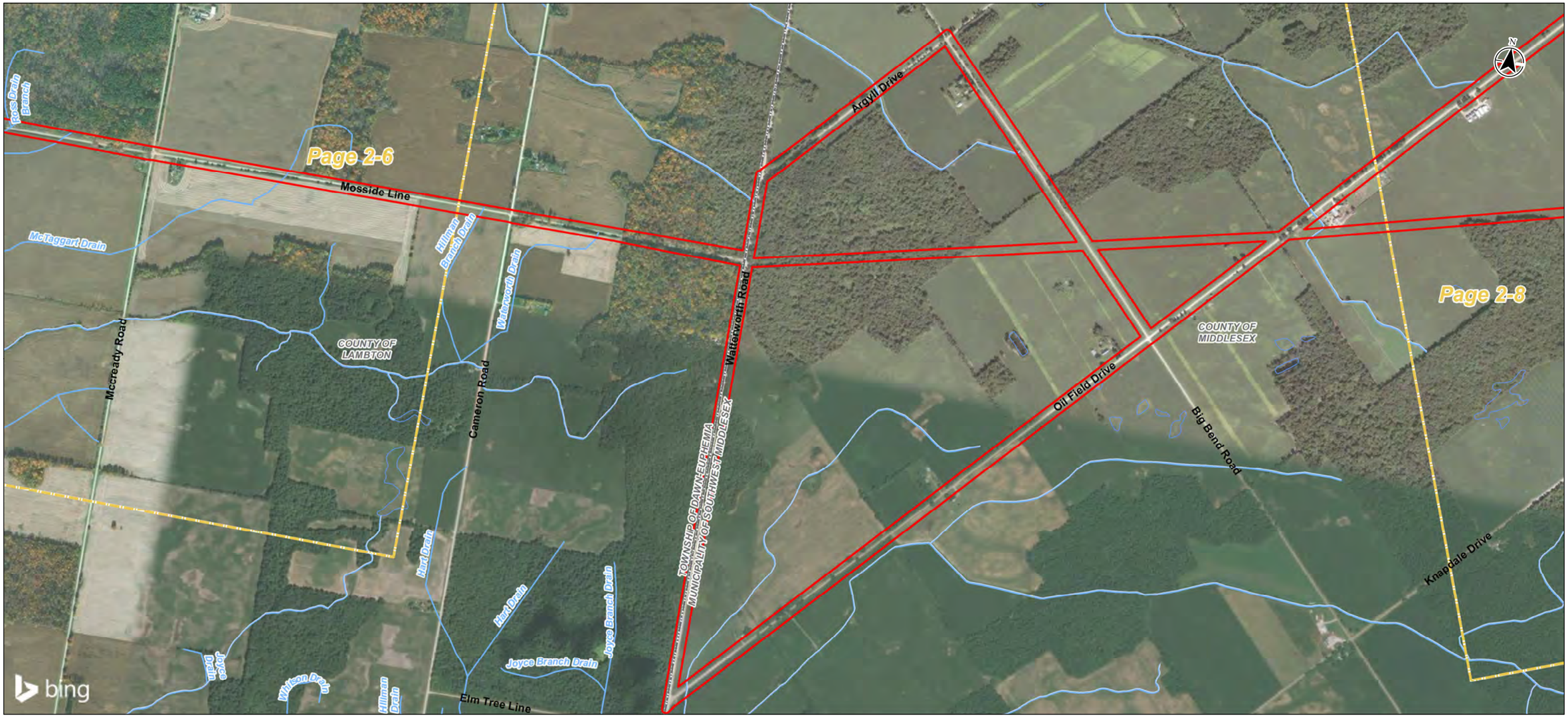

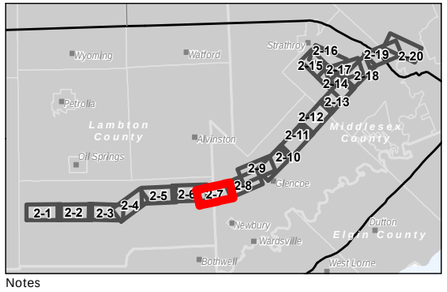

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
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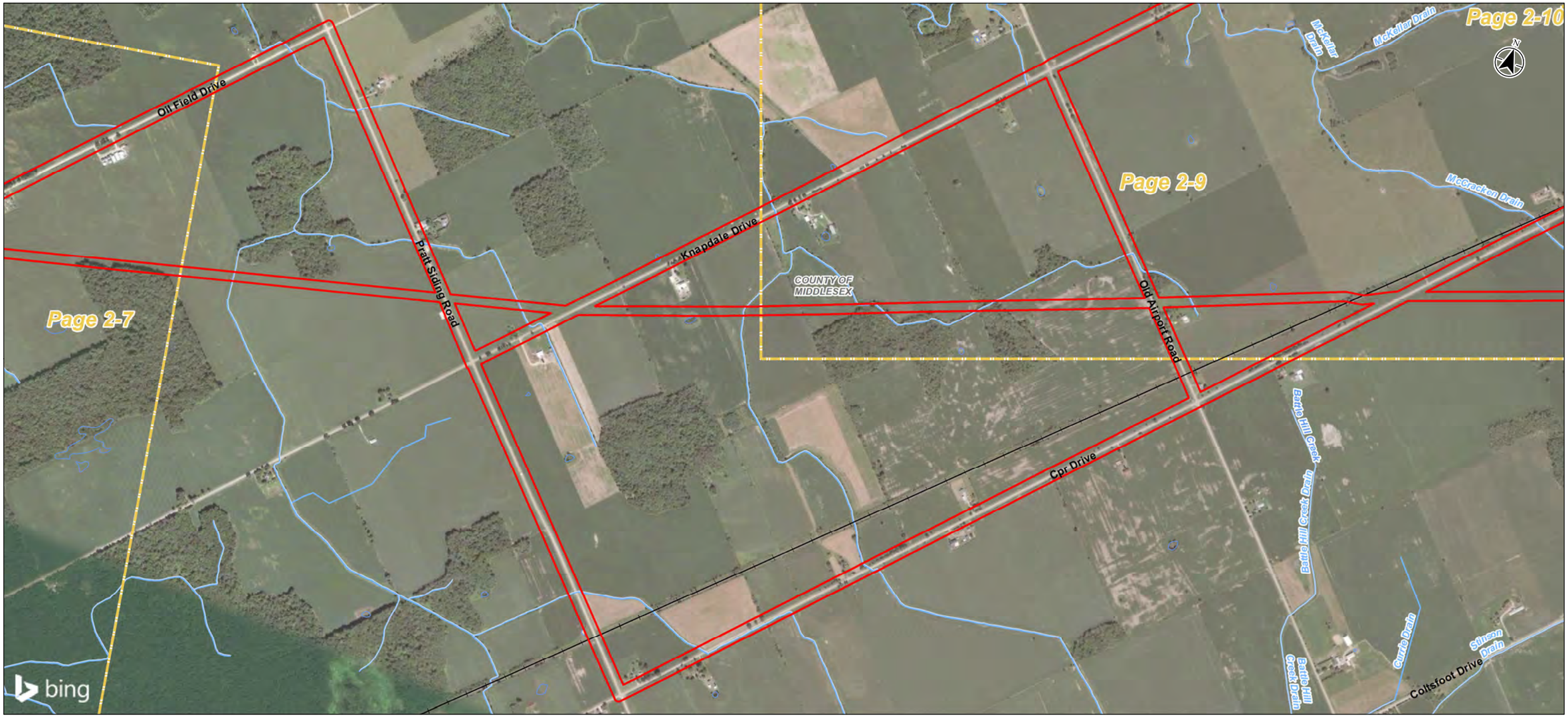

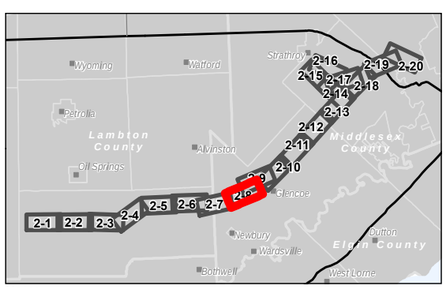

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Legend

- Study Area
- Railways_lio
- STATUS
  - Railway - Operational
  - Constructed Drain
  - Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
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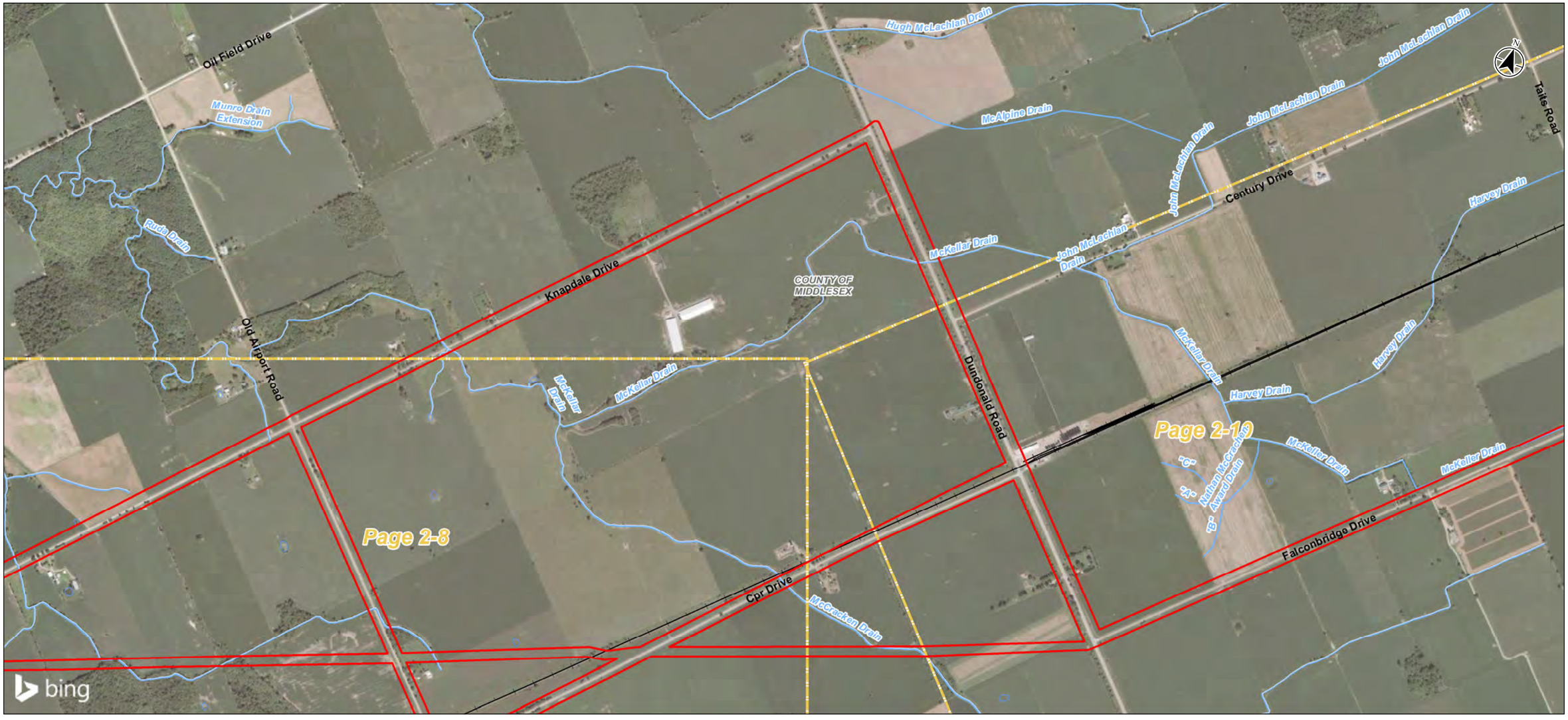

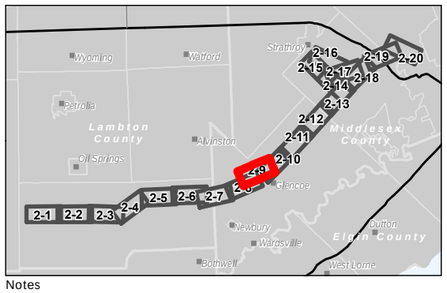

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Legend
- Study Area
- Railways_lio
- STATUS
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- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
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Study Area Details - Index

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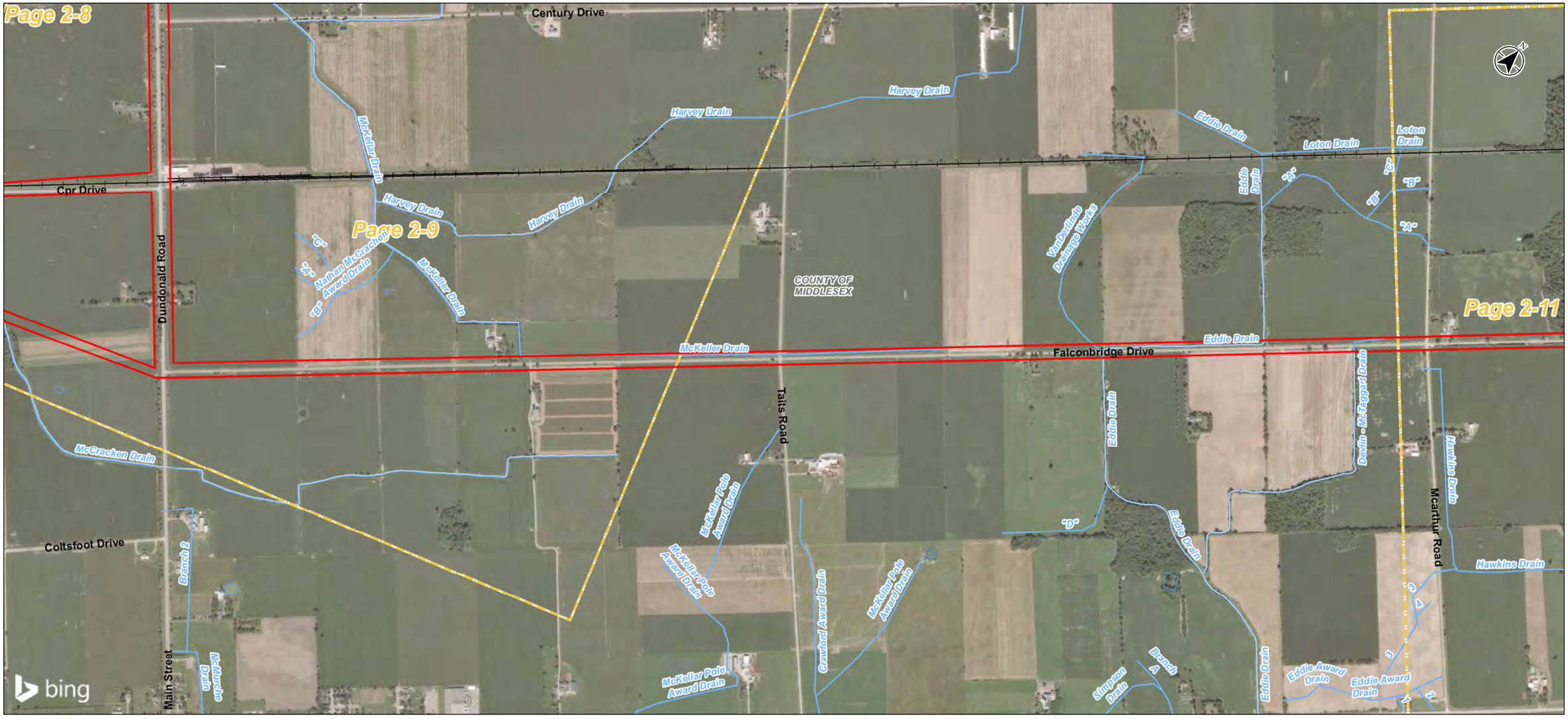

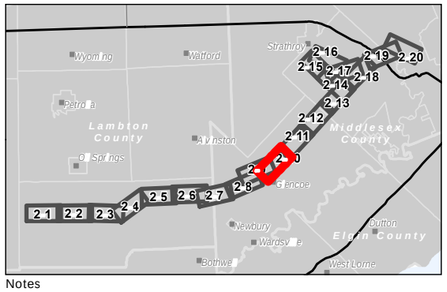

Legend

- Study Area
- Railways_lio
- STATUS
  - Railway - Operational
  - Constructed Drain
  - Watercourse
  - Map Tile Index
  - Municipal Boundary - Lower Tier
  - Municipal Boundary - Upper Tier
  - Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location
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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-10

Title
Study Area Details - Index

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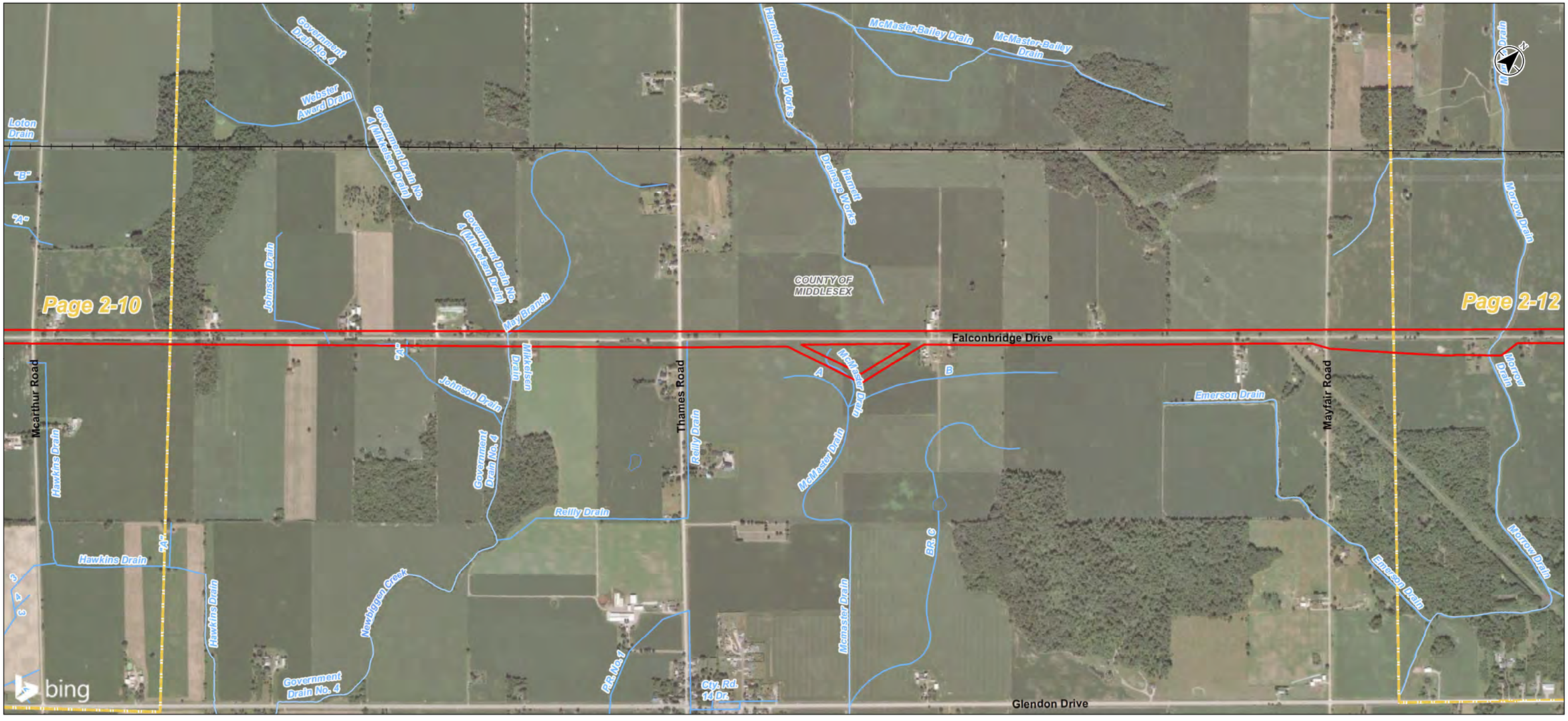

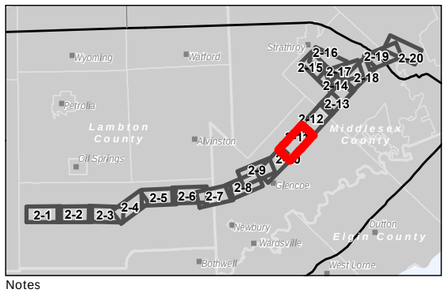

Legend

- Study Area
- Railways_lio
- STATUS
  - Railway - Operational
  - Constructed Drain
  - Watercourse
  - Map Tile Index
  - Municipal Boundary - Lower Tier
  - Municipal Boundary - Upper Tier
  - Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-11

Title
Study Area Details - Index

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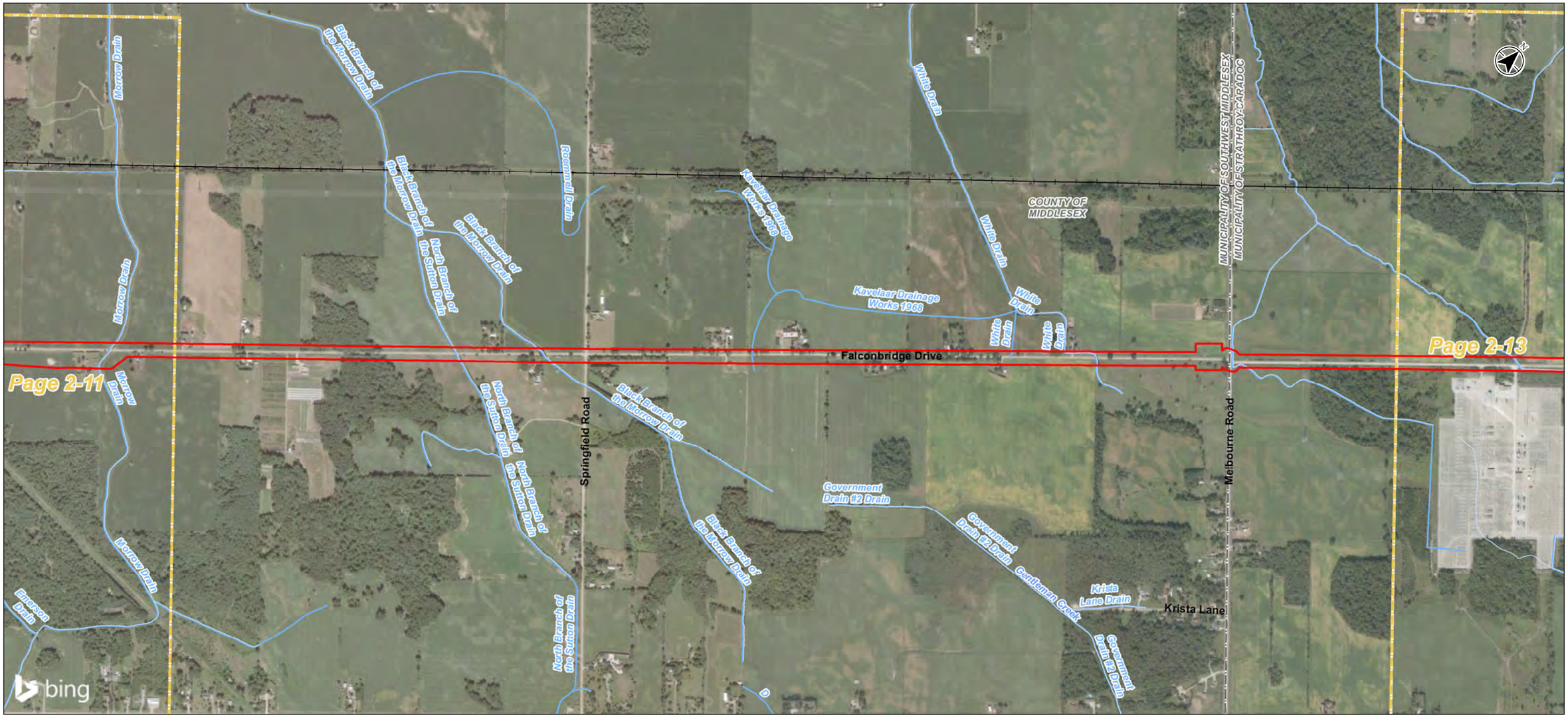

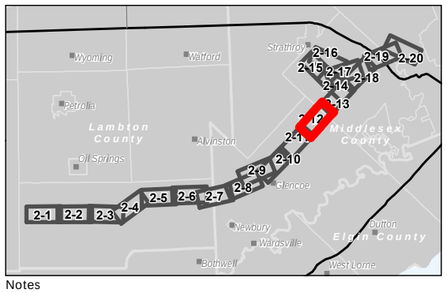

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Legend

- Study Area
- Railways_lio
- STATUS
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- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
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Title
Study Area Details - Index

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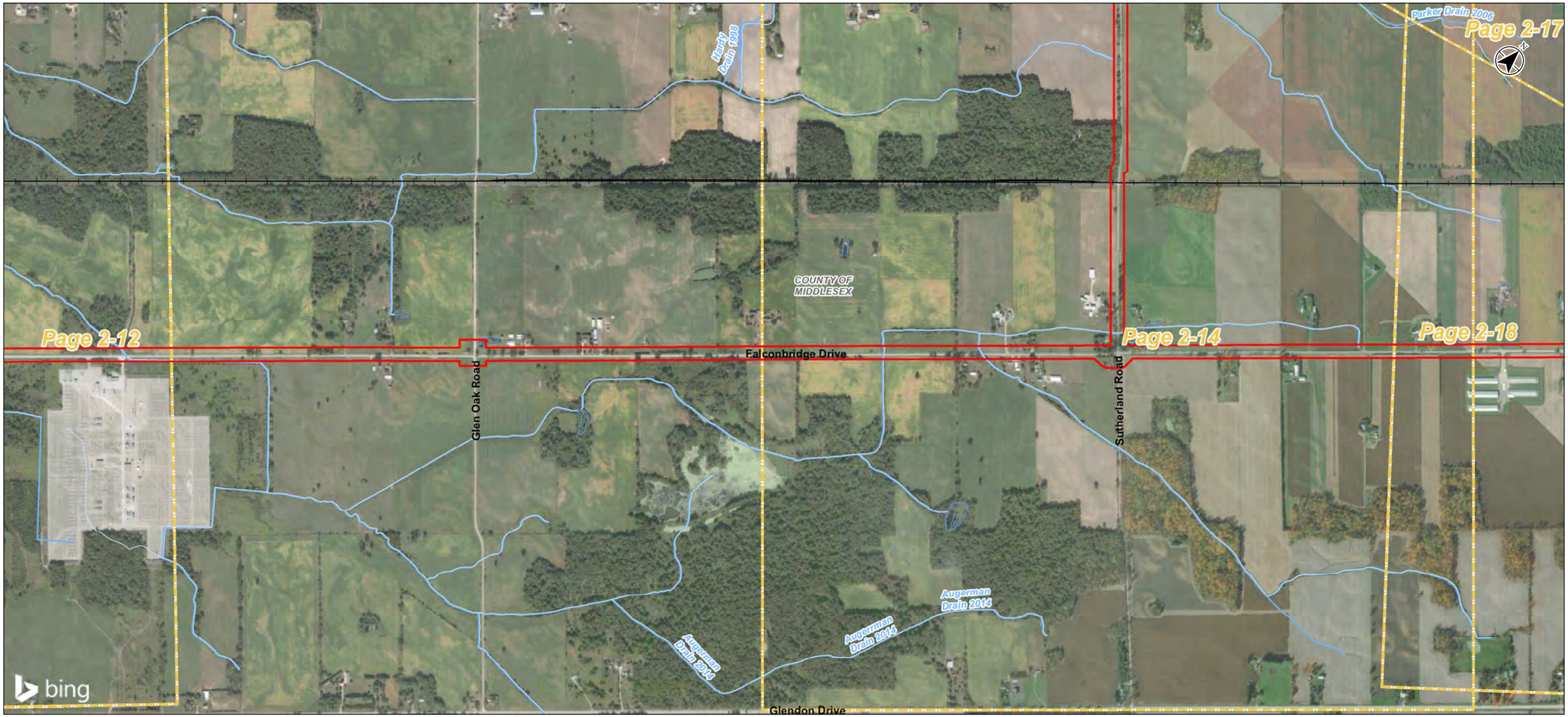

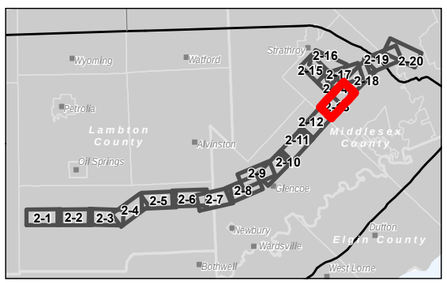

Notes

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Legend

- Study Area
- Railways_lio
- STATUS
  - Railway - Operational
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

Stantec

Project Location	160951170 REVA
Counties of Lambton and Middlesex	Prepared by SPE on 2020-07-09
	Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-13

Title
Study Area Details - Index

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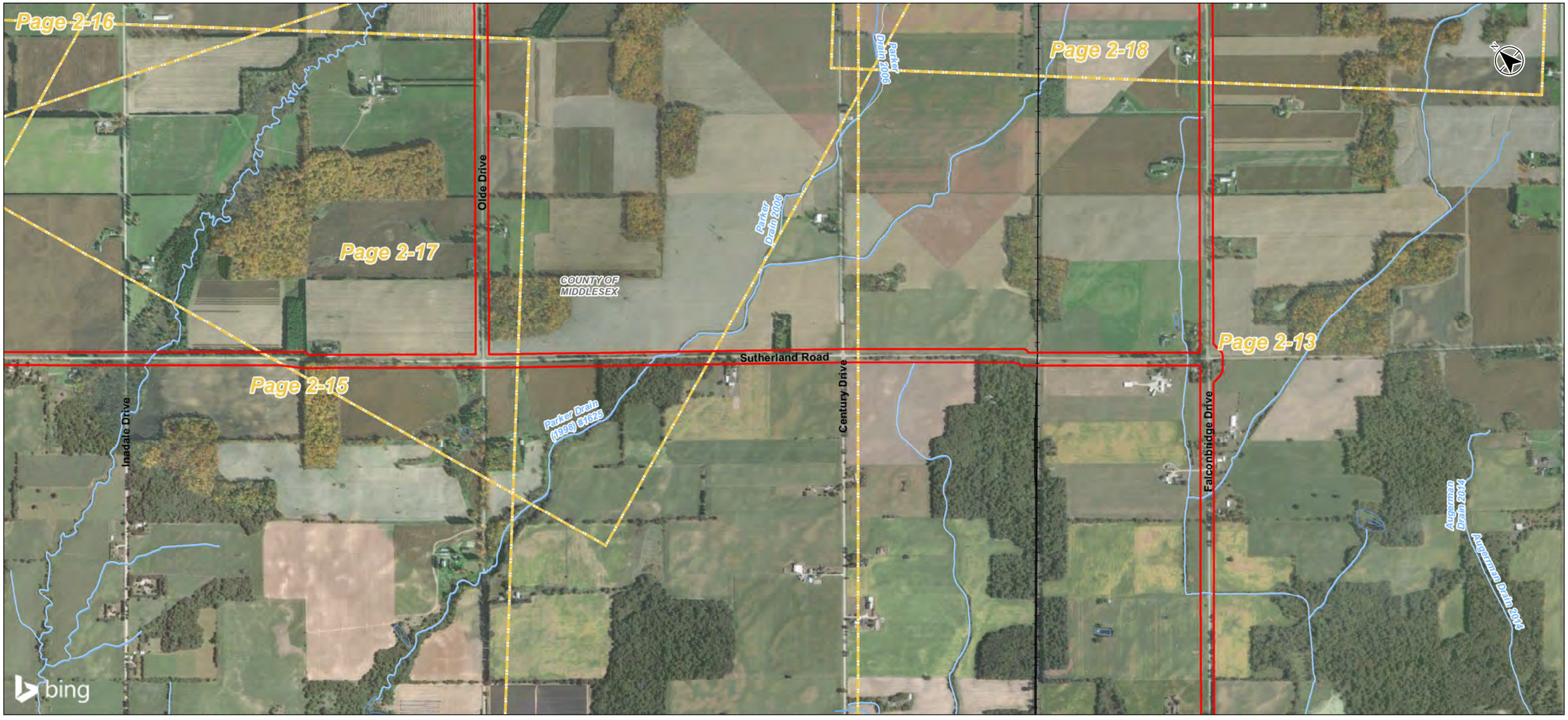

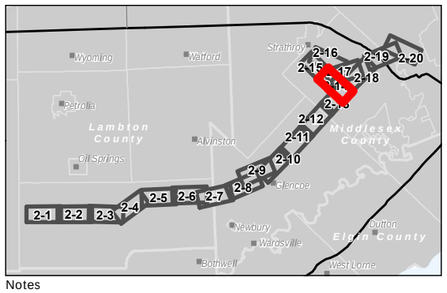

Legend

- Study Area
- Railways_lio
- STATUS
  - Railway - Operational
  - Constructed Drain
  - Watercourse
  - Map Tile Index
  - Municipal Boundary - Lower Tier
  - Municipal Boundary - Upper Tier
  - Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-14

Title
Study Area Details - Index

Notes
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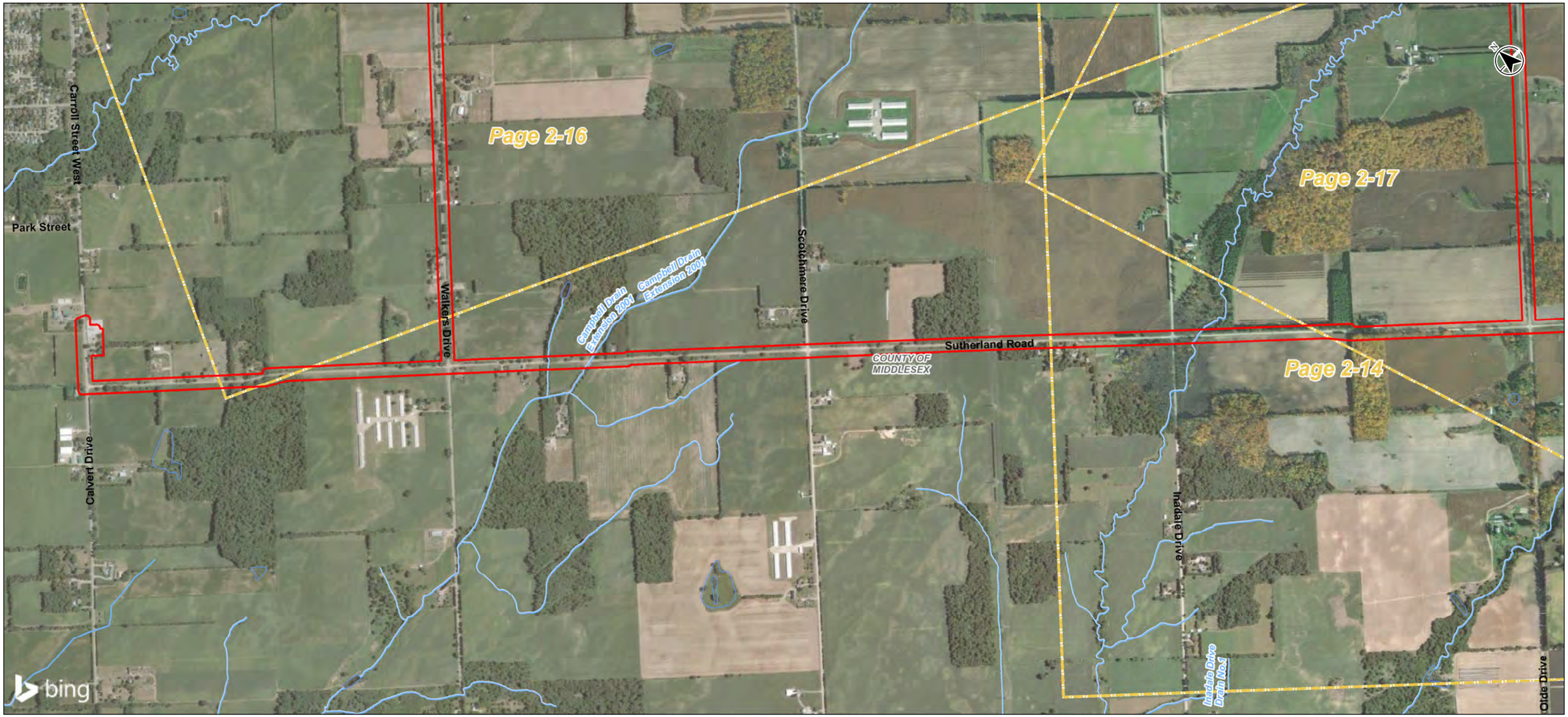

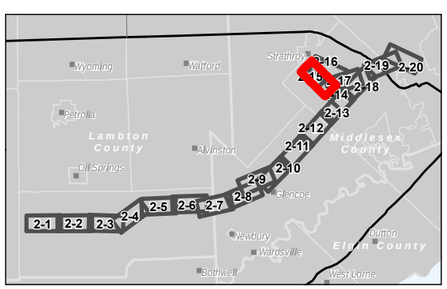

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-15

Title
Study Area Details - Index

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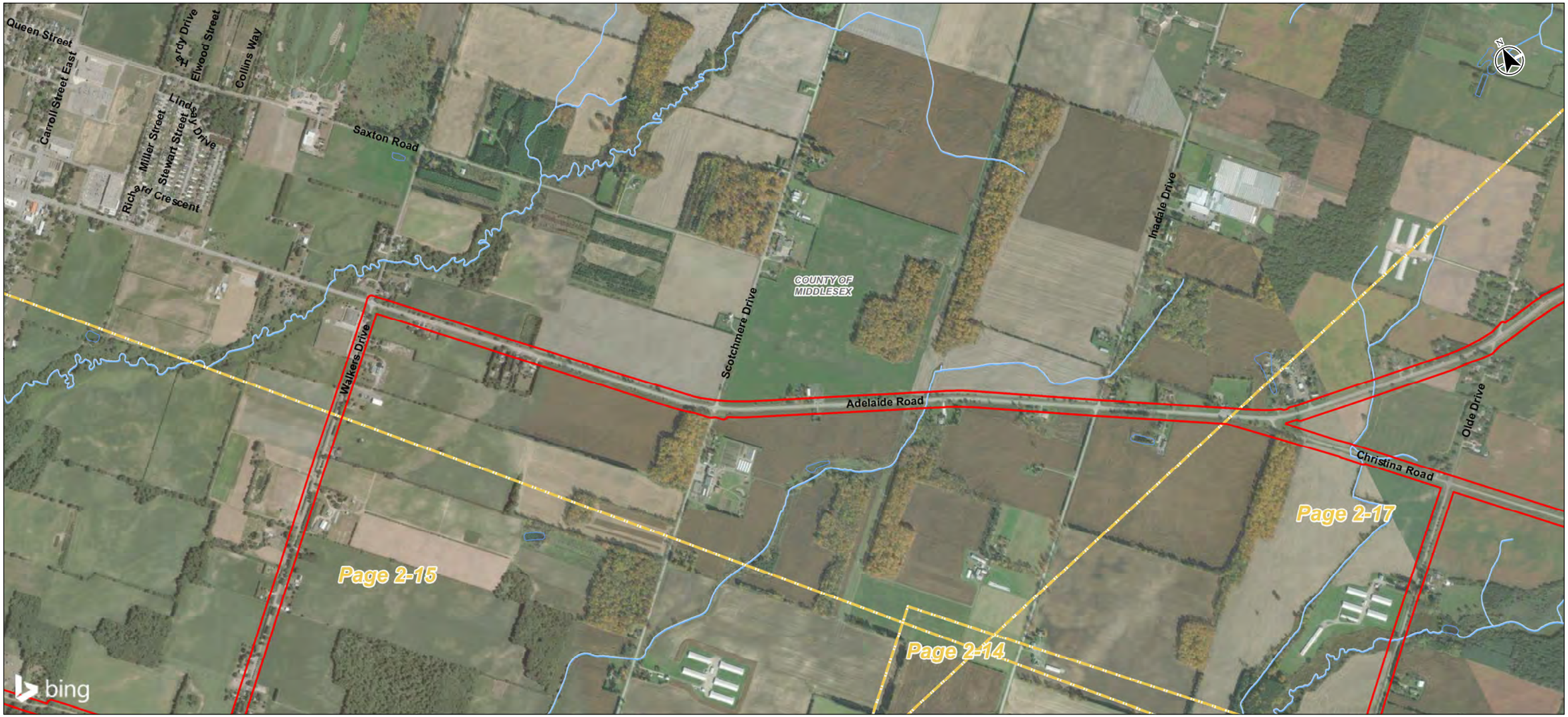

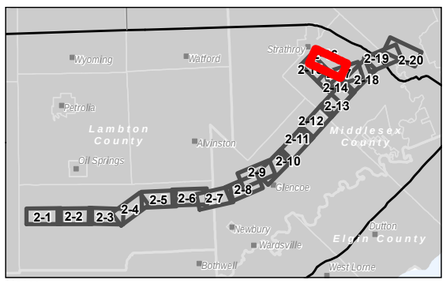

Legend

- Study Area
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

Notes

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Counties of Lambton and Middlesex

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-16

Title
Study Area Details - Index

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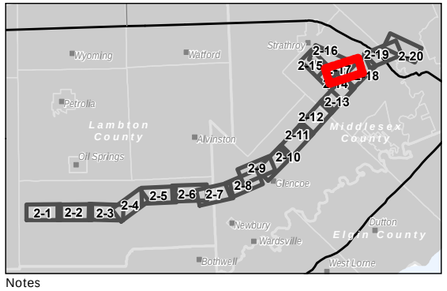

Legend

Study Area

Railways_lio

STATUS

Railway - Operational

Constructed Drain

Watercourse

Map Tile Index

Municipal Boundary - Lower Tier

Municipal Boundary - Upper Tier

Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-17

Title
Study Area Details - Index

Notes
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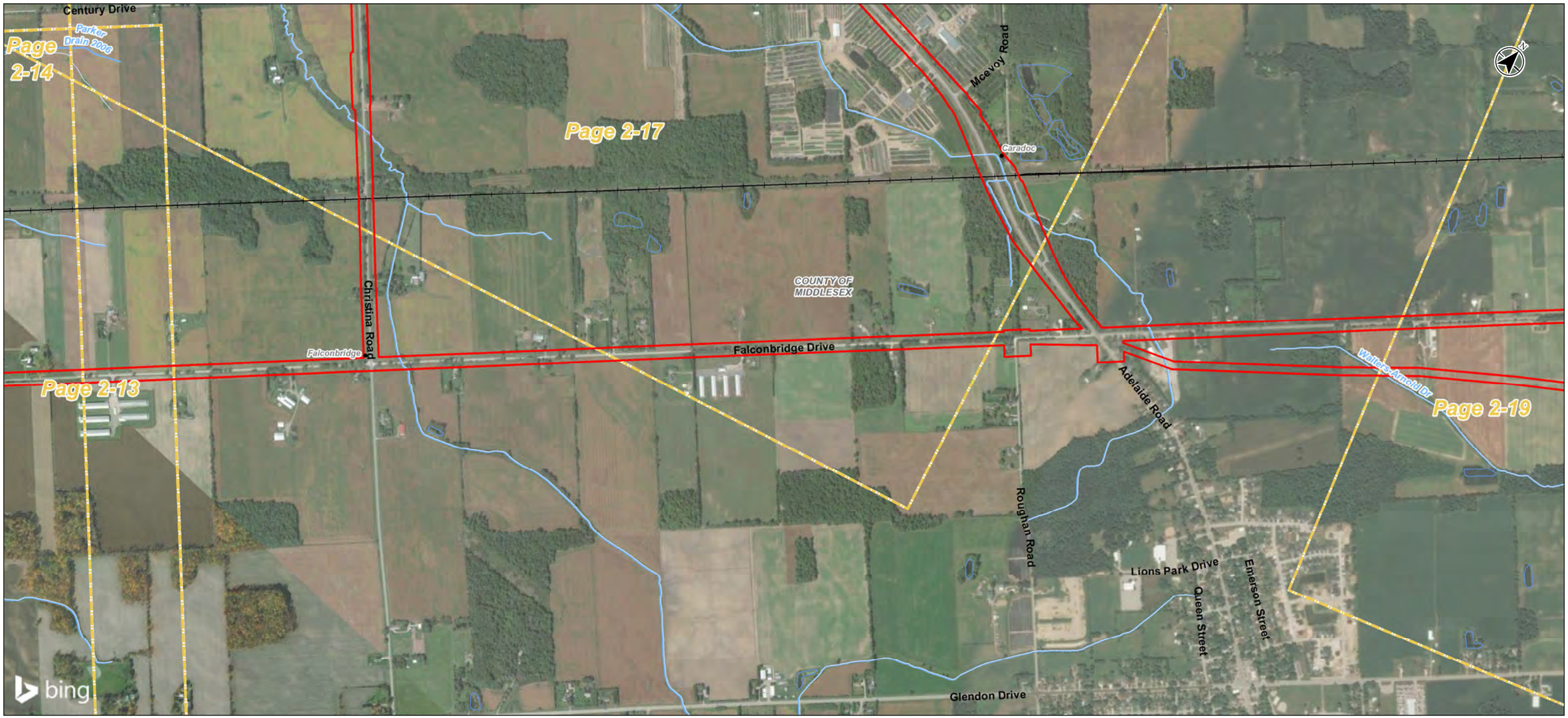

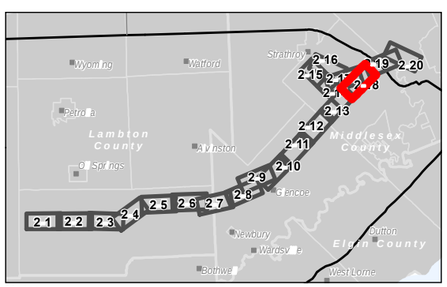

Legend

- Study Area
- Railways_lio
- STATUS
- Railway - Operational
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-18

Title
Study Area Details - Index

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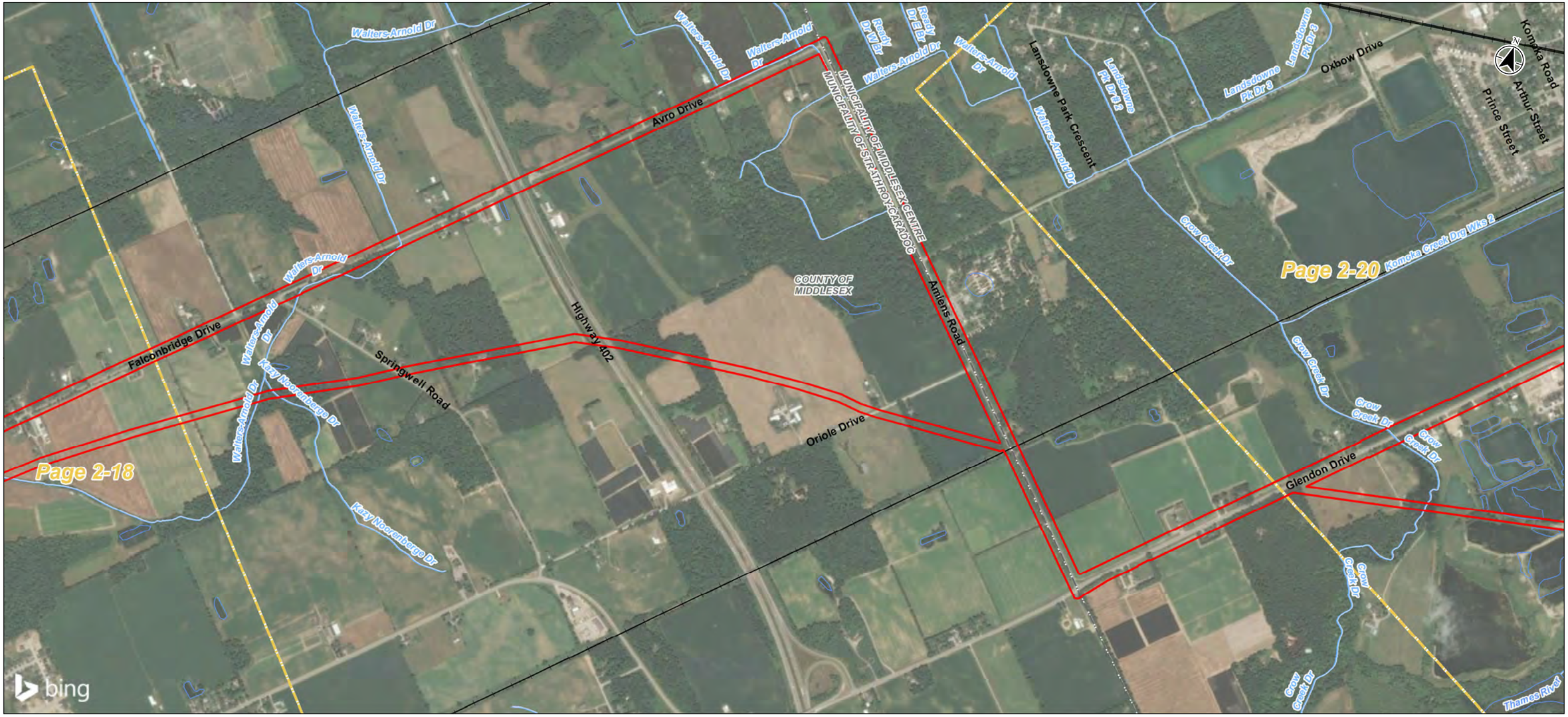

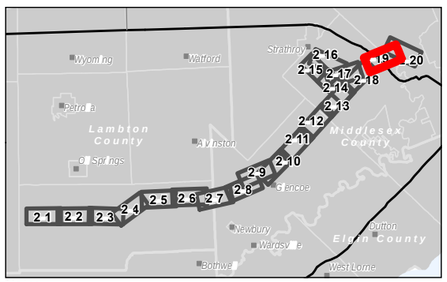

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Legend
- Study Area
- Railways_lio
- STATUS
  - Railway - Operational
- Constructed Drain
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres
1:15,000 (At original document size of 11x17)

Stantec

Project Location Counties of Lambton and Middlesex	160951170 REVA Prepared by SPE on 2020-07-09 Technical Review by BCC on 2020-07-02

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-19

Title
Study Area Details - Index

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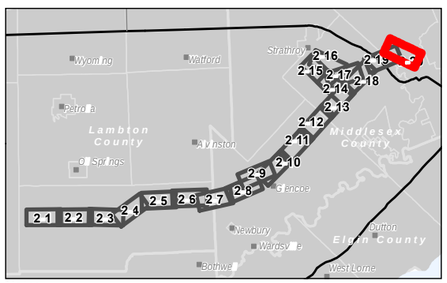

Legend

- Study Area
- Railways_lio
- STATUS
  - Railway - Operational
  - Constructed Drain
  - Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Municipal Boundary - Upper Tier
- Waterbody

0 300 600 metres

1:15,000 (At original document size of 11x17)

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STAGE 1 ARCHAEOLOGICAL ASSESSMENTT

Figure No.
2-20

Title
Study Area Details - Index

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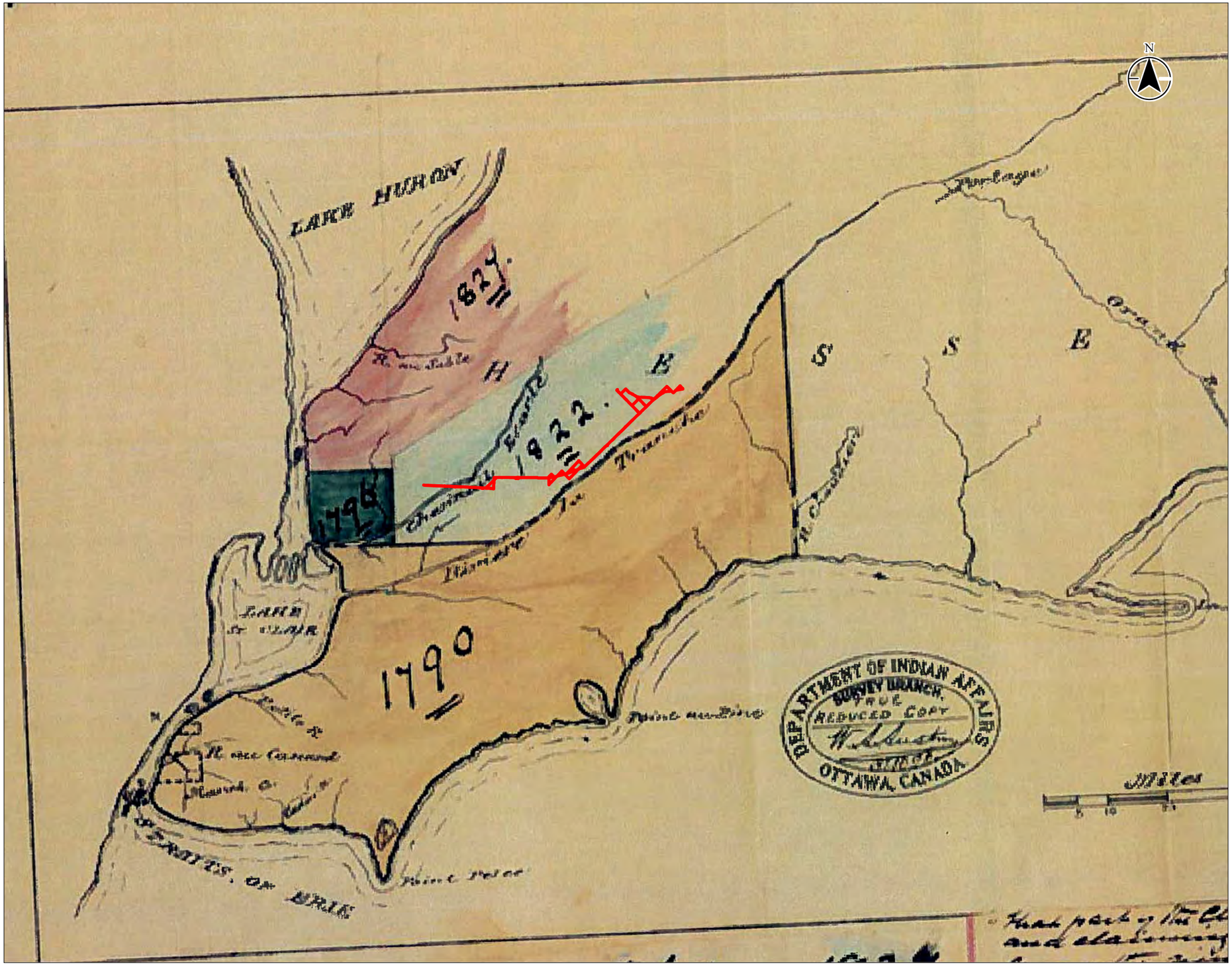

Stantec

Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Government of Canda. n.d.a. Map of Treaty Areas in Upper Canada. Ottawa: Department of Indian Affairs. Survey Branch.

Project Location
Counties of Lambton and Middlesex

160951170
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
3

Title
Map of Treaty Areas of Upper Canada

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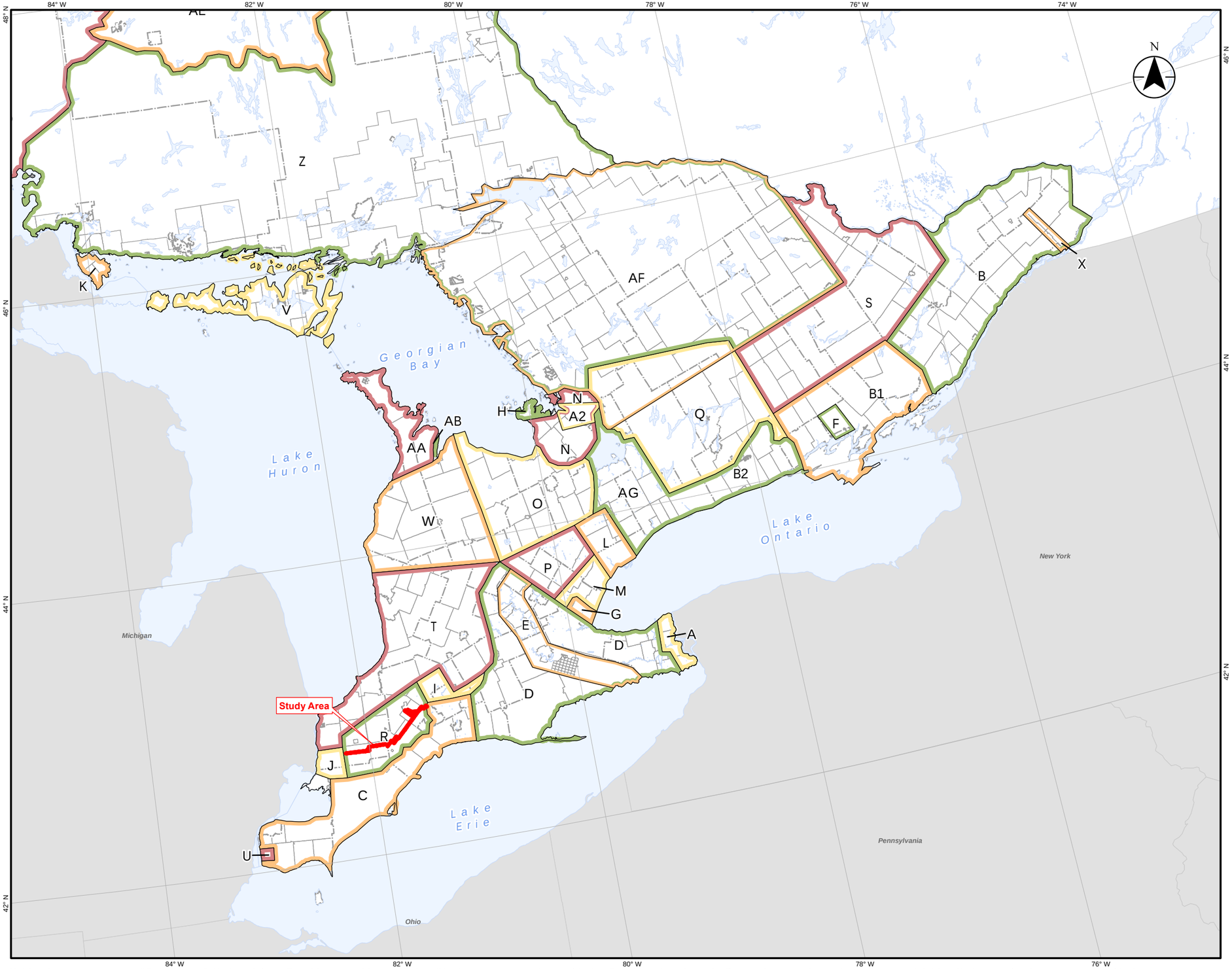

Stantec

Legend

- Study Area
- Watercourse
- Waterbody
- Municipal Boundary - Upper Tier
- Municipal Boundary - Lower or Single Tier

Ontario Treaties (from Morris 1943)

A- Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
A2- John Collins' Purchase, 1785 (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)
AG- Williams Treaty, October 31st, 1923 (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)
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)

0 50 100 Km

1:3,000,000 (At original document size of 11x17)

Notes
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Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
4

Title
Treaties and Purchases
(Adapted from Morris 1943)

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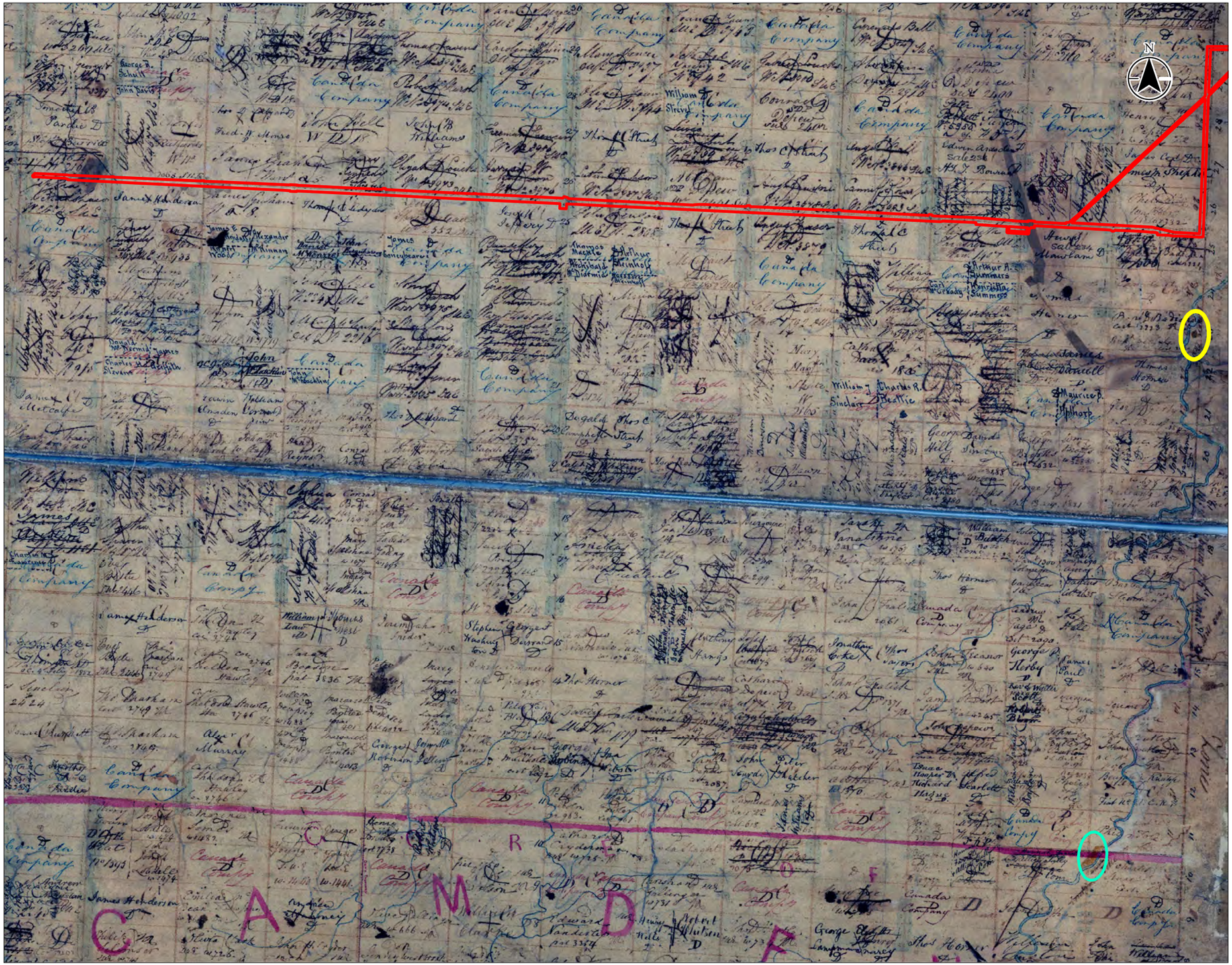

Stantec

Legend

- Study Area (Approximate)
- Indian Clearings
- Indian Village

Notes
1. Not to scale.
2. Source: Government of Ontario. n.d. Crown Land Surveys. Personal communication: Lisa Casselman, Survey Records Clerk, Ministry of Natural Resources and Forestry.

Project Location
Counties of Lambton and Middlesex

160951170
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
5

Title
Portion of the 1821 Plan of Dawn Township

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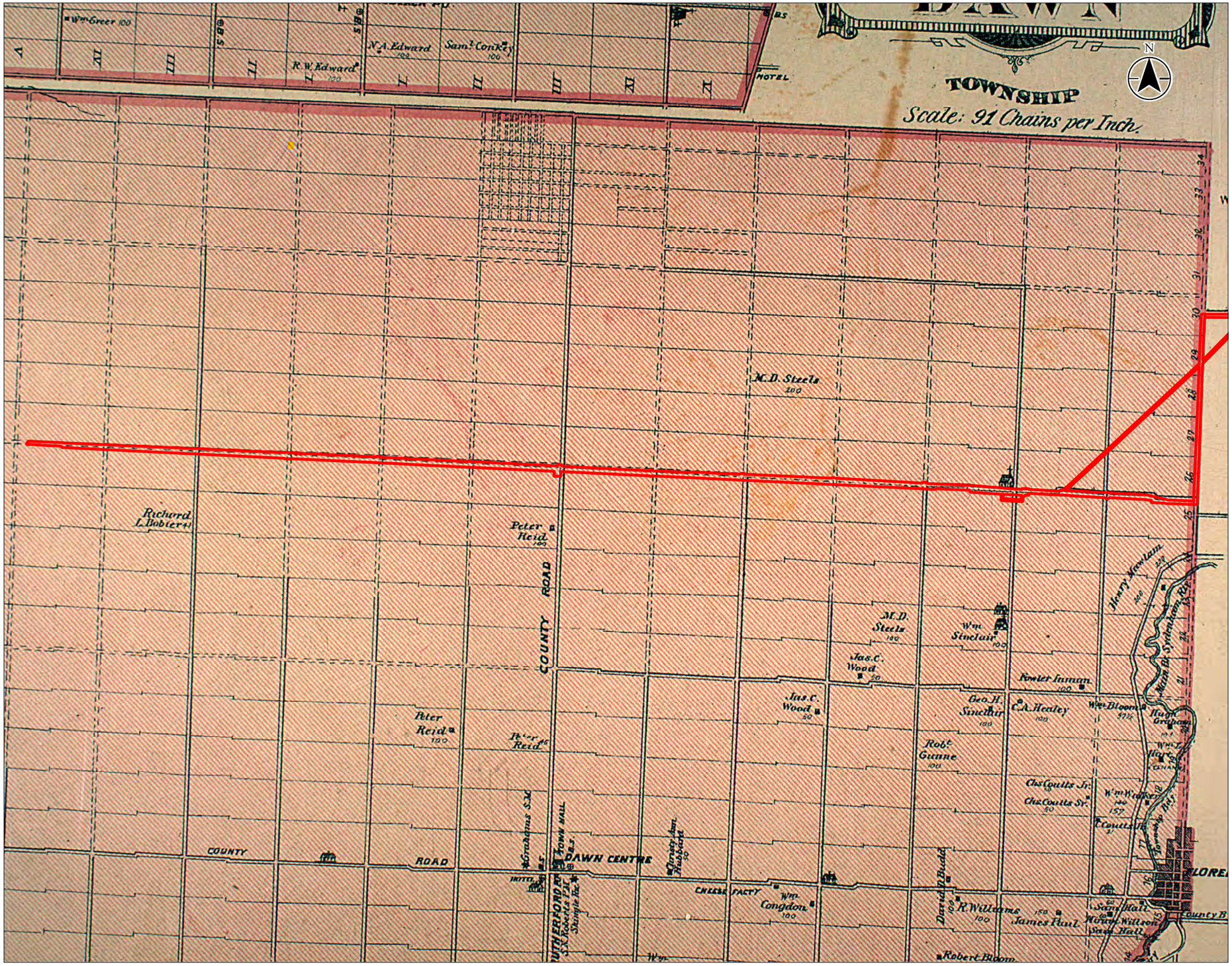

Stantec

Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Belden & Co. 1880. Lambton County Supplement to the Illustrated Atlas of the Dominion of Canada. Toronto: H. Belden & Co.

Project Location
Counties of Lambton and Middlesex

160951170
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
6

Title
Portion of the 1880 Historical Map of Dawn Township

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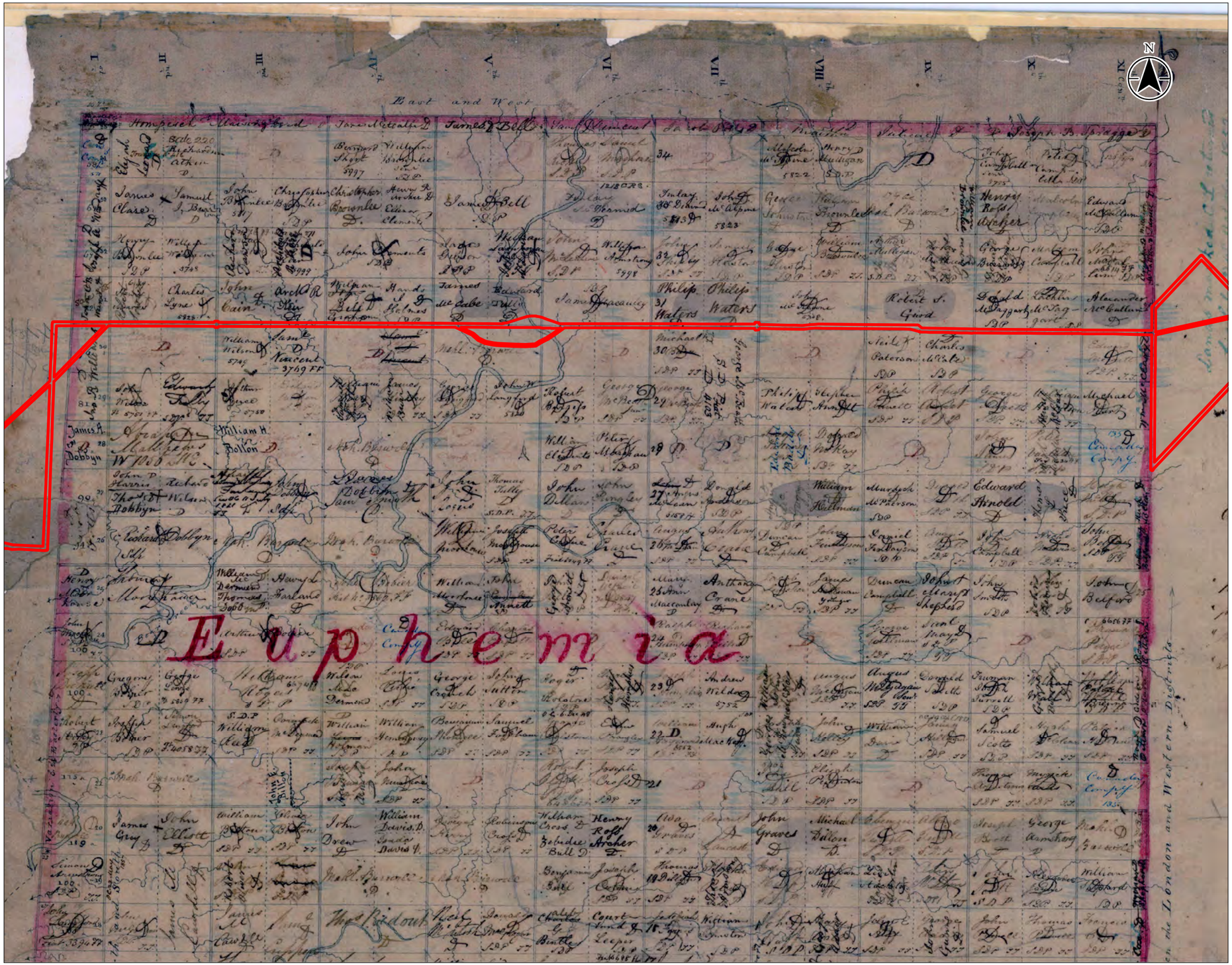

Stantec

Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Smith, Samuel. 1822. Township of Zone. Map D8. Survey Record No. 2398. Ontario Ministry of Natural Resources and Forestry, Peterborough.

Project Location
Counties of Lambton and Middlesex

160951170
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
7

Title
Portion of the 1821 Plan of Euphemia Township

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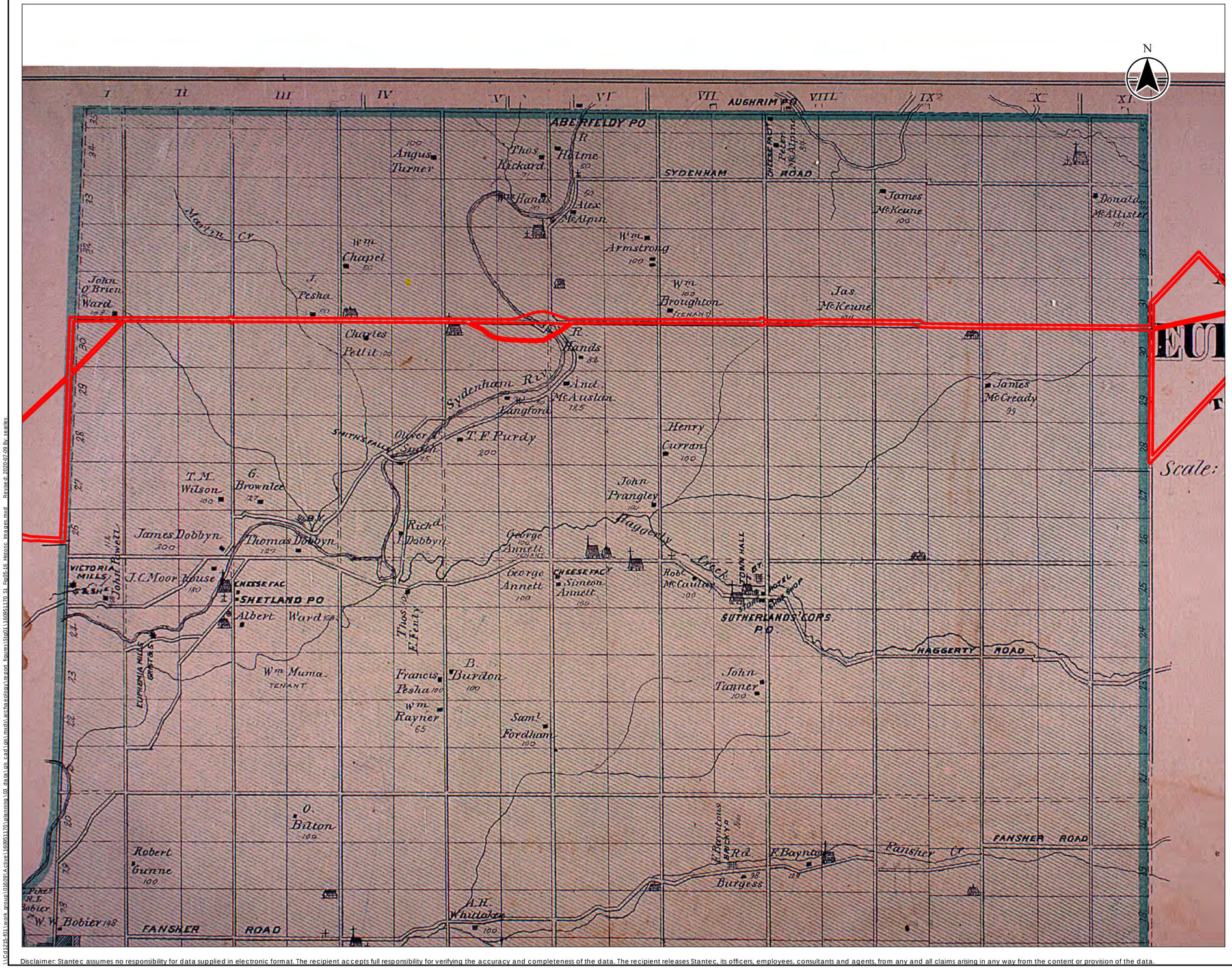

Stantec

Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Belden & Co. 1880. Lambton County Supplement to the Illustrated Atlas of the Dominion of Canada. Toronto: H. Belden & Co.

Project Location
Counties of Lambton and Middlesex

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Client/Project
ENBRIDGE GAS INC.
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
8

Title
Portion of the 1880 Historical Map of Euphemia Township

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Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Burwell, Colonel Malcolm. 1820. Township of Mosa. Map B8. Survey Record No. 1709. Ontario Ministry of Natural Resources and Forestry, Peterborough.

Project Location
Counties of Lambton and Middlesex

160951170
Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
9

Title
Portion of the 1820 Plan of Mosa Township

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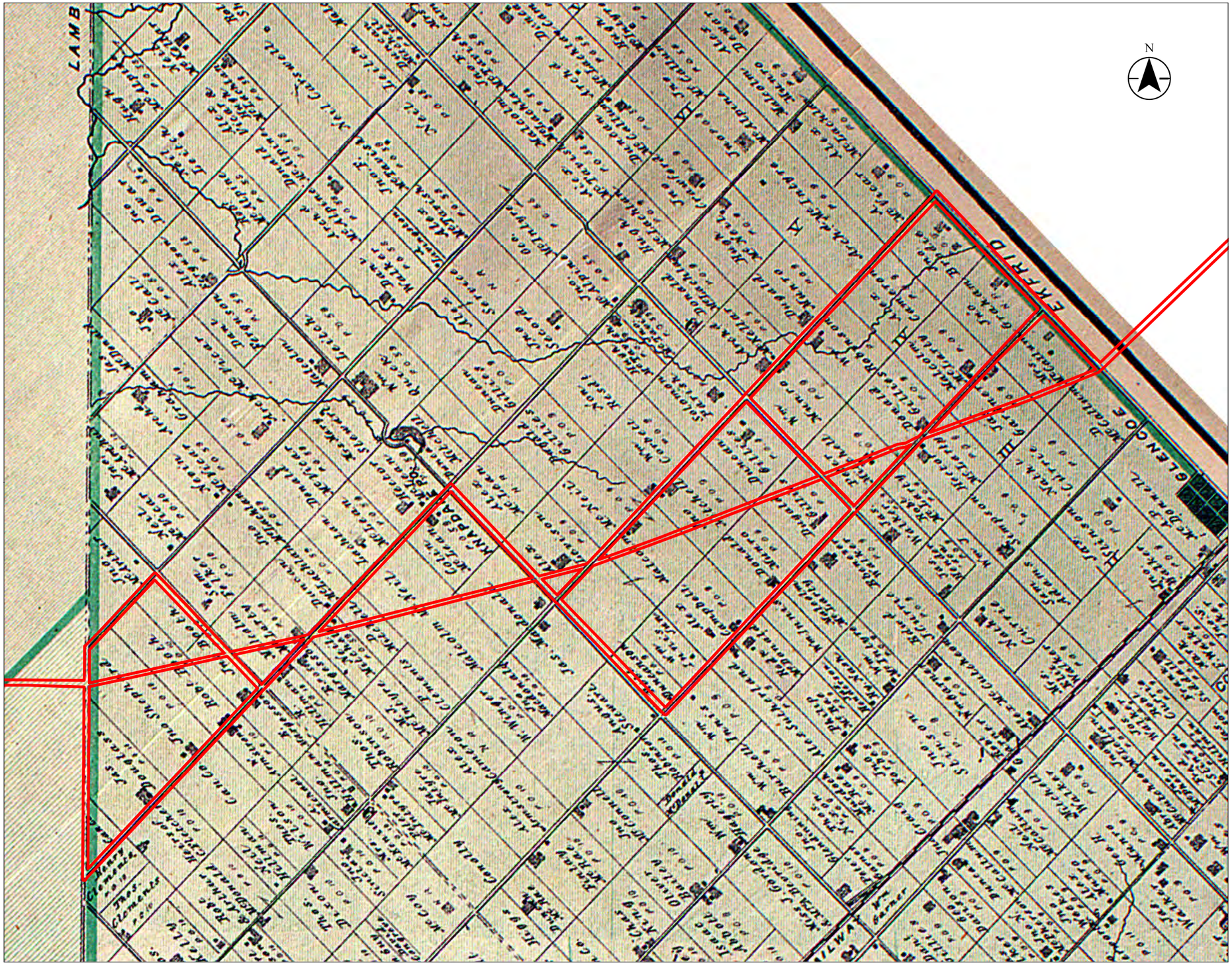

Stantec

Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Page, H.R. & Co. 1878. Illustrated Historical Atlas of the County of Middlesex. Toronto: Correll, Craig & Co. Lith. Toronto.

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
10

Title
Portion of the 1878 Historical Map of Mosa Township

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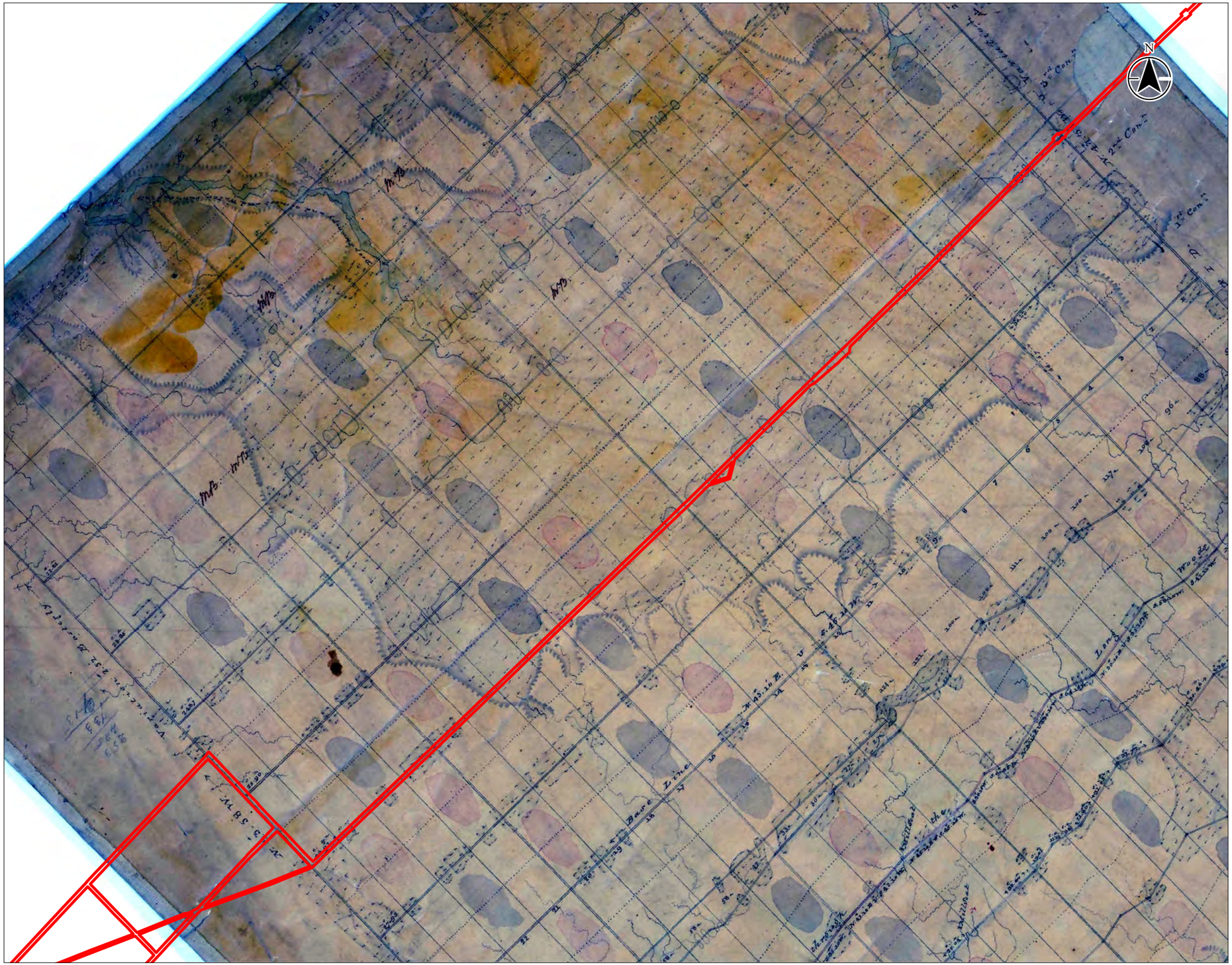

Stantec

Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Burwell, Colonel Malcolm. 1820. Township of Ekfrid. Map B5. Survey Record No. 957. Ontario Ministry of Natural Resources and Forestry, Peterborough.

Project Location	160951170
Counties of Lambton and Middlesex	Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
11

Title
Portion of the 1820 Plan of Ekfrid Township

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Stantec

Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Page, H.R. & Co. 1878. Illustrated Historical Atlas of the County of Middlesex. Toronto: Correll, Craig & Co. Lith. Toronto.

Project Location
Counties of Lambton and Middlesex

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
12

Title
Portion of the 1878 Historical Map of Ekfrid Township

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Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Burwell, Colonel Malcolm. 1821. Township of Caradoc. Map No. 9. Survey Record No. 725. Ontario Ministry of Natural Resources and Forestry, Peterborough.

Project Location Counties of Lambton and Middlesex	160951170 Prepared by SPE on 2020-07-09 Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
13

Title
Portion of the 1821 Plan of Caradoc Township

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Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Page, H.R. & Co. 1878. Illustrated Historical Atlas of the County of Middlesex. Toronto: Correll, Craig & Co. Lith. Toronto.

Project Location
Counties of Lambton and Middlesex

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Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
14

Title
Portion of the 1878 Historical Map of Caradoc Township

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Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Burwell, Colonel Malcolm. 1821b. Township of Lobo. Map No. 26. Survey Record No. 1425. Ontario Ministry of Natural Resources and Forestry, Peterborough.

Project Location
Counties of Lambton and Middlesex

160951170
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Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
15

Title
Portion of the 1821 Plan of Lobo Township

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Legend

Study Area (Approximate)

Notes
1. Not to scale.
2. Source: Page, H.R. & Co. 1878. Illustrated Historical Atlas of the County of Middlesex. Toronto: Correll, Craig & Co. Lith. Toronto.

Project Location
Counties of Lambton
and Middlesex

160951170
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
16

Title
Portion of the 1878 Historical Map of Lobo Township

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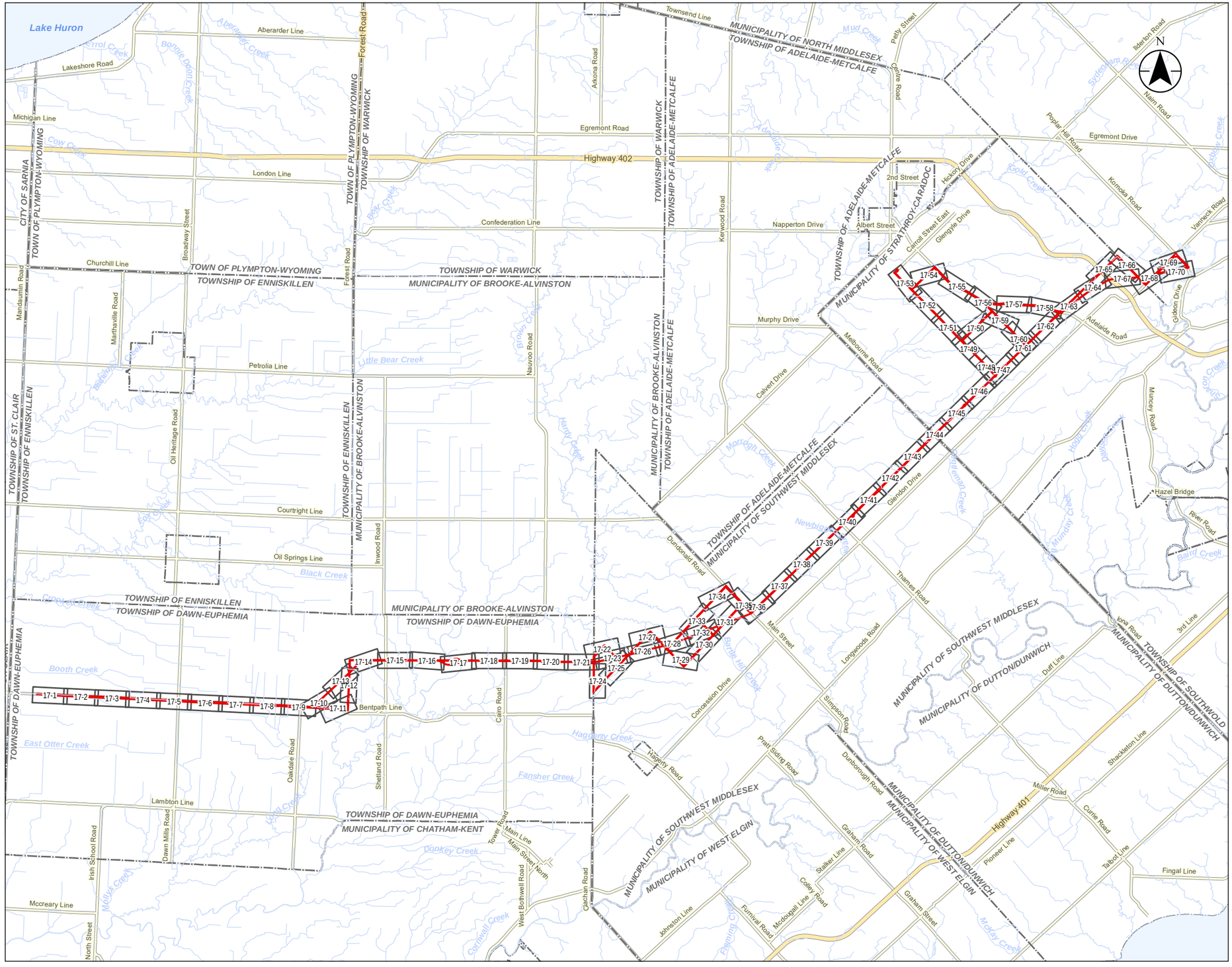

Stantec

Legend

- Study Area
- Expressway / Highway
- Major Road
- Watercourse
- Map Tile Index
- Municipal Boundary - Lower Tier
- Waterbody

0 5 10 Kilometers

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Notes

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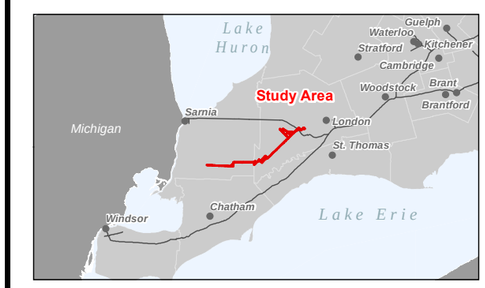

Project Location
Counties of Lambton and Middlesex

160951170
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-0

Title
Results Overview – Stage 1 Results

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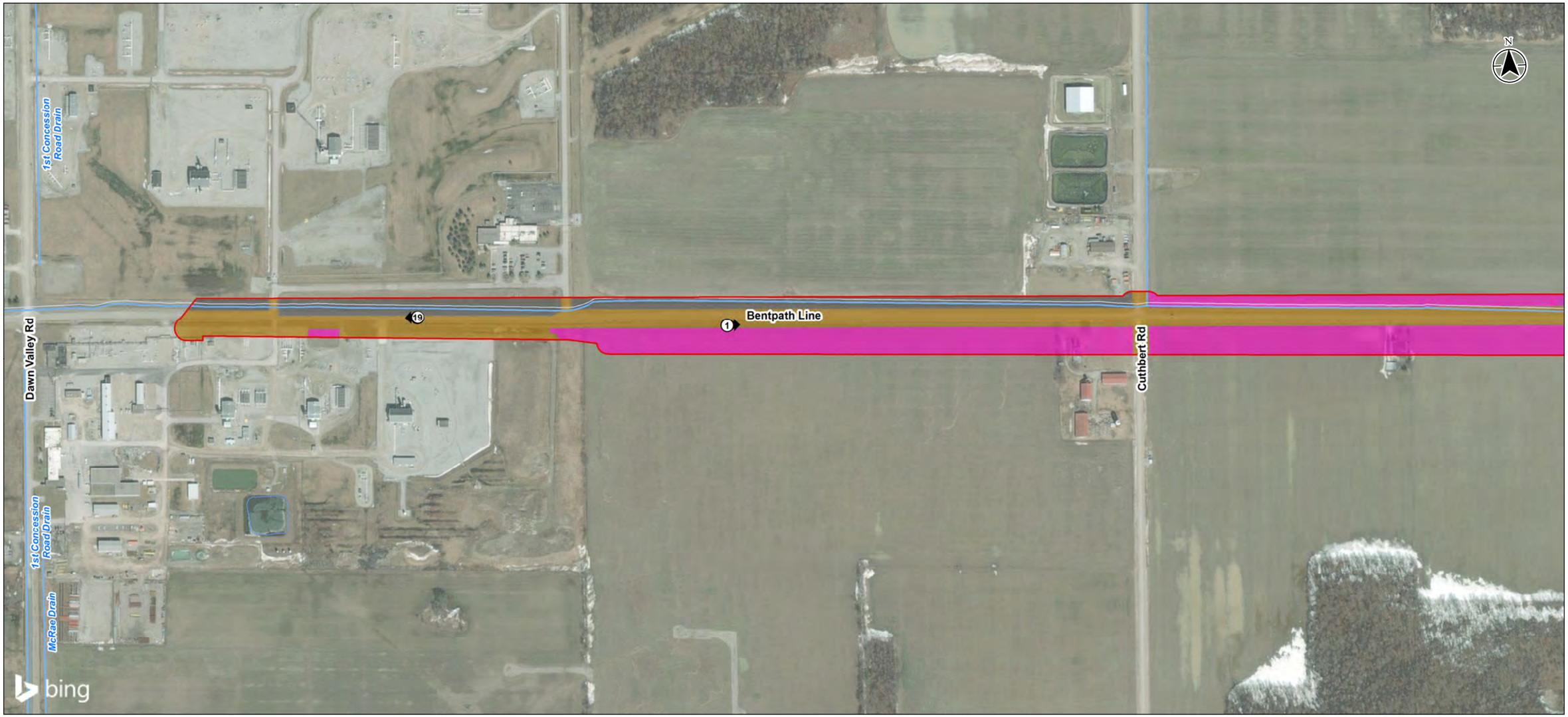

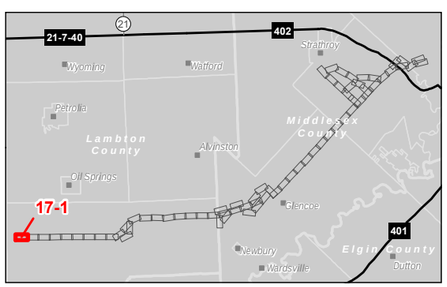

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Assessed, No Further Archaeological Work Required (Stantec 2015)

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-1

Title
Results Index – Stage 1 Results

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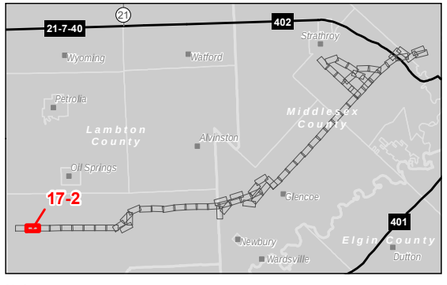

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-2

Title
Results Index – Stage 1 Results

Notes

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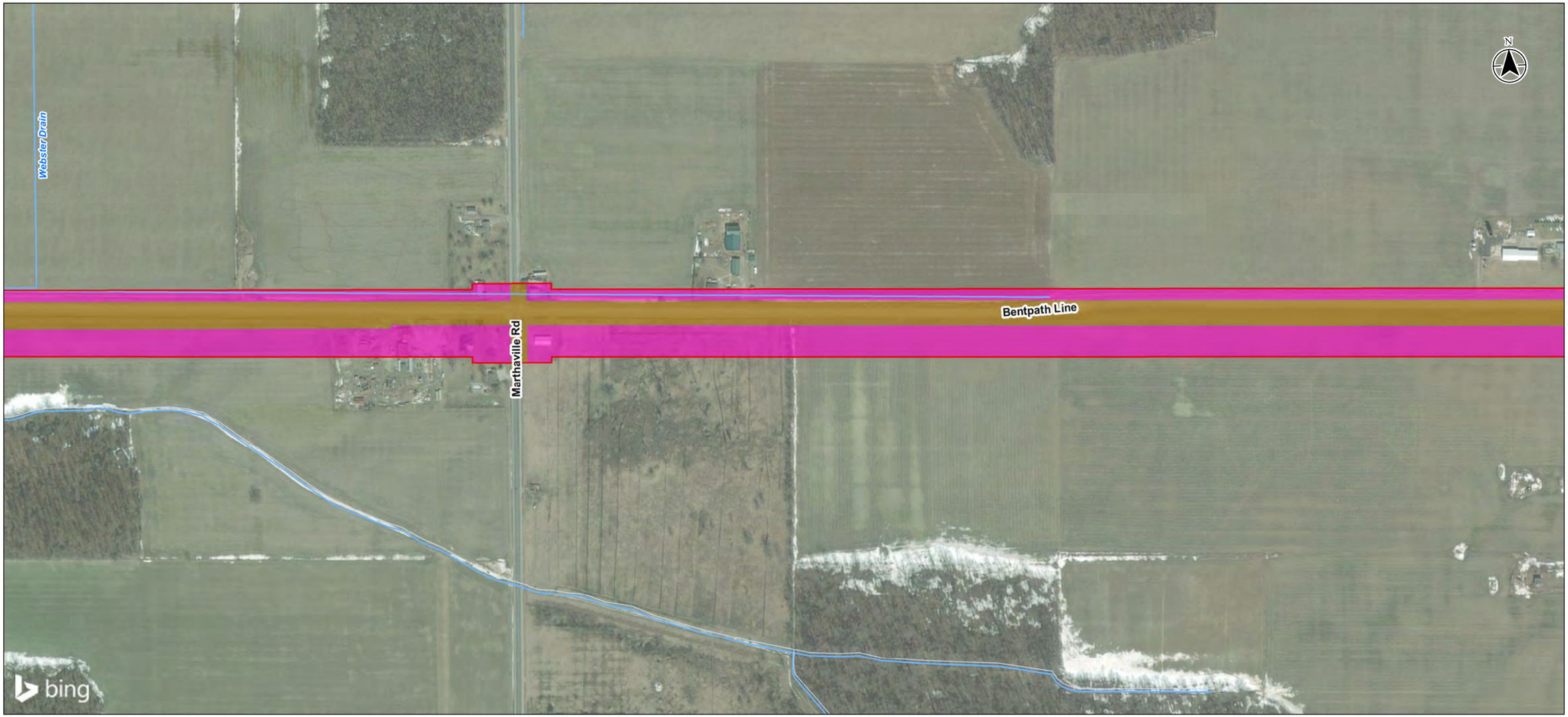

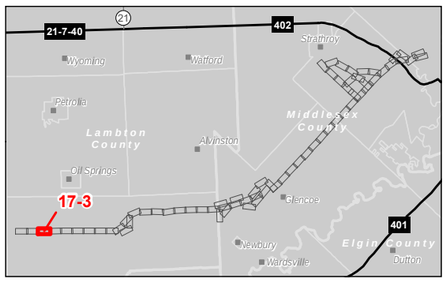

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-3

Title
Results Index – Stage 1 Results

Notes

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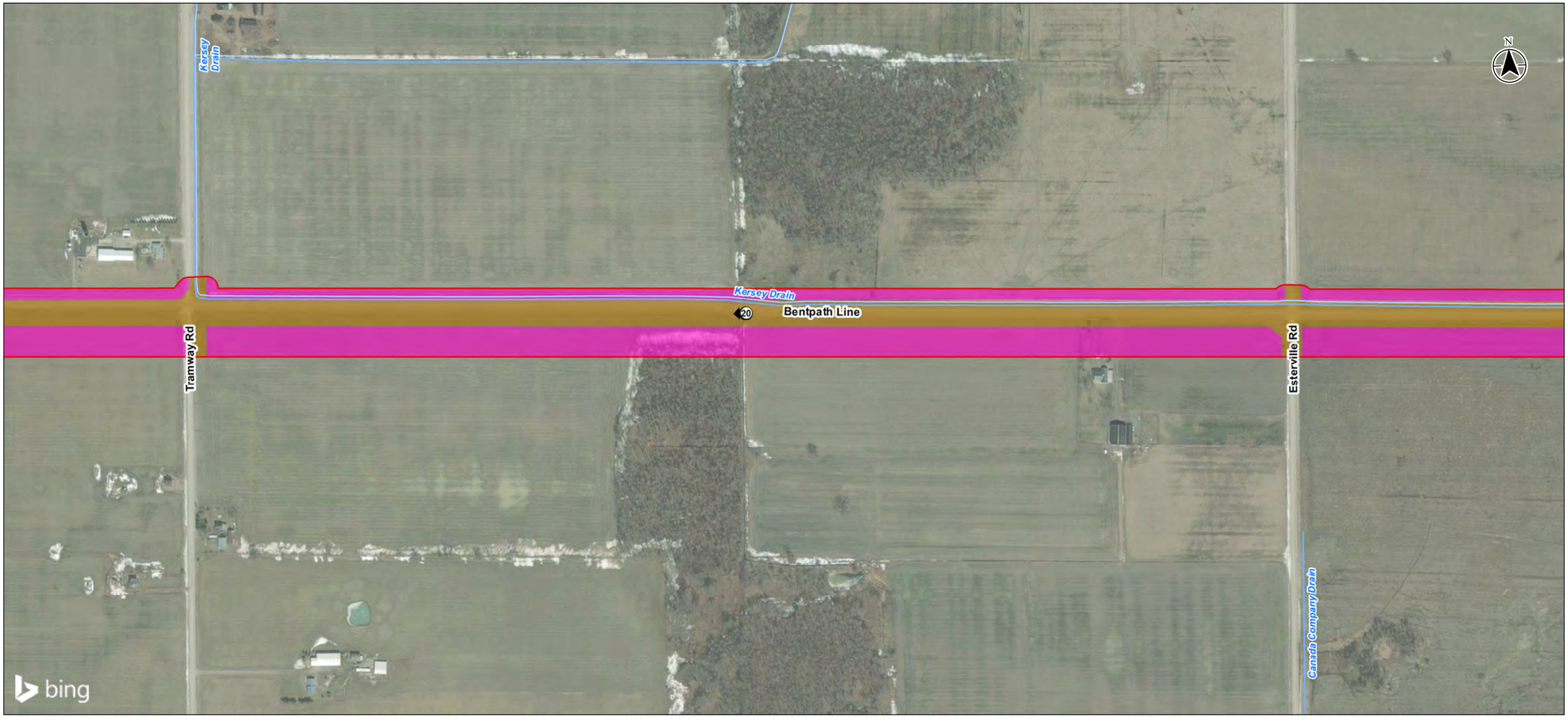

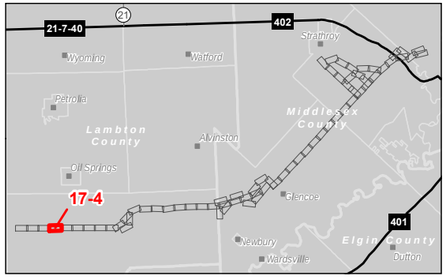

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-4

Title
Results Index – Stage 1 Results

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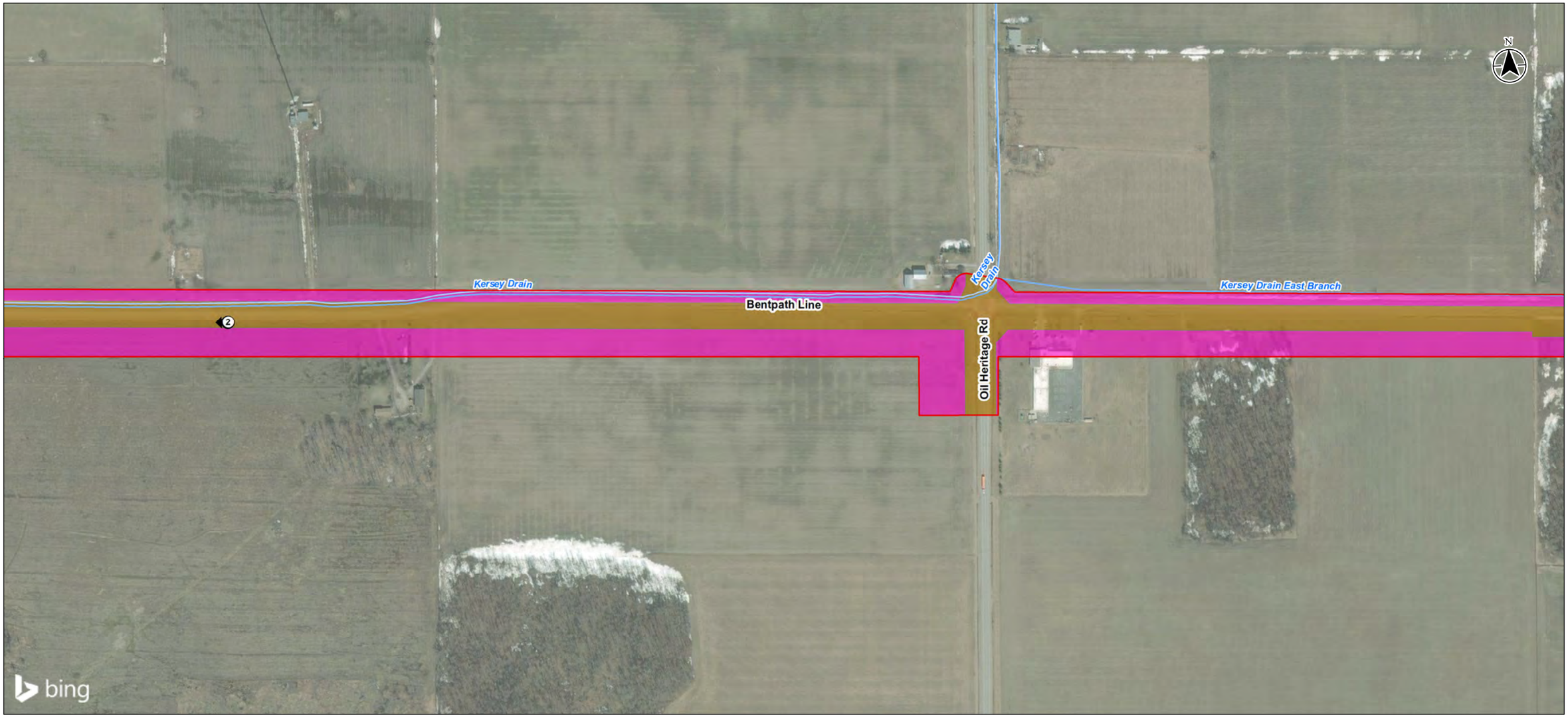

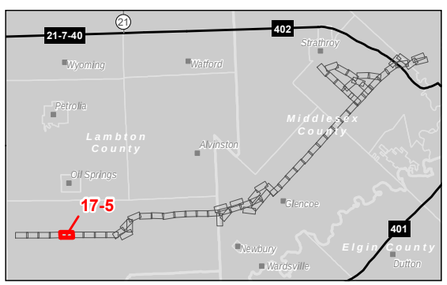

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-5

Title
Results Index – Stage 1 Results

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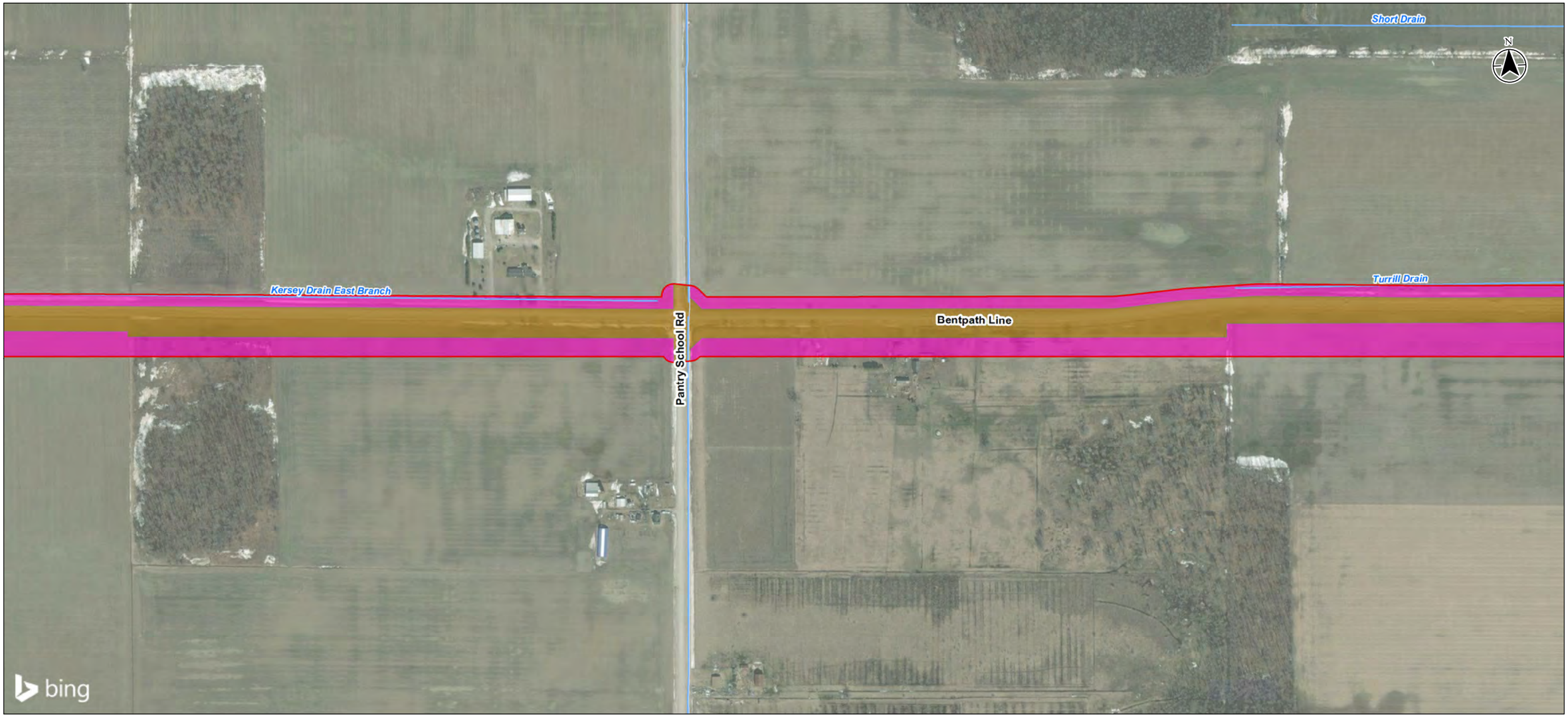

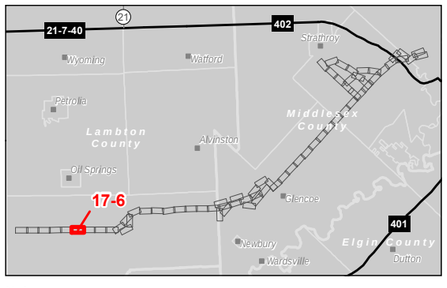

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-6

Title
Results Index – Stage 1 Results

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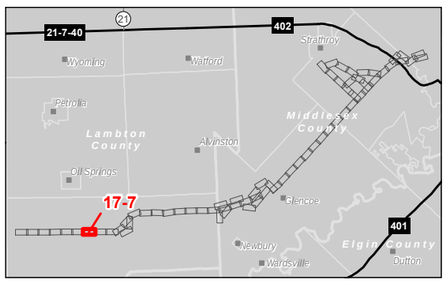

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-7

Title
Results Index – Stage 1 Results

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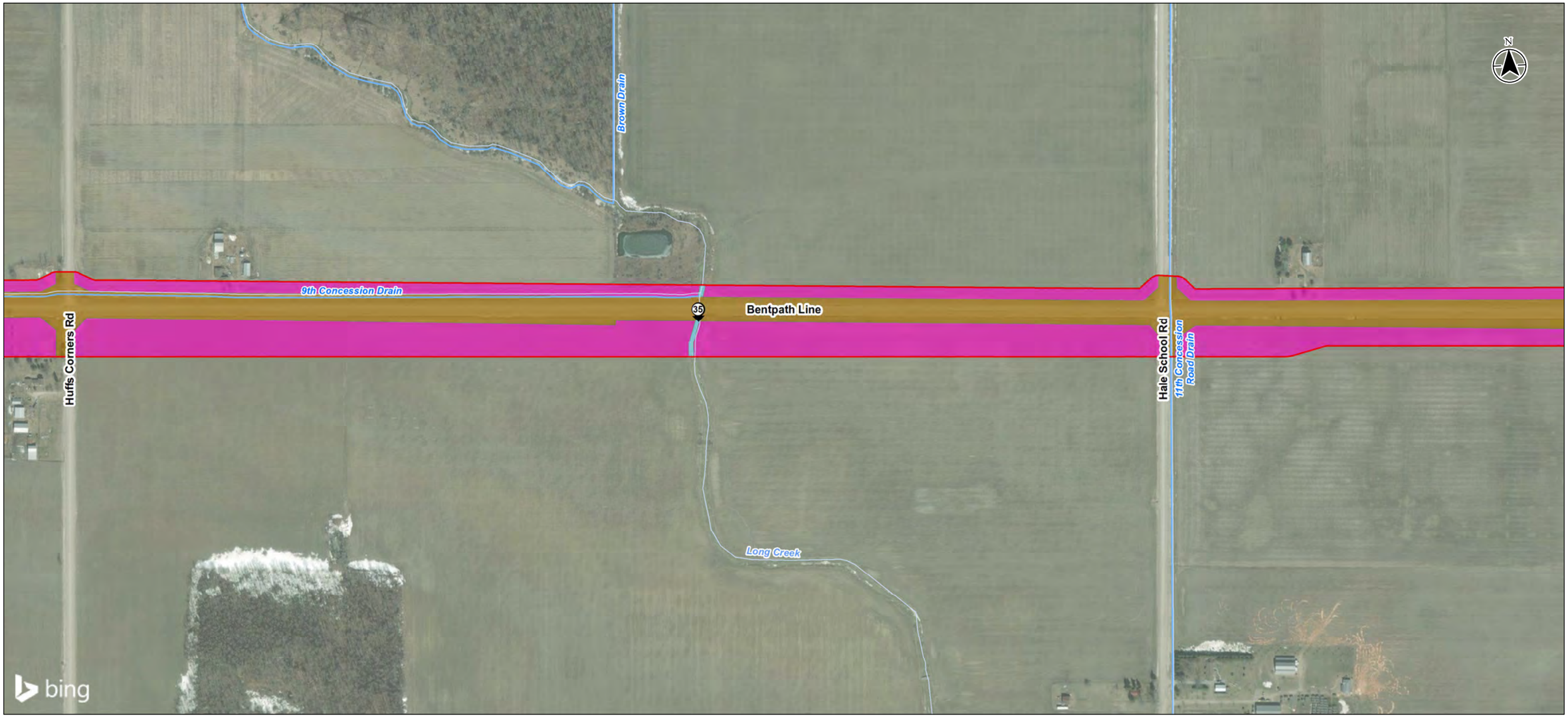

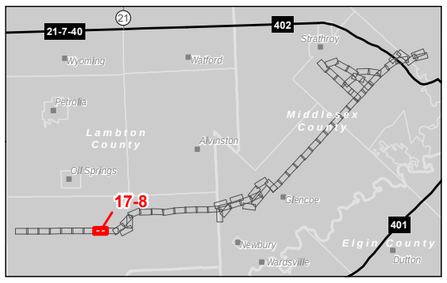

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Low and Permanently Wet Area, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-8

Title
Results Index – Stage 1 Results

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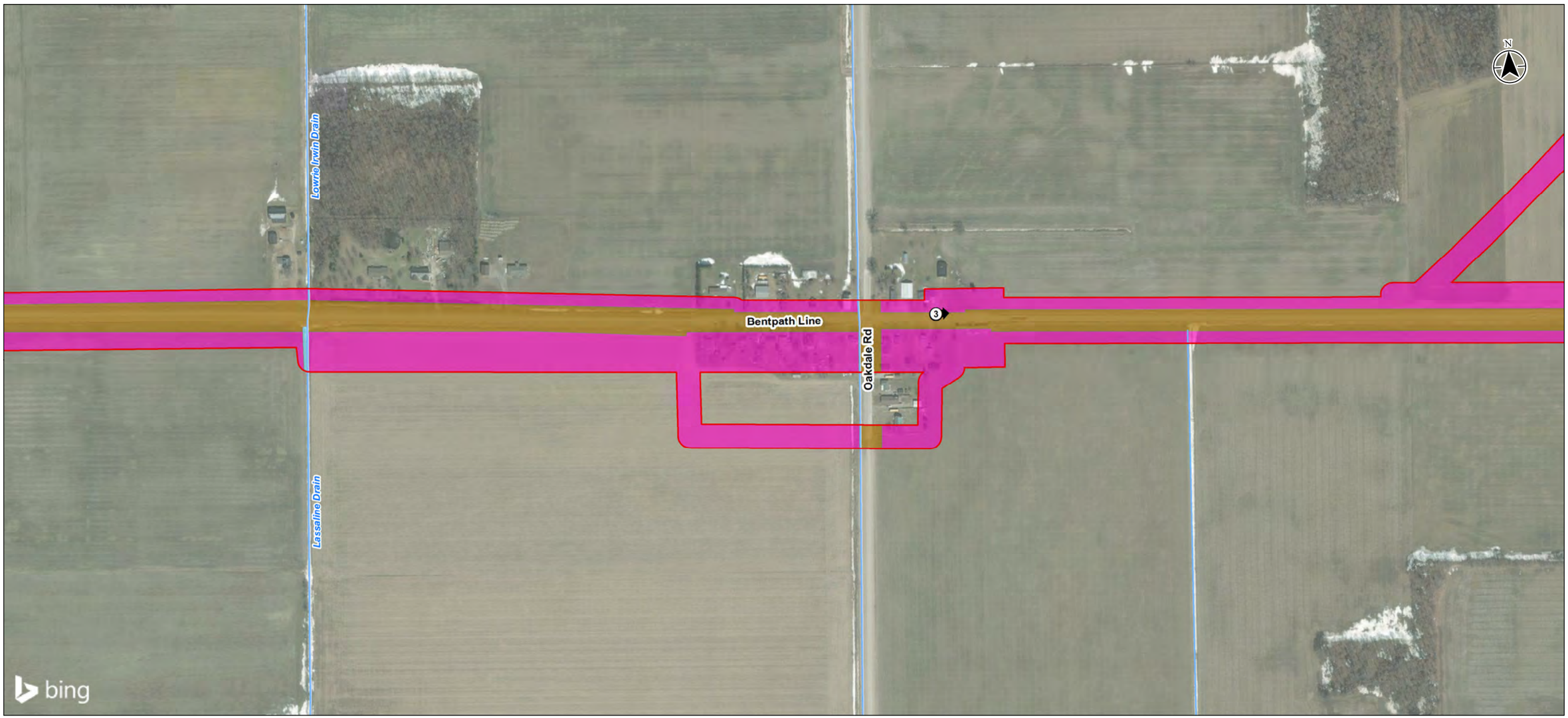

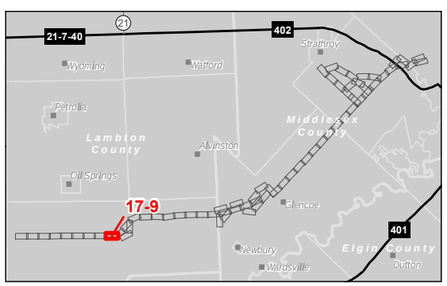

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Low and Permanently Wet Area, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-9

Title
Results Index – Stage 1 Results

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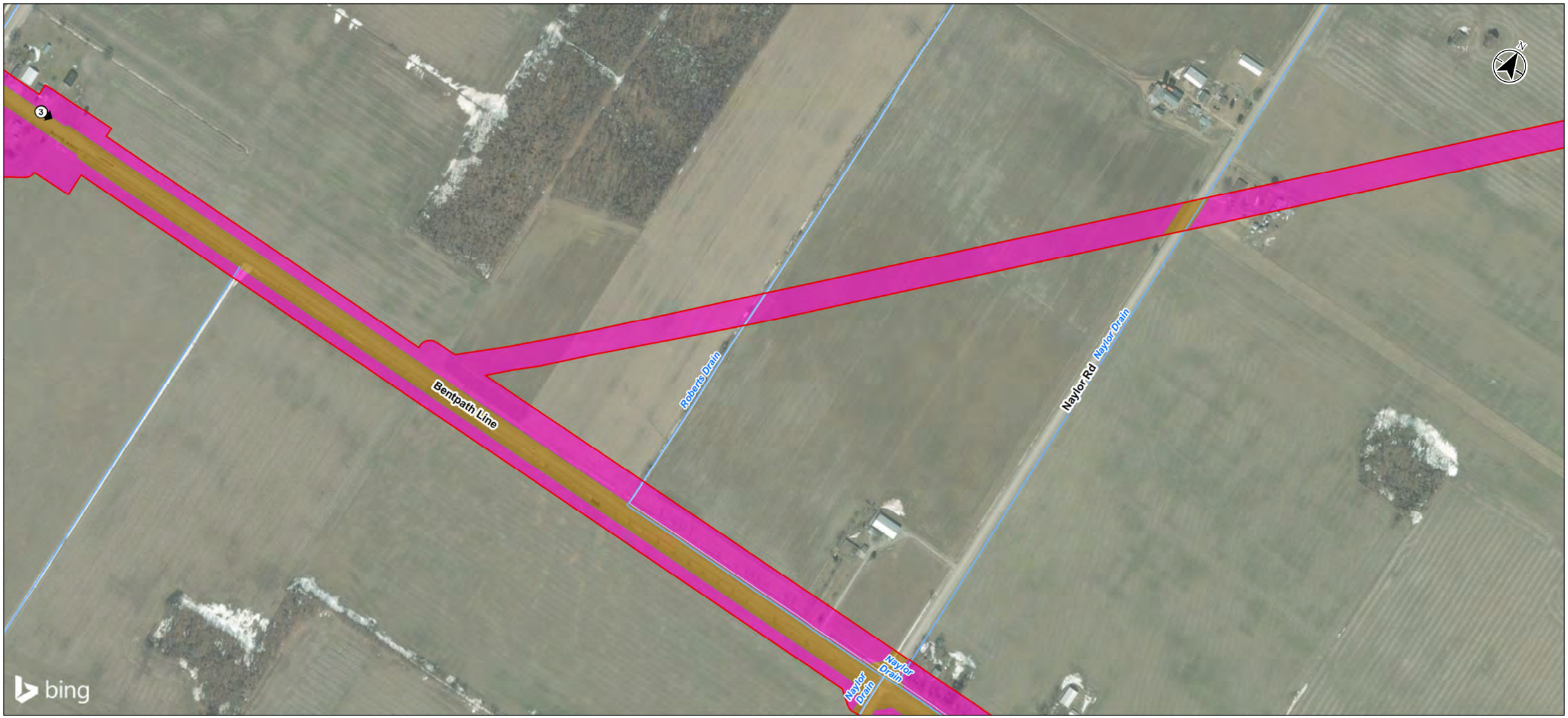

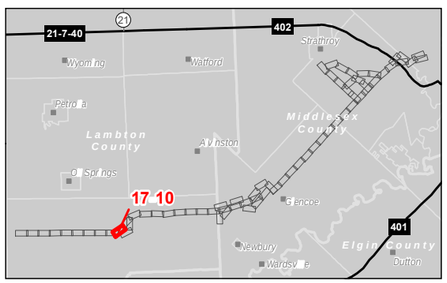

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-10

Title
Results Index – Stage 1 Results

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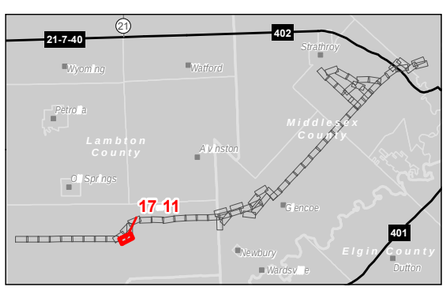

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-11

Title
Results Index – Stage 1 Results

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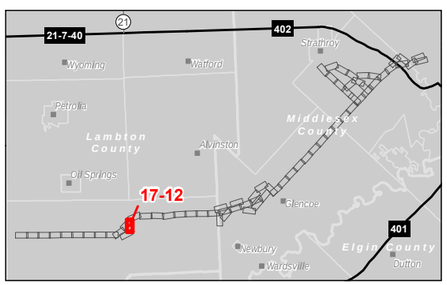

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-12

Title
Results Index – Stage 1 Results

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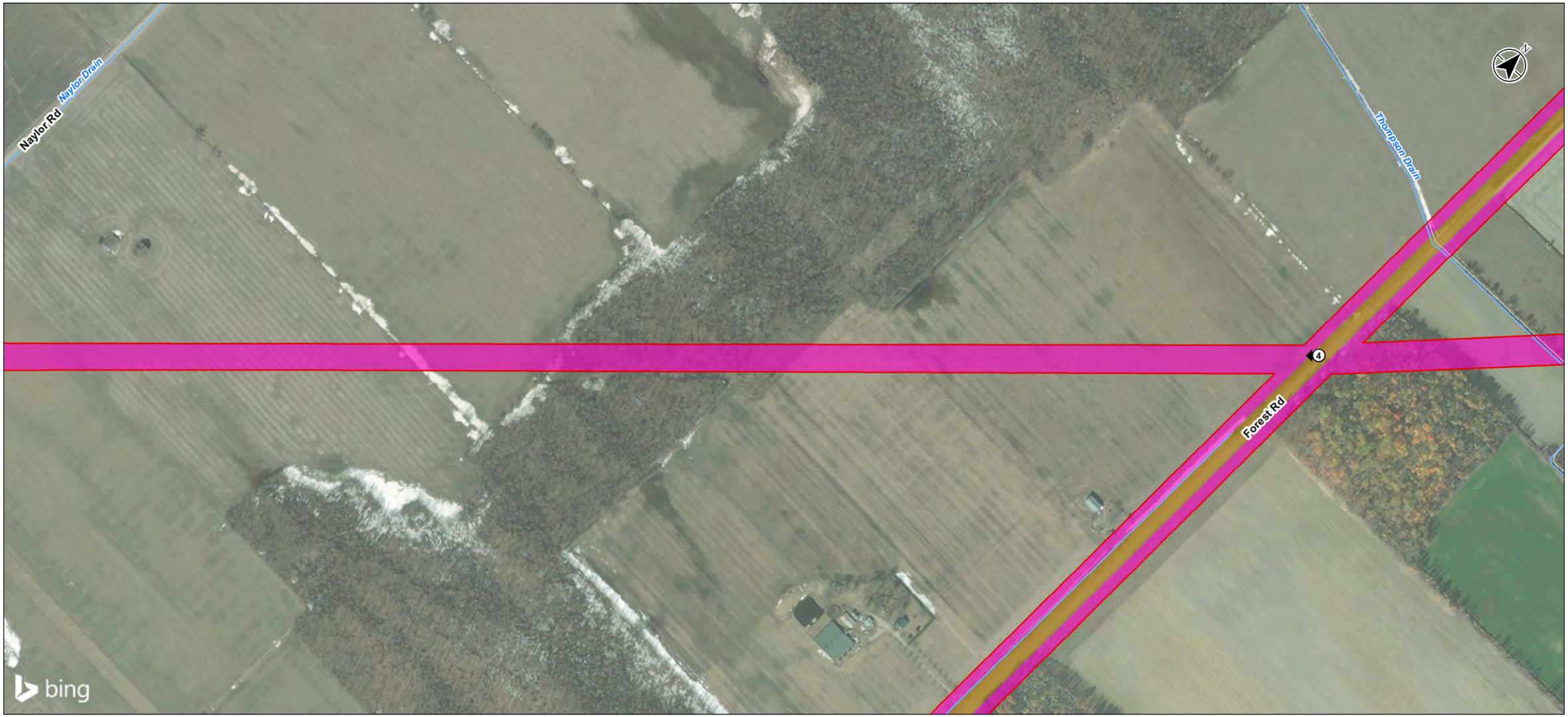

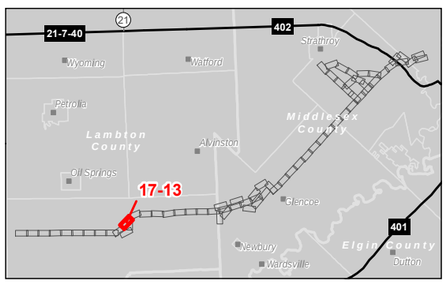

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-13

Title
Results Index – Stage 1 Results

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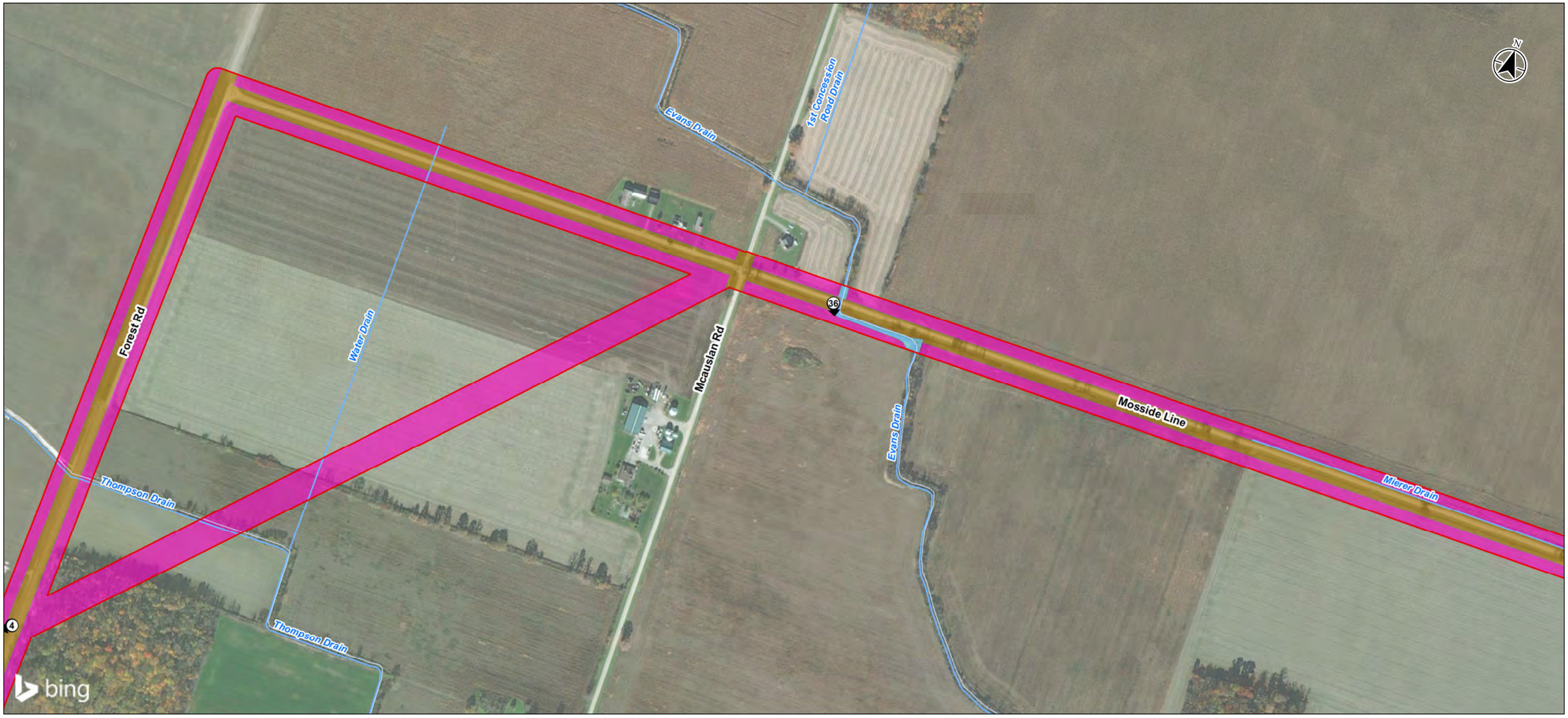

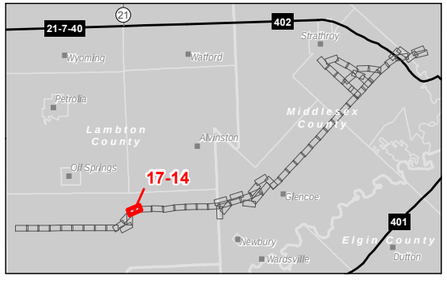

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Low and Permanently Wet Area, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-14

Title
Results Index – Stage 1 Results

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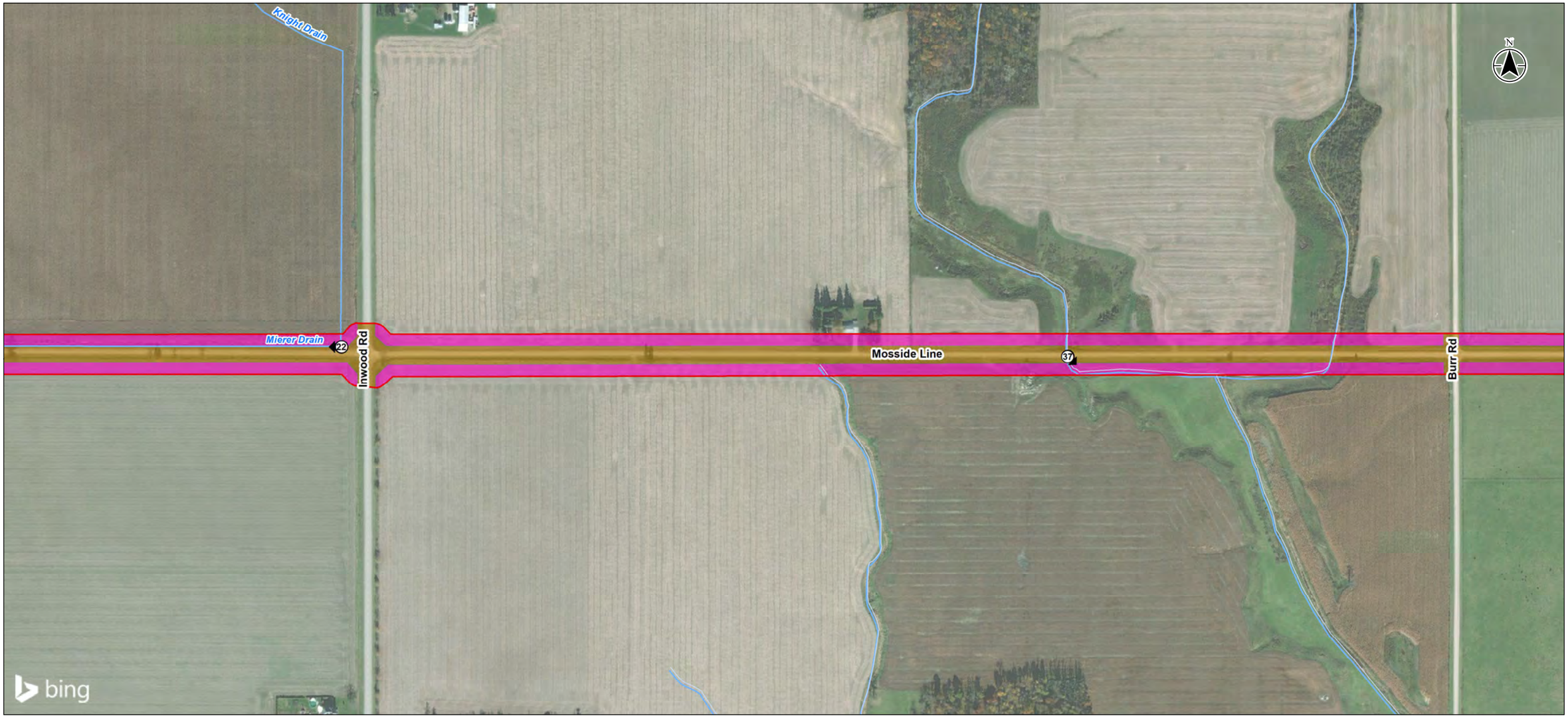

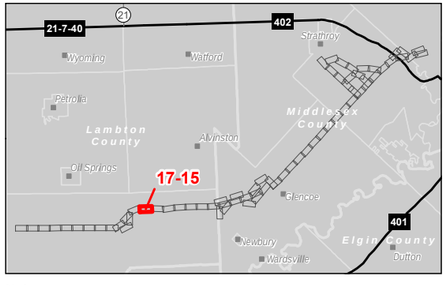

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-15

Title
Results Index – Stage 1 Results

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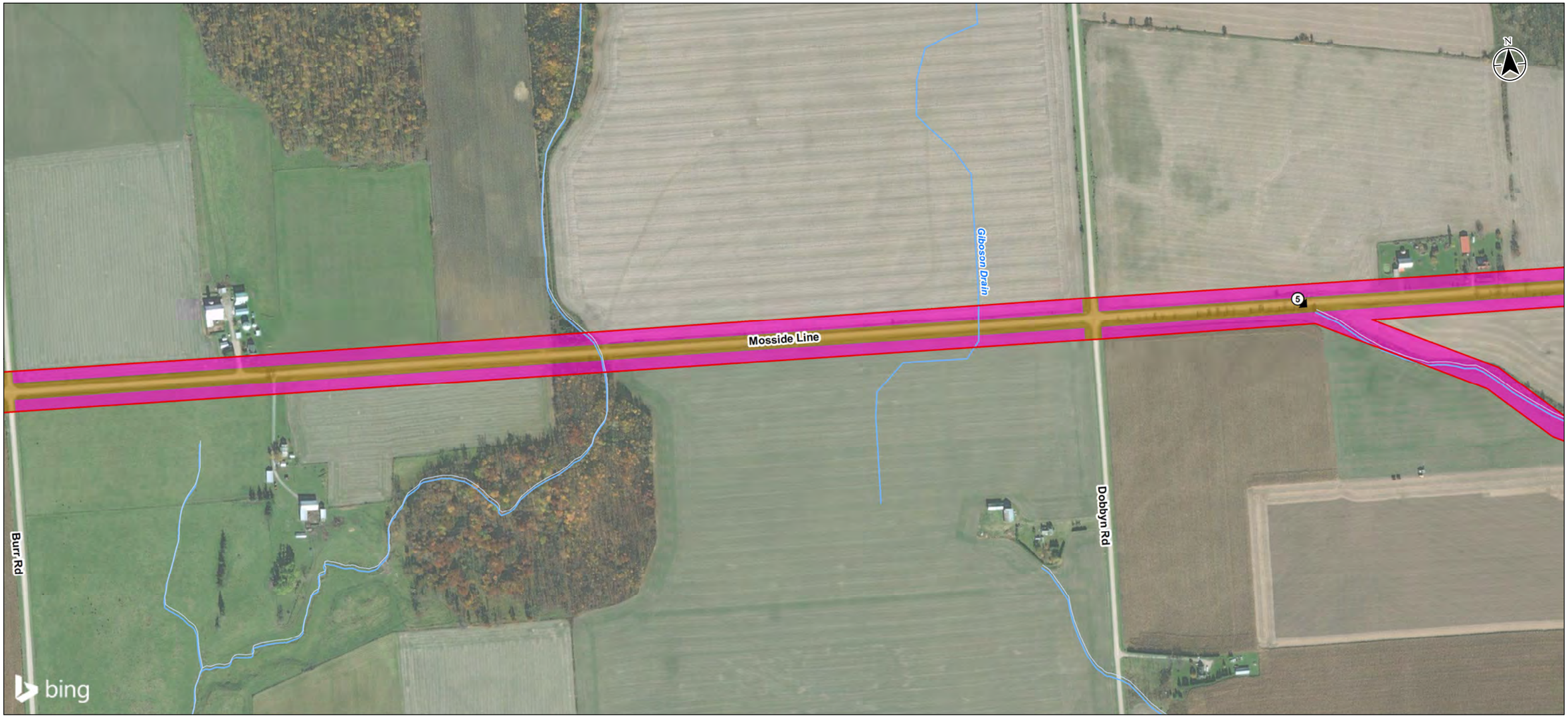

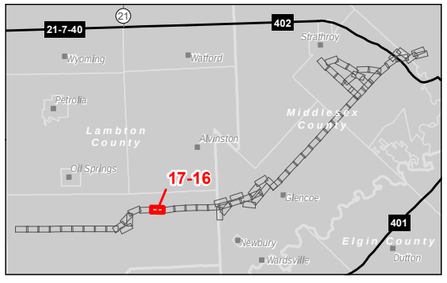

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-16

Title
Results Index – Stage 1 Results

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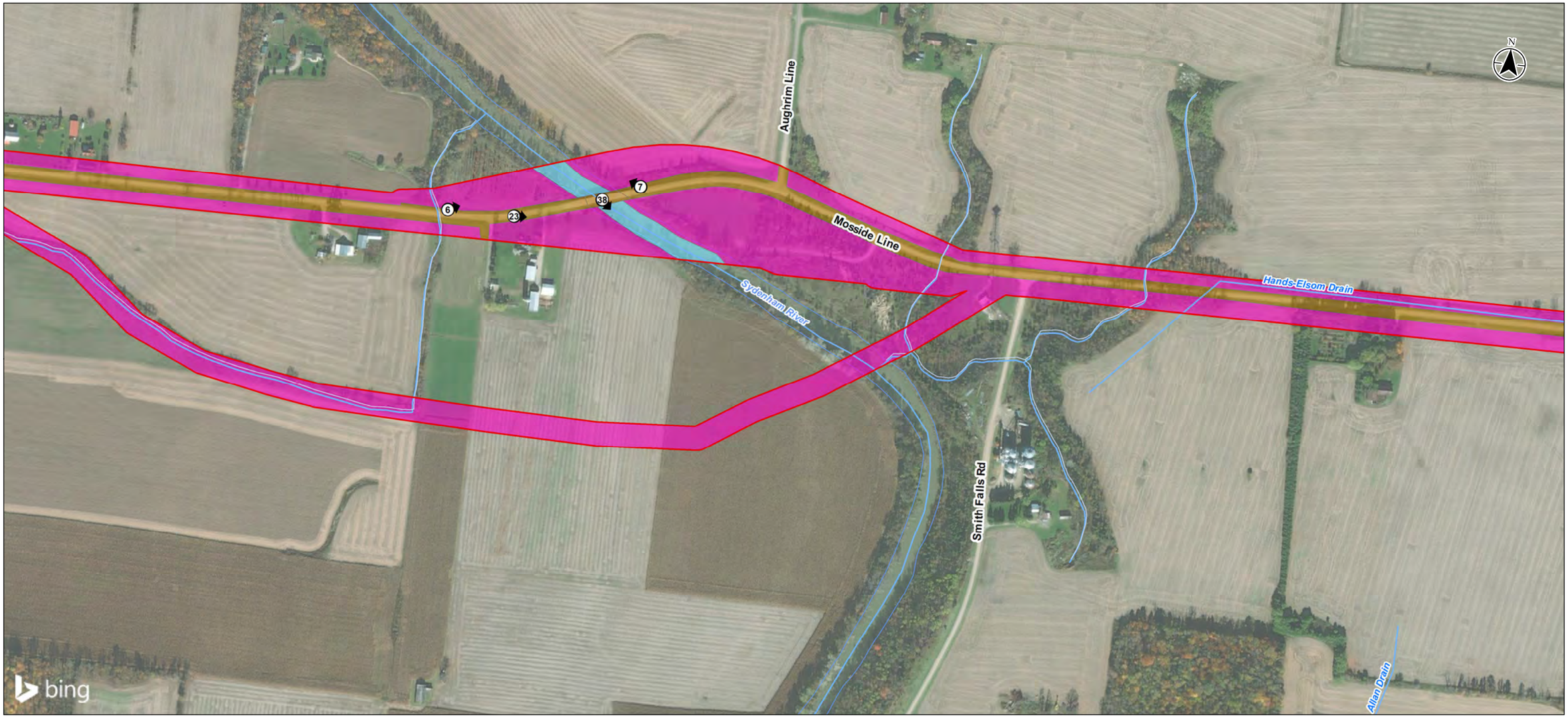

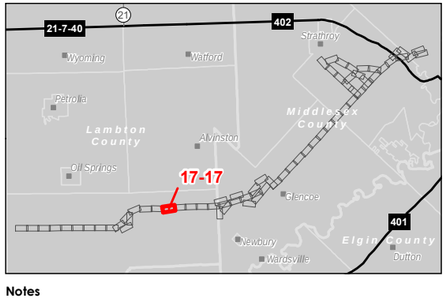

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Low and Permanently Wet Area, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-17

Title
Results Index – Stage 1 Results

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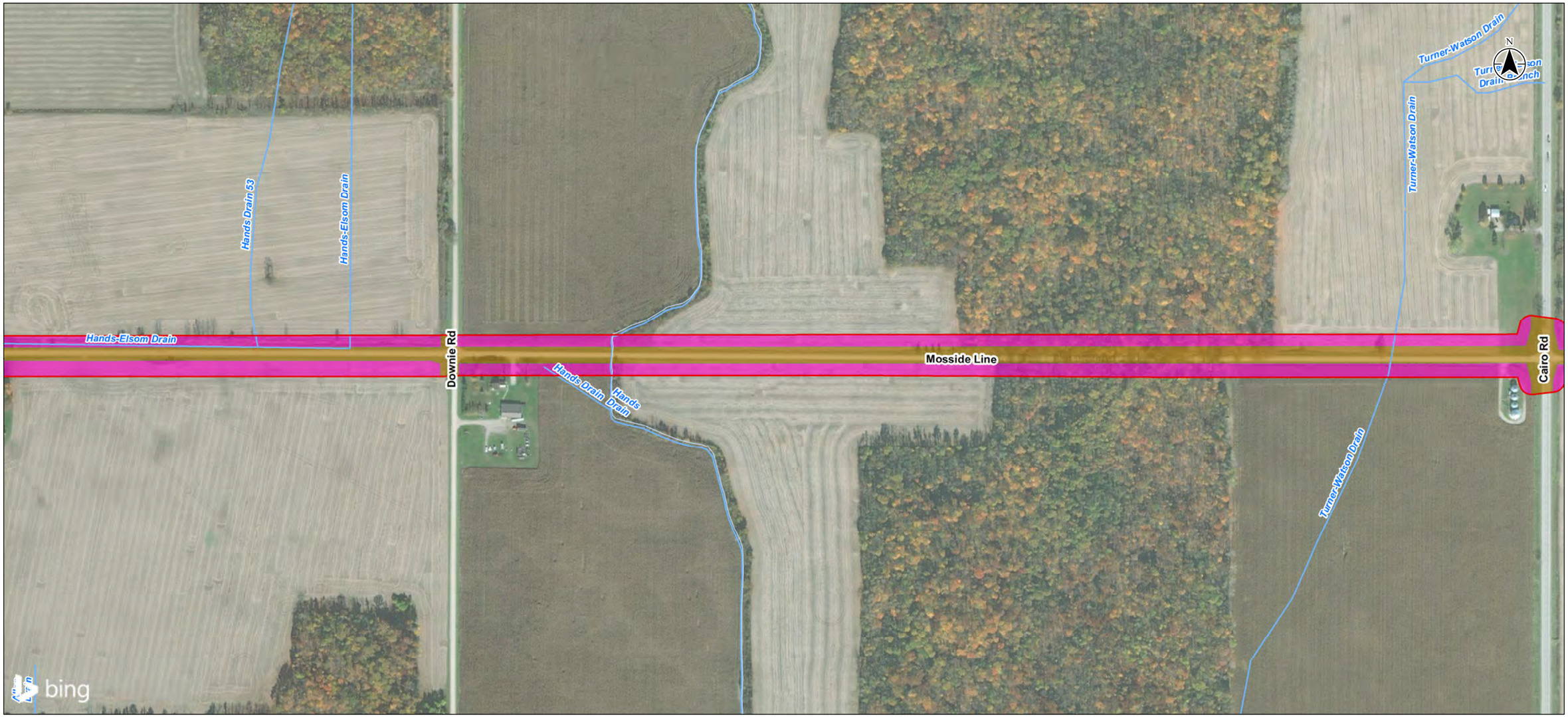

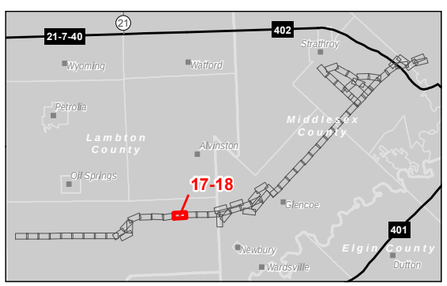

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-18

Title
Results Index – Stage 1 Results

Notes

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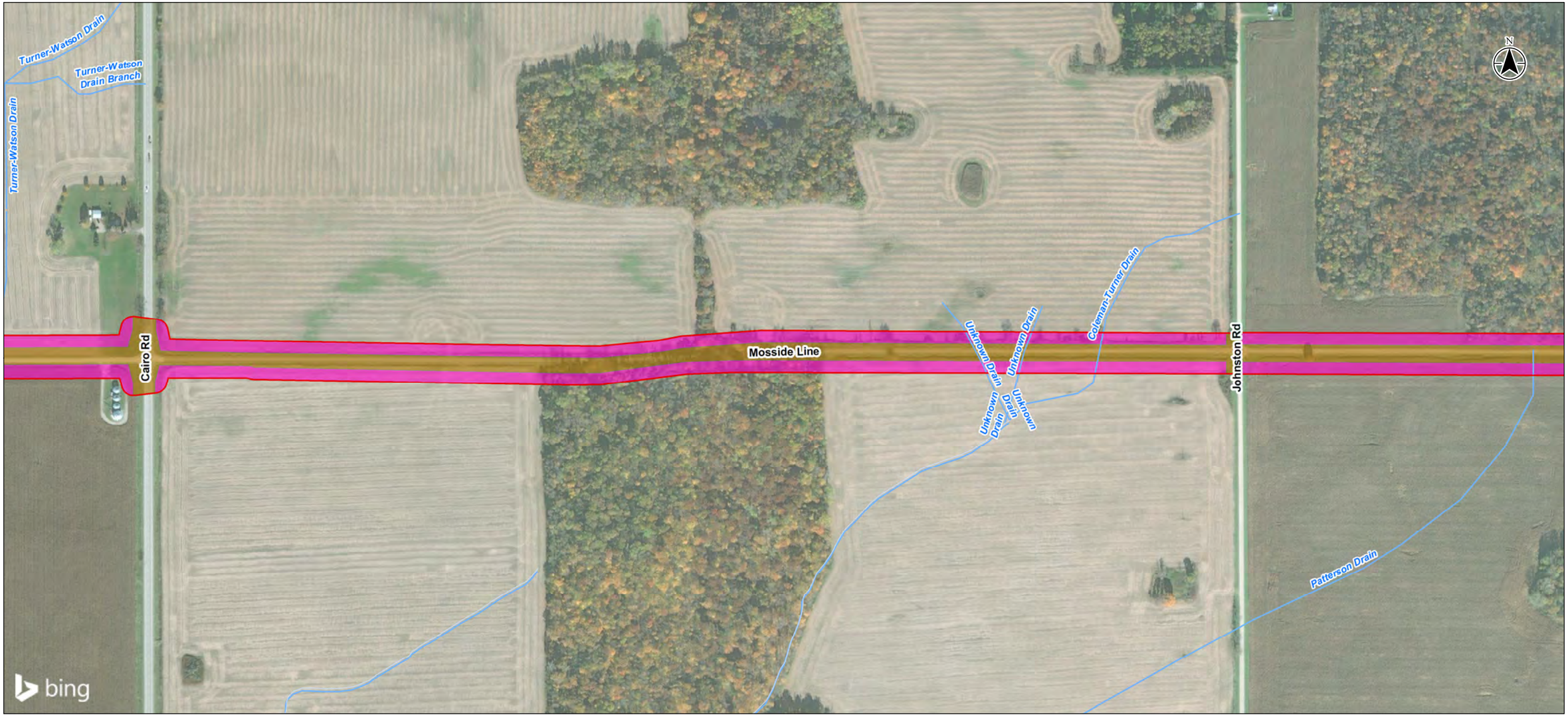

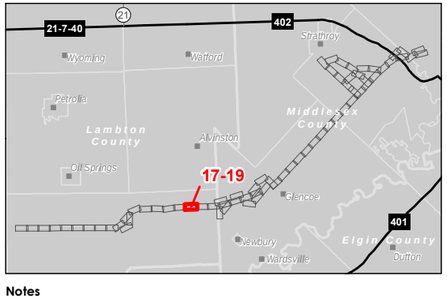

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-19

Title
Results Index – Stage 1 Results

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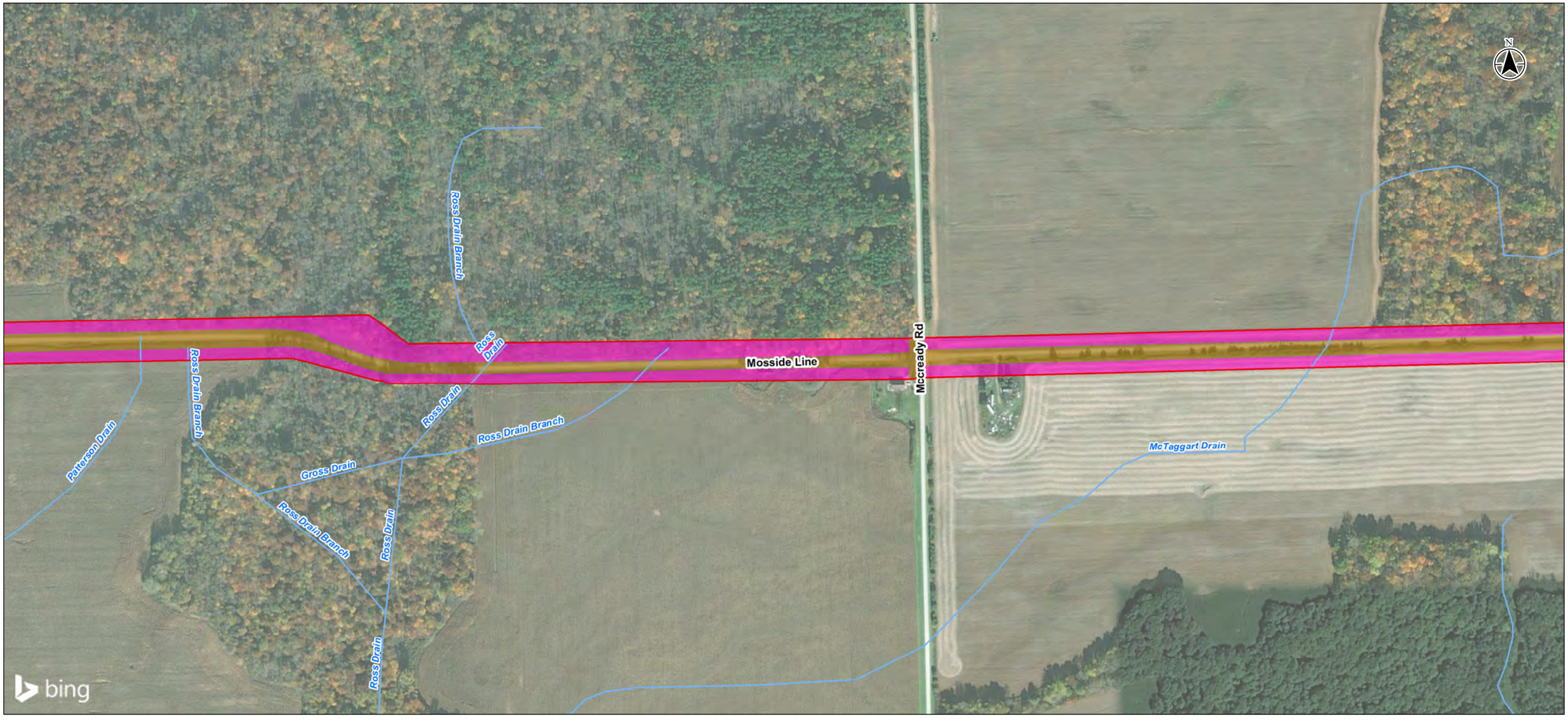

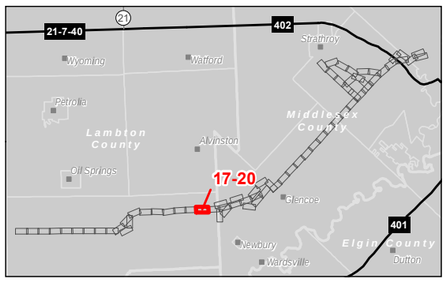

Legend

- Study Area
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-20

Title
Results Index – Stage 1 Results

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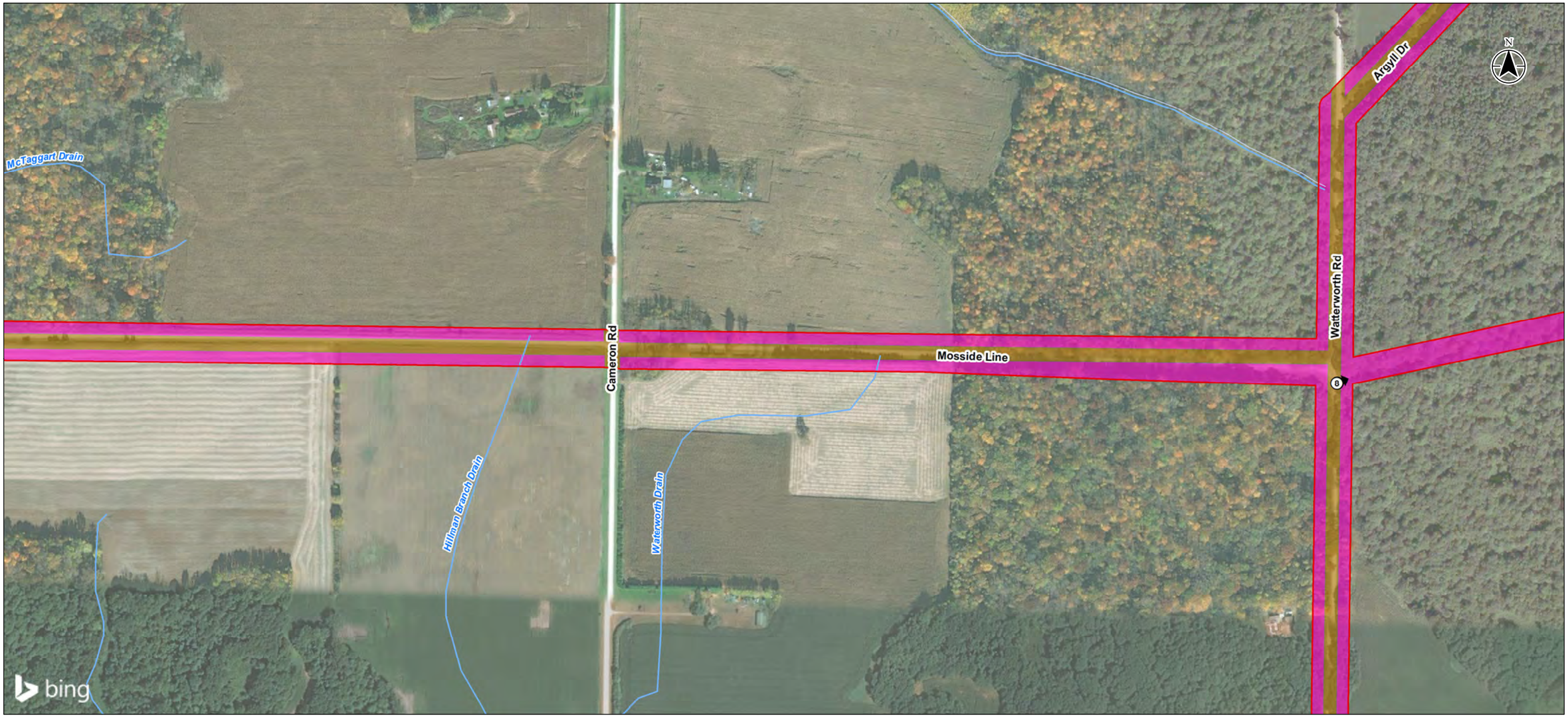

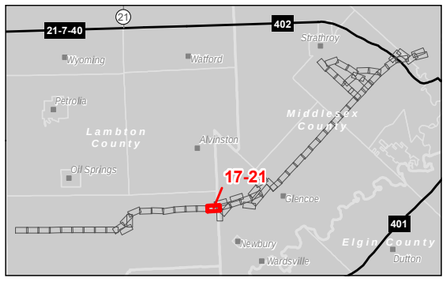

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-21

Title
Results Index – Stage 1 Results

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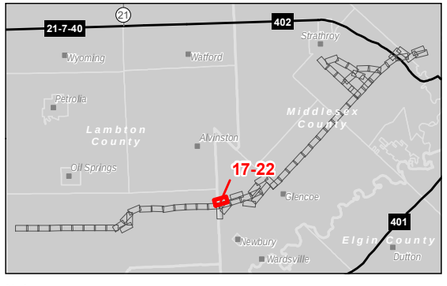

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-22

Title
Results Index – Stage 1 Results

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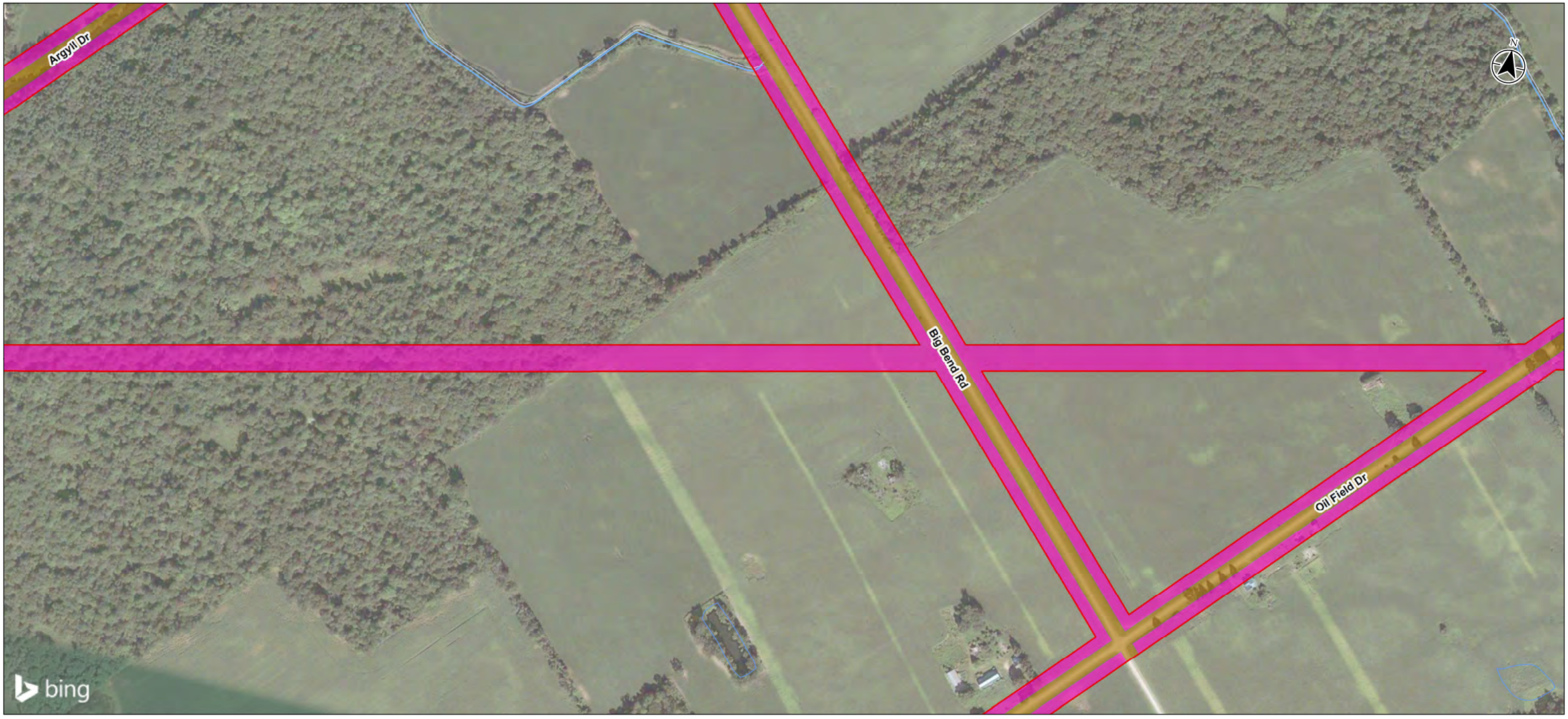

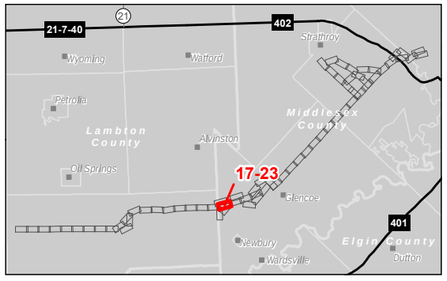

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-23

Title
Results Index – Stage 1 Results

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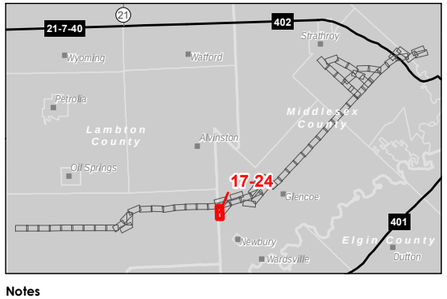

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-24

Title
Results Index – Stage 1 Results

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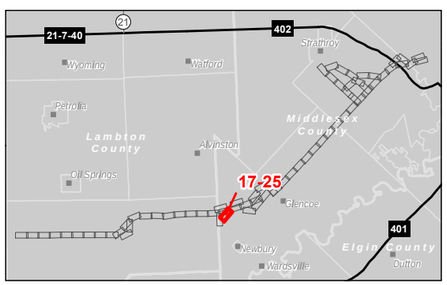

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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Client/Project
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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-25

Title
Results Index – Stage 1 Results

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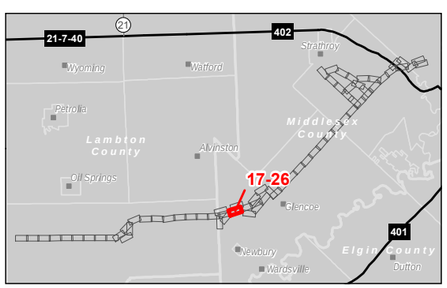

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-26

Title
Results Index – Stage 1 Results

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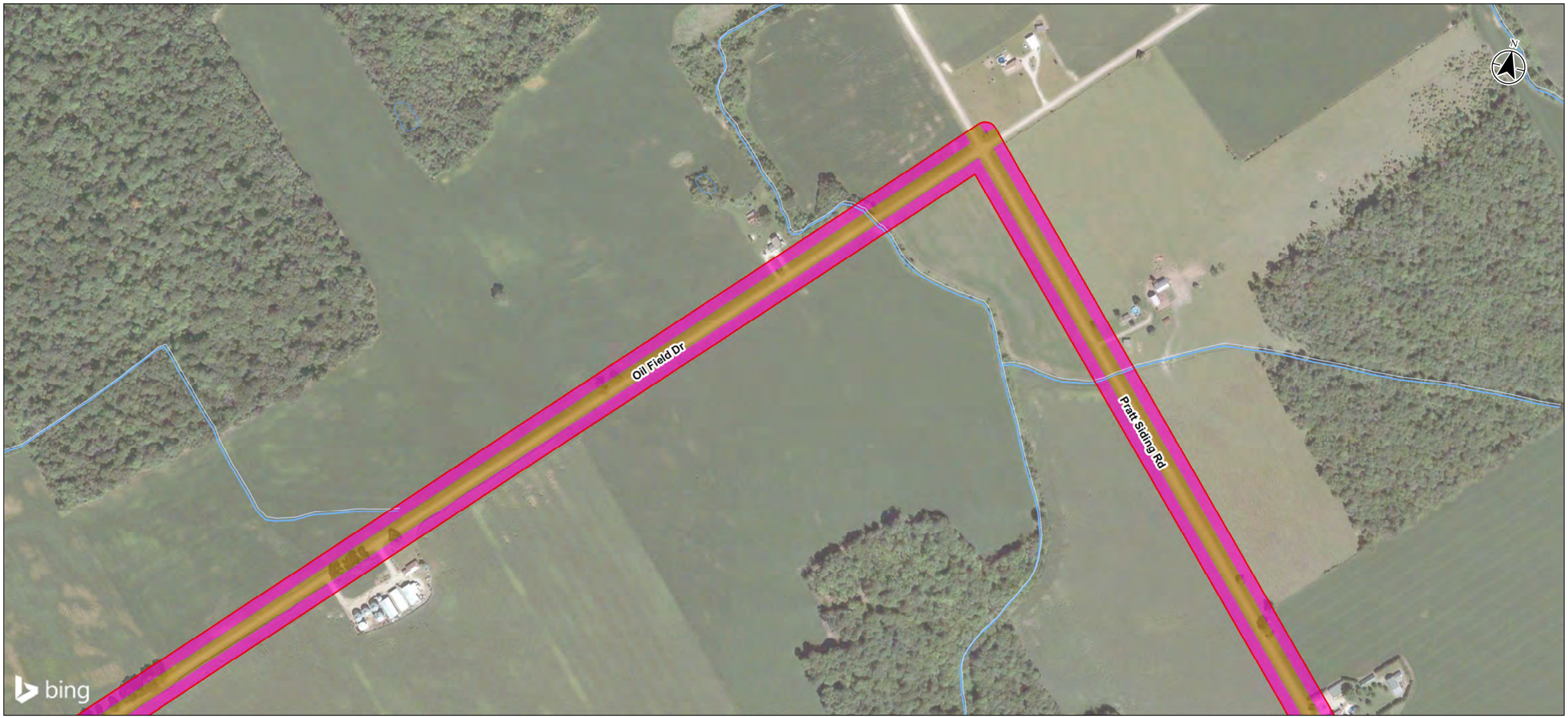

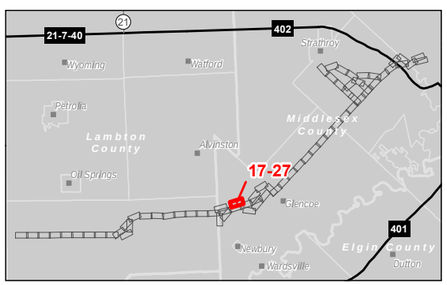

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Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-27

Title
Results Index – Stage 1 Results

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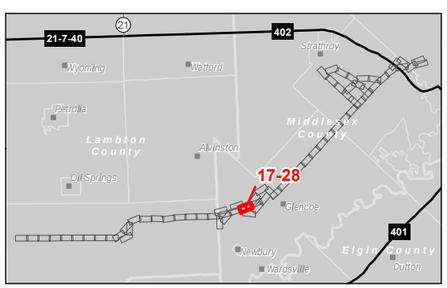

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-28

Title
Results Index – Stage 1 Results

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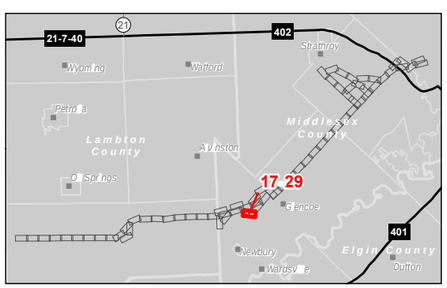

Legend

- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-29

Title
Results Index – Stage 1 Results

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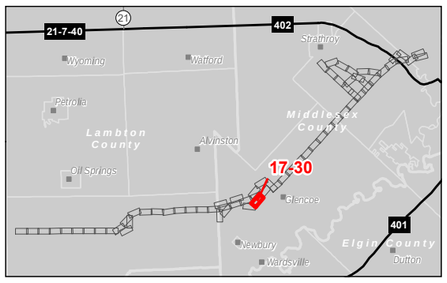

Legend

- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-30

Title
Results Index – Stage 1 Results

Notes

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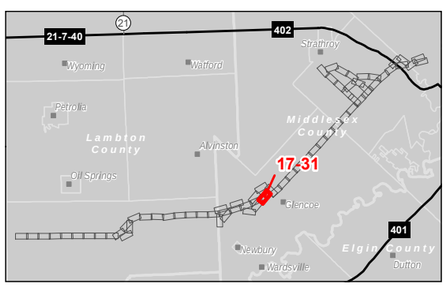

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Low and Permanently Wet Area, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-31

Title
Results Index – Stage 1 Results

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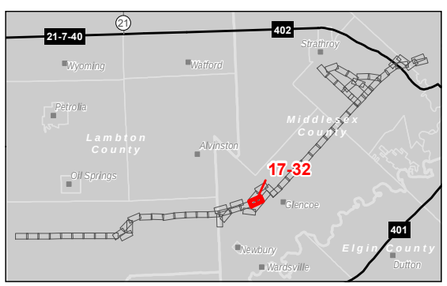

Legend

- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-32

Title
Results Index – Stage 1 Results

Notes

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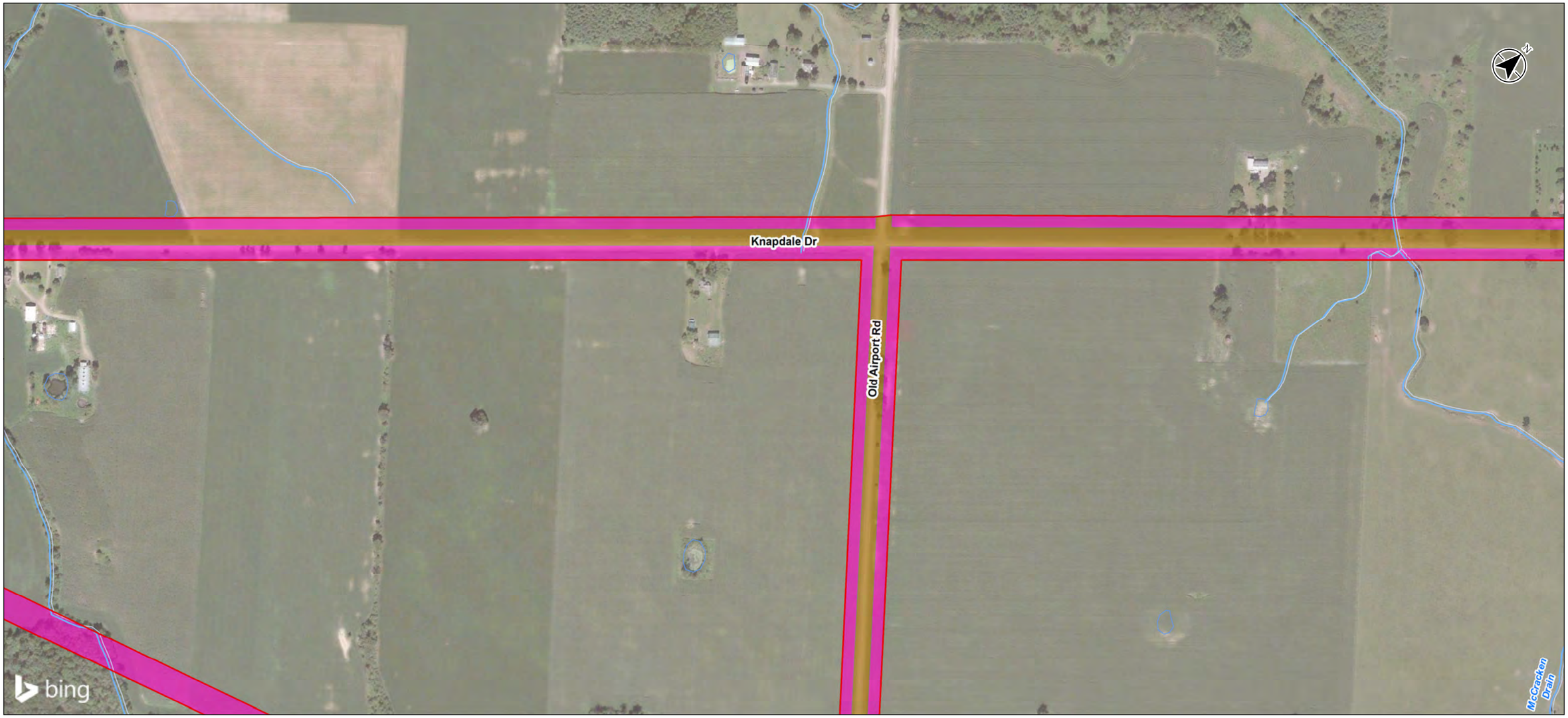

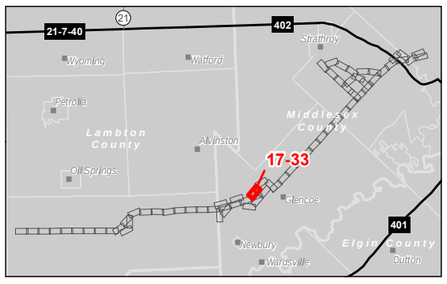

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-33

Title
Results Index – Stage 1 Results

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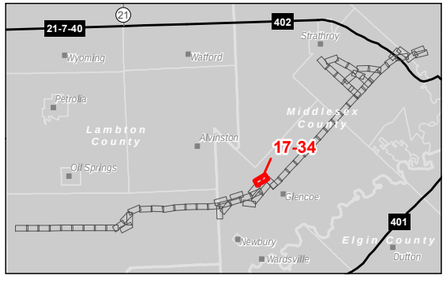

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-34

Title
Results Index – Stage 1 Results

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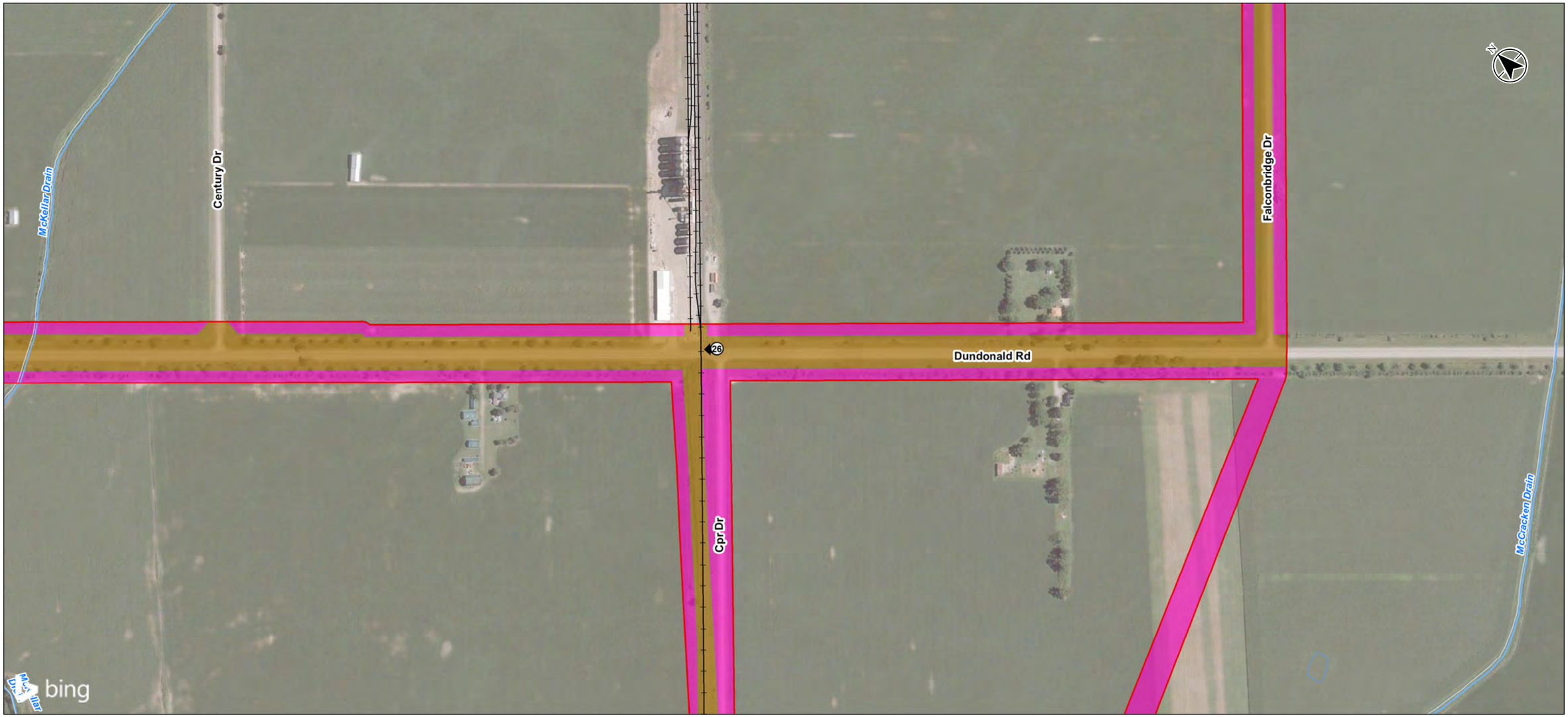

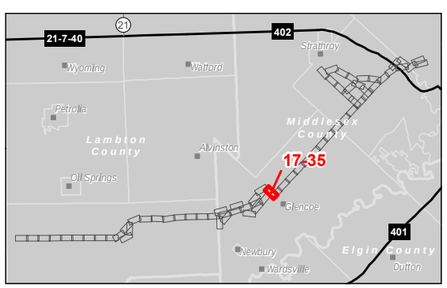

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-35

Title
Results Index – Stage 1 Results

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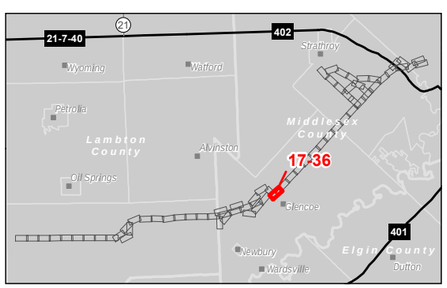

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Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-36

Title
Results Index – Stage 1 Results

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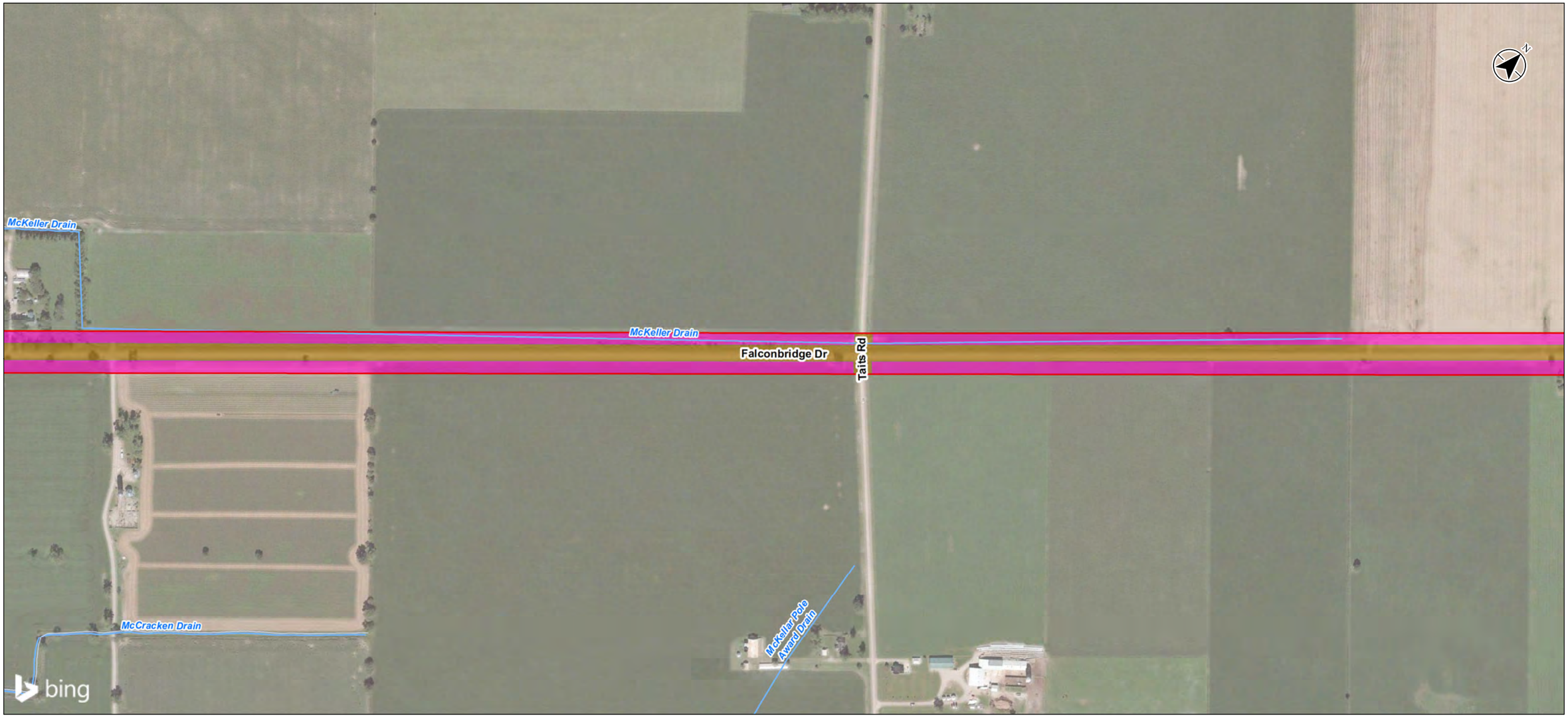

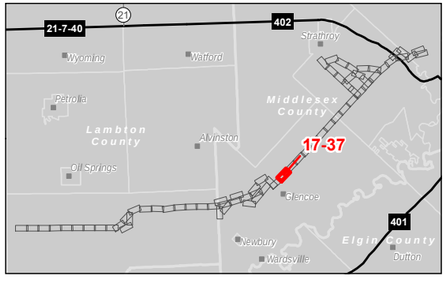

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-37

Title
Results Index – Stage 1 Results

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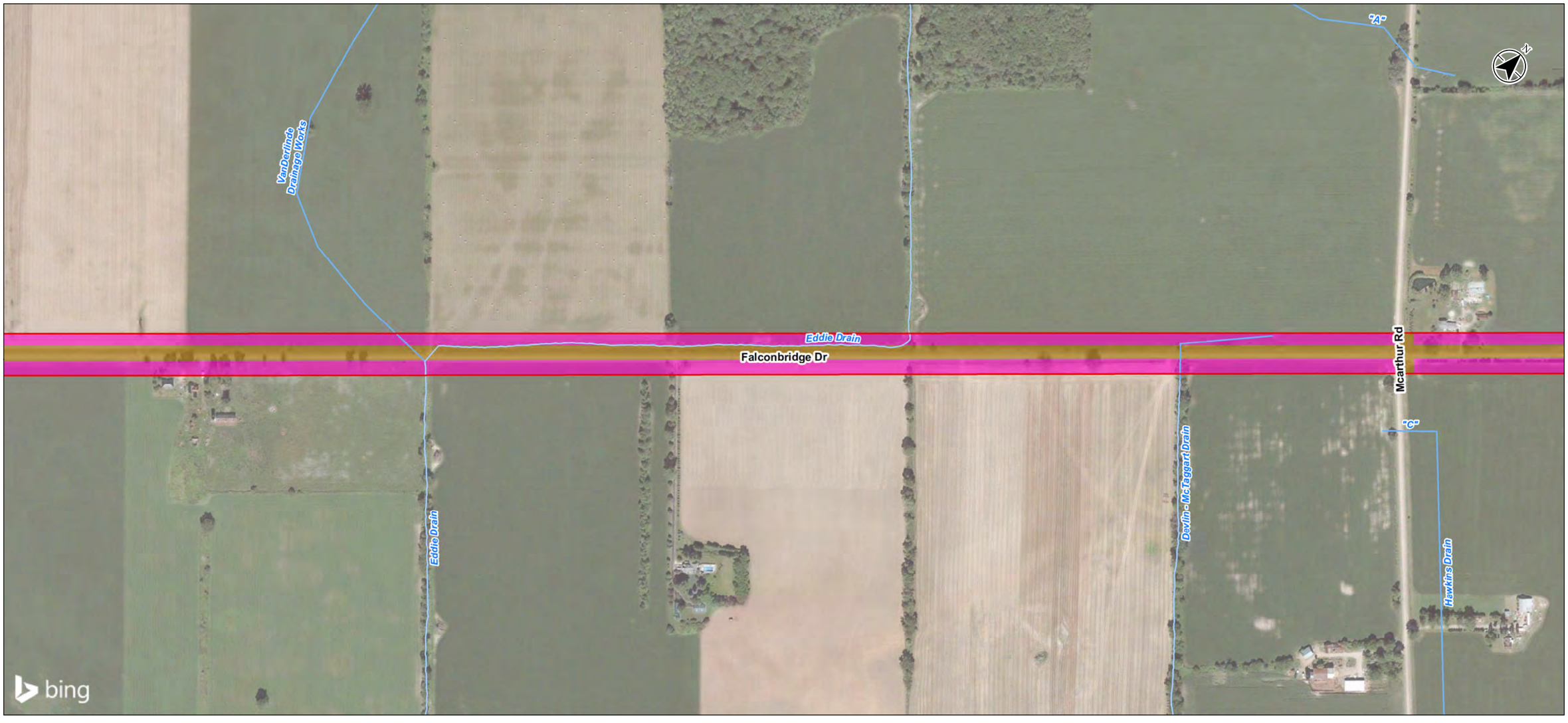

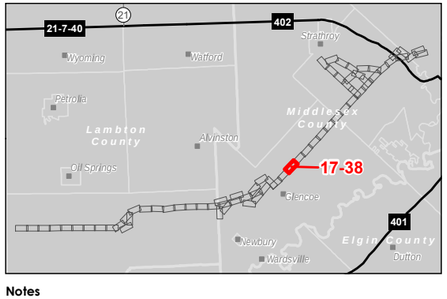

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Stantec

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Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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Client/Project
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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-38

Title
Results Index – Stage 1 Results

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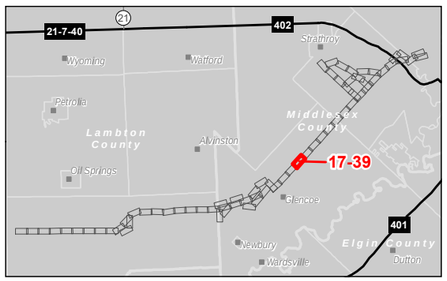

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-39

Title
Results Index – Stage 1 Results

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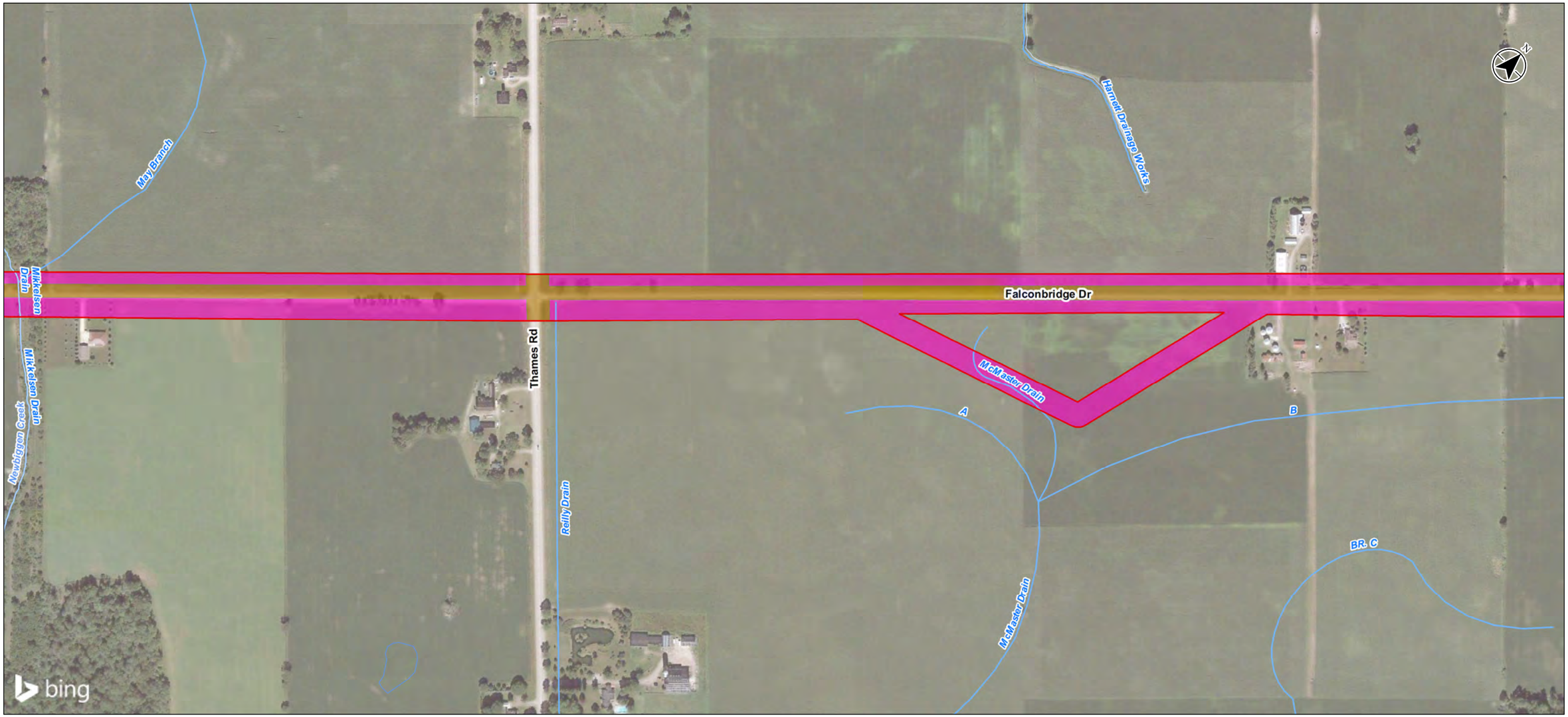

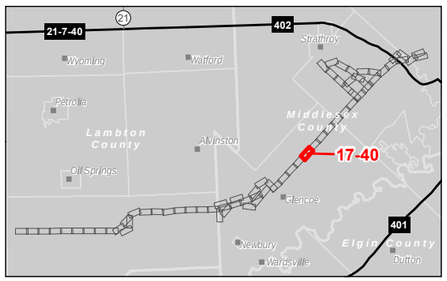

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-40

Title
Results Index – Stage 1 Results

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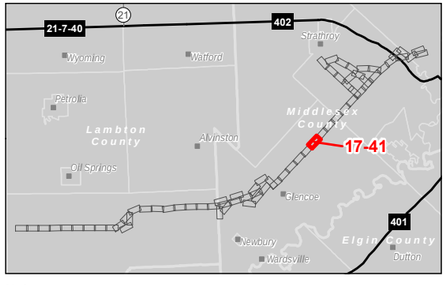

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-41

Title
Results Index – Stage 1 Results

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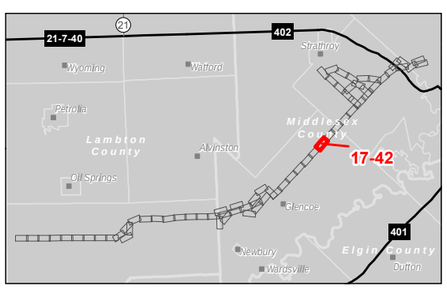

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-42

Title
Results Index – Stage 1 Results

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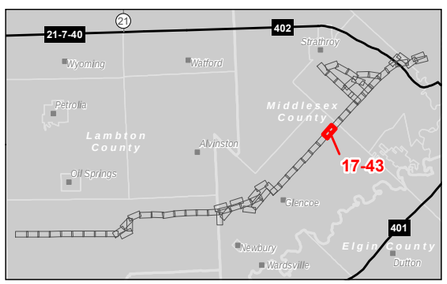

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-43

Title
Results Index – Stage 1 Results

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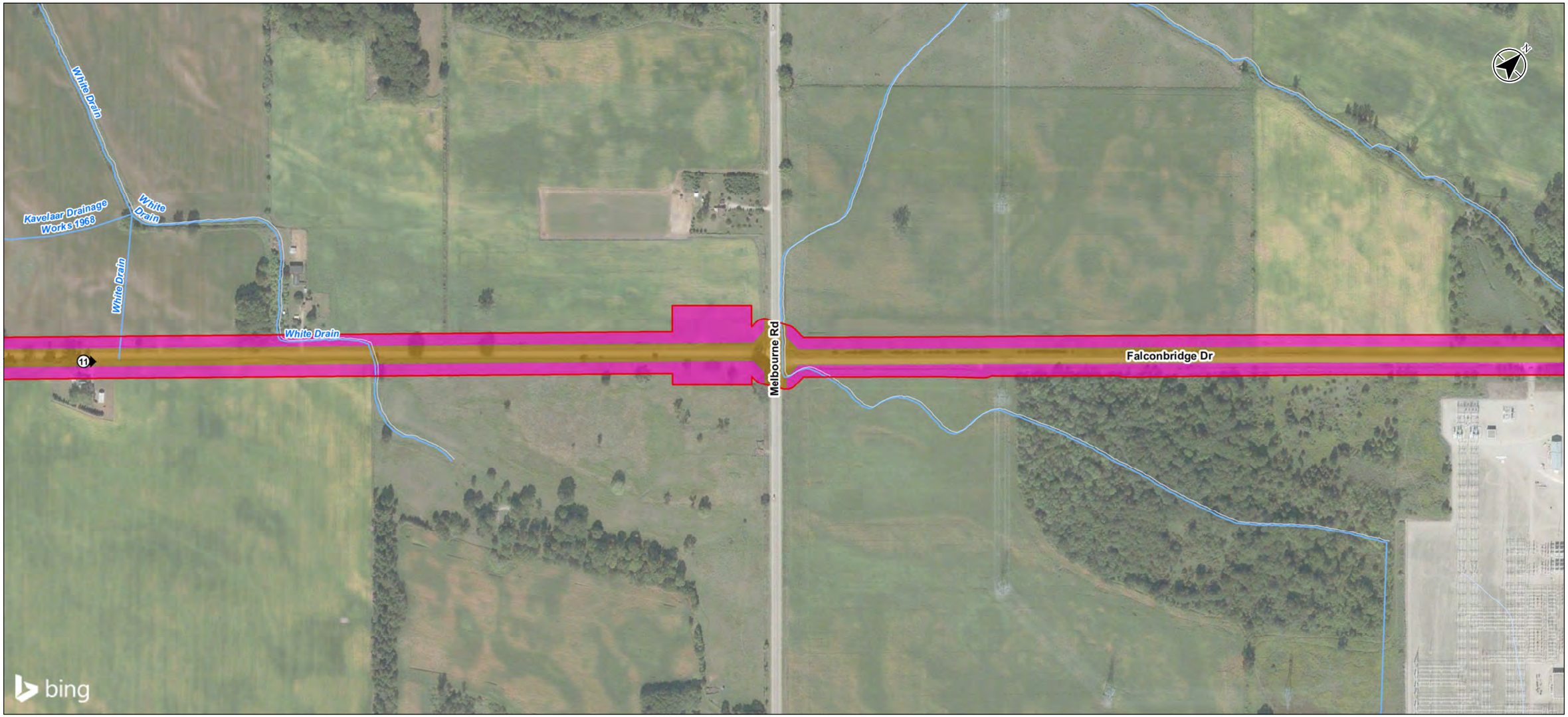

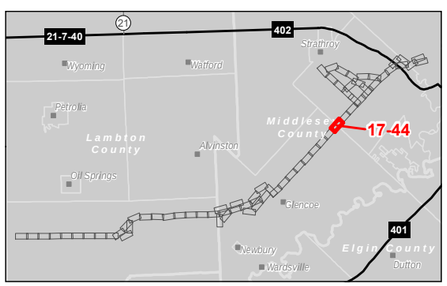

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-44

Title
Results Index – Stage 1 Results

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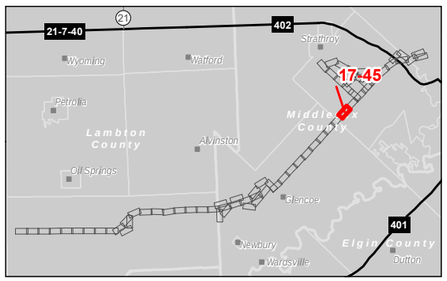

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-45

Title
Results Index – Stage 1 Results

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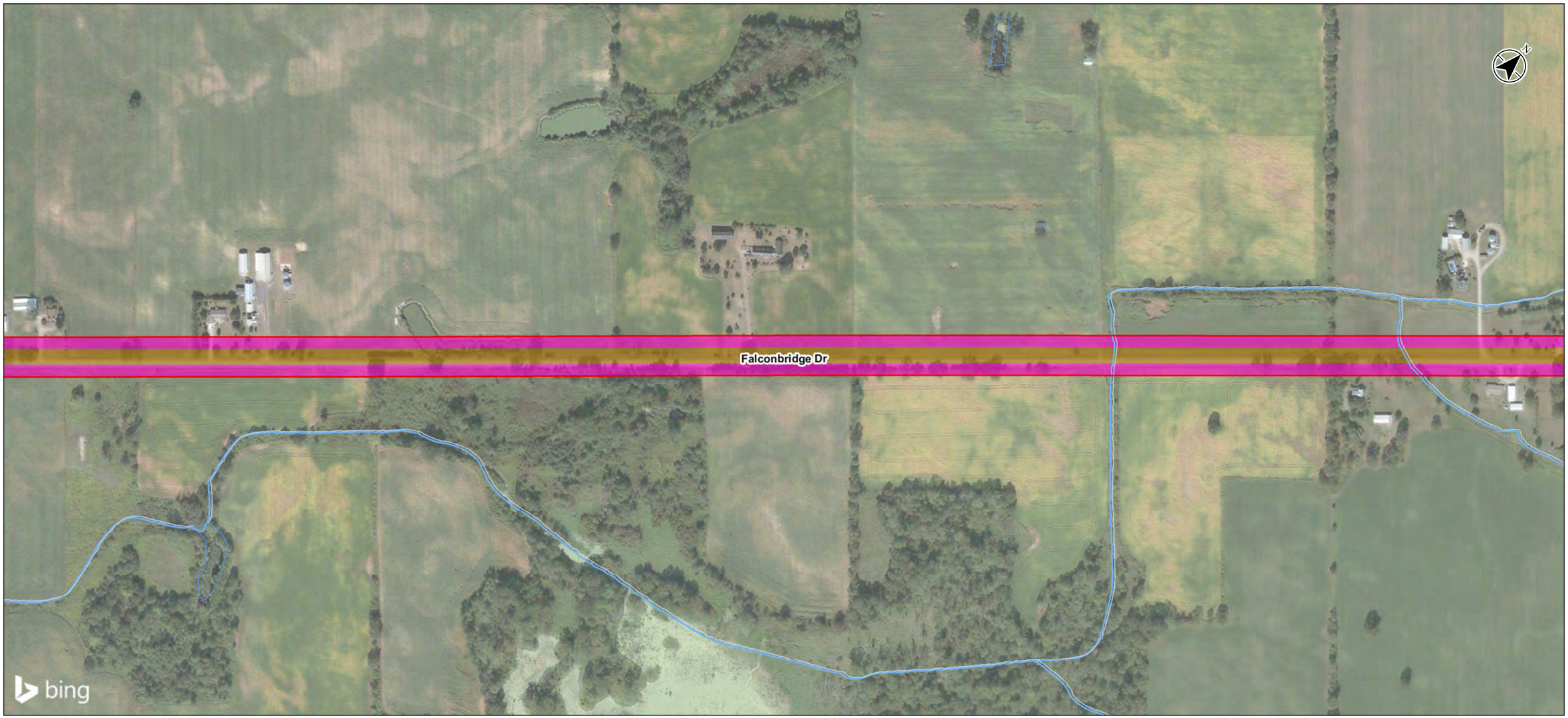

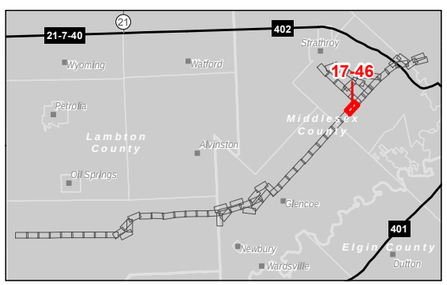

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Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-46

Title
Results Index – Stage 1 Results

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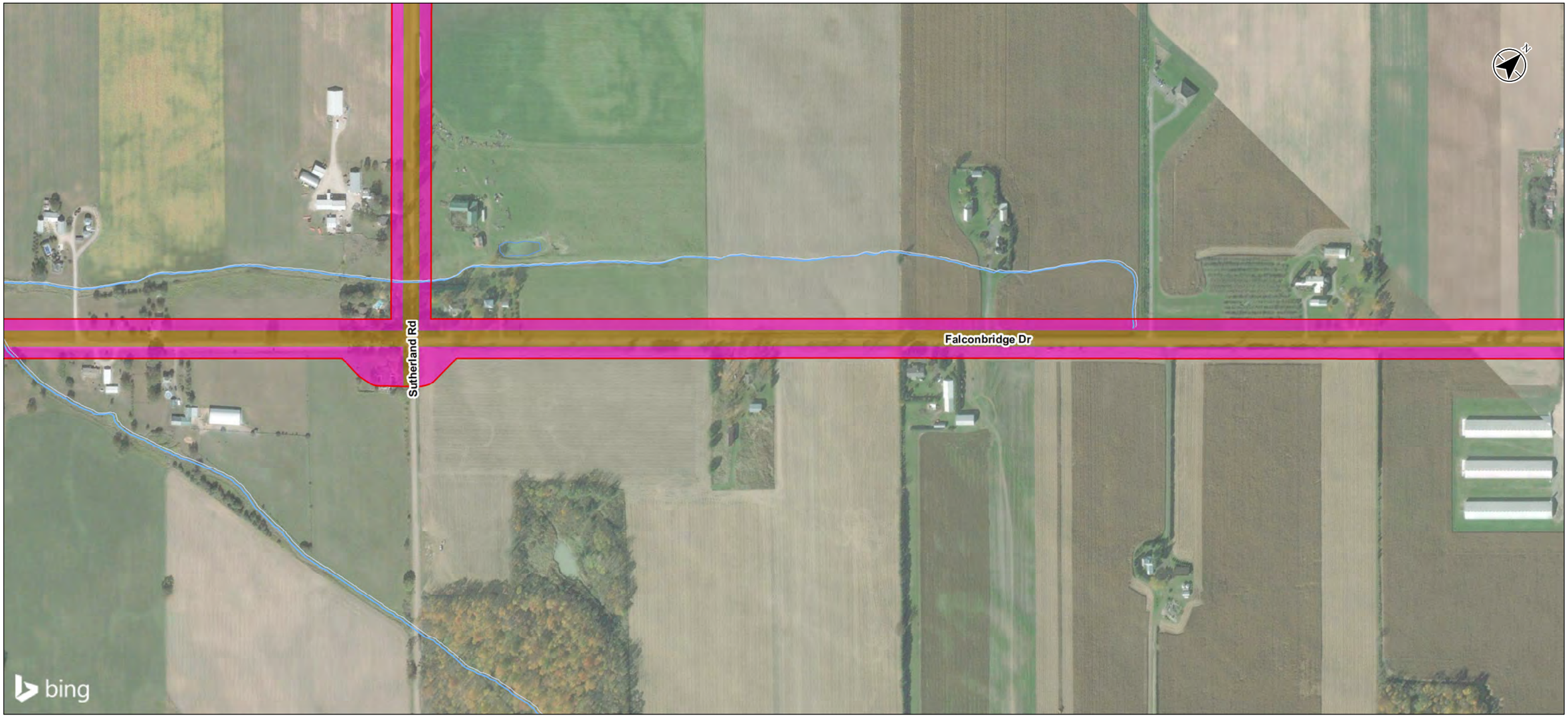

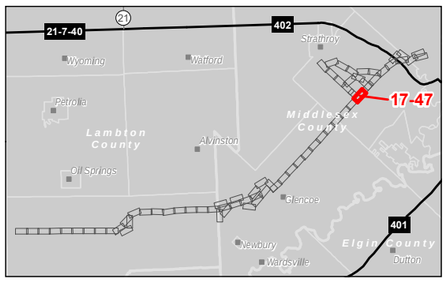

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Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Prepared by SPE on 2020-07-09
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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-47

Title
Results Index – Stage 1 Results

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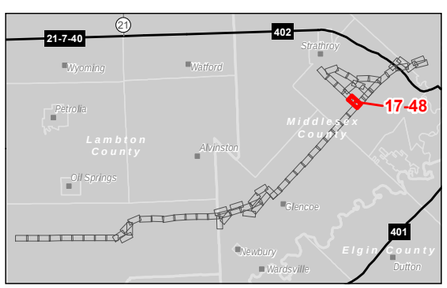

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-48

Title
Results Index – Stage 1 Results

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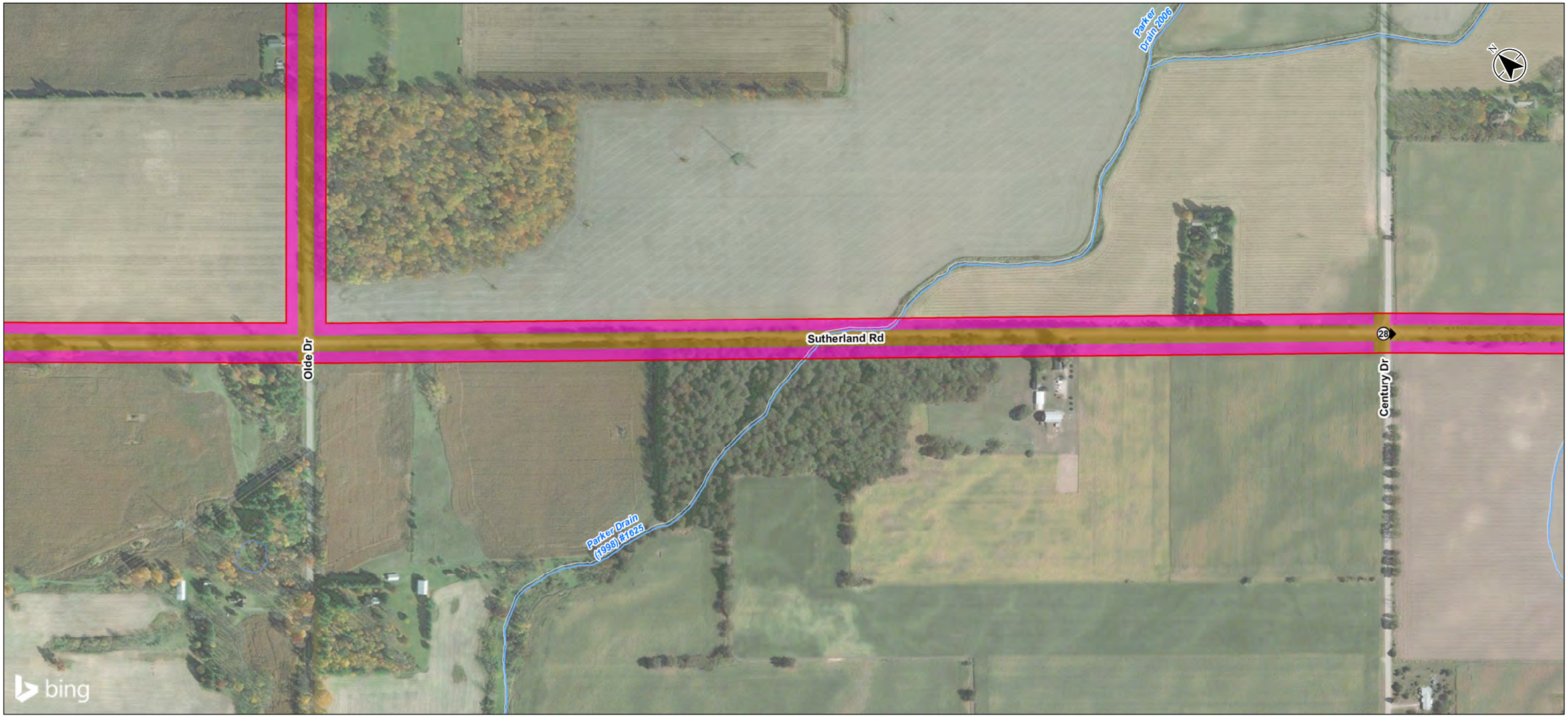

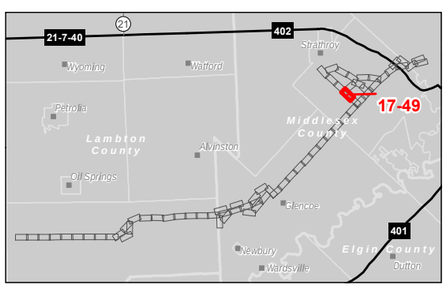

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-49

Title
Results Index – Stage 1 Results

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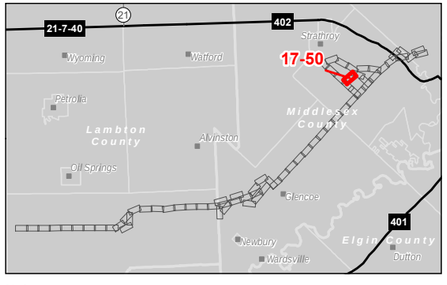

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-50

Title
Results Index – Stage 1 Results

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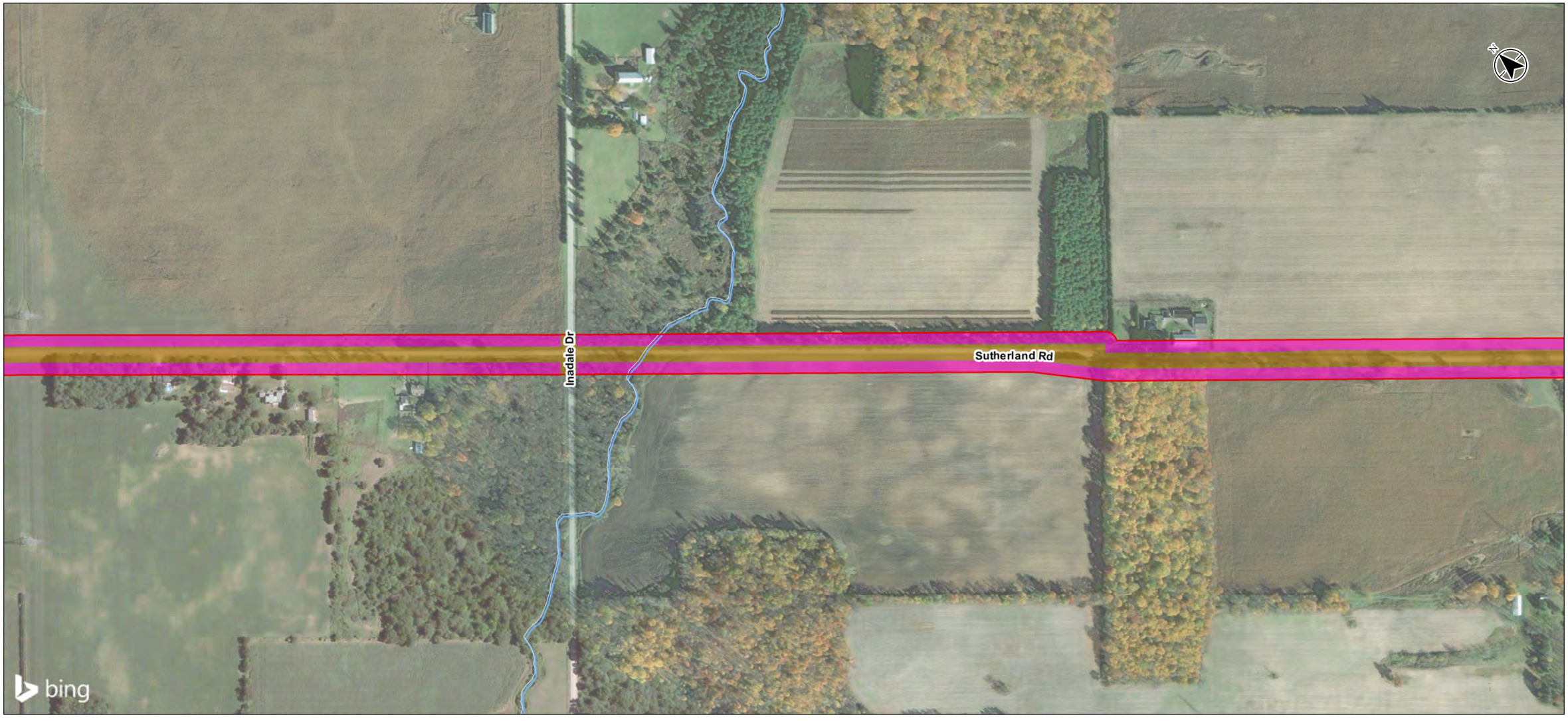

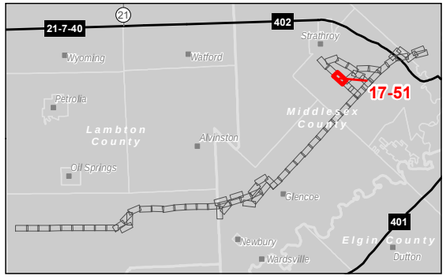

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-51

Title
Results Index – Stage 1 Results

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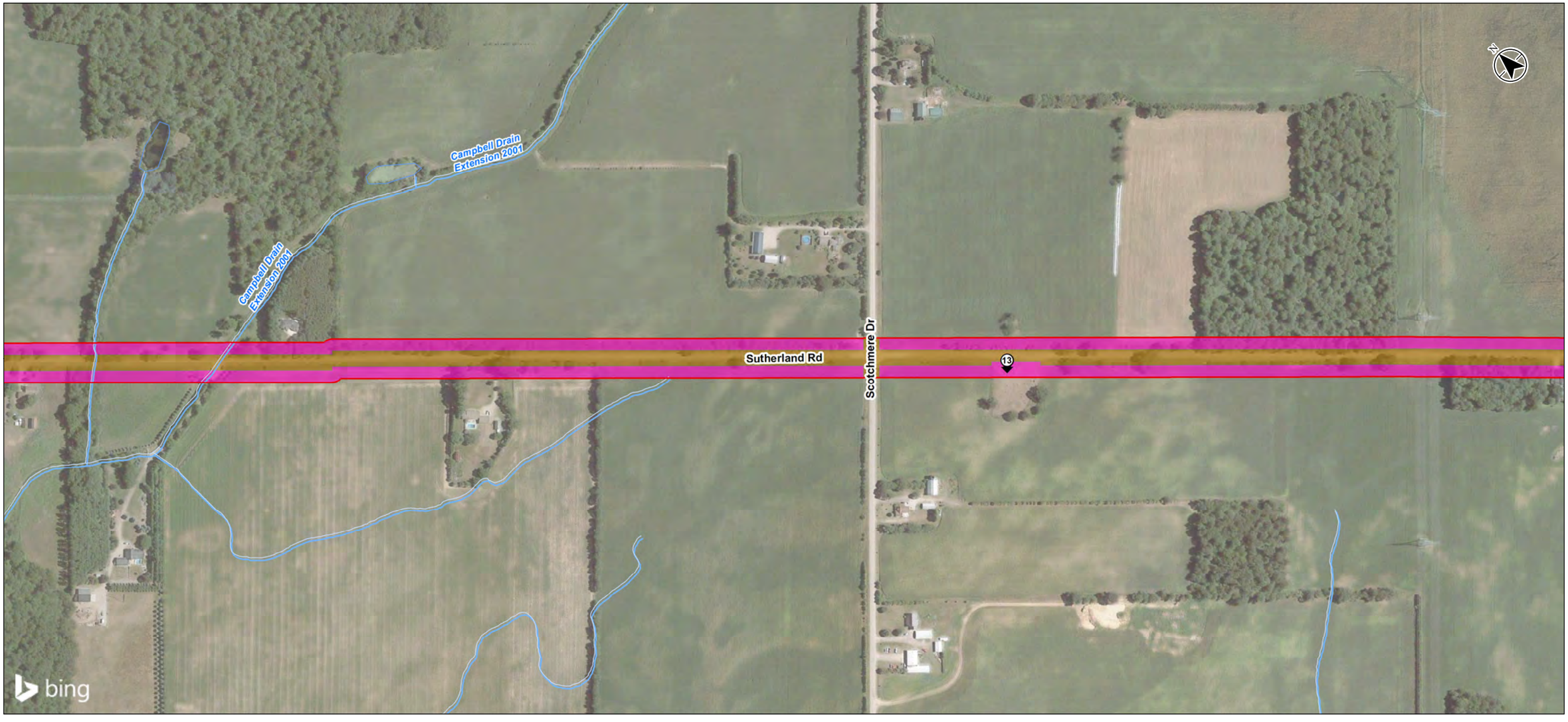

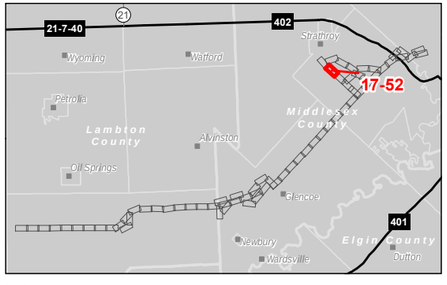

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Stantec

Project Location
Counties of Lambton and Middlesex

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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-52

Title
Results Index – Stage 1 Results

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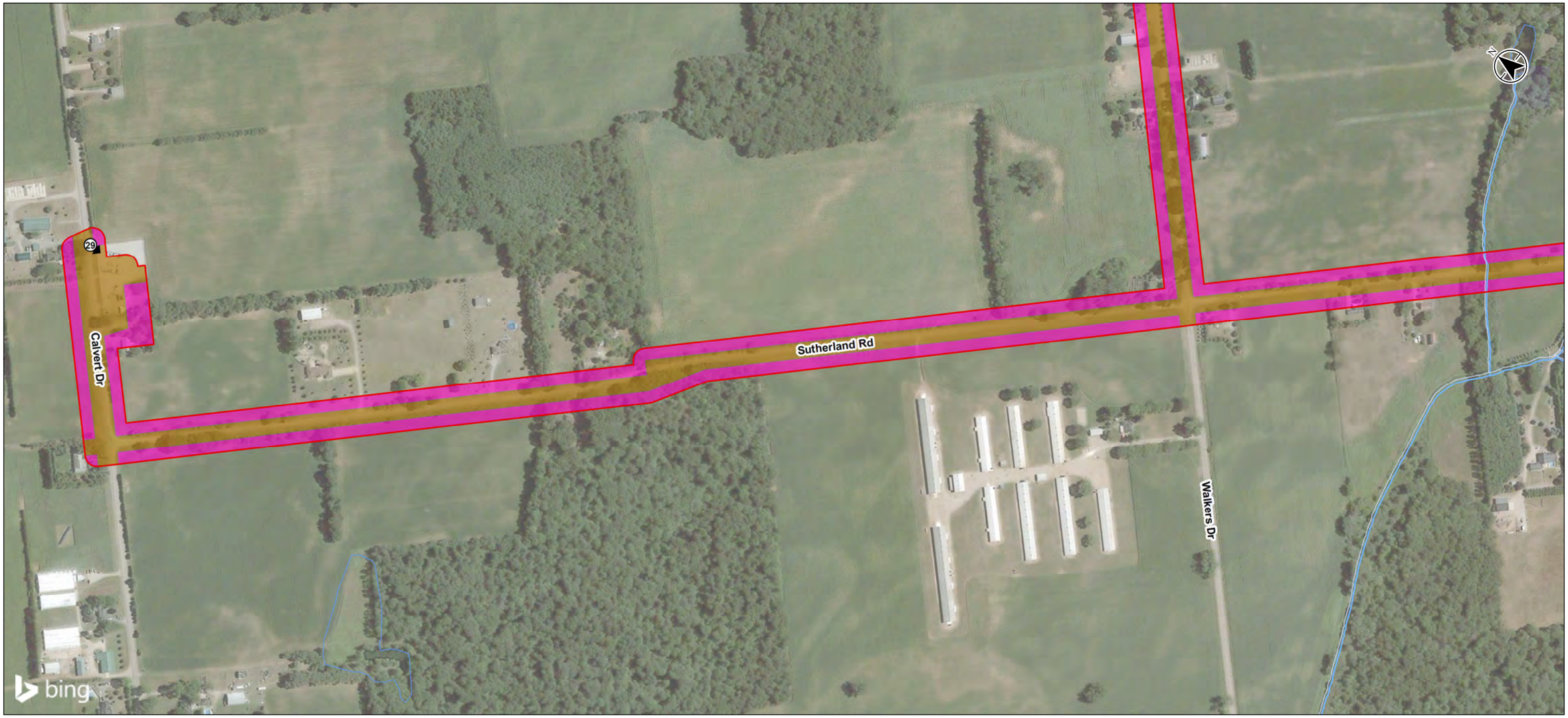

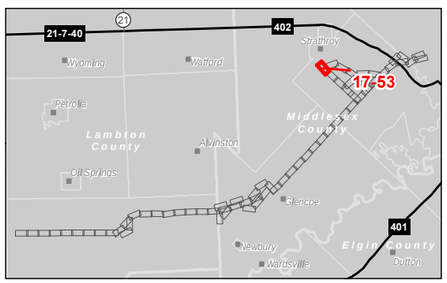

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Stantec

Project Location: Counties of Lambton and Middlesex
160951170 REVA
Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-53

Title
Results Index – Stage 1 Results

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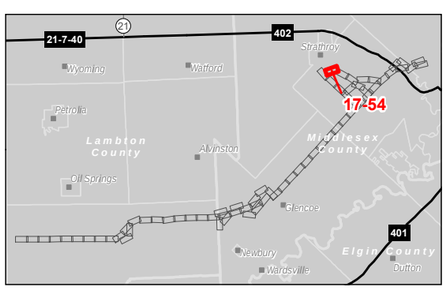

Legend

- Study Area
- Watercourse
- Constructed Drain

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-54

Title
Results Index – Stage 1 Results

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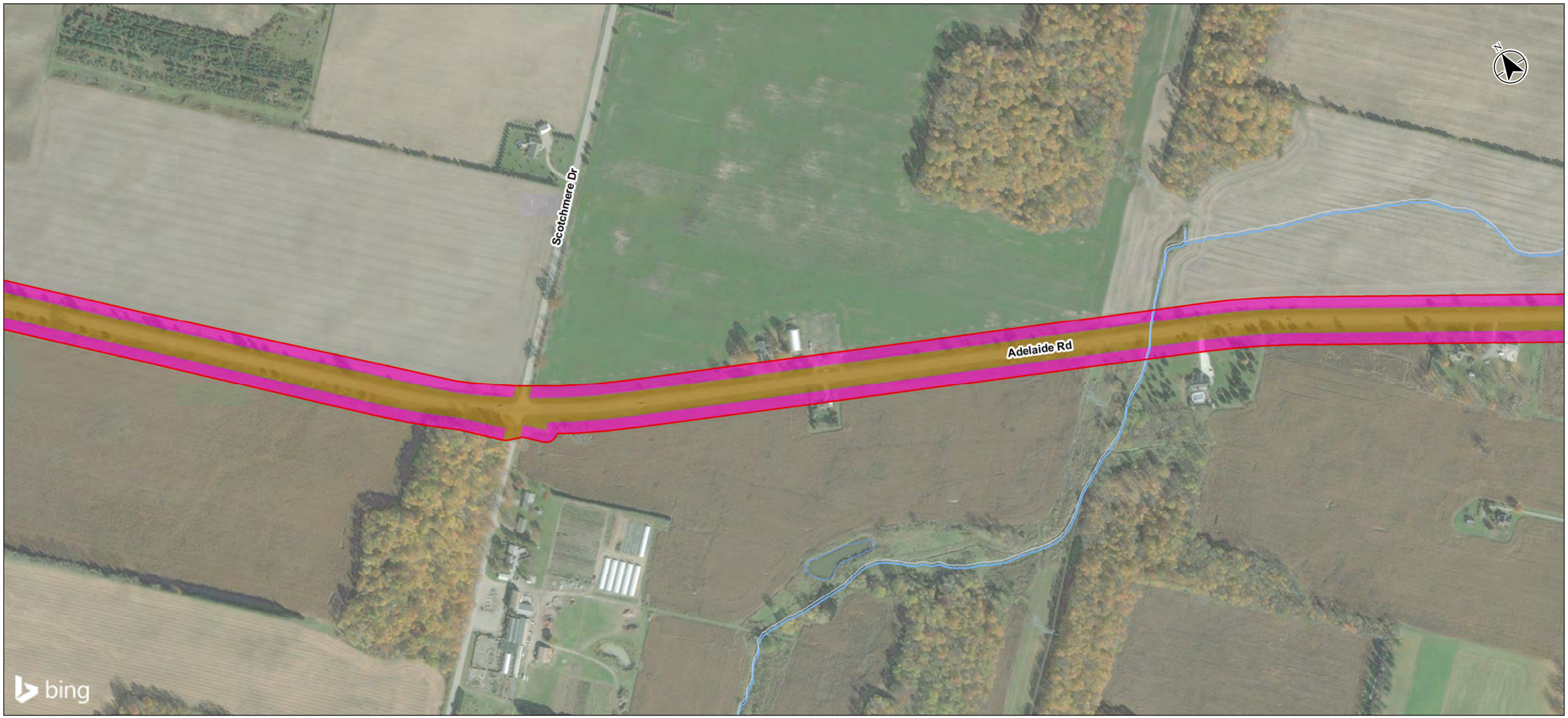

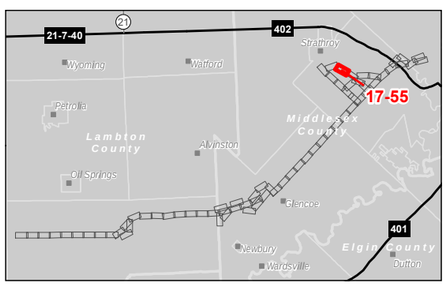

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Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

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STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-55

Title
Results Index – Stage 1 Results

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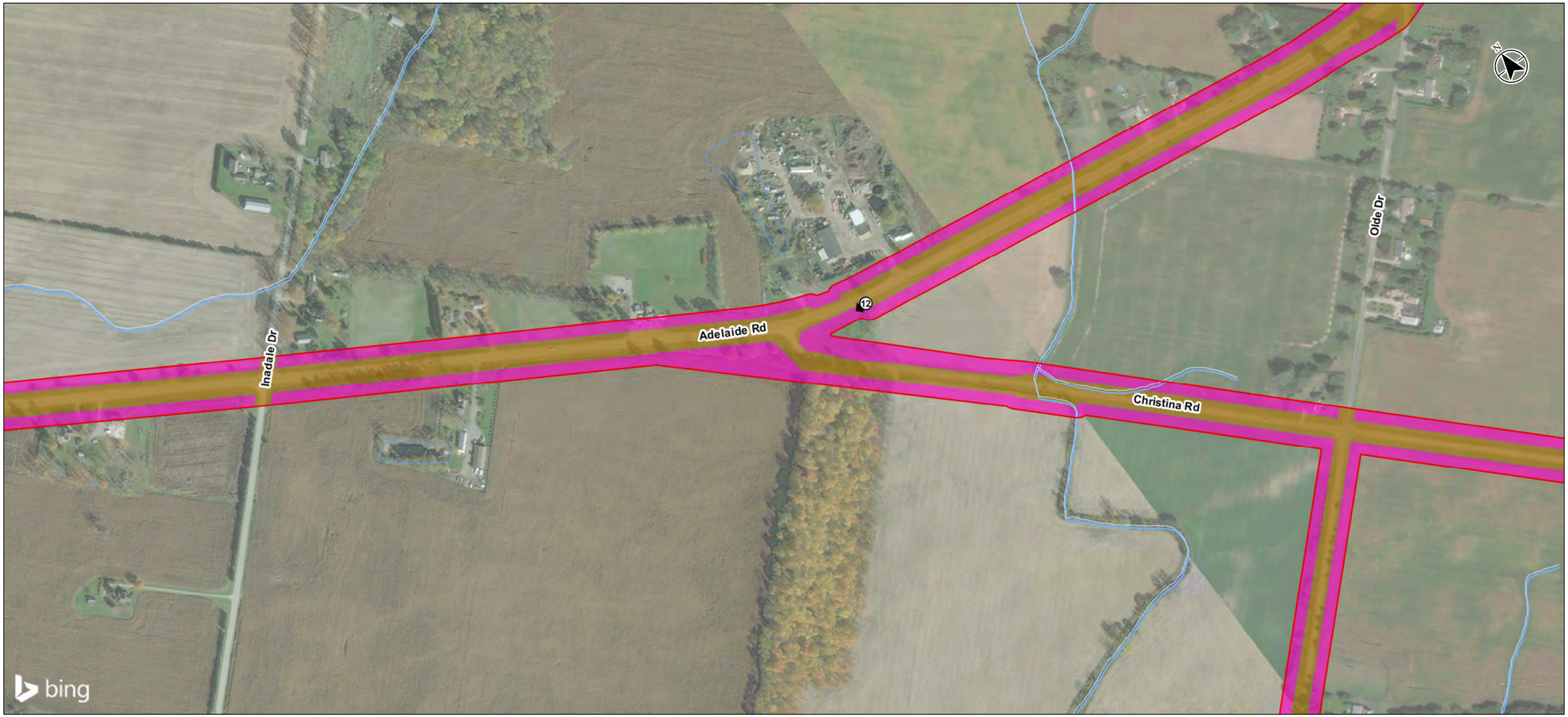

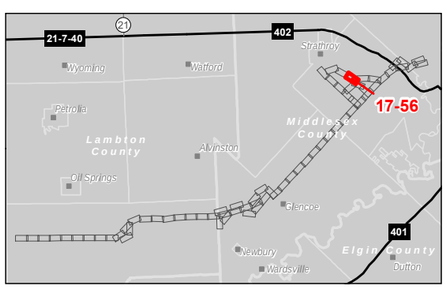

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-56

Title
Results Index – Stage 1 Results

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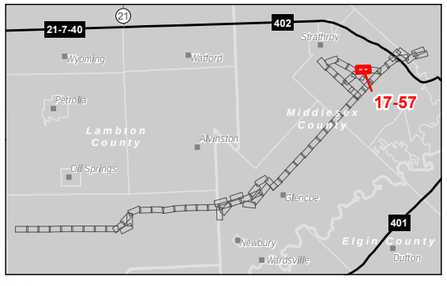

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Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Stantec

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-57

Title
Results Index – Stage 1 Results

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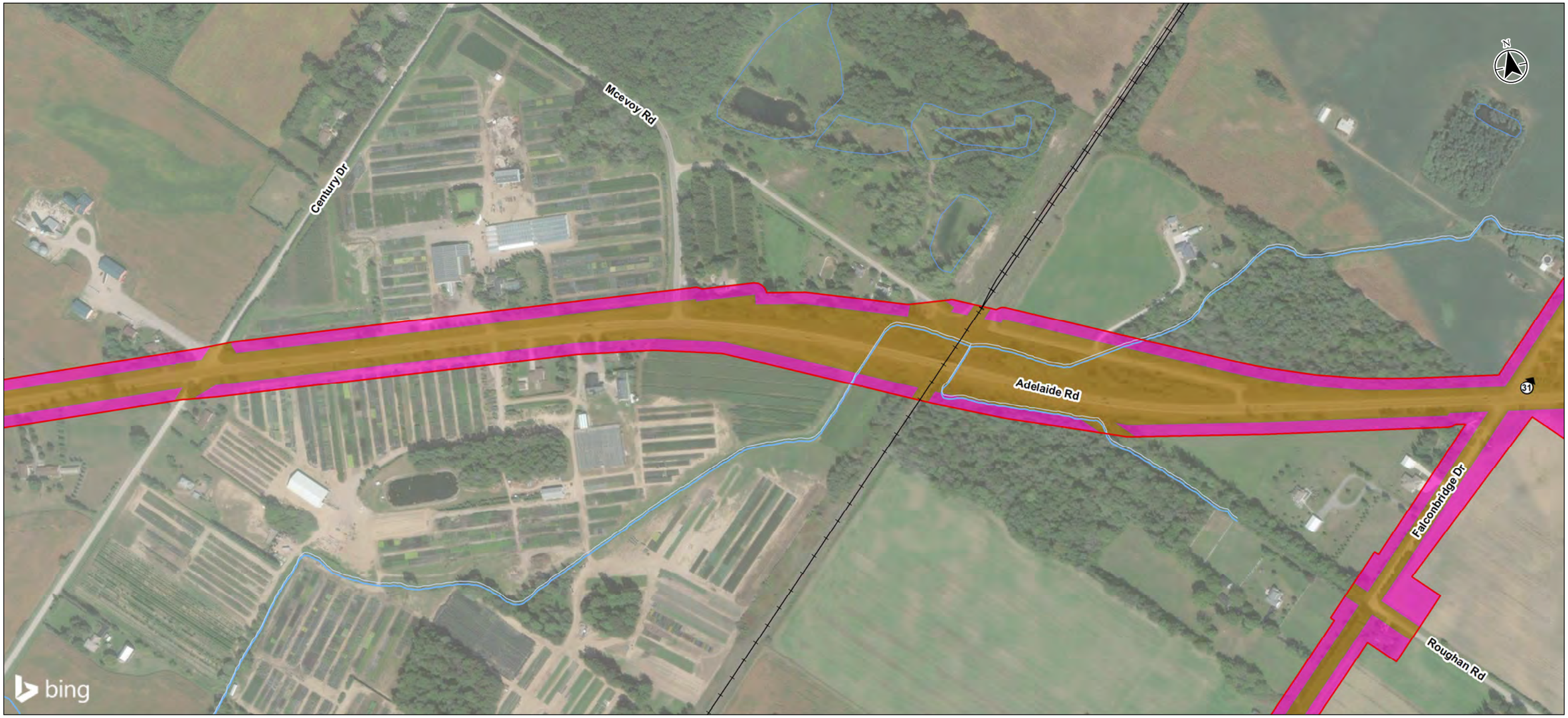

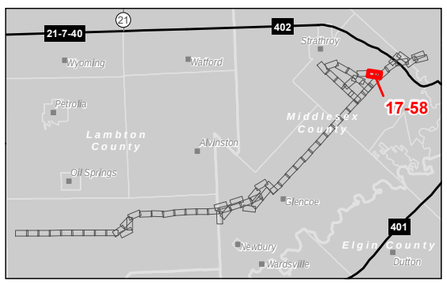

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location	160951170 REVA
Counties of Lambton and Middlesex	Prepared by SPE on 2020-07-09
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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-58

Title
Results Index – Stage 1 Results

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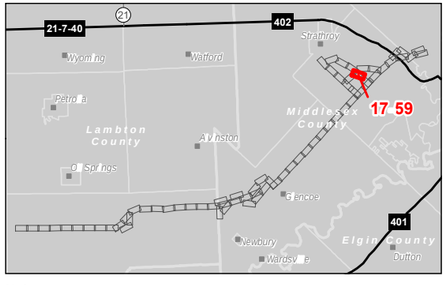

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Low and Permanently Wet Area, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-59

Title
Results Index – Stage 1 Results

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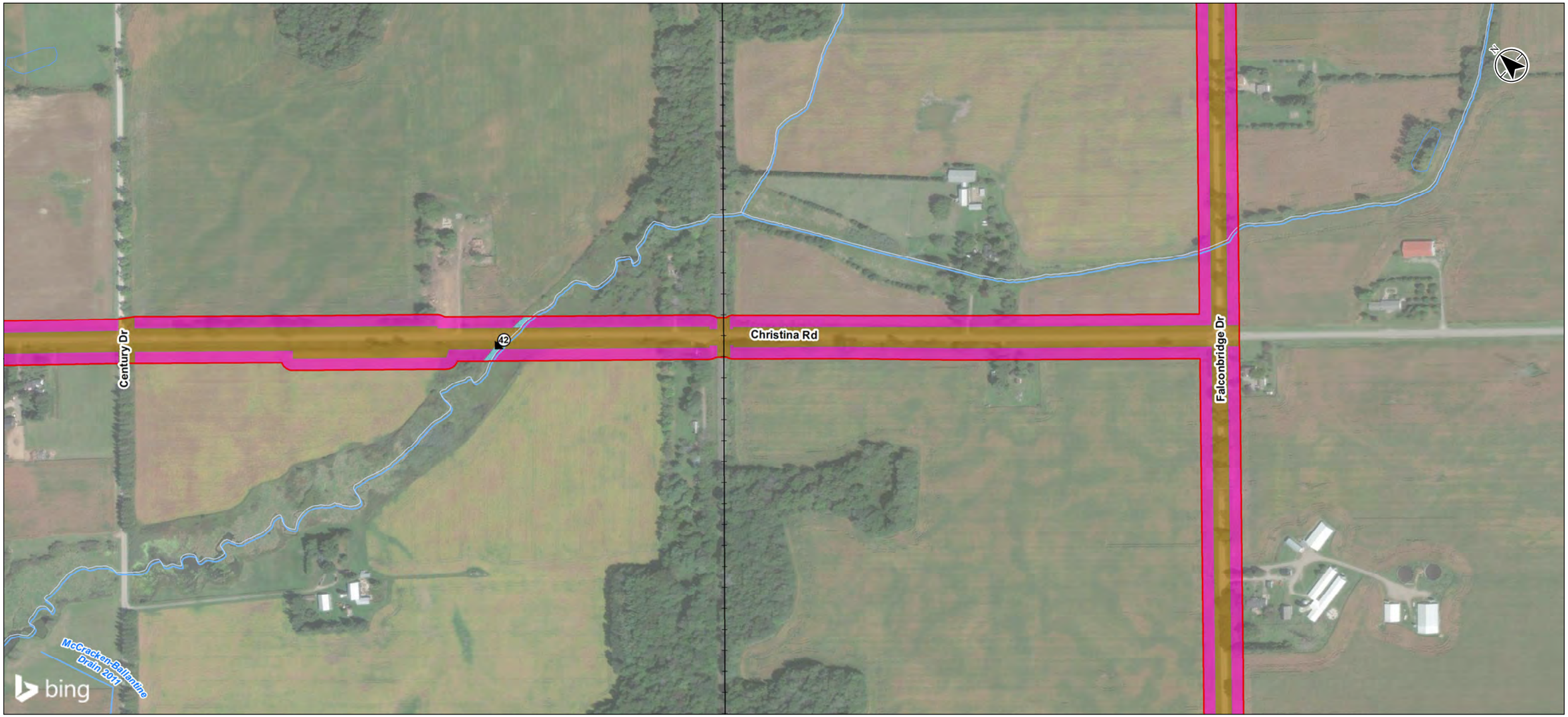

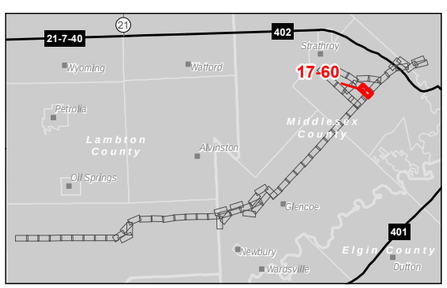

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Low and Permanently Wet Area, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Stantec

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-60

Title
Results Index – Stage 1 Results

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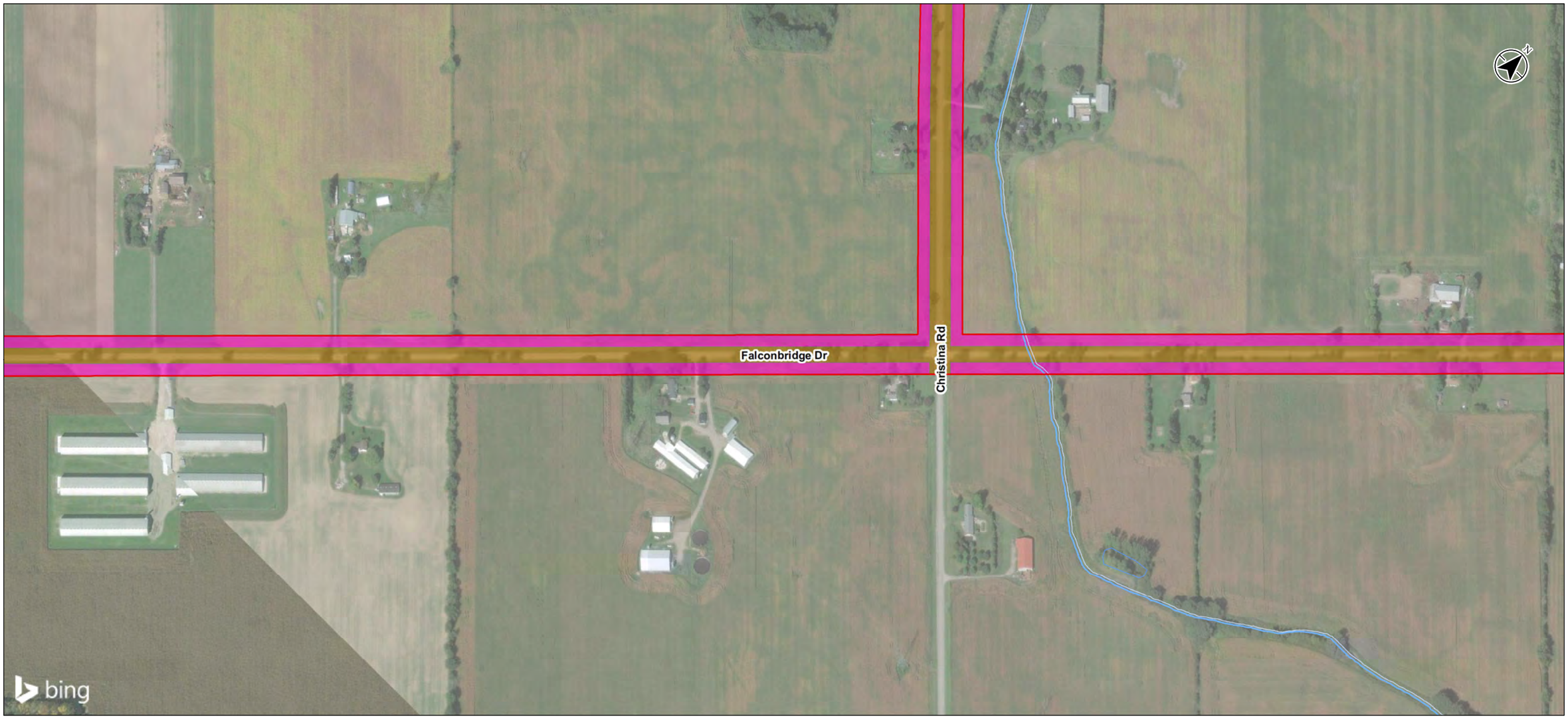

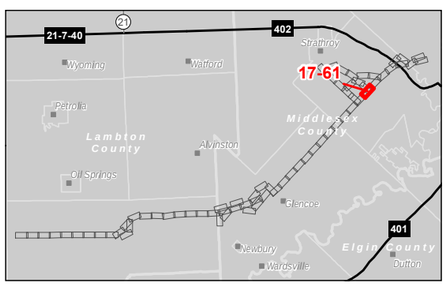

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Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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Project Location
Counties of Lambton and Middlesex

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-61

Title
Results Index – Stage 1 Results

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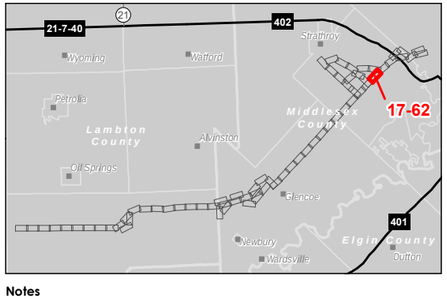

Legend

- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

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ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-62

Title
Results Index – Stage 1 Results

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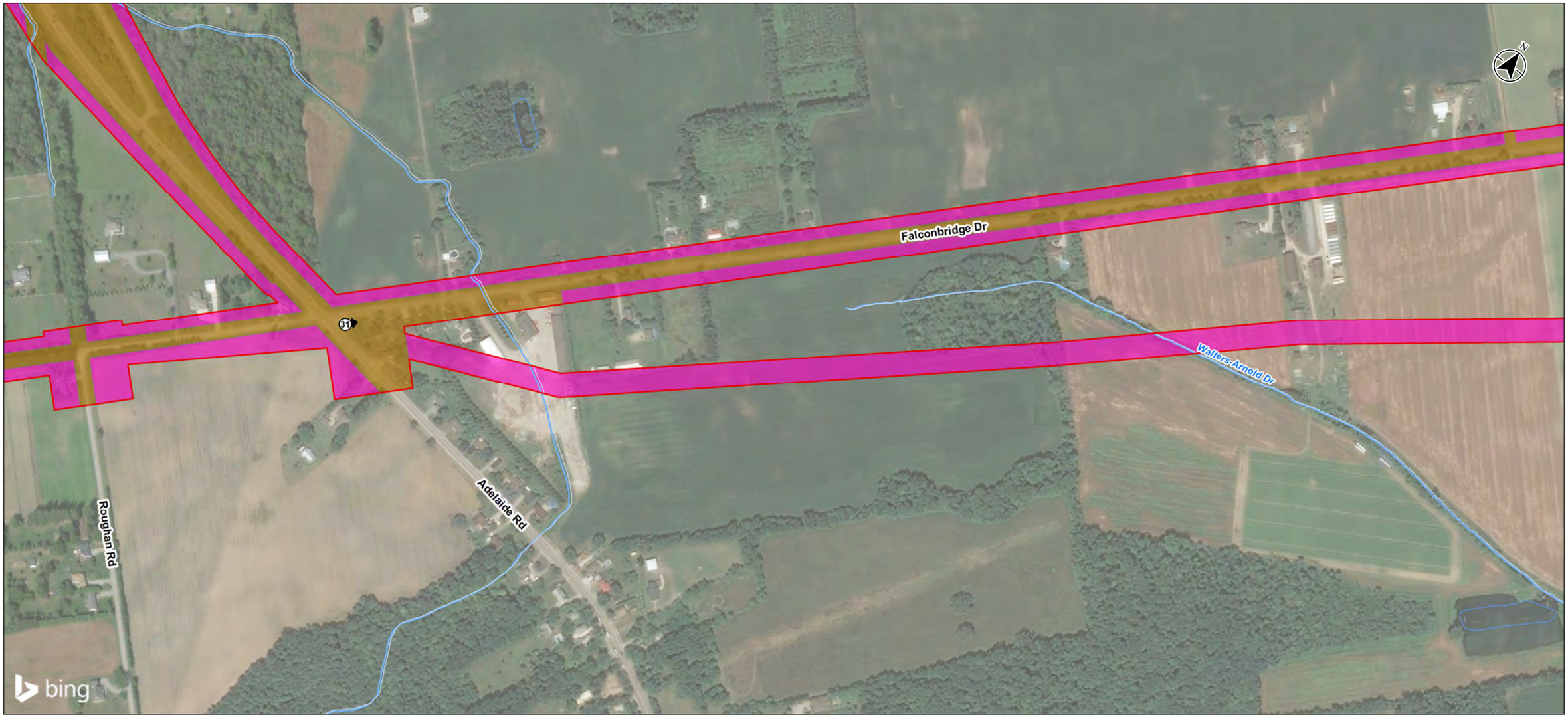

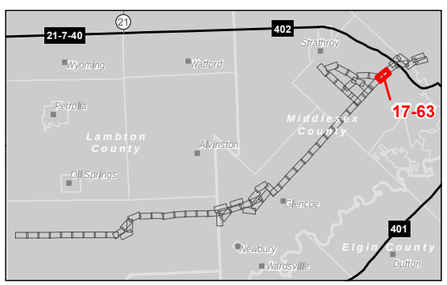

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

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Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-63

Title
Results Index – Stage 1 Results

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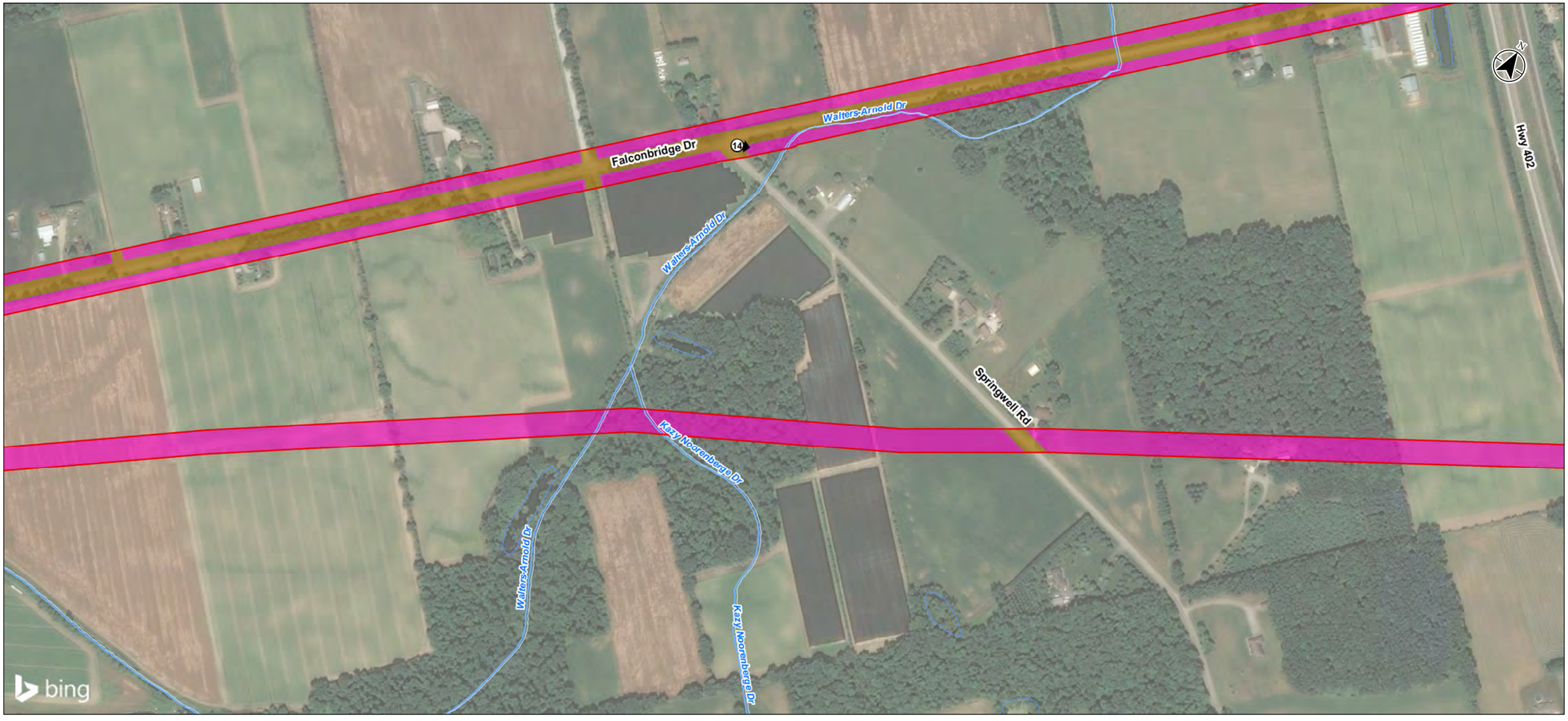

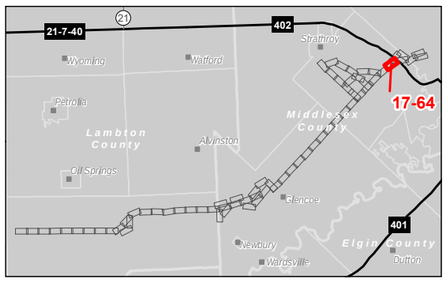

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-64

Title
Results Index – Stage 1 Results

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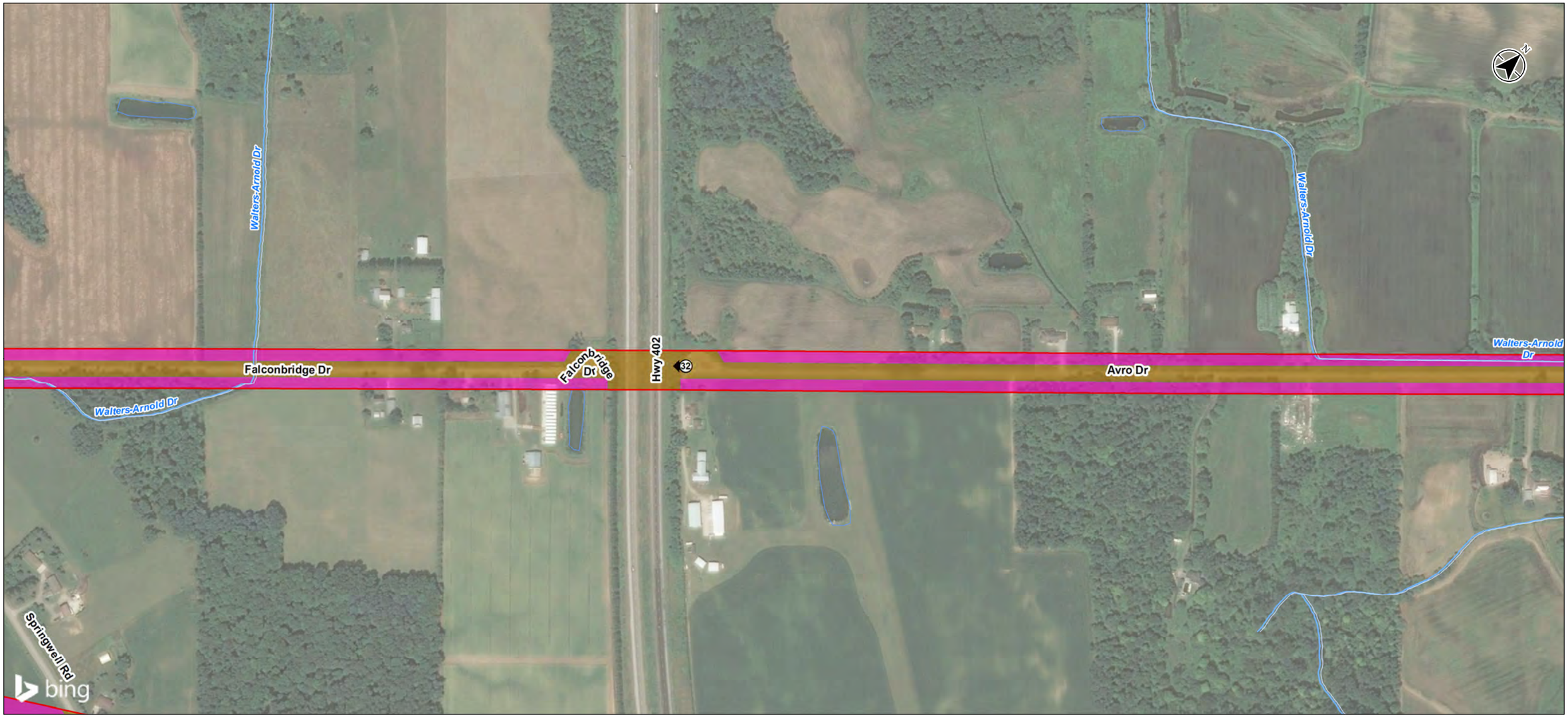

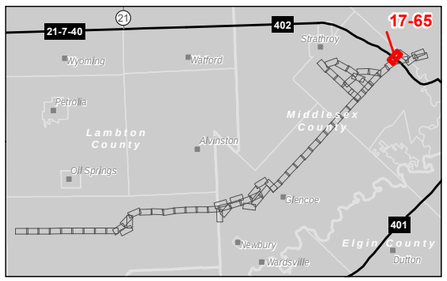

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
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Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-65

Title
Results Index – Stage 1 Results

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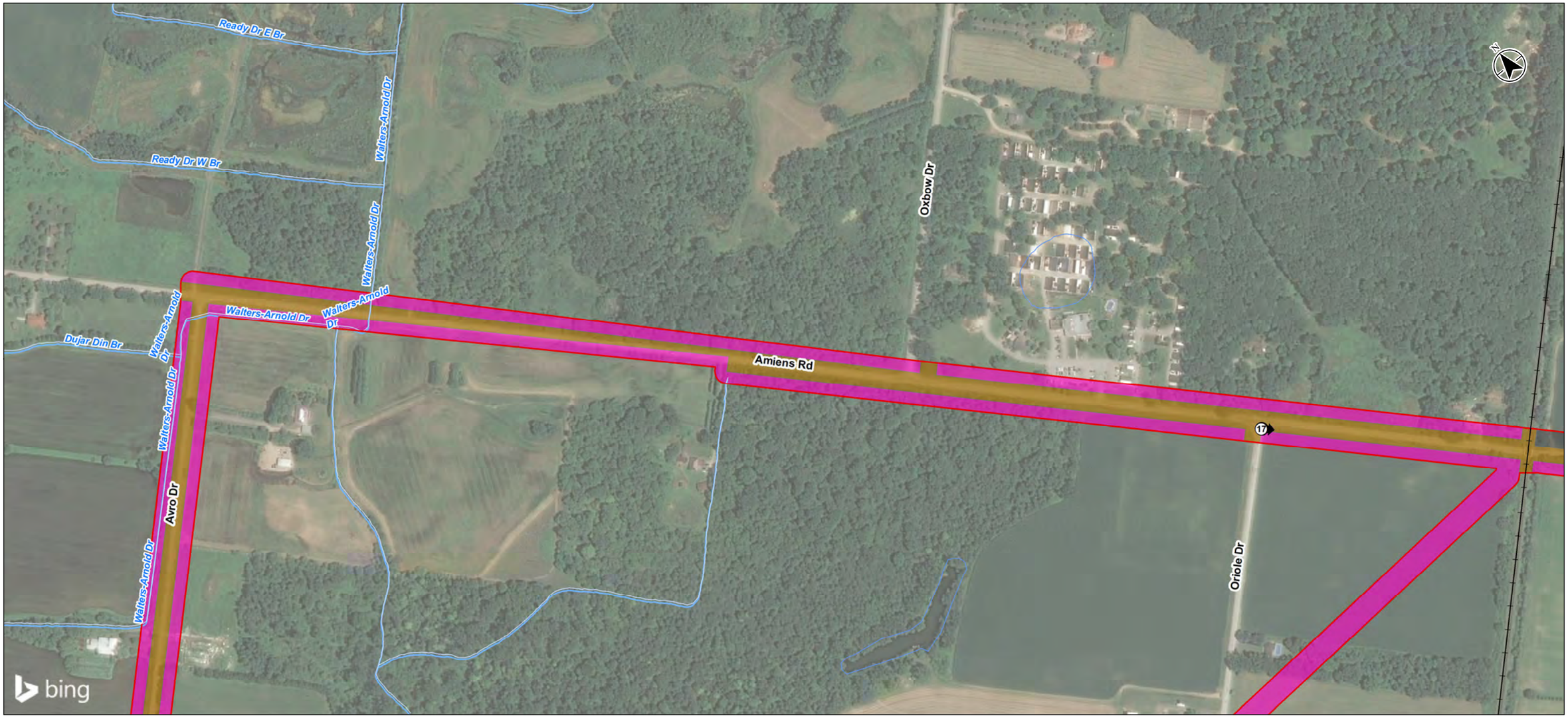

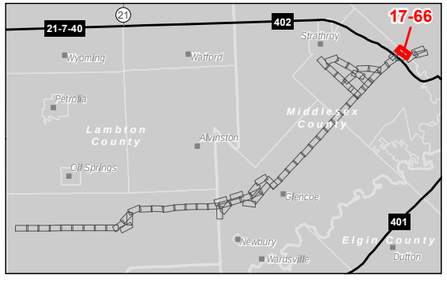

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Assessed, No Further Archaeological Work Required (TMHC 2018)

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
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Client/Project
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LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-66

Title
Results Index – Stage 1 Results

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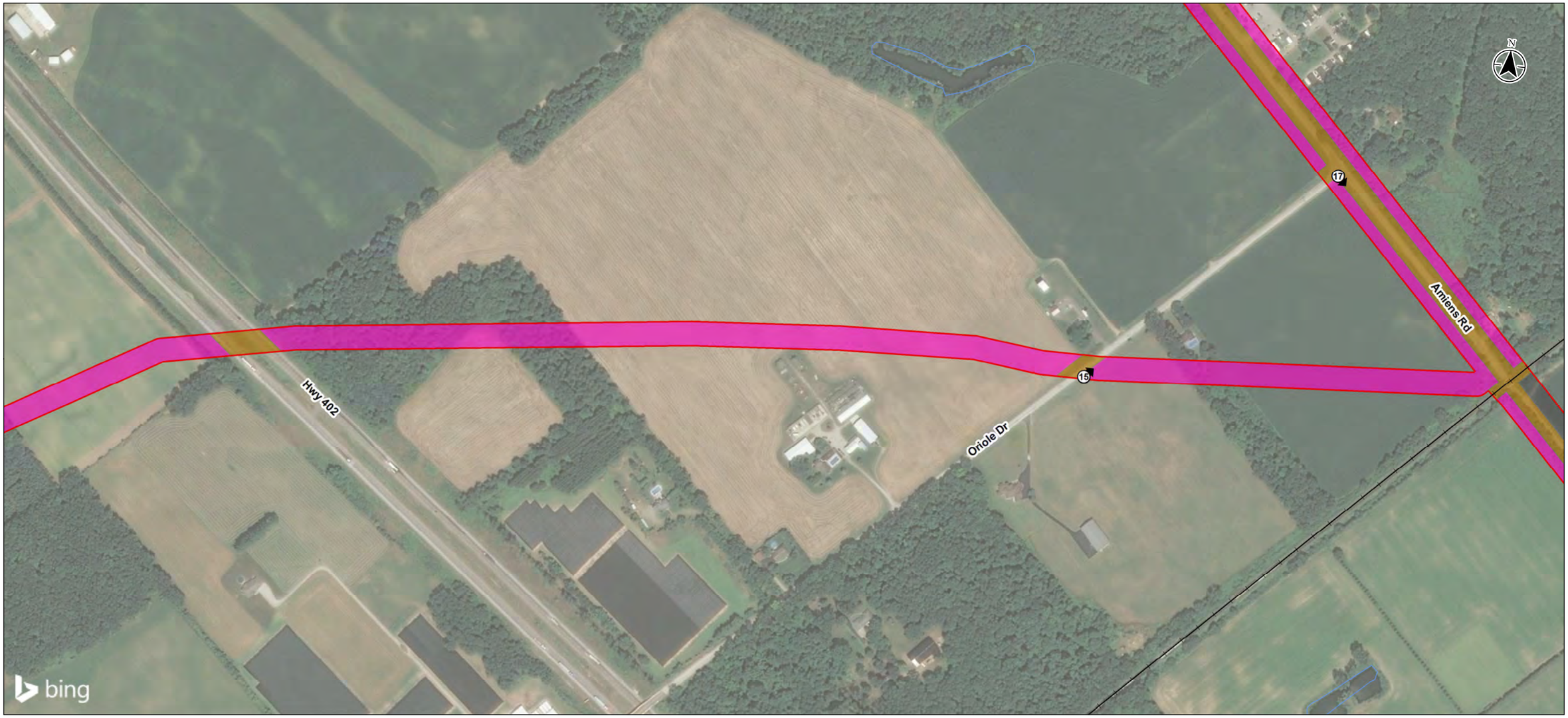

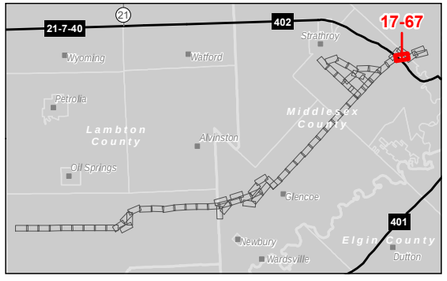

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Legend

- Photo Location and Direction
- Study Area
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Assessed, No Further Archaeological Work Required (TMHC 2018)

0 100 200 metres

1:5,000 (At original document size of 11x17)

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Counties of Lambton and Middlesex

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Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-67

Title
Results Index – Stage 1 Results

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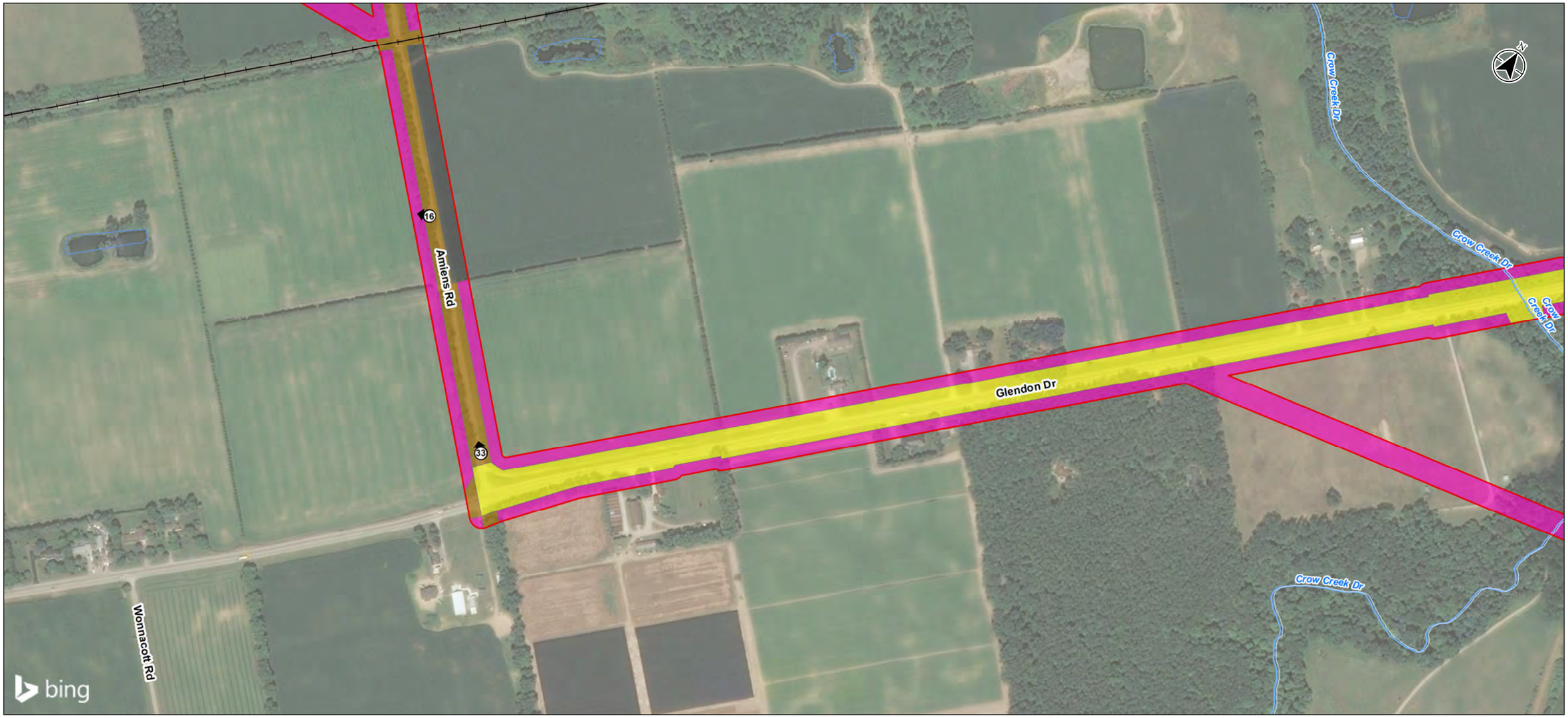

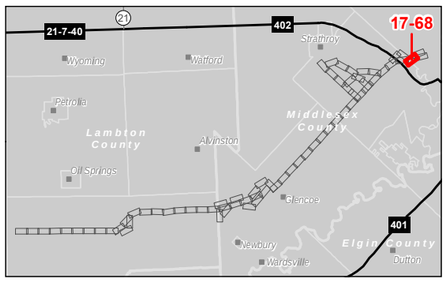

Notes

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Assessed, No Further Archaeological Work Required (Stantec 2016a)
- Previously Assessed, No Further Archaeological Work Required (TMHC 2018)

0 100 200 metres

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Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-68

Title
Results Index – Stage 1 Results

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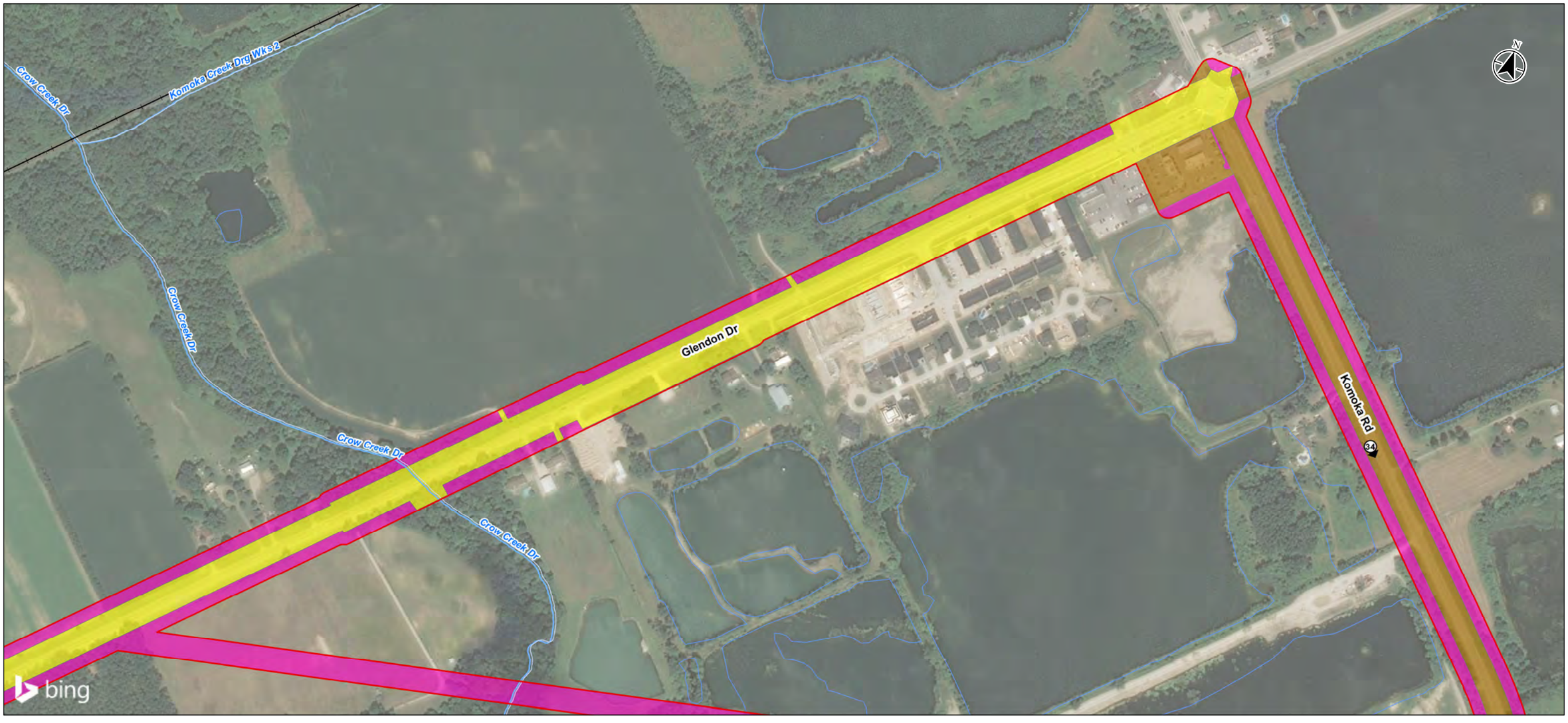

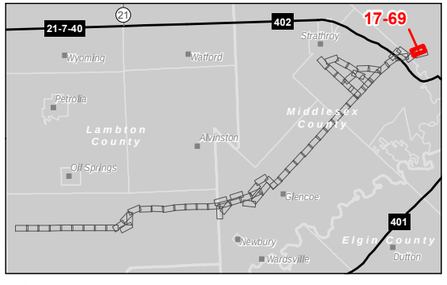

Notes

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Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Railway - Operational
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Assessed, No Further Archaeological Work Required (Stantec 2016a)

0 100 200 metres

1:5,000 (At original document size of 11x17)

Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-69

Title
Results Index – Stage 1 Results

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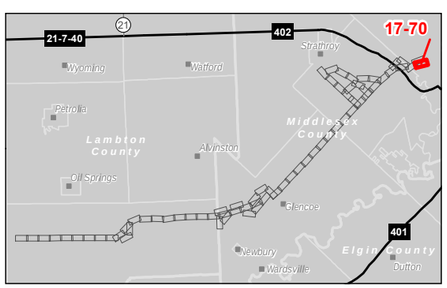

Legend

- Photo Location and Direction
- Study Area
- Watercourse
- Constructed Drain
- Waterbody

Assessment Method

- Area of Archaeological Potential - Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Previously Assessed, No Further Archaeological Work Required (Golder 2016)
- Previously Assessed, No Further Archaeological Work Required (Stantec 2016a)
- Previously Assessed, No Further Archaeological Work Requires (Stantec 2019a; 2019b; 2019c)

0 100 200 metres

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Notes

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Stantec

Project Location
Counties of Lambton and Middlesex

160951170 REVA
Prepared by SPE on 2020-07-09
Technical Review by BCC on 2020-07-02

Client/Project
ENBRIDGE GAS INC.
LONDON LINES REPLACEMENT PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
17-70

Title
Results Index – Stage 1 Results

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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 _____

Parker Dickson – Associate, Senior Archaeologist

Independent Review _____

Colin Varley – Senior Associate, Senior Archaeologist

APPENDIX G
Cultural Heritage Checklist

Ontario

Ministry of Tourism, Culture and Sport

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

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

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Project or Property Name

London Lines Replacement Project

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

Dawn-Euphemia, Southwest Middlesex, Strathroy-Caradoc, and Middlesex Centre

Proponent Name

Enbridge Gas Inc.

Proponent Contact Information

Kelsey Mills, kelsey.mills@enbridge.com

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found **not** to be of cultural heritage value?	☐	☑

If Yes, do **not** complete the rest of the checklist.

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

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value?	☐	☑
b. a National Historic Site (or part of)?	☐	☑
c. designated under the *Heritage Railway Stations Protection Act*?	☐	☑
d. designated under the *Heritage Lighthouse Protection Act*?	☐	☑
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	☐	☑
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	☐	☑

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☑
b. has or is adjacent to a known burial site and/or cemetery?	☑	☐
c. is in a Canadian Heritage River watershed?	☑	☐
d. contains buildings or structures that are 40 or more years old?	☑	☐

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☑	☐
b. has a special association with a community, person or historical event?	☐	☑
c. contains or is part of a cultural heritage landscape?	☑	☐

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

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

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

The summary and appropriate documentation may be:

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

Instructions

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

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's Ontario Heritage Toolkit or Standards and Guidelines for Conservation of Provincial Heritage Properties.

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

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

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

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

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

i. designated under the *Ontario Heritage Act*

- individual designation (Part IV)
- part of a heritage conservation district (Part V)

Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note**: To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- Ontario Heritage Trust
- local land registry office (for a title search)

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ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- Ontario Heritage Trust - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

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iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

---

iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act*. **Note**: To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- Ontario Heritage Trust

---

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the National Historic Sites website.

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the Directory of Designated Heritage Railway Stations.

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the Heritage Lighthouses of Canada website.

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the Federal Heritage Buildings Review Office.

See a directory of all federal heritage designations.

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – World Heritage Site website.

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

For more information, contact:

- municipal heritage committees or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's Heritage directory – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a list of plaques commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a list of plaques commemorating Canada's history

4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

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

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

4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the Canadian Heritage River System.

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

Note: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide Heritage Property Evaluation.

Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- municipal heritage committees or local heritage organizations
- Ontario Historical Society's "Heritage Directory" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through Ontario Trails.

Ministry of Heritage, Sport, Tourism and Culture Industries

Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, ON M7A 0A7
Tel: 416.314.7643

Ministère des Industries du Patrimoine, du Sport, du Tourisme et de la Culture

Direction des programmes et des services
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Toronto, ON M7A 0A7
Tél: 416.314.7643

Ontario

April 24, 2020 EMAIL ONLY

Rooly Georgopoulos
Senior Project Manager
Stantec Consulting Ltd.
300W-675 Cochrane Drive
Markham, ON L3R 0B8
Rooly.Georgopoulos@stantec.com

MHSTCI File	**:**	**0011819**
Proponent	**:**	**Enbridge Gas**
Subject	**:**	**Leave to Construct Application**
Project	**:**	**London Lines Replacement**
Location	**:**	**Township of Dawn-Euphemia, Municipality of Southwest Middlesex, the Township of Strathroy-Caradoc, and the Municipality of Middlesex Centre**

Dear Rooly Georgopoulos:

Thank you for contacting the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) about the above-referenced application to the Ontario Energy Board (OEB) for leave to construction under the *Ontario Energy Board Act*.

The OEB issued the *Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition* to assist applicants in identifying managing and documenting environmental impacts. The Guidelines encourage applicants to consult with the Ontario Pipeline Coordinating Committee (of which MHSTCI is a member) and other agencies. MHSTCI's interest in this process relates to its mandate of conserving Ontario's cultural heritage.

Among the planning activities outlined in Chapter 2 of the Guidelines, an applicant is advised to:

- describe the rationale for study area delineation (including construction staging, land requirements);
- identify existing baseline environmental conditions;
- identify potential environmental impacts expected to occur during construction and operation of the project, including cumulative impacts;
- describe proposed measures to mitigate potential negative impacts.

This letter provides advice on how to incorporate consideration of cultural heritage into the above-mentioned planning activities and expands on sections 4.3 and 5.3 of the Guidelines by outlining the technical cultural heritage studies and level of detail required

to address cultural heritage in pipeline and facilities projects. The outcomes and recommendations of the studies will be reported in the Environmental Report and form the basis for any future commitments.

Project Summary
The London Lines Replacement Project (LLRP) will include the replacement of approximately 75 kilometres (km) from the Township of Dawn-Euphemia eastward to the municipality of Southwest Middlesex and 10.5 km of a secondary pipeline to service the community of Strathroy. The project also includes a proposed new station at Calvert Drive and Sutherland Road in the Municipality of Strathroy-Caradoc.

Identifying Cultural Heritage Resources
While some cultural heritage resources may have already been formally identified, others may be identified through assessment.

Archaeological Resources
The *Criteria for Evaluating Archaeological Potential* checklist is used to determine if an archaeological assessment is needed. We understand that an archaeologist licenced under the *OHA* has been retained, who will complete the necessary archaeological assessment work and will be responsible for submitting the reports directly to MHSTCI for review.

Built Heritage Resources and Cultural Heritage Landscapes
A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment will be undertaken for the entire study area during the planning phase to inform the OEB and will be summarized in the Environmental Report. This study will:

1. Identify existing baseline cultural heritage conditions within the study area.
    - Study Area: The consultants preparing the Cultural Heritage Report will need to define a study area and explain their rationale. The common practice has been to define a study area as including the right-of-way (ROW) and a 50-metre buffer (construction zone) on either side of the ROW.
    - The report will include a historical summary of the study area and will identify all known or potential built heritage resources and cultural heritage landscapes in the study area. MHSTCI has developed screening criteria that may assist with this exercise: *Criteria for Evaluating for Potential Built Heritage Resources and Cultural Heritage Landscapes*.

2. Identify preliminary potential project-specific impacts on the known and potential built heritage resources and cultural heritage landscapes that have been identified. The report should include a description of the anticipated impact to each known or potential built heritage resource or cultural heritage landscape that has been identified.

3. Recommend measures to avoid or mitigate potential negative impacts to known or potential built heritage resources and cultural heritage landscapes. The proposed mitigation measures are to inform the next steps of project planning and design.

   Where a known or potential built heritage resource or cultural heritage landscape may be directly and adversely impacted, and where it has not yet been evaluated for Cultural Heritage Value or Interest (CHVI), completion of a Cultural Heritage Evaluation Report (CHER) is required to fully understand its CHVI and level of significance. The CHER must be completed as part of the Environmental Report. If a potential resource is found to be of CHVI, then a Heritage Impact Assessment (HIA) will be undertaken by a qualified person. The HIA will be completed in consultation with MHSTCI and the proponent as early as possible during detail design, following the OEB's Leave to Construct.

   While some cultural heritage landscapes are contained within individual property boundaries, others span across multiple properties. For certain cultural heritage landscapes, it will be more appropriate for the CHER and HIA to include multiple properties, in order to reflect the extent of that cultural heritage landscape in its entirety.

Cultural Heritage Reports will be undertaken by a qualified person who has expertise, recent experience, and knowledge relevant to the type of cultural heritage resources being considered and the nature of the activity being proposed.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

Environmental Reporting

The findings of the above-mentioned studies should be summarized as part of the Environmental Report discussion of existing conditions, impact assessment, mitigation, and future commitments. Commitments for further studies should clearly state what is to be done, who is responsible for implementation, and when. Recommendations from the technical cultural heritage studies described above should be reflected as commitments in the Environmental Report.

MHSTCI welcomes the opportunity to review and comment upon relevant sections of the draft Environmental Report, before the final draft Environmental Report is submitted to the OPCC for review.

Thank you for consulting MHSTCI on this project and please continue to do so throughout the OEB process. If you have any questions, require clarification, or would like additional examples to assist with project reporting, do not hesitate to contact me.

Sincerely,

Joseph Harvey
On behalf of

Katherine Kirzati
Heritage Planner
Heritage Planning Unit
Katherine.Kirzati@Ontario.ca

Copied to: Kelsey Mills, Environmental Advisor, Enbridge Gas Inc.
Zora Crnojacki, Project Advisor, OEB

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. MHSTCI makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MHSTCI be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Please notify MHSTCI if archaeological resources are impacted by EA project work. All activities impacting archaeological resources must cease immediately, and a licensed archaeologist is required to carry out an archaeological assessment in accordance with the *Ontario Heritage Act* and the *Standards and Guidelines for Consultant Archaeologists*.

If human remains are encountered, all activities must cease immediately and the local police as well as the Registrar, Burials of the Ministry of Government and Consumer Services must be contacted. In situations where human remains are associated with archaeological resources, MHSTCI should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

APPENDIX H
Alignment Sheets

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

SCRCA

Well Present

Well Present

Driveway

Construction Mitigation Notes:
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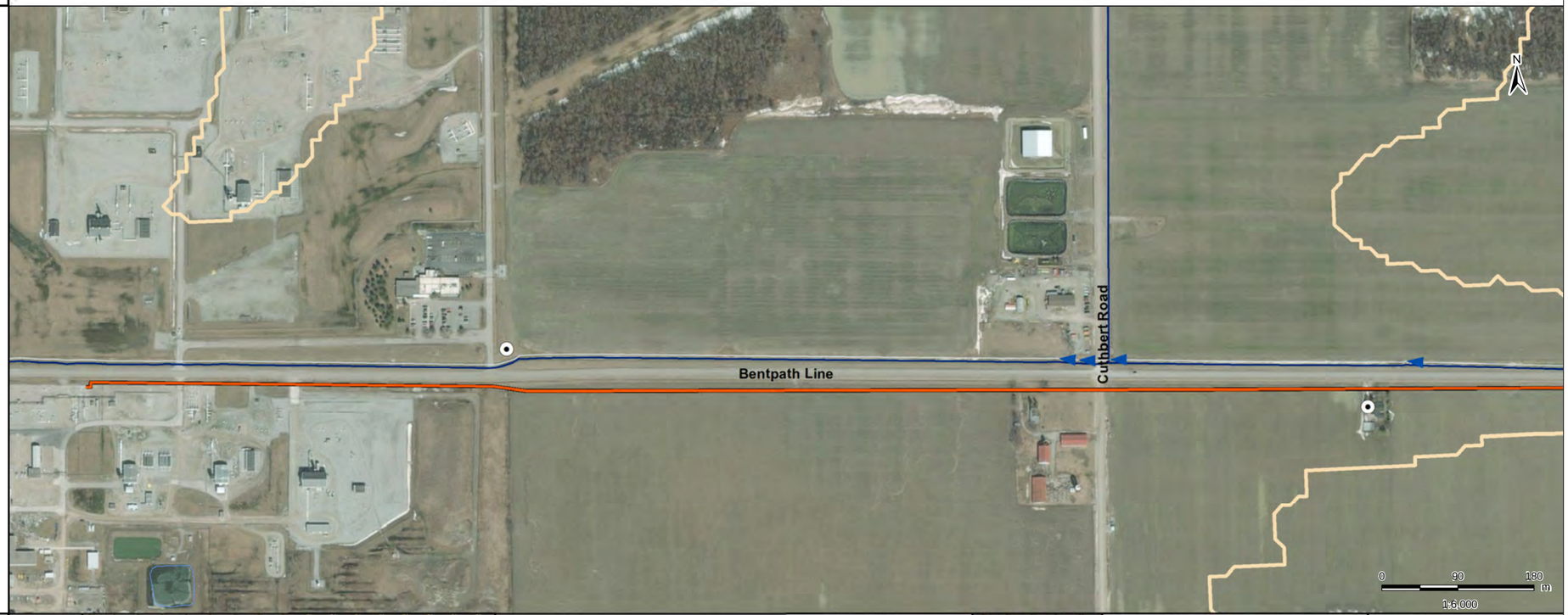


Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Note 7

Note 7

Note 7

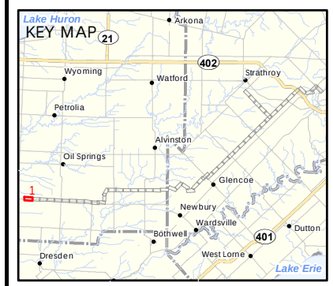
Notes 4 & 5

Notes 4 & 5

Note 6

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area
- Waterbody



Notes

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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-1	-

July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-1

Title
Environmental Alignment Sheets - Map 1

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Revised: 2020-07-11 By: seales

Resources	
CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse → Watercourse →
VEGETATION	
WATER WELL WITHIN 50 m	← Well Present
LINEAR FEATURES	← Road ← Driveway ← Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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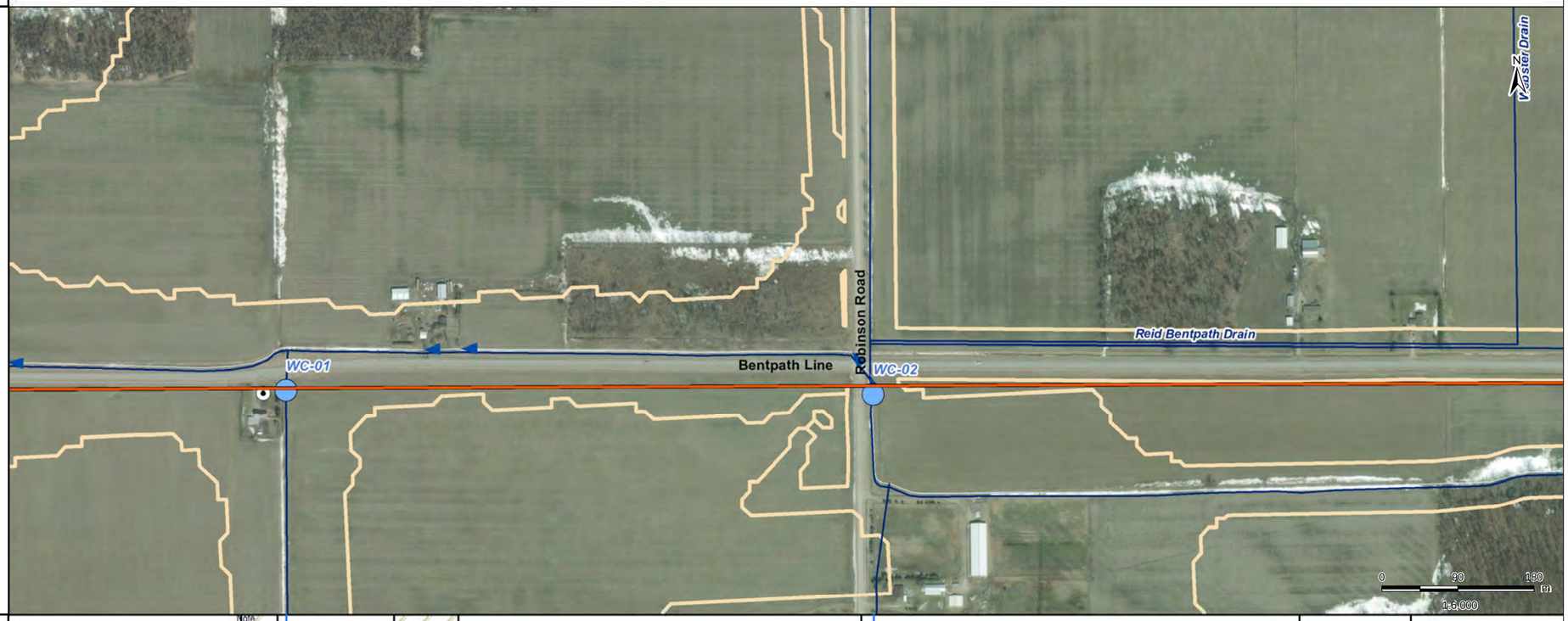

Construction Mitigation	
CONSTRUCTION REQUIREMENTS	Note 7 Note 7 Note 7 Note 7 Note 7 Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8 Note 8
PIPELINE CROSSING METHODS	
MONITORING	← Notes 4 & 5
VEGETATION RESTRICTIONS	
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

Notes
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Figure No.	Rev.
A-2	-

July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-2

Title
Environmental Alignment Sheets - Map 2

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Revised: 2020-07-11 By: searles

Resources						
CONSERVATION AUTHORITY REGULATED AREA			SCRCA		SCRCA	
WETLAND WATERCOURSE						
VEGETATION						
WATER WELL WITHIN 50 m			Wells Present			
LINEAR FEATURES	Driveways		Driveways and Roads		Driveways	
ENVIRONMENTALLY SENSITIVE AREA / ANSI						
SPECIES AT RISK (SAR) HABITAT						

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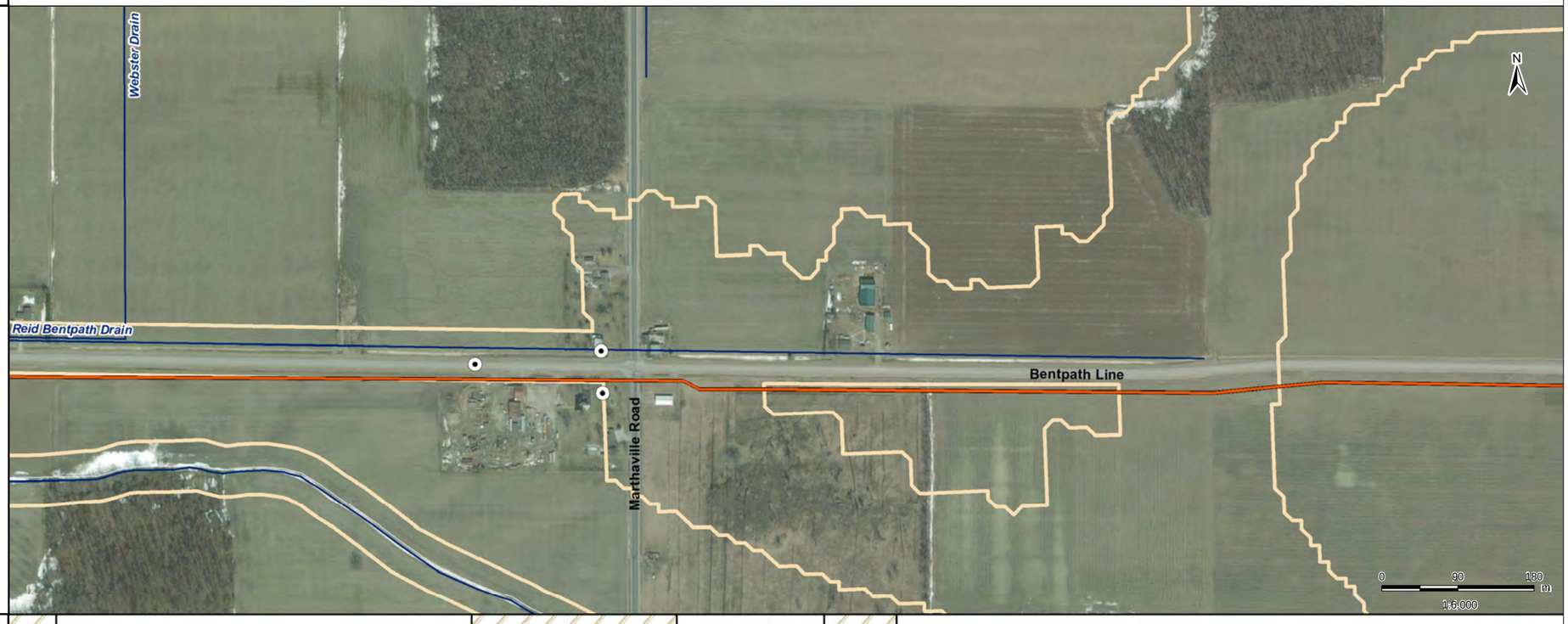

Construction Mitigation						
CONSTRUCTION REQUIREMENTS	Note 7		Note 7		Note 7	
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)						
PIPELINE CROSSING METHODS						
MONITORING			Notes 4 & 5			
VEGETATION RESTRICTIONS						
PERMITTING REQUIREMENTS			Note 6		Note 6	
SEED MIX						
POTENTIALLY CONTAMINATED SITES						
SPECIES AT RISK (SAR) HABITAT						

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

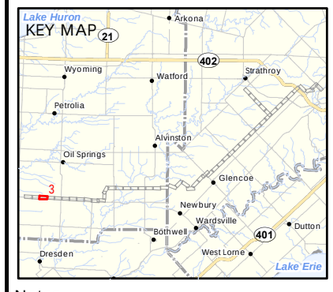

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Figure No.	Rev.
A-3	-

July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-3

Title
Environmental Alignment Sheets - Map 3

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Revised: 2020-07-11 By: searles

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
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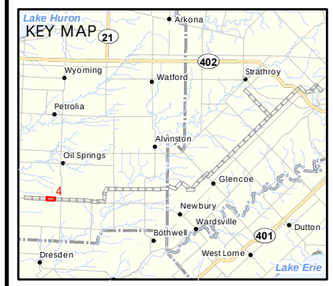
Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Note 7 Note 7 Note 7
Note 3
Note 6

Stantec

Legend
- Preferred Route
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area



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A-4	-

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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-4

Title
Environmental Alignment Sheets - Map 4

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Revised: 2020-07-21 By: stelles

Resources	CONSERVATION AUTHORITY REGULATED AREA		SCRCA	
	WETLAND WATERCOURSE			
	VEGETATION			
	WATER WELL WITHIN 50 m			Wells Present
	LINEAR FEATURES	← Road	Driveways	Driveways and Roads
	ENVIRONMENTALLY SENSITIVE AREA / ANSI			
	SPECIES AT RISK (SAR) HABITAT			

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SAR: Species at Risk

Construction Mitigation	CONSTRUCTION REQUIREMENTS	← Note 7	Note 7	Note 7
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)			
	PIPELINE CROSSING METHODS			
	MONITORING			Notes 4 & 5
	VEGETATION RESTRICTIONS			
	PERMITTING REQUIREMENTS		Note 6	
	SEED MIX			
	POTENTIALLY CONTAMINATED SITES			
	SPECIES AT RISK (SAR) HABITAT			

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

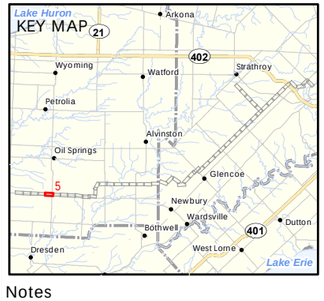

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Figure No.	Rev.
A-5	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-5

Title
Environmental Alignment Sheets - Map 5

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present
LINEAR FEATURES	Driveways; Driveways; Road; Driveways
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

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Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

Acronyms List:
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ECMM: Enbridge Construction and Maintenance Manual, 2019 (ECMM 2019)
SCRCA: St. Clair River Conservation Authority
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 7; Note 7; Note 2; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-6	-

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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-6

Title
Environmental Alignment Sheets - Map 6

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Revised: 2020-07-11 By: stelles

Resources	CONSERVATION AUTHORITY REGULATED AREA	SCRCA		SCRCA
	WETLAND WATERCOURSE		Watercourse	
	VEGETATION			
	WATER WELL WITHIN 50 m			
	LINEAR FEATURES		Road	
	ENVIRONMENTALLY SENSITIVE AREA / ANSI			
	SPECIES AT RISK (SAR) HABITAT			

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 2: HDD construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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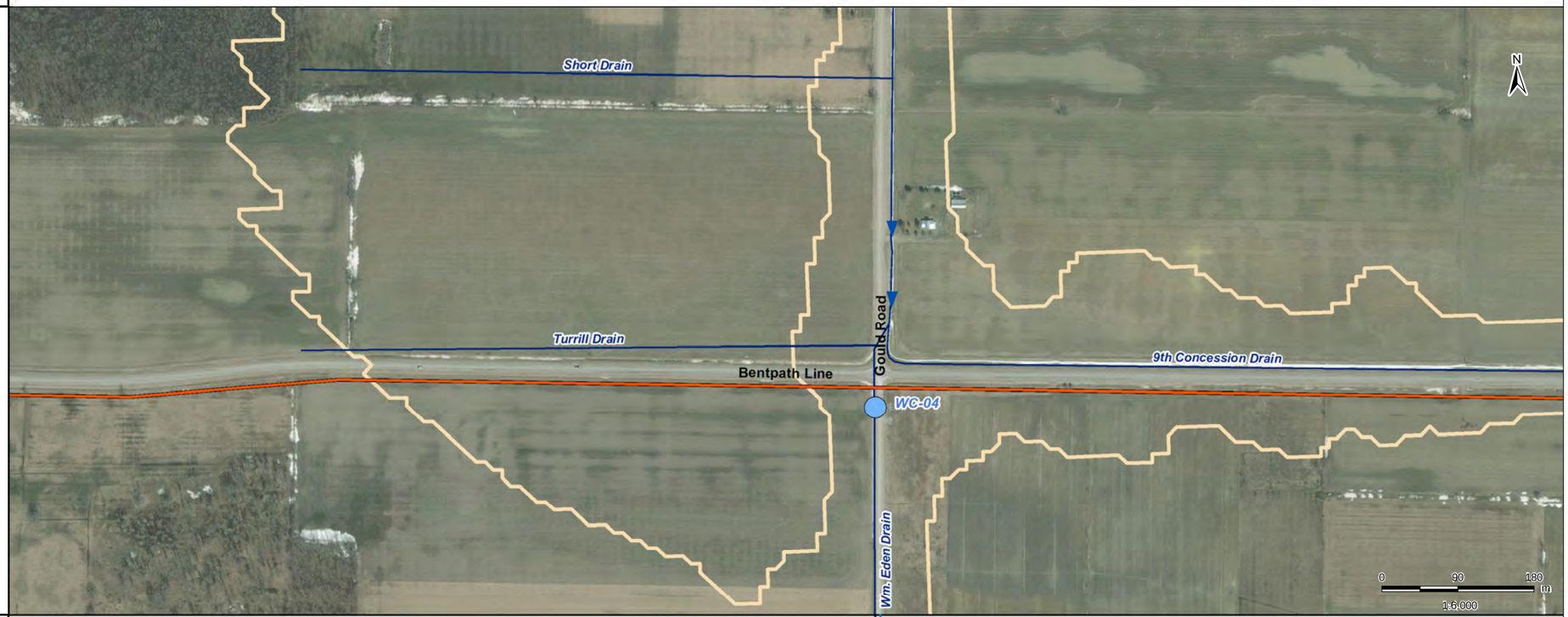
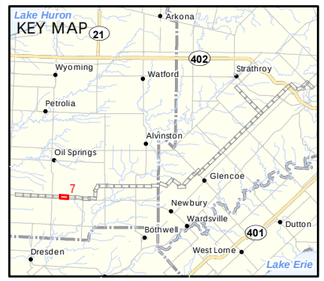


Construction Mitigation	CONSTRUCTION REQUIREMENTS		Note 7 / Note 2	
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)		Note 8	
	PIPELINE CROSSING METHODS			
	MONITORING			
	VEGETATION RESTRICTIONS			
	PERMITTING REQUIREMENTS	Note 6		Note 6
	SEED MIX			
	POTENTIALLY CONTAMINATED SITES			
	SPECIES AT RISK (SAR) HABITAT			

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-7

Title
Environmental Alignment Sheets - Map 7

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Revised: 2020-07-21 By: kdelles

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 2: HDD construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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LTVCA: Lower Thames Valley Conservation Authority
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SAR: Species at Risk

Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

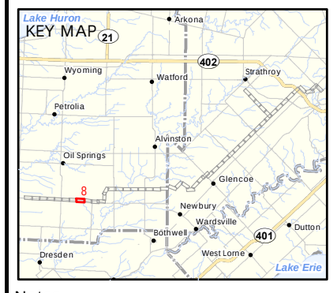

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Figure No.	Rev.
A-8	-

July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-8

Title
Environmental Alignment Sheets - Map 8

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Revised: 2020-07-11 By: stelles

Resources								
	CONSERVATION AUTHORITY REGULATED AREA	SCRCA		SCRCA		SCRCA		
	WETLAND WATERCOURSE	Watercourse →				Watercourse →		
	VEGETATION							
	WATER WELL WITHIN 50 m							
	LINEAR FEATURES	Road →				Driveway →		
	ENVIRONMENTALLY SENSITIVE AREA / ANSI							
	SPECIES AT RISK (SAR) HABITAT							

Construction Mitigation Notes:
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Construction Mitigation								
	CONSTRUCTION REQUIREMENTS	Note 2 →				Note 2 →		
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8 →				Note 8 →		
	PIPELINE CROSSING METHODS							
	MONITORING							
	VEGETATION RESTRICTIONS							
	PERMITTING REQUIREMENTS	Note 6		Note 6		Note 6		
	SEED MIX							
	POTENTIALLY CONTAMINATED SITES							
	SPECIES AT RISK (SAR) HABITAT							

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

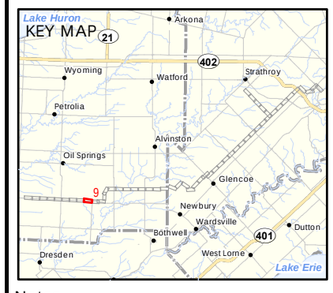

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Figure No.	Rev.
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July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-9

Title
Environmental Alignment Sheets - Map 9

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Revised: 2020-07-11 By: seales

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
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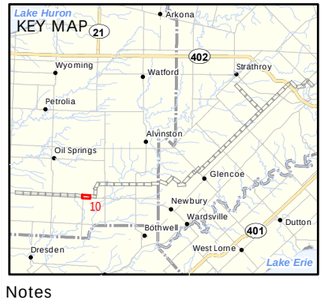
SAR: Species at Risk

Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Note 2 | Note 2 | Note 2 | Note 7
Note 8 | Note 8 | Note 8
Note 6

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- ANSI, Life Science;Regional
- Regulation Area



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A-10	-

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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-10

Title
Environmental Alignment Sheets - Map 10

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Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse; Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present
LINEAR FEATURES	Driveways and Roads; Driveway; Driveway; WC-12
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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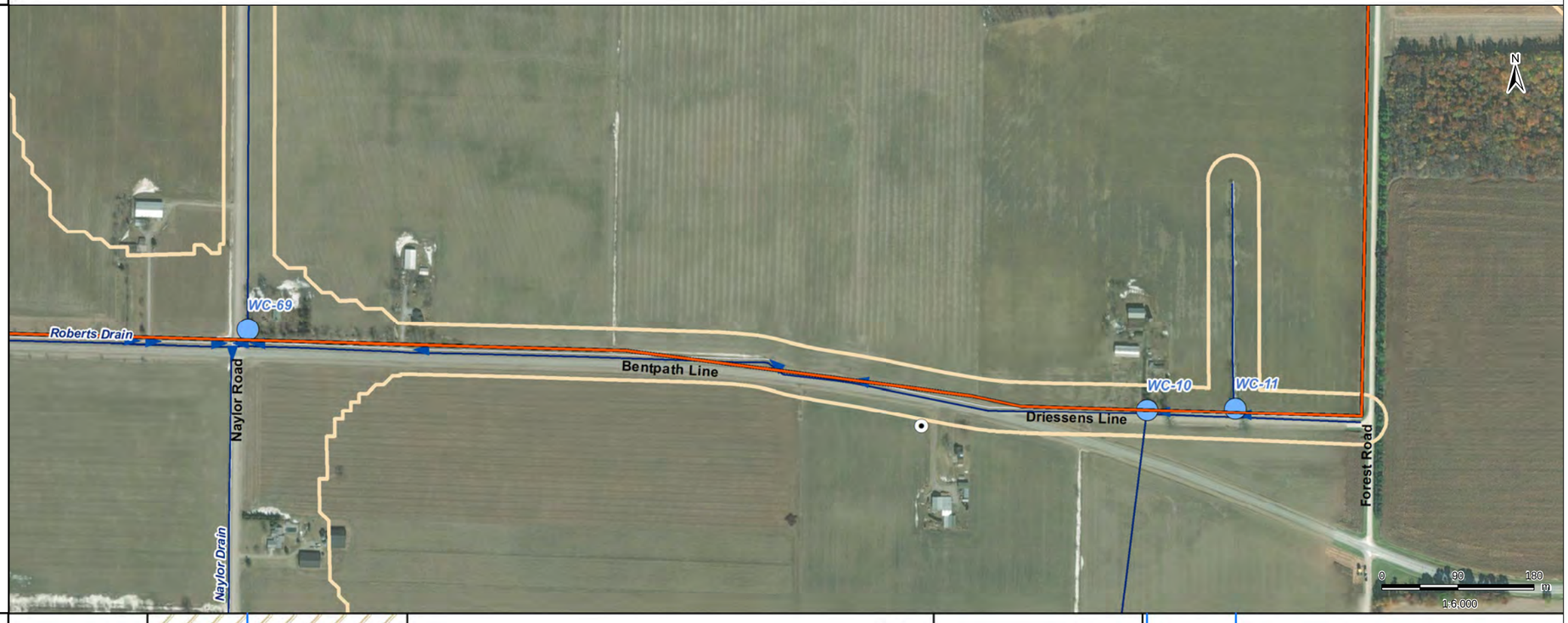

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 7; Note 7; Note 2; Note 7; Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Intermittent Watercourse
- Flow Direction
- Constructed Drain
- Watercourse
- ANSI, Life Science;Regional
- Regulation Area

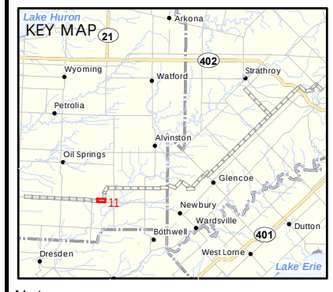

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Figure No.	Rev.
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July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-11

Title
Environmental Alignment Sheets - Map 11

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Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Driveway, Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2, Note 7, Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3, Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

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5. Conservation Authority data provided under license from St Clair Region Conservation Authority, Lower and upper Thames Valley Conservation Authorityand Maitland Valley Conseration Authority (2020).
6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-12	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-12

Title
Environmental Alignment Sheets - Map 12

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA; SCRCA; SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Road; Driveways and Roads
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 2: HDD construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 3: No clearing activities during the migratory breeding bird restricted activity period (April 1 – August 31) without preconstruction nesting surveys. Refer to Section 5.1 of the ER.
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Note 5: Water well monitoring program recommended. Refer to Table 5.1 of the ER.
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Note 8: Warmwater watercourse crossing - In-water work permitted from July 15 to March 14. Refer to Table 5.1 of the ER and Section 15.2 of the ECMM 2019.
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Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

Acronyms List:
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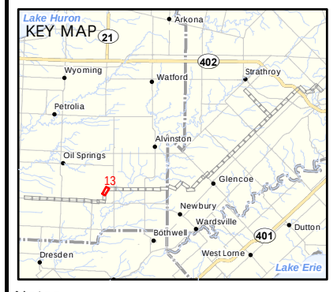
ECMM: Enbridge Construction and Maintenance Manual, 2019 (ECMM 2019)
SCRCA: St. Clair River Conservation Authority
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 7; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6; Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area



Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-13	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-13

Title
Environmental Alignment Sheets - Map 13

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Revised: 2020-07-11 By: seales

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	
VEGETATION	
WATER WELL WITHIN 50 m	Well Present
LINEAR FEATURES	Road; Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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UTRCA: Upper Thames Region Conservation Authority
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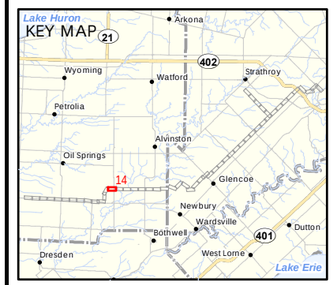
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 2; Note 2; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-14	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-14

Title
Environmental Alignment Sheets - Map 14

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Revised: 2020-07-11 By: seales

Resources	
CONSERVATION AUTHORITY REGULATED AREA	SCRCA / SCRCA
WETLAND WATERCOURSE	Watercourse / Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present / Wells Present
LINEAR FEATURES	Road / Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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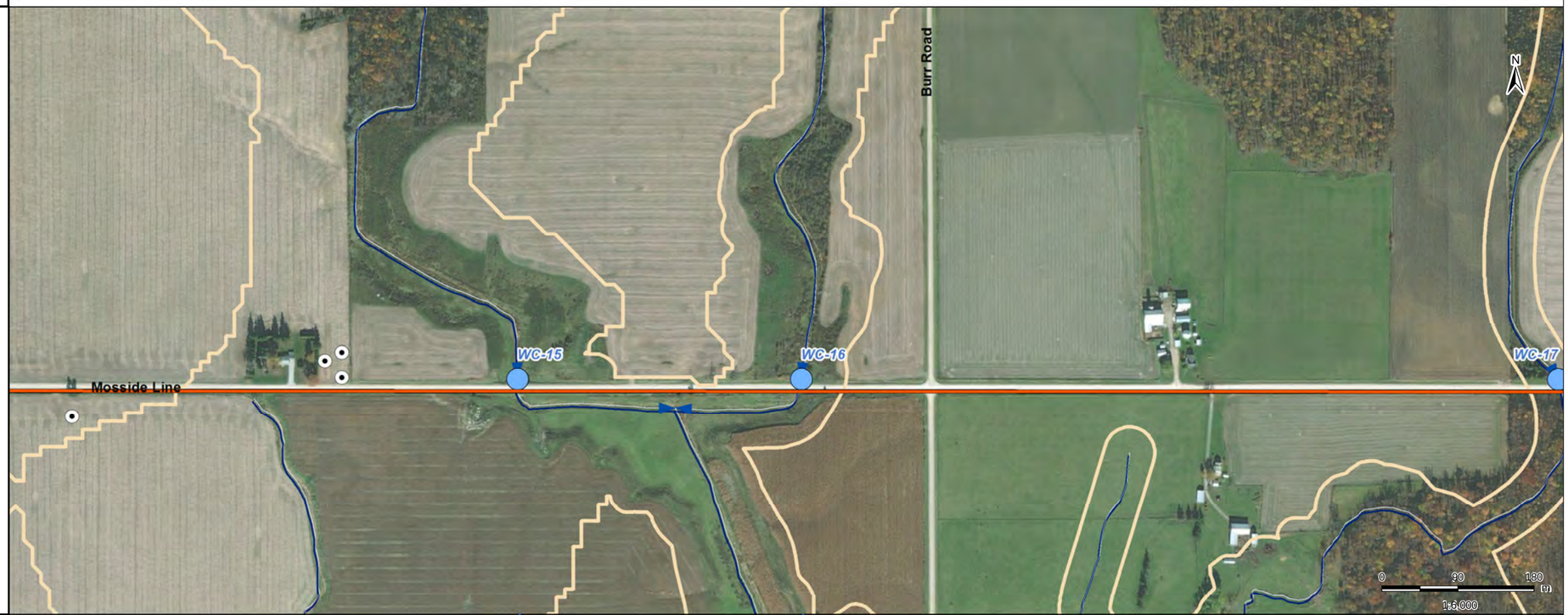
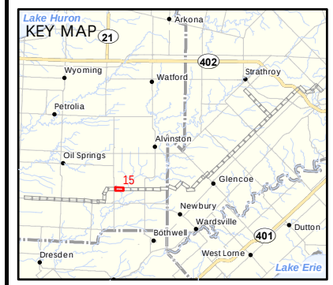
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk



Construction Mitigation	
CONSTRUCTION REQUIREMENTS	Note 2 / Note 2 / Note 7 / Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8 / Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5 / Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6 / Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area



Notes
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4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-15	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-15

Title
Environmental Alignment Sheets - Map 15

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Revised: 2020-07-11 By: seafles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA; SCRCA
WETLAND WATERCOURSE	Watercourse; Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

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UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 2; Note 7; Note 7; Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Warm
- Thermal Regime, Warm
- Regulation Area
- Waterbody

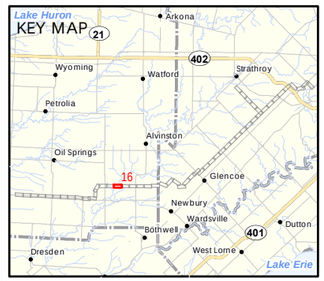

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Figure No.	Rev.
A-16	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-16

Title
Environmental Alignment Sheets - Map 16

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Revised: 2020-07-11 By: seafles

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
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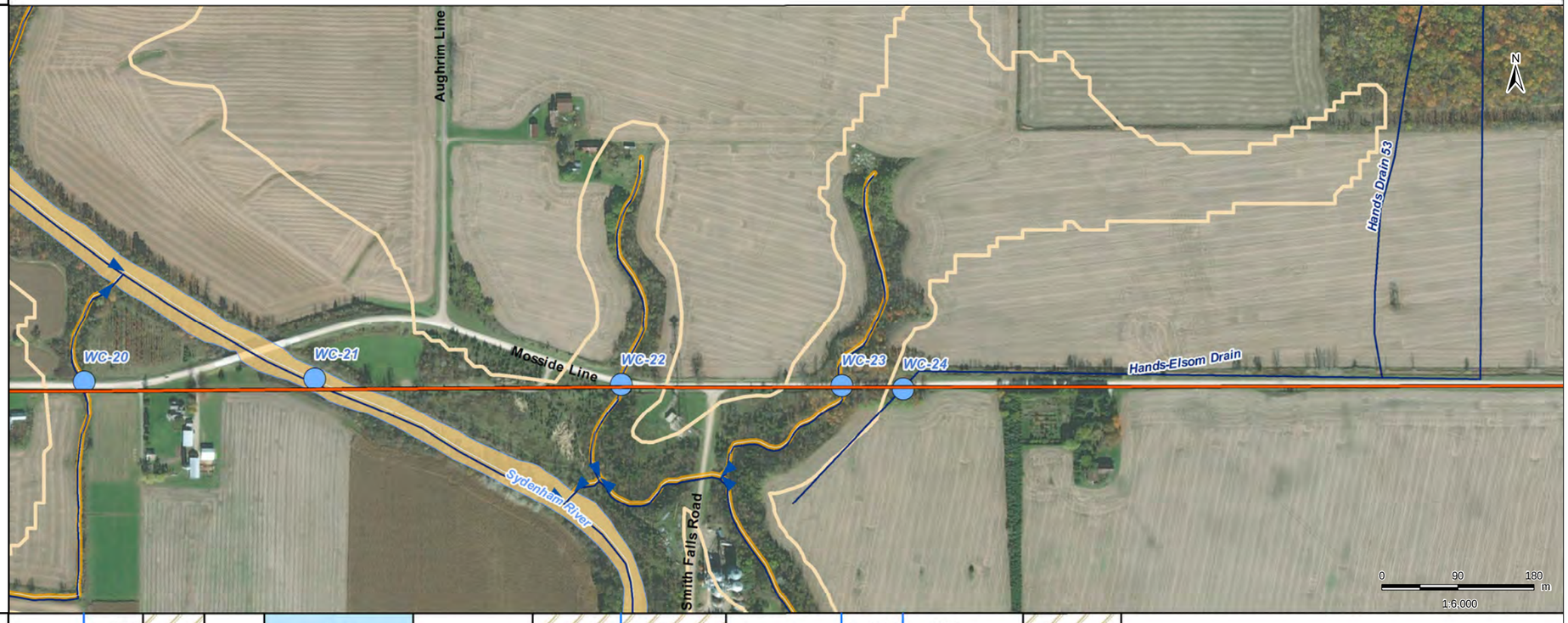
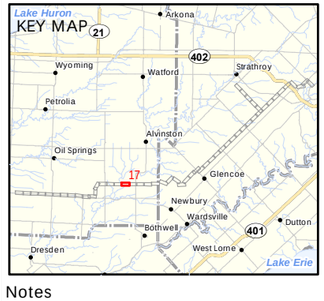
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk



Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Warm
- Thermal Regime, Warm
- Regulation Area
- Waterbody



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-17	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-17

Title
Environmental Alignment Sheets - Map 17

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA
WETLAND WATERCOURSE	Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

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LTVCA: Lower Thames Valley Conservation Authority
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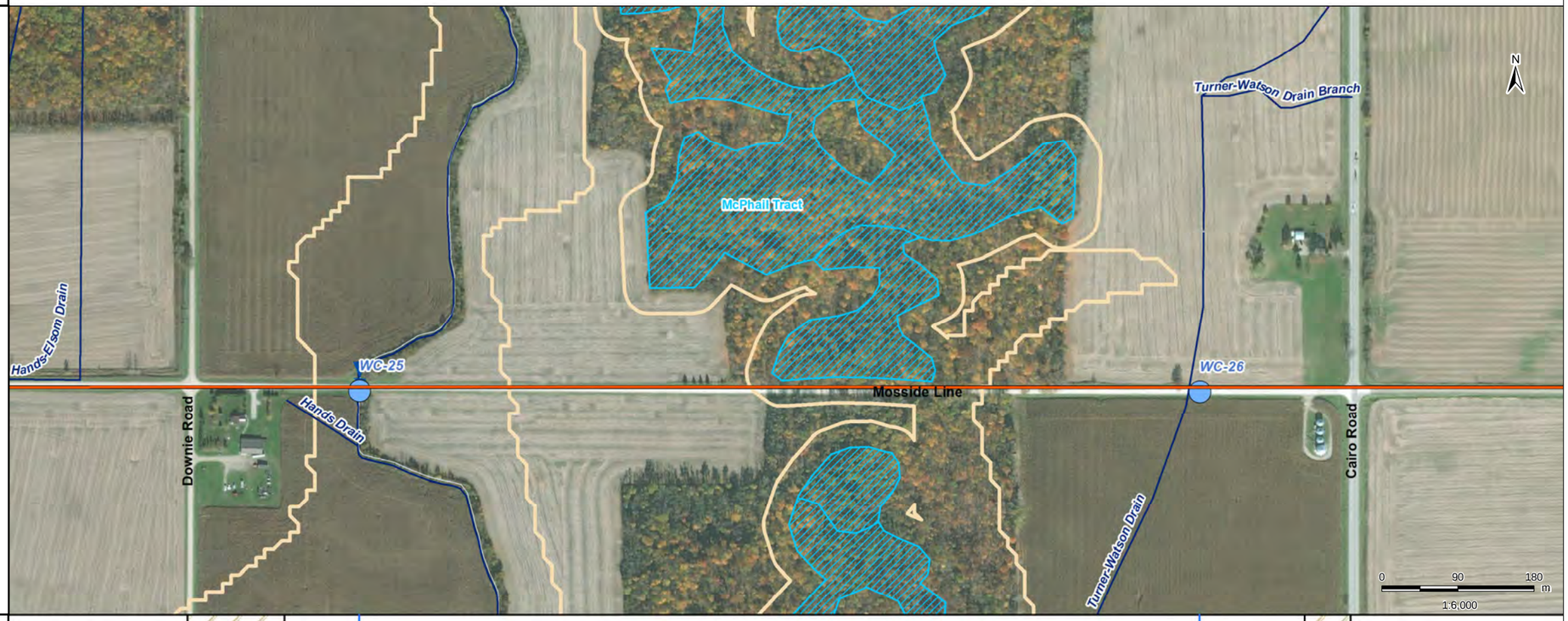

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 2; Note 2; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	Note 10

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Other/Locally Significant Wetland
- Regulation Area

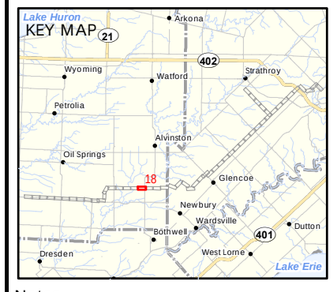

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Figure No.	Rev.
A-18	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-18

Title
Environmental Alignment Sheets - Map 18

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Revised: 2020-07-11 By: seales

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 2: HDD construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 3: No clearing activities during the migratory breeding bird restricted activity period (April 1 – August 31) without preconstruction nesting surveys. Refer to Section 5.1 of the ER.
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Note 5: Water well monitoring program recommended. Refer to Table 5.1 of the ER.
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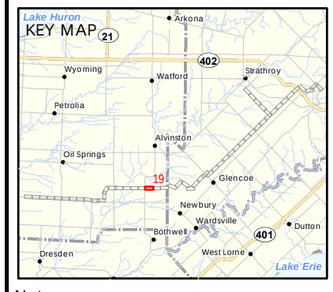
Note 10: Overall Benefit Permit under the Endangered Species Act, 2007 from the MNRF may be required if the species, or protected habitat, are impacted by project activities. See Table 5.1 of the ER and Section 7.5 of the ECMM 2019.
Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

Acronyms List:
ER: Environmental Report (Stantec 2020)
ECMM: Enbridge Construction and Maintenance Manual, 2019 (ECMM 2019)
SCRCA: St. Clair River Conservation Authority
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Provincially Significant Wetland
- Regulation Area



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N.
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3. Orthoimagery © 2020 Microsoft Corporation © 2020 Maxar ©CNES (2020) Distribution Airbus DS. Date of imagery unknown.
4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
5. Conservation Authority data provided under license from St Clair Region Conservation Authority, Lower and upper Thames Valley Conservation Authorityand Maitland Valley Conseration Authority (2020).
6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-19	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-19

Title
Environmental Alignment Sheets - Map 19

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse, Watercourse, Watercourse, Watercourse, Watercourse →
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Road →
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2, Note 2, Note 2, Note 7, Note 7, Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8, Note 8, Note 8, Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3, Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	Note 10

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Provincially Significant Wetland
- Regulation Area

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N.
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3. Orthoimagery © 2020 Microsoft Corporation © 2020 Maxar ©CNES (2020) Distribution Airbus DS. Date of imagery unknown.
4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
5. Conservation Authority data provided under license from St Clair Region Conservation Authority, Lower and upper Thames Valley Conservation Authorityand Maitland Valley Conseration Authority (2020).
6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-20	-

July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-20

Title
Environmental Alignment Sheets - Map 20

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Revised: 2020-07-22 By: seales

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

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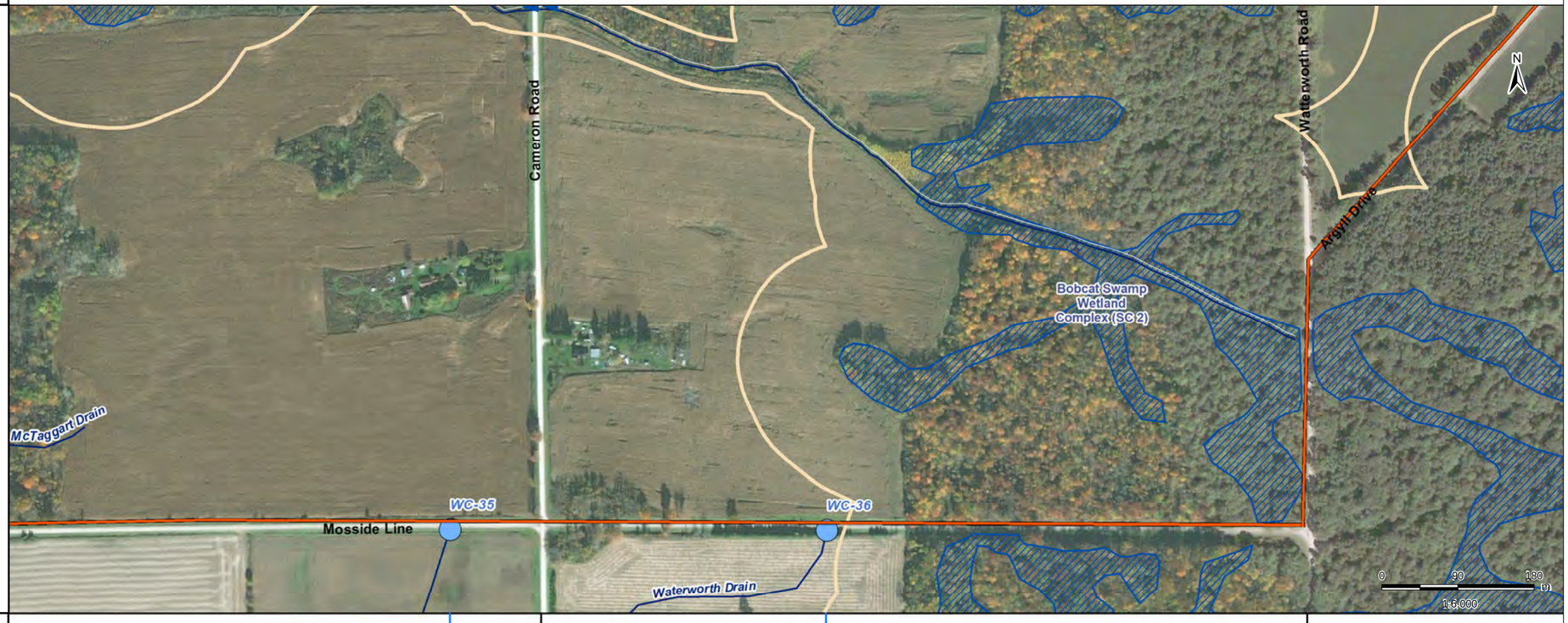
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk



Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Provincially Significant Wetland
- Regulation Area

Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-21	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-21

Title
Environmental Alignment Sheets - Map 21

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Revised: 2020-07-21 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA		SCRCA			
WETLAND WATERCOURSE		Watercourse				
VEGETATION						
WATER WELL WITHIN 50 m						
LINEAR FEATURES		Road	Driveways		Driveways and Roads	
ENVIRONMENTALLY SENSITIVE AREA / ANSI						WC-38
SPECIES AT RISK (SAR) HABITAT						

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

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ER: Environmental Report (Stantec 2020)
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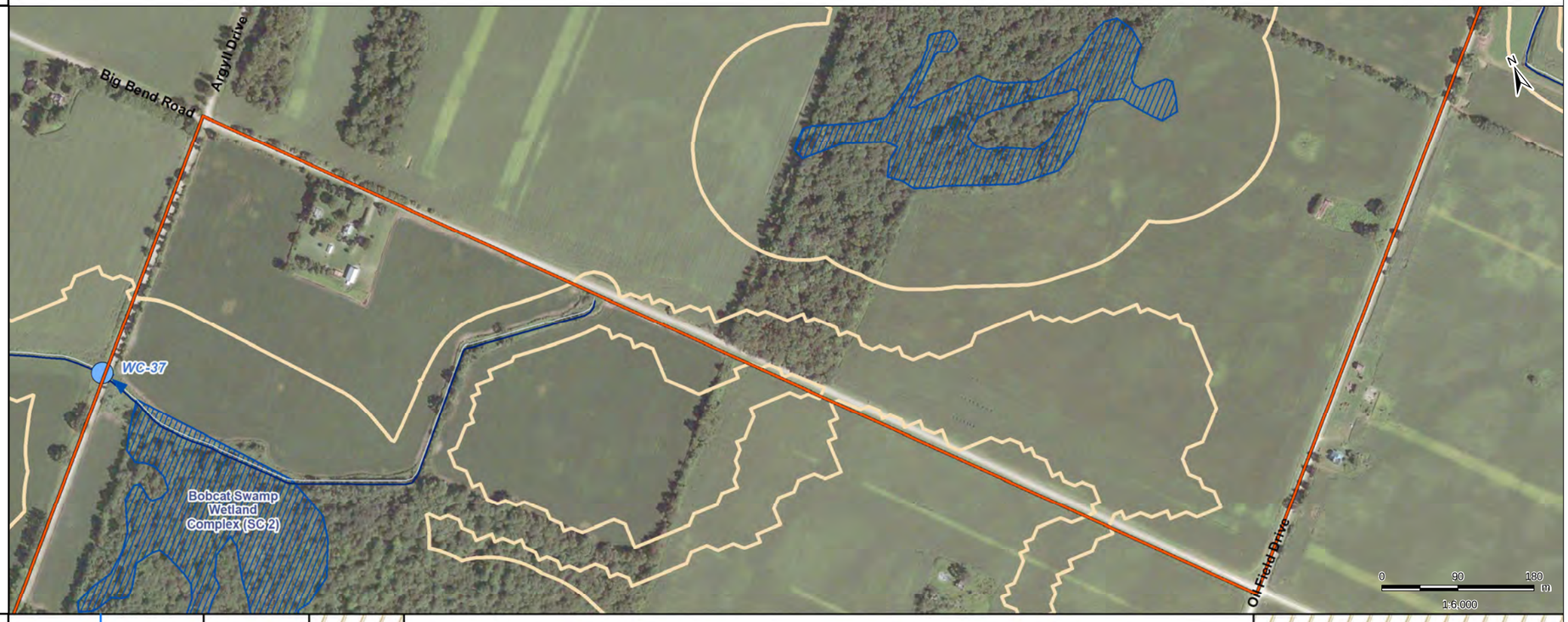
SCRCA: St. Clair River Conservation Authority
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk



Construction Mitigation

CONSTRUCTION REQUIREMENTS		Note 2	Note 7	Note 7		Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)		Note 8				
PIPELINE CROSSING METHODS						
MONITORING						
VEGETATION RESTRICTIONS		Note 3				Note 3
PERMITTING REQUIREMENTS	Note 6		Note 6			
SEED MIX						
POTENTIALLY CONTAMINATED SITES						
SPECIES AT RISK (SAR) HABITAT						

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Provincially Significant Wetland
- Regulation Area
- Waterbody

Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-22	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-22

Title
Environmental Alignment Sheets - Map 22

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA
WETLAND WATERCOURSE	Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Driveways; Driveways; Driveways
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 7; Note 7; Note 7; Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3; Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Provincially Significant Wetland
- Regulation Area
- Waterbody

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N.
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3. Orthoimagery © 2020 Microsoft Corporation © 2020 Maxar ©CNES (2020) Distribution Airbus DS. Date of imagery unknown.
4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
5. Conservation Authority data provided under license from St Clair Region Conservation Authority, Lower and upper Thames Valley Conservation Authoryand Maitland Valley Conseration Authority (2020).
6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-23	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-23

Title
Environmental Alignment Sheets - Map 23

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Revised: 2020-07-11 By: seales

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA
WETLAND WATERCOURSE	Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Driveway; Driveways; Driveway; Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 7; Note 2; Note 7; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	
PERMITTING REQUIREMENTS	Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Flow Direction
- Constructed Drain
- Watercourse
- Provincially Significant Wetland
- Regulation Area
- Waterbody

Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-24	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-24

Title
Environmental Alignment Sheets - Map 24

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA; SCRCA; SCRCA
WETLAND WATERCOURSE	Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present
LINEAR FEATURES	Railway; Driveways and Roads
ENVIRONMENTALLY SENSITIVE AREA / ANSI	WC-44
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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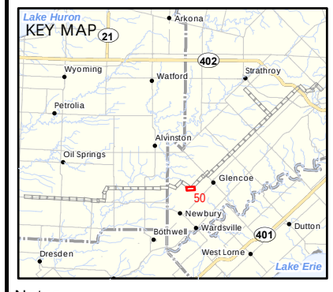
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 11; Note 7; Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	
PERMITTING REQUIREMENTS	Note 6; Note 6; Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Provincially Significant Wetland
- Regulation Area
- Waterbody



Notes
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4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-25

Title
Environmental Alignment Sheets - Map 25

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Revised: 2020-07-11 By: stelles

Resources	
CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Note 2 — Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present
LINEAR FEATURES	Driveways — Driveways — Driveways — Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

Acronyms List:
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ECMM: Enbridge Construction and Maintenance Manual, 2019 (ECMM 2019)
SCRCA: St. Clair River Conservation Authority
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation	
CONSTRUCTION REQUIREMENTS	Note 7 — Note 2 — Note 7 — Note 7 — Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Regulation Area
- Waterbody

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N.
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3. Orthoimagery © 2020 Microsoft Corporation © 2020 Maxar ©CNES (2020) Distribution Airbus DS. Date of imagery unknown.
4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
5. Conservation Authority data provided under license from St Clair Region Conservation Authority, Lower and upper Thames Valley Conservation Authorityand Maitland Valley Conseration Authority (2020).
6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-26	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-26

Title
Environmental Alignment Sheets - Map 26

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Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watrcourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Driveways; Driveways
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 2; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Regulation Area
- Waterbody

Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-27	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-27

Title
Environmental Alignment Sheets - Map 27

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Revised: 2020-07-11 By: stelles

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
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Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Note 7
Note 7

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area
- Waterbody

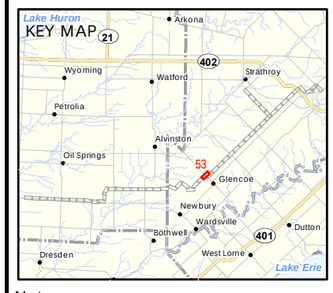

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Figure No.	Rev.
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July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-28

Title
Environmental Alignment Sheets - Map 28

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Revised: 2020-07-11 By: stelles

Resources

- CONSERVATION AUTHORITY REGULATED AREA
- WETLAND WATERCOURSE
- VEGETATION
- WATER WELL WITHIN 50 m
- LINEAR FEATURES
- ENVIRONMENTALLY SENSITIVE AREA / ANSI
- SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
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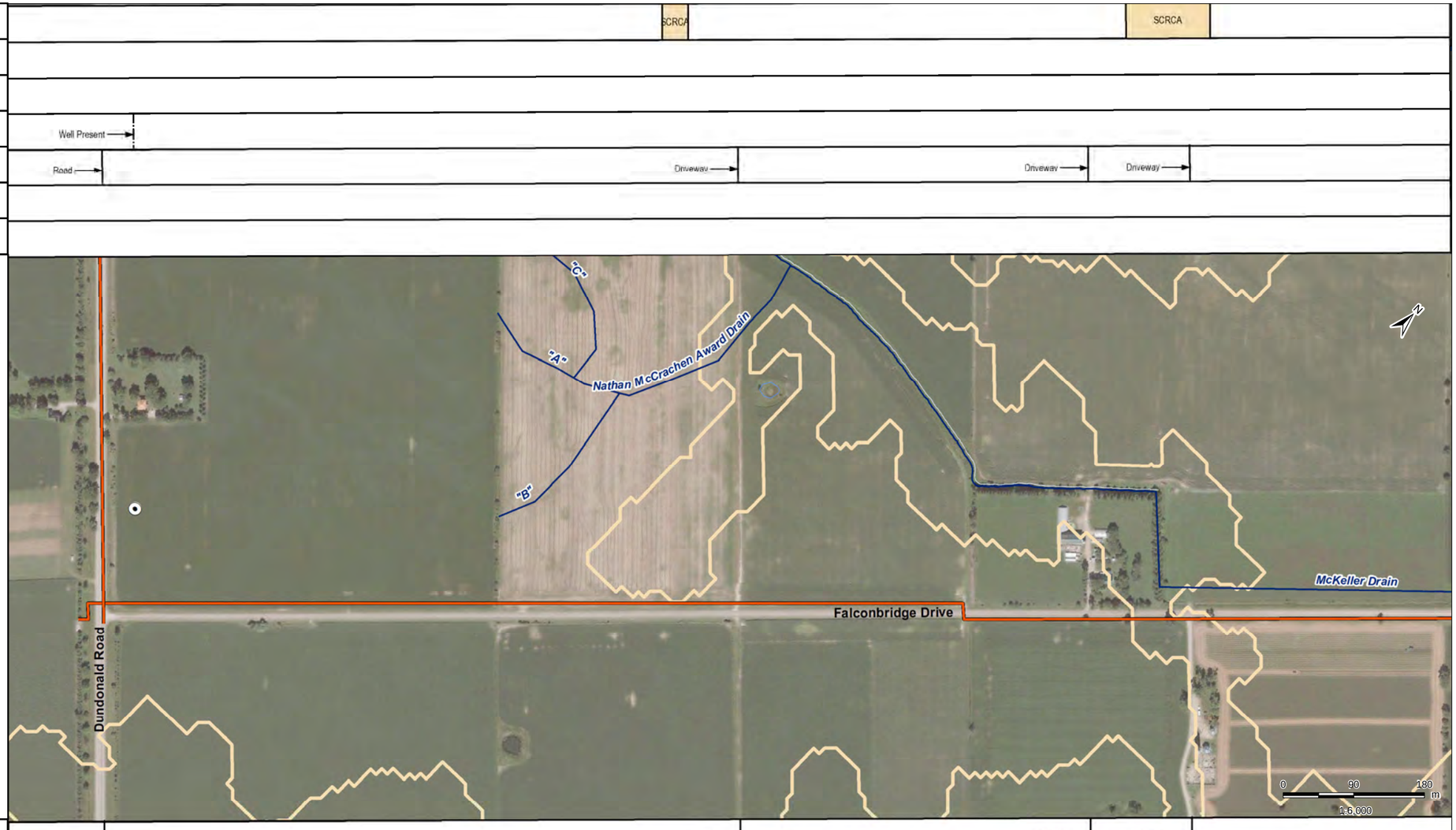
SAR: Species at Risk



Construction Mitigation

- CONSTRUCTION REQUIREMENTS
- FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
- PIPELINE CROSSING METHODS
- MONITORING
- VEGETATION RESTRICTIONS
- PERMITTING REQUIREMENTS
- SEED MIX
- POTENTIALLY CONTAMINATED SITES
- SPECIES AT RISK (SAR) HABITAT

Note 7 | Note 7 | Note 7 | Note 7
Notes 4 & 5
Note 6 | Note 6

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area
- Waterbody

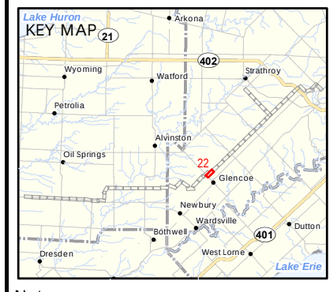


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Figure No.	Rev.
A-29	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-29

Title
Environmental Alignment Sheets - Map 29

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Revised: 2020-07-11 By: stelles

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
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Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Legend
- Preferred Route
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area
- Waterbody

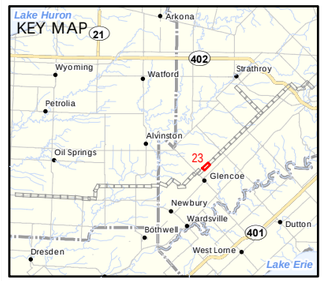

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Figure No.	Rev.
A-30	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-30

Title
Environmental Alignment Sheets - Map 30

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Revised: 2020-07-11 By: seafles

Resources

CONSERVATION AUTHORITY REGULATED AREA	LTVCA; LTVCA
WETLAND WATERCOURSE	Watercourse; Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

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MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 2; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area

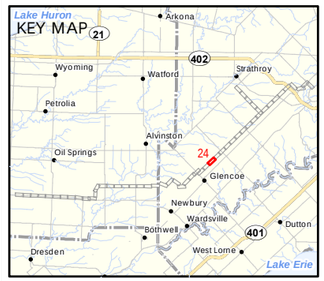

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Figure No.	Rev.
A-31	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-31

Title
Environmental Alignment Sheets - Map 31

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Revised: 2020-07-11 By: seafles

Resources

CONSERVATION AUTHORITY REGULATED AREA	LTVCA
WETLAND WATERCOURSE	Watercourse → Watercourse → Watercourse →
VEGETATION	
WATER WELL WITHIN 50 m	Well Present →
LINEAR FEATURES	← Driveway ← Driveway ← Driveway Driveway → Driveways
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

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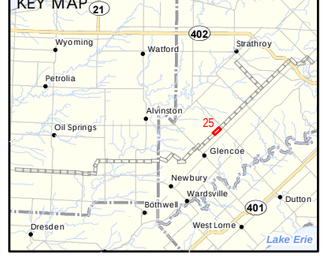
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7 → Note 7 → Note 7 → Note 2 → Note 7 → Note 2 → Note 7 → Note 2 → Note 7 Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8 → Note 8 → Note 8 →
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5 →
VEGETATION RESTRICTIONS	Note 9
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Regulation Area



Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-32	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-32

Title
Environmental Alignment Sheets - Map 32

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Revised: 2020-07-11 by: seales

Resources

CONSERVATION AUTHORITY REGULATED AREA	LTVCA; SCRCA
WETLAND WATERCOURSE	Watercourse; Watercourse; Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present
LINEAR FEATURES	Driveway; Road; Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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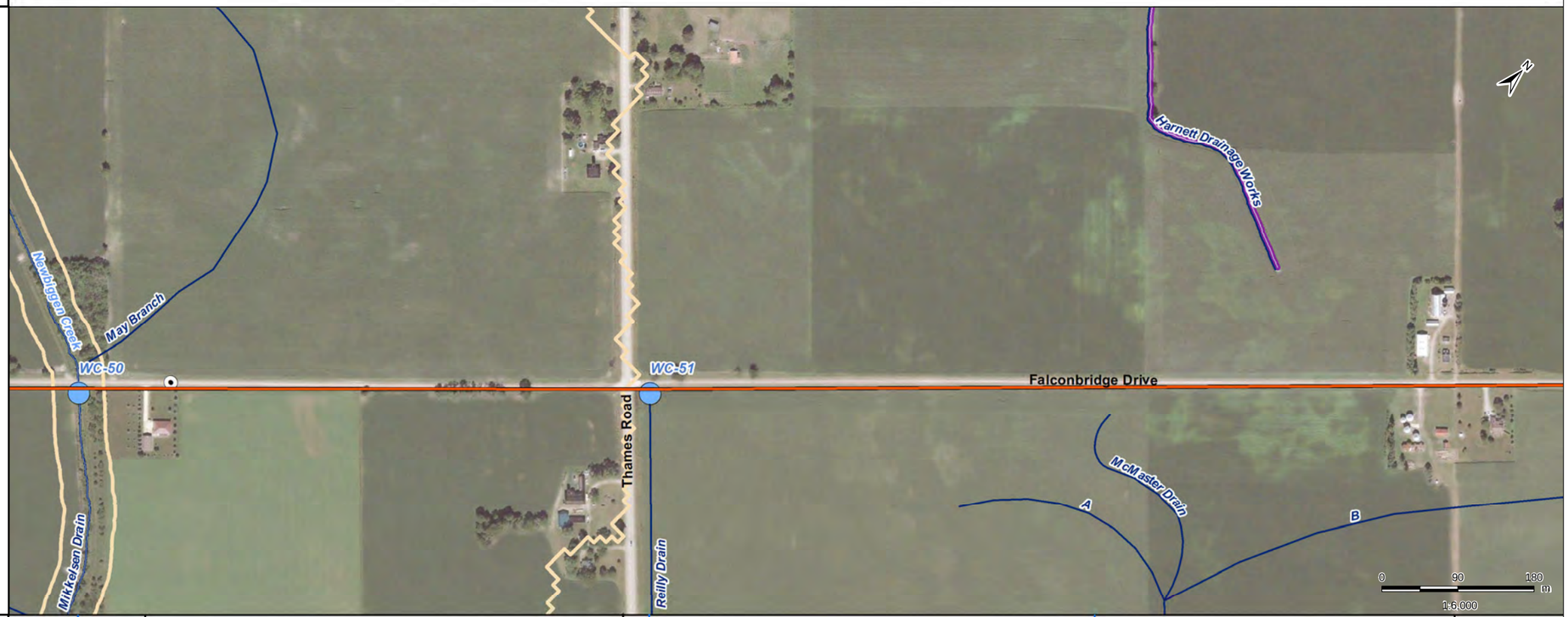
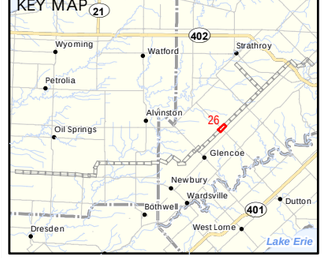


Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 7; Note 2; Note 7; Note 2; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	
PERMITTING REQUIREMENTS	Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Regulation Area
- Waterbody



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-33	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-33

Title
Environmental Alignment Sheets - Map 33

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Revised: 2020-07-11 by: seanles

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

SCRCA

SCRCA

Driveways

Driveway

Driveway

Hydro

Road

Construction Mitigation Notes:
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LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Note 7

Note 7

Note 7

Note 11

Note 7

Note 3

Note 6

Note 6

Stantec

Legend
- Preferred Route
- Hydro Line
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody

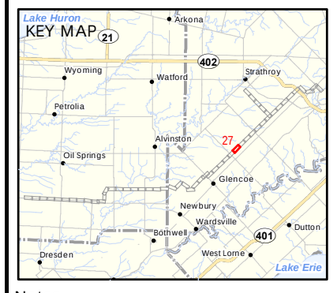

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Figure No.	Rev.
A-34	-

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160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-34

Title
Environmental Alignment Sheets - Map 34

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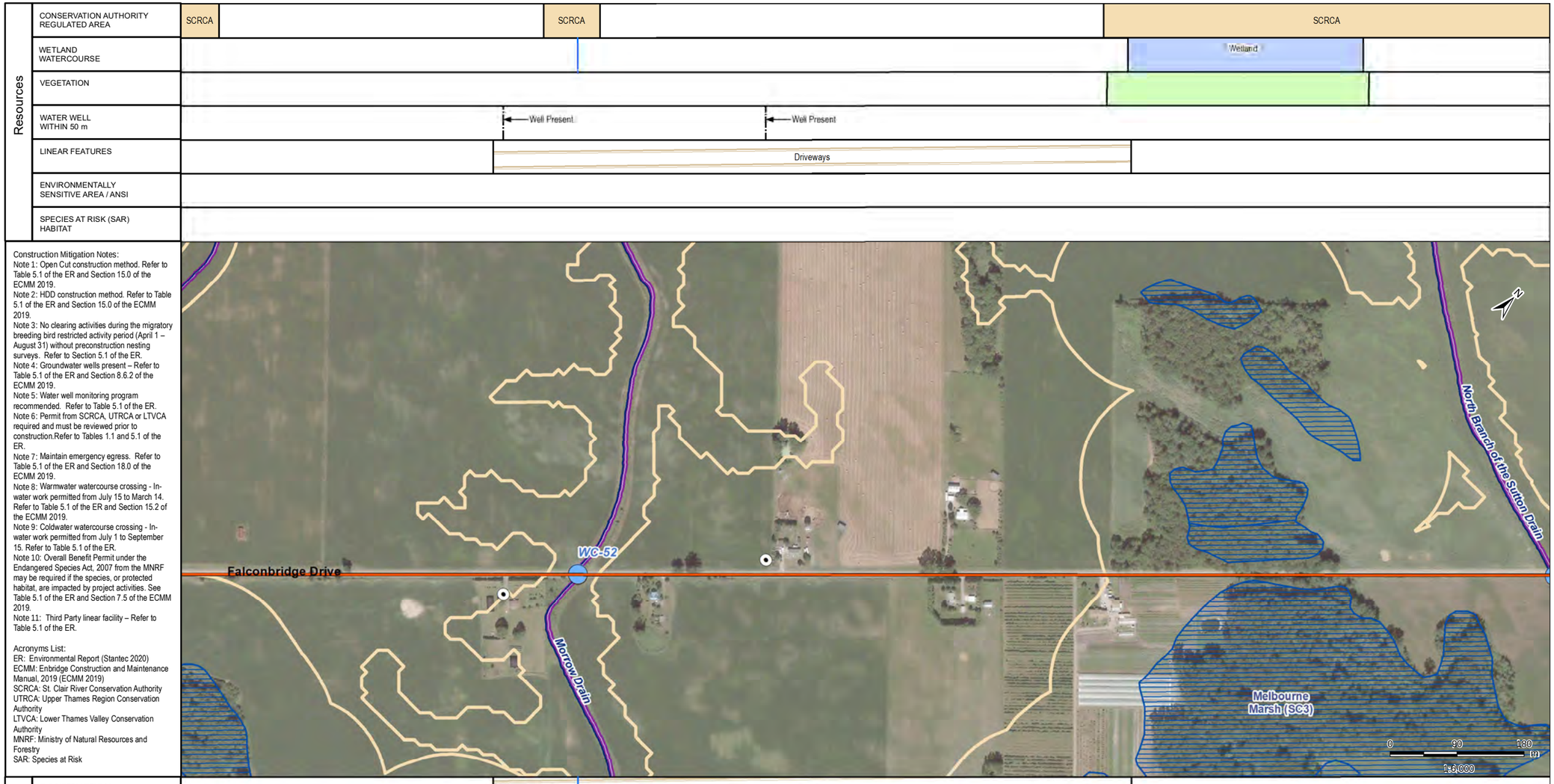

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SAR: Species at Risk

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Hydro Line
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area

Notes
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Figure No.	Rev.
A-35	-

July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-35

Title
Environmental Alignment Sheets - Map 35

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Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA
WETLAND WATERCOURSE	
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Driveways
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2; Note 2; Note 7; Note 7; Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 9; Note 9; Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5; Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Hydro Line
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area

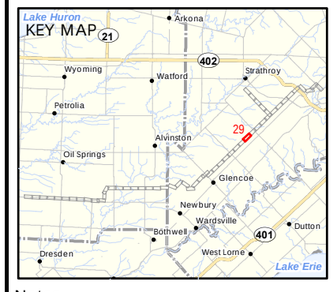

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Figure No.	Rev.
A-36	-

July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-36

Title
Environmental Alignment Sheets - Map 36

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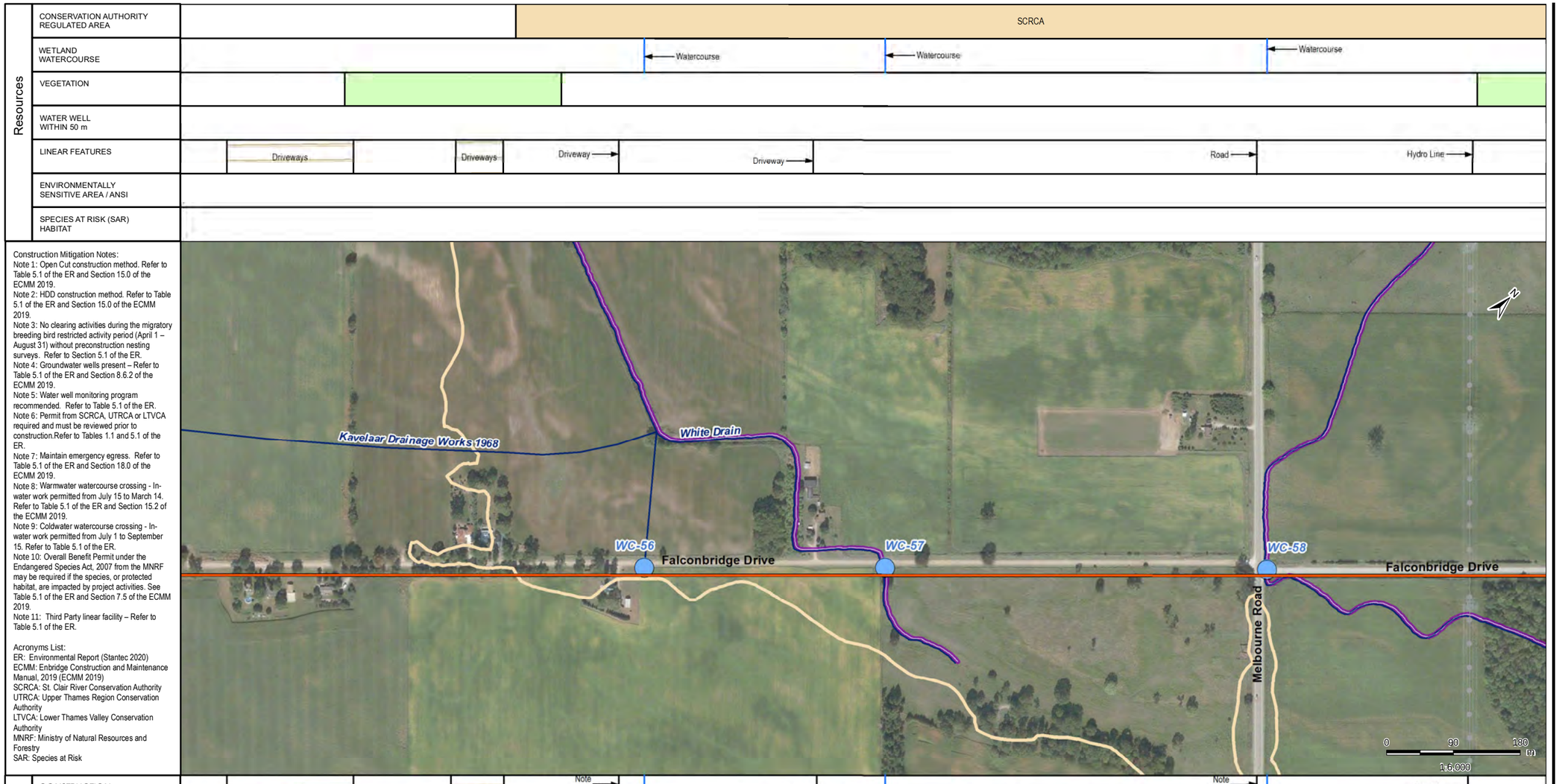

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- Watercourse Crossing Location
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- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area

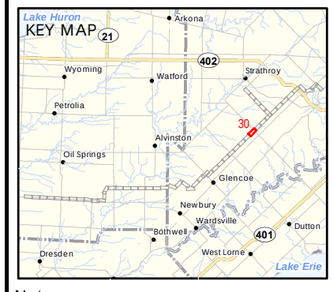

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Figure No.	Rev.
A-37	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-37

Title
Environmental Alignment Sheets - Map 37

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Revised: 2020-07-22 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Wells Present
LINEAR FEATURES	Hydro Line; Driveway; Driveway; Hydro Line; Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 11; Note 7; Note 7; Note 2; Note 1; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 9
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
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- Flow Direction
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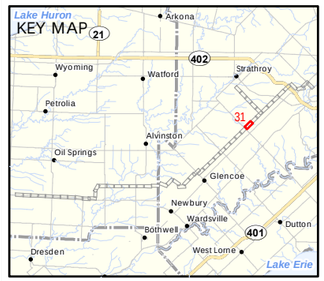

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Figure No.	Rev.
A-38	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-38

Title
Environmental Alignment Sheets - Map 38

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Resources	
CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Wetland
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Driveway, Road, Driveway, Driveway, Driveway, Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

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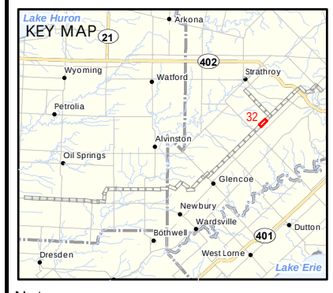
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation	
CONSTRUCTION REQUIREMENTS	Note 7, Note 7, Note 7, Note 7, Note 7, Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	Note 10

Stantec

Legend
- Preferred Route
- Intermittent Watercourse
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody



Notes
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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-39

Title
Environmental Alignment Sheets - Map 39

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Revised: 2020-07-12 By: searles

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
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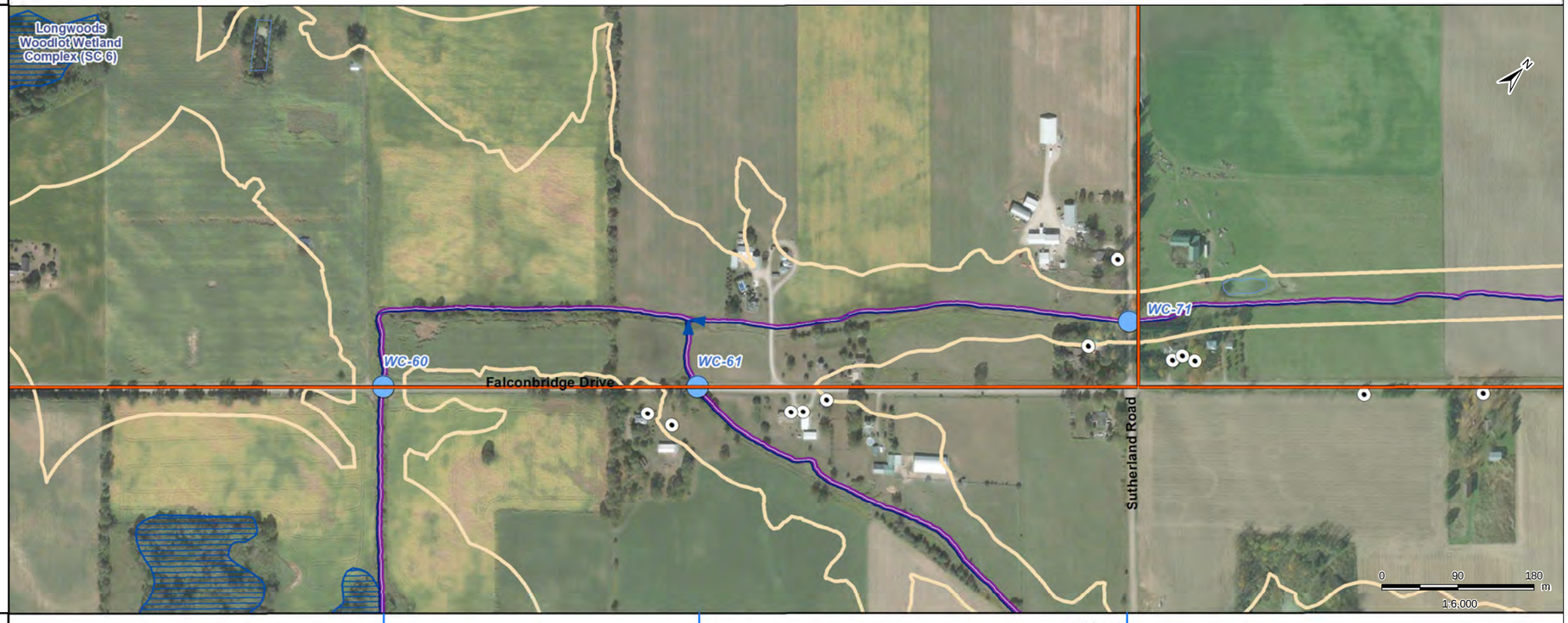
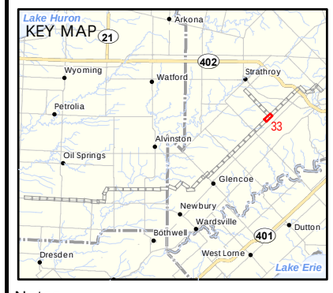


Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-40

Title
Environmental Alignment Sheets - Map 40

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Revised: 2020-07-22 By: stelles

Stantec

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present; Well Present; Well Present; Well Present; Well Present; Well Present
LINEAR FEATURES	Road; Driveway; Driveway; Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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MNRF: Ministry of Natural Resources and Forestry
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Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 7; Note 7; Note 7; Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 2
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5; Notes 4 & 5; Notes 4 & 5; Notes 4 & 5; Notes 4 & 5; Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3; Note 3; Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody

Notes
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Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-41

Title
Environmental Alignment Sheets - Map 41

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Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse, Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present, Well Present, Well Present
LINEAR FEATURES	Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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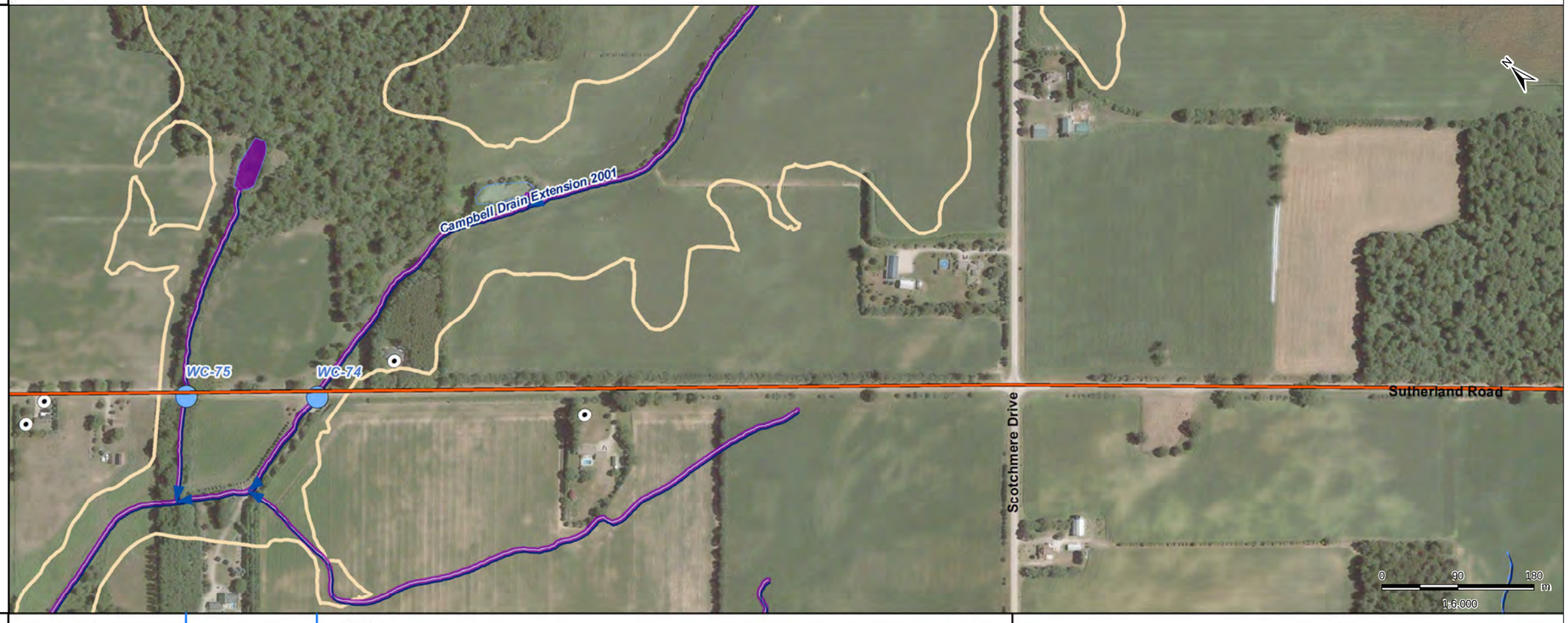

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2, Note 2, Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 9, Note 9
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5, Notes 4 & 5, Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3, Note 3, Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Intermittent Watercourse
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Thermal Regime, Cold
- Regulation Area
- Waterbody

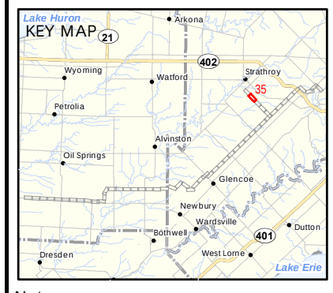

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Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-42

Title
Environmental Alignment Sheets - Map 42

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Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present
LINEAR FEATURES	Hydro Line; Driveways; Driveway; Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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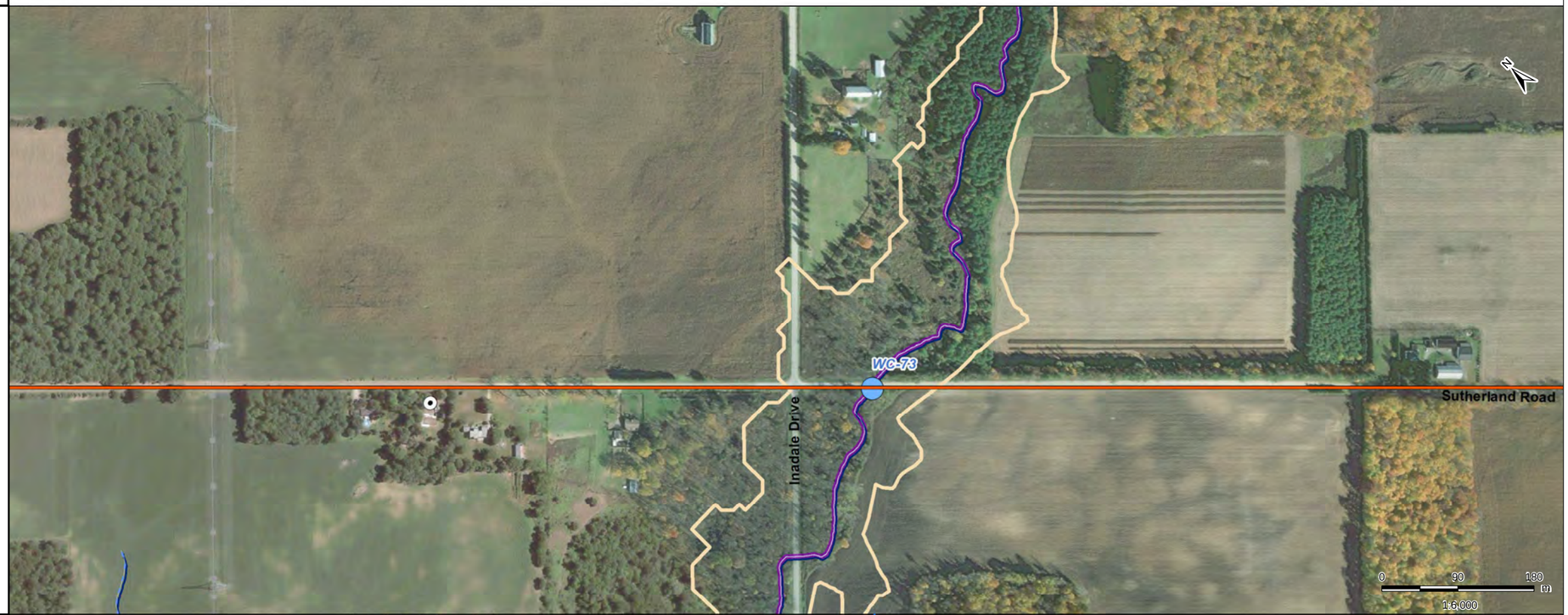

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 11; Note 7; Note 7; Note 7; Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 9
PIPELINE CROSSING METHODS	Notes 4 & 5
MONITORING	
VEGETATION RESTRICTIONS	Note 3; Note 3; Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Intermittent Watercourse
- Hydro Line
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Regulation Area

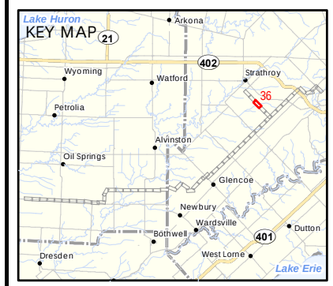

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Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-43

Title
Environmental Alignment Sheets - Map 43

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Revised: 2020-07-11 By: seales

Resources	
	CONSERVATION AUTHORITY REGULATED AREA
	WETLAND WATERCOURSE
	VEGETATION
	WATER WELL WITHIN 50 m
	LINEAR FEATURES
	ENVIRONMENTALLY SENSITIVE AREA / ANSI
	SPECIES AT RISK (SAR) HABITAT

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LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation	
	CONSTRUCTION REQUIREMENTS
	FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
	PIPELINE CROSSING METHODS
	MONITORING
	VEGETATION RESTRICTIONS
	PERMITTING REQUIREMENTS
	SEED MIX
	POTENTIALLY CONTAMINATED SITES
	SPECIES AT RISK (SAR) HABITAT

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Hydro Line
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Regulation Area
- Waterbody

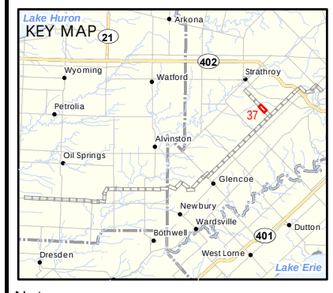

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Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-44

Title
Environmental Alignment Sheets - Map 44

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Revised: 2020-07-31 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA; SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Wells Present
LINEAR FEATURES	Road; Railway; Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

Acronyms List:
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ECMM: Enbridge Construction and Maintenance Manual, 2019 (ECMM 2019)
SCRCA: St. Clair River Conservation Authority
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 11; Note 2; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6; WC-61
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Intermittent Watercourse
- Hydro Line
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody

Notes
1. Coordinate System: NAD 1983 UTM Zone 17N.
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3. Orthoimagery © 2020 Microsoft Corporation © 2020 Maxar ©CNES (2020) Distribution Airbus DS. Date of imagery unknown.
4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
5. Conservation Authority data provided under license from St Clair Region Conservation Authority, Lower and upper Thames Valley Conservation Authorityand Maitland Valley Conseration Authority (2020).
6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
A-45	-

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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-45

Title
Environmental Alignment Sheets - Map 45

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Revised: 2020-07-11 By: seales

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	
VEGETATION	
WATER WELL WITHIN 50 m	Well Present; Well Present; Wells Present
LINEAR FEATURES	Driveway; Driveway; Driveway; Driveway; Driveway; Hydro Line; Driveway; Hydro Line
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 2: HDD construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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Note 5: Water well monitoring program recommended. Refer to Table 5.1 of the ER.
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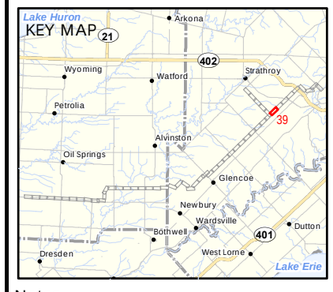
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 7; Note 7; Note 7; Note 7; Note 11; Note 7; Note 11
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5; Notes 4 & 5; Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Intermittent Watercourse
- Hydro Line
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Regulation Area



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-46

Title
Environmental Alignment Sheets - Map 46

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA
SCRCA

WETLAND WATERCOURSE
Watercourse

VEGETATION

WATER WELL WITHIN 50 m
Well Present
Wells Present
Well Present
Well Present
Well Present
Well Present
Well Present
Well Present
Well Present

LINEAR FEATURES
Driveway
Hydro Line
Driveway
Road
Driveway
Driveway
Driveways
Driveway

ENVIRONMENTALLY SENSITIVE AREA / ANSI

SPECIES AT RISK (SAR) HABITAT

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS
Note 7
Note 11
Note 7
Note 7
Note 2
Note 7
Note 7
Note 7
Note 7

FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)
Note 9

PIPELINE CROSSING METHODS

MONITORING
Notes 4 & 5
Notes 4 & 5
Notes 4 & 5
Notes 4 & 5
Notes 4 & 5
Notes 4 & 5
Notes 4 & 5
Notes 4 & 5
Notes 4 & 5

VEGETATION RESTRICTIONS
Note 3
Note 3
Note 3

PERMITTING REQUIREMENTS
Note 6

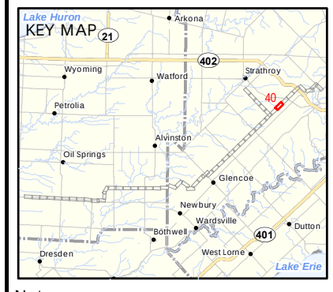
SEED MIX

POTENTIALLY CONTAMINATED SITES

SPECIES AT RISK (SAR) HABITAT

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Intermittent Watercourse
- Hydro Line
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Regulation Area
- Waterbody



Notes
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6. All driveway crossings will allow for emergency services access.

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July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-47

Title
Environmental Alignment Sheets - Map 47

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Revised: 2020-07-11 By: stelles

Stantec

Resources

CONSERVATION AUTHORITY REGULATED AREA	SCRCA
WETLAND WATERCOURSE	Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present; Well Present; Well Present; Well Present; Well Present
LINEAR FEATURES	Driveway; Driveway; Driveway; Driveway; Road; Driveways; Road; Driveways; Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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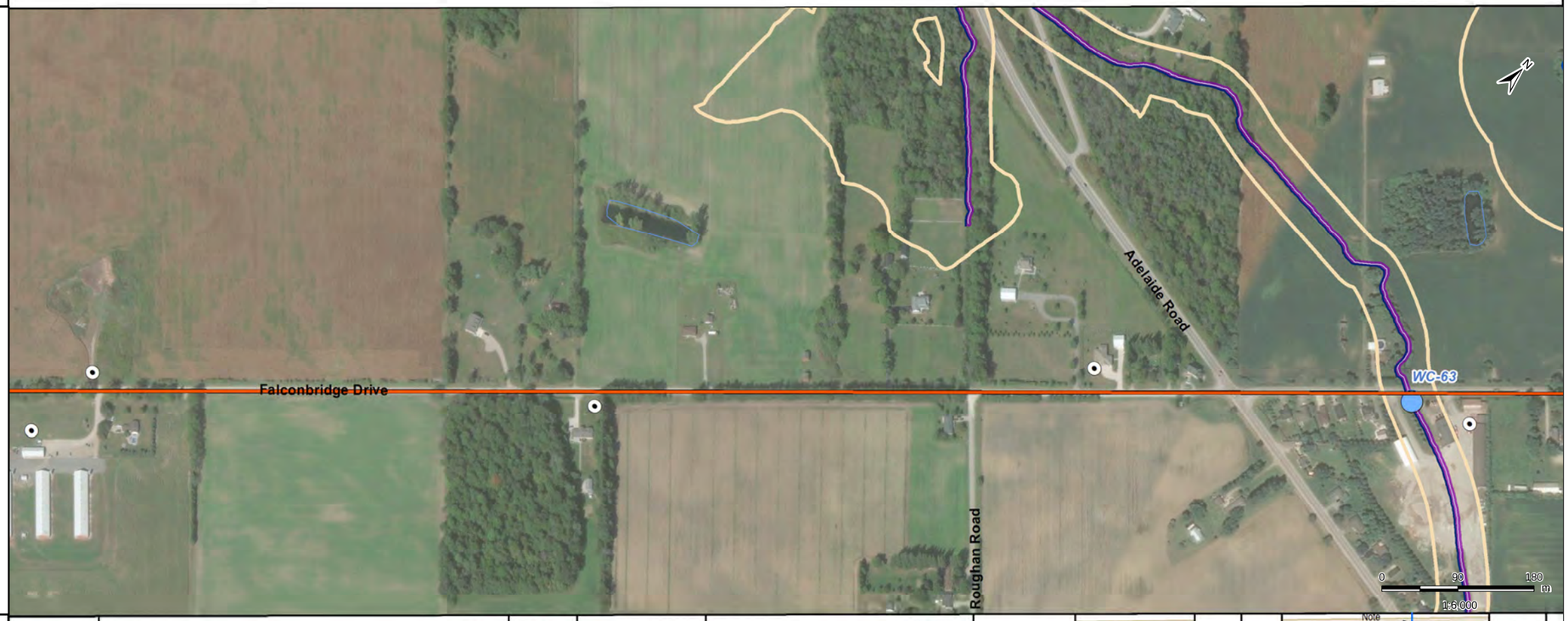
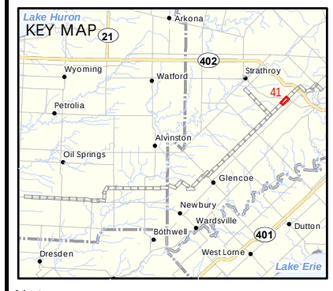


Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 7; Note 7; Note 7; Note 7; Note 7; Note 7; Note 7; Note 7; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5; Notes 4 & 5; Notes 4 & 5; Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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July 2020
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-48

Title
Environmental Alignment Sheets - Map 48

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Revised: 2020-07-11 By: searles

Resources

CONSERVATION AUTHORITY REGULATED AREA	UTRCA
WETLAND WATERCOURSE	
VEGETATION	
WATER WELL WITHIN 50 m	Wells Present; Well Present; Wells Present
LINEAR FEATURES	Driveways; Driveway; Driveway; Driveways; Driveway; Driveway; Driveway; Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 7; Note 7; Note 7; Note 7; Note 7; Note 7; Note 7; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5; Notes 4 & 5; Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Warm
- Provincially Significant Wetland
- Regulation Area
- Waterbody

Notes
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Figure No.	Rev.
A-49	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-49

Title
Environmental Alignment Sheets - Map 49

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	UTRCA; UTRCA; UTRCA
WETLAND WATERCOURSE	Watercourses; Watercourses; Wetland
VEGETATION	
WATER WELL WITHIN 50 m	Well Present; Well Present
LINEAR FEATURES	Road; Driveways; Driveway; Driveway; Driveway
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

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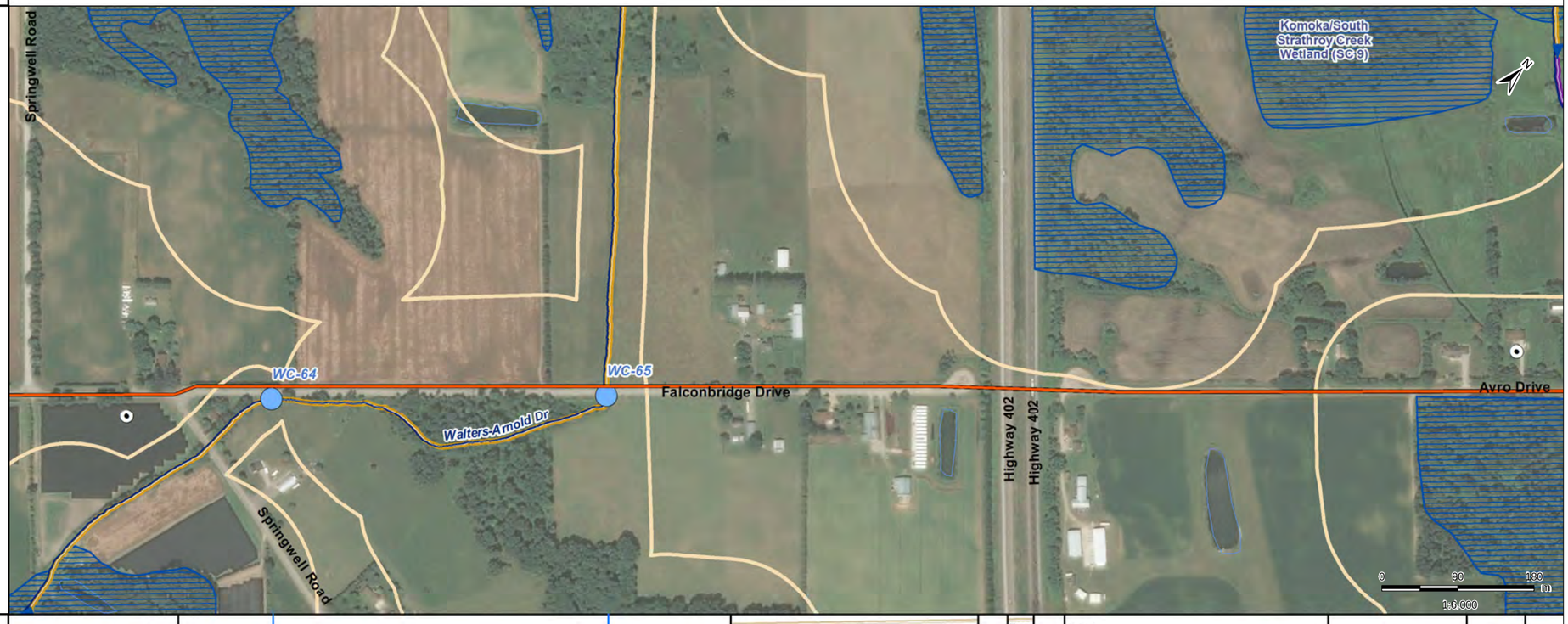

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7; Note 2; Note 2; Note 7; Notes 2 & 7; Note 7; Note 7; Note 7; Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 8; Note 8
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5; Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3; Note 3
PERMITTING REQUIREMENTS	Note 6; Note 6; Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Thermal Regime, Warm
- Provincially Significant Wetland
- Regulation Area
- Waterbody

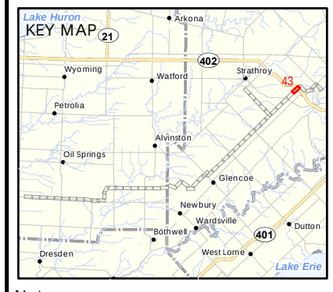

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Figure No.	Rev.
A-50	-

July 2020
160951170

Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-50

Title
Environmental Alignment Sheets - Map 50

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Revised: 2020-07-11 By: seales

Resources	
CONSERVATION AUTHORITY REGULATED AREA	UTRCA
WETLAND WATERCOURSE	Watercourse, Wetland, Watercourse, Wetland
VEGETATION	
WATER WELL WITHIN 50 m	
LINEAR FEATURES	Road, Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

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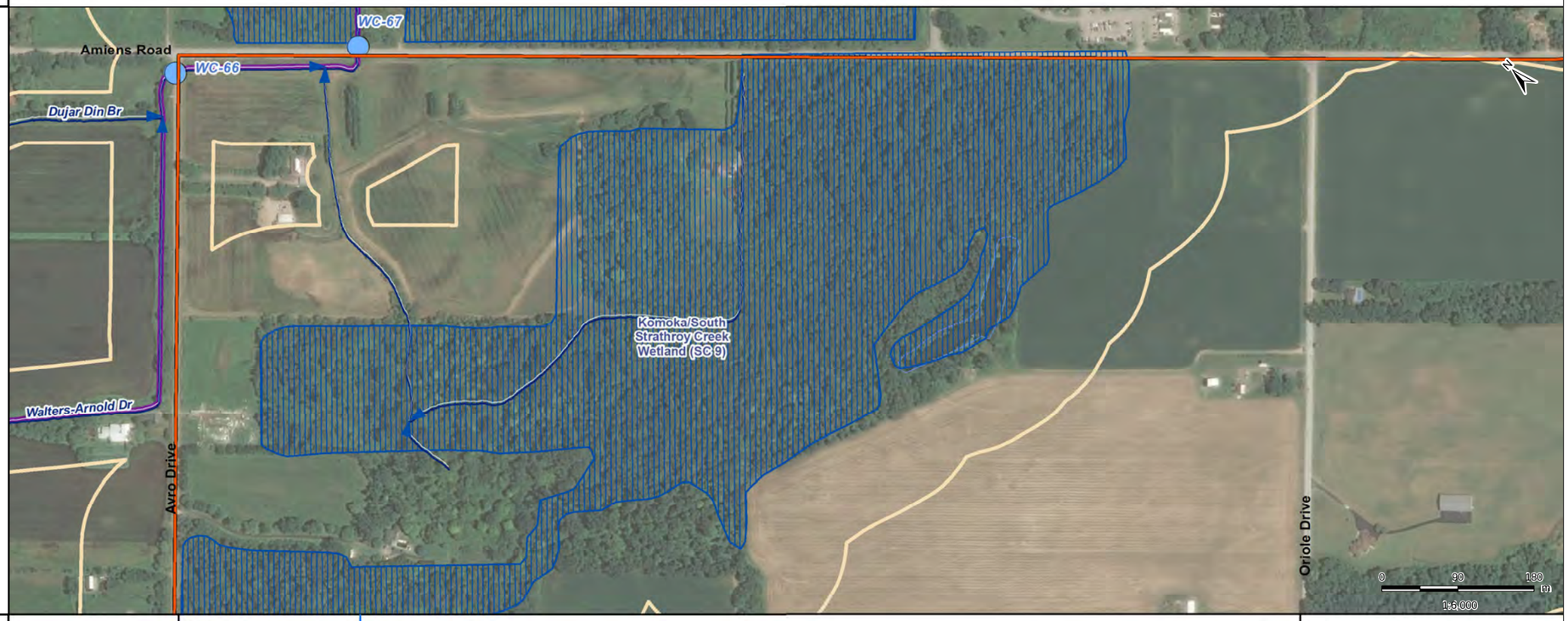
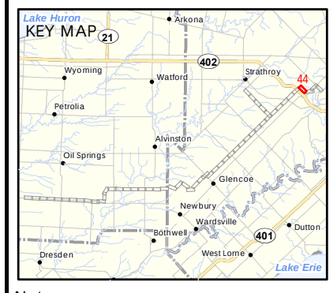
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk



Construction Mitigation	
CONSTRUCTION REQUIREMENTS	Note 2, Note 7, Note 2, Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 9, Note 9
PIPELINE CROSSING METHODS	
MONITORING	
VEGETATION RESTRICTIONS	Note 3, Note 3, Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	Note 10

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody



Notes
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3. Orthoimagery © 2020 Microsoft Corporation © 2020 Maxar ©CNES (2020) Distribution Airbus DS. Date of imagery unknown.
4. MECP Water well locations are approximate and have been positioned based on published UTM coordinates © Queen's Printer for Ontario, 2020.
5. Conservation Authority data provided under license from St Clair Region Conservation Authority, Lower and upper Thames Valley Conservation Authorityand Maitland Valley Conseration Authority (2020).
6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-51

Title
Environmental Alignment Sheets - Map 51

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Revised: 2020-07-12 By: searles

Resources

CONSERVATION AUTHORITY REGULATED AREA	
WETLAND WATERCOURSE	Wetland, Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present, Well Present, Well Present
LINEAR FEATURES	Railway, Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 2: HDD construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
Note 3: No clearing activities during the migratory breeding bird restricted activity period (April 1 – August 31) without preconstruction nesting surveys. Refer to Section 5.1 of the ER.
Note 4: Groundwater wells present – Refer to Table 5.1 of the ER and Section 8.6.2 of the ECMM 2019.
Note 5: Water well monitoring program recommended. Refer to Table 5.1 of the ER.
Note 6: Permit from SCRCA, UTRCA or LTVCA required and must be reviewed prior to construction.Refer to Tables 1.1 and 5.1 of the ER.
Note 7: Maintain emergency egress. Refer to Table 5.1 of the ER and Section 18.0 of the ECMM 2019.
Note 8: Warmwater watercourse crossing - In-water work permitted from July 15 to March 14. Refer to Table 5.1 of the ER and Section 15.2 of the ECMM 2019.
Note 9: Coldwater watercourse crossing - In-water work permitted from July 1 to September 15. Refer to Table 5.1 of the ER.
Note 10: Overall Benefit Permit under the Endangered Species Act, 2007 from the MNRF may be required if the species, or protected habitat, are impacted by project activities. See Table 5.1 of the ER and Section 7.5 of the ECMM 2019.
Note 11: Third Party linear facility – Refer to Table 5.1 of the ER.

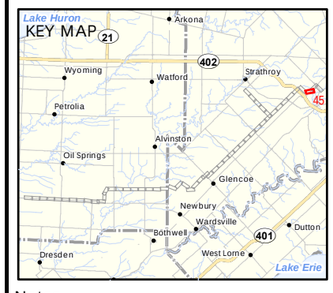
Acronyms List:
ER: Environmental Report (Stantec 2020)
ECMM: Enbridge Construction and Maintenance Manual, 2019 (ECMM 2019)
SCRCA: St. Clair River Conservation Authority
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7, Note 2 & 11, Note 7, Note 7, Note 2
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 9
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5, Notes 4 & 5, Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3, Note 3, Note 3
PERMITTING REQUIREMENTS	Note 6, Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	Note 10

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Regulation Area
- Waterbody



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6. All driveway crossings will allow for emergency services access.

Figure No.	Rev.
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-52

Title
Environmental Alignment Sheets - Map 52

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Revised: 2020-07-11 By: seales

Resources

CONSERVATION AUTHORITY REGULATED AREA	UTRCA
WETLAND WATERCOURSE	Wetland, Watercourse
VEGETATION	
WATER WELL WITHIN 50 m	Well Present, Well Present, Wells Present
LINEAR FEATURES	Driveways, Road
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
Note 1: Open Cut construction method. Refer to Table 5.1 of the ER and Section 15.0 of the ECMM 2019.
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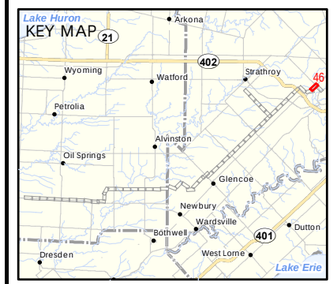
UTRCA: Upper Thames Region Conservation Authority
LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 2, Note 7, Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	Note 9
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5, Notes 4 & 5, Notes 4 & 5
VEGETATION RESTRICTIONS	Note 3, Note 3, Note 3
PERMITTING REQUIREMENTS	Note 6
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	Note 10

Stantec

Legend
- Preferred Route
- Watercourse Crossing Location
- Water Well (MECP)
- Railway - Operational
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Cold
- Provincially Significant Wetland
- Provincial Park - Provincially Regulated
- Regulation Area
- Waterbody



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6. All driveway crossings will allow for emergency services access.

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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
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Title
Environmental Alignment Sheets - Map 53

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Revised: 2020-07-11 By: stelles

Resources

CONSERVATION AUTHORITY REGULATED AREA	
WETLAND WATERCOURSE	
VEGETATION	
WATER WELL WITHIN 50 m	Wells Present — Well Present →
LINEAR FEATURES	Driveways
ENVIRONMENTALLY SENSITIVE AREA / ANSI	
SPECIES AT RISK (SAR) HABITAT	

Construction Mitigation Notes:
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LTVCA: Lower Thames Valley Conservation Authority
MNRF: Ministry of Natural Resources and Forestry
SAR: Species at Risk

Construction Mitigation

CONSTRUCTION REQUIREMENTS	Note 7
FISHERIES TIMING RESTRICTIONS (CONSTRUCT BETWEEN)	
PIPELINE CROSSING METHODS	
MONITORING	Notes 4 & 5 — Notes 4 & 5 →
VEGETATION RESTRICTIONS	
PERMITTING REQUIREMENTS	
SEED MIX	
POTENTIALLY CONTAMINATED SITES	
SPECIES AT RISK (SAR) HABITAT	

Stantec

Legend
- Preferred Route
- Water Well (MECP)
- Intermittent Watercourse
- Flow Direction
- Constructed Drain
- Watercourse
- Thermal Regime, Warm
- ANSI, Life Science;Provincial
- Provincially Significant Wetland
- Provincial Park - Provincially Regulated
- Regulation Area
- Waterbody

Notes
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Client/Project
Enbridge Gas Inc.
London Lines Project
Environmental Alignment Sheets

Figure No.
A-54

Title
Environmental Alignment Sheets - Map 54

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Revised: 2020-07-31 By: stelles