

DILLON
CONSULTING

ENBRIDGE GAS INC.

Environmental Report

Ridge Landfill RNG Project

Territorial Land Acknowledgement

The proposed Ridge Landfill RNG Project is located on land that has been inhabited by and cared for by people Indigenous to Turtle Island since time immemorial. We recognize and respect the historic connection to and harmonious stewardship by the Indigenous peoples over this shared land and, as such, we have a responsibility to preserve and care for the land, learn from the original inhabitants and move forward together in the spirit of healing, reconciliation and partnership.

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Acronyms and Abbreviations

C&M	Construction and Maintenance (Manual)
CHAR	Cultural Heritage Assessment Report
CHSR	Cultural Heritage Screening Report
CNR	Canadian National Railway Company
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Fisheries and Oceans Canada
Dillon	Dillon Consulting Limited
EA	environmental assessment
EASR	Environmental Activity and Sector Registry
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
Enbridge Gas	Enbridge Gas Inc.
ER	Environmental Report
ESA	Endangered Species Act, 2007
GHG	greenhouse gas
HVA	Highly Vulnerable Aquifer
IPZ	Intake Protection Zone
km	kilometre(s)
LTC	Leave-to-Construct
LTVCA	Lower Thames Valley Conservation Authority
LUG	Legacy Union Gas
m	metre(s)
masl	metres above sea level
mbgs	metres below ground surface
MECP	Ministry of Environment, Conservation and Parks
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MMAH	Ministry of Municipal Affairs and Housing
MNR	Ministry of Natural Resources
MNRF	Ministry of Natural Resources and Forestry
NDMNRF	Ministry of Northern Development, Mines, Natural Resources and Forestry
NHIC	Natural Heritage Information Centre
NPS	nominal pipe size
NRCan	Natural Resources Canada
O. Reg.	Ontario Regulation
O&M	operations and maintenance
OEB	Ontario Energy Board
OEB Guidelines	Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition

OGS	Ontario Geological Survey
OHT	Ontario Heritage Trust
OPCC	Ontario Pipeline Coordinating Committee
OWRA	Ontario Water Resources Act
PPR	Preliminary Preferred Route
PTTW	Permit to Take Water
RNG	renewable natural gas
SAR	Species at Risk
SARA	Species at Risk Act
SARO	Species at Risk in Ontario (List)
SCC	Species of Conservation Concern
SWH	Significant Wildlife Habitat
the Project	Ridge Landfill RNG Project
the Study	environmental and cumulative effects assessment
TMHC	TMHC Inc.
Waste Connections	Waste Connections of Canada
WHPA	Well Head Protection Area
WPCP	Water Pollution Control Plant
WWIS	Water Well Information System

Executive Summary

Enbridge Gas Inc. (Enbridge Gas) retained Dillon Consulting Limited to conduct an environmental and cumulative effects assessment (the Study) for the Ridge Landfill Renewable Natural Gas (RNG) Project (the Project) located in the Municipality of Chatham-Kent, near the community of Blenheim, Ontario. If approved, construction of the Project is anticipated to begin in spring 2023.

To reduce greenhouse gas emissions and help Ontario reach its 2030 climate change goals, Enbridge Gas, in partnership with Waste Connections of Canada, are proposing to create a brand new RNG facility at the Ridge Landfill. Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed to remove oxygen, nitrogen dioxide, carbon dioxide and any other compounds necessary to inject clean methane into the local natural gas distribution system. The Project is expected to reduce greenhouse gas emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year, or about 40% of the homes in Chatham-Kent.

The Project will involve the construction of a new RNG injection station at the Ridge Landfill and a new nominal pipe size 4-inch extra high-pressure steel pipeline, running from northwest of an existing Enbridge Gas pressure regulating station on Communication Road to the Ridge Landfill on Erieau Road. Enbridge Gas identified a preliminary preferred route and two alternative routes ranging in length from approximately 6 to 8 kilometres.

The Study results have been documented in this Environmental Report, which conforms to the Ontario Energy Board (2016) Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition.

Stakeholder engagement and Indigenous consultation are an important component of the Project. Early and frequent consultation with directly and indirectly affected Indigenous communities, property owners, government agencies, and the public was an integral part of the Study.

The Study involved undertaking an inventory of physical, natural, and socio-economic features within the Study Area. This information was used to produce maps identifying features that could be impacted by pipeline construction and operation. The Preferred Route was selected based on environmental and socio-economic concerns, as well as technical and economic feasibility requirements. The Preferred Route is sited in existing, previously disturbed municipal road rights-of-way, which greatly reduces potential adverse effects to the surrounding environment.

Mitigation measures are recommended to reduce potential negative effects to the environment. These recommendations, in combination with the Legacy Union Gas Construction and Maintenance Manual 2020, are anticipated to effectively protect the physical, natural, and socio-economic features along the pipeline route. Dillon does not anticipate any significant adverse effects from the construction and

operation of the Project with the implementation of the mitigation measures recommended in this report.

1.0 Introduction

Enbridge Gas Inc. (Enbridge Gas) retained Dillon Consulting Limited (Dillon) to conduct an environmental and cumulative effects assessment (the Study) for the Ridge Landfill Renewable Natural Gas (RNG) Project (the Project) located in the Municipality of Chatham-Kent, near the community of Blenheim, Ontario. If approved, construction of the Project is anticipated to begin in spring 2023.

1.1 Description of the Project

To reduce greenhouse gas emissions and help Ontario reach its 2030 climate change goals, Enbridge Gas, in partnership with Waste Connections of Canada (Waste Connections), are proposing to create a brand new RNG facility at the Ridge Landfill.

Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed to remove oxygen, nitrogen dioxide, carbon dioxide and any other compounds necessary to inject clean methane into the local natural gas distribution system. The Project is expected to reduce greenhouse gas (GHG) emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year, or about 40% of the homes in Chatham-Kent.

The Project will involve the construction of a new RNG injection station at the Ridge Landfill and a new nominal pipe size (NPS) 4-inch extra high-pressure steel pipeline, running from northwest of an existing Enbridge Gas pressure regulating station on Communication Road to the Ridge Landfill on Erieau Road. Enbridge Gas has identified a preliminary preferred route and two alternative routes ranging in length from approximately 6 to 8 kilometres (km). The routes under consideration are shown in Figure 1 and described below.

- The Preliminary Preferred Route (PPR) runs from a location just northwest of the existing Enbridge Gas pressure regulating station on Communication Road for approximately 300-350 metres (m). It then turns southwest and runs along Allison Line for 1.4 km, along Fargo Road for 20 m, along Allison Line for 2.8 km, then north along Erieau Road for 1.5 km to the Ridge Landfill.
- **Alternative Route 1** begins southwest of the intersection of Drury Line and Huffman Road, follows Drury Line southwest for approximately 5.5 km to Erieau Road, then proceeds southeast to the Ridge Landfill.
- **Alternative Route 2** begins at a location on Communication Road approximately 1.5 km southeast of the intersection with Drury Line, proceeds northwest to Drury Line, then southwest to Erieau Road and southeast to the Ridge Landfill.

The pipeline would be installed within existing road rights-of-way, where possible. Locating the pipeline within existing, previously disturbed municipal road rights-of-way will reduce the potential environmental and socio-economic effects. Typical depth of ground cover over the pipeline will be

approximately 0.9 m to 1.2 m; however, it may be installed deeper to provide additional protection in areas where it crosses underneath existing infrastructure (e.g., roads, railroad lines, sewers, other utility structures).

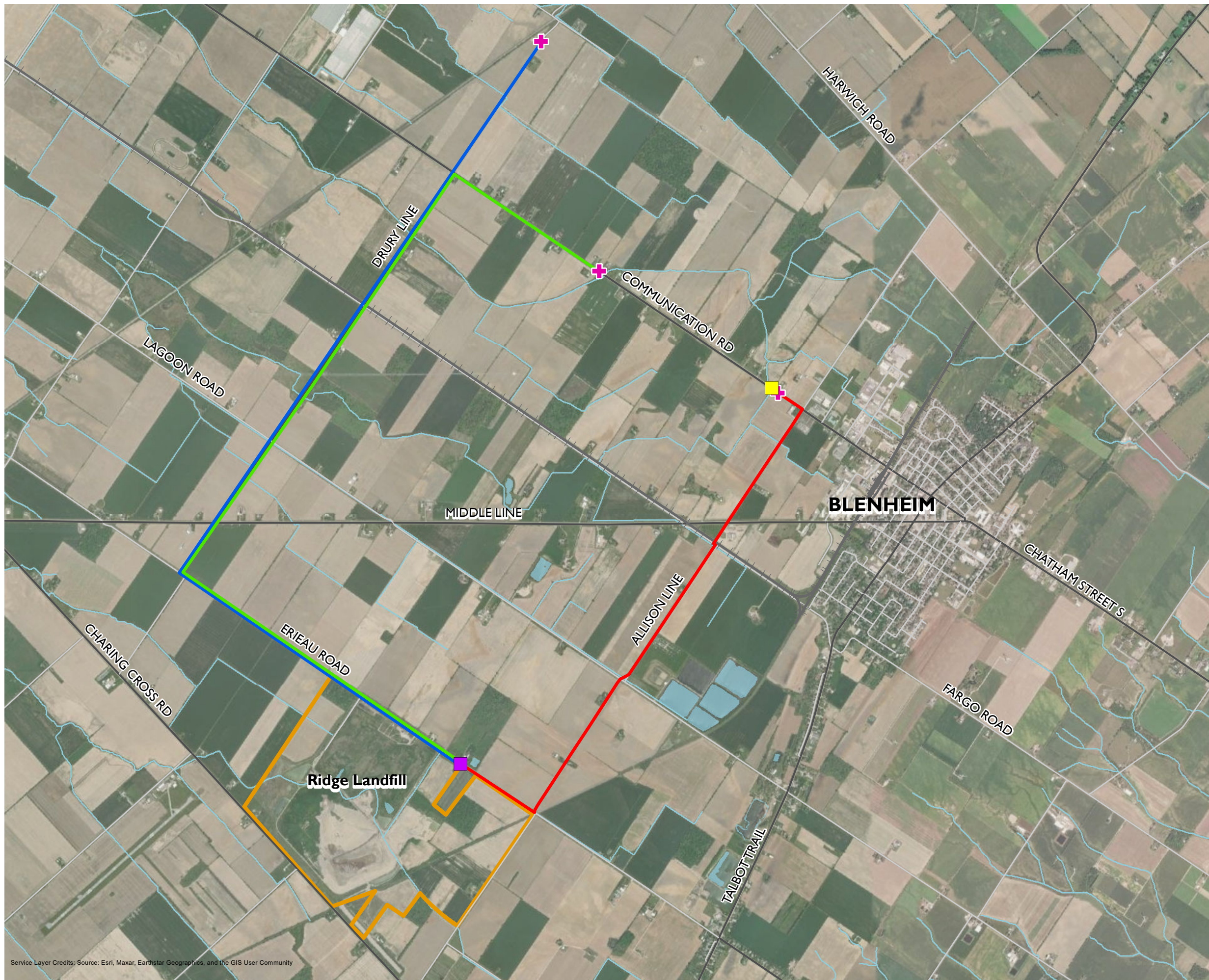
Temporary workspace and laydown areas will be required adjacent to the proposed location of the pipeline to facilitate the movement and storage of equipment necessary for construction. Enbridge will work with the Municipality of Chatham-Kent, regulatory agencies, and landowners to identify and secure appropriate workspace, as required.

1.2 Project Purpose and Rationale

Waste Connections and Enbridge Gas are committed to sustainability and reducing their environmental footprint. This Project is in alignment with Waste Connections' 2020 introduction of 15-year aspirational sustainability targets that include an increase in landfill gas recovery by at least 40%. This Project will provide RNG that will flow through Enbridge Gas' existing pipeline system to provide continued reliable delivery of natural gas for homes and businesses in Chatham-Kent.

The Project represents a significant investment from Waste Connections of more than \$50 million in the Chatham-Kent area, which will support Ontario's economic recovery, when it is most needed, post-pandemic. It is estimated that the RNG facility will employ approximately 50 new development and construction jobs in addition to highly skilled permanent green operational jobs once constructed and operational.

This Project, and projects like it, enables Enbridge Gas to connect producers like Waste Connections to consumers with a reliable source of RNG. Utilizing RNG as a low-carbon energy source to heat homes, power businesses, and fuel vehicle fleets effectively helps companies and communities achieve Ontario's GHG reduction goals.



ENBRIDGE GAS INC.
 RIDGE LANDFILL RNG PROJECT

PROJECT OVERVIEW
 FIGURE 1

- Existing Enbridge Station
- + Tie-in Location
- Customer Station (Proposed)
- Preliminary Preferred Route
- Alternative Route 1
- Alternative Route 2
- Rail
- Arterial/Collector Road
- Local Road
- Ridge Landfill
- Waterbody
- Watercourse



SCALE 1:32,000
 0 250 500 1,000 m



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNR, ENBRIDGE, ESRI, DILLON CONSULTING

MAP CREATED BY: DDR
 MAP CHECKED BY: AL
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 223276
 STATUS: DRAFT
 DATE: 2022-06-16

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

1.3 Environmental and Cumulative Effects Assessment

Dillon conducted a Study to identify potential environmental and socio-economic effects that the Project could have on the existing physical, natural, and socio-economic environment. Mitigation measures designed to reduce environmental and socio-economic effects were also developed as part of the Study. The Study results have been documented in this Environmental Report (ER), which conforms to the OEB (2016) Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition (OEB Guidelines).

1.4 Regulatory Framework

The Study was prepared to meet the requirements of the OEB. More information on the regulatory process is provided in the following subsections.

1.4.1 Ontario Energy Board

The Project is being planned in accordance with OEB regulations. The OEB acts as a regulatory body to protect the public interest, to determine that the Project is necessary, and to ensure that Enbridge Gas obtains the necessary approvals to meet health, safety, and environmental standards and regulations.

For OEB approval, the ER must document that municipal, provincial, and federal agencies, as well as the concerns of Indigenous communities, were considered. Concerns identified by landowners and the public should also be addressed.

Once complete, the ER is circulated to the Ontario Pipeline Coordinating Committee (OPCC). The OPCC coordinates the Ontario government's review of natural gas facility projects that require OEB approval. The OPCC's goal is to reduce adverse environmental effects that could arise from projects by reviewing environmental and routing reports.

If requested, the ER is also circulated to Indigenous communities, landowners adjacent to the project, and to interest groups, such as municipalities and the local conservation authority. Where possible, all outstanding issues are resolved prior to submission of an application to the OEB.

The OEB may order a written or oral hearing, based upon the complexity of the project and the level of public concern. Enbridge plans to file a Leave-to-Construct (LTC) Application with the OEB in July 2022. If approved by the OEB, construction of the Project is anticipated to start in the spring of 2023.

1.4.2 Impact Assessment Agency of Canada

Federal government involvement under the Impact Assessment Act (SC 2019, c. 28, s. 1) is required for specific types of projects. The types of projects that require federal review and approval are listed as

“designated projects” in the Physical Activities Regulations (SOR/2019-285), or are designated through Ministerial discretion.

The Project scope does not fall into the categories of projects listed in the Physical Activities Regulations and is, therefore, not subject to the requirements of the federal Impact Assessment Act.

1.4.3 Other Potential Permits, Approvals, or Notifications

In addition to OEB approval, other regulatory approvals may be required for the Project, as shown in Table 1. An appropriate amount of time should be scheduled to obtain all necessary permits and approvals prior to construction. Permit requirements will be confirmed with final Project design.

Table 1: Potential Permits, Approvals, or Notifications

Agency	Legislation, Regulation, or Standard	Permit/Approval/Notification
Ministry of Environment, Conservation and Parks (MECP)	Endangered Species Act, 2007 (SO 2007, c. 6) and Ontario Regulation (O. Reg.) 242/08	A permit or approval is required for activities that may affect a provincially listed species at risk (SAR) (Endangered or Threatened) and/or their habitat. See Section 4.2.8 of this report for more information on potential SAR in the Project area.
	Ontario Water Resources Act (OWRA) (RSO 1990, c. O.40) and O. Reg. 387/04: Water Taking Regulation	Registration under the Environmental Activity and Sector Registry (EASR) is required if the Project will result in dewatering of more than 50,000 litres per day (L/day) but less than 400,000 L/day. A Permit to Take Water (PTTW) will be required if water taking is greater than 400,000 L/day.
Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	Ontario Heritage Act (RSO 1990, c. O.18)	Archaeological clearance is required prior to any ground disturbances and/or site alterations. A Stage 1 Archaeological Assessment was completed for the Project and MHSTCI acceptance of the report was received on April 21, 2022. A copy of the report is provided in Appendix A. The report recommended a Stage 2 Archaeological Assessment be completed for the Project. A Cultural Heritage Screening Report (CHSR) was completed for the Project and is provided in Appendix B. The CHSR includes the MHSTCI Cultural Heritage Checklist and was submitted for MHSTCI review on April 19, 2022.

Agency	Legislation, Regulation, or Standard	Permit/Approval/Notification
Lower Thames Valley Conservation Authority (LTVCA)	Conservation Authorities Act and O. Reg. 152/06: Lower Thames Valley Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses	A permit is required for undercrossing or working within close proximity to any of the municipal drains along the proposed route options. Consultation with the LTVCA permitting department is recommended once final Project design is complete to determine if a permit is required at any of the municipal drain crossings.
Municipality of Chatham-Kent	Chatham-Kent Public Works Department	<p>Typically, a Public Works Permit is required for any work on, under or within municipal property, placed by someone other than the Municipality of Chatham-Kent. There are three main categories of work:</p> <ul style="list-style-type: none"> • Entrance (Driveway) Permit - required for construction of a new or changing an existing driveway or field entrance • Encroachment (Road Occupancy) Permit - required for contractors/homeowners blocking municipal property for private use • Right-of-Way (Ditch Enclosure) Permit - required to enclose any part of a roadside ditch
	Noise By-Law (No. 41-2004)	A Noise By-law Exemption is required if construction noises will occur outside of the allowable hours identified in the By-law (i.e., Monday to Saturday, between 11:00 pm and 7:00 am, and Sunday and Statutory Holidays at all times).
Canadian National Railway Company (CNR)	Railway Safety Act, Transport Canada Standards Respecting Pipeline Crossings Under Railways, and CSA Z662	A Work Permit from CNR is required to construct a utility on/above/below the CN right-of-way. Proponents must submit a Gas/Oil Pipeline Crossing Application to the CN Engineering Services department.

Study Process

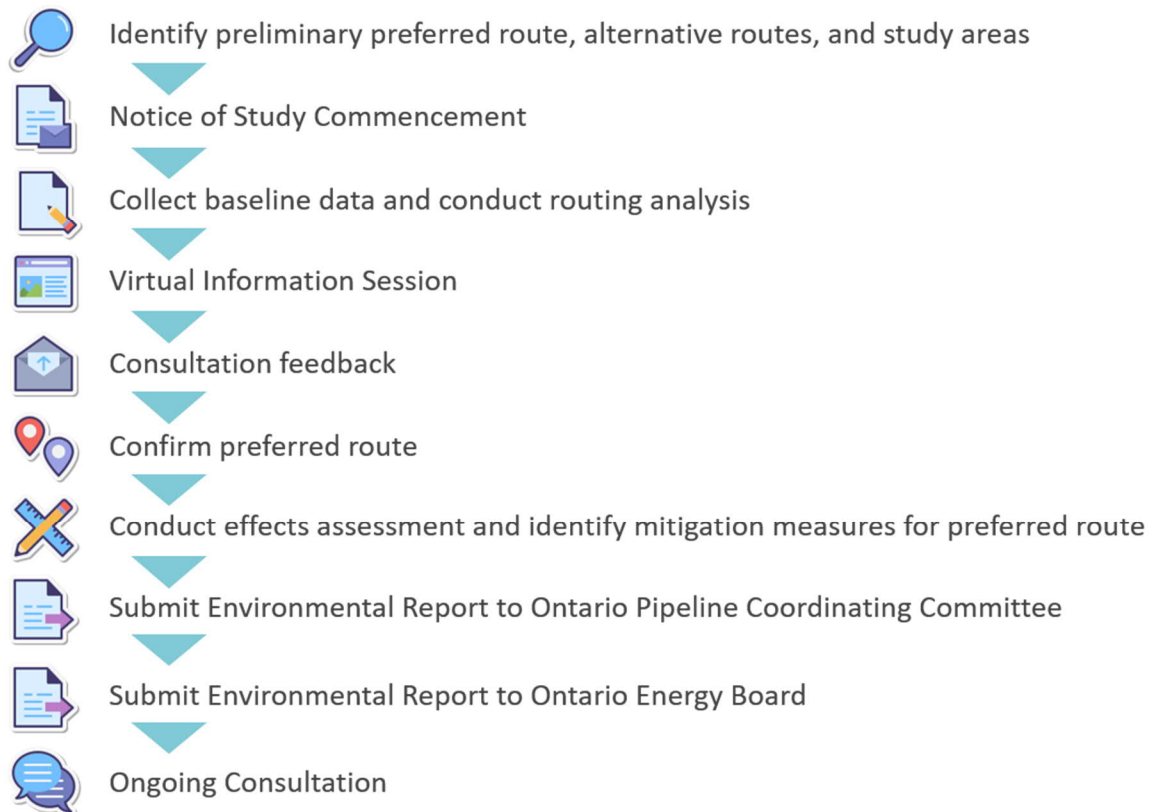
The Study process followed three main steps:

1. Identification of Study Areas and Environmental Inventory
2. Routing Constraints Analysis
3. Effects Assessment and Proposed Mitigation Measures

Stakeholder engagement and Indigenous consultation was conducted throughout the Study (see Section 3.0). The Study process is illustrated in Figure 2 and described in further detail in the following subsections.

Figure 2: Environmental Assessment (EA) Process and Consultation Flow Chart

EA Process and Consultation Flow Chart



2.1

Study Methods

The Study methods were designed to achieve the following objectives:

- Select a Study Area;
- Collect environmental and socio-economic data to evaluate the potential routes;
- Provide opportunities for Indigenous communities, agencies, potentially-affected landowners, and the general public to comment on the Project;
- Choose a Preferred Route for the pipeline that reduces adverse effects to the physical, natural, and socio-economic environment; and,
- Identify and recommend environmental protection and mitigation measures to be implemented during pipeline construction.

The Study was conducted between March and May 2022.

2.1.1

Identification of Study Area and Environmental Inventory

The first step of the Study involved identifying the Study Area for the Project. The Study Area boundaries were determined based on the pre-established start and end points of the pipeline and included areas that are most likely to be directly or indirectly affected by the Project.

To address potential adverse effects on indirectly-affected Indigenous communities, stakeholders and landowners, Dillon conducted desktop studies that encompassed 125 m on each side of the potential routes for a total width of 250 m (Figure 3).

An environmental and socio-economic constraints inventory and a features mapping exercise was conducted. Dillon mapped features based on both primary and secondary sources including data collected through site reconnaissance activities, contact with local, provincial, and federal agencies, and discussions with stakeholders. Based on Dillon's experience conducting studies of a similar nature and, in accordance with the OEB Guidelines, the mapping generally included topographical features, natural environment features, natural hazard information, and relevant land use planning information.

The purpose of collecting applicable data to compile features mapping was to assist the Study team, Enbridge Gas, Indigenous communities, the public, regulatory agencies, and interested parties in understanding how the environment may be affected by the Project. Feature maps serve as the baseline for route evaluation and for assessing the potential adverse effects resulting from construction and operation of the pipeline.

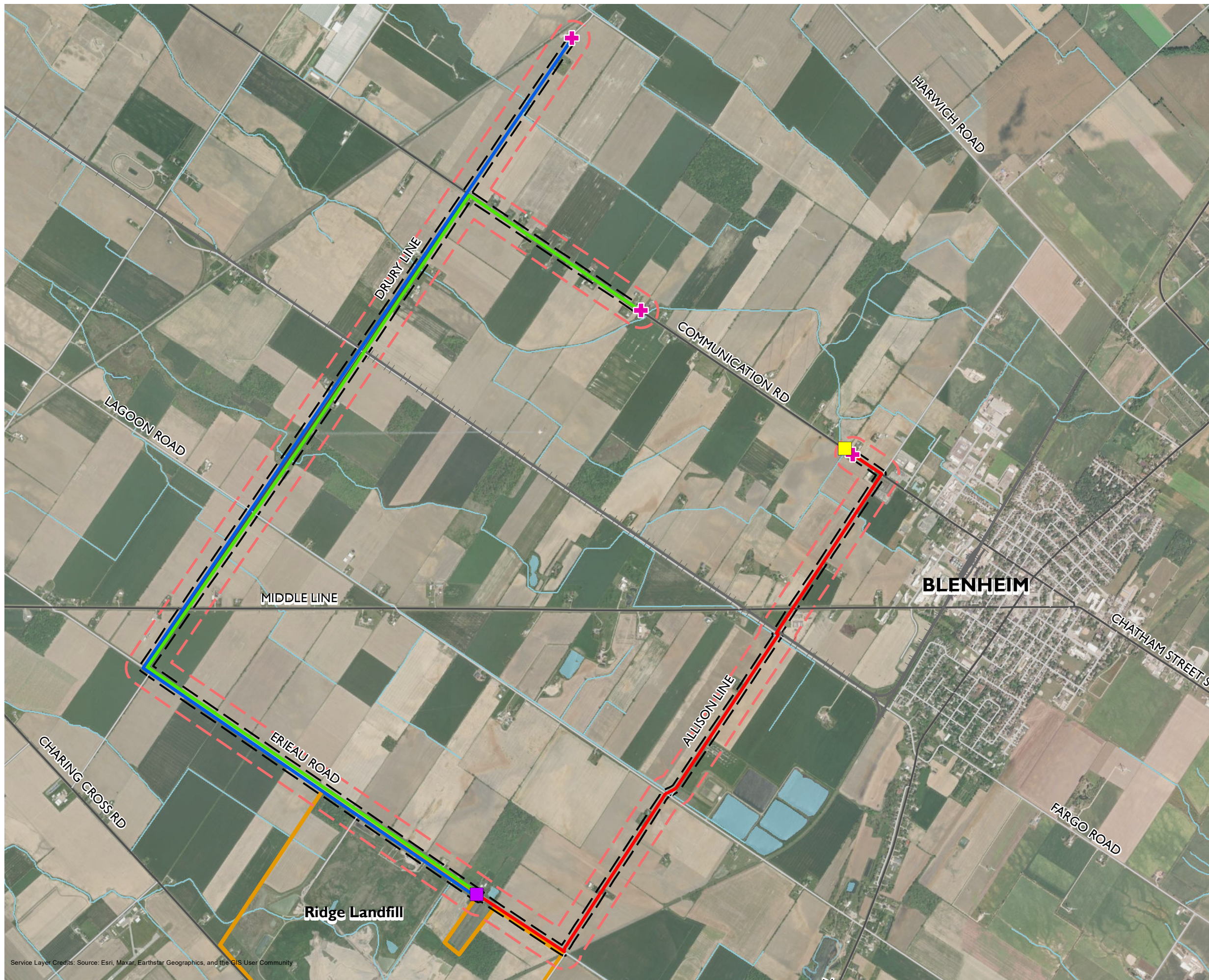
To confirm potential adverse effects on directly-affected Indigenous communities, stakeholders and landowners, Dillon undertook a field program that encompassed 30 m on each side of the potential routes (centreline) for a total width of 60 m (Project footprint). This was done to encompass the pipeline right-of-way, as well as potential temporary workspace required to accommodate pipeline construction.

Primary and secondary source data was collected and used to develop the environmental and socio-economic baseline setting for the Project. Primary sources include data retrieved during field studies, and secondary sources include data obtained through the review of electronic databases, published reports, existing literature, journals, information letters, and information received from Project stakeholders. Proper record-keeping practices were exercised to maintain data and results for future use. Methods used to retrieve information included internet research and correspondence with agencies and other stakeholders. A list of key secondary sources is included in Table 2. Secondary sources reviewed as part of the Stage 1 Archaeological Assessment are included in Appendix A.

Table 2: Key Data Records and Sources

Source	Records Reviewed
PROVINCIAL	
Land Information Ontario (LIO) (Government of Ontario 2022a)	<ul style="list-style-type: none"> Interactive Online Mapping Tool (accessed May 2022)
Natural Heritage Information Centre (NHIC) (Ministry of Northern Development, Mines, Natural Resources and Forestry [NDMNRF] 2022)	<ul style="list-style-type: none"> GIS database of occurrence records for natural heritage features. Uses 1 km squares based on the military grid reference system. Reviewed to determine historical occurrence records of: <ul style="list-style-type: none"> Species of Conservation Concern and SAR; Rare and exemplary plant communities; Wildlife concentration areas; and Natural areas. NHIC 1 km squares reviewed: 17MG1186, 17MG1187, 17MG1285, 17MG1286, 17MG1287, 17MG1288, 17MG1384, 17MG1385, 17MG1389, 17MG1390, 17MG1484, 17MG1485, 17MG1489, 17MG1490, 17MG1586, 17MG1587, 17MG1589, 17MG1687, 17MG1688, 17MG1788 and 17MG1789.
O. Reg. 230/08 (Species at Risk in Ontario [SARO] List)	<ul style="list-style-type: none"> Reviewed to confirm status of SAR/Species of Conservation Concern.
FEDERAL	
SAR Public Registry (Government of Canada 2022a)	<ul style="list-style-type: none"> Schedule 1 of SARA reviewed to confirm status of SAR/Species of Conservation Concern.
CONSERVATION AUTHORITY	
LTVCA (2018)	<ul style="list-style-type: none"> Watershed Report Card
WILDLIFE ATLASES	
Atlas of the Mammals of Ontario (Dobbyn 1994) and Mammals of the Western Hemisphere (NatureServe 2007)	<ul style="list-style-type: none"> Distribution data for mammals overlapping the Study Area.
Ontario Breeding Bird Atlas (Cadman et al. 2007)	<ul style="list-style-type: none"> Breeding bird historical occurrence records for the 10 km grid squares overlapping the Study Area: 17MG18.

Source	Records Reviewed
Ontario Reptile and Amphibian Atlas (Ontario Nature 2022)	<ul style="list-style-type: none"> List of reptile and amphibian species occurrences for the 10 km grid squares overlapping the Study Area: 17MG18.
Ontario Butterfly Atlas (Toronto Entomologists' Association 2022)	<ul style="list-style-type: none"> Lepidoptera historical occurrence records for the 10 km grid squares overlapping the Study Area: 17MG18.
PREVIOUS ENVIRONMENTAL ASSESSMENTS	
Ridge Landfill Expansion Environmental Assessment (Dillon 2020)	<ul style="list-style-type: none"> Reviewed biological data for portions of the Ridge Landfill Expansion EA study area that overlap with the Ridge Landfill RNG Project Study Area.
PLANNING AND POLICY	
Provincial Policy Statement (Ministry of Municipal Affairs and Housing [MMAH] 2020)	<ul style="list-style-type: none"> Policy directions related to infrastructure development and the environment.
Municipality of Chatham-Kent Official Plan (2018)	<ul style="list-style-type: none"> Policy directions related to infrastructure development and the environment.
Municipality of Chatham-Kent Comprehensive Zoning By-Law (No. 216-2009)	<ul style="list-style-type: none"> Land use designations.



ENBRIDGE GAS INC.
 RIDGE LANDFILL RNG PROJECT

PROJECT STUDY AREAS
 FIGURE 3

- Existing Enbridge Station
- + Tie-in Location
- Customer Station (Proposed)
- Preliminary Preferred Route
- Alternative Route 1
- Alternative Route 2
- Rail
- Arterial/Collector Road
- Local Road
- Project Footprint (30 m)
- Study Area (125 m)
- Ridge Landfill
- Waterbody
- Watercourse



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF, ENBRIDGE, ESRI, DILLON CONSULTING

MAP CREATED BY: DDR
 MAP CHECKED BY: AL
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 223276
 STATUS: DRAFT
 DATE: 2022-06-16

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

2.1.2 Routing Constraints Analysis

Enbridge Gas identified the PPR for the Project, as well as two alternative routes (Figure 1). Dillon analyzed the constraints associated with Enbridge Gas' PPR and the two alternative routes.

Enbridge Gas identified the PPR and alternative routes for the Project in consideration of the following factors:

- Location of existing natural gas infrastructure;
- Location of previously disturbed existing transportation routes (roads) and utility corridors/easements; and,
- Overall technical feasibility and economic viability of the route.

Dillon then conducted a constraints analysis to determine the compatibility of the PPR and alternative routes with environmental and socio-economic characteristics and sensitivities; existing and planned developments and infrastructure; and, in consideration of potential environmental and socio-economic impacts.

The criteria Dillon considered in the routing constraints analysis included biophysical constraints (e.g., watercourses, wetlands, etc.), socio-economic constraints (e.g., residences, commercial/industrial properties, etc.), and technical constraints (e.g., route length, major road crossings, rail crossings, etc.).

The constraints analysis conducted for the Project is provided in Appendix C. More information on the routes assessed in this ER is provided in Section 5.0.

2.1.3 Effects Assessment and Proposed Mitigation Measures

The next step in the Study process involved an assessment of the potential environmental and socio-economic effects of the Project, along with the identification of mitigation measures, for the Preferred Route. The objective of the effects assessment was to:

- Predict and analyze the nature and extent of Project effects;
- Identify mitigation measures to protect valued components; and,
- Determine the significance of any effects remaining following mitigation (i.e., residual effects), including the significance of combined effects (where applicable).

Criteria were used to assess the significance of residual effects. For the purposes of this assessment, a "significant residual effect" is defined as a permanent or long-term residual effect of high magnitude that has a high probability of occurrence and cannot be technically or economically mitigated.

The study methods for the cumulative effects assessment are described in Section 7.0.

Mitigation measures were identified that conform to the Legacy Union Gas (LUG) Construction and Maintenance (C&M) Manual 2020, as well as the relevant permitting authority requirements, including the OEB. The development of the mitigation measures was also based on Dillon's professional experience and field study, feedback received as part of the consultation program, industry best practices, and guidelines provided by local conservation authorities and other agencies. Recommended mitigation measures are described in Section 6.0.

If approved, Enbridge plans to begin construction of the Project in the spring of 2023 and have Project construction completed by the end of 2023. Construction will involve a number of distinct steps that may have some environmental effects. These steps are described below and are depicted in Appendix D.

- **Right-of-Way Preparation:** Involves staking or marking the pipeline location, identifying where other utilities are located, clearing vegetation (only as required), sweeping for wildlife, placing wildlife exclusion fencing (as required), and grading to allow for the movement of equipment and preparation of workspace. In urban areas, asphalt is removed and disposed of at landfills or licensed facilities. In vegetated areas, topsoil along the right-of-way is stripped and stored in piles for replacement after construction. Crews re-stake the centre point of trench line/route.
- **Pipe Delivery and Pipe Preparation:** Trucks will deliver pipes in sections to avoid having to stack large quantities of pipe. Crews lay out or string sections of the pipe along the right-of-way.
- **Joining Pipe Sections:** Pipes are then welded (steel pipe) or fused (polyethylene pipe) into one long piece, following the contour of the land. X-rays (steel pipe) and visual inspections (steel pipe and polyethylene pipe) will be undertaken to confirm the integrity of the joints. Where welded joints are required, the welded joints are coated.
- **Trenching/HDD:** Pipeline is installed via open trench or trenchless construction methods. Backhoes, excavators, or other machinery are used to dig trenches along the staked or marked points. Entry and exit pits will be identified for specific trenchless construction activities.
- **Lowering the Pipe:** Crews use side booms/cranes to lower the pipe into the trench or through the drilled passage.
- **Backfilling:** Excavated material is either reused or clean fill is brought in to backfill the trench. Large stones and other debris materials are removed from the backfill to prevent pipeline damage. Subsoil and topsoil are then laid over the trench. Anything disturbed by construction (such as fences and pavement) is repaired or replaced. Vegetative cover is replaced by sodding or seeding where required.
- **Testing:** The new pipeline will be nitrogen tested or hydrostatically tested. The pipeline is sealed then pressurized with nitrogen or filled with water and tested at a pressure higher than actual operating pressures. Nitrogen and hydrostatic tests check for leaks and confirm pipeline strength. If hydrostatically tested, water for the test may be obtained from the local municipality and either disposed of at a licensed facility or discharged in accordance with local by-laws.

- Clean-up: The construction area is carefully cleaned up after the trench/drill hole is completed or backfilled. All construction material and equipment is removed when construction is completed. A final grading of the area is done and excess soil is also removed. Slope stability and re-establishment of vegetation is carefully monitored following construction. Enbridge will complete any reclamation work necessary following pipeline construction.

Activities during operations include, but are not limited to, periodic site visits, vehicle use, remote surveillance and monitoring, and integrity digs.

Potential Project interactions with the physical, natural, and socio-economic environment are identified in Table 3. The setting information presented in Section 4.0 provides the context and rationale for potential interactions, which are assessed in Section 6.0.

Table 3: Interaction Matrix

Component	Interaction with the Project (Y/N)	
	Construction	Operations
Physiography and Topography	N	N
Surficial Geology and Soils	Y	Y
Groundwater	Y	Y
Bedrock	N	N
Atmospheric Environment	Y	Y
Aquatic Environment	Y	N
Wetlands	N	N
Areas of Natural and Scientific Interest and Other Environmentally Significant Areas	N	N
Terrestrial Habitat and Vegetation	Y	Y
Wildlife and Wildlife Habitat	Y	Y
Species at Risk	Y	Y
Planning Policies	N	N
Existing and Planned Land Use	N	N
Population, Employment, and Economic Activities	Y	Y
Human Occupancy and Resource Use	Y	N
Infrastructure and Services	Y	N
Indigenous Community Land and Resource Use	N	N
Cultural Heritage Resources	Y	N

Stakeholder Engagement and Indigenous Consultation

Stakeholder engagement and Indigenous consultation are requirements of the Project. Early and frequent consultation and engagement with directly and indirectly affected Indigenous communities, landowners, government agencies, and the public was an integral part of this Study. The objectives of the consultation and engagement process were to:

- Identify all potentially affected parties;
- Provide information to the parties on relevant components of the Study;
- Obtain input from these parties;
- Mitigate and, where appropriate, accommodate for impacts on Aboriginal and Treaty Rights; and,
- Integrate information received into the decision-making process.

A number of methods were utilized to achieve these objectives, including:

- Identification of key community members and interest groups during the Study Area definition phase including the local conservation authority, utility companies, government agencies, as well as directly and indirectly impacted landowners;
- Preparation and completion of a comprehensive stakeholder engagement program (**Section 3.0**);
- The provision of key Project information to Indigenous communities;
- Circulation of notices via Canada Post to approximately 4,300 residents and businesses in the Study Area;
- Advertisement of the Project in a local newspaper (Chatham Daily News) for two weeks prior to the Virtual Information Session;
- A Twitter and Facebook ad campaign geo-targeted to individuals within the Municipality of Chatham-Kent that are 25 years of age and older;
- A Virtual Information Session website to present the Project and facilitate public and stakeholder participation;
- Provision of Project information and updates via the Enbridge Gas website;
- Receipt of and response to public input through letters, e-mails, and phone calls;
- Analysis of Project comment forms from the Virtual Information Session; and,
- Circulation of information at key points in the process to Indigenous communities and all stakeholders including government agencies, residents, and other interested parties.

The stakeholder engagement and Indigenous consultation program also included early and frequent contact with regulatory agencies to provide or request information regarding the Project. Details of the stakeholder engagement and Indigenous consultation program are provided in Section 3.0.

3.0 Stakeholder Engagement and Indigenous Consultation Program

A comprehensive stakeholder engagement and Indigenous consultation program was undertaken for the Project. This section provides an overview of the consultation and engagement activities undertaken as part of the Study.

3.1 Objectives

The objectives of the consultation and engagement program were to:

- Inform potentially affected individuals/organizations about the Project;
- Protect Aboriginal and Treaty Rights;
- Seek and facilitate the involvement of potentially affected individuals/organizations;
- Make all reasonable efforts to identify the interests and meet the needs of participants;
- Provide participants with the information they required to participate in a meaningful way;
- Consider public issues/concerns during Project design and when making Project approval decisions;
- Incorporate feedback and evolve, as necessary, in response to the input and needs (access, format, etc.) of participants; and,
- Communicate to participants how their input affected outcomes (i.e., Project design and review/approval decisions).

3.2 Consultation Activities

From the outset, and throughout the Study process, Enbridge Gas stressed the importance of consulting with Indigenous communities, area residents, community organizations, and government agencies. To meet the Study consultation requirements set by the OEB and set the stage for achieving Enbridge Gas' consultation objectives, as well as meet the legal duty to consult with Indigenous communities, the stakeholder engagement and Indigenous consultation plan called for a series of communication and consultation activities that would inform the Study.

Communication activities included letters of invitation/notification, newspaper ads, a Virtual Information Session presented via a Project website hosted by Dillon, a geo-targeted Twitter, Instagram and Facebook ad campaign, and the Enbridge Gas Project-specific website. In addition, meetings by telephone and correspondence by electronic mail were also undertaken by the Project team.

3.2.1 Contact List

A list of regulatory agencies and interest groups active in the area was compiled through research and published information including government listings, previous studies completed in the area, the

internet, and telephone calls. A contact list was developed that subdivided the groups into the following categories:

- Indigenous Communities;
- Federal and Provincial Elected Officials;
- Federal Agencies;
- Provincial Agencies, including the OPCC and local Conservation Authority;
- Municipal Agencies and Elected Officials; and,
- Interest Groups (e.g., Federation of Agriculture, Chamber of Commerce, Chatham-Kent Municipal Airport).

All of the stakeholder groups listed above are included in the Contact List provided in Appendix E.

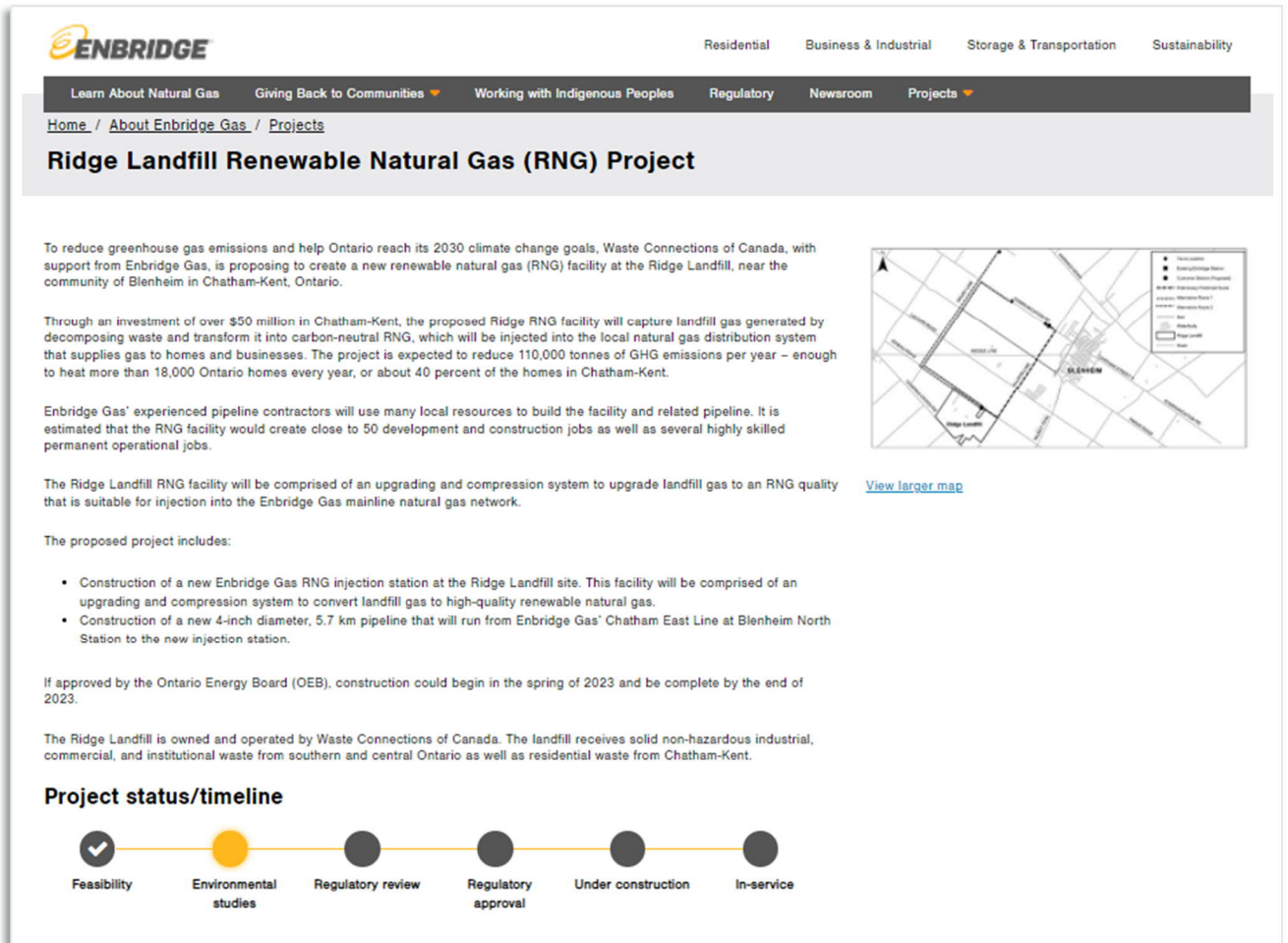
3.2.2 Project Website and Project Email

As a component of the consultation and engagement program, Enbridge Gas created a Project-specific website in order to make information accessible to as many groups as possible. By including all information in a downloadable format, Enbridge Gas provided a simple and expeditious method of communicating with stakeholders. Dillon also hosted a separate Project website to facilitate the Virtual Information Session; further details on the Virtual Information Session and associated website are provided in Section 3.2.5.

Dillon created a Project-specific email inbox (RNGRidgeLandfillEA@dillon.ca) that was used to communicate directly with stakeholders. The Project-specific email inbox will be monitored and emails will continue to be responded to throughout the OEB process and until substantial construction on the Project is complete.

All material presented at the Virtual Information Session, in Project notices, and in Project reports is posted on the Enbridge Gas Project website at www.enbridgegas.com/RidgeRNG. The final ER will be posted on the Enbridge Gas Project website in a downloadable format once it has been submitted to the OEB for review. Figure 4 shows a snapshot of the Enbridge Gas Project website.

Figure 4: Snapshot of Enbridge Gas Project Website



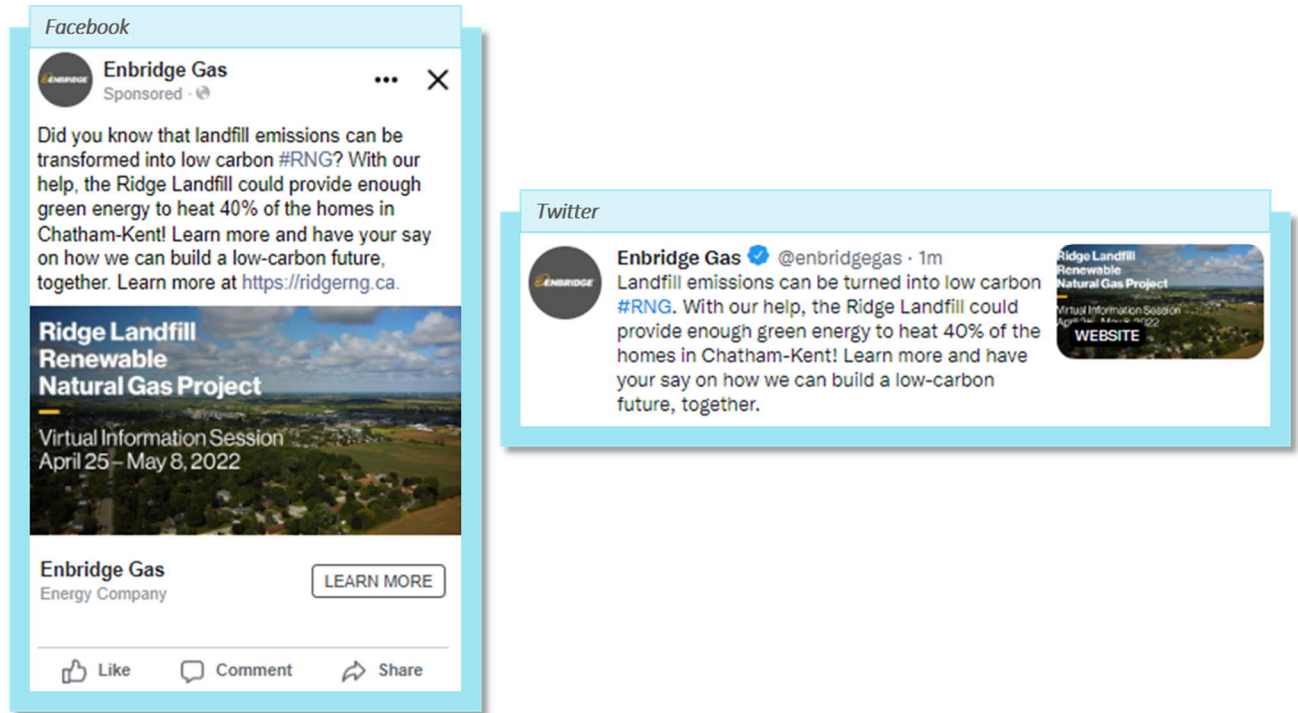
3.2.3 Public Notice

A Notice of Study Commencement and Virtual Information Session (Notice) was mailed to approximately 4,300 residences and businesses in the Study Area during the week of April 11, 2022 via Canada Post. A copy of the Notice is provided in Appendix F.

Newspaper notices ran in the Chatham Daily News on April 12 and April 19, 2022.

Enbridge Gas ran a Twitter and Facebook ad campaign geo-targeted to individuals within the Municipality of Chatham-Kent that are 25 years of age and older, from April 26 to May 8, 2022. Figure 5 shows the ads that were placed on Enbridge Gas' social media accounts.

Figure 5: Social Media Ads



Consultation logs for interest group and public correspondence are provided in Appendix G.

3.2.4 Contact Letters

Letters requesting environmental and socio-economic data and inviting government agencies (i.e., federal, provincial, and municipal) to the Virtual Information Session were distributed the week of April 11, 2022.

To expedite the process, agency letters were sent by electronic mail (copies of the letters sent to agencies are provided in Appendix H). Consultation logs for agency correspondence are provided in Appendix G, along with the interest group and public consultation logs.

3.2.5 Virtual Information Session

In light of the novel coronavirus (COVID-19) pandemic and to remain in compliance with public health advisories, a Virtual Information Session was conducted in lieu of a traditional public “drop-in” meeting to engage with the public and stakeholders and facilitate participation in the ER process. Dillon hosted the Virtual Information Session via a Project-specific website (www.RidgeRNG.ca) that was active for 2 weeks from Monday, April 25, 2022 to Sunday, May 8, 2022.

The purpose of the Virtual Information Session was to provide an opportunity for the public and stakeholders to comment on the Study and planning process, and the proposed routes. The Virtual Information Session was designed to achieve the following objectives:

- Introduce participants to the Project, the Study process, and consultation plans; and,
- Seek feedback from participants on local environmental and socio-economic considerations, issues, or concerns that should be addressed as part of the Study.

On the Virtual Information Session website, a video presentation was available providing an overview of the Project and environmental assessment process. The presentation slides were provided for download. A copy of the video transcript was also provided for download. The video presentation discussed the following:

- Introduction to Enbridge Gas and their commitment to meaningful engagement and environmental sustainability;
- Purpose of the Virtual Information Session;
- Enbridge Gas' Indigenous Peoples Policy;
- Project overview;
- Project map;
- Natural environment considerations;
- Socio-economic considerations;
- Archaeology and cultural heritage considerations;
- Pipeline design and safety;
- Pipeline construction sequence;
- Mitigation and monitoring;
- Regulatory framework (OEB);
- Environmental assessment process and Project schedule;
- Continuous stakeholder engagement; and,
- Information on how to stay informed.

Copies of the presentation, as well as the video transcript, are provided in Appendix I.

3.2.5.1 Results from Virtual Information Session

The Virtual Information Session website was viewed by 647 unique visitors and there was a total of 1,186 site views. The majority of visitors to the site (495 unique visitors; approximately 76%) were from the Municipality of Chatham-Kent (e.g., Blenheim, Chatham, Dresden, Tilbury, Wallaceburg, and other local communities).

Visitors to the Virtual Information Session were encouraged to submit a comment form – either through the online comment form, or by downloading a PDF of the comment form (see Appendix J) and submitting it to the Project email. Of the 647 unique site visits, only two people submitted the comment

form. Both individuals identified as residents or landowners in the Study Area and both were supportive of the Project. One individual noted they would prefer one of the alternative routes along Erieau Road and Drury Line, as the PPR along Allison Line would potentially disrupt farming operations.

While the Virtual Information Session resulted in minimal public comment, the Project Notice elicited greater stakeholder engagement, either through the Project email or by telephone, and included correspondence with provincial government agencies (e.g., MECP, NDMNRF, LTVCA), municipal agencies (e.g., Chatham-Kent Council, Public Utilities Commission), and the Chatham-Kent Municipal Airport. This correspondence is provided in the Stakeholder Engagement Logs in Appendix G.

3.2.5.2 Route Refinements Resulting from Public Input

There were no route refinements identified as a result of public input. Only one member of the public indicated they would prefer one of the alternative routes.

3.3 Indigenous Consultation

On November 25, 2022, an email was sent to the Ministry of Energy (MOE) providing notification of Enbridge Gas' intent to submit an LTC Application to the OEB for the Project and requesting the MOE's assessment of Duty-to-Consult requirements.

In a letter dated January 12, 2022, the MOE determined that the Project may have the potential to affect Aboriginal and Treaty Rights and provided a list of the following communities that should be consulted:

- Aamjiwnaang First Nation;
- Bkejwanong (Walpole Island) First Nation;
- Caldwell First Nation;
- Chippewas of the Thames First Nation;
- Chippewas of Kettle and Stony Point First Nation; and,
- Oneida Nation of the Thames.

Notification letters were sent to the Indigenous communities on March 1, 2022 to introduce the Project and provide an opportunity to comment. The Notice of Study Commencement and Virtual Information Session was sent to the Indigenous communities on April 11 and April 13, 2022. The notification letters invited the communities to provide input and comments regarding the proposed Project, specifically regarding potential impacts that the Project may have on constitutionally protected Aboriginal or Treaty Rights and any measures for mitigating those impacts. Enbridge Gas also requested the opportunity to meet with each community to discuss the Project.

Consultation with Indigenous communities, to date, is summarized in Appendix K. An Indigenous Consultation Report will be submitted as part of the LTC Application under separate cover.

3.4 Ongoing Engagement Activities

Although the ER is complete, Enbridge Gas is committed to ongoing communication with Indigenous communities, agencies, stakeholders, and the public.

Enbridge Gas will continue to actively engage all identified Indigenous groups in meaningful dialogue concerning the Project and endeavour to meet with each Indigenous community for the purposes of exchanging information regarding the Project, responding to inquiries, discussing issues and concerns regarding the Project; and will respond to communities in a timely manner. A full consultation record with Indigenous communities will be documented in the Indigenous Consultation Report to be submitted with the LTC Application under separate cover.

4.0 Physical, Natural, and Socio-Economic Environment Setting

This section describes the existing physical, natural, and socio-economic environment setting for lands that are located within the Study Area established for the Project.

4.1 Physical Environment

This subsection provides baseline information on the following components:

- Physiography and Topography;
- Surficial Geology and Soils;
- Bedrock; and,
- Groundwater.

4.1.1 Physiography and Topography

The Project is located within the physiographic region known as the Essex Clay Plain (Chapman and Putnam 2007), which is characterized by an extensive clay plain comprised of clay and silt-textured till (Tavistock Till) derived from glaciolacustrine deposits or shale (Chapman and Putnam 1984).

Topography in the Study Area generally ranges in elevation from approximately 193 metres above sea level (masl) to 204 masl, with the highest elevation approximately 500 m west of the intersection of Allison Line and Erieau Road, near the proposed Customer Station. Topography along each of the potential pipeline routes is discussed in more detail below.

- Preliminary Preferred Route (PPR) – Topography ranges from 202 masl to 199 masl with the lowest point at the proposed Customer Station on Erieau Road. The point of highest elevation is at the intersection of Fargo Road and Allison Line.
- **Alternative Routes 1 and 2** – Topography ranges from 200 masl to 193 masl generally decreasing in elevation from the south to the north, with the lowest point approximately 650 m south of the Communication Road and Drury Line intersection.

4.1.2 Surficial Geology and Soils

4.1.2.1 Surficial Geology

Surficial geologic mapping indicates the Study Area lies within a mixed zone of Pleistocene-aged overburden deposits, composed of the following types:

- Fine-textured glaciomarine deposits comprised of silt and clay; and,

- Till comprised of silt and silty clay.

Where present, the overburden thickness ranges from approximately 30 m to 60 m (Ontario Geological Survey [OGS] 1991).

The surficial geology underlying the majority of the PPR and Alternative Routes is composed of a relatively flat clay plain characterized by fine-grained glaciomarine deposits of silt and clay. Overlaying the clay plain, clast-poor, silty clay-textured till covers the extent of the routes.

4.1.2.2

Soils

The Project is located in a rural setting and is primarily comprised of agricultural land. However, the Project footprint consists of partially disturbed soils as a result of road and utility construction and related infilling. The soils underlying the road base are likely comprised of fine-grained silt and clay.

The Ridge Landfill, a major waste disposal site in Ontario, is located immediately south of the PPR and Alternative Routes on Erieau Road. The Ridge Landfill has been operating since the 1960s and is currently owned and operated by Waste Connections. The site is undergoing an Environmental Assessment to extend the landfill life (MECP 2020a). The Landfill has a system of drainage ditches and lagoons to manage surface water on site and a leachate collection system to manage groundwater (MECP 2020a).

A search of the Federal Contaminated Sites Inventory revealed no records of historical contamination (closed and active sites) within the Study Area (Treasury Board of Canada Secretariat 2022). A search of the MECP (2022a) Record of Site Condition database revealed no records within the Study Area.

Based on the presence of the Ridge Landfill (described above), it is possible that historical contamination (i.e., soils or groundwater) may be encountered during Project construction.

4.1.3

Bedrock

The Study Area lies over Late Devonian bedrock consisting of shale and mudstone (OGS 1991).

Underlying the overburden soils within the Study Area are a sequence of Devonian-aged sedimentary rocks (Kettle Point Formation). These bedrock formations are characterized by thinly laminated, siliciclastic, organic-rich black shale with thin to thick interbeds of organic-poor mudstone (OGS 1991).

The varying overburden thickness ranges from 30 m to 60 m. No portions of the PPR or Alternative Routes are located in areas of exposed bedrock. The majority of the pipeline will be buried between 0.9 m to 1.2 m deep and will be installed mainly in previously disturbed and infilled road rights-of-way.

4.1.4 Groundwater

The Study Area lies within the jurisdiction of the LTVCA. The PPR and Alternative Routes are not located in areas of potential groundwater recharge. The regional direction of groundwater flow is towards the southwest in the bedrock aquifer.

Detailed policy information for new development within mapped Well Head Protection Areas (WHPAs) and Intake Protection Zones (IPZs) have been developed by the Thames-Sydenham and Region Drinking Water Source Protection Committee (2015). WHPAs and IPZs have been identified as areas that are particularly sensitive to surface water contamination (e.g., spills, leaks, surface leaching, etc.). The Project does not overlap WHPAs or IPZs (Thames-Sydenham and Region Drinking Water Source Protection Committee 2015).

Highly Vulnerable Aquifer (HVA) areas are considered particularly susceptible to contamination due to shallow, near-surface groundwater or a permeable soil layer above the aquifer (MECP 2020b). The nearest HVA area is Ridgetown, located approximately 15 km northeast of the Study Area (Thames-Sydenham and Region Drinking Water Source Protection Committee 2015). The potential routes do not lie in HVA areas along the extent of their lineation. The construction and operation of a natural gas pipeline is not identified as a drinking water threat under the Ontario Clean Water Act (SO 2006, c. 22).

Well information contained in the MECP (2022b) Water Well Information System (WWIS) was reviewed in the vicinity of the PPR and Alternative Routes to better understand local groundwater conditions. There are a total of 9 unique well IDs located within 100 m of the routes, which includes 5 water supply wells, 2 observation wells, 1 record for well abandonment, and 1 test hole. The wells identified within 100 m range in depth between 15.8 metres below ground surface (mbgs) and 46 mbgs, with an average depth of approximately 34.2 mbgs. Static water levels range in depth between 18.2 mbgs and 35.4 mbgs with an average of 21.6 mbgs. Depths to bedrock range between 35.7 mbgs and 44.8 mbgs with an average of 38.2 mbgs. Based on evaluation of the drilling contractors' notes contained in the well logs, groundwater was found at depths ranging from 18.2 mbgs and 35.4 mbgs, with an average "water found" depth of 21.6 mbgs.

Natural Environment

This subsection provides baseline information on the following components:

- Atmospheric Environment;
- Aquatic Environment;
- Wetlands;
- Woodlands;
- Areas of Natural and Scientific Interest and other Environmentally Sensitive Areas;
- Terrestrial Habitat and Vegetation;
- Wildlife and Wildlife Habitat; and
- Species at Risk.

Existing natural environment features identified from background data sources are shown on Figure 6.

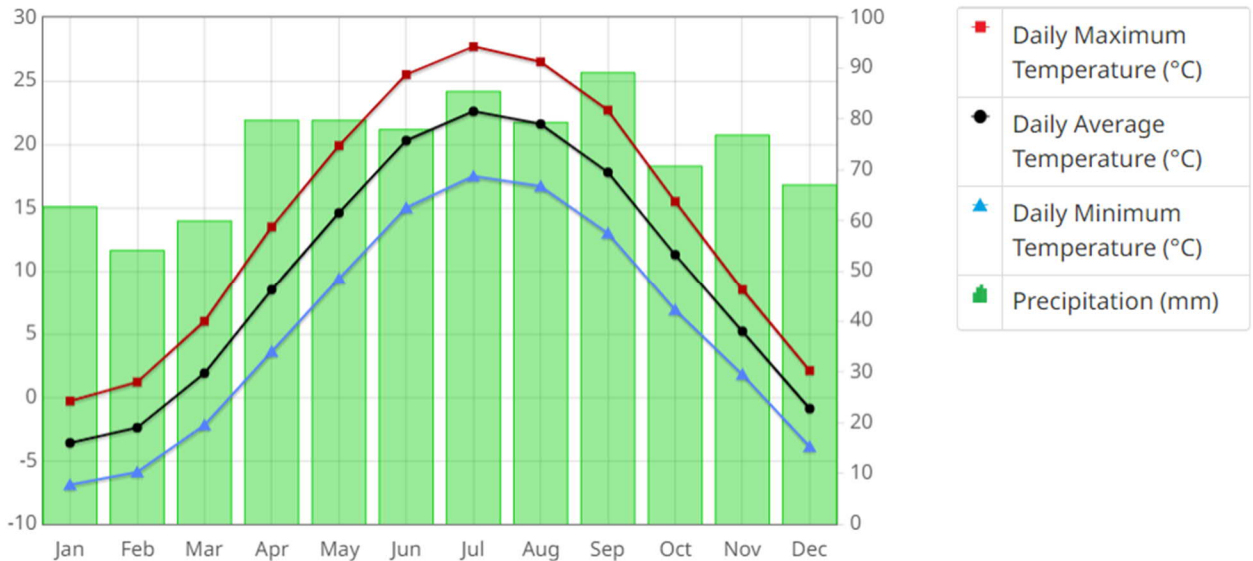
4.2.1 Atmospheric Environment

4.2.1.1 Climate

Climate averages are commonly used to describe the climatic conditions of a particular location in Canada. At the end of each decade, Environment and Climate Change Canada (ECCC) updates its climate averages for several locations across Canada and for as many climatic characteristics as possible. The climate averages and extremes are obtained from Canadian climate stations with at least 15 years of data between 1981 and 2010 (ECCC 2022).

Figure 7 shows temperature and precipitation data averaged over the period from 1983 to 2006 (23 years), taken at the Chatham Water Pollution Control Plant (WPCP), approximately 15 km northwest of the Study Area.

Figure 7: Temperature and Precipitation Graph for 1983 to 2006 – Chatham WPCP



Source: ECCC 2022

4.2.1.2 Air Quality

According to the MECP, overall air quality in Ontario has improved significantly over the past decade due to a substantial decrease in harmful pollutants such as nitrogen dioxide, sulphur dioxide and carbon monoxide that are emitted by vehicles and industry. There has also been a significant decrease in fine particulate matter which is emitted directly into the atmosphere as a by-product of fuel combustion or formed indirectly in the atmosphere through chemical reactions. Fine particulate matter, including smoke, fumes and dust can have various negative health effects, especially on the respiratory system (Ministry of the Environment and Climate Change 2015).

4.2.2 Aquatic Environment

A combination of desktop review of available agency resources and preliminary field investigations were conducted to determine the location of existing surface water features and the potential for fish habitat within the Study Area. Preliminary field assessments were completed on April 8, 2022 to confirm the location of surface water features within the Study Area. Locations of features identified during background reviews and confirmed during preliminary field investigations are shown on Figure 6.

4.2.2.1 Surface Water

The Project is located within the jurisdiction of the LTVCA, which manages the watersheds of all streams draining into the Thames River from Delaware to Lake St. Clair. A total of seven subwatersheds are located within the LTVCA watershed. The Project is located within the McGregor Creek & Area subwatershed, which drains 284 km² of land flowing through the City of Chatham and eventually empties into the Thames River.

A total of 14 surface water features (i.e., drains) are located with the Study Area and are shown on Figure 6. A breakdown of the drains crossed by Alternative Routes 1 and 2 as well as the PPR is summarized below, along with location descriptors.

Preliminary Preferred Route

- Cooks Drain – east side of Communication Road
- Wetherford Drain – crosses Allison Line
- Walker Drain – crosses Allison Line, east of Middle Line
- McGregor Drain – crosses Allison Line, east of Fargo Road
- Cameron Drain – crosses Allison Line, west of Lagoon Road
- Duke Drain – west side of Erieau Road, then crosses to the east side of Erieau Road at the southerly limits of the Ridge Landfill.

Alternative Route 1

- Proctor Drain – crosses Drury Line, then runs parallel on the south side
- Vester Drain – south side of Drury Line (outlets to Lucas Drain)
- Lucas Drain – crosses Drury Line
- Appleford Drain – south side of Drury Line (outlets to Lucas Drain), then turns south on west side of Fargo Road
- Walker Drain – crosses Drury Line
- Cameron Drain – crosses Drury Line
- Wm. Walker Drain – crosses Drury Line
- Gales Drain – crosses Drury Line, then turns south on east side of Erieau Road

Alternative Route 2

- Brooksbank Drain – east side of Communication Road
- Kormendy Drain – west side of Communication Road
- Lucas Drain – crosses Communication Road, outlet for the Brooksbank and Kormendy Drains
- Vester Drain – west side of Communication Road, then turns west on the south side of Drury Line (outlets to Lucas Drain)
- Lucas Drain – crosses Drury Line
- Appleford Drain – south side of Drury line (outlets to Lucas Drain), then turns south on west side of Fargo Road
- Walker Drain – crosses Drury Line
- Cameron Drain – crosses Drury Line
- Wm. Walker Drain – crosses Drury Line
- Gales Drain – crosses Drury Line, then turns south on east side of Erieau Road

4.2.2.2

Fish and Fish Habitat

Based on a review of available Aquatic Resource Area data from the NDMNRF (formerly MNRF), the drains that transect the Study Area have thermal regimes characterized as warm water and are known to contain a variety of common warm water fish species. Similarly, of the drains that transect the Study Area, with the exception of the Cameron, Gales and Lucas Drains, each are classified as Class F drains (e.g., intermittent flow with no sensitive fish species) by Fisheries and Oceans Canada (DFO). The Cameron, Gales and Lucas Drains are classified as Class C drains (e.g., permanent flow with no sensitive fish species) by DFO. Each of the drains that transect the Study Area provide either direct or indirect warm water fish habitat within an active agricultural landscape.

Based on a review of the NDMNRF LIO Natural Heritage Area mapping, Aquatic Resource Area data, and DFO Online Aquatic SAR Mapping Tool, none of the drains that transect the Study Area have documented occurrence records of aquatic SAR listed provincially and/or federally.

The Aquatic Resource Area data did provide the following warm water fish community data for the Duke and Locke Drains:

- Duke Drain: Bluntnose Minnow (*Pimephales notatus*), Common Carp (*Cyprinus carpio*), Common Shiner (*Luxilus cornutus*), Creek Chub (*Semotilus atromaculatus*), and Goldfish (*Carassius auratus*).
- Locke Drain: Bluntnose Minnow, Brown Bullhead (*Ameiurus nebulosus*), Common Shiner, Creek Chub, Fathead Minnow (*Pimephales promelas*), Gizzard Shad (*Dorosoma cepedianum*), Green Sunfish (*Lepomis cyanellus*), Johnny Darter (*Etheostoma nigrum*), Johnny Darter x Tesselated Darter (*Etheostoma nigrum* x *Etheostoma olmstedii*), *Lepomis* sp., Northern Pike (*Esox lucius*), Tadpole Madtom (*Noturus gyrinus*), and White Sucker (*Catostomus commersonii*).

With the exception of Common Carp and Goldfish, each of the aforementioned species are considered Secure (SRank of S5) or Apparently Secure (SRank of S4) in the Province of Ontario. Common Carp and

Goldfish have a SRank of SNA, indicating that a conservation status is not applicable as the species is not a suitable target for conservation activities.

The Ridge Landfill Expansion EA was reviewed to supplement the background review of fish and fish habitat where there was overlap with the Project Study Area. Of the 14 drains that transect the Study Area, two drains (i.e., Duke Drain and Gales Drain) overlap with the Ridge Landfill Expansion EA study area and were assessed in October of 2016. The Ridge Landfill Expansion EA characterized the Duke and Gales drains as follows:

- **Duke Drain:** Consistent in function throughout and characterized as flat and primarily channelized with few meanders. Little instream vegetation and cover was observed, and was generally limited to broad waterweed (*Elodea Canadensis*), reed canary grass (*Phalaris arundinacea*) and duckweed species (*Lemnoideae* sp.). Riparian cover was documented as consistent throughout and limited to overhanging grass species with infrequent presence of shrub species. The substrate was documented as dominated by silt throughout with presence of detritus, while the morphology of the drain was described as flat throughout with a wetted width ranging from 0.8 m in the upper reaches to 20 m in the lower reaches. The average wetted depth was described as ranging from 0.05 m in the upper reach to 0.2 m in the lower reach. Both Goldfish and Pumpkinseed (*Lepomis gibbosus*) were observed during the drain assessment. As previously indicated, Goldfish has a SRank of SNA, indicating that a conservation status is not applicable as the species is not a suitable target for conservation activities, while Pumpkinseed is listed as Secure (SRank of S5) in the province of Ontario.
- **Gales Drain:** At the time the drain was assessed there was no flow and the drain was dry throughout with no defined channel. Terrestrial grass species were present throughout the drain's depression and riparian area, and there was no indication of sediment sorting observed.

If required, detailed aquatic habitat assessments for the drains associated with the Preferred Route will be completed during detailed design in consultation with, and in support of, LTVCA permitting and approvals.

4.2.3 Wetlands

A review of readily available agency mapping did not identify local wetlands and/or Provincially Significant Wetlands (PSWs) within the Study Area. However, as part of the Ridge Landfill Expansion EA background review, a single wetland [Swamp Maple Mineral Deciduous Swamp (SWDM3-3)] was identified within the Study Area in association with Alternative Routes 1 and 2 along Erieau Road (see Figure 8).

4.2.4 Woodlands

Two mapped woodlands were identified within the Study Area in association with Alternative Routes 1 and 2 based on a review of readily available agency mapping (Figure 6).

In accordance with the Municipality of Chatham-Kent’s Official Plan (2018), significant woodlands are defined as all woodlots 2 hectares (ha) in size or larger based on agency mapping or identified by the Municipality in cooperation with the LTVCA. Schedule C4 in the Municipality’s Official Plan identifies the two aforementioned woodlands identified within the Study Area as significant woodlands (Figure 6).

4.2.5 Areas of Natural and Scientific Interest and Other Environmentally Significant Areas

Based on a review of available agency mapping, no Areas of Natural and Scientific Interest (ANSI) or other Environmentally Significant Areas occur within the Study Area.

4.2.6 Terrestrial Habitat and Vegetation

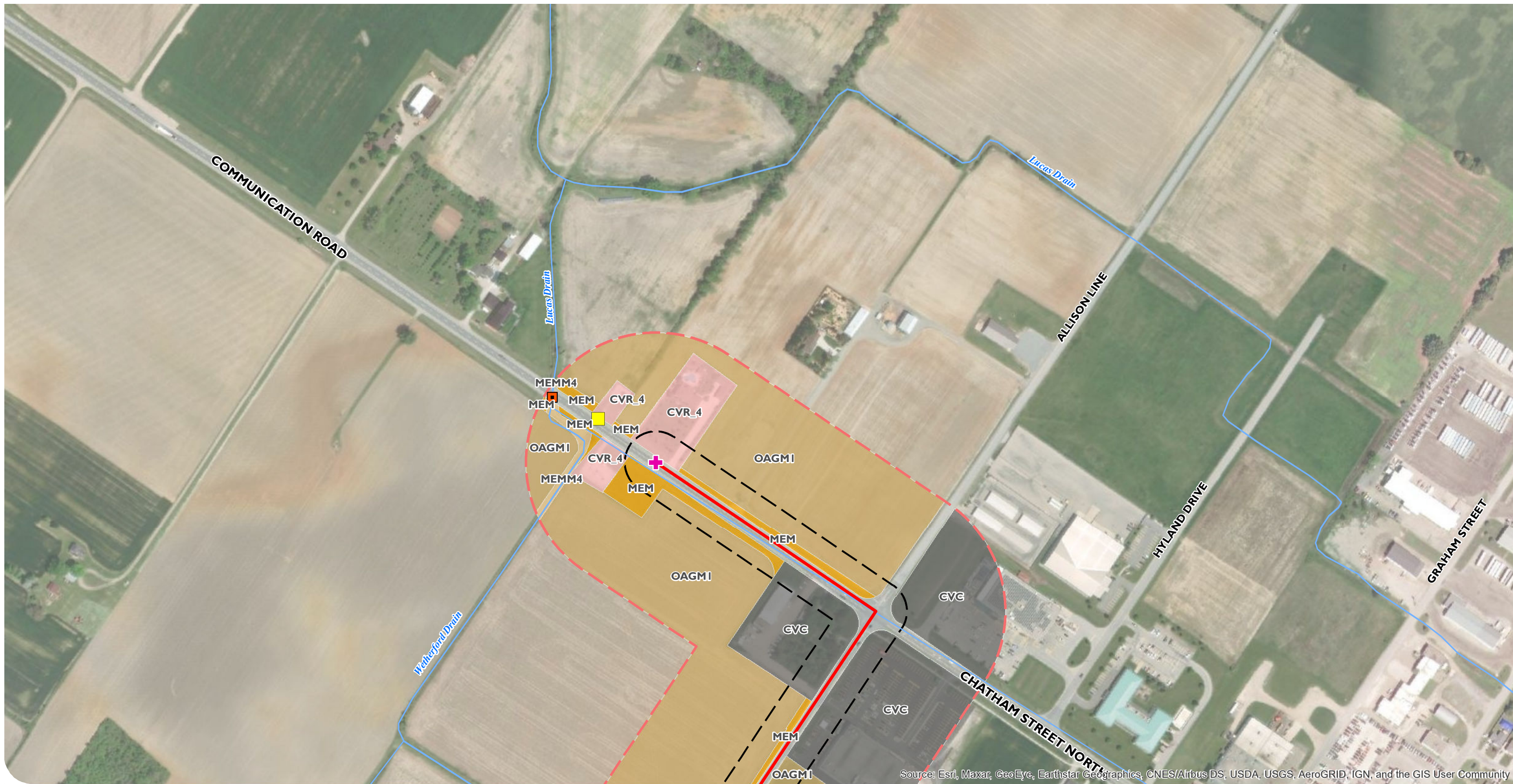
Preliminary Ecological Land Classification (ELC) surveys were conducted using the ELC System for Southern Ontario, and second approximation classifications (Lee et al. 1998, Lee 2008) were used to classify and map ecological communities within the Study Area. The ecological community polygon boundaries were determined through a review of aerial photography and further refined during the preliminary field investigations conducted on April 8, 2022. Current ELC mapping is provided on Figure 8 (below). As these surveys were completed outside of the growing season and without soil assessment, natural features were generally only identified to the community class level of the ELC hierarchy.

Lands within the Study Area are predominantly classified as ‘constructed’ or ‘cultural’ communities, with limited occurrences of ‘natural’ or ‘naturalized’ community types. The Study Area is largely dominated by active agriculture (annual row crops – OAGM1), followed by rural properties (CVR_4) common in rural southwestern Ontario agricultural landscapes. Most of the natural communities showed high levels of anthropogenic influences, and in some cases were considered maintained (e.g., road side mixed meadows [MEM]). Of the natural communities identified within the Study Area, the least impacted features (woodlands [FOD, FOC, FODM9-4/FODM4-9], wetlands [SWDM3-3], and mixed meadow/thicket [MEM/THD]) are associated with Alternative Routes 1 and 2. A full list of ELC community types, and their total area per route option within the Study Area is provided in Table 4.

Table 4: ELC Communities within the Study Area

ELC Community Code	ELC Community Type	Alternatives 1 & 2 Area (ha)	PPR Area (ha)	Combined Area (ha)
CULTURAL				
CGL	Greenlands	--	2.89	2.89
CVC	Commercial and Institutional	--	3.88	3.88
CVC_2	Light Industry	--	2.52	2.52
CVC_3	Landfill	11.75	--	11.75
CVC_4	Rural Property	32.25	0.48	32.73
OAGM1	Annual Row Crops	206.11	99.31	305.42

ELC Community Code	ELC Community Type	Alternatives 1 & 2 Area (ha)	PPR Area (ha)	Combined Area (ha)
SAGM2	Orchard	0.11	1.51	1.62
TAGM5	Hedgerow	1.83	0.95	2.78
NATURAL (UPLAND)				
Forest				
FOD	Deciduous Forest	0.8	--	0.8
FOC	Coniferous Forest	2.3	--	2.3
FODM9-4/ FODM4-9	Fresh-Moist Shagbark Hickory Deciduous Forest / Dry-Fresh Basswood Deciduous Forest	0.65	--	0.65
Meadow				
MEGM3	Dry-Fresh Graminoid Meadow	0.31	--	0.31
MEMM4	Fresh-Moist Mixed Meadow	--	0.26	0.26
MEM	Mixed Meadow	7.3	5.96	13.26
MEM/THD	Mixed Meadow / Deciduous Thicket Complex	3.39	--	3.39
NATURAL (WETLAND)				
Swamp				
SWDM3-3	Swamp Maple Mineral Deciduous Swamp	3.05	--	3.05
AQUATIC SYSTEM				
OA	Open Aquatic	--	0.4	0.4



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION

FIGURE 8A



- Project Footprint (30 m)
- Study Area (125 m)
- Existing Enbridge Station
- Tie-in Location
- Preliminary Preferred Route
- Watercourse
- Ecological Land Classification**
- CVC: Commercial and Institutional (3.88 ha)
- CVR_4: Rural Property (32.73 ha)
- MEM: Mixed Meadow (Cultural) (13.26 ha)
- MEMM4: Fresh-Moist Mixed Meadow Ecosite (0.26 ha)
- OAGMI: Annual Row Crops (305.42 ha)
- Box Culvert

NOTE: Alternate Routes are offset for visual purposes

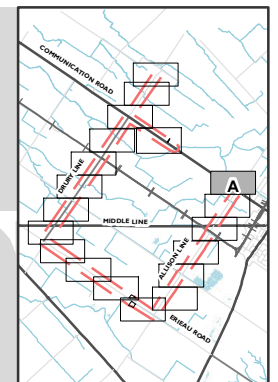


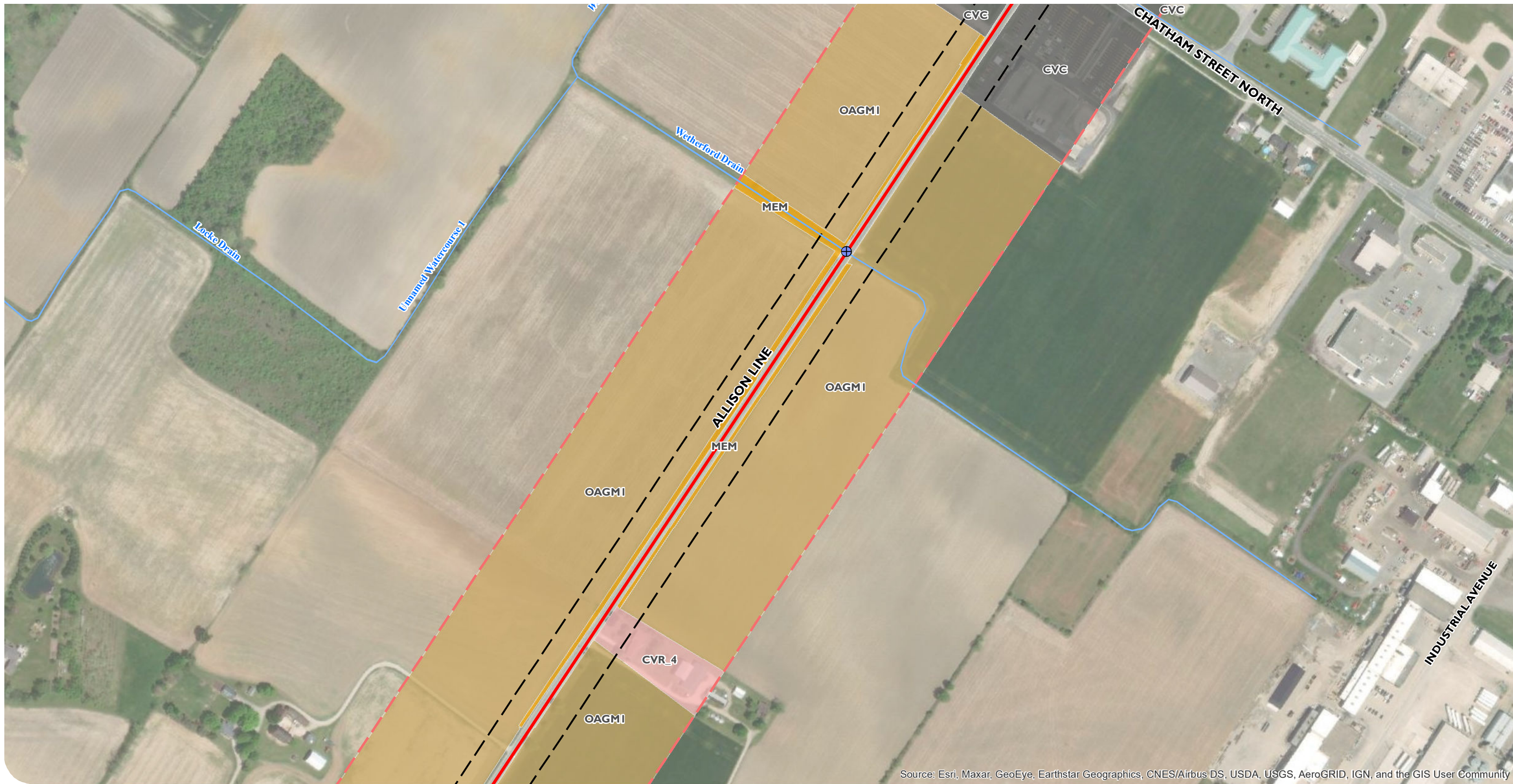
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8B



- Project Footprint (30 m)
- Study Area (125 m)
- Preliminary Preferred Route
- Watercourse

- Ecological Land Classification**
- CVC: Commercial and Institutional (3.88 ha)
 - CVR_4: Rural Property (32.73 ha)
 - MEM: Mixed Meadow (Cultural) (13.26 ha)
 - OAGMI: Annual Row Crops (305.42 ha)
- CSP Culvert

NOTE: Alternate Routes are offset for visual purposes

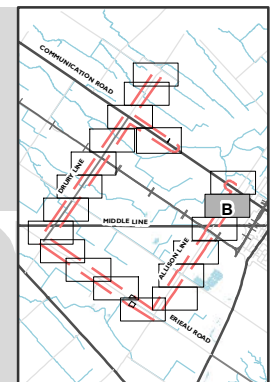


MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING, ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RING PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8C



- Project Footprint (30 m)
- Study Area (125 m)
- Preliminary Preferred Route
- Rail
- Watercourse
- Ecological Land Classification**
- CGL: Greenlands (2.89 ha)
- CVC_2: Light Industry (2.52 ha)
- CVR_4: Rural Property (32.73 ha)
- MEM: Mixed Meadow (Cultural) (13.26 ha)
- OAGMI: Annual Row Crops (305.42 ha)
- Box Culvert
- CSP Culvert

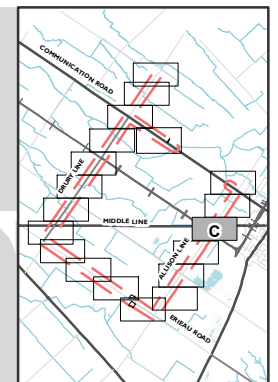
NOTE: Alternate Routes are offset for visual purposes



MAP DRAWING INFORMATION:
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MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8D



- Project Footprint (30 m)
 - Study Area (125 m)
 - Preliminary Preferred Route
 - Rail
 - Watercourse
 - TAGM5: Hedgerow (2.78 ha)
- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
 - MEM: Mixed Meadow (Cultural) (13.26 ha)
 - OAGM1: Annual Row Crops (305.42 ha)

NOTE: Alternate Routes are offset for visual purposes

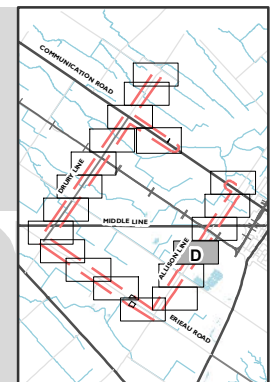


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DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8E



- Project Footprint (30 m)
- Study Area (125 m)
- Preliminary Preferred Route
- Watercourse

- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
 - MEM: Mixed Meadow (Cultural) (13.26 ha)
 - OAGMI: Annual Row Crops (305.42 ha)
 - TAGM5: Hedgerow (2.78 ha)

- Box Culvert with BARS and Cliff Swallow nests

NOTE: Alternate Routes are offset for visual purposes

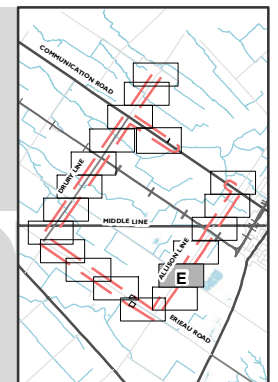


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ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8F



- Project Footprint (30 m)
- Study Area (125 m)
- Preliminary Preferred Route
- Watercourse

- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
 - OAGM1: Annual Row Crops (305.42 ha)

NOTE: Alternate Routes are offset for visual purposes

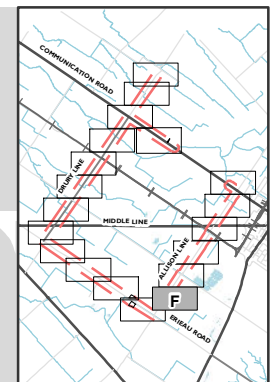


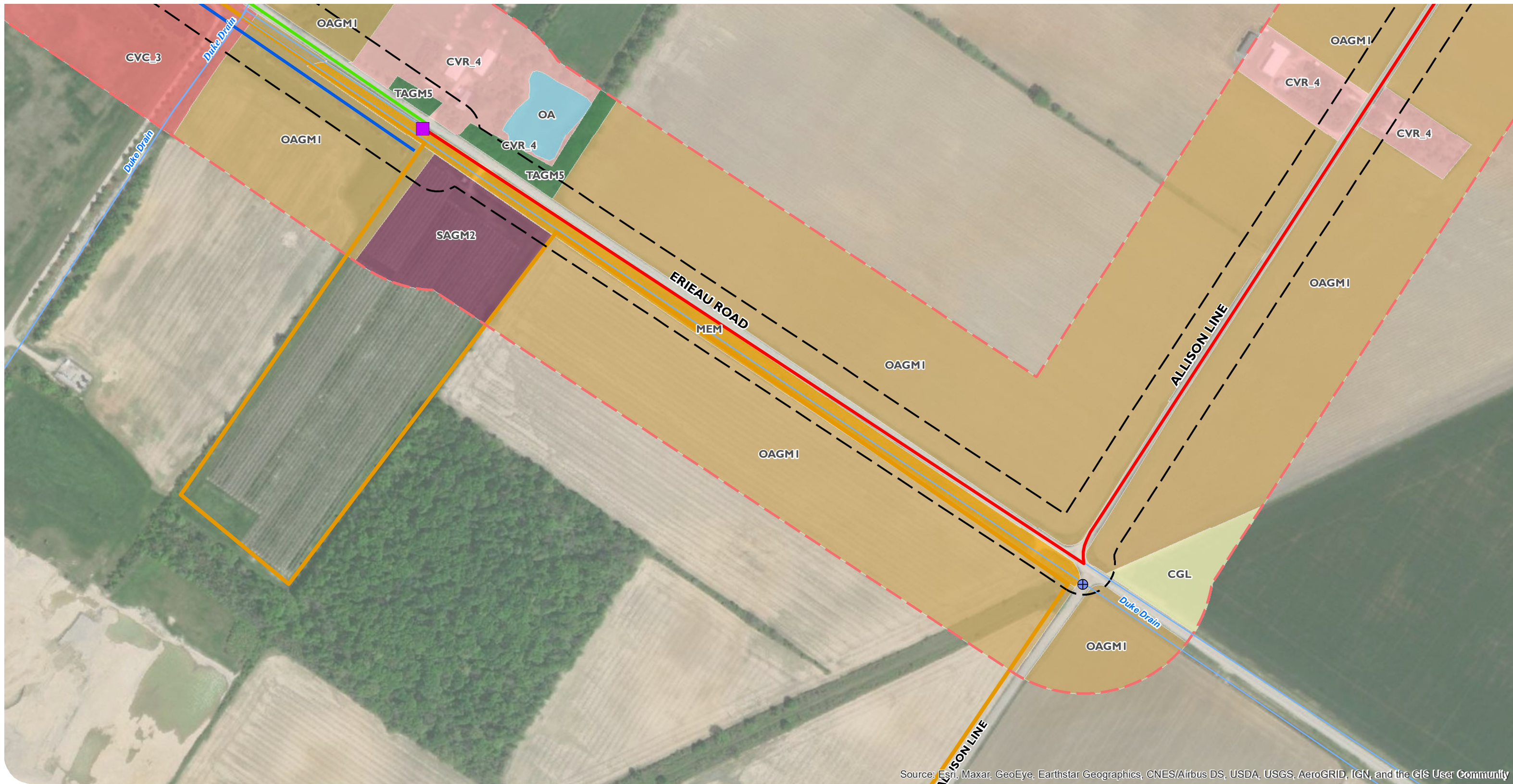
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DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING, ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
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ENBRIDGE GAS INC.
RIDGE LANDFILL RING PROJECT

ECOLOGICAL LAND CLASSIFICATION

FIGURE 8G



- Project Footprint (30 m)
- Study Area (125 m)
- Customer Station (Proposed)
- Preliminary Preferred Route

- Alternative Route 1
- Alternative Route 2
- Ridge Landfill
- Watercourse

Ecological Land Classification

- CGL: Greenlands (2.89 ha)
- CVC_3: Landfill (11.75 ha)
- CVR_4: Rural Property (32.73 ha)
- MEM: Mixed Meadow (Cultural) (13.26 ha)

- OA: Open Aquatic (0.4 ha)
- OAGMI: Annual Row Crops (305.42 ha)
- SAGM2: Orchard (1.62 ha)
- TAGM5: Hedgerow (2.78 ha)
- CSP Culvert

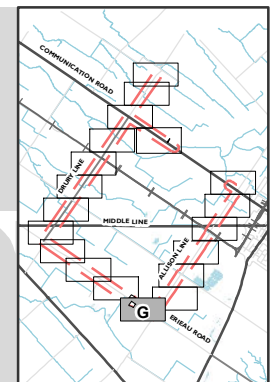
NOTE: Alternate Routes are offset for visual purposes

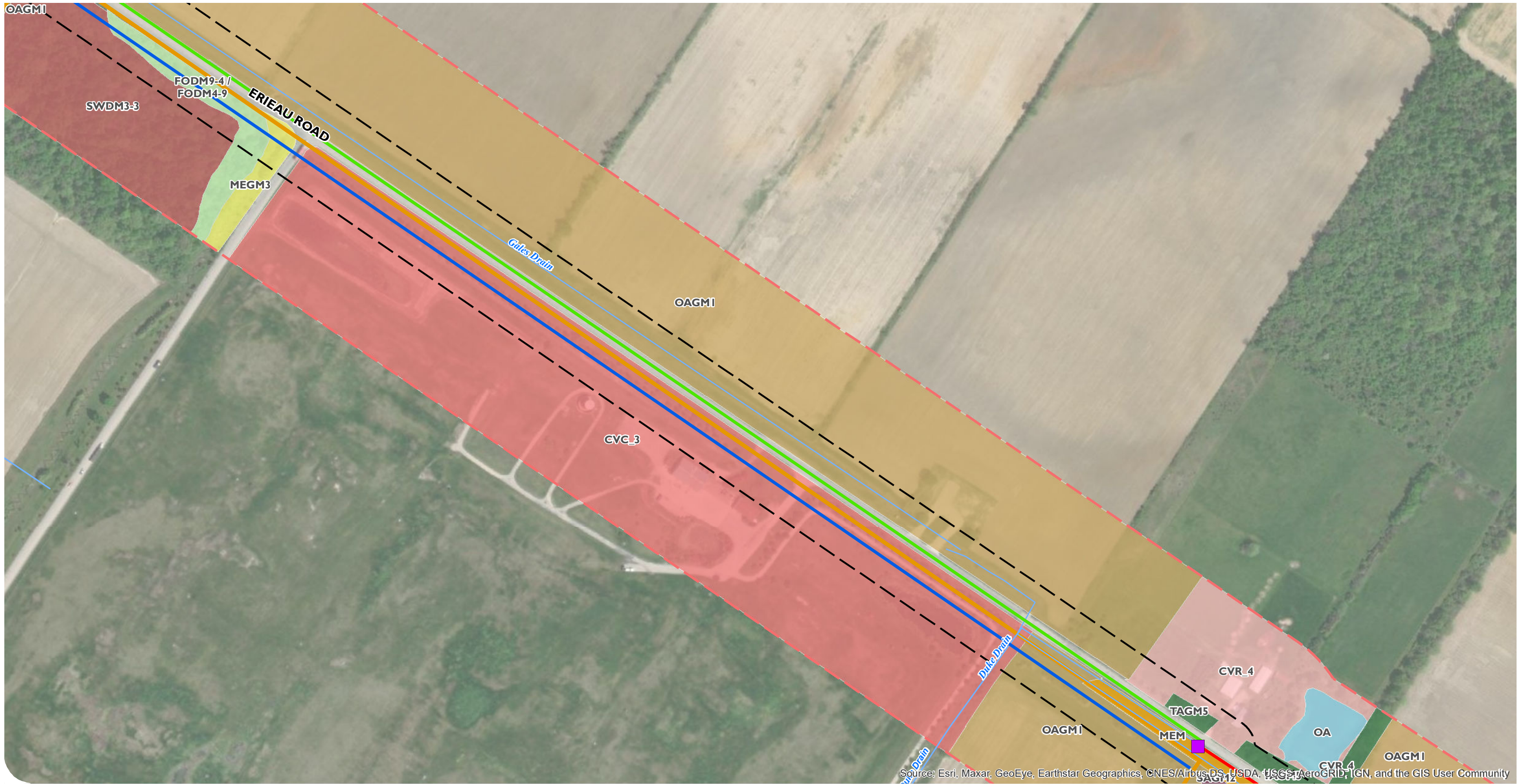


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MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RING PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8H



- Project Footprint (30 m)
- Study Area (125 m)
- Customer Station (Proposed)
- Preliminary Preferred Route

- Alternative Route 1
- Alternative Route 2
- Ridge Landfill
- Watercourse

- Ecological Land Classification**
- CVC_3: Landfill (11.75 ha)
 - CVR_4: Rural Property (32.73 ha)
 - FODM9-4: Fresh-Moist Shagbark Hickory Deciduous Forest /
 - MEGM3: Dry-Fresh Graminoid Meadow (0.31 ha)

- MEM: Mixed Meadow (Cultural) (13.26 ha)
- OA: Open Aquatic (0.4 ha)
- OAGMI: Annual Row Crops (305.42 ha)
- SAGM2: Orchard (1.62 ha)
- SWDM3-3: Swamp Maple Mineral Deciduous Swamp (3.05 ha)

- TAGM5: Hedgerow (2.78 ha)

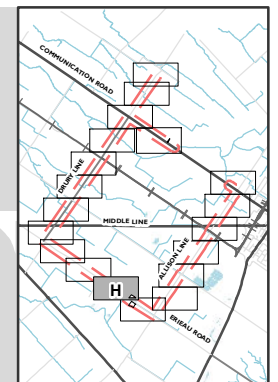
NOTE: Alternate Routes are offset for visual purposes



MAP DRAWING INFORMATION:
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MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION

FIGURE 8I



- | | | |
|--------------------------|---------------------------------------|--|
| Project Footprint (30 m) | Ridge Landfill | FODM9-4: Fresh-Moist Shagbark Hickory Deciduous Forest / |
| Study Area (125 m) | Watercourse | MEGM3: Dry-Fresh Graminoid Meadow (0.31 ha) |
| Alternative Route 1 | Ecological Land Classification | OAGM1: Annual Row Crops (305.42 ha) |
| Alternative Route 2 | CVC_3: Landfill (11.75 ha) | SWDM3-3: Swamp Maple Mineral Deciduous Swamp (3.05 ha) |
| | | TAGM5: Hedgerow (2.78 ha) |

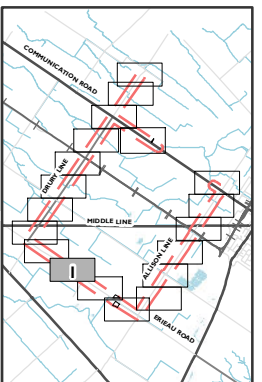
NOTE: Alternate Routes are offset for visual purposes



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MAP CREATED BY: DDR
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ENBRIDGE GAS INC.
RIDGE LANDFILL RING PROJECT

ECOLOGICAL LAND CLASSIFICATION

FIGURE 8J



- Project Footprint (30 m)
 - Study Area (125 m)
 - Alternative Route 1
 - Alternative Route 2
 - Watercourse
 - CSP Culvert
- Ecological Land Classification**
- MEM: Mixed Meadow (Cultural) (13.26 ha)
 - OAGMI: Annual Row Crops (305.42 ha)
 - TAGM5: Hedgerow (2.78 ha)

NOTE: Alternate Routes are offset for visual purposes

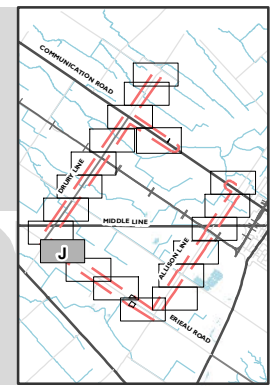


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MAP CREATED BY: DDR
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ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8K



- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2

Watercourse

- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
 - MEM: Mixed Meadow (Cultural) (13.26 ha)
 - OAGMI: Annual Row Crops (305.42 ha)

- TAGM5: Hedgerow (2.78 ha)
- CSP Culvert

NOTE: Alternate Routes are offset for visual purposes

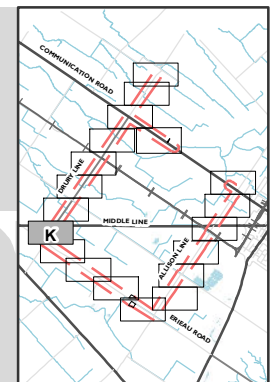


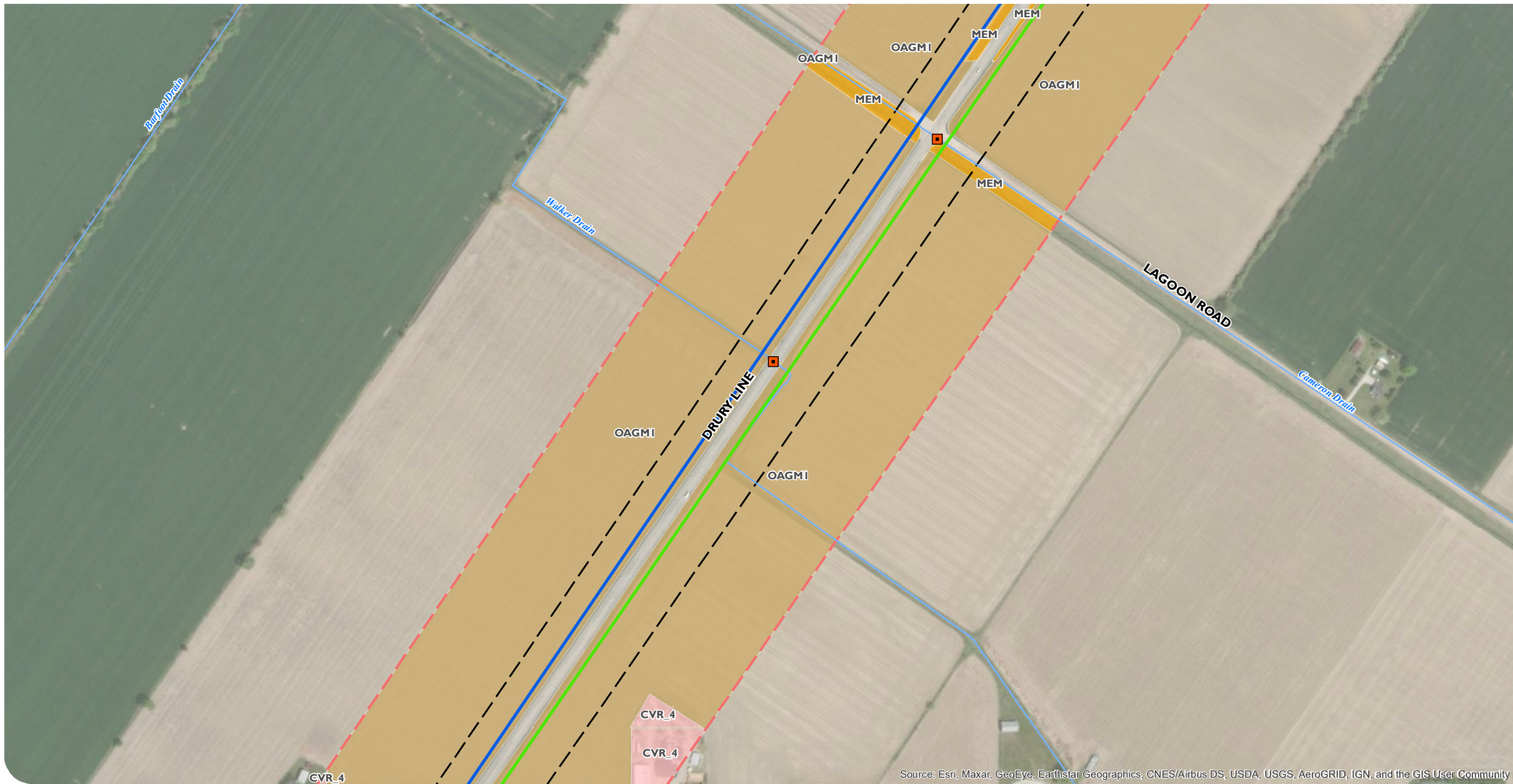
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MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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ENBRIDGE GAS INC.
RIDGE LANDFILL RING PROJECT

ECOLOGICAL LAND CLASSIFICATION

FIGURE 8L



- Project Footprint (30 m)
 - Study Area (125 m)
 - Alternative Route 1
 - Alternative Route 2
 - Watercourse
 - Box Culvert
- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
 - MEM: Mixed Meadow (Cultural) (13.26 ha)
 - OAGMI: Annual Row Crops (305.42 ha)

NOTE: Alternate Routes are offset for visual purposes

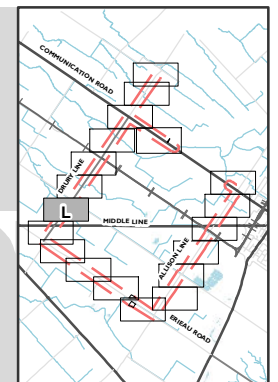


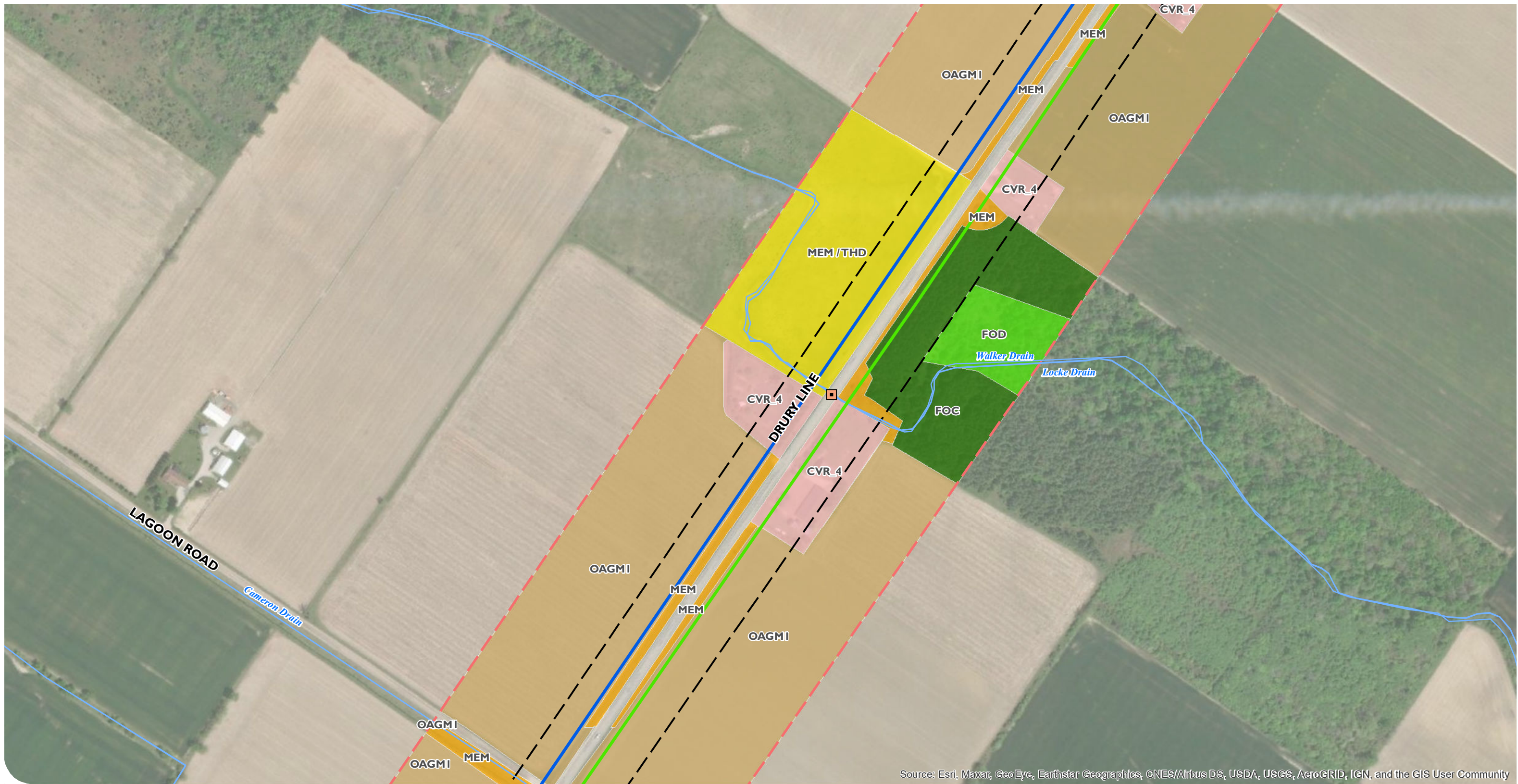
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MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RING PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8M



- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Watercourse
- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
- FOC: Conifer Forest (2.3 ha)
- FOD: Deciduous Forest (0.8 ha)
- MEM / THD: Mixed Meadow / Deciduous Thicket Complex (3.39 ha)
- MEM: Mixed Meadow (Cultural) (13.26 ha)
- OAGMI: Annual Row Crops (305.42 ha)
- Box Culvert with Cliff Swallow nests

NOTE: Alternate Routes are offset for visual purposes

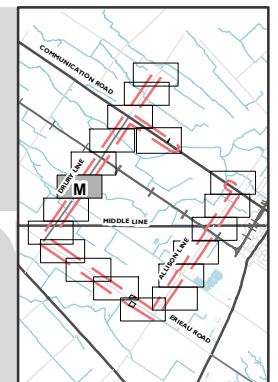


MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING, ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION

FIGURE 8N



- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Rail
- Watercourse
- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
- MEM / THD: Mixed Meadow / Deciduous Thicket Complex (3.39 ha)
- MEM: Mixed Meadow (Cultural) (13.26 ha)
- OAGMI: Annual Row Crops (305.42 ha)

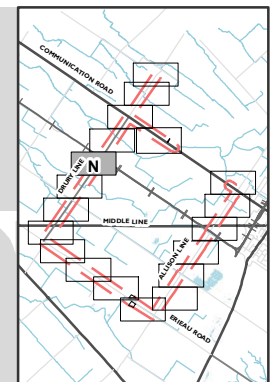
NOTE: Alternate Routes are offset for visual purposes

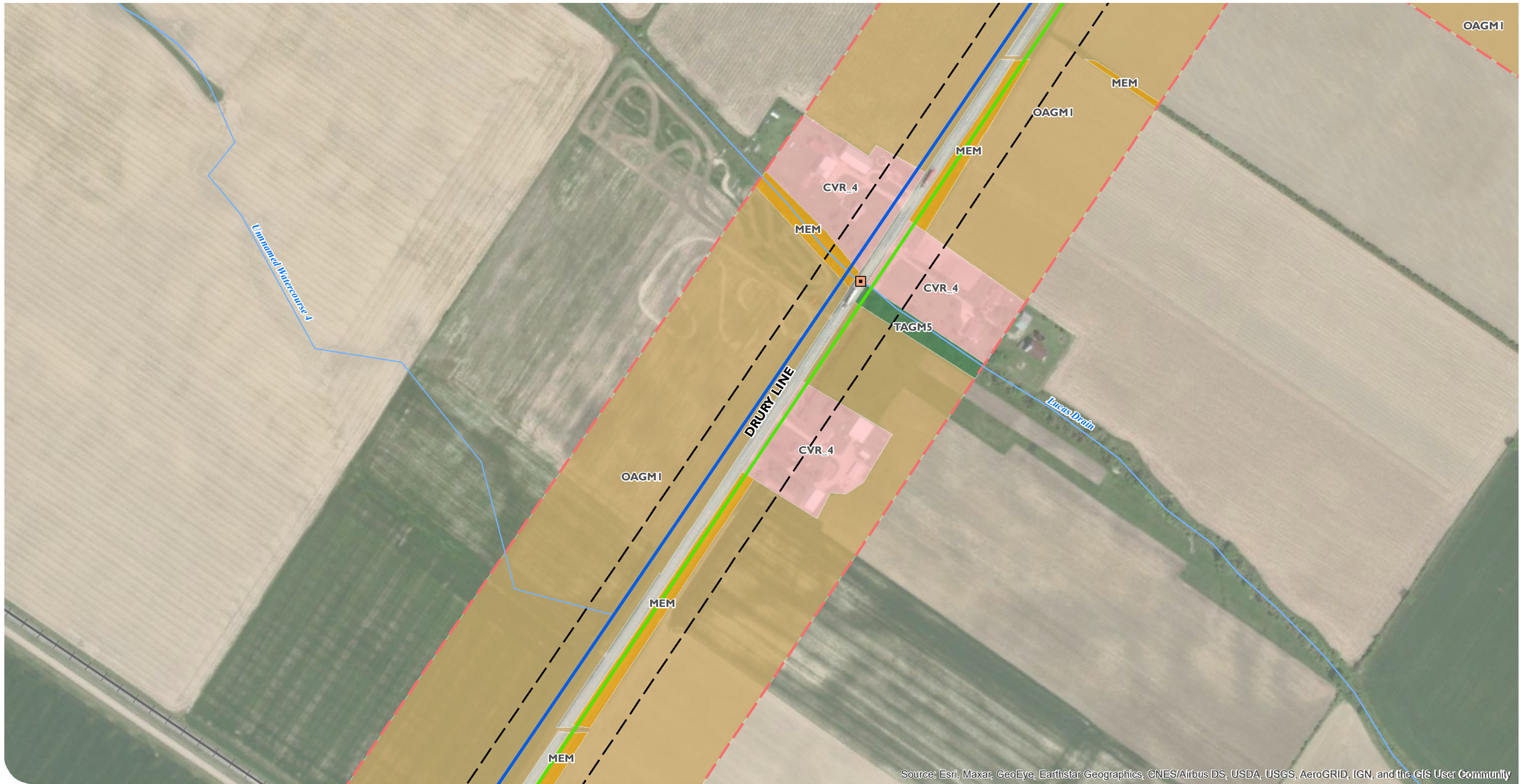


MAP DRAWING INFORMATION:
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MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 80



- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Rail
- Watercourse
- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
- MEM: Mixed Meadow (Cultural) (13.26 ha)
- OAGMI: Annual Row Crops (305.42 ha)
- TAGM5: Hedgerow (2.78 ha)
- Box Culvert with Cliff Swallow nests

NOTE: Alternate Routes are offset for visual purposes

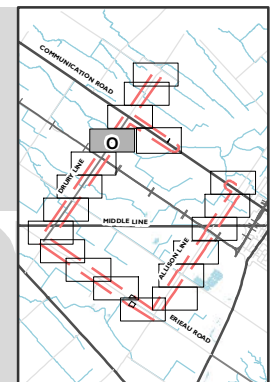


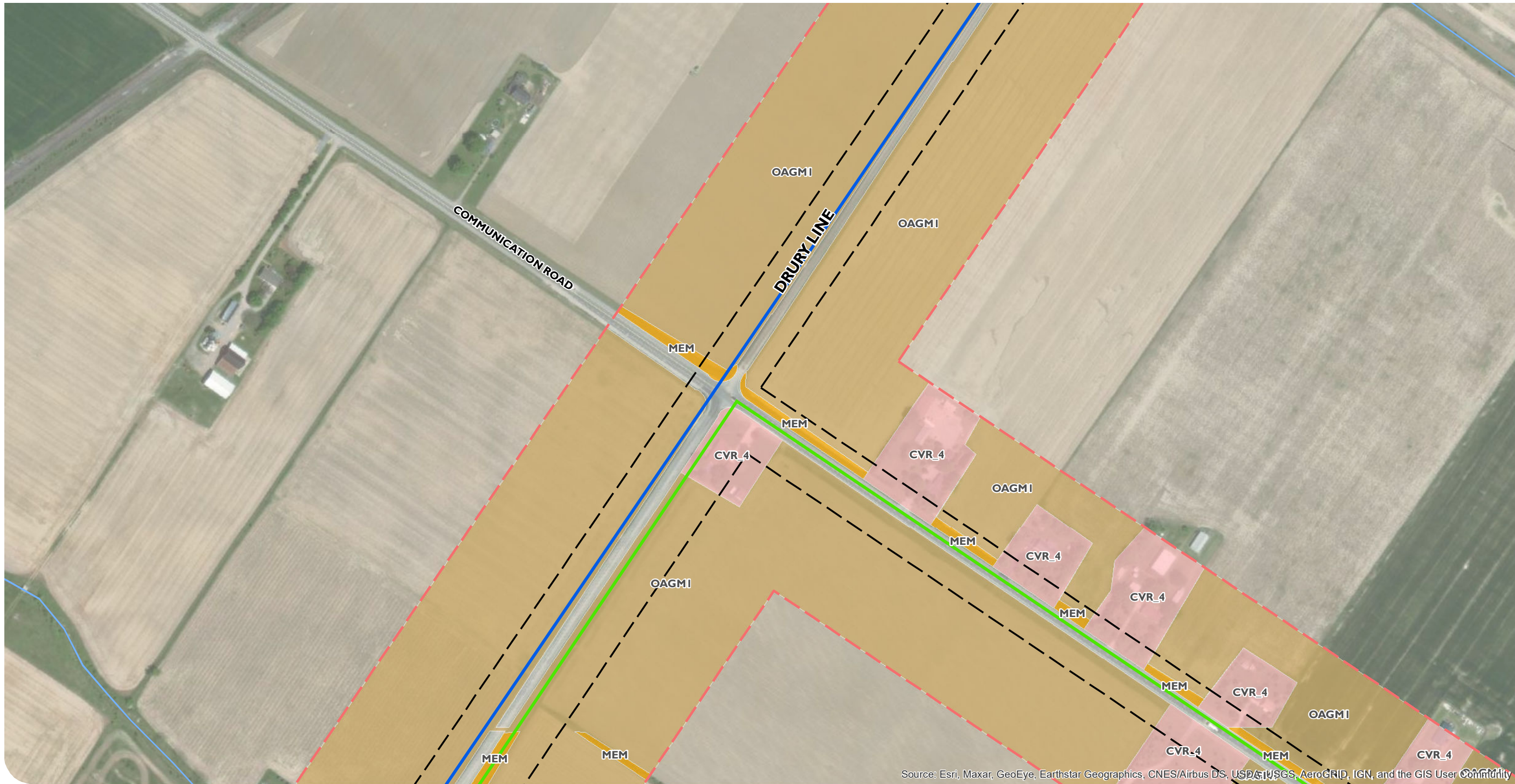
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DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY

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MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16









ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION




FIGURE 8P



-  Project Footprint (30 m)
-  Study Area (125 m)
-  Alternative Route 1
-  Alternative Route 2

 Watercourse

Ecological Land Classification

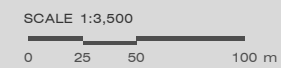
-  CVR_4: Rural Property (32.73 ha)
-  MEM: Mixed Meadow (Cultural) (13.26 ha)
-  OAGMI: Annual Row Crops (305.42 ha)

NOTE: Alternate Routes are offset for visual purposes



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY

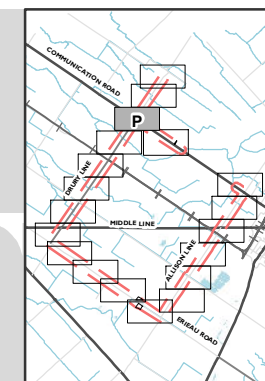
MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276

STATUS: DRAFT

DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8Q



- Project Footprint (30 m)
- Study Area (125 m)
- Tie-in Location
- Alternative Route 2
- Watercourse
- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
- MEM: Mixed Meadow (Cultural) (13.26 ha)
- OAGMI: Annual Row Crops (305.42 ha)
- TAGM5: Hedgerow (2.78 ha)
- Box Culvert with Barn Swallow nests

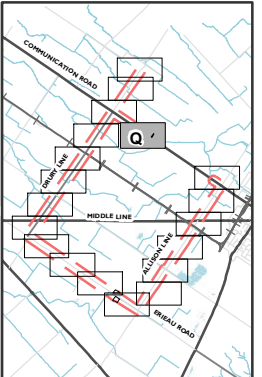
NOTE: Alternate Routes are offset for visual purposes

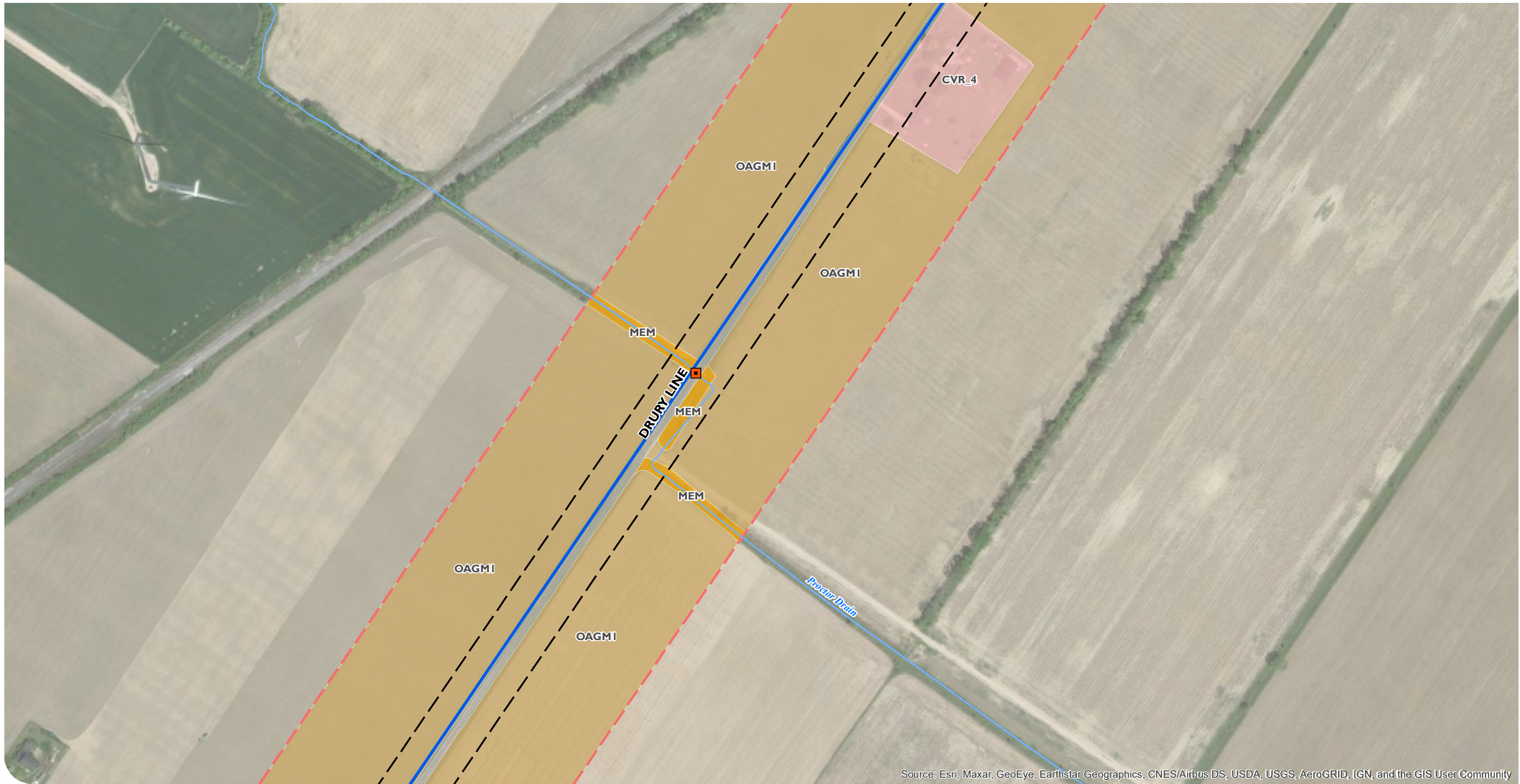


MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY
MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION
FIGURE 8R



- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Watercourse

- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
 - MEM: Mixed Meadow (Cultural) (13.26 ha)
 - OAGMI: Annual Row Crops (305.42 ha)
 - Box Culvert

NOTE: Alternate Routes are offset for visual purposes

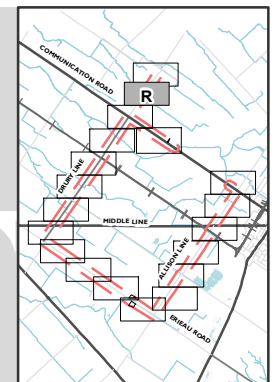


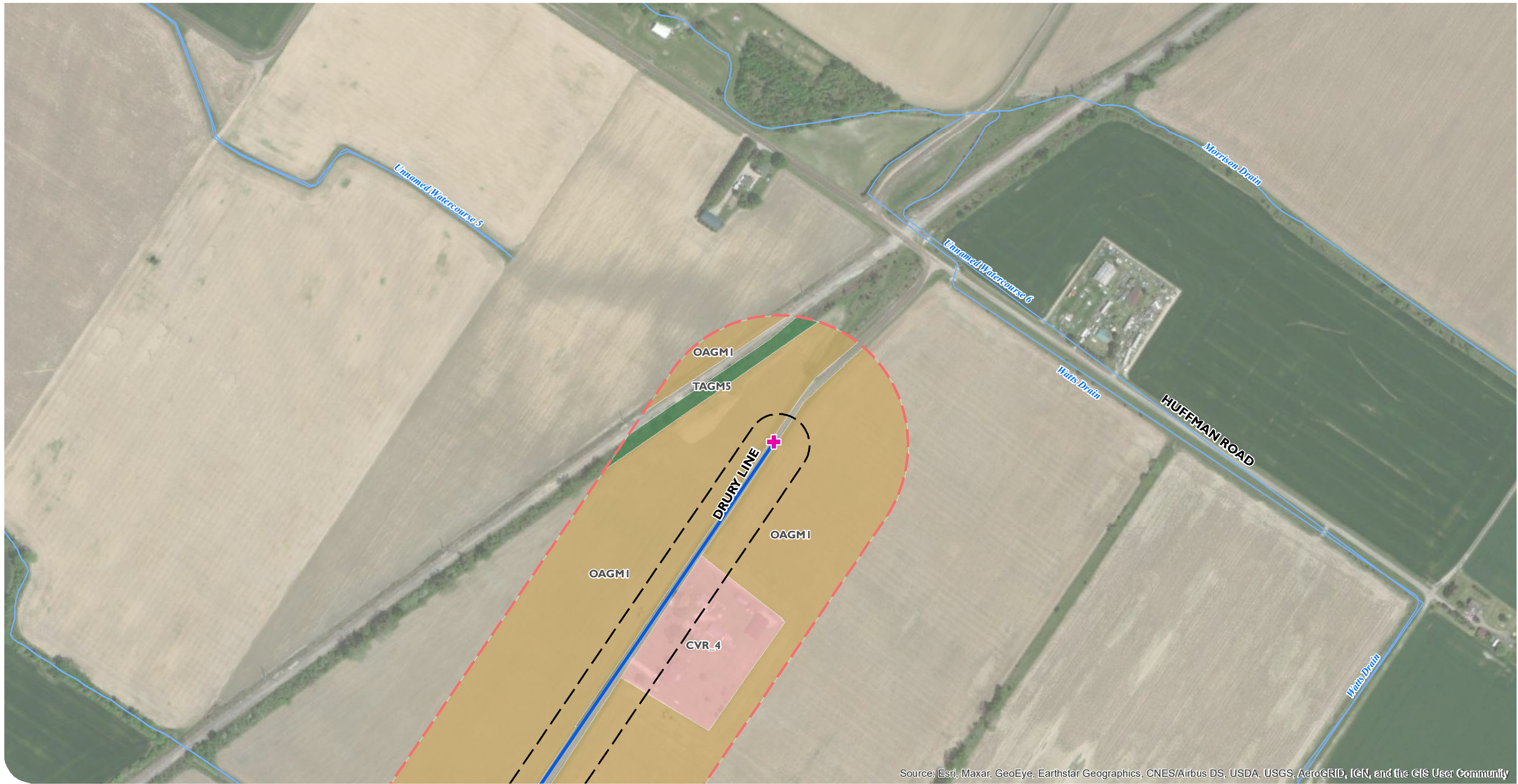
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING, ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

ECOLOGICAL LAND CLASSIFICATION

FIGURE 8S



- Project Footprint (30 m)
 - Study Area (125 m)
 - Tie-in Location
 - Alternative Route 1
 - Watercourse
- Ecological Land Classification**
- CVR_4: Rural Property (32.73 ha)
 - OAGMI: Annual Row Crops (305.42 ha)
 - TAGM5: Hedgerow (2.78 ha)



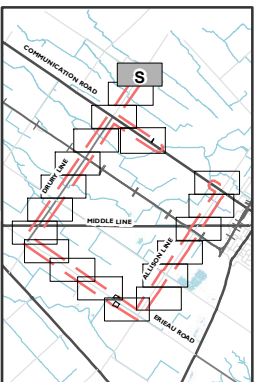
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

NOTE: Alternate Routes are offset for visual purposes



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16



4.2.7 Wildlife and Wildlife Habitat

A records review of the information included in Table 2 identified a number of flora and fauna species with historical occurrence records within 1 km of the Study Area. The majority of species identified are considered Secure or Common (SRank of S5 or S4) in the province of Ontario. A complete list of flora and fauna species identified through background review is included in Appendix L.

4.2.7.1 Flora

The records review identified 171 botanical species as having the potential to occur in the vicinity of the Study Area. Of the 171 species, 6 are considered Species of Conservation Concern and 2 are listed as SAR provincially. SAR are further discussed in Section 4.2.8.

4.2.7.2 Fauna

- Birds – the records review identified 148 bird species as having the potential to occur in the vicinity of the Study Area. Of the 148 species, 8 are listed as SAR provincially and 10 are listed as SAR federally; 20 species are considered Species of Conservation Concern.
- Mammals – the records review identified 42 species as having the potential to occur in the general vicinity of the Study Area. Of the 42 species, 6 are listed as SAR provincially and 2 are considered Species of Conservation Concern.
- **Herptiles** – the records review identified 9 species as having the potential to occur in the general vicinity of the Study Area. Of the 9 species, 2 are listed as SAR provincially and 1 species is considered a Species of Conservation Concern.
- Odonata – the records review identified 21 species as having the potential to occur in the general vicinity of the Study Area. None of the 21 species are listed as SAR provincially and 1 species is considered a Species of Conservation Concern.
- Lepidoptera – the records review identified 25 species as having the potential to occur in the general vicinity of the Study Area. None of the 25 species are listed as SAR provincially and 1 species is considered a Species of Conservation Concern.

4.2.7.3 Incidental Wildlife Observations

Incidental wildlife observations made during the April 2022 field assessment include Blue Jay (*Cyanocitta cristata*), Striped Skunk (*Mephitis mephitis*), Raccoon (*Procyon lotor*) and Golden-crowned Kinglet (*Regulus satrapa*). Each of the aforementioned species are considered Secure (SRank of S5) in the province of Ontario.

4.2.7.4 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). To assist planning authorities, the NDMNRF

developed the Significant Wildlife Habitat (SWH) Technical Guide (MNR 2000) that provides information on the identification, description, and prioritization of SWH in Ontario. To account for the ecological diversity across the province, NDMNRF developed the SWH Ecoregional Criteria Schedules to support the SWH Technical Guide. These schedules are specific to each geographic area of each eco-region. The Study Area is located in Ecoregion 7E (Lake Erie-Lake Ontario); under the Criteria Schedule for Ecoregion 7E (MNR 2015), SWH has been divided into four broad categories consisting of:

- Seasonal concentration areas;
- Rare vegetation communities or specialized habitats for wildlife;
- Animal movement corridors; and,
- Habitats of species of conservation concern excluding the habitats of endangered and threatened species.

Wildlife habitat has been preliminarily identified within the Study Area through the initial field assessment and ELC mapping. Areas identified as having the potential to support SWH have been identified as candidate SWH. Candidate SWH identified within the Study Area is predominantly associated with natural or naturalized features (i.e., woodlands, meadows, wetlands and drains) that overlap with the Study Area, as shown on Figure 9. Vegetation community types described in the following four broad categories, below, are outlined above in Table 4.

1. Seasonal Concentration Areas

Seasonal concentration areas are sites that support large numbers of a species to gather together at one time of the year, or where several species congregate. Based on the initial site assessment conducted in April 2022, three (3) types of candidate seasonal concentration areas have the potential to occur in the Study Area; Candidate bat maternity colonies, Candidate turtle wintering areas, and Candidate reptile hibernacula.

- **Bat maternity colonies:** supported by mixed and deciduous forests and swamps with large diameter dead or dying trees with cavities. Areas that have the potential to support bat maternity habitat include treed communities in the Study Area (i.e., FOD, FOC, FODM9-4/4-9 and SWDM3-3). None of the aforementioned communities are associated with the PPR.
- **Turtle wintering areas:** occur in permanent waterbodies and large wetlands with sufficient dissolved oxygen. Areas that have the potential to support turtle wintering in the Study Area include drains and Open Aquatic (OA) areas where the depth of water during the overwintering period is such that it will not freeze.
- **Reptile hibernacula:** may be found in/under rock piles, slopes, stone fences or crumbling foundations. Areas in the Study Area that have the potential to support reptile hibernacula generally include box culverts. Three box culverts are associated with the PPR and four box culverts are associated with Alternative Routes 1 and 2.

2. Rare Vegetation Communities or Specialized Habitats

This category consists of two separate components. Rare habitats are those with vegetation communities that are considered rare in the province. S-Ranks are rarity rankings applied to species at the provincial level. Generally, S-Ranks of S1 to S3 (i.e., extremely rare to rare-uncommon in Ontario), as defined by the NHIC, could qualify. Specialized habitats are microhabitats that are critical to some wildlife species. Based on the initial site assessment conducted in April 2022, one specialized habitat has the potential to occur in the Study Area: candidate amphibian breeding habitat (woodland).

- Amphibian breeding habitat: suitable specialized habitat type includes wetlands, ponds or areas that are likely to support vernal (seasonal) pooling that are within or adjacent to a woodland. Areas in the Study Area that have the potential to support amphibian breeding habitat include FOD and FOC in association with Alternative Routes 1 and 2. Amphibian surveys were completed in association with FODM9-4/4-9 and SWDM3-3 in support of the Ridge Landfill Expansion EA in 2016. Based on the results of the amphibian surveys, the FODM9-4/4-9 and SWDM3-3 community types in the Study Area did not meet the definition of SWH for amphibian breeding habitat.

3. Animal Movement Corridors

Animal movement corridors are elongated, naturally-vegetated parts of the landscape used by animals to move from one habitat to another, and are typically identified by NDMNRF and/or planning authorities. Based on the initial site assessment conducted in April 2022, including the records reviewed in Table 2, no animal movement corridors were identified.

4. Habitat for Species of Conservation Concern

The SWH Technical Guide (MNR 2000) defines Species of Conservation Concern as globally, nationally, provincially, regionally, or locally rare (S-Rank of S1, S2 or S3) but does not include SAR (species listed as Threatened or Endangered; species identified as provincially and/or federally-listed SAR are further defined and discussed in Section 4.2.8). Species of Conservation Concern include the following:

- Species that are assigned a conservation rank of S1-S3 by the NHIC;
- Species that are listed as Special Concern on the Species at Risk in Ontario (SARO) list;
- Species that are listed as Special Concern, Threatened, or Endangered on Schedule 1 of SARA; and/or,
- Species that are classified as Special Concern, Threatened, or Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) but have not yet been added to Schedule 1 of SARA.

Based on the results of the preliminary field investigation, 31 Species of Conservation Concern were identified as having the potential to occur in the general vicinity of the Study Area (Appendix L). Consideration of Species of Conservation Concern habitat potentially present in the Study Area was determined based on existing land uses, the general habitat requirements of the species, and the ELC communities identified during the preliminary field assessment conducted in April 2022. Based on the existing land uses within the Study Area being dominated by active agriculture, the habitat requirements

associated with many of the Species of Conservation Concern are not present in the Project footprint. As a result, and in the absence of detailed field surveys being completed, natural or naturalized features (i.e., FOD, FOC, MEMM4 and MEM/THD) have been carried forward as Candidate habitat for Species of Conservation Concern. Based on the results of the fieldwork conducted for the Ridge Landfill Expansion EA, the FODM9-4/4-9 and SWDM3-3 (excluding MEGM3) communities were previously assessed as SWH for Stiff Cowbane, which has been carried forward into this assessment.



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9A



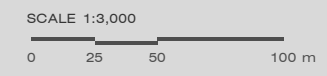
- Project Footprint (30 m)
- Study Area (125 m)
- Existing Enbridge Station
- Tie-in Location
- Preliminary Preferred Route
- Watercourse
- Candidate Habitat for Species of Conservation Concern
- Candidate Reptile Hibernacula Habitat

NOTE: Alternate Routes are offset for visual purposes

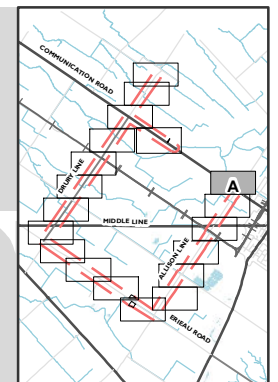


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MAP CREATED BY: DDR
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



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9B

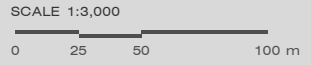


-  Project Footprint (30 m)
-  Study Area (125 m)
-  Preliminary Preferred Route
-  Watercourse

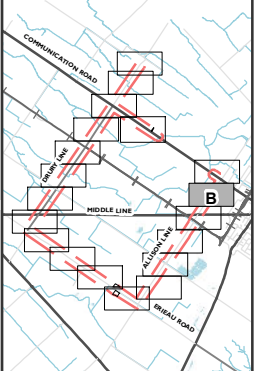


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ESRI IMAGERY
MAP CREATED BY: DDR
MAP CHECKED BY: DB / AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

NOTE: Alternate Routes are offset for visual purposes



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATURAL FEATURES
FIGURE 9C

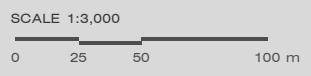


- Project Footprint (30 m)
- Study Area (125 m)
- Preliminary Preferred Route
- Rail
- Watercourse
- Candidate Reptile Hibernacula Habitat

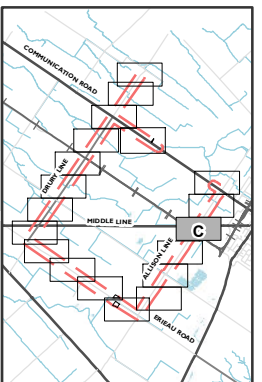
NOTE: Alternate Routes are offset for visual purposes



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ESRI IMAGERY
MAP CREATED BY: DDR
MAP CHECKED BY: DB / AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9D



- Project Footprint (30 m)
- Study Area (125 m)
- Preliminary Preferred Route
- Watercourse

NOTE: Alternate Routes are offset for visual purposes

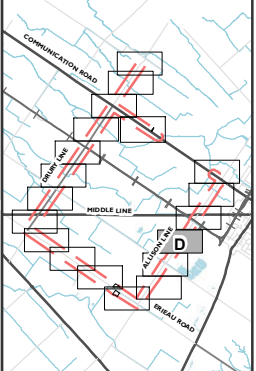


MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY

MAP CREATED BY: DDR
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MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES

FIGURE 9E



- Project Footprint (30 m)
- Study Area (125 m)
- Preliminary Preferred Route
- Waterbody
- Watercourse
- Candidate Reptile Hibernacula Habitat



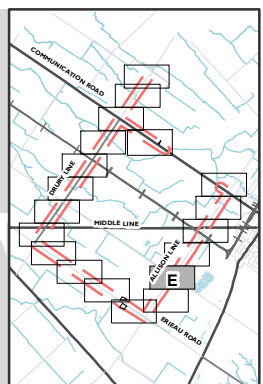
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DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
ESRI IMAGERY

MAP CREATED BY: DDR
MAP CHECKED BY: DB / AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

NOTE: Alternate Routes are offset for visual purposes



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


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9F



-  Project Footprint (30 m)
-  Study Area (125 m)
-  Preliminary Preferred Route

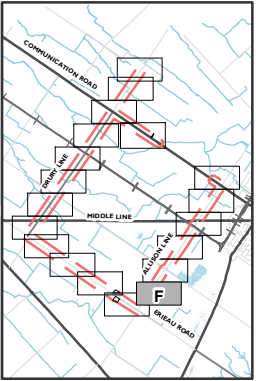
NOTE: Alternate Routes are offset for visual purposes



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ESRI IMAGERY
MAP CREATED BY: DDR
MAP CHECKED BY: DB / AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9G

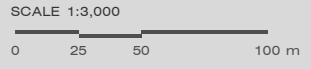


- Project Footprint (30 m)
- Study Area (125 m)
- Customer Station (Proposed)
- Preliminary Preferred Route
- Alternative Route 1
- Alternative Route 2
- Ridge Landfill
- Waterbody
- Watercourse

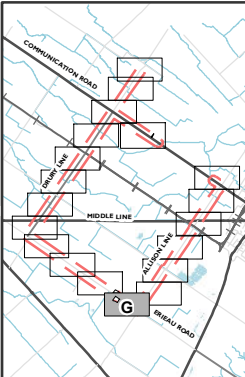
NOTE: Alternate Routes are offset for visual purposes



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ESRI IMAGERY
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MAP CHECKED BY: DB / AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



PROJECT: 223276 STATUS: DRAFT DATE: 2022-06-16





Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATURAL FEATURES
FIGURE 9H



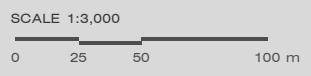
- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Ridge Landfill
- Waterbody
- Watercourse
- Candidate Bat Maternity Colonies Habitat
- Significant Habitat for Species of Conservation Concern (Stiff)
- Significant Woodland

NOTE: Alternate Routes are offset for visual purposes

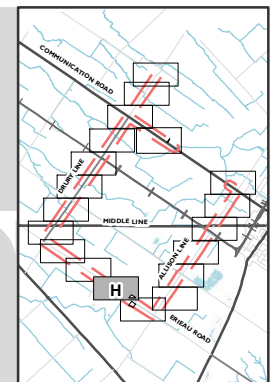


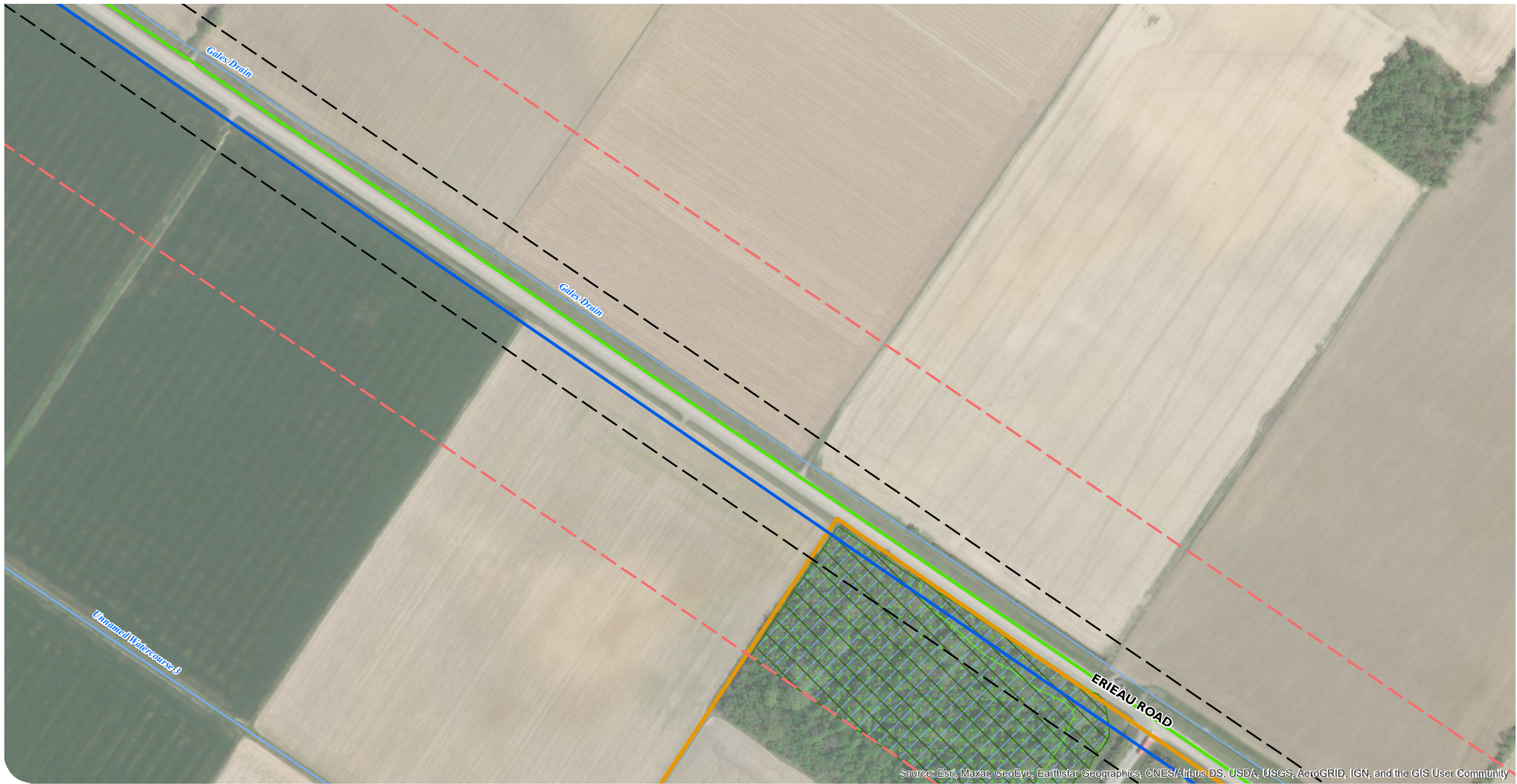
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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9I



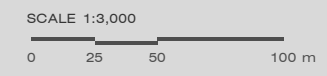
- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Ridge Landfill
- Watercourse
- Candidate Bat Maternity Colonies Habitat
- Significant Habitat for Species of Conservation Concern (Stiff)
- Significant Woodland

NOTE: Alternate Routes are offset for visual purposes

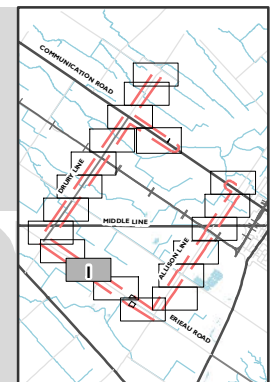


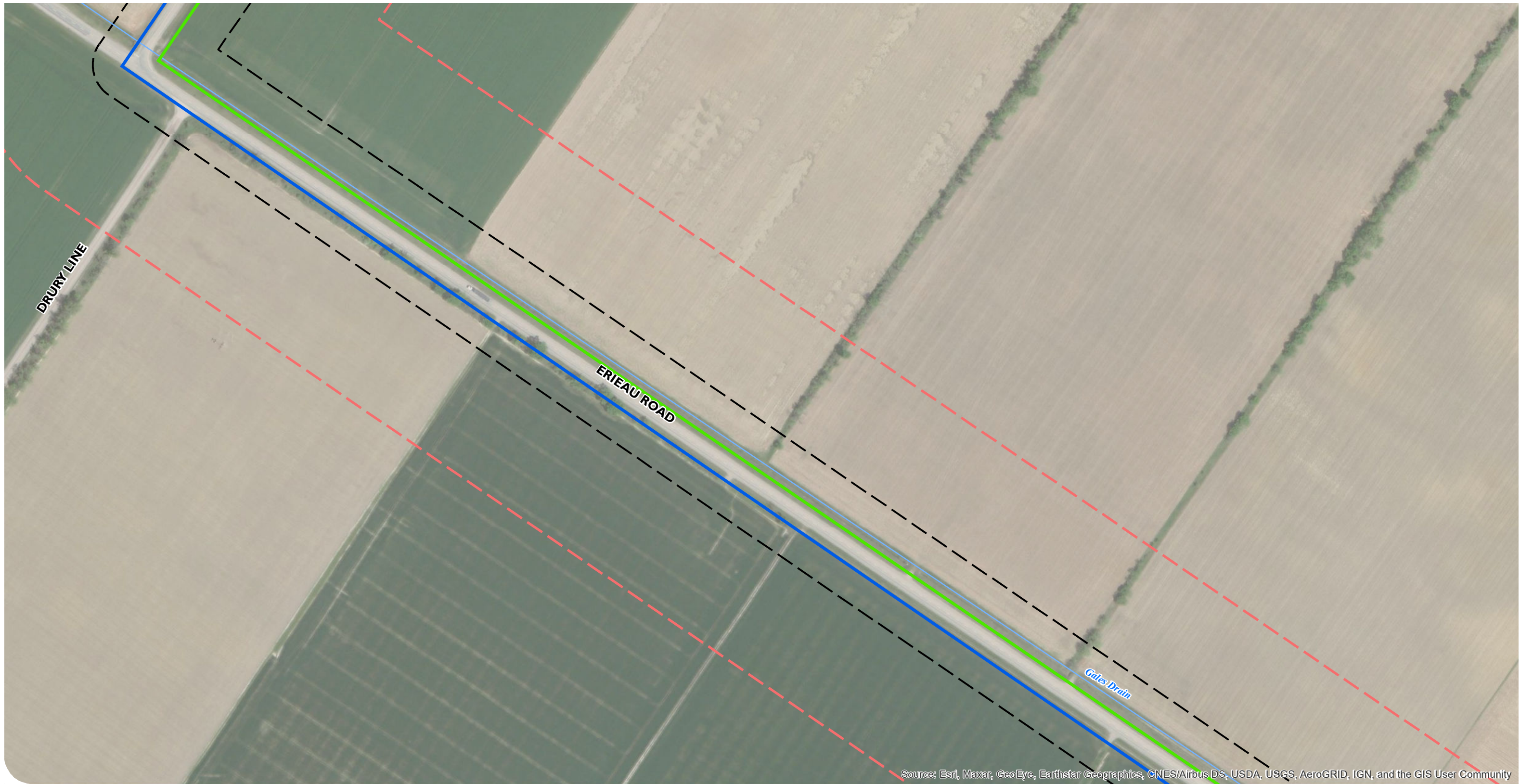
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



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9J



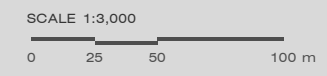
-  Project Footprint (30 m)
-  Study Area (125 m)
-  Alternative Route 1
-  Alternative Route 2

NOTE: Alternate Routes are offset for visual purposes

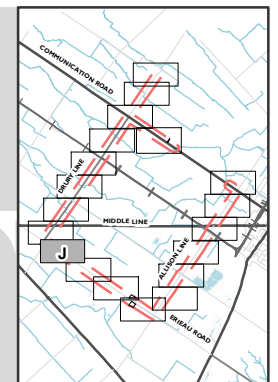


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ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9K



- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2

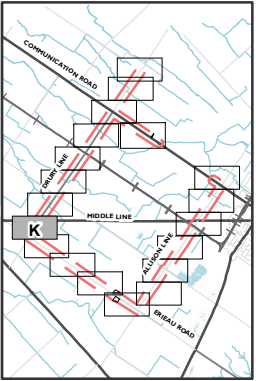
NOTE: Alternate Routes are offset for visual purposes

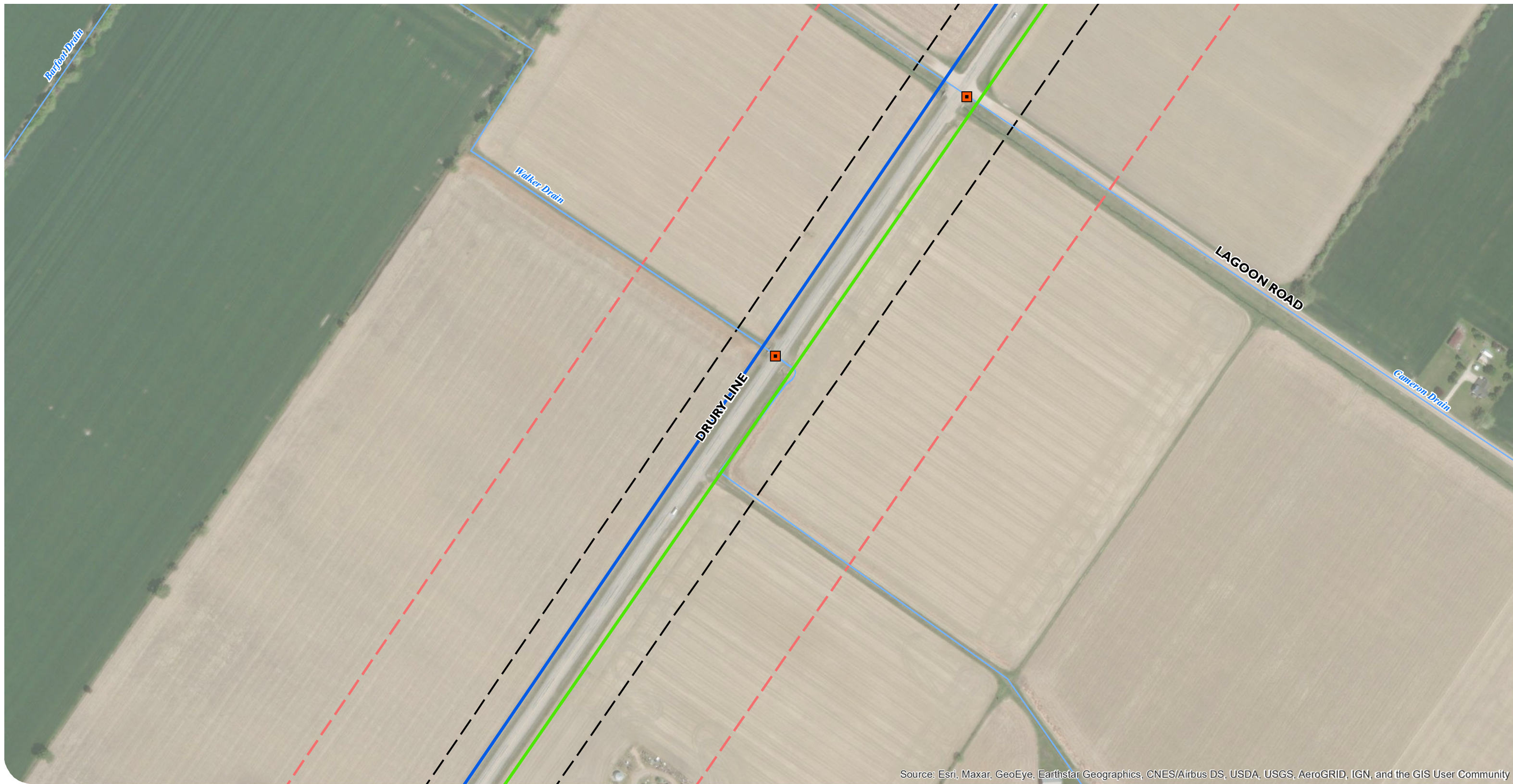


MAP DRAWING INFORMATION:
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ESRI IMAGERY
MAP CREATED BY: DDR
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MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES

FIGURE 9L



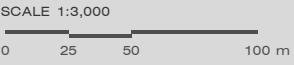
- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Watercourse
- Candidate Reptile Hibernacula Habitat



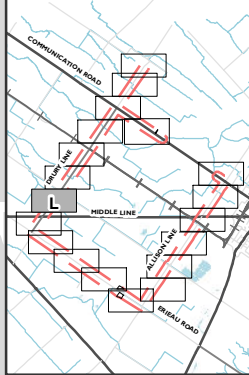
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DATA PROVIDED BY MNR, ENBRIDGE, DILLON CONSULTING,
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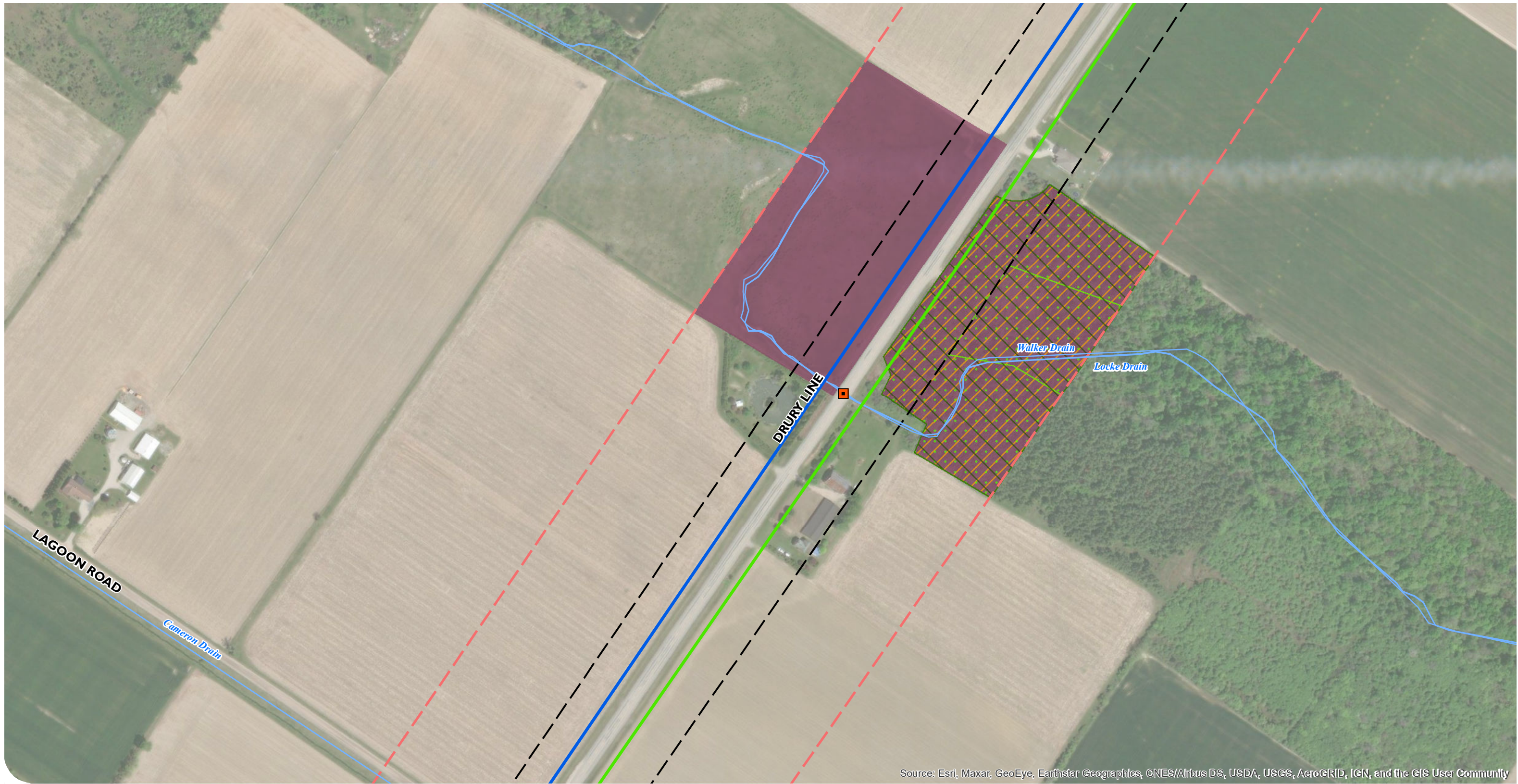
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MAP CHECKED BY: DB / AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

NOTE: Alternate Routes are offset for visual purposes



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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATURAL FEATURES
FIGURE 9M



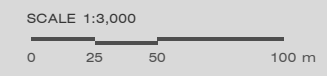
- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Watercourse
- Candidate Bat Maternity Colonies Habitat
- Candidate Amphibian Breeding Habitat
- Candidate Habitat for Species of Conservation Concern
- Significant Woodland
- Candidate Reptile Hibernacula Habitat

NOTE: Alternate Routes are offset for visual purposes

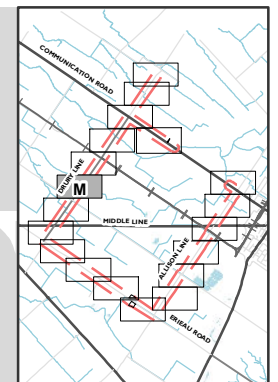


MAP DRAWING INFORMATION:
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ESRI IMAGERY

MAP CREATED BY: DDR
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MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATURAL FEATURES
FIGURE 9N



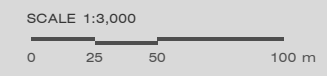
- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Rail
- Watercourse

NOTE: Alternate Routes are offset for visual purposes

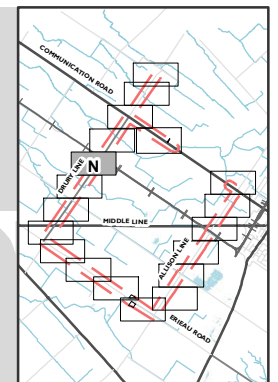


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ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATURAL FEATURES
FIGURE 90



- Project Footprint (30 m)
- Study Area (125 m)
- Alternative Route 1
- Alternative Route 2
- Rail
- Watercourse
- Candidate Reptile Hibernacula Habitat



MAP DRAWING INFORMATION:
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MAP CREATED BY: DDR
MAP CHECKED BY: DB / AL
MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N

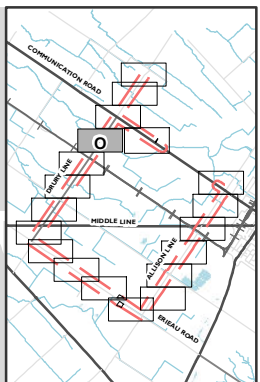
NOTE: Alternate Routes are offset for visual purposes



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




Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9P

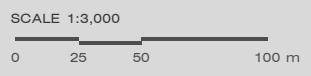


-  Project Footprint (30 m)
-  Study Area (125 m)
-  Alternative Route 1
-  Alternative Route 2
-  Watercourse

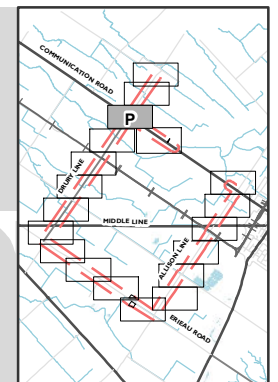
NOTE: Alternate Routes are offset for visual purposes



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ESRI IMAGERY
MAP CREATED BY: DDR
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RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES
FIGURE 9Q



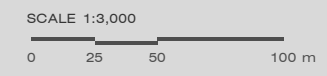
- Project Footprint (30 m)
- Study Area (125 m)
- Tie-in Location
- Alternative Route 2
- Watercourse
- Candidate Reptile Hibernacula Habitat

NOTE: Alternate Routes are offset for visual purposes

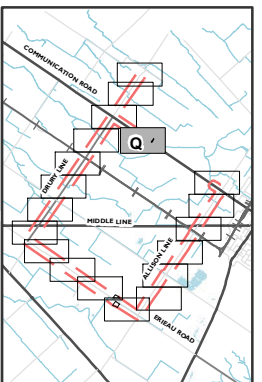


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MAP CREATED BY: DDR
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MAP PROJECTION: NAD 1983 CSRS UTM Zone 17N



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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES

FIGURE 9R



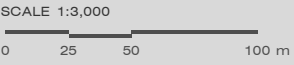
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- Study Area (125 m)
- Alternative Route I
- Watercourse
- Candidate Reptile Hibernacula Habitat

NOTE: Alternate Routes are offset for visual purposes

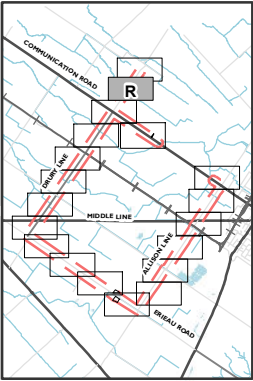


MAP DRAWING INFORMATION:
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

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ENBRIDGE GAS INC.
RIDGE LANDFILL RNG PROJECT

SIGNIFICANT NATRURAL FEATURES

FIGURE 9S



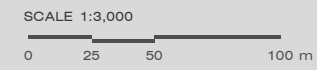
-  Project Footprint (30 m)
-  Study Area (125 m)
-  Tie-in Location
-  Alternative Route 1
-  Watercourse

NOTE: Alternate Routes are offset for visual purposes



MAP DRAWING INFORMATION:
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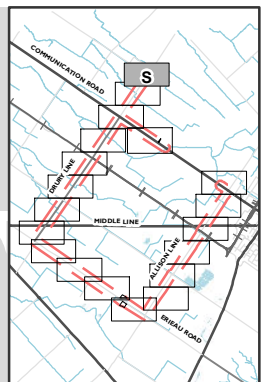
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4.2.8 Species at Risk

4.2.8.1 Regulatory Context

Federal

The federal SARA applies to species listed under Schedule 1 of the Act on federal lands and/or aquatic species, as well as migratory birds listed under the Migratory Birds Convention Act, 1994. Under SARA, species listed on Schedule 1 receive species protection (Section 32) and residence protection (Section 33). Critical Habitat is defined under Section 2 of SARA as “the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species’ critical habitat in the recovery strategy or in an action plan for the species”.

Provincial

The provincial Endangered Species Act, 2007 applies to species listed as Extirpated, Endangered, or Threatened under Ontario Regulation 230/08 on private and public lands under provincial jurisdiction, and provides both species protection (Section 9) and habitat protection (Section 10). Under the Act, habitat is defined as either General Habitat or Regulated Habitat. General Habitat is defined as the area a species currently depends on, either directly or indirectly, to carry out its life processes (under clause 2(1)(b) of the Act), including: dens, nests, hibernacula, or other residences. General Habitat does not include areas where a species once lived and/or where it may be re-introduced. General Habitat protection is in place until a regulation is made prescribing an area as Regulated Habitat.

Regulated Habitat is the area prescribed for a species in a habitat regulation (under clause 2(1)(a) of the Act), and may include: specific features/boundaries and areas where the species lives, used to live, or is believed to be capable of living.

4.2.8.2 Potential for Species at Risk in the Study Area

Based on the results of the records review, a total of 21 provincial/federal SAR were identified as having the potential to occur in the general vicinity of the Study Area (Appendix L). However, when taking into account the ELC results for the Study Area, the habitat requirements associated with each of the 21 SAR identified during the background review, and the relatively old age of several of the SAR occurrence records, the Study Area was ultimately assessed as having the potential to support only 9 of the 21 SAR identified in the records review (see Table 5). All 9 SAR have the potential to occur along Alternative Route 1 and Alternative Route 2; while 8 of the SAR have the potential to occur along the PPR.

Of the 9 SAR assessed as having the potential to occur within the Study Area of all three route options, only Barn Swallow (*Hirundo rustica*) was observed during the April 2022 site assessment; Barn Swallow nests were observed in connection with box culverts at the Cameron Drain intersection in association with the PPR, as well as the Lucas Drain intersection in association with Alternative Route 2. With the

exception of Eastern Foxsnake (*Pantherophis gloydi* pop. 2), each of the SAR identified in Table 5 have General Habitat protection; Eastern Foxsnake has Regulated Habitat protection (O. Reg. 832/21).

The MECP will be consulted during detailed design to determine whether species-specific surveys may be required to support potential permitting and/or approvals under the Endangered Species Act, 2007.

Table 5: Federal and Provincial Species at Risk with Potential to Occur in the Study Area

Scientific Name	Common Name	Federal Status ¹	Provincial Status ²	S-Rank ³	General Habitat Requirements
BIRDS					
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B	The species typically constructs nests on anthropogenic structures with rough surfaces and horizontal ledges, which may be present in the CVC, CVC_2, and CVC_4 communities, and typically are located near open water areas. Barn Swallow nests were observed in association with box culverts which intersect the Lucas Drain along Alternative Route 2 and the Cameron Drain along the PPR.
<i>Hylocichla mustelina</i>	Wood Thrush	END	SC	S4B	The species is found in Carolinian and Great Lakes-St. Lawrence forest zones; undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near ponds or swamps; hardwood forest edges; must have some trees higher than 12 m. Communities with the potential to support habitat for the species within the Study Area include FOD and FOC (along the Alternative Routes). The Ridge Landfill Expansion EA did not identify this species during breeding bird surveys in association with FODM9-4/4-9 and SWDM3-3. There is no suitable habitat for this species identified along the PPR.
HERPTILES					
<i>Pantherophis gloydi</i> pop. 2	Eastern Foxsnake Carolinian Pop.	END	END	S2	This species prefers a variety of habitats, with a strong preference towards hedgerows, marshes, meadows, naturalized pastures, and open woodland areas. Eastern Foxsnake habitat is regulated under Ontario Regulation 832/21. Nest sites include rotting cavities of downed trees, decaying vegetation piles, rodent burrows, and hay piles. The species hibernates in burrows, limestone bedrock fissures, canals, and old building foundations. Communities with the potential to support habitat for the species within the Study Area include FOD, FOC, MEM (unmaintained), MEMM4, MEMG3, FODM9-4/4-9, SWDM3-3, MEM/THD, and TAGM5. In addition, box culverts and building foundations have the potential to support hibernacula where fractures in foundations extend below the frost line.

Scientific Name	Common Name	Federal Status ¹	Provincial Status ²	S-Rank ³	General Habitat Requirements
MAMMALS					
<i>Myotis leibii</i>	Eastern Small-footed Myotis	---	END	S2S3	Roosts in caves, mine shafts, crevices or buildings that are in or near woodland; hibernates in cold dry caves or mines; maternity colonies in caves or buildings; hunts in forests. Communities with the potential to support roosting habitat within the Study Area include CVC, CVC_2, CVR_4, FOD, FOC, FODM9-4/4-9, SWDM3-3 and TAGM5.
<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4	The species uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges. Communities with the potential to support roosting habitat within the Study Area include CVC, CVC_2, CVR_4, FOD, FOC, FODM9-4/4-9, SWDM3-3 and TAGM5.
<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3	The species hibernates during winter in mines or caves; during summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, man-made structures but prefers hollow trees or under loose bark; hunts within forests, below canopy. Communities with the potential to support roosting habitat within the Study Area include CVC, CVC_2, CVR_4, FOD, FOC, FODM9-4/4-9, SWDM3-3 and TAGM5.
<i>Pipistrellus subflavus</i>	Tri-colored Bat	END	END	S3?	The species can be found in a variety of forested habitats. They form day roosts and maternity colonies in older forests and occasionally in barns or other structures, and overwinter in caves. They forage over water and along streams in the forest. Communities with the potential to support roosting habitat within the Study Area include CVC, CVC_2, CVR_4, FOD, FOC, FODM9-4/4-9, SWDM3-3 and TAGM5.

Scientific Name	Common Name	Federal Status ¹	Provincial Status ²	S-Rank ³	General Habitat Requirements
VASCULAR PLANTS					
<i>Juglans cinerea</i>	Butternut	END	END	S3?	The species usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges. Communities with the potential to support habitat for the species within the Study Area include FOD and TAGM5. The Ridge Landfill Expansion EA did not identify this species during botanical assessments in association with FODM9-4/4-9 and SWDM3-3.
<i>Liatris spicata</i>	Dense Blazing Star	THR	THR	S2	This species prefers moist prairie habitats, and is often observed in abandoned fields, along utility corridors, roadside ditches and railways. This species does not do well in dry conditions and/or shady conditions. Communities with the potential to support this species habitat within the Study Area include MEMM4, MEM and MEM/THD. The Ridge Landfill Expansion EA did not identify this species during botanical assessments in association with MEGM3.

Notes:

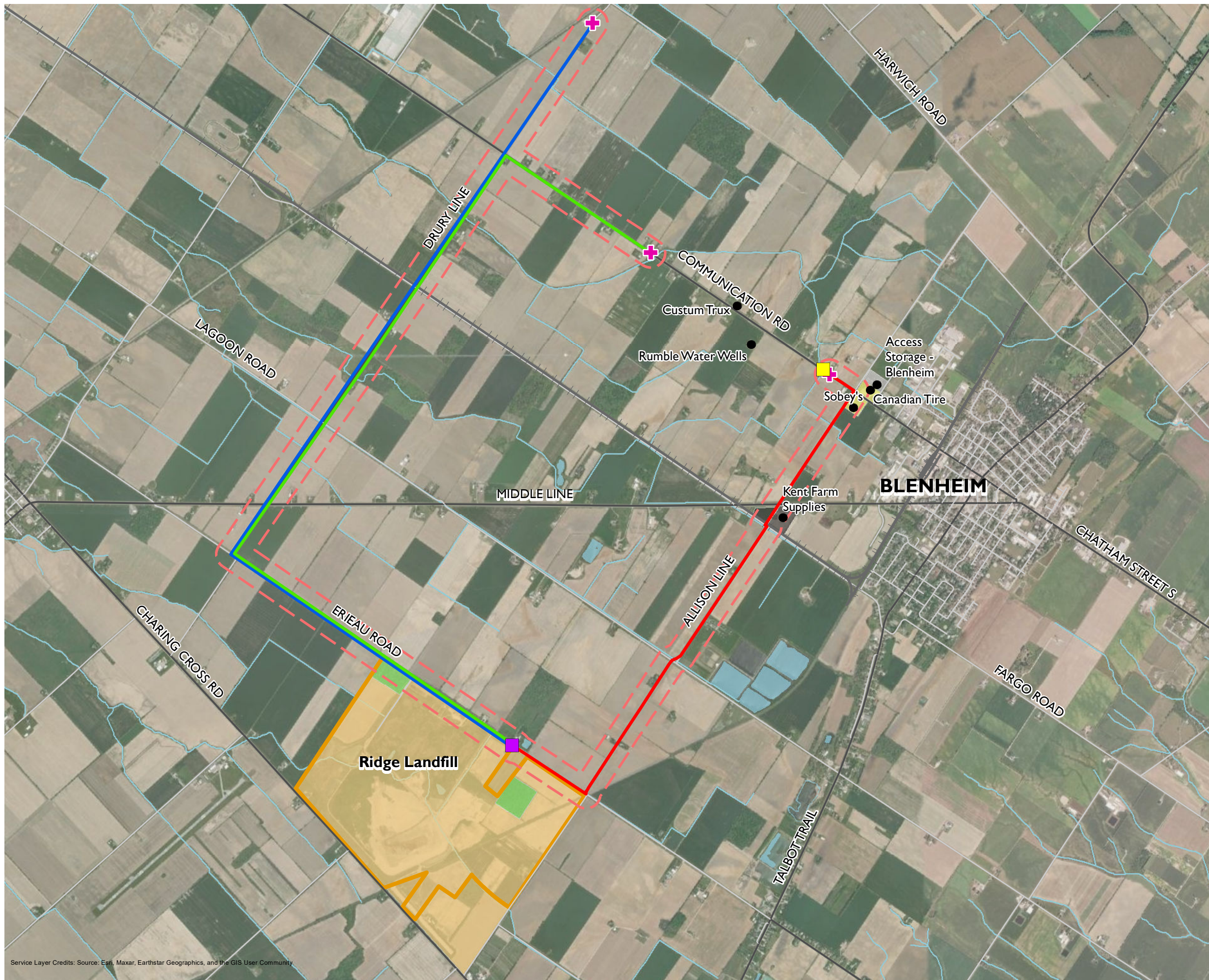
- 1 SARA (THR= Threatened, END = Endangered)
- 2 Endangered Species Act, 2007 (THR= Threatened, END= Endangered, SC = Special Concern)
- 3 Ontario S-Rank (S4= apparently secure; S3 = vulnerable; S2 = imperilled; S1 = critically imperilled; ? = inexact or uncertain; B = breeding status; N = non-breeding status)

4.3 Socio-Economic Environment

This subsection provides baseline information on the following components:

- Planning Policies;
- Existing and Planned Land Use;
- Population, Employment, and Economic Activities;
- Human Occupancy and Resource Use;
- Infrastructure and Services;
- Indigenous Community Land and Resource Use; and,
- Cultural Heritage Resources.

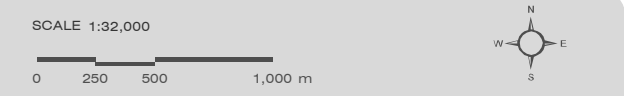
Socio-economic features are shown on Figure 10.



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SOCIO-ECONOMIC FEATURES
FIGURE 10

- Existing Enbridge Station
 - Tie-in Location
 - Customer Station (Proposed)
 - Business
 - Study Area (125 m)
 - Preferred Route
 - Alternative Route 1
 - Alternative Route 2
 - Rail
 - Arterial/Collector Road
 - Local Road
 - Ridge Landfill
 - Waterbody
 - Watercourse
 - Chatham-Kent Zoning
 - General Industrial
 - Landfill
 - Open Space
 - Rural Industrial
 - Urban Commercial
- *All other zones within the study area are Agricultural



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MAP CHECKED BY: AL
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4.3.1 Planning Policies

Municipalities are the primary decision-makers for their communities and are required to implement provincial policies through municipal official plans and planning-related decisions.

Plans and policies reviewed as part of the Project include:

- Provincial Policy Statement, 2020 (MMAH 2020); and,
- Municipality of Chatham-Kent Official Plan (2018).

4.3.1.1 Provincial Policy Statement

The Provincial Policy Statement, 2020 is issued under Section 3 of the Planning Act (RSO 1990, c. P.13) and came into effect on May 1, 2020. As with the previous Provincial Policy Statement, 2014, the new policy provides direction on matters of provincial interest related to land use planning and development. According to MMAH (2020), the goals of the proposed changes to the policy were to:

- Encourage an increase in the mix and supply of housing;
- Protect the environment and public safety;
- Reduce barriers and costs for development and provide greater certainty;
- Support rural, northern and Indigenous communities; and,
- Support the economy and job creation.

Natural gas pipelines are defined as “infrastructure” under the Provincial Policy Statement, 2020. The Project is in line with the policy’s direction, which states that “healthy, liveable and safe communities are sustained by ensuring that necessary infrastructure and public service facilities are or will be available to meet current and projected needs” (MMAH 2020).

4.3.1.2 Municipality of Chatham-Kent Official Plan

The Municipality of Chatham-Kent’s Official Plan is a key part of Chatham-Kent’s planning policy structure that guides land use decisions in the Municipality. It is a multipurpose document and tool for achieving a safe, healthy and sustainable Chatham-Kent and addresses Growth management, protection and enhancement of natural features and culture heritage features, the Province’s requirements under the Provincial Policy Statement, and Chatham-Kent’s needs for community-level planning, by providing policy framework (Municipality of Chatham-Kent 2018).

The Project does not conflict with the Strategic Directions of the Official Plan which express pipelines and related facilities shall be permitted in any land-use designation, provided that the development satisfies applicable provincial and/or federal legislation and shall be constructed, maintained and operated to minimize their impact on adjacent land uses and the natural environment (Municipality of Chatham-Kent 2018).

The Project is in direct alignment with the Municipality's energy objective, which is to "Endeavour to improve energy efficiency, reduce greenhouse emissions and foster local energy solutions in the Municipality" (Municipality of Chatham-Kent 2018).

4.3.2 Existing and Planned Land Use

The Municipality of Chatham-Kent Official Plan (2018) outlines land use designations within the Municipality, which are implemented through a range of more detailed land-use zones in the Municipality's Zoning By-law (No. 216-2009). The Project, as a natural gas pipeline or "utility", is generally permitted in all land use designations (Municipality of Chatham-Kent 2018). Services and utilities, such as natural gas pipelines, are not prevented or otherwise restricted by the provisions of the Zoning By-law (No. 216-2009).

For reference, the Study Area occurs southwest of the Community of Blenheim "Primary Urban Centre" land use zone, as depicted in Schedule E1 of the Official Plan (Municipality of Chatham-Kent 2018). The Study Area is zoned mainly as "Agricultural". Other designations along the route options include "Rural Industrial" (intersection of Allison Line, Fargo Road and Middle Line), "Urban Commercial" (intersection of Allison Line and Communication Road), "Open Space" (just west of the Ridge Landfill boundary along Eriau Road), and "Landfill" (i.e., the Ridge Landfill property) (Municipality of Chatham-Kent 2022a).

4.3.3 Population, Employment, and Economic Activities

4.3.3.1 Population and Demographics

According to the 2021 Census, the Municipality of Chatham-Kent has a population of 103,988 people, representing an increase of 2.3% from 2016 (101,647) (Statistics Canada 2022a). As of the 2021 Census, the community of Blenheim has a population of 4,487, representing an increase of 3.3% from 2016 (4,344) (Statistics Canada 2022b). Comparatively, the Province of Ontario experienced a population increase of approximately 5.8% over the same period (Statistics Canada 2022c). In 2021, the Municipality of Chatham-Kent had an average population density of approximately 42.4 people per square kilometre and the average age of the population was 44 years (Statistics Canada 2022a). Other demographic data from the 2021 Census was not yet available at the time of writing this report.

According to the 2016 Census, the Municipality of Chatham-Kent had a total visible minority population of 4,530, of which the majority of individuals identified as Black (2,125 individuals or 47% of total visible minorities) (Statistics Canada 2017a). In 2016, the highest certificate, diploma or degree among the Municipality's population, aged 25 to 64 years, was "College, CEGEP or other non-university certificate or diploma" at 16,495 individuals (or 59% of those with a post-secondary education) (Statistics Canada 2017a).

4.3.3.2 Employment and Economy

According to the 2016 Census, the Municipality of Chatham-Kent has a labour participation rate of 60.2% and an unemployment rate of 7.5% (Statistics Canada 2017a). Similarly, the Province of Ontario has a labour participation rate of 64.7% and an unemployment rate of 7.4% (Statistics Canada 2017b).

More recent data from the Municipality's CKPlan2035 Progress Report on Economic Prosperity indicates that the unemployment rate in Chatham-Kent was 6.4% in 2019 but rose to 9.2% for 2020 compared to the Ontario unemployment rate of 9.6%. In 2021, the unemployment rate dropped for Chatham-Kent and Ontario, Chatham-Kent dropped to 7.3% and Ontario to 8% (Municipality of Chatham-Kent 2022b). The greatest contributor to the increase in Chatham-Kent's unemployment rate between 2019 and 2020 was the COVID-19 pandemic, as seen in a mirrored increase in unemployment in the Province of Ontario as a whole.

The two largest employment industries in the Municipality of Chatham-Kent are Manufacturing and Health Care, followed by Retail and Agriculture. The leading occupations in the Municipality are in Sales and Service and Trades and Transport (Statistics Canada 2017a).

The median household income in Chatham-Kent increased by almost 11% from \$44,460 in 2013 to \$49,290 in 2017. In 2019, the median household income in Chatham-Kent increased by almost 2.5% to \$51,720 (Municipality of Chatham-Kent 2022b).

4.3.3.3 Main Economic Sectors

Advanced Manufacturing and Automotive

Chatham-Kent is recognized for having a strong advanced manufacturing sector and precision machining cluster that serves a range of industries, including Automotive; Agricultural Equipment; Oil, Gas and Chemical; Control Systems; Heavy Industry; Line Automation; and Transportation (Municipality of Chatham-Kent 2022c).

The automotive industry in Chatham-Kent is known for its auto parts manufacturers, makers and suppliers that provide top-quality products. The head offices of RM Sothebys Auctions, a renowned auction house for collector cars, and RM Auto Restoration are located in Blenheim. The nickname "The Classic Car Capital of Canada" comes from the abundance of classic car events in the community (Municipality of Chatham-Kent 2022d).

Agriculture, Agri-Food and Food Processing

Chatham-Kent boasts a \$4 billion dollar agriculture and agri-food industry that is internationally competitive. Agriculture plays an important role in the community's culture and economy, housing large agricultural processing companies such as Rol-Land Farms, Platinum Produce, and The Andersons (Municipality of Chatham-Kent 2022e). The combination of freshwater, rich soils, warm climate and

research have allowed the Municipality to become an ideal location for agricultural companies and food processing (Municipality of Chatham-Kent 2022e).

4.3.4 Human Occupancy and Resource Use

4.3.4.1 Culture, Tourism, and Recreation

The Municipality of Chatham-Kent carries a rich visual culture through museums, gallery exhibits and theatre performances. These experiences can be found at the Chatham Capitol Theatre, Kiwanis Theatre, CK Museum, Thames Art Gallery, ARTspace as well as the Ridge House Museum. The Chatham Cultural Centre located in downtown Chatham celebrates the community through awareness, appreciation and pride to artistic and cultural achievements. The Cultural Centre provides opportunity to individuals, groups and organizations to enjoy and participate in a number of experiences (Municipality of Chatham-Kent 2022f).

The Town of Blenheim proudly celebrates its retail experience through the selection of boutiques and speciality stores. During the summer, the community celebrates Ontario’s largest carnival and sidewalk sale, further nourishing the retail experience through discounts and bargains (Town of Blenheim 2022). Visitors are also able to partake in recreation activities, public beaches, along with unique natural habitats and scenic parklands such as Rondeau Provincial Park and C.M. Wilson Conservation Area (CKtoday 2022). Children are able to visit Tablot Trail Place, a unique farm-themed experience with summer concerts, climbing activities, splash pads and other special events (CKtoday 2022).

4.3.4.2 Neighbourhoods and Residences

The Study Area is largely rural residential and agricultural in nature with some industrial land use. Some of the urban commercial areas of the Town of Blenheim fringe the upper northeast part of the Study Area near the intersection of Communication Road and Allison Line.

There are few residences located along either the PPR or Alternative Routes.

4.3.5 Infrastructure and Services

4.3.5.1 Existing Linear Infrastructure

Chatham-Kent is served by an extensive network of local, collector and arterial roads and highways that provide linkages within the community, to other parts of Ontario, and to the United States. Highway 40 and Highway 401 are the only roads currently under the jurisdiction of the MTO, and the Municipality is responsible for maintaining all other roads in Chatham-Kent (Municipality of Chatham-Kent 2018).

The Project footprint encounters mainly local roads as classified in Schedule B1 of the Municipality of Chatham-Kent (2018) Official Plan. Local roads serve residential and/or employment areas, connecting

individual properties to collector, arterial roads and provincial highways and posted speeds vary from 40 km/hr to 60 km/hr (Municipality of Chatham-Kent 2018). Communication Road and Middle Line are classified as rural arterial roads, which means they serve local and regional travel and have posted speed limits from 60 km/hr to 90 km/hr (Municipality of Chatham-Kent 2018).

Communication Line west of Drury Line, Drury Line south from Communication Road to Erieau Road, and Erieau Road east from Drury Line to the Ridge Landfill is the main Ridge Landfill Truck Route (Municipality of Chatham-Kent 2018). Alternative Routes 1 and 2 would conflict with the truck route during construction.

All of the route options cross the Canadian National Railway line at one point. It is assumed that all the routes encounter power and telecommunication lines since these utilities tend to follow the municipal road network.

4.3.5.2 Community Services and Institutions

The Municipality of Chatham-Kent is responsible for providing municipal services such as social housing, emergency and protective services, waste management, roads, sewers, water, parks and recreation, libraries and archives, museums, transit, long term care homes, and child care and children's services.

There are no community services located directly in the Study Area. The nearest community with services is the Town of Blenheim located immediately adjacent to the Study Area. Blenheim has all the typical community services that are sought by residents and tourists including grocery stores, pharmacies, parks, sports and recreation, schools, health and wellness centres, library, pet care, financial institutions, general retail and convenience stores, and gas stations, etc. (Town of Blenheim 2022).

The nearest hospital with 24/7 emergency services is located in Chatham, approximately 20 km northwest of the Study Area.

4.3.6 Indigenous Community Land and Resource Use

A review of applicable mapping and correspondence with the MOE indicated that the Project may have the potential to affect Indigenous communities who hold or claim Aboriginal or Treaty Rights protected under Section 35 of Canada's Constitution Act, 1982. These communities include:

- Aamjiwnaang First Nation;
- Bkejwanong (Walpole Island) First Nation;
- Caldwell First Nation;
- Chippewas of the Thames First Nation;
- Chippewas of Kettle and Stony Point First Nation; and,
- Oneida Nation of the Thames.

To date, consultation with Indigenous communities has not resulted in the identification of potential impacts of the Project on Aboriginal or Treaty Rights or on Indigenous use of land and resources in the Study Area. Additional information pertaining to consultation with Indigenous communities is provided in Section 3.3.

4.3.7 Cultural Heritage Resources

A Stage 1 Archaeological Assessment was undertaken by TMHC Inc. (TMHC) that consisted of a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils, and drainage. A copy of the Stage 1 Archaeological Assessment report prepared for the Project is provided in Appendix A. The report was submitted to the MHSTCI and clearance from the Ministry was received on April 21, 2022.

The Stage 1 property inspection conducted on March 11, 2022 visually confirmed that the majority of the Project area is considered extensively disturbed (38.34 ha) or wet (0.04 ha) and no longer retains archaeological potential. These areas have been photo-documented. A small portion of the Project area outside the municipal road right-of-way has been previously assessed (1.27 ha) and does not require further assessment. Areas outside of the municipal road right-of-way are grassed or agricultural fields (24.41 ha) and retain archaeological potential and should be subject to Stage 2 assessment.

A Cultural Heritage Screening Report (CHSR) was completed for the Project and is provided in Appendix B. The CHSR includes the MHSTCI Cultural Heritage Checklist and was submitted for MHSTCI review on April 19, 2022.

The cultural heritage screening confirmed that there are no federally-designated heritage properties within 50 m of any of the route options, nor are there any properties designated or listed on the Chatham-Kent Municipal Heritage Register. To date, no properties have been designated according to MHSTCI and they are not aware of any provincial heritage properties within or adjacent to the Study Area. At the time of the writing of the CHSR, no correspondence had been received from the Ontario Heritage Trust (OHT), however, a review of accessible OHT databases did not reveal any potential heritage concerns. No cemeteries or other properties/landscapes of heritage interest were identified during the high-level review documented in the CHSR.

Although there were no federally, provincially, or municipally designated heritage properties identified in the cultural heritage screening, TMHC did note that there are structures within 50 m of each of the potential route options that are 40 years of age or older, signalling potential cultural heritage value or interest. Therefore, TMHC recommends the completion of a cultural heritage assessment report (CHAR) prior to construction. On June 9, 2022, an MHSTCI representative spoke with a TMHC representative and verbally stated that they agree with the recommendations in the CHSR that a CHAR be completed for

the Project. The CHAR will further evaluate the identified potential heritage resources and determine if a Heritage Impact Assessment is necessary.

A CHAR and Stage 2 Archaeological Assessment will be completed for the Project in summer 2022. If the CHAR or Stage 2 recommend further studies, these will be completed prior to construction in accordance with MHSTCI requirements.

5.0

Route Selection

As described in Section 2.1.2, Enbridge Gas identified the PPR and Alternative Routes for the Project. The routing constraints analysis conducted for the Project is provided in Appendix C.

The PPR and Alternative Routes considered in this ER are shown on Figure 1.

5.1

Preferred Route

Based on the information collected during the desktop review of the Study Area and the results of the routing constraints analysis, we have identified the Preferred Route for the Project as Enbridge Gas' PPR, as shown in Figure 11, below.

From an environmental and socio-economic perspective, the PPR is considered the Preferred Route to be carried forward in this assessment. The desktop review and field studies summarized in Section 4.0, along with the routing constraints analysis provided in Appendix C, indicate it is the shortest, most direct route; it is in proximity to the fewest natural ELC communities (i.e., forest, meadow, and wetland communities; see Table 4 for details); it passes by the fewest number of residences and businesses; and it avoids a key trucking route for the Ridge Landfill.

5.2

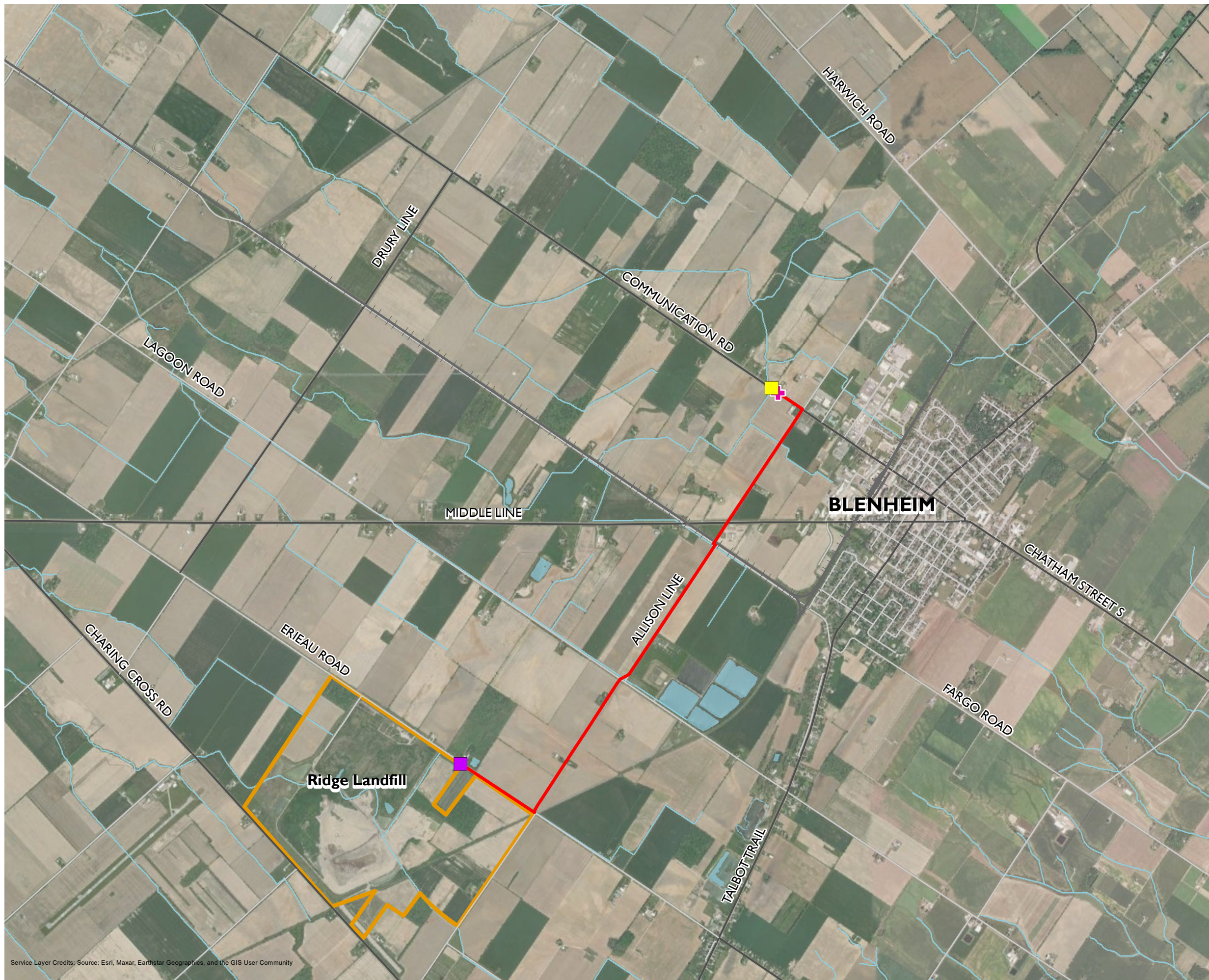
Temporary Workspace and Laydown Areas

Temporary workspace and laydown areas will be required adjacent to the proposed location of the pipeline to facilitate the movement and storage of equipment necessary for construction. Enbridge Gas will work with the Municipality of Chatham-Kent, regulatory agencies, and landowners to identify and secure appropriate workspace, as required.

Field work completed for the Project included lands located approximately 30 m on each side of the road right-of-way (i.e., Project footprint) and can be used to site temporary facilities. When siting temporary facilities, the following criteria should be used to minimize adverse environmental and socio-economic effects:

- Identify locations within previously disturbed areas;
- Select locations close to the area of construction to minimize ground disturbance;
- Avoid areas with native vegetation and other natural features such as woodlands;
- Avoid, where possible, known locations of SAR;
- Avoid sloped and poorly drained areas; and,
- Avoid areas with known cultural heritage/archaeological resources.

Mitigation measures provided in Section 6.0 of this ER should be considered when siting temporary facilities. Applicable agency approvals will be required.



ENBRIDGE GAS INC.
 RIDGE LANDFILL RNG PROJECT

PREFERRED ROUTE
 FIGURE 11

- Existing Enbridge Station
- Customer Station (Proposed)
- + Tie-in Location
- Preferred Route
- Rail
- Arterial/Collector Road
- Local Road
- Ridge Landfill
- Waterbody
- Watercourse

SCALE 1:32,000
 0 250 500 1,000 m



MAP DRAWING INFORMATION:
 DATA PROVIDED BY MNRF, ENBRIDGE, ESRI, DILLON CONSULTING
 MAP CREATED BY: DDR
 MAP CHECKED BY: AL
 MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 223276
 STATUS: DRAFT
 DATE: 2022-06-16

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Effects Assessment and Proposed Mitigation

This section provides the assessment of the potential effects associated with the Preferred Route on the physical, natural, and socio-economic environment (Table 6). Recommended mitigation measures are also described in this section and select mitigation measures are shown on Figure 12.

The majority of potential Project-related effects can be avoided by locating the pipeline within existing, previously disturbed municipal road rights-of-way.

Table 6: Potential Effects, Mitigation Measures, and Potential Residual Effects of Project Construction and Operations

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
PHYSICAL ENVIRONMENT				
Physiography and Topography	<ul style="list-style-type: none"> The pipeline will mainly be installed within, or immediately adjacent to, existing road rights-of-way. The topography in these areas is generally level or gradually inclined and is heavily influenced by grading conducted for past utility and road works. Roads, driveways, and adjacent vegetated areas will be returned to their pre-construction grade following construction. 	<ul style="list-style-type: none"> No effects to physiography and topography are expected to occur as a result of Project activities. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Surficial Geology and Soils	<ul style="list-style-type: none"> The pipeline will be installed within, or immediately adjacent to, municipal road rights-of-way. The soils and subsoils in the Project footprint have been heavily disturbed by past utility and road works and related infilling. A search of publicly available data revealed no records of historical contamination in the Study Area. However, it is possible for potential historical contamination to be encountered due to proximity to the Ridge Landfill and working within municipal road rights-of-way. The potential for leaks or spills from Project activities to affect soils is considered in Accidents and Malfunctions (Section 8.0). 	<ul style="list-style-type: none"> Discovery of historical contamination during construction. 	<ul style="list-style-type: none"> The contractor should proceed with construction cautiously and be aware of the potential for contaminated soils. If contaminated soils are suspected, the Suspect Soils Procedure in the LUG C&M Manual 2020 should be followed, as suspect soils must be safely handled and disposed of in a manner consistent with regulatory requirements. Additional subsurface investigations (confirmatory and waste classification samples) should take place in areas suspected of having soil contamination. The LUG C&M Manual 2020 Suspect Soils Procedure provides direction for managing contaminated sites that are encountered during construction. Should suspect soils be encountered, third party consultants are on-call 24/7 to provide support. Suspect soils are typically identified based on the following: <ul style="list-style-type: none"> An odour emanating from the excavation; A significant change in colour, oil sheen, texture or stunted vegetation condition; The presence of coloured, odorous or non-water like liquid seeping into the excavation; and, The presence of solid wastes including drums, containers or tanks. If suspect soils are identified, implement the Suspect Soils Procedure (see LUG C&M Manual 2020 for further details). 	<ul style="list-style-type: none"> No residual effect is anticipated following implementation of the recommended mitigation measures.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Groundwater	<ul style="list-style-type: none"> The pipeline will be installed at an approximate depth (top of pipe) of between 0.9 m to 1.2 m deep and may be installed using a combination of open-cut trenching and trenchless techniques. Should sections of the pipeline trench encounter the groundwater table, groundwater may exfiltrate into the trench and may require dewatering to facilitate construction. Similarly, groundwater may be encountered at trench depth where integrity digs are conducted during operations. There is the potential to encounter contaminated groundwater in conjunction with the discovery of historically contaminated soils. Bentonite slurry will be generated during construction if trenchless construction methods are used. There is potential for bentonite slurry to seep into porous subsurface formations, reduce groundwater quality, and leave the tunnel along a preferential flow pathway and inadvertently seep into a nearby watercourse, or interfere with nearby structures (i.e., roadways). Bentonite slurry, when not managed appropriately, is considered an industrial waste and so requires specific handling. The potential for leaks or spills from Project activities to affect groundwater is considered in Accidents and Malfunctions (Section 8.0). 	<ul style="list-style-type: none"> Reduction in groundwater quality. 	<p>General</p> <ul style="list-style-type: none"> Review and adhere to the Hazardous Waste Management and Disposal section of the LUG C&M Manual 2020 to avoid contaminant introduction during construction. Maintain equipment in good working condition such that equipment and vehicles are free of leaks. Store all fuels, chemicals, and other lubricants away from drainage features and on relatively flat areas in contained storage areas. Re-fuelling activities should be undertaken a minimum of 30 m away from drainage features and other sensitive environmental features. Should a spill occur, the MECP Spills Action Centre (1-800-268-6060) should be contacted immediately and containment should occur as soon as practical; Enbridge's Environment Department should also be notified (1-855-336-2056). <p>Dewatering</p> <ul style="list-style-type: none"> Register under the EASR where dewatering in excess of 50,000 L/day and up to 400,000 L/day is required. Excess water should be directed away from sensitive natural features. Obtain a PTTW from the MECP where dewatering in excess of 400,000 L/day is required. Excess water should be directed away from sensitive natural features. Potentially contaminated groundwater should be managed and disposed of in accordance with applicable regulatory requirements. Additional measures are provided in the Spills Response and Reporting and Dewatering sections of the LUG C&M Manual 2020. <p>Bentonite Slurry</p> <ul style="list-style-type: none"> Bentonite slurry generation can be reduced by using a centrifuge to screen out solids and fines, allowing the bentonite to be reused on-site to a certain extent. Prior to disposal, bentonite slurry can be treated by solidification methods and removed from the site under the appropriate waste classification. The composition of the bentonite slurry should be determined based on the geotechnical conditions of the site. The application of bentonite slurry should be monitored frequently by the Contractor. Extra caution should be exercised near drainage features, natural features, and nearby structures that could be impacted. Additional measures are provided in the Trenchless Installations section of the LUG C&M Manual 2020. 	<ul style="list-style-type: none"> Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short to medium-term in duration, and not significant.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Bedrock	<ul style="list-style-type: none"> The overburden thickness (i.e., depth to bedrock) in the Study Area varies between approximately 30 m to 60 m. There is no exposed bedrock in the Study Area. The majority of the pipeline will likely be buried between 0.9 m to 1.2 m deep and given the depth to bedrock in the Study Area, it is highly unlikely that intact bedrock will be encountered during pipeline construction. 	<ul style="list-style-type: none"> No effects to bedrock are expected to occur as a result of Project activities. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
NATURAL ENVIRONMENT				
Atmospheric Environment	<ul style="list-style-type: none"> Air emissions (including greenhouse gases) from vehicle and equipment use (i.e., exhaust and dust) will occur during construction and site-specific maintenance activities (e.g., integrity digs) during operations. Air contaminants from vehicle and equipment use include sulphur dioxide, nitrogen oxide, volatile organic compounds, carbon monoxide, and particulate matter. In addition, carbon dioxide, a greenhouse gas, is emitted from internal combustion engines. Emissions produced through welding cannot be mitigated; however, these emissions will be short-term and localized. It is not anticipated that this will be a significant contributor to air and GHG emissions. On a larger scale, the use of landfill gas as a renewable energy input into the existing natural gas system will increase landfill gas recovery by at least 40%, while contributing to the Municipality's and Province's GHG reduction goals. 	<ul style="list-style-type: none"> Temporary and localized increase in air emissions during construction and operations (where preventative maintenance is performed). Long-term reduction in GHG emissions through the increased recovery of landfill gas. 	<ul style="list-style-type: none"> Limit the area of open trenches (where possible) to reduce dust. Implement dust control measures during dry and windy conditions. Dust control measures should be monitored regularly to increase efficiency. Equip vehicles with emission controls, as applicable, and operate within regulatory requirements. Limit long-term idling, where possible. Limit construction activities during high wind events. 	<ul style="list-style-type: none"> Following the implementation of mitigation measures, the residual effect of temporary localized increase in air emissions is anticipated to be low magnitude, short-term in duration, and not significant. In the long-term, the Project will have a positive effect on the atmospheric environment by creating an overall net decrease in GHG emissions from landfill operations.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Aquatic Environment	<ul style="list-style-type: none"> • Surface water features in the Study Area consist of six municipal drains (i.e., Cooks, Wetherford, Walker, McGregor, Cameron, and Duke). • The drains that transect the Study Area have thermal regimes characterized as warm water and are known to contain a variety of common warm water fish species. The Cameron Drain is the only one classified by DFO as Class C (i.e., permanent flow with no sensitive fish species) while all the other drains are classified as Class F (i.e., intermittent flow with no sensitive fish species). • Construction activities may result in temporary disruption of flow, reduction in surface water quality (e.g., localized sedimentation), alteration of fish habitat, or death/injury of fish in watercourses directly crossed by the pipeline route, depending on the crossing technique (i.e., open cut crossings are more likely to impact the aquatic environment than trenchless crossings). • The potential for leaks or spills from Project activities to affect the aquatic environment is considered in Accidents and Malfunctions (Section 8.0). 	<ul style="list-style-type: none"> • Temporary reduction in surface water quality and alteration of water flow during construction if trenched crossing techniques are implemented. 	<ul style="list-style-type: none"> • Re-contour the streambed to approximate the pre-construction profile and channel configuration to ensure that flow patterns are unaltered. Watercourses are not to be realigned or straightened in any way nor have their hydraulic characteristics changed. • Complete all instream activity within a reasonable period of time, having regard for the site-specific conditions, to limit the duration and severity of disturbance. • Schedule crossing construction, to the extent practical, to complete trenching, lowering-in and backfill with continuous effort or to the satisfaction of the Environmental Inspector or Enbridge Gas designate. • Maintain the quantity and quality of stream flow, if present, throughout crossing construction. Trench through the watercourse after isolation is installed and operational, and maintain stream flow at all times. • Install and maintain erosion and sediment control measures prior to commencing grading within the vicinity of a watercourse. • Any stockpiled materials shall be stored and stabilized at a minimum distance of 30 m from the watercourse. • Avoid or reduce grading within the 10 m riparian buffer of watercourses, unless otherwise approved by the Environmental Inspector. Grading within 10 m of watercourses, if approved, may be appropriate if completion of this activity results in reduced erosion and sedimentation risk. • Delay grading on the approach slopes to watercourses until immediately prior to the commencement of construction of the crossing, if practical. If grading occurs, ensure that interim erosion control is installed, as appropriate. • Refueling and maintenance of equipment must be set back from any water body a minimum of 100 m to minimize the potential for water pollution, unless otherwise approved by Enbridge Gas' Environment Department. 	<ul style="list-style-type: none"> • Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short-term in duration, and not significant.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
<p>Aquatic Environment (cont'd)</p>	<ul style="list-style-type: none"> • See above 	<ul style="list-style-type: none"> • See above 	<ul style="list-style-type: none"> • Machinery should arrive on site in a clean condition and be maintained free of fluid leaks. Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent any deleterious substance from entering the water. • Banks and riparian areas are to be restored to their original condition if any disturbance occurs. • Undertake site restoration works immediately following construction and in accordance with the Site Restoration section of the LUG C&M Manual 2020. • Stabilize any waste materials removed from the work site to prevent them from entering the watercourse. This could include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs. 	<ul style="list-style-type: none"> • See above
		<ul style="list-style-type: none"> • Alteration of fish habitat or death/injury of fish during construction if trenched crossings techniques are implemented. 	<ul style="list-style-type: none"> • Develop site-specific water crossing plans in consultation with Enbridge Gas prior to conducting any in-water work. • Time isolated crossings to protect sensitive fish life stages by adhering to fisheries timing windows. Consult with LTVCA and other relevant agencies (e.g., MECP, DFO, ECCC) to determine appropriate timing windows. • Stabilize the streambed and restore the original channel shape, bottom gradient and substrate to pre-construction condition. • Ensure banks are stabilized, restored to original shape, adequately protected from erosion and revegetated, preferably with native species. • Temporary isolation should be pursued to allow work "in-the-dry" while maintaining the natural downstream flow by installing dams upstream and downstream of the site and conveying all of the natural upstream flow into a flume, or pumping it around the isolated area. • Use dams made of non-earthen material, such as water-inflated portable dams, pea gravel bags, concrete blocks, steel or wood wall, clean rock, sheet pile or other appropriate designs, to separate the dewatered work site from flowing water. 	<ul style="list-style-type: none"> • Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short-term in duration, and not significant.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Aquatic Environment (cont'd)	<ul style="list-style-type: none"> See above 	<ul style="list-style-type: none"> See above 	<ul style="list-style-type: none"> A qualified Fish Biologist or technician must complete a fish salvage from the isolated area prior to and during dewatering where isolated crossing techniques are used. Fish salvage activities will need to be conducted in accordance with applicable permit approvals and minimize harm and stress to fish. Release captured fish to pre-determined areas of similar or better habitat, where possible, preferably downstream of the work site. Pump sediment laden (trench) water into a vegetated area or settling basin, and prevent sediment and other deleterious substances from entering any water body. Remove accumulated sediment and excess spoil from the isolated area before removing dams. If rock is used to stabilize banks, it should be clean, free of fine materials, and of sufficient size to resist displacement during peak flood events. The rock should be placed at the original stream bank grade to ensure there is no infilling or narrowing of the watercourse. Gradually remove the downstream dam first to equalize water levels inside and outside of the isolated area and to allow suspended sediments to settle. During the final removal of dams, restore the original channel shape, bottom gradient and substrate at these locations as required and manually if possible. Pumped diversions should be used to divert water around the isolated area to maintain natural downstream flows and prevent upstream ponding. Ensure intakes of pumping hoses are equipped with appropriate screening to avoid entrainment and impingement of fish. Ensure the pumping system is sized to accommodate any expected high flows of the watercourse during the construction period. Pumps should be monitored at all times, and back-up pumps should be readily available on-site in case of pump failure. Protect pump discharge area(s) to prevent erosion and the release of suspended sediments downstream, and remove this material when the works have been completed. 	<ul style="list-style-type: none"> See above
Wetlands	<ul style="list-style-type: none"> No wetlands occur within the Study Area of the Preferred Route. 	<ul style="list-style-type: none"> No effects to wetlands are expected to occur as a result of Project activities. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Areas of Natural and Scientific Interest and Other Environmentally Significant Areas	<ul style="list-style-type: none"> There are no Areas of Natural and Scientific Interest or other environmentally significant areas in the Study Area. 	<ul style="list-style-type: none"> No effects to Areas of Natural and Scientific Interest or other environmentally significant areas are expected to occur as a result of Project activities. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Terrestrial Habitat and Vegetation	<ul style="list-style-type: none"> The majority of the Study Area can be classified as agricultural (e.g., annual row crops, orchards) with some small areas of commercial and industrial use and rural residential properties. Natural vegetation communities are sparse in the Study Area and consist of narrow pockets of meadow communities (i.e., MEM and MEMM4) that occur along some of the roadside ditches. There is a small portion of the Study Area with hedgerows that occurs on the opposite side of the road of the proposed RNG injection station site at the Ridge Landfill and will be avoided since the majority of Project construction will occur on the Ridge Landfill side of the road. The Project will be installed within, or immediately adjacent to, existing road rights-of-way. Vegetation encountered will likely consist of common roadside vegetation of minor ecological value (vegetation capable of colonizing new roadside edges). However, if construction activities (e.g., temporary laydown areas, equipment encroachment) extend into vegetated areas, activities could result in the temporary loss or alteration of vegetation. Construction activities could result in the introduction or spread of invasive species and/or weeds. The potential for leaks or spills from Project activities to affect vegetation is considered in Accidents and Malfunctions (Section 8.0). 	<ul style="list-style-type: none"> Temporary loss or alteration of vegetation during construction. 	<ul style="list-style-type: none"> Minimize the width of the construction area to reduce the amount of vegetation affected. Limits of the workspace should be clearly marked to avoid encroachment into adjacent vegetated areas and to avoid unnecessary tree removals. Where feasible, construction traffic should be limited to the existing road allowance to avoid potential compression of tree root zones. Protect vegetation adjacent to the working area from construction traffic and/or materials storage. Upon completion of construction, all vegetation removed or damaged should be replaced with appropriate native species. Ontario native seed mixes should be appropriate for the habitat type and existing land use. Undertake construction in a manner consistent with the Clearing section of the LUG C&M Manual 2020. Implement tree protection zones once vegetation removal is complete. The tree drip line plus an additional 1 m demarcated by fencing should be established around remaining edge vegetation to avoid soil compaction. 	<ul style="list-style-type: none"> Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short to medium-term in duration, and not significant.
		<ul style="list-style-type: none"> Introduction or spread of invasive species and/or weeds during construction. 	<ul style="list-style-type: none"> All equipment should arrive to the site clean and free of soil and/or vegetation to prevent the introduction and spread of invasive species and weeds. Ontario native seed mixes that are free of weed species should be used for revegetation. 	<ul style="list-style-type: none"> No residual effect is anticipated following implementation of the recommended mitigation measures.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Wildlife and Wildlife Habitat	<ul style="list-style-type: none"> The pipeline will mainly be installed within, or immediately adjacent to, existing road rights-of-way in heavily developed areas and limited interaction with wildlife is anticipated. Minor to moderate wildlife habitat is anticipated to be present within the Study Area due to the presence of some natural meadow communities. Cultural features like outbuildings, barns, hedgerows, and houses may provide habitat for bats and nesting birds; as well, the box culverts and graveled shoulders of the roads could provide habitat to nesting birds, turtles, and reptiles. Walpole Island First Nation has noted that snapping turtles are known to inhabit the area around the Blenheim Sewage Treatment Plant lagoons and often nest in the graveled shoulder along Allison Line. Noise from construction activities can cause some temporary disturbance to local wildlife, if present in the Study Area. Vegetation removal during construction may potentially limit or alter wildlife habitat. The removal of vegetation can impact nesting birds if conducted during known breeding bird timing windows (generally between April 1 and August 31). Construction activities have the potential to attract turtles looking for suitable nesting substrate between late May and early July. This can potentially impact turtles and turtle nests. Snakes may use open areas such as road shoulders to bask, potentially putting them at risk from construction activities. Construction activities have the potential to cause physical harm to slower moving animals like frogs, snakes, and turtles. Trenching activities have the potential to cause physical harm to wildlife that may fall in any open trenches, particularly if the trenches are left exposed overnight. The potential for leaks or spills from Project activities to affect wildlife and wildlife habitat is considered in Accidents and Malfunctions (Section 8.0). 	<ul style="list-style-type: none"> Temporary alteration of wildlife habitat, disruption of wildlife movement, and/or increase in wildlife mortality during construction. 	<p>General Measures</p> <ul style="list-style-type: none"> Flag or fence off nearby natural vegetation communities that should not be disturbed, prior to construction. Undertake environmental awareness training for all workers onsite to highlight issues specific to the Project. Training should focus on protocols for injured wildlife and the identification of SAR that may be encountered. All wildlife encountered should be handled by a qualified professional using approved NDMNRF/MECP handling protocols and relocated away from the construction area to prevent incidental harm. Nuisance and large wildlife encounters or incidents involving wildlife should be reported to the NDMNRF/MECP. Food waste and debris should be removed from the site daily and disposed of at an approved waste facility. Conduct pre-construction planning that includes a review of the areas of potential habitat. Minimize the width of the construction area to reduce the amount of vegetation affected. Suspend construction if active habitat is discovered and an adequate setback distance cannot be maintained. Maintain habitat connections, where possible, during construction. Implement measures to restore lost habitat/habitat connections. <p>Birds</p> <ul style="list-style-type: none"> Abide by regulatory timing windows (generally April 1 to August 31) and setback distances when vegetation removal (including individual trees) is required or when working in or directly adjacent to natural features. Conduct pre-construction nest sweeps if construction will occur within the migratory bird restricted activity period (April 1 to August 31). Nest sweeps are valid for 7 days. Protect active nests by flagging or fencing off an appropriate setback distance as determined by a qualified professional. If a nest is found during construction activities, stop work and notify the Environmental Inspector or Enbridge designate. 	<ul style="list-style-type: none"> Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short-term in duration, and not significant.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Wildlife and Wildlife Habitat (cont'd)	<ul style="list-style-type: none"> See above 	<ul style="list-style-type: none"> See above 	<p>Bats</p> <ul style="list-style-type: none"> Narrow construction footprint, where possible, to limit tree removals. Complete assessments prior to clearing to determine if candidate maternity trees (those with loose bark, crevices, hollows or cavities) are present. Clearing of potential bat roosting trees is to be avoided between April 1 and September 30. If potential bat roosting trees require removal during this window, additional surveys may be required. Contact a qualified individual prior to clearing. <p>Reptiles</p> <ul style="list-style-type: none"> Abide by regulatory timing windows and setback distances. General timing windows for reptiles are: <ul style="list-style-type: none"> Turtle/snake active season (when exclusion fencing is required in designated turtle/snake habitat areas) – April 1 to October 31 Turtle nesting period – May 1 to July 15 Turtle hatchling period – August 15 to October 31 If a turtle or snake is encountered on site, stop work and allow the individual to leave the area. Flag or fence off identified habitat features prior to the timing windows for nesting and breeding listed above, if possible. The recommended depth of the fence and height of the fence differs depending on the reptile group: <ul style="list-style-type: none"> Turtles: bury fencing a minimum of 10-20 cm below ground with a vertical height of at least 60 cm. Snakes: varies by species – consult the MNR (2013) document Species at Risk Best Practices Technical Note, Reptile and Amphibian Exclusion Fencing (Version 1.1). Note, stakes should be installed on the activity side to prevent snakes using stakes to climb fencing. Wildlife exclusion fencing should be erected along Allison Line in the vicinity of the Blenheim Sewage Treatment Plant, as this is a known location for nesting snapping turtles that inhabit the nearby sewage lagoons. Complete a wildlife sweep within the exclusion area following fence installation to ensure there is no trapped wildlife. Visually inspect machinery and/or engine compartments each day during construction for basking reptiles such as snakes. 	<ul style="list-style-type: none"> See above

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Species at Risk	<ul style="list-style-type: none"> Desktop review and field studies determined that there are eight SAR with the potential to occur within the Study Area of the Preferred Route, including one bird (Barn Swallow), four bats (Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-coloured Bat), one snake (Eastern Foxsnake), and two botanical species (Butternut and Dense Blazing Star). Only Barn Swallow was observed during the April 2022 site assessment; Barn Swallow nests were observed in association with the box culvert at the Cameron Drain intersection. With the exception of Eastern Foxsnake, each of the SAR identified as having potential to occur in the Study Area (see Table 5) have General Habitat protection; Eastern Foxsnake has Regulated Habitat protection (O. Reg. 832/21). None of the drains that transect the Study Area have documented occurrence records of aquatic SAR listed provincially and/or federally. 	<ul style="list-style-type: none"> Temporary alteration of SAR habitat, disruption of SAR movement, and/or increase in SAR mortality during construction. 	<ul style="list-style-type: none"> Implement recommended mitigation measures for the protection of vegetation and wildlife and wildlife habitat outlined above. Abide by the conditions of regulatory permits or approvals when working in areas where there is potential to interact with SAR or Species of Conservation Concern. MECP should be consulted during detailed design to determine whether species-specific surveys may be required to support potential permitting and/or approvals under the Endangered Species Act, 2007. Provide SAR identification sheets to workers that outline habitat, identifying characteristics and mitigation measures. Document SAR encounters and notify appropriate regulatory authorities. 	<ul style="list-style-type: none"> Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short-term in duration, and not significant.
SOCIO-ECONOMIC ENVIRONMENT				
Planning Policies	<ul style="list-style-type: none"> Under the relevant plans and policies reviewed for this report, the Project is in line with the municipal and provincial policy directions for maintaining safe, livable, and economically diverse and prosperous communities. The Project is in direct alignment with Chatham-Kent's energy objective, which is to "Endeavour to improve energy efficiency, reduce greenhouse emissions and foster local energy solutions in the Municipality" (Municipality of Chatham-Kent 2018). 	<ul style="list-style-type: none"> No adverse effects to planning policies are expected to occur as a result of Project activities. The Project will have a positive effect and contribution to the Municipality's and Province's GHG reduction goals. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Existing and Planned Land Use	<ul style="list-style-type: none"> It is not anticipated that Project activities will have any impact on existing or planned land use as the proposed pipeline will be installed within, or immediately adjacent to, existing, previously disturbed road rights-of-way. The Project does not require re-zoning of lands and will not restrict future development within existing linear infrastructure corridors (beyond their currently existing and planned allowable uses). The Project is a permissible use of the existing road rights-of-way and Enbridge Gas will obtain all required permits and approvals prior to construction and operations. 	<ul style="list-style-type: none"> No effects to existing and planned land use are expected to occur as a result of Project activities. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Population, Employment, and Economic Activities	<ul style="list-style-type: none"> The Project is located in a rural area where there are numerous farms and agricultural businesses. Construction activities may affect traffic and/or access to businesses for a short period of time. The Project is not anticipated to have a noticeable impact on business levels due to the short-term duration of construction activities and the implementation of appropriate traffic control and access measures. The Project (i.e., pipeline and RNG injection station construction and operations) will employ a small workforce for a short period of time and no permanent jobs will be created or lost as a result of the Project. It is estimated that the proposed Waste Connections-owned biomethane station (not in the scope of this Project) will result in an investment of more than \$50 million in the local economy and employ approximately 50 new development and construction jobs in addition to highly skilled permanent green operational jobs once constructed and operational. This is a positive indirect effect of the Project on employment and economic activities. 	<ul style="list-style-type: none"> No direct effects to population, employment, and economic activities are expected to occur as a result of Project activities. The Project will indirectly contribute to a significant investment in the local economy and the creation of numerous temporary and permanent jobs by facilitating the construction and operations of the proposed Waste Connections-owned biomethane station at the Ridge Landfill. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Human Occupancy and Resource Use	<ul style="list-style-type: none"> The Project is located in a rural area adjacent to farms, residences, and industrial businesses that are generally set further back from the road than in urban or residential areas. Construction activities may temporarily cause nuisance noise for local residents and businesses. Visual effects of construction cannot be mitigated, however, they will be short-term and localized. During operations, visual effects will be limited to the presence of above-ground safety signage. 	<ul style="list-style-type: none"> Temporary increase in nuisance noise during construction. 	<ul style="list-style-type: none"> Construction activities will be carried out in compliance with municipal noise by-laws with respect to noise and construction equipment usage. Applicable noise by-law exemptions will be sought if construction activities cannot be avoided on Statutory Holidays, Sundays or at night. General noise control measures will be implemented during construction (i.e., proper maintenance of equipment, muffling systems, minimum idling of equipment and vehicles). 	<ul style="list-style-type: none"> Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short-term in duration, and not significant.

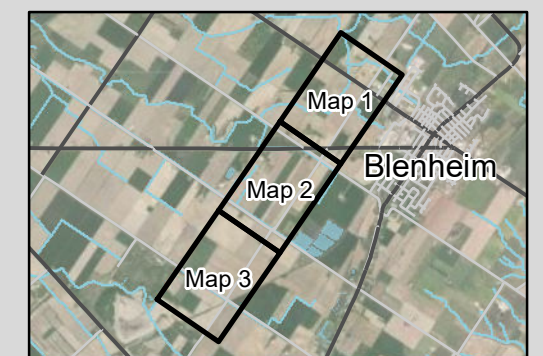
Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Infrastructure and Services	<ul style="list-style-type: none"> The Project is located in a rural area along many local roads and some arterial roads that are only two lanes wide. Farming equipment is likely to be present on these roads, especially during the spring and summer. Construction may cause traffic disruptions (e.g., congestion, lane closures, or detours) impacting traffic flow and access to driveways. The Project will result in the creation of hazardous wastes (e.g., pneumatic oils from hydraulic systems, gasoline, and other lubricants and oils) and non-hazardous wastes (e.g., packaging, spent lubricating cartridges, coffee cups) requiring proper storage and disposal. 	<ul style="list-style-type: none"> Temporary traffic disruptions during construction. 	<ul style="list-style-type: none"> Traffic access will be maintained, where possible, during construction. However, lane closures and traffic detours may be required to allow construction equipment and materials passage, or where open-cut construction is planned. Good management and best practices will be implemented during construction to minimize traffic disruption. If required, temporary detour routes will be provided to reduce potential impacts to drivers. Appropriate signage and flag personnel will be used should detours be necessary. Enbridge Gas is encouraged to consult with municipal staff to develop an appropriate traffic management plan to assist with maintaining traffic flow. Consultation with Emergency Medical Services may also be required if temporary detours are deemed necessary. A common parking area should be established for construction crews to reduce traffic and better manage parking congestion. The Contractor should be encouraged to transport construction staff to the site from a central collection point via bus or other method to reduce the potential for parking issues and traffic congestion. Enbridge Gas will respond to any construction complaints promptly. Vehicle traffic will be managed in accordance with the Traffic Control and Protection Plan, Road and Railway Crossings, Pipeline Depth of Cover Survey, Trenching/Excavating, Trenching, and Paving Excavation and Repairs sections of the LUG C&M Manual 2020. An appropriate Traffic Control Plan will be developed and implemented in accordance with Ontario Traffic Manual (OTM) Book 7 – Temporary Conditions. 	<ul style="list-style-type: none"> Following the implementation of mitigation measures, the residual effect is anticipated to be low magnitude, short-term in duration, and not significant.
		<ul style="list-style-type: none"> Temporary increase in wastes during construction. 	<ul style="list-style-type: none"> Solid waste will be collected and disposed of appropriately in accordance with applicable regulations at a licensed waste facility. Hazardous wastes will be transported by MECP licensed waste haulers to a MECP registered disposal site. Temporary storage of wastes onsite will include the use of secured containers in designated sites away from sensitive areas. All construction waste will be disposed of in accordance with the Hazardous Waste Management and Disposal section of the LUG C&M Manual 2020. 	<ul style="list-style-type: none"> No residual effect is anticipated following implementation of the recommended mitigation measures.

Component	Context/Interaction	Potential Effect(s)	Mitigation Measures	Potential Residual Effect(s)
Indigenous Community Land and Resource Use	<ul style="list-style-type: none"> To date, Indigenous communities consulted on the Project have not identified any specific issues or concerns regarding the impact of the Project on Aboriginal or Treaty Rights or on their use of land and resources in the Study Area. Enbridge Gas will continue to engage with Indigenous communities throughout the Project and will work with Indigenous communities to address issues or concerns, should they arise. 	<ul style="list-style-type: none"> No effects to Aboriginal or Treaty rights or Indigenous communities' use of land and resources are expected to occur as a result of Project activities. 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Cultural Heritage Resources	<ul style="list-style-type: none"> The results of the Stage 1 Archaeological Assessment for the Project indicate that the majority of the Project area is considered extensively disturbed or wet and no longer retains archaeological potential. There are some areas outside of the municipal road right-of-way that retain archaeological potential (i.e., grassed areas or agricultural fields) and are recommended for Stage 2 assessment. A Stage 2 Archaeological Assessment will be completed in the summer of 2022 to identify any archaeological resources requiring mitigation. The CHSR recommends a CHAR be completed prior to construction to determine if a Heritage Impact Assessment is required. 	<ul style="list-style-type: none"> Disturbance of previously undiscovered archaeological resources during construction. 	<ul style="list-style-type: none"> Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, the person discovering the archaeological resources will notify the Environmental Inspector and Enbridge Environmental Advisor. A stop-work procedure will be implemented to immediately cease alteration of the site and a licensed consultant archaeologist will be engaged to carry out archaeological fieldwork in compliance with Section 48(1) of the Ontario Heritage Act. Work undertaken in and around areas with known archaeological potential will be completed in accordance with the Archaeological Areas section of the LUG C&M Manual 2020. Follow recommendations from the Stage 1 and Stage 2 archaeological assessments. If human remains are encountered, all activities must cease immediately, and the local police and coroner must be contacted. In situations where human remains are associated with archaeological resources, MHSTCI should also be notified at archaeology@ontario.ca to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act. 	<ul style="list-style-type: none"> No residual effect is anticipated following implementation of the recommended mitigation measures.
		<ul style="list-style-type: none"> Disturbance of built heritage resources or cultural heritage landscapes during construction. 	<ul style="list-style-type: none"> Implement recommendations in the CHAR and/or Heritage Impact Assessment to be completed prior to construction. 	<ul style="list-style-type: none"> No residual effect is anticipated following implementation of the recommended mitigation measures.

MITIGATION MAP

FIGURE 12
Map 1 OF 3

- Existing Enbridge Station
- + Tie-in Location
- Customer Station (Proposed)
- Preferred Route
- +— Rail
- Arterial/Collector Road
- Local Road
- Ridge Landfill
- Project Footprint (30 m)
- Study Area (125 m)
- Watercourse
- Waterbody
- Woodland



SCALE 1:5,500



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNRF, ENBRIDGE, ESRI, DILLON CONSULTING

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 223276
STATUS: DRAFT
DATE: 2022-06-16



Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

● Road or Rail Crossing. For road or rail crossings, trenchless construction is the preferred crossing technique. Contact the Municipality of Chatham-Kent for road crossing permitting requirements. Enbridge Gas will develop a Traffic Management Plan to ensure that traffic is maintained while crossings are conducted. Flag persons will be provided as required. Refer to the appropriate sections of the LUG C&M Manual 2020.

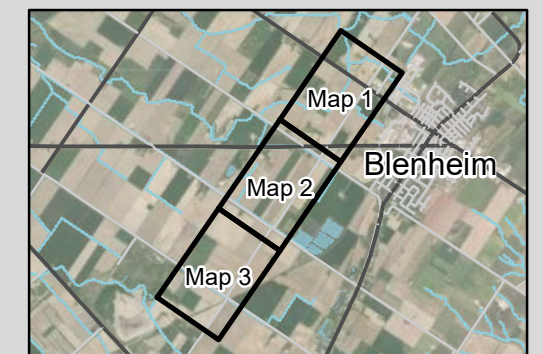
● Potential Crossing of Watercourse or Drainages. Crossing technique (open cut or trenchless) to be determined during construction detailed design process having regard for the engineering technical feasibility of construction and natural features. All watercourses to be crossed shall be prepared and constructed according to permit conditions established by the Lower Thames Valley Conservation Authority. Refer to the appropriate sections of the LUG C&M Manual 2020. No vehicle or equipment refuelling within 30 metres of a watercourse or drainages, unless otherwise approved by Enbridge Gas Environment. Clean up of all watercourse and drainage crossings shall be completed to the satisfaction of the conservation authority and Environmental Inspector.

● Driveway Crossing. Access will be maintained to private and commercial properties at all times. Signage will be used to indicate detours or alternative entrances, if required, in consultation with the landowner.

MITIGATION MAP

FIGURE 12
Map 2 OF 3

- Existing Enbridge Station
- + Tie-in Location
- Customer Station (Proposed)
- Preferred Route
- Rail
- Arterial/Collector Road
- Local Road
- Ridge Landfill
- Project Footprint (30 m)
- Study Area (125 m)
- Watercourse
- Waterbody
- Woodland



SCALE 1:5,500
0 25 50 100 m



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR, ENBRIDGE, ESRI, DILLON CONSULTING

MAP CREATED BY: DDR
MAP CHECKED BY: AL
MAP PROJECTION: NAD 1983 UTM Zone 17N



PROJECT: 223276
STATUS: DRAFT
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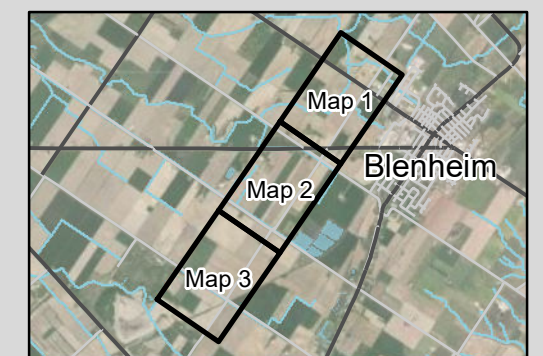
● Potential Crossing of Watercourse or Drainages. Crossing technique (open cut or trenchless) to be determined during construction detailed design process having regard for the engineering technical feasibility of construction and natural features. All watercourses to be crossed shall be prepared and constructed according to permit conditions established by the Lower Thames Valley Conservation Authority. Refer to the appropriate sections of the LUG C&M Manual 2020. No vehicle or equipment refuelling within 30 metres of a watercourse or drainages, unless otherwise approved by Enbridge Gas Environment. Clean up of all watercourse and drainage crossings shall be completed to the satisfaction of the conservation authority and Environmental Inspector.

● Driveway Crossing. Access will be maintained to private and commercial properties at all times. Signage will be used to indicate detours or alternative entrances, if required, in consultation with the landowner.

MITIGATION MAP

FIGURE 12
Map 3 OF 3

- Existing Enbridge Station
- Tie-in Location
- Customer Station (Proposed)
- Preferred Route
- Rail
- Arterial/Collector Road
- Local Road
- Ridge Landfill
- Project Footprint (30 m)
- Study Area (125 m)
- Watercourse
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SCALE 1:5,500



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Road or Rail Crossing. For road or rail crossings, trenchless construction is the preferred crossing technique. Contact the Municipality of Chatham-Kent for road crossing permitting requirements. Enbridge Gas will develop a Traffic Management Plan to ensure that traffic is maintained while crossings are conducted. Flag persons will be provided as required. Refer to the appropriate sections of the LUG C&M Manual 2020.

Potential Crossing of Watercourse or Drainages. Crossing technique (open cut or trenchless) to be determined during construction detailed design process having regard for the engineering technical feasibility of construction and natural features. All watercourses to be crossed shall be prepared and constructed according to permit conditions established by the Lower Thames Valley Conservation Authority. Refer to the appropriate sections of the LUG C&M Manual 2020. No vehicle or equipment refuelling within 30 metres of a watercourse or drainages, unless otherwise approved by Enbridge Gas Environment. Clean up of all watercourse and drainage crossings shall be completed to the satisfaction of the conservation authority and Environmental Inspector.

Driveway Crossing. Access will be maintained to private and commercial properties at all times. Signage will be used to indicate detours or alternative entrances, if required, in consultation with the landowner.

7.0

Cumulative Effects Assessment

The cumulative effects assessment evaluates the significance of residual effects of the Project (i.e., effects remaining after the application of mitigation) in combination with the effects of other existing or proposed projects or developments. The cumulative effects assessment recognizes that while individual actions may not have a significant effect on the physical, natural, or socio-economic environment, multiple actions of a similar nature that occur over an extended period of time may have a significant effect.

7.1

Methods

The cumulative effects assessment was conducted in accordance with the OEB Guidelines and included developing a cumulative effects Study Area with appropriate boundaries.

For the purposes of this assessment, cumulative effects are defined as follows:

- The combination and interaction of effects of the same project;
- The combination and interaction of the effects of the proposed Project with other projects; and,
- The combined effects over time in the same space.

7.1.1.1

Spatial and Temporal Boundaries

Based on Dillon's professional experience, it was determined that the spatial boundaries for the cumulative effects assessment be established as a 10 km radius from the Preferred Route (i.e., 5 km buffer on each side of the route).

Temporal boundaries identified for the assessment include recently constructed projects, projects currently under review, under construction, or planned within three years before or three years following Project construction (i.e., reasonably foreseeable).

7.1.1.2

Criteria for Significance

The same criteria that were used to assess the significance of residual effects were used for the cumulative effects assessment. For the purposes of this assessment, a "significant cumulative effect" is defined as a permanent or long-term cumulative effect of high magnitude that has a high probability of occurrence and cannot be technically or economically mitigated.

7.1.1.3

Identified Projects

A desktop review of various sources was conducted to identify projects within the spatial and temporal boundaries of the cumulative effects assessment. Sources reviewed included the Canadian Impact Assessment Registry (Impact Assessment Agency of Canada 2022), Natural Resources Canada Major

Projects Inventory (Government of Canada 2022b), Investing in Canada Plan Project Map (Infrastructure Canada 2022), Infrastructure Ontario Projects Map (Infrastructure Ontario 2022), Environmental Registry of Ontario (Government of Ontario 2022b), Hydro One Major Projects (Hydro One Networks Inc. 2022), Entegrus Capital Projects (Entegrus 2022), and Chatham-Kent Construction Projects Interactive Project Map (Municipality of Chatham-Kent 2022g).

Specific projects identified within the spatial and temporal boundaries for the cumulative effects assessment are summarized in Table 7; however, the list is not exhaustive. It is anticipated that future and ongoing consultation with the municipality and other key stakeholders may result in the identification of other planned development activities in the cumulative effects assessment boundaries. Enbridge Gas will work to identify efficiencies in regard to timing and coordination of Project construction with other planned developments, where feasible, in order to reduce the cumulative impact.

Table 7: Projects Identified for the Cumulative Effects Assessment

Source	Project Name	Description
Canadian Impact Assessment Registry (Impact Assessment Agency of Canada 2022)	N/A	No projects identified within the spatial or temporal boundaries.
Natural Resources Canada Major Projects Inventory (Government of Canada 2022b)	N/A	No projects identified within the spatial or temporal boundaries.
Investing in Canada Plan Project Map (Infrastructure Canada 2022)	N/A	No projects identified within the spatial or temporal boundaries.
Infrastructure Ontario Projects Map (Infrastructure Ontario 2022)	N/A	No projects identified within the spatial or temporal boundaries.
Environmental Registry of Ontario (Government of Ontario 2022b)	N/A	No projects identified within the spatial or temporal boundaries.
Hydro One Major Projects (Hydro One Networks Inc. 2022)	N/A	No projects identified within the spatial or temporal boundaries.

Source	Project Name	Description
Entegrus Capital Projects (Entegrus 2022)	CN-BLN Chittim	<ul style="list-style-type: none"> • Project Status: In Design • Construction Date(s): 2023 • Project Scope: Removal of poles and installation of pad mounted transformers. • Location: approx. 1 km east of the Preferred Route. The project is located on Chittim Road at the intersection with Fargo Road; just north of McGregor/Kinsmen Park in Blenheim.
Chatham-Kent Construction Projects Map (Municipality of Chatham-Kent 2022g)	T22-183 Chittim Road Watermain Replacement	<ul style="list-style-type: none"> • Project Status: Planned • Construction Date(s): Summer 2022 - Fall 2022 • Project Scope: Upgrade and replace existing watermain, including all service connections and fire hydrants. Restoration, as required. • Location: approx. 1 km east of the Preferred Route. The project will occur from 78 Chittim Road to Fargo Road in Blenheim.
	T20-210 Ellen Street Watermain and Road Improvements	<ul style="list-style-type: none"> • Project Status: Complete • Construction Date(s): August 4, 2020 - Fall 2020 • Project Scope: Ellen and Mountford – watermain, storm sewer and road reconstruction; Tablot Street – watermain • Location: approx. 1.5 km east of the Preferred Route. The project took place on Ellen Street, Mountford Street, and Talbot Street West in Blenheim.
	T22-170 Snow Avenue Reconstruction	<ul style="list-style-type: none"> • Project Status: Planned • Construction Date(s): Summer 2022 - Fall 2022 • Project Scope: Repair existing sanitary sewer, as required; Install new storm sewer, service connections and catch basins; Replace existing watermain, service connections and appurtenances; Reconstruction of the existing asphalt road to meet current Chatham-Kent Development Standards; Replacement of driveway approaches within municipal boulevards, as required by condition or grading; Boulevard grading and restoration, as required. • Location: approx. 2 km east of the Preferred Route. The project will occur on Snow Avenue (King Street to Chatham Street South) in Blenheim.

Source	Project Name	Description
Chatham-Kent Construction Projects Map (Municipality of Chatham-Kent 2022g) (cont'd)	Teksavvy Fibre-to-the-Home Project (Cedar Springs)	<ul style="list-style-type: none"> • Project Status: Complete • Construction Date(s): June 2021 - September 2021 • Project Scope: The installation of fibre communication conduits and grade-level boxes for the fibre-to-the-home project. • Location: approx. 5 km southeast of the Preferred Route. The project work occurred along various local streets in the Community of Cedar Springs.
	Teksavvy Fibre-to-the-Home Project (Blenheim)	<ul style="list-style-type: none"> • Project Status: Varies depending on neighbourhood (Planned / Underway / Complete) • Construction Date(s): 2021-2022 • Project Scope: The installation of fibre communication conduits and grade-level boxes for the fibre-to-the-home project. • Location: approx. 1-2 km east/southeast of the Preferred Route. The project work has/is/will occur along various local streets in Blenheim.

7.2 Analysis of Cumulative Effects

Based on the planned and existing developments identified and the minor predicted residual effects of the Project, it is not likely that there will be a cumulative impact from this Project in conjunction with other projects within the identified spatial and temporal boundaries for the cumulative effects assessment. All of the identified planned and existing developments will occur on urban residential roads in the Town of Blenheim and/or the community of Cedar Springs. None of the planned or existing developments intersect directly with the Project (all are ≥ 1 km away). They are all relatively small in scope and will have localized, short-term effects that are unlikely to be felt simultaneously with the effects of the Project.

The contribution of the Project to cumulative effects on the physical, natural and socio-economic environment is considered negligible at the regional scale. Any residual effects will be short to medium-term during Project activities. As a result, a further assessment of cumulative effects of the Project is not considered warranted on this basis.

8.0

Accidents and Malfunctions

This section provides an overview of potential adverse effects that may result from accidents and malfunctions associated with the Project.

8.1

Accidents and Malfunctions Considered

Accidents and malfunctions are unplanned events that have the potential to result in adverse effects on the environment, should they occur. While the rigorous standards and practices that are in place make accidents or malfunctions unlikely for the Project, the potential consequences are evaluated so that emergency response and contingency planning can be identified to reduce the risk and the severity of the consequences.

Accidents and malfunctions have the potential to occur during all phases of the Project and may include the following:

- Equipment or machinery leaks or other spills; and,
- Pipeline failure during operations resulting in the release of natural gas.

Accidents and malfunctions can result from various unplanned events including equipment failure, human error, natural perils, third-party damage, or vandalism. The assessment of accidents and malfunctions takes into account the type, scale, and location of the Project, the characteristics of the product to be transported, sensitivities in the Study Area, and Enbridge Gas' internal preventative protocols for reducing the likelihood of such events.

Enbridge Gas implements several strategies aimed at preventing potential accidents and malfunctions including:

- Maintaining the pipeline with special pipeline coatings and cathodic protection;
- Patrolling the right-of-way regularly using aircraft, vehicles, and foot patrols; and,
- Monitoring the pipeline remotely and through in-line inspections, integrity digs, and leak surveys.

8.1.1

Equipment or Machinery Leaks or Other Spills

Hazardous materials are a component of vehicles, machinery, and construction equipment and some hazardous materials will be stored onsite during the construction period. Potential contaminants associated with the Project may include gasoline, diesel fuel, lubricants, and hydraulic fuels. If equipment is not properly maintained or if hazardous materials are not stored or handled properly, spills may occur.

8.1.2 Pipeline Failure during Operations

Natural gas is lighter (less dense) than air, is non-toxic, and has low solubility in water. Consequently, natural gas escaping from a minor leak would volatilize to the atmosphere with little potential to adversely affect the surrounding environment.

Pipelines can be damaged by natural events or vandalism, however, more often they are damaged by regular work activities conducted by third parties (e.g., road or utility work). It is a requirement that contractors obtain utility locates prior to any ground disturbance by contacting Ontario One-Call in order to decrease the possibility of accidentally damaging adjacent infrastructure.

Enbridge Gas takes steps to ensure the safe and reliable operation of their natural gas pipelines, including continuously monitoring the entire network and performing regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended. If a natural gas release is detected or reported, Enbridge Gas promptly responds by dispatching a trained response team and isolates and repairs the leak or damage. Vandalism to the Project and response measures are considered in Enbridge Gas' internal protocols.

8.2 Effects Assessment and Significance

The assessment of potential effects and identification of key mitigation measures for accidents and malfunctions is provided in Table 8. Additional mitigation measures can be found in the LUG C&M Manual 2020.

Table 8: Potential Effects, Mitigation Measures, and Potential Residual Effects of Accidents and Malfunctions

Potential Effect(s)	Project Activity	Spatial Boundary	Mitigation Measures	Potential Residual Effect(s)
Equipment or machinery leaks or other spills resulting in contamination of the surrounding environment	Construction or site-specific maintenance during operations (e.g., integrity digs)	Project footprint (i.e., 30 m on either side of the right-of-way)	<ul style="list-style-type: none"> • Equipment and machinery should be kept in good working order and maintained on a regular basis. • Follow safe work procedures when working with, or storing, chemicals. Crews should be properly trained in the handling of wastes. • Immediately contain and clean up spills in accordance with regulatory requirements and Enbridge Gas procedures. • Contractor(s) and construction crews should have appropriate spill containment and hazardous material and response training. • Implement applicable sections of Enbridge Gas' internal protocols for safety, pre-emergency preparedness, and emergency response actions. • Depending on the type/extent and or nature of spill, the following should be contacted: <ul style="list-style-type: none"> - MECP Spills Action Centre at 1-800-268-6060 (out of Province 1-416-325-3000) - MECP Pollution 24-hour public hotline at: 1-866-MOE-TIPS (1-866-663-8477) - Report emergencies by calling 911 (Emergency Services) 	A release of hazardous materials would be immediately contained and recovered. A release of this nature is expected to be avoided, or effectively mitigated, therefore, no residual effects are predicted.

Potential Effect(s)	Project Activity	Spatial Boundary	Mitigation Measures	Potential Residual Effect(s)
Pipeline failure resulting in a release of natural gas	Operations	Study Area (i.e., 125 m on either side of the right-of-way)	<ul style="list-style-type: none"> Implement applicable sections of Enbridge Gas' internal protocols for safety, pre-emergency preparedness and emergency response. 	Depending on the size of the leak and the environmental and socio-economic components that are impacted, the duration of the residual effect may be immediate to long-term and the magnitude may be low to high. The potential residual effects of a leak are reversible with the implementation of remedial measures and residual effects are not likely to be significant.

8.3 Summary of Residual Effects

The likelihood of a significant residual effect is considered low with the implementation of appropriate preventative and mitigation measures. No significant residual effects from accidents and malfunctions are predicted for the Project.

9.0 Effects of the Environment on the Project

This section identifies the potential effects of the environment on the Project.

Potential effects of the environment on the Project are considered unlikely. Enbridge Gas is aware of the range of environmental conditions that may affect the Project and this knowledge has been incorporated into Project planning, design, and proposed mitigation measures to avoid such effects as best as possible. The pipeline will be constructed and operated in accordance with applicable industry standards (e.g., Canadian Standards Association Standard Z662) and regulatory requirements.

9.1 Environmental Conditions Considered

The following environmental conditions were identified as potentially affecting the Project in the Study Area:

- Severe weather events (i.e., heavy or persistent precipitation, extreme temperatures, high winds, or frequent/intense storms [lightning, ice]); and,
- Natural hazards (i.e., seismic activity, flooding).

9.1.1 Severe Weather Events

Severe weather events are increasingly more common as a result of global climate change. Severe weather events may include heavy or persistent precipitation, extreme temperatures, high winds, or frequent/intense storms. These events may, in turn, lead to natural hazards such as flooding or mass wasting events, depending on the location and circumstances.

9.1.2 Natural Hazards

9.1.2.1 Seismic Activity

Shifting of large sections of the earth's crust (tectonic plates) has the ability to cause severe earthquakes and accounts for over 97% of earthquakes worldwide (Natural Resources Canada [NRCan] 2021a). Central and Eastern Canada have a relatively low rate of earthquake activity due to their location in a stable continental region within the North American Plate. Rather than being caused by the shifting of earth's tectonic plates, seismic activity in this zone appears to be related to regional stress fields with earthquake activity concentrated in areas of crustal weakness (NRCan 2021a).

The Project is located within the Southern Great Lakes Seismic Zone (NRCan 2021a) and is in an area with a low seismic hazard rating (NRCan 2021b). No significant earthquakes have been recorded in the Study Area over the past 50 years (NRCan 2022).

9.1.2.2

Flooding

The effects of climate change and severe weather (e.g., heavy or persistent precipitation) can lead to flood events. The Project is in a rural environment dominated by vegetation and natural soils in an area with abundant drainages where storm water is managed to a great extent by natural ground infiltration. Agricultural practices on lands in the Project area can lead to increased runoff depending on the type of farming that is being conducted at the time. Flooding can occur where the natural drainage systems are overwhelmed by inputs either from extreme precipitation, overland flooding from nearby watercourses, accelerated runoff from intensively farmed lands, or some combination thereof, including factors such as snow/ice melt and frozen or saturated ground conditions.

Instances of historical flooding in the Lower Thames River watershed have been associated with major waterbodies such as the Thames River, Lake Erie, and Lake St. Clair (LTVCA 2022). The Project is not located in close proximity to any of these waterbodies (Thames-Sydenham and Region Drinking Water Source Protection Committee 2015).

9.2

Effects Assessment and Significance

The assessment of effects of the environment on the Project is provided in Table 9.

Table 9: Potential Effects, Mitigation Measures, and Potential Residual Effects of Effects of the Environment on the Project

Potential Effect(s)	Project Activity	Spatial Boundary	Mitigation Measures	Potential Residual Effect(s)
<p>Severe weather events (i.e., heavy or persistent precipitation, extreme temperatures, high winds, or frequent/intense storms [lightning, ice]) and natural hazards (i.e., seismic activity, flooding) may affect the Project in the following ways:</p> <ul style="list-style-type: none"> • Delay the Project schedule; • Damage construction equipment; • Increase safety concerns for workers during construction; and • Damage the operating pipeline. 	Construction and Operations	Project footprint and Study Area	<ul style="list-style-type: none"> • Notify the Environmental Inspector in the event mitigation measures identified in the Project-specific Environmental Protection Plan (EPP) are ineffective at avoiding or reducing environmental effects or if alternative measures to address environmental issues are warranted due to site or weather conditions. • Postpone work during severe weather events that may pose a hazard to safety and/or result in damage to Project infrastructure and equipment. • Design and construct the pipeline in accordance with all applicable industry standards (e.g., Canadian Standards Association Standard Z662). • Conduct regular monitoring during O&M in accordance with regulatory requirements. 	With the implementation of mitigation measures, no residual effects are predicted for potential effects of the environment on the Project.

9.3 Summary of Residual Effects

The likelihood of a significant residual effect on the Project is considered low with the implementation of appropriate preventative and mitigation measures. No significant residual effects due to severe weather events or natural hazards are predicted for the Project.

Inspection and Monitoring Recommendations

It is Dillon's recommendation that Enbridge Gas employ the services of an Environmental Inspector to be present as needed during the construction of the pipeline. The Environmental Inspector will provide inspection of Contractor environmental mitigation measures and respond to other environmental issues that may develop during pipeline construction. The Environmental Inspector should be familiar with pipeline construction techniques, the OEB Guidelines, and the implementation of the mitigation recommendations in this ER.

The primary objective of environmental inspection is to determine the effectiveness of mitigation measures (and modify as needed), inspect the construction site and determine compliance with applicable environmental legislation, regulations, industry standards, and project permit conditions, including any notification requirements or conditions set by the OEB. Standard conditions of approval set by the OEB for Enbridge may include:

- Requirements to notify the OEB of any material changes in construction or restoration procedures;
- Notifying the OEB of the expected in-service date, actual in-service date, and completion of construction;
- Filing post-construction interim and final monitoring reports; and,
- Applying a landowner complaint tracking system.

The primary objective of environmental monitoring during construction is to monitor the physical, natural, and socio-economic environment to determine any adverse effects and to verify that the construction site is returned to pre-construction conditions as soon as possible. The purpose of post-construction monitoring is to ascertain the success of the restoration effort and mitigation measures. The knowledge gained from inspection and monitoring can be used in future projects to avoid or minimize similar problems that may arise. Monitoring reports also allow for the collection of quantitative data for the assessment of effects, and to recommend mitigation measures for future projects.

Pre-Construction

A number of activities should be undertaken prior to construction including:

- Acquisition of all necessary permits and approvals;
- The development of a Project-specific Environmental Protection Plan (EPP), including appropriate management and contingency plans (e.g., Waste Management, Traffic Management, Spill Contingency) and Environmental Alignment Sheets with detailed mitigation measures;
- Environmental training for the Contractor. This usually occurs with the Construction Manager and Project Supervisor. The purpose of the training is to educate the construction crew on the key components of the EPP, including the location of sensitive environmental features and associated

mitigation measures including SAR, wetlands, watercourses, and working within residential areas. Other areas of concern along the rights-of-way are also reviewed in the field at this time; and,

- A pictorial record of conditions is compiled to compare restoration efforts with pre-construction conditions.

10.2 Construction

10.2.1 Environmental Inspectors and Monitors

The Environmental Inspector's responsibilities will be to monitor construction with respect to the mitigation and monitoring recommendations outlined in this report, and that construction activities are carried out in compliance with permit conditions.

Environmental Monitors (typically Qualified Professionals) should be used as-needed during construction (e.g., handling wildlife).

A licensed archaeologist or heritage specialist may be required to monitor work in sensitive heritage resource areas, if identified in the archaeology and cultural heritage assessments completed for the Project.

10.2.2 Spill Contingency Plan

A contingency plan for accidental spills should be developed. At a minimum, there should be spill kits on site and a telephone number posted for the MECP Spills Action Centre (1-800-268-6060), which will be reported by Enbridge Environment in the event of a spill. The Environmental Inspector will be trained in Enbridge's spill response protocols and should impart this training at the pre-construction meeting.

10.3 Post-Construction

10.3.1 Monitoring Reports

In order to assess the effectiveness of restoration programs within the rights-of-way used for pipeline construction and, in keeping with the intent of the OEB Guidelines, environmental monitoring reports will be prepared including an Interim Monitoring Report and a Final Monitoring Report. As per OEB Guidelines, the Interim Monitoring Report is required within 3 months after energization, while the Final Monitoring Report is to be prepared no later than 15 months after the in-service date, or, where the deadline falls between December 1 and May 31, the following June 1.

10.3.1.1 Interim Monitoring Report

The following provides an outline of an Interim Monitoring Report based on the OEB Guidelines.

- Describe the predicted effects (including cumulative effects) and mitigation measures;

- Compare predicted effects with those that actually occurred, explaining the reasons for any deviations;
- Outline any changes in the proposed construction, monitoring, or restoration procedures that took place during the Project, and the reason for the changes;
- Discuss the effectiveness of the measures applied and indicate opportunities for improvement in future pipeline projects;
- Provide a log of complaints during construction and the actions taken in response; and,
- Detail any instances where provisions of a local by-law have not been complied with and the reasons for such non-compliance.

10.3.1.2 Final Monitoring Report

The following provides an outline of a Final Monitoring Report based on the OEB Guidelines.

- Describe the condition of the rehabilitated right-of-way and actions taken subsequent to the submission of the Interim Monitoring Report;
- Compare predicted and actual effects (including cumulative effects, mitigation measures, and explain any deviations which may have occurred);
- Report the results of any monitoring programs and analyses such as soil and water sampling, and make recommendations as appropriate;
- Discuss the effectiveness of the mitigation measures as well as the monitoring programs and indicate opportunities for improvement in future pipeline projects;
- Provide a breakdown of environmental costs incurred for the Project. In particular, items of cost associated with specific measures related to pre-construction, construction, or restoration should be described;
- Provide a log of complaints received during construction and the actions taken in response; and,
- Include instances where the provision of any local by-law has not been complied with and the reasons for such non-compliance.

The Final Monitoring Report should also address any potential cumulative effects which may arise for pipelines such as reduced soil productivity, land use restrictions due to increased easement widths, or additional above ground facilities and/or repeated construction through sensitive areas.

Summary and Conclusions

The Study involved undertaking an inventory of physical, natural, and socio-economic features within a defined Study Area. This information was used to produce maps identifying features that could be impacted by pipeline construction and operation. Enbridge selected the PPR and alternative routes for the Study based on environmental and socio-economic concerns, as well as technical and economic feasibility requirements. The Preferred Route is sited in existing, previously disturbed road rights-of-way, which greatly reduces potential adverse effects to the surrounding environment.

Mitigation measures were recommended to reduce potential negative effects to the environment. These recommendations, in combination with the LUG C&M Manual 2020, are anticipated to effectively protect the physical, natural, and socio-economic features along the pipeline route. The mitigation recommendations contained in this report, along with Enbridge Gas' construction policies, should be included in contract specifications. Use of a qualified Environmental Inspector will help reduce disturbance to the environment during pipeline construction activities.

Lastly, preparation of Interim and Final Post-Construction Monitoring Reports and implementation of an Environmental Inspection Program will assist with monitoring the area to determine any changes to the environment from pre-construction conditions following the construction period.

Dillon does not anticipate any significant adverse effects from the construction and operation of the Project with the implementation of the mitigation measures recommended in this report.

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Appendix A

Stage 1 Archaeological Assessment Report

**Stage I Archaeological Assessment
Ridge Landfill RNG Project
Lots 13, 16 -19, Concession 1 East of Communication Road
Lots 12, 13, 16 -19, Concession 1 West of Communication Road
Lots 12, 13, 18 and 19, Concession 2 West of Communication Road
Lot 12-19, Concession 3 West of Communication Road
Lots 13-18, Concession 4 West of Communication Road
Geographic Township of Harwich
Former Kent County
Municipality of Chatham-Kent, Ontario**

Original Report

Submitted to:
Ministry of Heritage, Sport, Tourism and Culture Industries

Prepared for:
Dillon Consulting Limited
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Licensee: Matthew Beaudoin, PhD, P324
PIF No: P324-0713-2022
Project No: 2021-376
Dated: April 18, 2022



EXECUTIVE SUMMARY

In the spring of 2022, TMHC Inc. (TMHC) was contracted by Dillon Consulting Limited (Dillon) to carry out a Stage I archaeological assessment for the Ridge Landfill RNG Project, near Blenheim, Ontario. A new nominal pipe size (NPS) 4-inch extra high pressure (XHP) steel natural gas pipeline may be installed northwest of an existing Enbridge station on Communication Road to the Ridge Landfill on Eriean Road. The Preliminary Preferred Route runs from a location just northwest of the existing Enbridge station on Communication Road for 300 m, then turns south-west and runs along Allison Line for 1.4 km, along Fargo Road for 20 m then continues along Allison Line for 2.8 km, then turns north along Eriean Road for 1.5 km to the customer site. Two alternative routes were also evaluated as part of the Stage I assessment. The first begins southwest of the intersection of Drury Line and Huffman Road, following Drury Line southwest for approximately 5.5 km to Eriean Road then proceeding southeast to the customer site and the second begins at a location on Communication Road approximately 1.5 km southeast of the intersection with Drury Line, proceeds northwest to Drury Line then proceeds southwest to Eriean Road then southeast to the customer site.

The Project area, which encompasses all three route options, will be within the existing municipal right-of-way (ROW) of Communication Road, Allison Line, Fargo Road, Drury Line and Eriean Road with a 10 m buffer around the routes to capture any required work areas that fall outside of the ROW. The Project area lies within part of Lots 13, 16-19, Concession 1 East of Communication Road, Lots 12, 13, 16-19, Concession 1 West of Communication Road, Lots 12, 13, 18 and 19, Concession 2 West of Communication Road, Lot 12-19, Concession 3 West of Communication Road and Lots 13-18, Concession 4 West of Communication Road, Geographic Township of Harwich, Municipality of Chatham-Kent, Ontario. The work was undertaken in accordance with the provisions of the *Environmental Assessment Act* and the *Provincial Policy Statement (PPS)*.

The purpose of the assessment was to determine whether there was potential for the discovery of archaeological resources within the Project area. The Stage I background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, potential for the discovery of archaeological sites is indicated by the presence of or proximity (within 300 m) to:

- an area of 19th century settlement (Blenheim);
- watercourses (numerous natural and artificial drainage);
- 19th century travel routes (Eriean Road, Allison Line, Lagoon Road, Fargo Road, Communication Road, Chatham Street North, Allison Line, Drury Line, Huffman Road and Middle Line); and
- mapped 19th century structures.

As the Project area contained several features signaling archaeological potential, a Stage I property inspection was conducted to evaluate the current conditions of the Project area and determine if any areas of archaeological potential remained intact within the Project area. Based on this investigation the following recommendations are made:

- Areas of Previous Assessment:
 - All previously assessed portions of the Project area where no further assessment was recommended do not require further assessment (1.27 ha; 2.0%).



- Areas of Low Archaeological Potential:
 - All portions of the Project area identified as extensively disturbed do not retain archaeological potential and do not require further assessment (38.34 ha; 59.9%).
 - All portions of the Project area identified as low and permanently wet do not retain archaeological potential and do not require further assessment (0.04 ha; 0.1%).
- Stage 2 Methodologies:
 - Once the Preliminary Preferred Route alternative is determined, a more detailed review of existing conditions should be undertaken, alongside a comparison to archaeological potential mapping provided in this report (Maps 12 to 38).
 - In keeping with provincial standards, the agricultural fields should be ploughed for pedestrian survey; however, for any impact areas that are linear corridors less than 10 m wide, test pit survey can be undertaken (as per Section 2.1.2 Standard 1.f.).
 - In keeping with the provincial standards, the non-ploughable areas must be subject to test pit assessment. In both cases, a 5 m transect interval is recommended to achieve the provincial standard.
- Changes to Extent of Project Area:
 - If the extent of the Project Area or route alternatives change to incorporate lands not addressed in this study, further assessment will be required.

Our recommendations are subject to the conditions laid out in Section 7.0 of this report and to the MHSTCI's review and acceptance of this report into the provincial registry.



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PROJECT PERSONNEL

Project Manager	Matthew Beaudoin, PhD (P324)
Project Administrators	Victoria Scott, MA, MLis Kellie Theaker
GIS Mapping	David Gostick, BA
Report Production	Kelly Gostick, MA (PI 189)
Researcher	Kelly Gostick, MA (PI 189)
Field Director	Kelly Gostick, MA (PI 189)
Senior Review	Matthew Beaudoin, PhD (P324)

ACKNOWLEDGEMENTS

Alissa Lee	Dillon Consulting Limited
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TERRITORIAL ACKNOWLEDGEMENT

This archaeological assessment is being completed on land that has been inhabited by and cared for by people Indigenous to Turtle Island since time immemorial. We recognize and respect the historic connection to and harmonious stewardship by the Indigenous peoples over this shared land and, as such, we have a responsibility to preserve and care for the land, learn from the original inhabitants and move forward together in the spirit of healing, reconciliation and partnership.



ABOUT TMHC

Established in 2003, with a head office in London, Ontario, TMHC Inc. (TMHC) provides a broad range of archaeological assessment, heritage planning, and consultation services throughout the Province of Ontario. We provide consulting services for Indigenous communities, municipal heritage planning and training, public outreach and educational programs, and have established specialties in community engagement, cemetery investigations, faunal analysis, and large and sensitive projects. Since TMHC's inception, we have evolved with the needs of our clients, the demands of the regulatory environment, and the growth in the industry.

Since 2004, TMHC has held retainers with Infrastructure Ontario (formerly the Ontario Realty Corporation), Hydro One, the Ministry of Transportation and the City of Hamilton. Presently, TMHC was successfully added to the Infrastructure Ontario, Ministry of Transportation, Hydro One, Metrolinx, and Niagara Parks retainers. In addition, TMHC has successfully managed a wider variety of highly sensitive, large, and complicated projects and have a proven track record in successfully managing and navigating them to completion. In 2013, TMHC earned the Ontario Archaeological Society's award for Excellence in Cultural Resource Management.

KEY STAFF BIOS

Matthew Beaudoin, PhD, Principal/Manager – Archaeological Assessments

Matthew Beaudoin received a PhD in Anthropology from Western University in 2013 and became a Principal at TMHC in 2019. During his archaeological career, Matthew has conducted extensive field research and artifact analysis on Indigenous and Settler sites from Labrador and Ontario. In addition, Matthew has also conducted ethnographic projects in Labrador. Since joining TMHC in 2008, Matthew has been involved with several notable projects, such as the Imperial Oil's Waterdown to Finch Project, the Camp Ipperwash Project, and the Scugog Island Natural Gas Pipeline Project.

Matthew is an active member of the Canadian Archaeological Association, the Ontario Archaeological Association, the Ontario Historical Society, the World Archaeology Congress, the Council for Northeastern Historical Archaeology, the Society for American Archaeology, and the Society for Historical Archaeology.



STATEMENT OF QUALIFICATIONS AND LIMITATIONS

The attached Report (the “Report”) has been prepared by TMHC Inc. (TMHC) for the benefit of the Client (the “Client”) in accordance with the agreement between TMHC and the Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”);
- represents TMHC’s professional judgment in light of the Limitation and industry standards for the preparation of similar reports;
- may be based on information provided to TMHC which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and section thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement

TMHC shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. TMHC accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

TMHC agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but TMHC makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Except (1) as agreed to in writing by TMHC and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

TMHC accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information (“improper use of the Report”), except to the extent those parties have obtained the prior written consent of TMHC to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.



QUALITY INFORMATION

Report prepared by:

Kelly Gostick, MA (PI 189)

Staff Archaeologist/Project Manager

Report reviewed by:

Matthew Beaudoin, PhD (P324)

Principal/Manager of Archaeological Assessment



I PROJECT CONTEXT

I.1 Development Context

I.1.1 Introduction

In the spring of 2022, TMHC Inc. (TMHC) was contracted by Dillon Consulting Limited (Dillon) to carry out a Stage I archaeological assessment for the Ridge Landfill RNG Project, near Blenheim, Ontario. A new nominal pipe size (NPS) 4-inch extra high pressure (XHP) steel natural gas pipeline may be installed northwest of an existing Enbridge station on Communication Road to the Ridge Landfill on Erieau Road. The Preliminary Preferred Route runs from a location just northwest of the existing Enbridge station on Communication Road for 300 m, then turns south-west and runs along Allison Line for 1.4 km, along Fargo Road for 20 m then continues along Allison Line for 2.8 km, then turns north along Erieau Road for 1.5 km to the customer site. Two alternative routes were also evaluated as part of the Stage I assessment. The first begins southwest of the intersection of Drury Line and Huffman Road, following Drury Line southwest for approximately 5.5 km to Erieau Road then proceeding southeast to the customer site and the second begins at a location on Communication Road approximately 1.5 km southeast of the intersection with Drury Line, proceeds northwest to Drury Line then proceeds southwest to Erieau Road then southeast to the customer site.

The Project area, which encompasses all three route options, will be within the existing municipal right-of-way (ROW) of Communication Road, Allison Line, Fargo Road, Drury Line and Erieau Road with a 10 m buffer around the routes to capture any required work areas that fall outside of the ROW. The Project area lies within part of Lots 13, 16-19, Concession 1 East of Communication Road, Lots 12, 13, 16-19, Concession 1 West of Communication Road, Lots 12, 13, 18 and 19, Concession 2 West of Communication Road, Lot 12-19, Concession 3 West of Communication Road and Lots 13-18, Concession 4 West of Communication Road, Geographic Township of Harwich, Municipality of Chatham-Kent, Ontario. The work was undertaken in accordance with the provisions of the *Environmental Assessment Act* and the *Provincial Policy Statement (PPS)*. The purpose of the assessment was to determine whether there was potential for the discovery of archaeological resources within the Project area.

All archaeological assessment activities were performed under the professional archaeological license of Matthew Beaudoin, Ph.D. (P324) and in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Permission to commence the study was given by Alissa Lee of Dillon.



1.1.2 Purpose and Legislative Context

The *Ontario Heritage Act* (R.S.O. 1990) makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the *Provincial Policy Statement* (PPS 2020) which states:

development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.

In the PPS, the term conserved means:

the identification, protection, management and use of *built heritage resources, cultural heritage landscapes* and *archaeological resources* in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision-maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.

The *Environmental Assessment Act* provides for the protection and conservation of the environment. In this case, the environment is widely defined to cover “cultural heritage” resources. Section 5(3)(c) of the Act stipulates that heritage resources to be affected by a proposed undertaking be identified during the environmental screening process. Within the EA process, the purpose of a Stage I background study is to determine if there are known cultural resources within the proposed Project area, or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites.

The Stage I archaeological assessment work was conducted in accordance with Section 4.3.4 Cultural Heritage Resources in the *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (OEB 2016) and the 2020 PPS. The purpose of a Stage I background study is to determine if there are known cultural resources within the proposed areas of impact or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites. If significant sites are found, a strategy (usually avoidance, preservation, or excavation) must be put forth for their mitigation.



2 STAGE I BACKGROUND REVIEW

2.1 Research Methods and Sources

A Stage I overview and background study was conducted to gather information about known and potential cultural heritage resources within the Project area. According to the *Standards and Guidelines*, a Stage I background study must include a review of:

- an up-to-date listing of sites from the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) PastPortal for 1 km around the Project area;
- reports of previous archaeological fieldwork within a radius of 50 m around the Project area;
- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historical settlement maps (e.g., historical atlas, survey);
- archaeological management plans or other archaeological potential mapping when available; and,
- commemorative plaques or monuments on or near the property.

For this project, the following activities were carried out to satisfy or exceed the above requirements:

- a database search was completed through MHSTCI's PastPortal system that compiled a list of registered archaeological sites within 1 km of the Project area (completed March 2, 2022)
- a review of known prior archaeological reports for the property and adjacent lands;
- Ontario Base Mapping (1:10,000) was reviewed through ArcGIS and mapping layers provided by geographynetwork.ca;
- detailed mapping provided by the client was also reviewed; and
- a series of historic maps and photographs was reviewed related to the post-1800 land settlement.

Additional sources of information were also consulted, including modern aerial photographs, local history accounts, soils and physiographic data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), and both 1:50,000 (Natural Resources Canada) and finer scale topographic mapping.

When compiled, background information was used to create a summary of the characteristics of the Project area, in an effort to evaluate its archaeological potential. The Province of Ontario (MTC 2011; Section 1.3.1) has defined the criteria that identify archaeological potential as:

- previously identified archaeological sites;
- water sources;
 - primary water sources (e.g., lakes, rivers, streams, creeks);
 - secondary water sources (e.g., intermittent streams and creeks, springs, marshes, swamps);
 - features indicating past water sources (e.g., glacial lake shorelines, relic river or stream channels, shorelines of drained lakes or marshes, cobble beaches);
 - accessible or inaccessible shorelines (e.g., high bluffs, sandbars stretching into a marsh);
- elevated topography (e.g., eskers, drumlins, large knolls, plateau);
- pockets of well-drained sandy soils;
- distinctive land formations that might have been special or spiritual places (e.g., waterfalls, rock outcrops, caverns, mounds, promontories and their bases);



- resource areas, including:
 - food or medicinal plants (e.g., migratory routes, spawning areas, prairies);
 - scarce raw materials (e.g., quartz, copper, ochre, or chert outcrops);
 - early Settler industry (e.g., fur trade, logging, prospecting, mining);
- areas of early 19th-century settlement, including:
 - early military locations;
 - pioneer settlement (e.g., homesteads, isolated cabins, farmstead complexes);
 - wharf or dock complexes;
 - pioneer churches;
 - early cemeteries;
- early transportation routes (e.g., trails, passes, roads, railways, portage routes);
- a property listed on a municipal register, designated under the *Ontario Heritage Act*, or that is a federal, provincial, or municipal historic landmark or site; and,
- a property that local histories or informants have identified with possible archaeological sites, historical event, activities, or occupations.

In Southern Ontario (south of the Canadian Shield), any lands within 300 m of any of the features listed above are considered to have potential for the discovery of archaeological resources.

Typically, a Stage I assessment will determine potential for Indigenous and 19th-century period sites independently. This is due to the fact that lifeways varied considerably during these eras, so the criteria used to evaluate potential for each type of site also varies.

It should be noted that some factors can also negate the potential for discovery of intact archaeological deposits. The *Standards and Guidelines* (MTC 2011; Section 1.3.2) indicates that archaeological potential can be removed in instances where land has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. Major disturbances indicating removal of archaeological potential include, but are not limited to:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints; and,
- sewage and infrastructure development.

Some activities (agricultural cultivation, surface landscaping, installation of gravel trails, etc.) may result in minor alterations to the surface topsoil but do not necessarily affect or remove archaeological potential. It is not uncommon for archaeological sites, including structural foundations, subsurface features and burials, to be found intact beneath major surface features like roadways and parking lots. Archaeological potential is, therefore, not removed in cases where there is a chance of deeply buried deposits, as in a developed or urban context or floodplain where modern features or alluvial soils can effectively cap and preserve archaeological resources.



2.2 Project Context: Archaeological Context

2.2.1 Project area: Overview and Physical Setting

Enbridge is planning for the Ridge Landfill RNG Project, near Blenheim, Ontario (Maps 1 and 2). The Project involves the installation of a new natural gas pipeline from an area northwest of an existing Enbridge station on Communication Road to the Ridge Landfill on Erieau Road. Three route alternatives have been considered: 1) Preliminary Preferred Route – runs from a location just northwest of the existing Enbridge station on Communication Road for 300 m, then turns south-west and runs along Allison Line for 1.4 km, along Fargo Road for 20 m then continues along Allison Line for 2.8 km, then turns north along Erieau Road for 1.5 km; 2) Alternative 1 – 7.7 km between the Ridge Landfill site on Erieau Road to Drury Line, extending to 1.3 km north of Communication Road; and 3) Alternative 2 – 7.9 kms between the Ridge Landfill site to Drury Line to Communication Road, extending 1.5 km east of Drury Line. The Project area falls within the Geographic Townships of Harwich, in the Municipality of Chatham-Kent. The Project area is rural in nature and comprises roadways, ROWs, and adjacent grassed and agricultural fields.

2.2.2 Physiography

The Project area falls within the St. Clair Clay Plains physiographic region, as defined by Chapman and Putnam (1984:147-151; Map 3). The region consists of an extensive system of clay plains covering some 2,270 square miles east of the St. Clair River and south of the Lake Huron shoreline (Chapman and Putnam 1984:147). The plain shows very little notable relief yet minor elevation changes have a marked effect on soils and vegetation. The St. Clair Clay Plain was formerly the bed of glacial lakes Whittlesey and Warren and the former shorelines of these ancient water bodies have been documented along the eastern edge of the plain, near Alvinston and Watford. The Project area falls within bevelled till plains and glacial beaches. The Glacial Lake Warren Beach shoreline lies approximately 1 km southeast of the Project area. The Charring Cross Moraine lies approximately 100 m northwest of the Project area.

2.2.3 Soils

Given the fact that much of the Project area was a former lake bed, the soils within the vicinity of the Project area are primarily imperfectly- to poorly-draining types that have developed on lacustrine deposits (Map 4). Three soils types are present within the Project area: Brookston Clay, Perth Loam, and Kintyre Sandy Loam. Brookston Clay is a dark grey gleisolic soil derived from lacustro-morainic materials and limestone parent material with some shale (Richards et al. 1949:24). Perth Loam is a grey-brown podsolic soil derived from lacustro-morainic materials and limestone parent material with some shale (Richards et al. 1949:24). Kintyre Sandy Loam is a well-draining soil developed on lacustrine deposits (Schut 1992:22). Artificial drainage is essential given the flat topography of the area and the clay soils. Massive ditches have been cut across and alongside properties to allow suitable drainage for agriculture. The underlying bedrock is limestone.



2.2.4 Drainage

The Project area is within the Lower Thames River watershed and the area is drained by watercourses, tributaries and subsidiary artificial drains that flow south to Lake Erie (Map 1). The Project area is drained by many artificial drainage channels. From north to south the artificial drains within the Project area are the Proctor Drain, the Lucas Drain, Cookson Drain, Locke Drain, Jackson Drain, Walker Drain, McGregor Drain, Cameron Drain, Barfoot Drain and Gales Drain. The Lucas Drain is likely a channelized drain of a former watercourse as seen on the 1880 historic map (Map 13).

Overall, the heavy soils and flat topography throughout this part of Kent County, derived from its origin as a glacial lake bed, encourage relatively poor drainage conditions. Artificial drains, dredge cuts and deep, open ditches are common features on the landscape as a result and significantly supplement the natural drainage provided by existing watercourses. Alongside the installation of tile drains, these drainage improvements have been imperative for enhancing the agricultural productivity of farmland (Richards et al. 1949:14).

2.2.5 Summary of Registered or Known Archaeological Sites

According to PastPortal (accessed March 2, 2022) there are seven registered archaeological sites within 1 km of the Project area (Table 1). All of these sites were identified in the 1980s to 2010s as part of cultural resource management projects. AbHm-2 is the closest site to the Project area and is located approximately 450 m to the southwest. AbHm-2 consisted of a biface and two flakes and was recommended for further assessment.

Table 1: Registered Archaeological Sites within 1 km of the Project area

Borden Number	Site Name	Time Period	Affinity	Site Type	Status
AbHm-30	Location 4	Archaic, Early	Aboriginal	findspot	No Further CHVI
AbHm-29		Post-Contact	Euro-Canadian	farmstead	Further CHVI
AbHm-28		Woodland	Aboriginal	findspot	No Further CHVI
AbHm-27	Ridge Location 1	Pre-Contact	Aboriginal	scatter	No Further CHVI
AbHm-22	AbHm-22-P5	Archaic, Early			
AbHm-2	Erieau	Pre-Contact	Aboriginal	scatter	
AbHm-1	Charing Cross	Pre-Contact	Aboriginal	findspot	



2.2.6 Summary of Past Archaeological Investigations within 50 m

During the course of this study, it was established that six previous archaeological assessments have occurred within 50 m of the Project area (Maps 5 to 9). These were identified through a review of TMHC corporate records, industry knowledge, and MHSTCI records. However, it should be noted that the MHSTCI currently does not provide an inventory of archaeological assessments to assist in this determination. A summary of these studies and their recommendations are provided below.

2.2.6.1 Ridge Landfill Expansion – Dillon 1997, ASI 2017, Stantec 2019a, 2019b, 2020 (Maps 5-8, SD Maps 1 and 2)

Between 1995 and 1998 Dillon Consulting Limited (under the direction of John MacDonald and Bruce Stewart) conducted Stage 2 archaeological assessments for the Ridge Landfill Expansion. The Stage 2 was conducted in 1995 to 1997 and consisted of test pit and pedestrian survey at a 5 m interval. The survey identified three small 19th century scatters and one non-diagnostic lithic findspot, all of which were considered not to retain further cultural heritage value or interest. The Stage 2 also identified the Charing Cross (AbHm-1) and Erieau (AbHm-2) sites within the proposed landfill expansion area. AbHm-1 consisted of a projectile point base and AbHm-2 consisted of a biface and two flakes. Abhm-2 was recommended for further assessment while the other sites were not. A portion of this project area covers the current study area. The results of the Stage 2 assessment are presented in a report entitled *BFI Ridge Landfill, Archaeological Assessment of Expansion Site Stage 2: Archaeological Assessment* (Dillon 1997; 95-066, 96-031, 97-072).

In 2017 ASI conducted a Stage 1 assessment for the proposed expansion of the Ridge Landfill near the community of Blenheim in the Municipality of Chatham-Kent. The Stage 1 assessment determined that parts of the study area retains archaeological potential and Stage 2 assessment was recommended. This project is located adjacent to the current Project area. The results of the Stage 1 assessment are presented in a report entitled *Stage 1 Archaeological Assessment, Ridge Landfill Expansion, Part of Lots 13-25, Concession 1-4 West of Communication Road and Part of Lots 19-25, Concession 1 East of Communication Road (Former Township of Harwich, County of Kent), Municipality of Chatham-Kent* (ASI 2017; Licensee Jessica Lytle; PIF P1066-0026-2017).

In 2019 Stantec was contracted to conduct a Stage 2 archaeological assessment for the proposed Ridge Landfill Expansion Project. Stage 2 was conducted for three areas, totally approximately 66.4 ha that were determined to have archaeological potential based on the Stage 1 assessment. The Stage 2 assessment consisted of test pit survey at 5 m intervals and resulted in the documentation of one Indigenous site, AbHm-27. AbHm-27 consisted of 21 Indigenous artifacts from six test pits, one test unit and nine surface artifacts over a 75 by 38 m area. The site was recommended for Stage 3 assessment. The ploughed fields within the project area were not subject to Stage 2 assessment at this time, so they retain archaeological potential and should be subject to Stage 2 assessment at a later date. AbHm-27 is located within the current study area. The results of the Stage 2 assessment are presented in a report entitled *Stage 2 Archaeological Assessment: Proposed Ridge Landfill Expansion, Part of Lots 13, 14 and 16, Concession 4 West of Communication Road, Township of Harwich, County of Kent now Municipality of Chatham-Kent* (Stantec 2019a; Licensee Peter Popkin; PIF P362-0250-2019).

Later in 2019 Stantec returned to the project area to complete the Stage 2 assessment for the proposed Ridge Landfill Expansion Project. The remaining Stage 2 assessment consisted of pedestrian and test pit survey at a 5 m interval. The Stage 2 assessment resulted in the documentation of three additional sites: AbHm-28, AbHm-29 and AbHm-30. AbHm-28 is an isolated Woodland period projectile point. AbHm-29 is a 19th century site



consisting of 155 artifacts over a 123 by 57 m area. Based on the artifacts recovered the site dates from the mid-19th century to the early 20th century. AbHm-30 is an isolated Early Archaic period projectile point. Both AbHm-29 and AbHm-30 were recommended for Stage 3 assessment while AbHm-28 was not recommended for further work. The results of the Stage 2 assessment are presented in a report entitled *Stage 2 Archaeological Assessment: Proposed Ridge Landfill Expansion – Additional Assessment, Part of Lots 13, 14 and 16, Concession 4 West of Communication Road, Township of Harwich, County of Kent now Municipality of Chatham-Kent* (Stantec 2019b; Licensee Peter Popkin; PIF P362-0261-2019).

Also in 2019 Stantec conducted Stage 3 assessments for AbHm-27 and AbHm-30. The assessment of AbHm-27 consisted of the excavation of 67 units resulting in the recovery of 133 Indigenous artifacts including 120 pieces of chipping detritus, 10 utilized flakes and three retouched flakes. No further work was recommended for AbHm-27 based on low unit counts. The Stage 3 assessment of AbHm-30 consisted of the excavation of six units resulting in the recovery of one piece of chipping detritus. No further work was recommended for AbHm-30. The results of the Stage 3 assessment are presented in a report entitled *Stage 3 Archaeological Assessment: Location 1 (AbHm-27) and Location 4 (AbHm-30), Proposed Ridge Landfill Expansion, Part of Lots 13, 14 and 16, Concession 4 West of Communication Road, Township of Harwich, County of Kent now Municipality of Chatham-Kent* (Stantec 2020; Licensee Peter Popkin; PIF P362-0281-2019 and P362-0282-2019).

2.2.6.2 Stage I Archaeological Assessment- Talbot Trail (Map 9)

In 2022, TMHC conducted a Stage I archaeological assessment for the Municipal Class Environmental Assessment (EA) as part of the Talbot Trail Realignment project. The Stage I study area was comprised of a portion of Talbot Trail stretching west of Campbell Road to just east of Gore Road, between the communities of Wheatley and Blenheim. This study area is within 50 m of the current study area. The results of the Stage I assessment are presented in a report entitled *Stage I Archaeological Assessment, Municipal Class EA, Talbot Trail Realignment, Various Lots and Concession, Geographic Townships of Harwich, Raleigh, Tilbury East and Romney, Former Kent County, Municipality of Chatham-Kent, Ontario* (TMHC 2022; Licensee Matthew Beaudoin; PIF P324-0710-2022).

2.2.7 Date of Archaeological Fieldwork

The property inspection was conducted by Kelly Gostick (PI 189) on March 15, 2022 in a mix of sun and clouds and cool weather conditions. The weather conditions allowed for good visibility for the inspection of the surface features. Light snow was present in some ditches but did not impede the visual inspection of the Project area.



2.3 Project Context: Historical Context

2.3.1 Indigenous Settlement in Kent County

While numerous archaeological surveys have been undertaken for portions of Kent County in advance of wind and other energy projects, little systematic archaeological assessment has taken place within the immediate environs of the Project area. As such, our knowledge of the Indigenous occupation in the general area is incomplete. Nevertheless, using province-wide and region-specific data, a generalized cultural chronology for Indigenous settlement in Kent County can be proposed (Table 2). A summary of the themes and temporal periods of Indigenous occupation is provided below.

Table 2: Chronology of Indigenous Settlement in the Kent County

Period	Time Range	Diagnostic Features	Archaeological Complexes
Early Paleo	9000-8400 BCE	fluted projectile points	Gainey, Barnes, Crowfield
Late Paleo	8400-8000 BCE	non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Early Archaic	8000-6000 BCE	serrated, notched, bifurcate base points	Nettling, Bifurcate Base Horizon
Middle Archaic	6000-2500 BCE	stemmed, side & corner notched points	Brewerton, Otter Creek, Stanly/Neville
Late Archaic	2000-1800 BCE	narrow points	Lamoka
Late Archaic	1800-1500 BCE	broad points	Genesee, Adder Orchard, Perkiomen
Late Archaic	1500-1100 BCE	small points	Crawford Knoll
Terminal Archaic	1100-950 BCE	first true cemeteries	Hind
Early Woodland	950-400 BCE	expanding stemmed points, Vinette pottery	Meadowood
Middle Woodland	400 BCE-500 CE	dentate, pseudo-scallop pottery	Couture
Transitional Woodland	500-900 CE	first corn, cord-wrapped stick pottery	Riviere au Vase/Algonquin
Late Woodland	900-1300 CE	first villages, corn horticulture, longhouses	Younge/Algonquin
Late Woodland	1300-1400 CE	large villages and houses	Springwell/Algonquin
Late Woodland	1400-1650 CE	tribal emergence, territoriality	Wolf/Algonquin
Contact Period - Indigenous	1700 CE-present	treaties, mixture of Indigenous & European items	Three Fires Confederacy, Attawandaron, Wendat, Odawa, Wenro
Contact Period - Settler	1796 CE-present	industrial goods, homesteads	pioneer life, municipal settlement



2.3.1.1 Paleo Period

The first human populations to inhabit Kent County arrived between 12,000 and 10,000 years ago, coincident with the end of the last period of glaciation. Climate and environmental conditions were significantly different than they are today; local environs would not have been welcoming to anything but short-term settlement. Termed Paleoindians by archaeologists, Ontario's Indigenous peoples would have crossed the landscape in small groups (i.e., bands or family units) searching for food, particularly migratory game species. In this area, caribou may have provided the staple of the Paleo period diet, supplemented by wild plants, small game, birds and fish.

Given the low density of populations on the landscape at this time and their mobile nature, Paleo period sites are small and ephemeral. They are sometimes identified by the presence of fluted projectile points manufactured on a highly distinctive whitish-grey chert named "Fossil Hill" (after the formation) or "Collingwood." This material was acquired from sources near the edge of the escarpment on Blue Mountain.

2.3.1.2 Archaic Period

Settlement and subsistence patterns changed significantly during the Archaic period as both the landscape and ecosystem adjusted to the retreat of the glaciers. Building on earlier patterns, early Archaic period populations continued the mobile lifestyle of their predecessors. Through time and with the development of more resource rich local environments, these groups gradually reduced the size of the territories they exploited on a regular basis. A seasonal pattern of warm season riverine or lakeshore settlements and interior cold weather occupations has been documented in the archaeological record.

Since the large cold weather mammal species that formed the basis of the Paleo period subsistence pattern became extinct or moved northward with the onset of warmer climate conditions, Archaic period populations had a more varied diet, exploiting a range of plant, bird, mammal and fish species. Reliance on specific food resources like fish, deer and nuts becomes more pronounced through time and the presence of more hospitable environments and resource abundance led to the expansion of band and family sizes. In the archaeological record, this is evident in the presence of larger sites and aggregation camps, where several families or bands would come together in times of plenty. The change to more preferable environmental circumstances led to a rise in population density. As a result, Archaic sites are more plentiful than those from the earlier period. Artifacts typical of these occupations include a variety of stemmed and notched projectile points, chipped stone scrapers, ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets), bifaces or tool blanks, animal bone (where and when preserved) and waste flakes, a by-product of the tool making process.

2.3.1.3 Early, Middle and Transitional Woodland Periods

Significant changes in cultural and environmental patterns are witnessed in the Woodland period (c. 950 B.C.E.-1700 C.E.). By this time, the coniferous forests of earlier times were replaced by stands of mixed and deciduous species. Occupations became increasingly more substantial in this period, culminating in major semi-permanent villages by 1,000 years ago. Archaeologically, the most significant changes by Woodland times are the appearance of artifacts manufactured from modeled clay and the construction of house structures. The Woodland period is often defined by the occurrence of pottery, storage facilities and residential areas similar to those that define the incipient agricultural or Neolithic period in Europe.

Early and Middle Woodland period peoples are also known for a well-developed burial complex and ground stone tool industry. Unique Early Woodland period ground stone items include pop-eyed birdstones and



gorgets. In addition, there is evidence of the development of widespread trading with groups throughout the northeast. The recovery of marine shells from the Lake Superior area indicates that exchanges of exotic materials and finished items from distant places were commonplace.

2.3.1.4 Late Woodland Period

By the Late Woodland period there was a distinctive cultural occupation of the western portion of Ontario, including Essex, Kent and Lambton counties plus some portions of neighbouring ones as well. The primary Late Woodland occupants of the Windsor area assigned by archaeologists to the Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with people in southeastern Michigan and northwestern Ohio, and represented an *in situ* cultural development from the earlier Middle Woodland peoples. The Western Basin Tradition seems to have been centred in the territory of the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. Murphy and Ferris (1990) refute an Iroquoian affiliation for Western Basin, and instead favour an Algonquian designation. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes. The four phases are: Riviere au Vase, Younge, Springwells, and Wolf. Table 4 below is extracted from the Windsor Archaeological Master Plan (CRM Group Ltd. et al. 2005:2-13).



Table 3: The Four Phases of the Western Basin Tradition

Phase	Date	Settlement and Subsistence	Pottery
Riviere au Vase	A.D. 600-900	<ul style="list-style-type: none"> - developed directly from the Middle Woodland Couture complex - seasonal mobility geared toward resource availability - summer base camps by lakeshores, fall/winter in interior - no corn or beans present 	<ul style="list-style-type: none"> - Wayne ware: small, thin walled, vertical cord-marking - later wares are tool impressed
Younge	A.D. 900-1200	<ul style="list-style-type: none"> - corn and beans present - settlement & subsistence continues as before with focus on warm season gathering of groups and winter dispersals 	<ul style="list-style-type: none"> - pottery is larger, more elaborately decorated - body of vessels are corded, coarsely & irregularly - multiple bands of tool impression
Springwells	A.D. 1200-1400	<ul style="list-style-type: none"> - larger more permanent warm season settlements - longhouses & palisades present - more intensive horticulture - locations near arable lands, and along the shorelines of marshes, river and lakes - possible use wattle & daub 	<ul style="list-style-type: none"> - ceramics large & bag-shaped - collars & castellated rims decorated with horizontal bands of incised or impressed decoration - roughened, self slip & ribbed paddle surfaces first appear
Wolf	A.D. 1400-1600	<ul style="list-style-type: none"> - few examples of sites known - distribution limited to around Lake St. Clair, St. Clair River - large warm weather villages, often fortified by earthworks - nature of these sites is attributed to the westward expansion of Ontario Iroquoians that resulted in abandonment by the Western Basin peoples in the early 1600s 	<ul style="list-style-type: none"> - diagnostic characteristic of Wolf phase is Parker Festooned pottery - undulating bands of dentate stamped impressions or stamped applique strips on vessel necks - after A.D. 1500 most vessels with strap handles & notched lips or notched horizontal rim strips, plus shell temper

* Table information from the Windsor Archaeological Master Plan (CRM Group Ltd. et al. 2005: 2-13)



2.3.2 Treaty History

The Project area is encompassed by the McKee Purchase (Treaty No. 2). The treaty was signed May 19, 1790 between the Deputy Agent of Indian Affairs—Alexander McKee, and 27 chiefs of local Ojibwa, Odawa, Pottawatomie, and Wendat nations (Canada 1891; Surtees 1984). The treaty covered a significant area including what became Elgin, Kent, and Essex counties along the north shore of Lake Erie including the entirety of West Tilbury and Rochester Townships in Essex County, and East Tilbury, Raleigh, and Harwich Townships in Kent County. At the time of signing, only two reserves were created. What became known as the Huron and the Huron Church Reserves near Windsor were the domain of all signatories (Surtees 1984). During the 19th century, the reserves ostensibly became Wendat territory and were gradually sold off until the Anderdon Wendat dissolved their Canadian status (Canada 1891).

The traditional territories of several contemporary Anishinaabe First Nations encompass the Project area including Aamjiwnaang First Nation, Chippewas of the Thames First Nation and Walpole Island First Nation (Bkejwanong). The traditional territory of Caldwell First Nation, a Chippewa nation who did not sign Treaty No. 2, also encompasses the Project area. Caldwell First Nation settled their outstanding land claim with the federal government in 2010-11 (Canada 2020).

2.3.3 Nineteenth-Century and Municipal Settlement

The Project area falls within the Geographic Townships of Harwich in Kent County. A brief discussion of early 19th century and municipal settlement in these places is provided below and provides the context for evaluating historic era archaeological potential.

The earliest non-Indigenous settlement in this portion of Kent counties focused on the northern shores of Lake Erie, Lake St. Clair, and the Thames River. The Lake Erie environs, alongside most of southwestern Ontario, were claimed by the King of France on March 23, 1670 (Lajeunesse 1960:xxxiii). French missionaries and fur traders were some of the first Europeans to travel through what is now southern Ontario and their knowledge facilitated French military and economic efforts, including the establishment of fortifications on the Detroit River. The earliest formal land surveys in the counties were along the lakeshore and employed the French system of establishing long lots with narrow water frontages. Following the establishment of British control over the land, the Crown recognized Indigenous title to the land by way of proclamation in 1764 (Lajeunesse 1960:cix).

2.3.3.1 Kent County

One of the first recorded settlers in Kent County and in the vicinity of Chatham was “Sally” (Sarah) Aitse (Hands), an active trader and diplomat (Dictionary of Canadian Biography Online 2012). She is thought to be of Oneida origin, although some references also note she once declared to be Shawnee. Regardless, Aitse came to the Thames River from Detroit, although she was born and raised in the Susquehanna River valley. In 1787 Aitse came to Kent County and by 1788 she had negotiated with the local Ojibwa groups the purchase of 150 square miles of land from the mouth of the Thames to the forks in what is now the City of Chatham (at Tecumseh Park). Through this, she became the municipality’s first major “landholder.” She constructed a house on Lot 10, Concession I of Dover East Township. Aitse was once the wife of British “Indian interpreter” Andrew Montour and later John Willson, a prominent trader. Before coming to the Thames River, Sally had established herself as an active trader in the Western District, having operated out of Detroit.



Ainse's arrival in the area was concurrent with concerted early efforts by the British Crown to acquire lands and encourage settlement along the river (H. Belden & Co. 1880:45). In 1790, representatives of many local native groups, including Chippewa and Mississauga, were summoned by the King of England to Detroit to discuss the King's desire to purchase lands along the Thames River. This eventually resulted in the signing of the McKee Treaty of the same year that saw the British acquisition of lands along the river. The transfer was not without problems, as the ownership of many land parcels came under immediate dispute due to previous agreements made between First Nations representatives, early settlers and land speculators (Hamil 1951; Jacobs 1983). Sally Ainse's prior land purchase was one such parcel under dispute. In 1890 she had petitioned to Governor Lord Dorchester to obtain legal title to her property; however, the lands fell squarely within the area covered under the McKee Treaty despite claims from herself and local chiefs that her property was exempt from the treaty provisions. Ainse's appeal was originally denied, likely due to the fact that hers was some of the most valuable and productive land in the area. However, an order was later made for her to be given clear title to some 1,673 acres (only a fraction of her initial parcel) after influential lobbying by Sir John Johnson (Superintendent General of Indian Affairs), Joseph Brant (*Thayendanegea* Mohawk Chief), and Lieutenant Governor John Graves Simcoe. The Executive Council denounced the order and Ainse was never given title or compensation.

Following the McKee Treaty, land grants were made, primarily to discharged British soldiers and other United Empire Loyalists who fled the American colonies following the war of independence (H. Belden & Co. 1880:45). The majority of early settlement in Kent County focused on the lakeshore and along the Thames River, so named by Lieutenant-Governor John Graves Simcoe in 1792. Early on, the river provided one of the only means of travel and transport through the uncleared forests. Its hinterlands were desirable for habitation as they were generally elevated and drier than the swampy, uncleared interior and former lake bed between the river and the lakeshore. Prior to the establishment of British control, some lands in Kent County were surveyed according to the old French system that saw the establishment of long, linear lots with narrow frontages oriented to shorelines (Lauriston 1952). The first major Crown-commissioned survey by the British was conducted by Patrick McNiff, who established lots and concessions along the Thames River in 1790 and 1791. McNiff's survey notes recorded 28 settler families along the river below present-day Chatham. He noted that in the area of the forks the woodland extended no more than 30 acres, often less, with the plains and marshes beyond being largely uninhabitable.

McNiff was also very impressed with the "Forks" of the river at what is now Chatham, noting that it should be considered as a potential town site; McNiff's recommendation is thought to have strongly influenced Lieutenant-Governor Simcoe's planning (Lauriston 1952). The establishment of the *Canada Act* in 1791 saw the appointment of Lieutenant-Colonel John Graves Simcoe as Lieutenant-Governor of Upper Canada. Simcoe quickly set out to make his mark, especially on sparsely populated areas to the west of the Grand River. He studied the few available surveys for these areas, including McNiff's survey of the Thames River. Simcoe quickly developed a plan for colonizing wilderness areas, heavily based on using the Thames as a major transportation route. He proposed making London as the new capital of Upper Canada, and developing a city at the lower forks of the Thames called Chatham. Like the Chatham in Simcoe's English homeland, this was envisioned as a place of shipbuilding and military defense positioning (Lauriston 1952). In February 1793 Governor Simcoe traveled the Thames enroute to Detroit. Shortly thereafter he authorized the laying out of a 600 acre town site on the Thames River, situated where the river meets McGregor Creek. Recognizing the specific strategic importance of the point of land at the junction of the Thames River and McGregor Creek, the land of present-day Tecumseh Park was set aside as a military reserve and shipbuilding yard. The City of



Chatham essentially began as a naval dockyard, as in 1794 the government established a shipyard near the foot of Victoria Avenue (H. Belden & Co. 1880:50).

2.3.3.2 Harwich Township

Upon the arrival of early land surveyors in Harwich, Ojibway and Potawatomi populations had established significant settlements along the Lake Erie shoreline (Lauriston 1952:268). The earliest survey of Harwich Township used the Lake Erie shore as a baseline (L.E. – Lake Erie survey). Heading north, the survey ran into difficulties given the alignment of the baseline with the Thames River. Separate surveys were made adjacent to Communication Road (ECR – East of Communication Road and WCR – west of Communication Road) and the river (River Thames Survey - RT). Communication Road was an important military road early on, connecting the Thames River at Chatham with Rondeau Bay along Lake Erie. The section of the road between Chatham and what is now Blenheim was opened by 1844 (Armstrong 1985:7).

Early pioneers, mostly United Empire Loyalists and discharged military men, established homesteads along the Thames River in the northern portion of Harwich Township. Records indicated that certificates for river side lots were issued as early as 1792 (Hamil 1951:18). In that year Thomas Clark settled along the Thames River near Chatham (H. Belden & Co. 1880:53). Settlement proceeded further east along the river in subsequent years. The back concessions were not cleared and settled until slightly later. This was due largely to the fact that much of the township land was tied up in Crown and clergy reserves or held by land speculators and absentee landholders, many of which were army and navy officers who were given substantial grants of between 1,200 and 3,000 acres each (Hamil 1951:28). Much of the township along the lakeshore continued to be inhabited by Pottawatomi and Ojibway peoples up to circa 1820.

Harwich Township was first surveyed in 1795, although only a portion of it was completed at that time. Ibraham Iredell, the township's first surveyor, was given instructions to clear a "road of communication" between the Chatham settlement and Rondeau and to lay out 200 acre lots on both sides for settlement of loyal British subjects (H. Belden & Co. 1880:53). However, even by 1844, Communication Road had not reached the lakeshore. The earlier Upper Talbot Road began construction in 1811 (Armstrong 1985). Near Blenheim, Upper Talbot followed an earlier Indigenous trail (Armstrong 1985:25).

Generally speaking, the earlier settled areas away from Communication Road and other early transportation routes and apart from the Lake Erie shoreline in Harwich were those centred on the prominent southwest-northeast trending ridge, which offered sandier and loamier soils than the hard clays of the former glacial lake bottom. The portion of Harwich falling along the Raleigh Township boundary was one of the last portions of the township to be settled (Lauriston 1952:268), largely due to a lack of well-established roads in this area.

As with other early Kent and Essex County townships, lumbering was a focal point of early Harwich industry as many centres developed first as milling sites along major watercourses. One such milling site was on McGregor Creek west of Communication Road, on Lot 27, Concession I west of Communication Road, on property owned by W.J. Richardson in 1876. It was the impetus for the development of a small community that would come to be known as Bridgend (or Bridge End or Kent Centre), where the McLeans, McGarvins and Smiths would establish homesteads. The community had a post office by 1866 with Ann Warner as postmaster (McEvoy & Co. 1866-67). The 1880 map of the township shows a hotel on the east side of Communication Road, alongside McMahons store (Map 27). The inn was a strategic stopping point for travellers at the junction of Communication Road and an early trail that travelled east along McGregor's Creek (now Pinehurst Line) (Armstrong 1985:19).



2.3.3.3 History of Blenheim

The site of Blenheim was a strategic location on Communication Road, between the Thames River in Chatham and Rondeau Bay to the south. Prior to 1850, much of the land within the town site was held by a Scottish speculator, Albert Robertson. In 1833, Richard De Clute (D'Chute) purchased 70 acres from Robertson in the area that is now Blenheim. The land was sold again in 1837 to Colonel James W. Little, who was responsible for dividing the site into village lots. The first lot in the town site was not sold until 1839. Many of the earliest settlers were Scots. In 1843/1844 a log school building was erected on the north side of Talbot Road, in the east end of the town. The first church in Blenheim was erected in 1846 on Chatham Street and was used by Methodists and Presbyterians at different times. In 1845 a general store was opened by Walter and Robert Bass and Samuel Brundage ran an inn. The community's first post office was opened in 1849 (Armstrong 1985:33-35).

Located in the interior of Harwich, Blenheim grew more slowly than river- and lake-side settlements. Before the turn of the 20th century, its major industry was lumbering. By 1857/58, the community boasted sawmills, cabinet makers, blacksmiths and supporting businesses. It had general stores, a shoe store, four inns, and a tailor shop. A new frame school had been erected by that time (Armstrong 1985:78). After 1860, the town grew steadily as new families arrived and businesses opened. The town was incorporated as a village in 1874 (Armstrong 1985:78).

2.3.4 Nineteenth Century Land Use History and Map Review

The Project area lies within part of Lots 13, 16-19, Concession 1 East of Communication Road, Lots 12, 13, 16-19, Concession 1 West of Communication Road, Lots 12, 13, 18 and 19, Concession 2 West of Communication Road, Lot 12-19, Concession 3 West of Communication Road and Lots 13-18, Concession 4 West of Communication Road, Geographic Township of Harwich, Municipality of Chatham-Kent, Ontario. A review of 19th-century mapping was completed, the results of which are presented in Tables 4 and 5.

Shackleton and McIntosh's 1876 *Map of the County of Kent, Canada West* indicates that the area was heavily settled by this time (Map 10). Table 4 lists the owners and occupants of the lots at this time, as well as any structures depicted on the lots. The community of Blenheim is present to the east of the Project area. Several historic transportation routes are present and open at this time including Eriean Road, Allison Line, Lagoon Road, Fargo Road, Communication Road, Chatham Street North, Allison Line, Drury Line, Huffman Road and Middle Line. The Canada Southern Railway lies west of the Project area. A small unnamed watercourse is present in the northern portion of the Project area at this time.

The 1880 H. Belden and Co. *Illustrated Historical Atlas of the Counties of Essex and Kent, Ont.* illustrates that few changes have occurred within the Project area from the 1876 map. Fewer owners or occupants are depicted on this map, likely a result of subscription fees to have your name appear in the historic atlas. Only lots with names or structures are listed in Table 5 (Map 11).



Table 4: Landowners and Structures Depicted on 1876 Map

Lot	Con.	Township	Name	Structure in Project area
12	1 WCR	Harwich	J. Gardner & J. Lane	none
13	1 WCR	Harwich	T.K. Morris & J. Knight	none
16	1 WCR	Harwich	R. Knapp, J. Kitchen & S. McCumming	none
17	1 WCR	Harwich	J. Vester & J. Nicha7	none
18	1 WCR	Harwich	R.A. Tompkins	none
19	1 WCR	Harwich	R. Huffman	none
12	2 WCR	Harwich	N.H. Stevens	none
13	2 WCR	Harwich	D.J. Van Velsor	none
18	2 WCR	Harwich	n/a	none
19	2 WCR	Harwich	n/a	none
12	3 WCR	Harwich	n/a	none
13	3 WCR	Harwich	A. Sawyer, T.J. Blakman & A. Allison	none
14	3 WCR	Harwich	McGregor, H. McPherson & R.J. McGregor	none
15	3 WCR	Harwich	n/a	none
16	3 WCR	Harwich	D. Walker & T Gales	none
17	3 WCR	Harwich	J & W Walker	none
18	3 WCR	Harwich	T & W Knott	none
19	3 WCR	Harwich	T. Bennett & J. Hutchinson	none
13	4 WCR	Harwich	S. Irving	none
14	4 WCR	Harwich	Keefer	none
15	4 WCR	Harwich	J. Drury	none
16	4 WCR	Harwich	H. White & T. Pardec	none
17	4 WCR	Harwich	C & J White	none
18	4 WCR	Harwich	J. Broadbent	none
13	1 ECR	Harwich	G. Barton & G. Lucas	none
16	1 ECR	Harwich	D. Knapp & J. Proctor	none
17	1 ECR	Harwich	A. Breathour & J. Greenwood	none
18	1 ECR	Harwich	J Barker, J. Boyle & J. Proctor	none
19	1 ECR	Harwich	D. Rice, D. Barker	none

Table 5: Landowners and Structures Depicted on 1880 Map

Lot	Con.	Township	Name	Structure in Project area
17	1 WCR	Harwich	Jno. Vester	House
18	1 WCR	Harwich	William Blair?	House
16	1 ECR	Harwich	D. McKenzie & J E. Proctor	House

2.3.5 Built Heritage Environment

There are no designated heritage properties or plaques within 50 m of the Project area.



3 STAGE I PROPERTY INSPECTION

As the Project area was in proximity to several features signaling archaeological potential, a Stage I property inspection was conducted to evaluate the current conditions of the Project area and its integrity.

The property inspection was conducted on March 15, 2022 in a mix of sun and clouds and cool weather. The weather conditions allowed for good visibility for the inspection of the surface features. The property inspection involved the recording and photo-documentation of the field conditions. Although still winter, there was no snow covering the surface of the Project area, except in some ditches. The field review began at the southern end of Communication Road and continues clockwise around the Project area.

3.1 Communication Road – South End (Map 12; Images 1 and 2)

Communication Road is a two laned paved roadway with wide gravel shoulders and three residential properties. Two utility stations are present on both sides of the road at the proposed start of the pipeline. Both sides of Communication Road are ditched with subsurface utilities present as well as above ground hydro in the ROW (Images 1 and 2). Outside the ROW is grassed or agricultural field and contains archaeological potential.

3.2 Allison Line (Maps 12-19; Images 3 to 19)

Allison Line is a two laned paved and gravel roadway with gravel shoulders, ditched ROW and seven residential properties. Allison Line between Communication Road and Fargo Road is ditched within the ROW with hydro poles present on the west side of the ROW (Images 3-8). Between Fargo Road and Lagoon Road the ROW is also ditched with hydro poles present on the west side (Images 9-13). South of Lagoon Road Allison Line becomes a two laned gravel road with ditches and above and below ground utilities (Images 14-19). Outside the ROW is grassed or agricultural field and contains archaeological potential.

3.3 Eriean Road (Maps 19-25; Images 20 to 29)

Eriean Road between Allison Line and Drury Line is a two laned paved roadway with gravel shoulders and one residential property. The ROW and 10 m buffer on the south side of Eriean Road is a wide channelized drain and the north side is also ditched with above ground hydro (Images 20-25). Grassed and agricultural fields are present in some portion of the 10 m buffer on the north side of Eriean Road.

West of the customer site, the ROW on the north side of Eriean Road is a wide, deep channelized drain (Images 26 and 28) while the south side is ditched (Image 27 and 29). Outside the ROW is grassed or agricultural field and contains archaeological potential.

3.4 Drury Line (Maps 25-35; Images 30 to 51)

Drury Line between Eriean Road and Communication Road is a two laned paved road with gravel shoulders and nine residential properties. Ditches are present on both sides of the road and above and below ground utilities are also found within the ROW (Images 30-45). Lands outside the ROW are agricultural fields or grassed or treed and retain archaeological potential.



West of Fargo Road Drury Line becomes a gravel two lane roadway with moderate ditches and above and below ground utilities. Agricultural fields are present on both sides of Drury Line that encroach into the ROW on the west side of the road (Image 46-51) and retain archaeological potential.

3.5 Communication Road – North End (Maps 33,36-38; Images 52 to 59)

The northern portion of Communication Road is a two laned paved roadway with wide gravel shoulders and 14 residential properties. The ROW along Communication Road is ditched with above and below ground utilities (Images 52-59). Outside the ROW is grassed or agricultural field and contains archaeological potential.

All files are currently being stored at the TMHC corporate office located at 1108 Dundas Street, Unit 105, London, ON N5W 3A7 (Table 6).

Table 6: Documentary Records

Date	Field Notes	Field Maps	Digital Images
March 15, 2022	Digital and hard copies	Digital and hard copies	180 Images



4 ANALYSIS AND CONCLUSIONS

As noted in Section 2.1, the Province of Ontario has identified numerous factors that signal the potential of a property to contain archaeological resources. The Stage I background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, potential for the discovery of archaeological sites is indicated by the presence of or proximity (within 300 m) to:

- an area of 19th century settlement (Blenheim);
- watercourses (numerous natural and artificial drainage);
- 19th century travel routes (Erieau Road, Allison Line, Lagoon Road, Fargo Road, Communication Road, Chatham Street North, Allison Line, Drury Line, Huffman Road and Middle Line); and
- mapped 19th century structures.

As the Project area contained several features signaling archaeological potential, a Stage I property inspection was conducted to evaluate the current conditions of the Project area and determine if any areas of archaeological potential remained intact within the Project area. The Stage I property inspection has visually confirmed that the majority of the Project area is considered extensively disturbed (38.34 ha) or wet (0.04 ha) and no longer retains archaeological potential. These areas have been photo-documented. A small portion of the Project area outside the ROW has been previously assessed (1.27 ha) and does not require further assessment. Areas outside of the ROW are grassed or agricultural fields (24.41 ha) and retain archaeological potential and should be subject to Stage 2 assessment. In keeping with provincial standards, the portions of the Project area that consist of unploughable land are recommended for test pit assessment. A 5 m transect interval is recommended to achieve the provincial standard.

The results of our Stage I archaeological assessment, as well as the location and orientation of report photographs, are presented on Maps 12 to 38. No detailed proponent mapping was provided for this study. Instead, the information was provided as a GIS shape file. For that reason, our Stage I findings are not illustrated on a proponent map per se.



5 RECOMMENDATIONS

A Stage I archaeological assessment was conducted for the Ridge Landfill RNG Project, near Blenheim, Ontario. Approximately 6 to 8 km of new natural gas pipeline is required to connect the proposed RNG customer station to the existing Enbridge gas distribution system, with three potential routes identified travelling along Communication Road, Allison Line, Erieau Road and Drury Line.

Based on the Stage I background research and property inspection, the following recommendations apply:

- Areas of Previous Assessment:
 - All previously assessed portions of the Project area where no further assessment was recommended do not require further assessment (1.27 ha; 2.0%).
- Areas of Low Archaeological Potential:
 - All portions of the Project area identified as extensively disturbed do not retain archaeological potential and do not require further assessment (38.34 ha; 59.9%).
 - All portions of the Project area identified as low and permanently wet do not retain archaeological potential and do not require further assessment (0.04 ha; 0.1%).
- Stage 2 Methodologies:
 - Once the Preliminary Preferred Route alternative is determined, a more detailed review of existing conditions should be undertaken, alongside a comparison to archaeological potential mapping provided in this report (Maps 12 to 38).
 - In keeping with provincial standards, the agricultural fields should be ploughed for pedestrian survey; however, for any impact areas that are linear corridors less than 10 m wide, test pit survey can be undertaken (as per Section 2.1.2 Standard 1.f.).
 - In keeping with the provincial standards, the non-ploughable areas must be subject to test pit assessment. In both cases, a 5 m transect interval is recommended to achieve the provincial standard.
- Changes to Extent of Project Area:
 - If the extent of the Project Area or route alternatives change to incorporate lands not addressed in this study, further assessment will be required.

Our recommendations are subject to the conditions laid out in Section 7.0 of this report and to the MHSTCI's review and acceptance of this report into the provincial registry.



6 SUMMARY

A Stage I archaeological assessment was conducted for the Ridge Landfill RNG Project, near Blenheim, Ontario. Approximately 6 to 8 km of new NPS 4-inch steel pipeline will be installed between a location northwest of the existing Enbridge station on Communication Road and the Ridge Landfill on Erieau Road. The background research indicated that the Project area was in proximity to features signaling archaeological potential and a Stage I property inspection was undertaken. The Stage I property inspection has visually confirmed that the majority of the Project area is considered extensively disturbed (38.34 ha) or wet (0.04 ha) and no longer retains archaeological potential. These areas have been photo-documented. A small portion of the Project area outside the ROW has been previously assessed (1.27 ha) and does not require further assessment. Areas outside of the ROW are grassed or agricultural fields (24.41 ha) and retain archaeological potential and should be subject to Stage 2 assessment. In keeping with provincial standards, the portions of the Project area that consist of unploughable land are recommended for test pit assessment. A 5 m transect interval is recommended to achieve the provincial standard.



7 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the MHSTCI as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the Project area of a development proposal have been addressed to the satisfaction of the 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 for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.

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

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and Crystal Forrest, A/Registrar of Burial Sites, Ontario Ministry of Government and Consumer Services. Her telephone number is 416-212-7499 and e-mail address is Crystal.Forrest@ontario.ca.



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9 IMAGES

Image 1: Communication Road ROW - Ditched

Looking East



Image 2: Communication Road ROW – Ditched and Subsurface Utilities

Looking West



Image 3: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 4: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 5: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 6: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 7: Allison Line ROW – Ditched, Above and Below Ground Utilities

Looking Southwest



Image 8: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 9: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 10: Allison Line ROW – Ditched

Looking Southwest



Image 11: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 12: Allison Line ROW – Ditched

Looking Southwest



Image 13: Median in Allison Line – Disturbed and Above Ground Utilities

Looking Southwest



Image 14: Allison Line ROW – Ditched

Looking Southwest



Image 15: Allison Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 16: Allison Line ROW – Ditched, Above and Below Ground Utilities

Looking Northeast



Image 17: Allison Line ROW – Ditched, Above and Below Ground Utilities

Looking Southwest



Image 18: Allison Line ROW – Ditched and Above Ground Utilities

Looking Northeast



Image 19: Allison Line ROW – Ditched and Above Ground Utilities

Looking Northeast



Image 20: Erieau Road ROW – Ditched and Above Ground Utilities

Looking West



Image 21: Erieau Road ROW – Ditched and Above Ground Utilities

Looking West



Image 22: Erieau Road ROW – Ditched and Above Ground Utilities

Looking East



Image 23: Erieau Road ROW – Ditched

Looking West



Image 24: Erieau Road ROW – Ditched

Looking East



Image 25: Erieau Road ROW – Ditched and Utilities Outside ROW

Looking West



Image 26: Erieau Road ROW – Ditched

Looking East



Image 27: Erieau Road ROW – Ditched

Looking West



Image 28: Erieau Road ROW – Ditched

Looking East



Image 29: Erieau Road ROW – Ditched

Looking East



Image 30: Drury Line ROW - Ditched

Looking Northeast



Image 31: Drury Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 32: Drury Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 33: Drury Line ROW – Ditched
Looking Northeast



Image 34: Drury Line ROW – Ditched
Looking Northeast



Image 35: Drury Line ROW – Ditched

Looking Northeast



Image 36: Drury Line ROW – Ditched

Looking Northeast



Image 37: Drury Line ROW – Ditched

Looking Northeast



Image 38: Drury Line ROW – Ditched

Looking Northeast



Image 39: Drury Line ROW – Ditched and Above Ground Utilities

Looking Southwest



Image 40: Drury Line ROW – Ditched and Below Ground Utilities

Looking Southwest



Image 41: Drury Line ROW – Ditched

Looking Northeast



Image 42: Drury Line ROW – Ditched and Above Ground Utilities

Looking Northeast



Image 43: Drury Line ROW – Ditched and Above Ground Utilities

Looking Northeast



Image 44: Drury Line ROW – Ditched

Looking Southwest



Image 45: Drury Line ROW – Ditched and Below Ground Utilities

Looking Southwest



Image 46: Drury Line ROW – Ditched and Below Ground Utilities

Looking Northeast



Image 47: Drury Line ROW – Ditched and Above Ground Utilities

Looking Northeast



Image 48: Drury Line ROW - Ditched and Below Ground Utilities

Looking Southwest



Image 49: Drury Line ROW - Ditched

Looking Northeast



Image 50: Drury Line ROW – Ditched, Above and Below Ground Utilities

Looking Southwest



Image 51: Drury Line ROW – Ditched and Below Ground Utilities

Looking Southwest



Image 52: Communication Road ROW – Ditched and Above Ground Utilities

Looking East



Image 53: Communication Road ROW - Ditched

Looking East



Image 54: Communication Road ROW – Ditched and Above Ground Utilities

Looking East



Image 55: Communication Road ROW – Ditched

Looking East



Image 56: Communication Road ROW – Ditched and Below Ground Utilities

Looking West



Image 57: Communication Road ROW – Ditched and Above Ground Utilities

Looking West



Image 58: Communication Road ROW – Ditched and Above Ground Utilities

Looking West



Image 59: Communication Road ROW – Ditched and Above Ground Utilities

Looking West

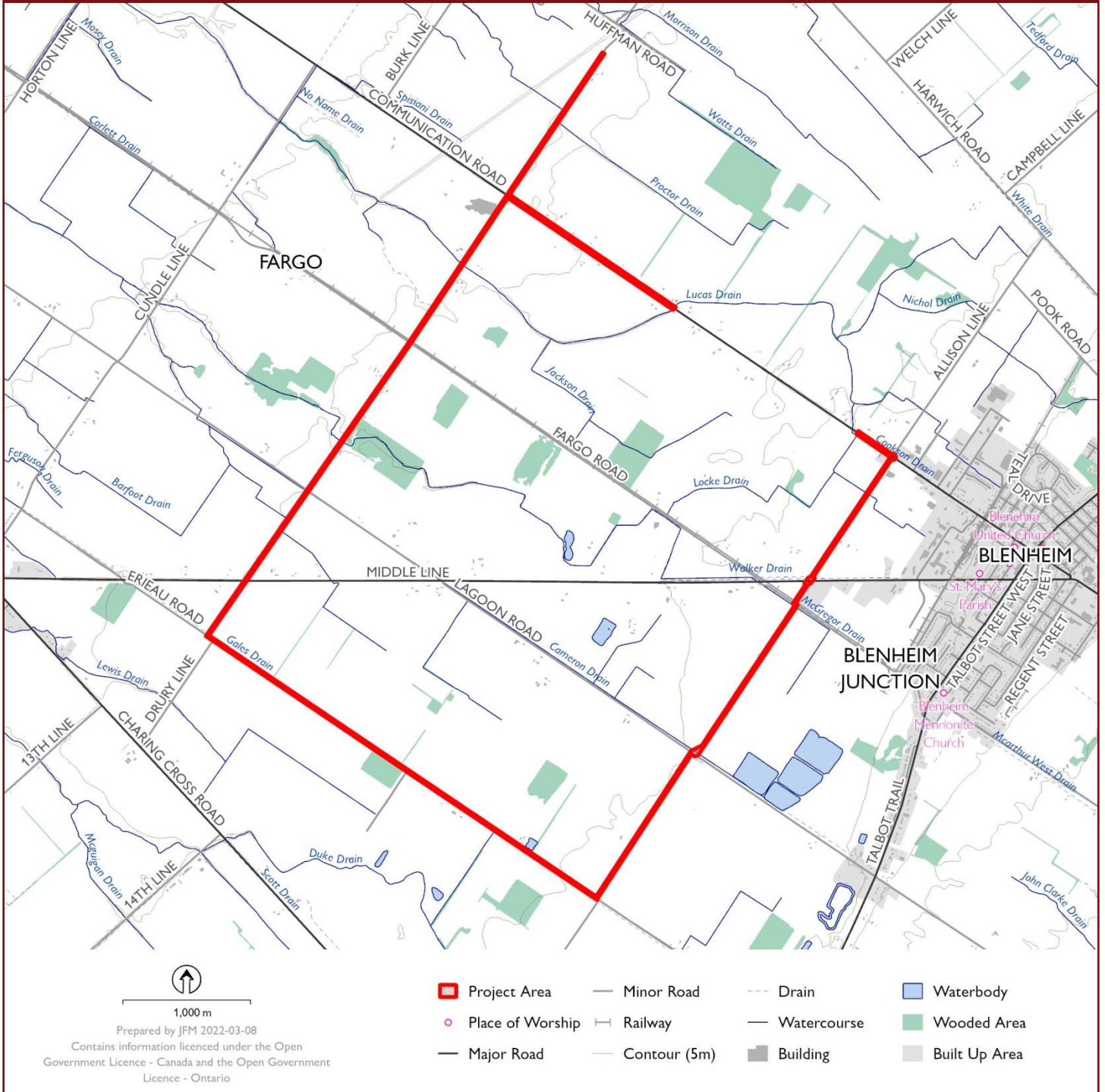




10 MAPS



PROJECT LOCATION



Map I: Location of the Municipality of Chatham-Kent, ON



AERIAL PHOTOGRAPHY

County of Chatham-Kent Orthophotography



1,000 m

Prepared by DG 2022-03-08

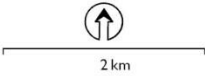
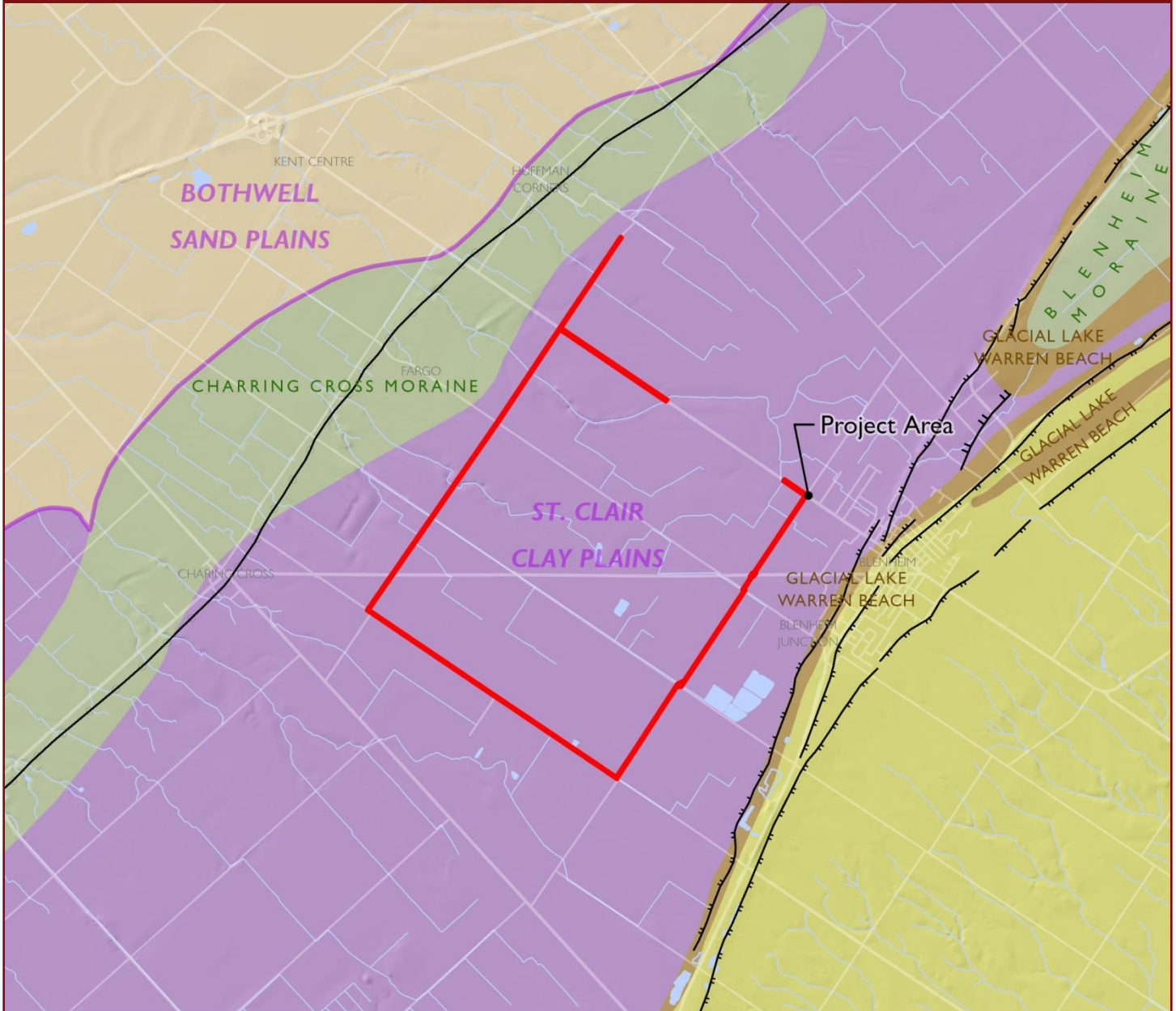
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 Project Area

Map 2: Aerial Photograph Showing the Location of the Project Area

PHYSIOGRAPHY

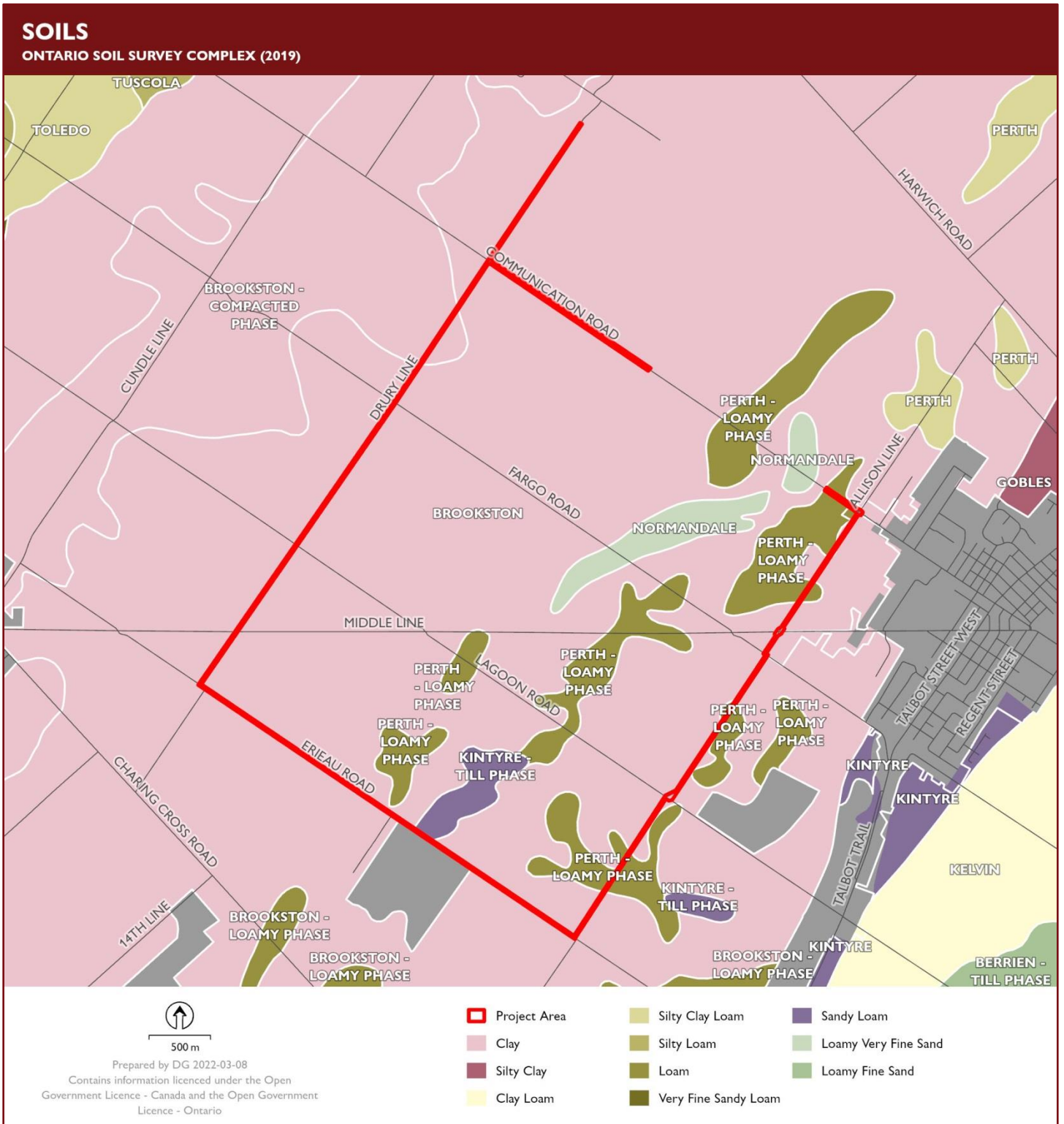
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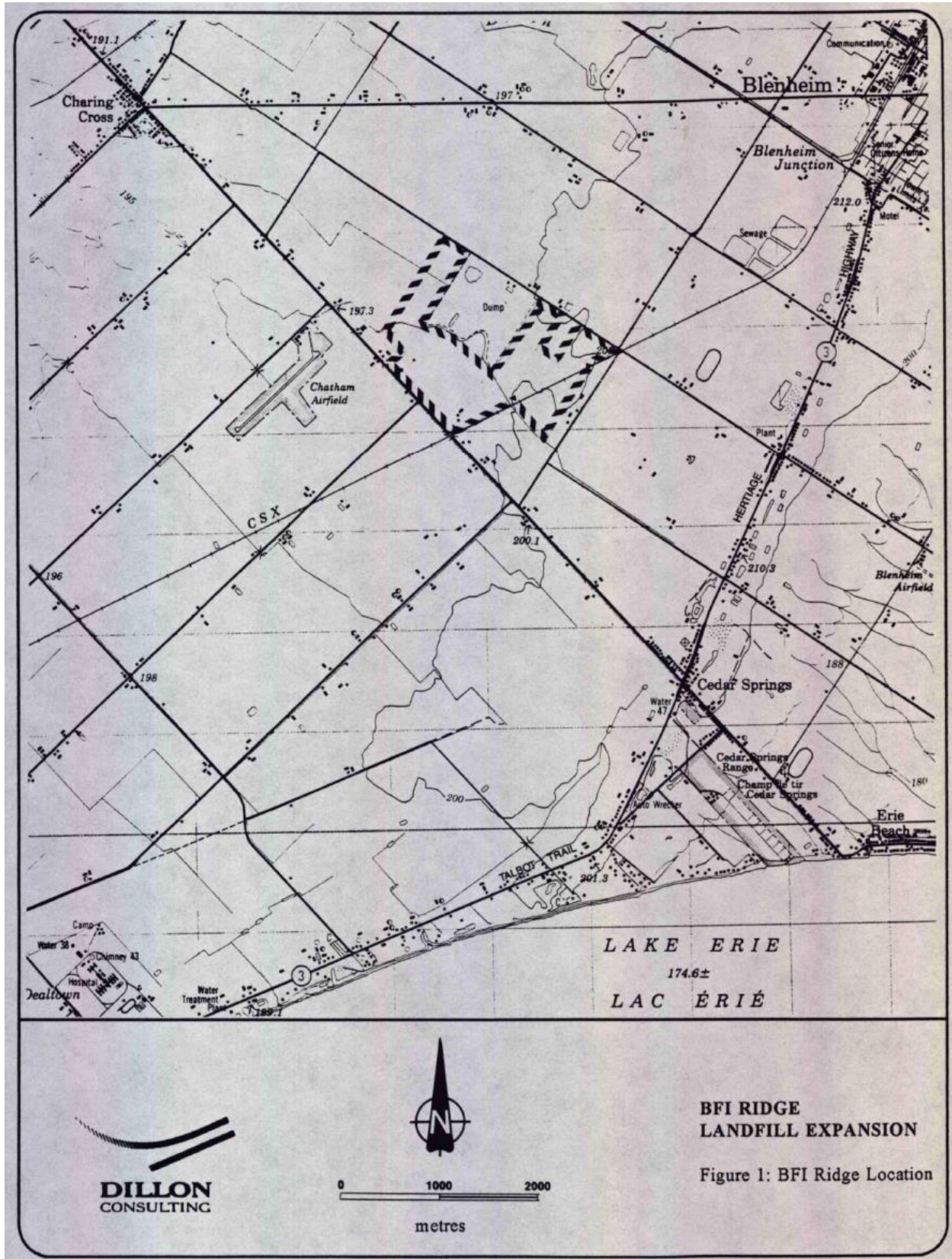
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- Project Area
- Physiographic Region
- Shoreline
- Shore Bluff or Scarp
- Minor Moraine
- Glacial Beach
- Till Moraine
- Sand Plain
- Bevelled Till Plain
- Clay Plain

Map 3: Physiography Within the Vicinity of the Project Area



Map 4: Soils Within the Vicinity of the Project Area



Map 5: Dillon (1997) Stage I-2 Assessment BFI Ridge Landfill Expansion

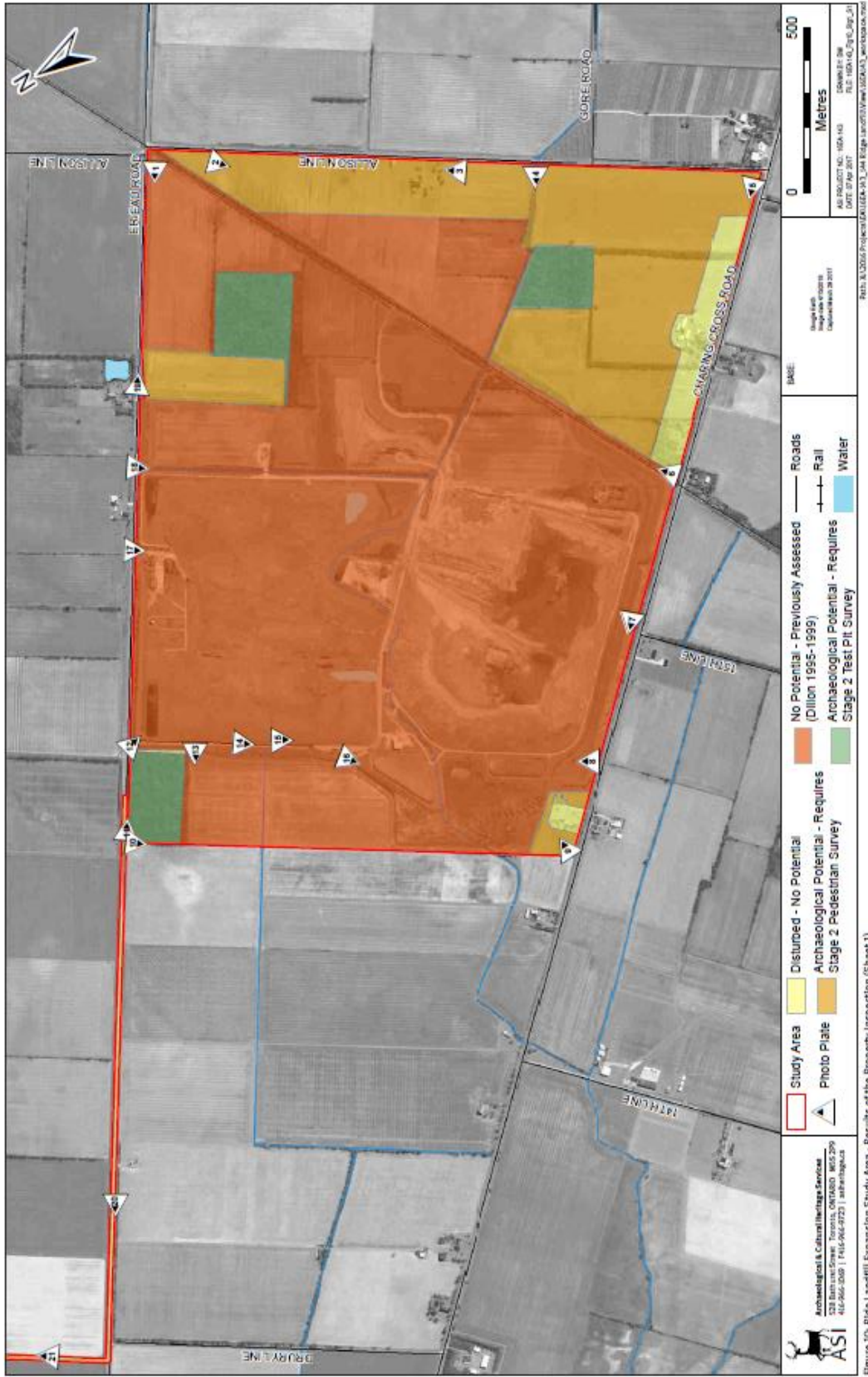
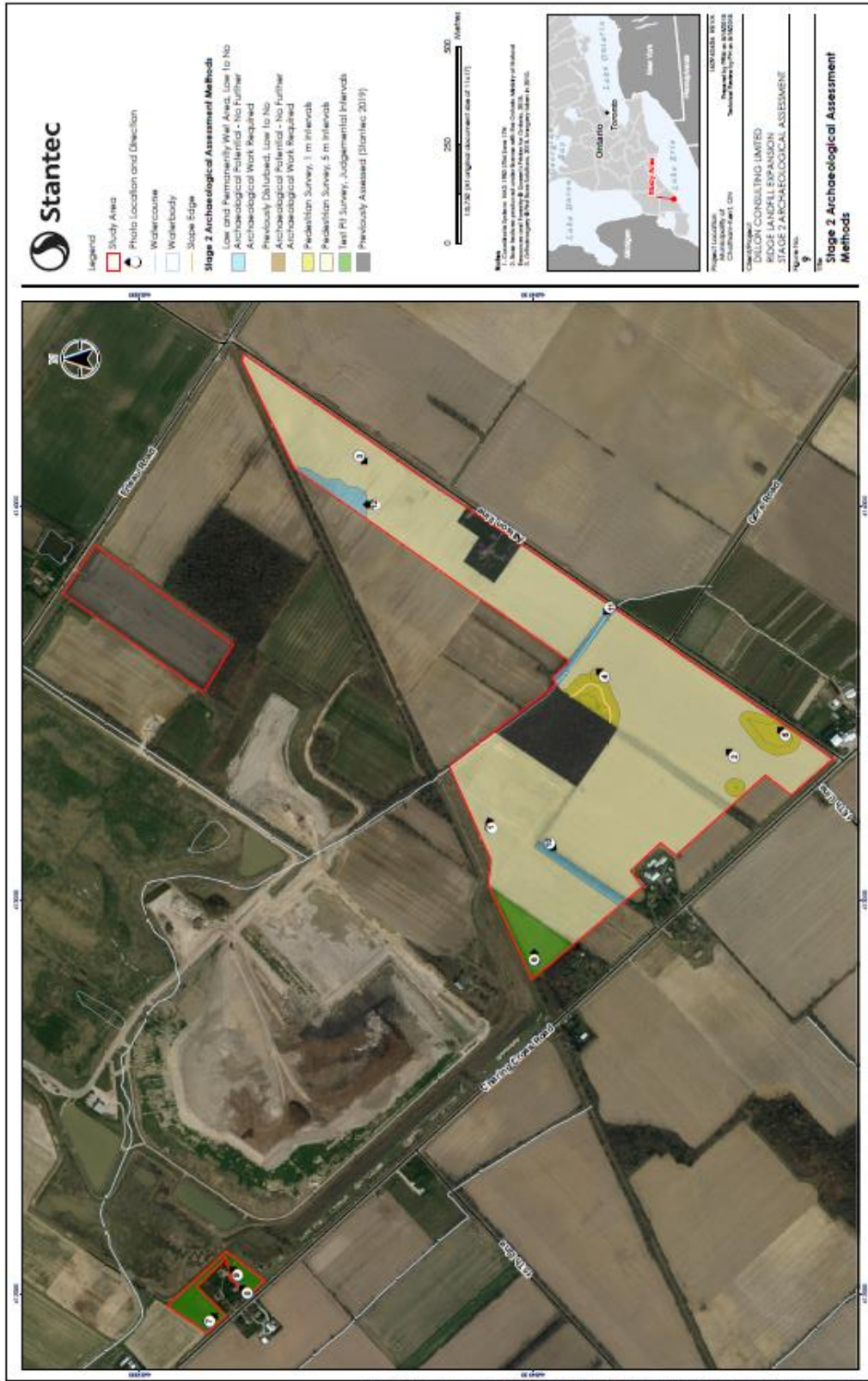


Figure 10: Ridge Landfill Expansion Study Area - Results of the Property Inspection (Sheet 1)

Map 6: ASI (2017) Stage I Ridge Landfill Expansion



Map 7: Stantec (2019a) Partial Stage 2 Assessment – Ridge Landfill



Map 8: Stantec (2019b) Partial Stage 2 Assessment – Ridge Landfill – Additional Assessment

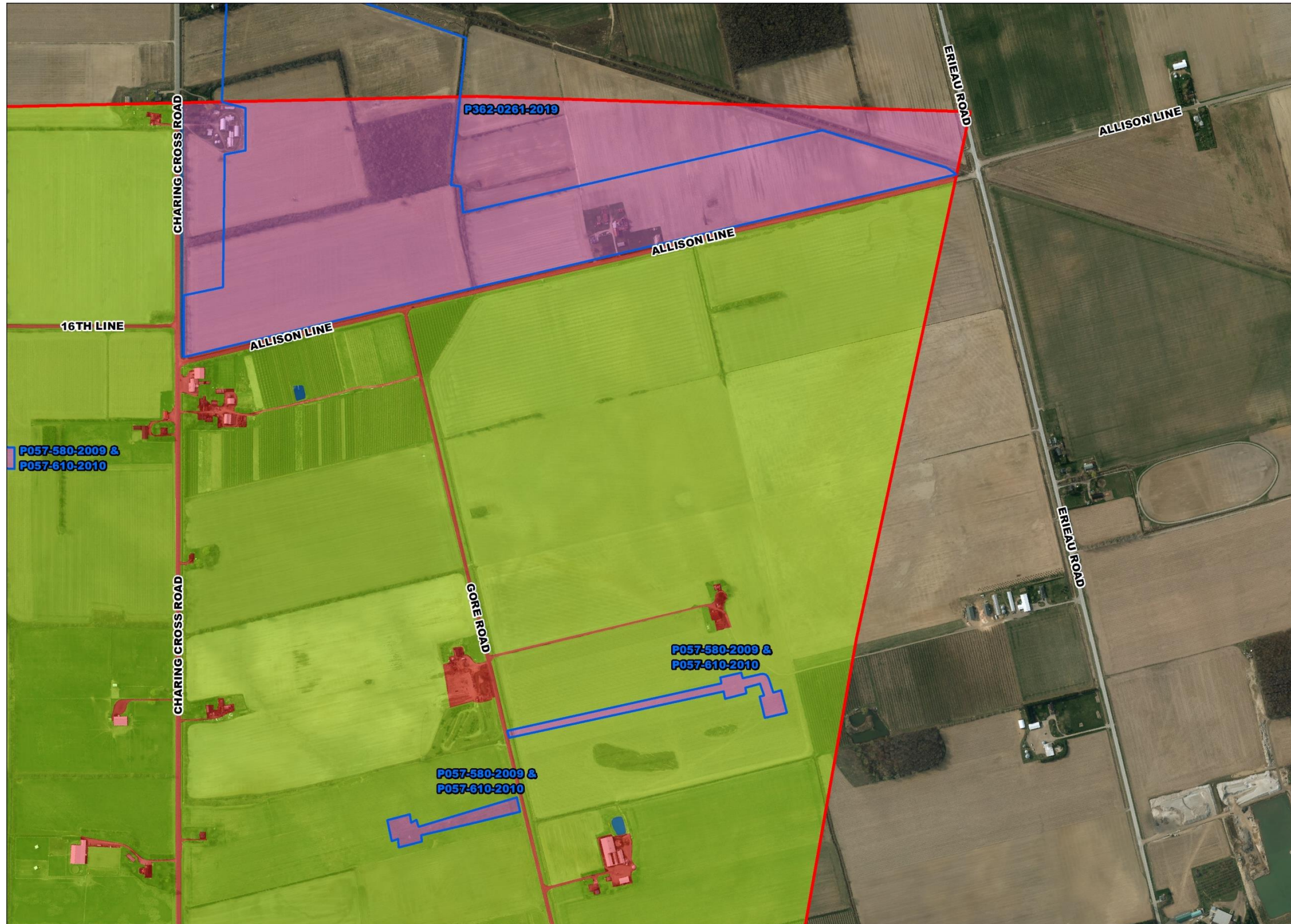
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TALBOT TRAIL REALIGNMENT EA
STAGE 1 RESULTS
& RECOMMENDATIONS

- Study Area
- PREVIOUSLY ASSESSED**
- TMHC Inc
- Other Consultants Reports
- STAGE 1 ASSESSMENT RESULTS**
- Previously Assessed
- Areas of Archaeological Potential*
- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required*
- Disturbed
- Low-Lying/Wet

Page 30 of 31



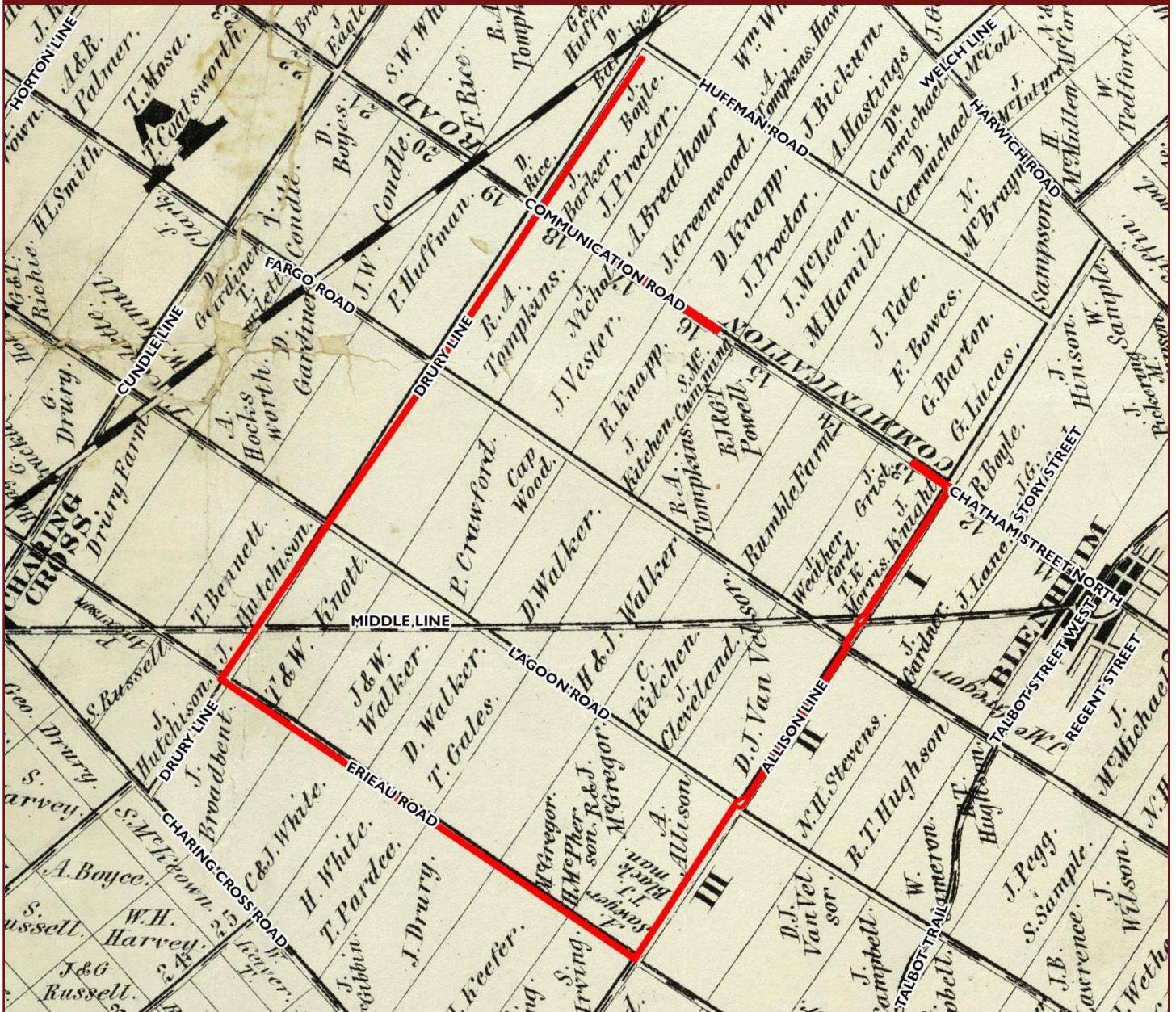
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Imagery source: SWOOP (2010)



Map 9: TMHC (2022) Talbot Trail Stage I Assessment Results – Page 30

1876 HISTORIC MAP

MAP OF THE COUNTY OF KENT (SHACKLETON AND MCINTOSH)



1,000 m

Prepared by DG 2022-03-08

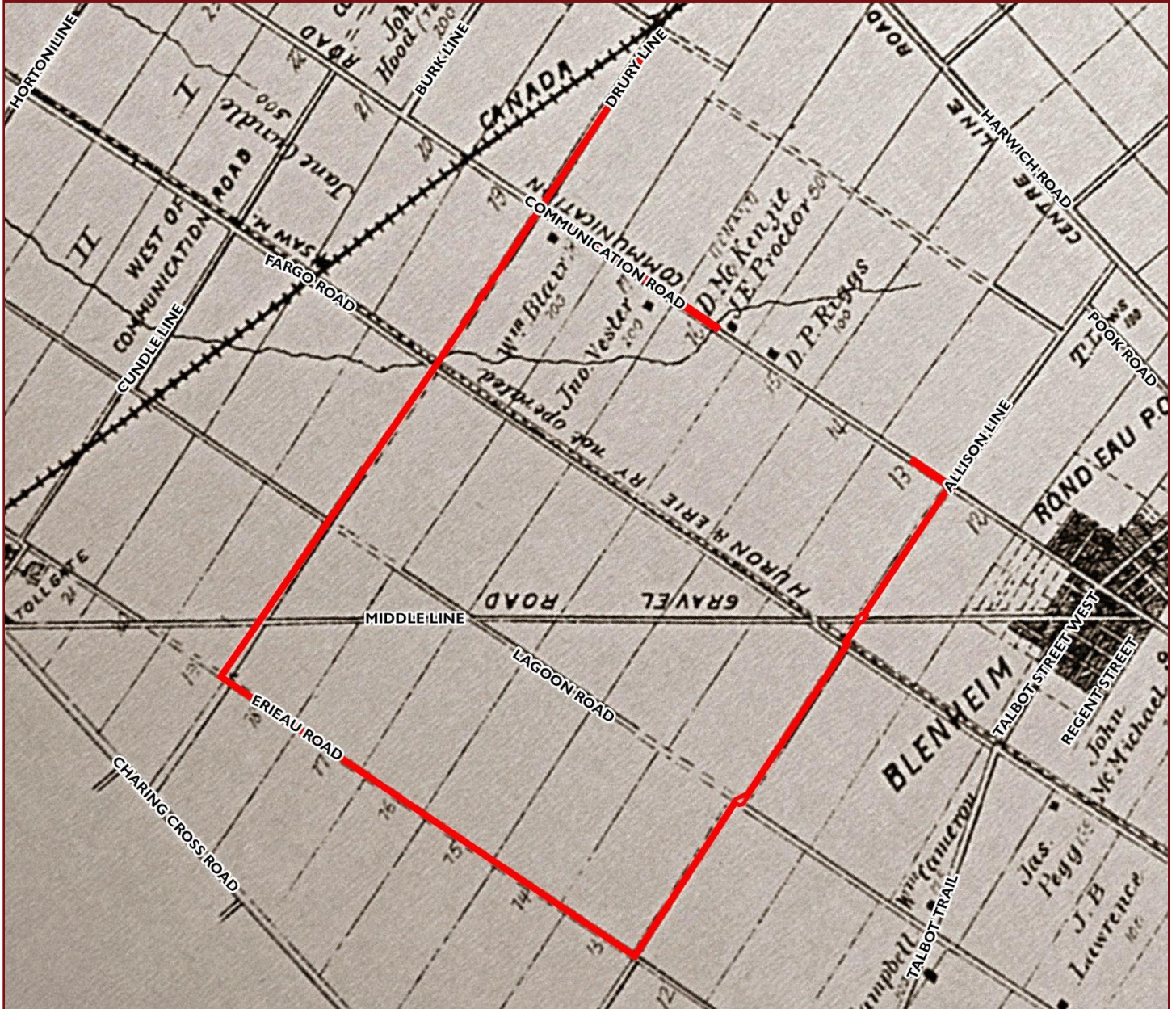
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Project Area

Map 10: Location of the Project Area Shown on the 1876 Shackleton & McIntosh Map

1880 HISTORIC MAP

ILLUSTRATED HISTORICAL ATLAS OF THE COUNTY OF KENT



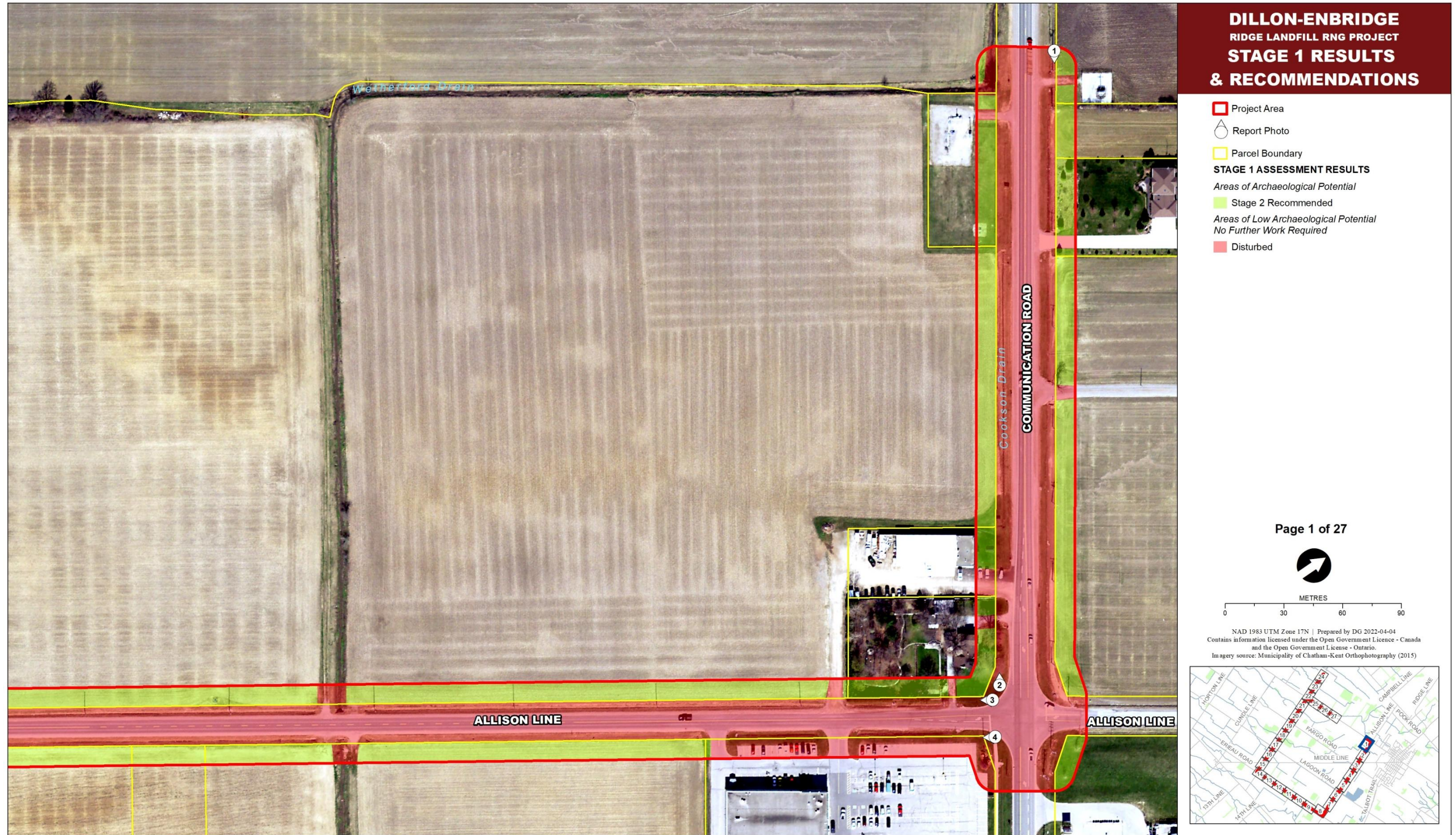
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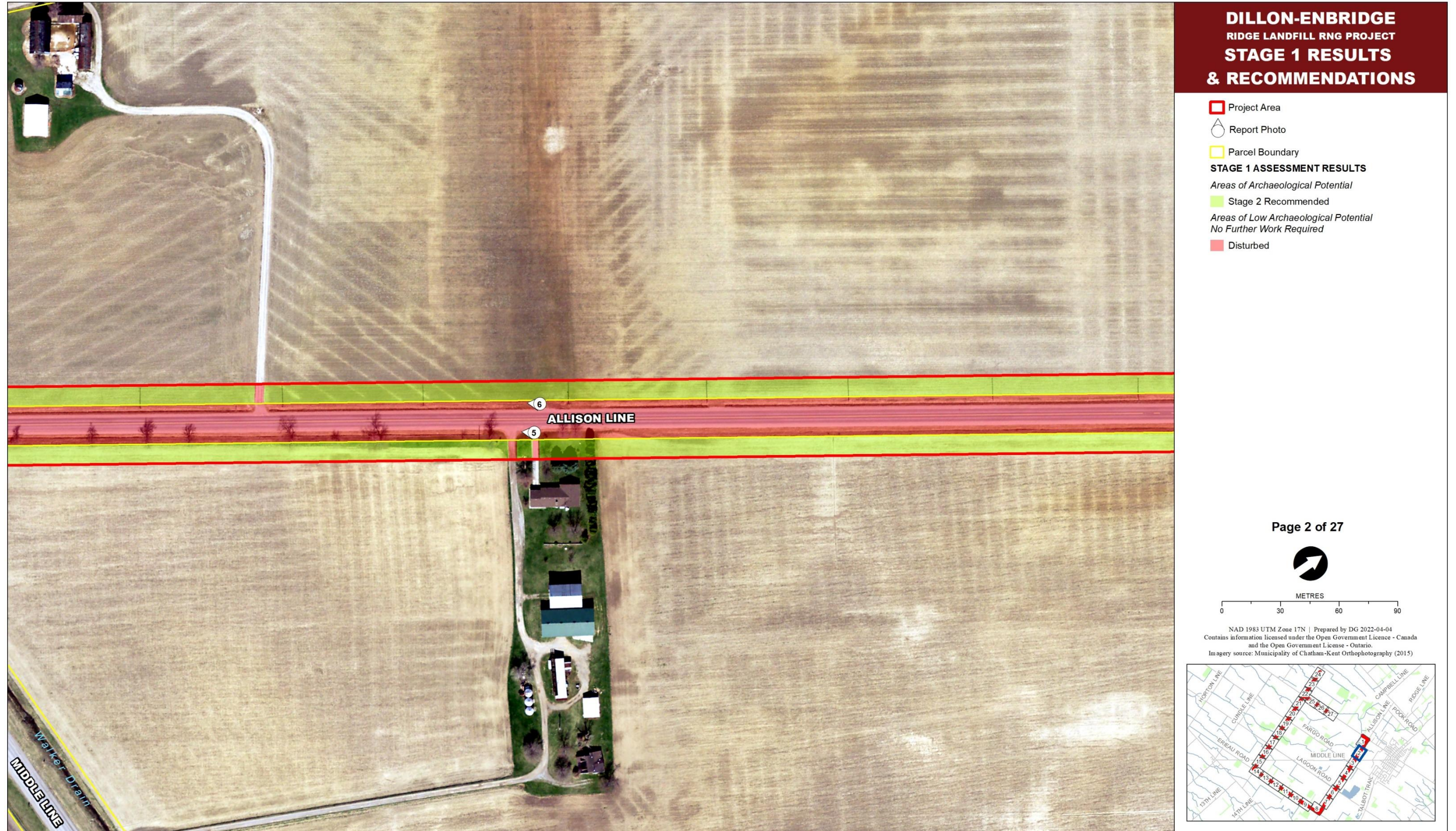
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Project Area

Map 11: Location of the Project Area Shown on the 1880 Historic Atlas Map



Map 12: Stage I Assessment Results – Page 1



Page 2 of 27

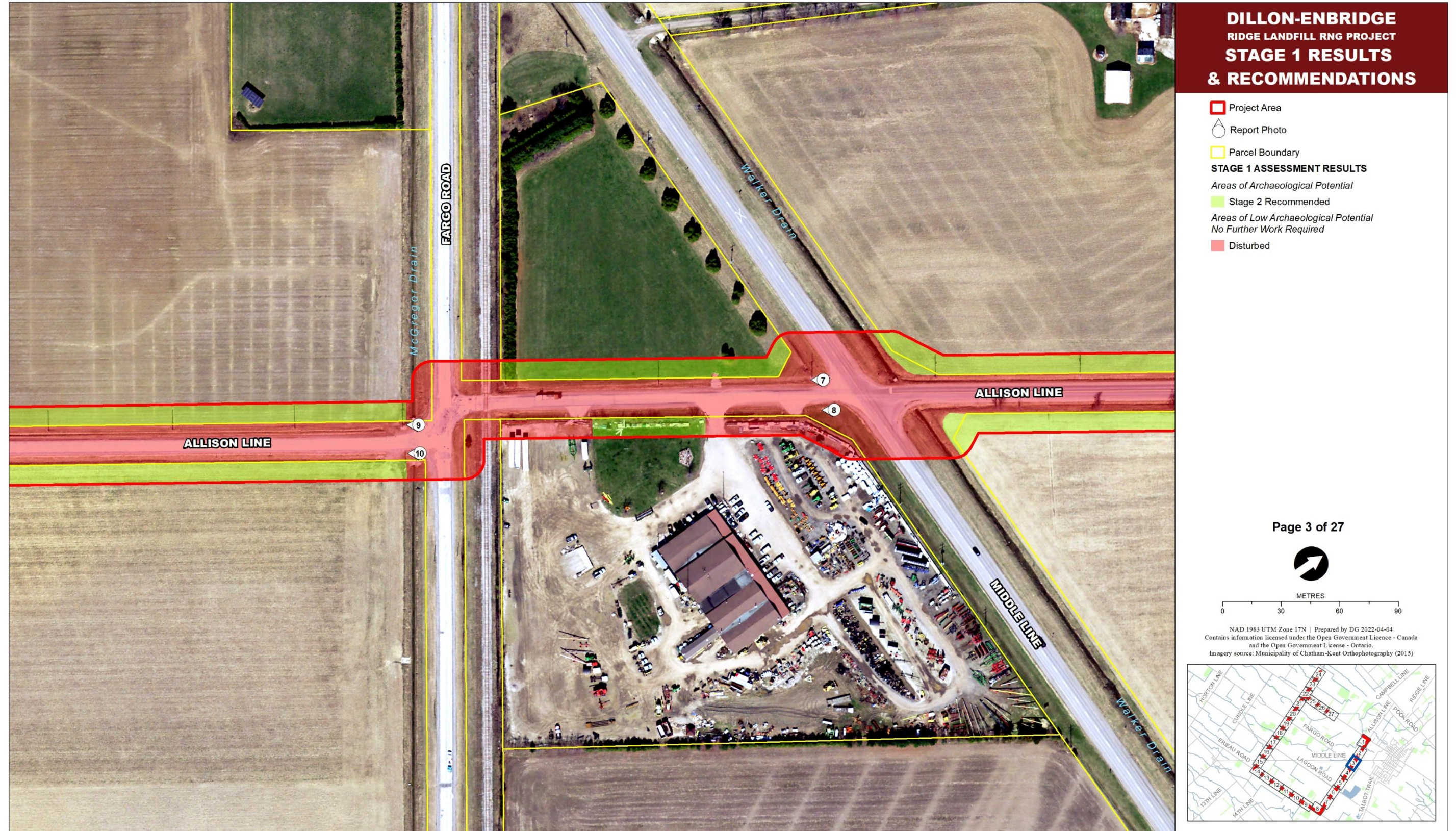


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METRES

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and the Open Government Licence - Ontario.
Imagery source: Municipality of Chatham-Kent Orthophotography (2015)



Map 13: Stage I Assessment Results – Page 2



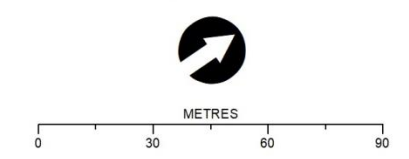
Map 14: Stage I Assessment Results – Page 3



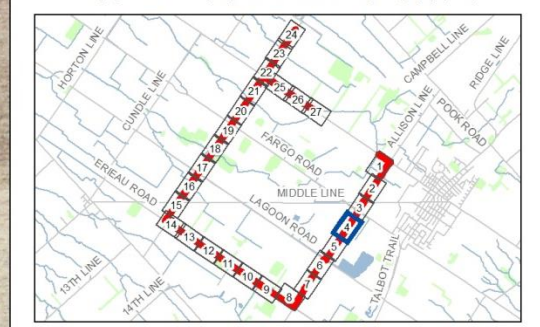
**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
 - Report Photo
 - Parcel Boundary
- STAGE 1 ASSESSMENT RESULTS**
- Areas of Archaeological Potential*
- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required*
- Disturbed

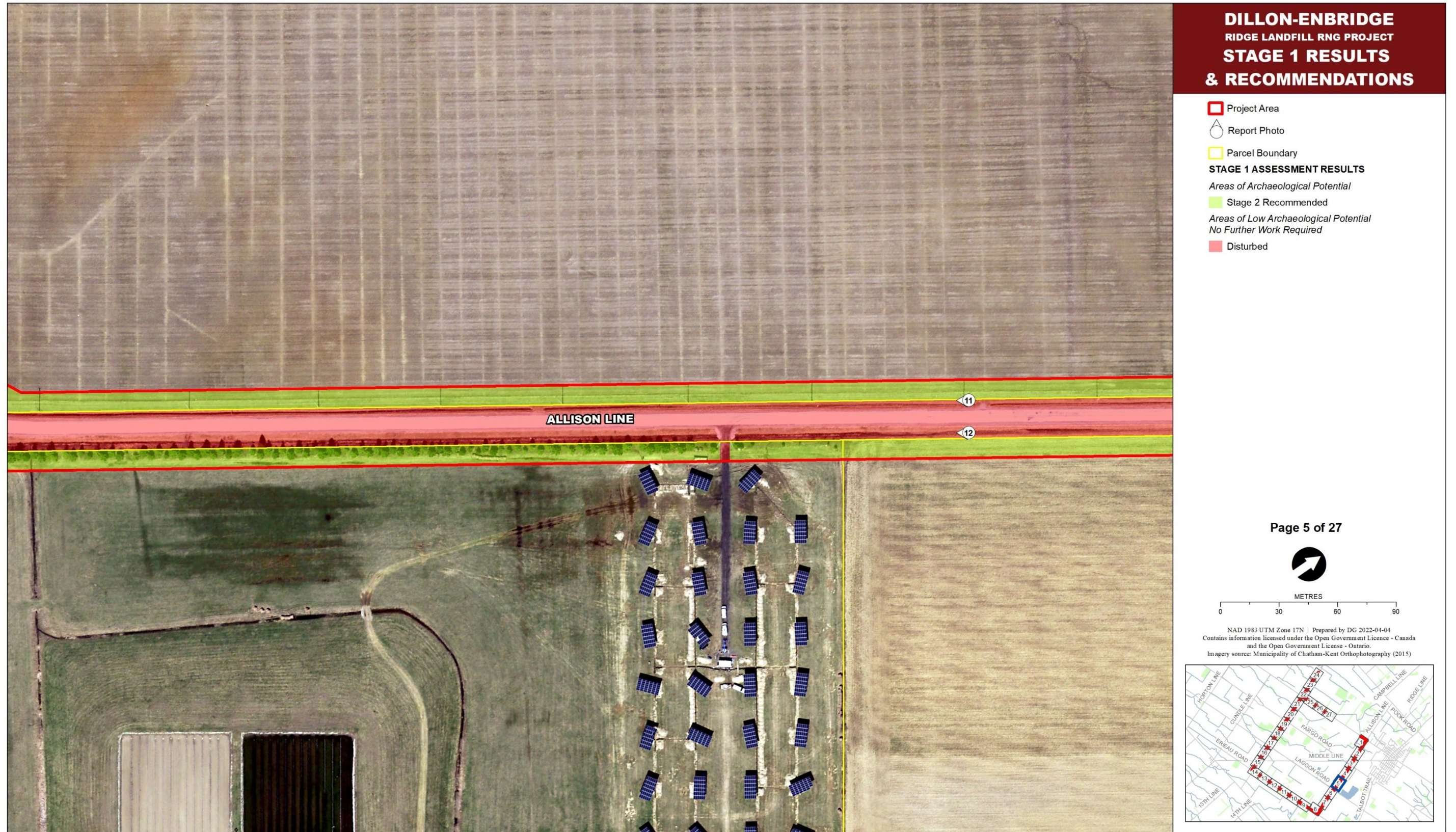
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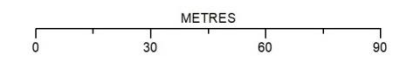
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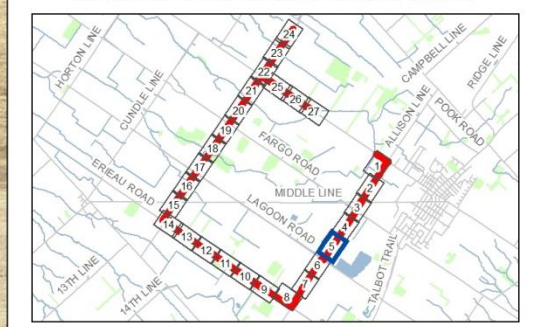
**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
 - Report Photo
 - Parcel Boundary
- STAGE 1 ASSESSMENT RESULTS**
- Areas of Archaeological Potential*
- Stage 2 Recommended
 - Areas of Low Archaeological Potential
No Further Work Required
 - Disturbed

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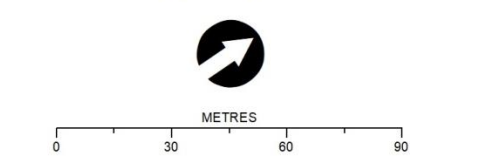
Map 16: Stage I Assessment Results – Page 5



**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
 - Report Photo
 - Parcel Boundary
- STAGE 1 ASSESSMENT RESULTS**
- Areas of Archaeological Potential*
- Stage 2 Recommended
 - Areas of Low Archaeological Potential
No Further Work Required
 - Disturbed

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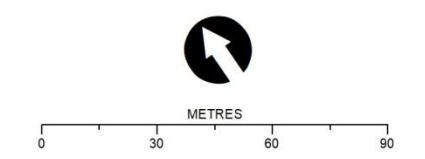


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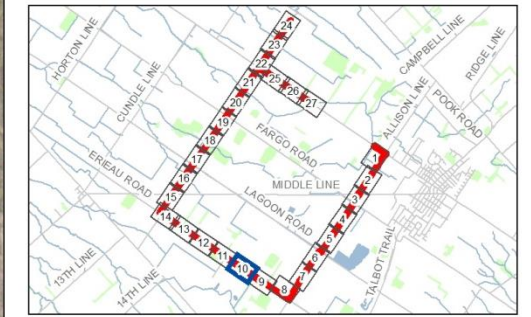


**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
- Report Photo
- Parcel Boundary
- STAGE 1 ASSESSMENT RESULTS**
- Areas of Archaeological Potential*
- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required*
- Disturbed



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Map 21: Stage I Assessment Results – Page 10



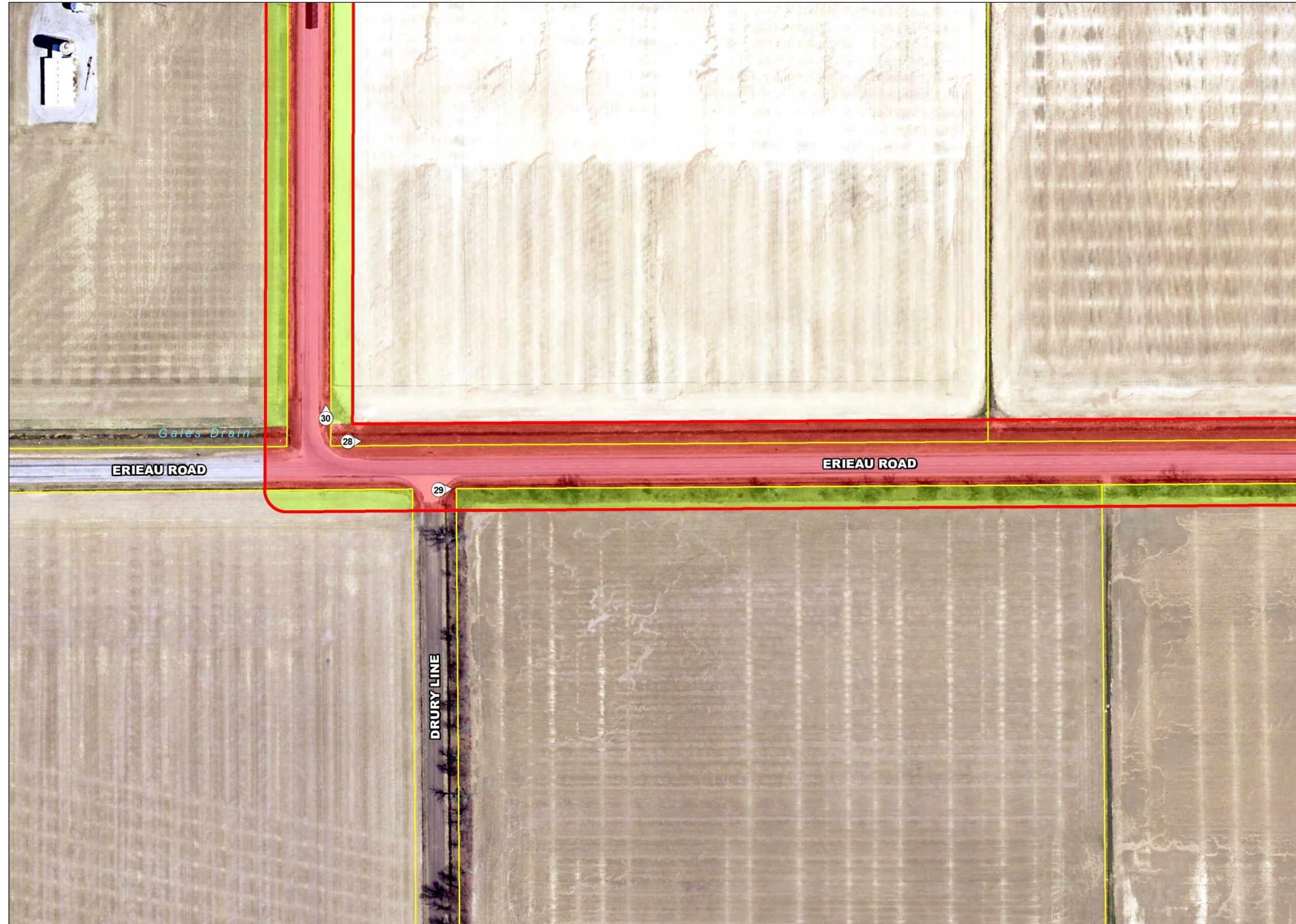
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**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
- Report Photo
- Parcel Boundary

STAGE 1 ASSESSMENT RESULTS

Areas of Archaeological Potential

- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required
- Disturbed

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METRES

0 30 60 90

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Map 25: Stage I Assessment Results – Page 14



**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
- Report Photo
- Parcel Boundary

STAGE 1 ASSESSMENT RESULTS

Areas of Archaeological Potential

- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required
- Disturbed

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METRES

0 30 60 90

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Map 26: Stage I Assessment Results – Page 15



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**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
- Report Photo
- Parcel Boundary

STAGE 1 ASSESSMENT RESULTS

Areas of Archaeological Potential

- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required
- Disturbed

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METRES

0 30 60 90

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Map 30: Stage I Assessment Results – Page 19



Map 31: Stage I Assessment Results – Page 20



**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
- Report Photo
- Parcel Boundary

STAGE 1 ASSESSMENT RESULTS

Areas of Archaeological Potential

- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required
- Disturbed
- Low-Lying/Wet

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METRES

0 30 60 90

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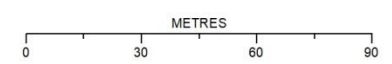
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DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS

- Project Area
 - Report Photo
 - Parcel Boundary
- STAGE 1 ASSESSMENT RESULTS**
- Areas of Archaeological Potential*
- Stage 2 Recommended
 - No Further Work Required
- Areas of Low Archaeological Potential*
- Disturbed

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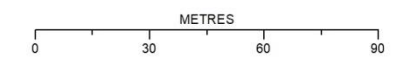
Map 36: Stage I Assessment Results – Page 25



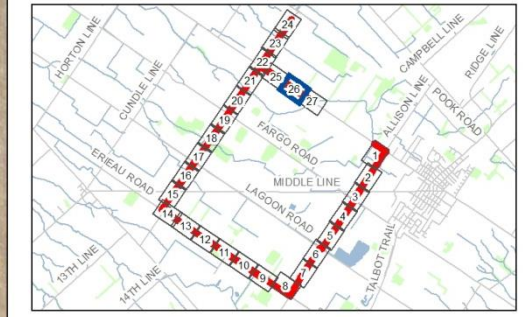
DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS

- Project Area
 - Parcel Boundary
 - Report Photo
- STAGE 1 ASSESSMENT RESULTS**
- Areas of Archaeological Potential*
- Stage 2 Recommended
 - Areas of Low Archaeological Potential
No Further Work Required
 - Disturbed

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Map 37: Stage I Assessment Results – Page 26



**DILLON-ENBRIDGE
RIDGE LANDFILL RNG PROJECT
STAGE 1 RESULTS
& RECOMMENDATIONS**

- Project Area
- Report Photo
- Parcel Boundary

STAGE 1 ASSESSMENT RESULTS

Areas of Archaeological Potential

- Stage 2 Recommended
- Areas of Low Archaeological Potential
No Further Work Required
- Disturbed
- Low-Lying/Wet

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METRES

0 30 60 90

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Appendix B

Cultural Heritage Screening Report

**Ridge Landfill RNG Project
Geographic Township of Harwich,
Municipality of Chatham-Kent, Ontario**

Cultural Heritage Screening – Technical Memorandum

Prepared for:

Dillon Consulting Limited
177 Colonnade Road South, Suite 101
Ottawa, ON K2E 7J4

Prepared by:

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1108 Dundas Street
Unit 105
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tmhc.ca



Project No: 2021-380

Final Dated: April 18, 2022



PROJECT PERSONNEL

Principal	Matthew Beaudoin, Ph.D.
Senior Review	Joshua Dent, Ph.D., CAHP
Project Manager	Joan Crosbie M.A.
Cultural Heritage Specialist	Hayden Bulbrook, M.A.
Project Administrator	Kellie Theaker, CHRP
GIS Mapping	John Moody, Ph.D., Andrew Turner, BA

ACKNOWLEDGEMENTS

Ontario Heritage Trust	Krystal Power
Ministry of Heritage, Sport, Tourism and Culture Industries	Karla Barboza
Corporation of the Municipality of Chatham-Kent	Jeremy Lefaive



TERRITORIAL ACKNOWLEDGEMENT

This cultural heritage screening is being completed on land that has been inhabited by and cared for by people Indigenous to Turtle Island since time immemorial. We recognize and respect the historic connection to and harmonious stewardship by the Indigenous peoples over this shared land and, as such, we have a responsibility to preserve and care for the land, learn from the original inhabitants and move forward together in the spirit of healing, reconciliation and partnership.



ABOUT TMHC

Established in 2003, with a head office in London, Ontario, TMHC provides a broad range of archaeological assessment, heritage planning, and consultation services throughout the Province of Ontario, founded on over forty years of progressive and responsible experience. We provide consulting services for Indigenous communities, municipal heritage planning and training, public outreach and educational programs, and have established specialties in community engagement, cemetery investigations, faunal analysis and ground penetrating radar surveys. Since TMHC's inception, we have evolved with the needs of our clients, the demands of the regulatory environment, and the growth in the industry.

Since 2004, TMHC has held retainers with Infrastructure Ontario (formerly the Ontario Realty Corporation), Hydro One, the Ministry of Transportation (Southwest and Central regions), Metrolinx, the Niagara Parks Commission, and the City of Hamilton. In 2013, TMHC earned the Ontario Archaeological Society's award for Excellence in Cultural Resource Management.

KEY STAFF BIOS

Matthew Beaudoin, PhD., Principal

Matthew Beaudoin received a Ph.D. in Anthropology from Western University in 2013 and became a Principal at TMHC in 2019. During his archaeological career, Matthew has conducted extensive field research and artifact analysis on Indigenous and Settler sites from Labrador and Ontario. In addition, Matthew has also conducted ethnographic projects in Labrador. Since joining TMHC in 2008, Matthew has been involved with several notable projects, such as the Imperial Oil's Waterdown to Finch Project, the Camp Ipperwash Project, and the Scugog Island Natural Gas Pipeline Project.

Matthew is an active member of the Canadian Archaeological Association, the Ontario Archaeological Association, the Ontario Historical Society, the World Archaeology Congress, the Council for Northeastern Historical Archaeology, the Society for American Archaeology, and the Society for Historical Archaeology.

Joshua Dent, PhD., CAHP, Manager – Community Engagement and Heritage Division

Joshua (Josh) Dent received a Ph.D. in Anthropology from Western University under a Joseph-Bombardier CGS Scholarship in 2016, and specializes in heritage resource management, archival research and heritage regulations. Since relocating to London, Ontario after experience conducting built heritage assessments in Western Canada, Josh has participated in both the not-for-profit advocacy for and municipal oversight of built heritage resources and cultural landscapes. His role as a resource member of the London Advisory Committee on Heritage (LACH) provided significant insight into municipal heritage review processes and the composition of successful built heritage assessments and research. With TMHC, he has participated in the background research for and field assessment of cultural heritage assessment projects across Southwestern Ontario. With extensive field and archival research experience and a broad personal network of urban planners, historians and institutions, Josh is well-equipped to produce comprehensive land-use histories and field assessments.



Joan Crosbie, M.A., Manager – Cultural Heritage Division

Joan has extensive cultural heritage management experience in both the private and public sectors with a strong background in preservation services, built and landscape heritage assessment, archival/historical research, and Museums services. She earned her MA in Architectural History from York University. In her role in Preservation Services with the Toronto Historical Board (City for Toronto), Joan was part of a small team of professionals who advised City Council on a broad range of heritage preservation and planning matters. Later, as Curator of Casa Loma, she gained extensive experience as part of the Senior Management team and honed her skills in cultural and community engagement and short to long term planning for a major tourism/heritage facility. She was a key staff liaison with the restoration architects and skilled trades as the Casa Loma Estate underwent a major exterior restoration program. More recently, as Manager of Culture and Community Services, Town of Whitchurch-Stouffville, Joan managed the Heritage and Museums services portfolios and has widened her experience in cultural planning to include the adaptive reuse of heritage buildings and historic main street revitalization. For many years, she was also the staff representative on the municipality's Heritage Advisory Committee and managed the commemorative plaque program. She has published articles on architecture and architectural preservation for a wide range of organizations, including the Canadian Society for Industrial Heritage, the City of Toronto and the Society for the Study of Architecture in Canada.



STATEMENT OF QUALIFICATIONS AND LIMITATIONS

The attached Memo (the “Memo”) has been prepared by TMHC Inc. (TMHC) for the benefit of the Client (the “Client”) in accordance with the agreement between TMHC and the Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations and conclusions contained in the Memo (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Memo (the “Limitations”);
- represents TMHC’s professional judgment in light of the limitation and industry standards for the preparation of similar reports;
- may be based on information provided to TMHC which has not been independently verified;
- has not been updated since the date of issuance of the Memo and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of context;
- was prepared for the specific purposes described in the Memo and the Agreement.

TMHC shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. TMHC accepts no responsibility for any events or circumstances that may have occurred since the date on which the Memo was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

TMHC agrees that the Memo represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Memo and the Agreement, but TMHC makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Memo, the Information or any part thereof.

Except (1) as agreed to in writing by TMHC and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Memo and the Information may be used and relied upon only by Client.

TMHC accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Memo or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Memo or any of the Information (“improper use of the Memo”), except to the extent those parties have obtained the prior written consent of TMHC to use and rely upon the Memo and the Information. Any injury, loss or damages arising from improper use of the Memo shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Memo and any use of the Memo is subject to the terms hereof.



QUALITY INFORMATION

Report prepared by: *HBulbrook*
Hayden Bulbrook, M.A.
Cultural Heritage Specialist

Report reviewed by: *Josh Dent*
Joshua Dent, Ph.D., CAHP
Senior Review

Report reviewed by: *Matthew Beaudoin*
Matthew Beaudoin, Ph.D.
Principal



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I BACKGROUND AND OVERVIEW

I.1 Memo Purpose and Scope

In the winter of 2022, TMHC Inc. (TMHC) was contracted by Dillon Consulting Limited to produce a Cultural Heritage Screening and Technical Memorandum for the Ridge Landfill Renewable Natural Gas (RNG) Project, near Blenheim, Ontario. A new nominal pipe size (NPS) 4-inch extra high pressure (XHP) steel natural gas pipeline may be installed northwest of an existing Enbridge station on Communication Road to the Ridge Landfill on Erieau Road. The Preliminary Preferred Route runs from a location just northwest of the existing Enbridge station on Communication Road for 300 m, then turns southwest and runs along Allison Line for 1.4 km, along Fargo Road for 20 m then continues along Allison Line for another 2.8 km. It then turns north along Erieau Road for 1.5 km to the customer site. Two alternative routes were also proposed. Alternative Route 1 begins southwest of the intersection of Drury Line and Huffman Road, follows Drury Line southwest for approximately 5.5 km to Erieau Road then proceeds southeast to the customer site. Alternative Route 2 begins at a location on Communication Road approximately 1.5 km southeast of the intersection with Drury Line, runs northwest to Drury Line then southwest to Erieau Road. It then proceeds southeast to the customer site following the same proposed path as Alternative Route 1. All considered alternatives are within the existing municipal right-of-way (ROW).

This screening fulfills part of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation for Hydrocarbon Pipelines and Facilities in Ontario*, 7th ed. 2016 requirement for consideration of the cultural environment by:

1. Completing a cultural heritage screening that encompasses all properties within the Study Area based on the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes*.

I.2 Historical Context

The proposed route alternatives fall within the Geographic Township of Harwich in former Kent County. The earliest record of settlement in this region began in the latter half of the 18th century by French settlers who were unable to acquire land along the crowded Detroit River.¹

Subsequent English settlement was spurred by the McKee Treaty, signed in May of 1790, that witnessed much of the land in the Western District ceded to the British from the local Ojibway nations.² Early settlement in the Thames Valley was encouraged in later years by Lieutenant-Governor Simcoe's "enthusiasm for the area as a military and naval stronghold in the expected continuation of the struggle with the United States".³

A portion of Harwich Township was first surveyed in 1795. The remaining Township was surveyed in subsequent years. Abraham Iredell, the township's first surveyor, was given instructions to clear a "road of communication" between the Chatham settlement and Rondeau and to lay out 200 acre lots on both sides for the settlement of loyal British subjects.⁴ However, even by 1844, Communication Road had not been laid out

¹ Johnson 1974:26

² Jacobs 1983:64

³ Johnson 1974:26

⁴ H. Belden & Co. 1880:53



as far as the lake shore. Construction on the Upper Talbot Road began in 1811.⁵ Near Blenheim, Upper Talbot followed an earlier Indigenous trail.⁶ The portion of Harwich Township bordering Raleigh Township was one of the last areas to be settled, due to a lack of well-established roads in this area.⁷

1.3 Methodology

This screening was prepared in accordance with the MHSTCI *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes*. Completed MHSTCI checklists for each alternative can be found in Appendix A. The Study Area encompasses a set of line picks associated with each alternative and roughly considers properties up to 70 m away on either side to account for indirect impacts to potential heritage properties (Map 1).

A site visit to the Study Area was not conducted as part of this work.

1.4 Client Contact Information

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ALee@dillon.ca

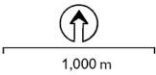
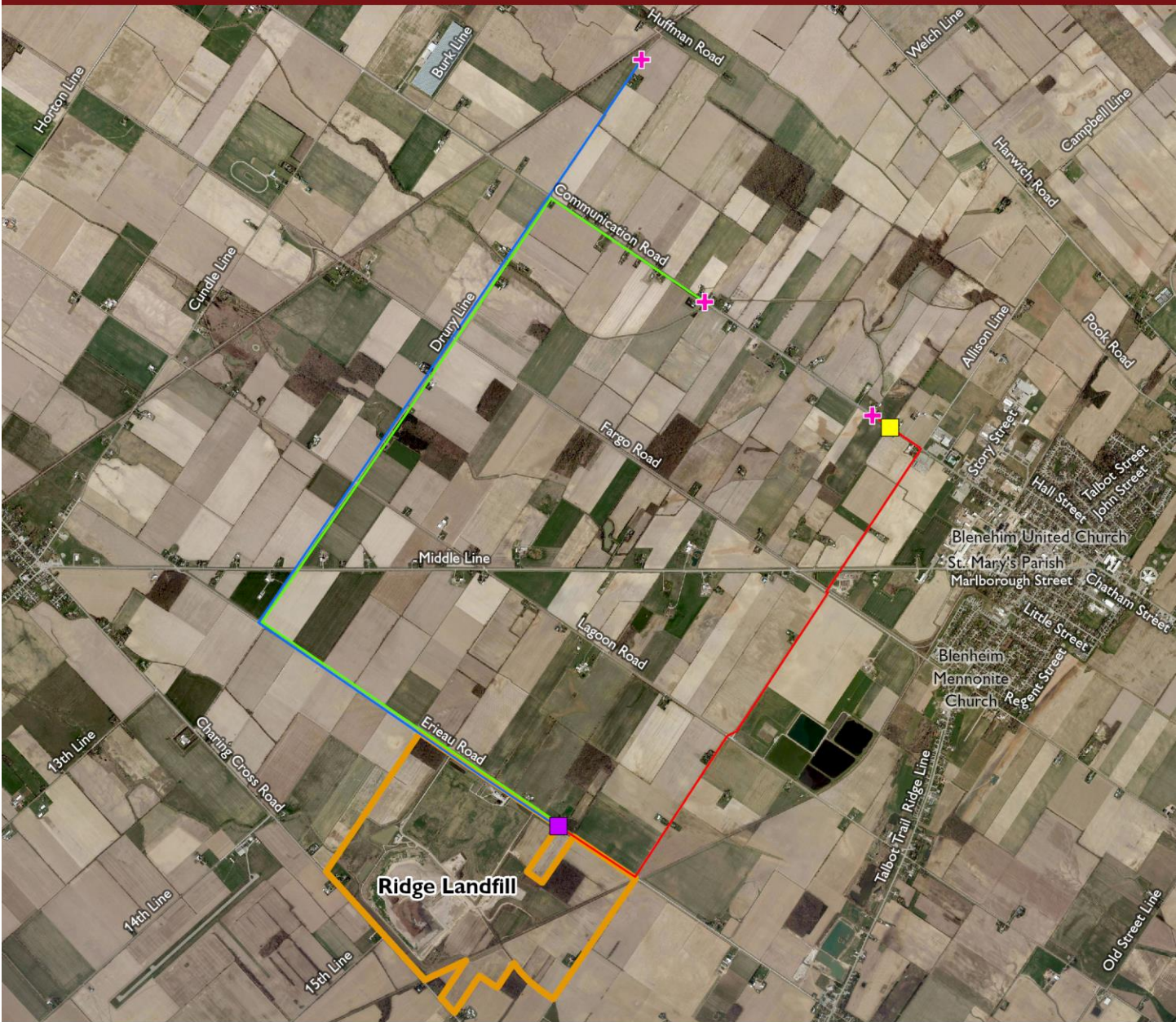
⁵ Armstrong 1985

⁶ Armstrong 1985:25

⁷ Lauriston 1952:268



STUDY AREA
County of Chatham-Kent Orthophotography



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- Existing Enbridge Station
- Customer Station (Proposed)
- Tie-in Location
- Preliminary Preferred Route
- Alternative Route 1
- Alternative Route 2
- Ridge Landfill

Map I: Aerial Photograph Showing the Location of the Study Area



2 CULTURAL HERITAGE SCREENING

The following cultural heritage screening considers potential heritage concerns for the Preliminary Preferred Route and the two alternative routes of the Ridge Landfill RNG Project.

2.1 Proposed Alternatives

2.1.1 Preliminary Preferred Route

The Preliminary Preferred Route runs from a location just northwest of the existing Enbridge station on Communication Road for 450 m, then turns south-west along Allison Line for 1.4 km, then along Fargo Road for 20 m. It continues along Allison Line for another 2.8 km when it turns north along Erieau Road for 1.5 km to the customer site.

The Preliminary Preferred Route runs in proximity to approximately 16 properties with structures, 12 of which contain structures that have been preliminarily identified as 40 or more years old. Of these 12 properties, roughly ten include structures located within 50 m of the Preliminary Preferred Route and may require heritage mitigation strategies.

There are no federally designated heritage properties within 50 m of this Preliminary Preferred Route, nor are there any properties designated or listed on the Chatham-Kent Municipal Heritage Register. No issues were identified by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). At the time of the writing of this memo, no correspondence has been received from the Ontario Heritage Trust (OHT), however a review of accessible OHT databases did not reveal any potential heritage concerns. No cemeteries or other properties/landscapes of heritage interest were identified during this high-level review.

Table 1: Identified Heritage Properties Within 50 m of Preliminary Preferred Route

Federally Designated Heritage Properties		
none		
Chatham-Kent Municipal Heritage Register – Designated Properties		
none		
Chatham-Kent Municipal Heritage Register – Listed Properties		
none		

2.1.2 Alternative Route 1

Alternative Route 1 begins southwest of the intersection of Drury Line and Huffman Road and follows Drury Line southwest for approximately 5.5 km to Erieau Road then proceeds southeast to the customer site.

This route runs in proximity to approximately 15 properties with structures, nine of which contain structures that have been preliminarily identified as 40 or more years old. Of these nine properties roughly seven include structures located within 50 m of Alternative Route 1 and may require heritage mitigation strategies.

There are no federally designated heritage properties within 50 m of this alternative, nor are there any properties designated or listed on the Chatham-Kent Municipal Heritage Register. To date, no properties have



been designated according to MHSTCI and they are not aware of any provincial heritage properties within or adjacent to the Study Area. At the time of the writing of this memo, no correspondence has been received from the OHT, however a review of accessible OHT databases did not reveal any potential heritage concerns. No cemeteries or other properties/landscapes of heritage interest were identified during this high-level review.

Table 2: Identified Heritage Properties Within 50 m of Alternative Route 1

Federally Designated Heritage Properties		
none		
Chatham-Kent Municipal Heritage Register – Designated Properties		
none		
Chatham-Kent Municipal Heritage Register – Listed Properties		
none		

2.1.3 Alternative Route 2

Alternative Route 2 begins at a location on Communication Road approximately 1.5 km southeast of the intersection with Drury Line. It then proceeds northwest to Drury Line, turns southwest to Erieau Road and then southeast to the customer site.

This route travels across approximately 29 properties with structures, of which 22 were preliminarily identified as containing structures 40 years of age or older. Of those 22 properties identified, roughly 20 include structures located within 50 m of Alternative Route 2 and may require heritage mitigation strategies. There are 13 properties along this route that overlap with the properties identified in Alternative Route 1, six of which have been preliminarily identified as 40 or more years old.

There are no federally designated heritage properties within 50 m of this alternative, nor are there any properties designated or listed on the Chatham-Kent Municipal Heritage Register. To date, no properties have been designated according to MHSTCI and they are not aware of any provincial heritage properties within or adjacent to the Study Area. At the time of the writing of this memo, no correspondence has been received from the OHT, however a review of accessible OHT databases did not reveal any potential heritage concerns. No cemeteries or other properties/landscapes of heritage interest were identified during this high-level review.



Table 3: Identified Heritage Properties Within 50 m of Alternative Route 2

Federally Designated Heritage Properties		
none		
Chatham-Kent Municipal Heritage Register – Designated Properties		
none		
Chatham-Kent Municipal Heritage Register – Listed Properties		
none		

2.2 Screening Recommendations

This cultural heritage screening has identified potential heritage properties in all presently considered alternative routes. Therefore, the completion of a cultural heritage assessment report (CHAR) is recommended once the Preliminary Preferred Route has been selected. The CHAR will further evaluate these potential heritage resources and, if necessary, conduct a preliminary heritage impact assessment.



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APPENDIX A: MHSTCI SCREENING CHECKLIST



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.



Project or Property Name

Ridge Landfill RNG Project - Preliminary Preferred Route

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

Near Blenheim, Chatham-Kent

Proponent Name

Dillon Consulting Limited on behalf of Enbridge Gas Inc.

Proponent Contact Information

Alissa Lee, Alee@dillon.ca

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 <i>Ontario Heritage Act</i> as being of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. a National Historic Site (or part of)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has or is adjacent to a known burial site and/or cemetery?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. is in a Canadian Heritage River watershed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. contains buildings or structures that are 40 or more years old?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has a special association with a community, person or historical event?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. contains or is part of a cultural heritage landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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)

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)

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 Tourism,
Culture and Sport

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

**Criteria for Evaluating Potential
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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.



Project or Property Name

Ridge Landfill RNG Project - Alternative Route 1

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

Near Blenheim, Chatham-Kent

Proponent Name

Dillon Consulting Limited on behalf of Enbridge Gas Inc.

Proponent Contact Information

Alissa Lee, Alee@dillon.ca

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 <i>Ontario Heritage Act</i> as being of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. a National Historic Site (or part of)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has or is adjacent to a known burial site and/or cemetery?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. is in a Canadian Heritage River watershed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. contains buildings or structures that are 40 or more years old?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has a special association with a community, person or historical event?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. contains or is part of a cultural heritage landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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)

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)

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]
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- 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 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.



Project or Property Name

Ridge Landfill RNG Project - Alternative Route 2

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

Near Blenheim, Chatham-Kent

Proponent Name

Dillon Consulting Limited on behalf of Enbridge Gas Inc.

Proponent Contact Information

Alissa Lee, Alee@dillon.ca

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 <i>Ontario Heritage Act</i> as being of cultural heritage value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. a National Historic Site (or part of)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. designated under the <i>Heritage Railway Stations Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. designated under the <i>Heritage Lighthouse Protection Act</i> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has or is adjacent to a known burial site and/or cemetery?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. is in a Canadian Heritage River watershed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. contains buildings or structures that are 40 or more years old?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. has a special association with a community, person or historical event?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. contains or is part of a cultural heritage landscape?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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)

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)

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.

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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
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For more information, contact:

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For more information on known cemeteries and/or burial sites, see:

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- 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.

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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:

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- complexes of buildings
- monuments
- ruins

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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:

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- 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.

Appendix C

Routing Constraints Analysis

Table C1: Comparison of Preliminary Preferred Route and Alternative Routes

Criteria	PPR	Alternative Route 1	Alternative Route 2
Approximate route length (km)	5.7	8.5	8.6
Municipal drains along route (number of crossings)	9	9	9
Wetlands in Study Area (number)	0	1	1
Woodlands in Study Area (number)	0	2	2
Candidate SWH - potential bat maternity colonies in Study Area (number of suitable ELC community occurrences ¹)	0	4	4
Candidate SWH - potential turtle overwintering areas in Study Area (number of suitable aquatic feature occurrences ²)	2	3	3
Candidate SWH - potential reptile hibernacula in Study Area (number of box culverts ³)	3	4	4
Candidate SWH - potential habitat for Species of Conservation Concern in Study Area (number of suitable ELC community occurrences ⁴)	1	3	3
Rail corridors (number of crossings)	1	1	1
Number of driveways along route ⁵	25	26	41
Number of residences along route ⁵	11	11	23
Number of businesses along route ⁵	6	11	16

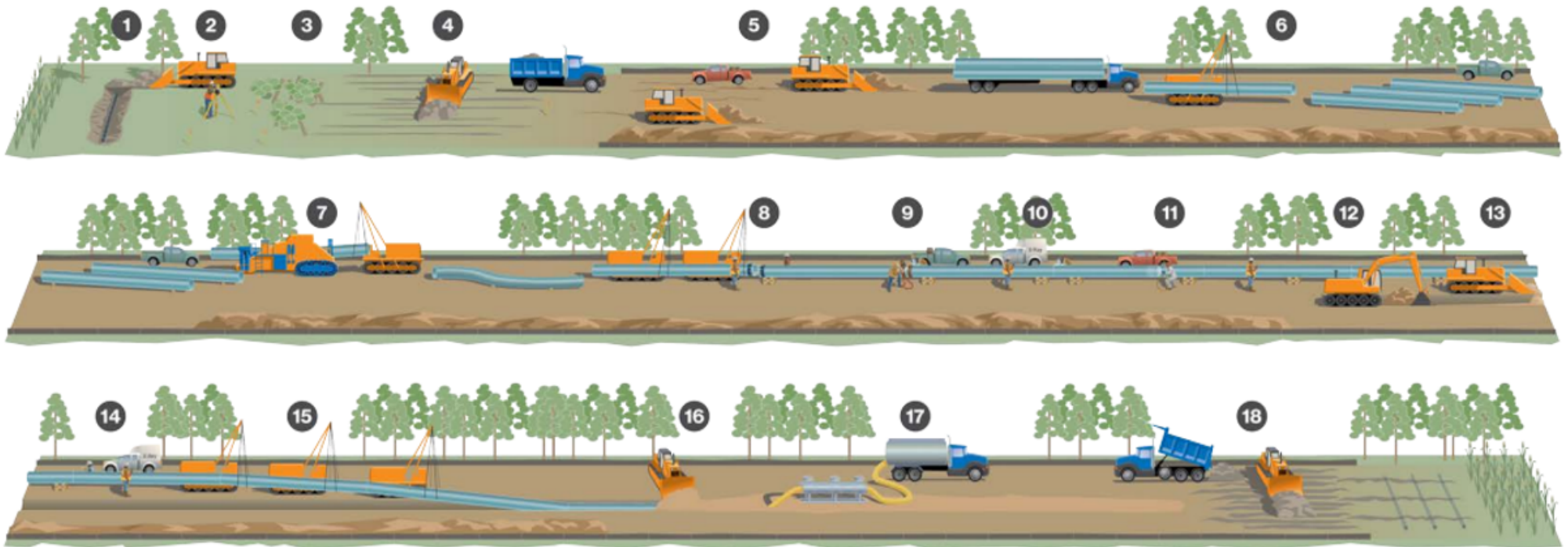
Notes:

- 1 Associated with FOD, FOC, FODM9-4/4-9 and SWDM3-3 communities
- 2 Includes drains (permanent flow - including Cameron, Lucas, and Gales drains) and Open Aquatic (OA) areas where the depth of water during the overwintering period is such that it will not freeze
- 3 Areas in the Study Area that have the potential to support reptile hibernacula generally include box culverts
- 4 Natural or naturalized features associated with FOD, FOC, MEMM4 and MEM/THD communities
- 5 Approximation based on aerial imagery interpretation

Appendix D

Typical Pipeline Construction Sequence

Constructing an Enbridge Gas Pipeline



- | | | | | | |
|----------------------------|-----------------------------------|-----------------------|---|---|---|
| 1. Pre-construction tiling | 4. Right-of-way topsoil stripping | 7. Field bending pipe | 10. X-ray or ultrasonic inspection, weld repair | 13. Padding trench bottom | 16. Backfilling |
| 2. Surveying and staking | 5. Front-end grading | 8. Lining-up pipe | 11. Field coating | 14. Final inspection and coating repair | 17. Hydrostatic testing |
| 3. Clearing | 6. Stringing pipe | 9. Welding process | 12. Digging the trench | 15. Lowering pipe | 18. Site restoration and post-construction tiling |

Appendix E

Contact List

Surname	First Name	Organization	Department	Title/Role	Address	City/Town, Province	Postal Code	Telephone	E-Mail
Indigenous Communities									
O'Brien	Cathleen	Aamjiwnaang First Nation	--	Environmental Coordinator	978 Tashmoo Avenue	Sarnia, ON	N7T 7H5	519-336-8410	cobrien@aamjiwnaang.ca
MacBeth	Janet	Bkejwanong (Walpole Island) First Nation	--	Consultation Manager	RR 3	Wallaceburg, ON	N8A 4K9	519-627-1481	Janet.Macbeth@wifn.org
McCormack	Michelle	Caldwell First Nation	--		14 Orange Street	Leamington, ON	N8H 1P5	519-322-1766	ecc@caldwellfirstnation.ca
Riley	Kelly	Chippewas of the Thames First Nation	Consultation Department	--	RR 1	Muncey, ON	N0L 1Y0	519- 289-5555	kriley@cottfn.com
Lee	Philip	Chippewas of Kettle and Stony Point First Nation	Southwind Corporate Development Inc.	CEO	6247 Indian Lane	Kettle and Stony Point First Nation, ON	N0N 1J1	519-786-2125	philip.lee@southwindcorp.ca
Doxtator	Brandon	Oneida Nation of the Thames	Consultation Department	Environment and Consultation Coordinator	RR 2	Southwold, ON	N0L 2G0	519-652-3244	environment@oneida.on.ca
Federal and Provincial Elected Officials									
Epp	Dave	Government of Canada	Chatham-Kent—Leamington	Member of Parliament (MP)	75 Erie Street South, Unit 100	Leamington, ON	N8H 3B2	613-992-2612	Dave.Epp@parl.gc.ca
Nicholls	Rick	Government of Ontario	Chatham-Kent—Leamington	Member of Provincial Parliament (MPP)	111 Heritage Road, Suite 100	Chatham, ON	N7M 5W7	519-351-0510	rnicholls-co@ola.org
Ontario Pipeline Coordinating Committee (OPCC)									
Crnojacki	Zora	Ontario Pipeline Coordinating Committee (OPCC)	Ontario Energy Board (OEB)	OPCC Chair/Project Advisor	P.O. Box 2319, 2300 Yonge Street, 26th Floor	Toronto, ON	M4P 1E4	416-440-8104	Zora.Crnjacki@oeb.ca
Geerts	Helma	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Agriculture, Food and Rural Affairs (OMAFRA)	Policy Advisor, Land Use Policy & Stewardship	1 Stone Road West, 3rd Floor SE	Guelph, ON	N1G 4Y2	519-546-7423	Helma.Geerts@ontario.ca
Potter	Katy	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Environment, Conservation and Parks (MECP)	Supervisor (Acting), Environmental Assessment Branch	135 St Clair Avenue West, 7th Floor	Toronto, ON	M4V 1P5	416-804-2793	katy.potter@ontario.ca
Manouchehri	Kourosh	Ontario Pipeline Coordinating Committee (OPCC)	Technical Standards and Safety Authority (TSSA)	Engineer	345 Carlingview Drive	Toronto, ON	M9W 6N9	416-734-3539	manouchehri@tssa.org
Harris	Maya	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Municipal Affairs and Housing (MMAH) - Central Municipal Services Office	Manager, Community Planning & Development (East)	777 Bay Street, 13th Floor	Toronto, ON	M5G 2E5	416-585-6063	maya.harris@ontario.ca
Knieriem	Michelle	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Municipal Affairs and Housing (MMAH) - Western Municipal Services Office	Team Lead, Regional Planning	659 Exeter Rd, Exeter Road Complex 2nd Floor	London, ON	N6E 1L3	519-873-4033	Michelle.Knieriem@ontario.ca
Schulte-Hostedde	Bridget	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Municipal Affairs and Housing (MMAH) - Municipal Services Office - North	Regional Director (Sudbury, Thunder Bay - Acting)	Suite 401, 159 Cedar Street (Sudbury) Suite 223, 435 James Street South (Thunder Bay)	Sudbury, ON Thunder Bay, ON	P3E 6A5 P7E 6S7	705-564-6858 807-475-1187	bridget.schulte-hostedde@ontario.ca
Elms	Michael	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Municipal Affairs and Housing (MMAH) - Eastern Municipal Services Office	Manager, Community Planning & Development	8 Estate Lane, Rockwood House	Kingston, ON	K7M 9A8	613-545-2132	michael.elms@ontario.ca
Wilkinson	Jonathon	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Energy	Senior Advisor (Acting), Indigenous Energy Policy Unit	77 Grenville Street, 6th Floor	Toronto, ON	M7A 1B3	705-313-3658	jonathon.wilkinson@ontario.ca
Barboza	Karla	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	Team Lead, Heritage Planning Unit	400 University Avenue, 5th Floor	Toronto, ON	M7A 2R9	416-660-1027	karla.barboza@ontario.ca
Johnston	Keith	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Northern Development, Mines, Natural Resources and Forestry	Environmental Planning Team Lead (Acting), Strategic and Indigenous Policy Branch	99 Wellesley Street West	Toronto, ON	M7A 1W3	705-313-6960	keith.johnston@ontario.ca
Ostrowka	Cory	Ontario Pipeline Coordinating Committee (OPCC)	Infrastructure Ontario	Environmental Specialist, Environmental Management	1 Dundas Street West, Suite 2000	Toronto, ON	M5G 1Z3	647-264-3331	cory.ostrowka@infrastructureontario.ca
DiFabio	Tony	Ontario Pipeline Coordinating Committee (OPCC)	Ministry of Transportation (MTO)	Team Lead, Operations Division - Corridor Management	301 St. Paul Street West	St. Catharines	L2R 7R4	365-336-2136	Tony.DiFabio@ontario.ca
Provincial Agencies									
Greene	Robert	Ministry of the Solicitor General	--	Director	25 Grosvenor Street, 13th Floor	Toronto, ON	M7A 1Y6	416-277-2370	robert.greene@ontario.ca
Cerniavskaja	Karina	Ministry of Northern Development, Mines, Natural Resources and Forestry	Southern Region, Aylmer District	District Planner	615 John Street North	Aylmer, ON	N5H 2S8	519-200-2276	karina.cerniavskaja@ontario.ca
Boyd	Erick	Ministry of Municipal Affairs and Housing (MMAH)	Western Municipal Services Office	Manager, Community Planning & Development	659 Exeter Road, 2nd Floor	London, ON	N6E 1L3	519-873-4025	erick.boyd@ontario.ca
--	--	Ministry of Agriculture, Food and Rural Affairs (OMAFRA)	General Email (Initial Contact)	--	--	--	--	--	omafra.eanotices@ontario.ca
Rutherford	Nancy	Ministry of Agriculture, Food and Rural Affairs (OMAFRA)	Land Use Policy & Stewardship, Food Safety & Environmental Policy Branch	Rural Planner	1 Stone Road West	Guelph, ON	N1G 4Y2	226-962-2139	nancy.rutherford@ontario.ca
Pastori	Andrea	Ministry of Energy	Strategic, Network and Agency Policy Division	Cabinet Liaison and Strategic Policy Branch Coordinator	77 Grenville Street, 6th Floor	Toronto, ON	M7A 1B3	416-274-2126	andrea.pastori@ontario.ca
Romeo	Laura	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	Heritage Planning Unit, Programs and Services Branch	Heritage Planner	400 University Avenue, 5th Floor	Toronto, ON	M7A 2R10	437-996-5218	laura.romeo@ontario.ca
Harvey	Joseph	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)	Heritage Planning Unit, Programs and Services Branch	Heritage Planner	401 University Avenue, 5th Floor	Toronto, ON	M7A 2R10	613-242-3743	joseph.harvey@ontario.ca
O'Neill	Kathleen	Ministry of Environment, Conservation and Parks (MECP)	Environmental Assessment Branch	Director	135 St Clair Avenue West	Toronto, ON	M4V 1P5	647-287-5664	kathleen.oneill@ontario.ca
--	--	Ministry of Environment, Conservation and Parks (MECP)	Species at Risk Branch	--	--	--	--	--	SAROntario@ontario.ca
Ecclestone	Susan	Ministry of Environment, Conservation and Parks (MECP)	Species at Risk Branch	Director	40 St Clair Avenue West, 14th Floor	Toronto, ON	M4V 1M2	416-274-8864	susan.ecclestone@ontario.ca
Heeney	Paul	Ministry of Environment, Conservation and Parks (MECP)	Species at Risk Branch	Acting Director	50 Bloomington Rd	Aurora, ON	L4G 0L8	613-202-1889	paul.heeney@ontario.ca
--	--	Ministry of Environment, Conservation and Parks (MECP)	Species at Risk Branch	Branch Coordinator	--	--	--	--	sarbcordinator@ontario.ca
Corrigan	Kirsten	Ministry of Environment, Conservation and Parks (MECP)	Conservation and Source Protection Branch	Director	40 St Clair Avenue West, 14th Floor	Toronto, ON	M4V 1M2	705-987-5144	kirsten.corrigan@ontario.ca

Surname	First Name	Organization	Department	Title/Role	Address	City/Town, Province	Postal Code	Telephone	E-Mail
Keyvani	Mohsen	Ministry of Environment, Conservation and Parks (MECP)	Waste Approvals	Manager	135 St Clair Avenue West	Toronto, ON	M4V 1P5	416-432-7253	mohsen.keyvani@ontario.ca
Racz	David	Ministry of Environment, Conservation and Parks (MECP)	Windsor Area Office	Senior Environmental Officer	4510 Rhodes Drive, Unit 620	Windsor, ON	N8W 5K5	519-948-1464	david.racz@ontario.ca
Van Wagner	Randall	Lower Thames Valley Conservation Authority	Conservation Lands and Services	Manager	100 Thames Street	Chatham, ON	N7L 2Y8	519-354-7310 ex 234	randall.vanwagner@ltvca.ca
--	--	Hydro One Networks Inc. (HONI)	--	--	--	--	--	--	SecondaryLandUse@HydroOne.com
Municipal Elected Officials									
Canniff	Darrin	Municipality of Chatham-Kent	--	Mayor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3219	ckmayor@chatham-kent.ca
Authier	Mark	Municipality of Chatham-Kent	Ward 1: West Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3228	mark.authier@chatham-kent.ca
Harrigan	Melissa	Municipality of Chatham-Kent	Ward 1: West Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-350-8254	melissa.harrigan@chatham-kent.ca
Ceccacci	Anthony	Municipality of Chatham-Kent	Ward 2: South Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3206	anthony.ceccacci@chatham-kent.ca
Latimer	Mary Clare	Municipality of Chatham-Kent	Ward 2: South Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3207	maryclare.latimer@chatham-kent.ca
Thompson	Trevor	Municipality of Chatham-Kent	Ward 2: South Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-350-3715	trevor.thompson@chatham-kent.ca
Wright	John	Municipality of Chatham-Kent	Ward 3: East Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3252	john.wright@chatham-kent.ca
Pinsonneault	Steve	Municipality of Chatham-Kent	Ward 3: East Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3253	steve.pinsonneault@chatham-kent.ca
McGrail	Jamie	Municipality of Chatham-Kent	Ward 4: North Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3221	jamie.mcgrail@chatham-kent.ca
Faas	Joe	Municipality of Chatham-Kent	Ward 4: North Kent	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3208	joe.faas@chatham-kent.ca
Hall	Aaron	Municipality of Chatham-Kent	Ward 5: Wallaceburg	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3229	aaron.hall@chatham-kent.ca
McGregor	Carmen	Municipality of Chatham-Kent	Ward 5: Wallaceburg	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-350-3659	carmen.mcgregor@chatham-kent.ca
Finn	Amy	Municipality of Chatham-Kent	Ward 6: Chatham	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3216	amy.finn@chatham-kent.ca
McGregor	Brock	Municipality of Chatham-Kent	Ward 6: Chatham	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-350-2537	brock.mcgregor@chatham-kent.ca
Sulman	Douglas	Municipality of Chatham-Kent	Ward 6: Chatham	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3234	doug.sulman@chatham-kent.ca
Kirkwood-Whyte	Karen	Municipality of Chatham-Kent	Ward 6: Chatham	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3209	karen.kirkwood-whyte@chatham-kent.ca
Bondy	Michael	Municipality of Chatham-Kent	Ward 6: Chatham	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3246	michael.bondy@chatham-kent.ca
Crew	Marjorie	Municipality of Chatham-Kent	Ward 6: Chatham	Councillor	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-3218	marjorie.crew@chatham-kent.ca
Haddad	Tony	Municipality of Chatham-Kent	Administration	Chief Administrative Officer (CAO)	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	lolad@chatham-kent.ca
Municipal Agencies									
McAllister	Bruce	Municipality of Chatham-Kent	Community Development	General Manager	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	brucem@chatham-kent.ca
McFadden	Stuart	Municipality of Chatham-Kent	Economic Development	Director	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	stuartm@chatham-kent.ca
Smith	Judy	Municipality of Chatham-Kent	Municipal Governance/Clerk	Director	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	judy@chatham-kent.ca
Rainbird	Jamie	Municipality of Chatham-Kent	Economic Development	Manager	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	jamier@chatham-kent.ca
Bernardi	Rob	Municipality of Chatham-Kent	Public Utilities Commission, Water & Wastewater Services	Facilities & Systems Manager	325 Grand Avenue East, PO Box 1191	Chatham, ON	N7M 5L8	226-312-2023 ex 4336	robbe@chatham-kent.ca
Jacques	Ryan	Municipality of Chatham-Kent	Planning Services	Director	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	ryanj@chatham-kent.ca
McFadden	Mark	Municipality of Chatham-Kent	Engineering	Manager	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	markmc@chatham-kent.ca
Clarke	Gabriel	Municipality of Chatham-Kent	Growth & Sustainability	Manager	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	gabrielc@chatham-kent.ca
Dick	Tim	Municipality of Chatham-Kent	Drainage, Asset and Waste Management	Director	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998 ex 3310	timd@chatham-kent.ca
Sunderland	Tim	Municipality of Chatham-Kent	Public Utilities Commission	General Manager	325 Grand Avenue East, PO Box 1191	Chatham, ON	N7M 5L8	519-436-0119	tims@chatham-kent.ca
Case	Chris	Municipality of Chatham-Kent	Fire and Emergency Services	Fire Chief	5 Second Street	Chatham, ON	N7M 5X2	519-352-8401 ex 3416	ckfire@chatham-kent.ca
--	--	Municipality of Chatham-Kent	Public Works Department	--	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	ckpw@chatham-kent.ca
--	--	Municipality of Chatham-Kent	Engineering and Transportation Department	--	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	cktraffic@chatham-kent.ca
--	--	Municipality of Chatham-Kent	Public Utilities Commission	Water & Wastewater Services	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-436-0119	ckpuc@chatham-kent.ca
--	--	Municipality of Chatham-Kent	Planning Services	--	315 King Street West, P.O. Box 640	Chatham, ON	N7M 5K8	519-360-1998	ckplanning@chatham-kent.ca
Interest Groups									
Hundt	Gail	Chatham-Kent Chamber of Commerce	--	President & CEO	54 Fourth Street	Chatham, ON	N7M 2G2	519-352-7540 ex 22	gail@chatham-kentchamber.ca
Cunningham	Jay	Kent Federation of Agriculture	--	President	--	--	--	519-784-2084	jay.cunningham2@gmail.com
Verstraete	Carol	Kent Federation of Agriculture	--	Member Services Representative	--	--	--	519-809-3040	carol.verstraete@ofa.on.ca
Nokes	Ian	Ontario Federation of Agriculture	--	Policy Analyst	100 Stone Road West, Suite 206	Guelph, ON	N1G 5L3	519-821-8883 ex 253	ian.nokes@ofa.on.ca
Smith	Catherine	Waste Connections of Canada	Ridge Landfill	Project Manager	20262 Erieau Road	Blenheim, ON	NOP 1A0	519-358-2860	Catherine.Smith@WasteConnections.com
Smith	Marion	Chatham-Kent Municipal Airport	--	Airport Manager	8528 14th Line, RR #2	Merlin, ON	NOP 1W0	519-676-3455	msmith@z3aviation.com

Appendix F

Notice of Study Commencement and Virtual Information Session

PROPOSED RIDGE LANDFILL RNG PROJECT

NOTICE OF STUDY COMMENCEMENT AND VIRTUAL INFORMATION SESSION

CHATHAM-KENT, ONTARIO

ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge Gas) has retained Dillon Consulting Limited to begin an environmental study for the proposed Ridge Landfill Renewable Natural Gas (RNG) Project located in the Municipality of Chatham-Kent, Ontario.

Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed for injection into the local natural gas distribution system. The project is expected to reduce greenhouse gas emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year or about 40% of the homes in Chatham-Kent.

The project will involve the construction of a new RNG injection station at the Ridge Landfill and a 4-inch extra high pressure steel pipeline. Enbridge Gas has identified a preliminary preferred route that runs 5.7 km between Enbridge's Chatham East Line at Blenheim North Station to the Ridge Landfill, and two alternative routes (see map).

Once the study is complete, Enbridge Gas will apply to the Ontario Energy Board (OEB) for approval to construct the project. If approved, construction may begin in spring 2023.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the project, describe the natural and socio-economic environment, evaluate the project from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder and Indigenous consultation is a key component of this study. Members of the general public, landowners, government agencies, current customers, Indigenous communities, and other interested parties are invited to participate in the study. We are hosting a Virtual Information Session to provide you with an opportunity to review the project and provide input.

Virtual Information Session Website: www.RidgeRNG.ca

Active Dates: Monday, April 25 to Sunday, May 8, 2022

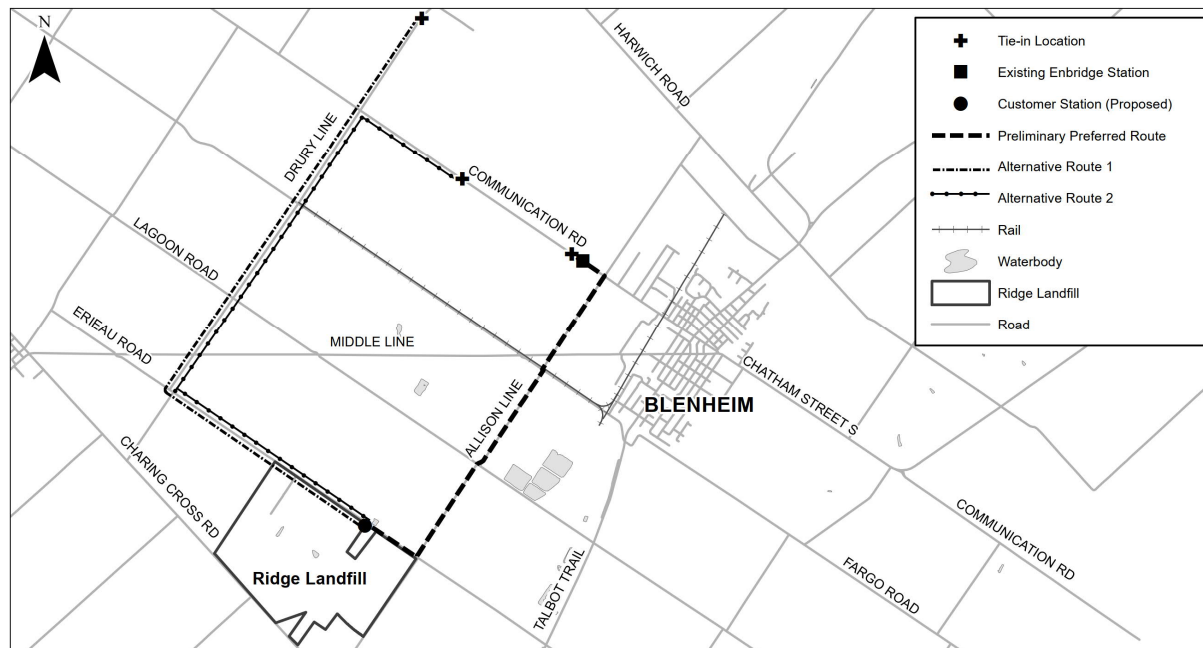
Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please visit the Virtual Information Session website or contact one of the individuals listed here. The last day to submit comments for consideration in the environmental study is May 24, 2022.

Enbridge Gas Project Website: www.enbridgegas.com/RidgeRNG

Tanya Turk
Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd.
Markham, ON L6C 0M6

Alissa Lee
Environmental Assessment
Project Manager
Dillon Consulting Limited
Suite 101 - 177 Colonnade Rd.
South, Ottawa, ON K2E 7J4

Project Contact Info:
RNGRidgeLandfillEA@dillon.ca
613-745-2213 ext. 3024



Appendix G

Stakeholder Engagement Logs



ENBRIDGE GAS INC.

Ridge Landfill RNG Project

Appendix G: Stakeholder Engagement Logs

Agency Correspondence

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
FEDERAL AGENCIES AND ELECTED OFFICIALS					
1.1	April 11, 2022	Member of Parliament Chatham-Kent – Leamington <i>Contact: Dave Epp</i>	Enbridge representative provided the Notice of Commencement via email.	N/A	N/A
PROVINCIAL AGENCIES AND ELECTED OFFICIALS					
2.1	April 11, 2022	Member of Provincial Parliament Chatham-Kent – Leamington <i>Contact: Rick Nicholls</i>	Enbridge representative provided the Notice of Commencement via email.	N/A	N/A
3.1	April 11, 2022	Ministry of the Solicitor General <i>Contact: Robert Greene</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
4.1	April 11, 2022	Ministry of Municipal Affairs and Housing (MMAH) <i>Contact: Erick Boyd</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
5.1	April 11, 2022	Ministry of Agriculture, Food and Rural Affairs (OMAFRA) <i>Contacts: EA Notices and Nancy Rutherford</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
6.1	April 11, 2022	Ministry of Energy <i>Contact: Andrea Pastori</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
7.1	April 11, 2022	Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) <i>Contacts: Laura Romeo and Joseph Harvey</i>	Dillon representative sent Project letter and Notice of Commencement via email.	May 20, 2022	MHSTCI representative provided a letter of advice regarding the proposed Project.
7.2	May 26, 2022	MHSTCI <i>Contacts: Joseph Harvey and Karla Barboza</i>	Dillon representative confirmed receipt of MHSTCI's letter of advice.	N/A	N/A
7.3	April 18, 2022	MHSTCI <i>Contact: Past Portal</i>	TMHC representative submitted the Stage 1 Archaeology Assessment for the Project to the Ontario Past Portal.	April 21, 2022	MHSTCI Past Portal representative stated that the Stage 1 Archaeology Assessment had been entered into the Ontario Public Register of Archaeological Reports without technical review.
7.4	April 19, 2022	MHSTCI <i>Contact: Karla Barboza</i>	TMHC representative submitted the Cultural Heritage Screening Technical Memo and cultural heritage checklists for the Project.	April 19, 2022	MHSTCI representative acknowledged receipt of the submission.

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
7.5	June 9, 2022	MHSTCI <i>Contact: Karla Barboza</i>	TMHC representative had a phone conversation with the MHSTCI representative and inquired whether they would be providing any formal comments on the Cultural Heritage Screening Technical Memo. MHSTCI representative stated that they agree with the recommendation in the memo that a Cultural Heritage Assessment Report (CHAR) be completed as a next step.	N/A	N/A
8.1	April 11, 2022	Ministry of Environment, Conservation and Parks (MECP) Environmental Assessment Branch <i>Contact: Kathleen O'Neil</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
9.1	April 11, 2022	MECP Species at Risk Branch <i>Contact: SAROntario (Permitting and Compliance)</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
9.2	April 11, 2022	MECP Species at Risk Branch <i>Contact: Susan Ecclestone</i>	Dillon representative sent Project letter and Notice of Commencement via email.	April 11, 2022	Out of office message provided contact information for the Acting Director (Paul Heeney) and Branch Coordinator.
9.3	April 11, 2022	MECP Species at Risk Branch <i>Contacts: Paul Heeney and SAR Branch Coordinator</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
10.1	April 11, 2022	MECP Conservation and Source Protection Branch <i>Contacts: Kirsten Corrigan, Vesna Alimpic, Jennifer Moulton</i>	Dillon representative sent Project letter and Notice of Commencement via email.	May 7, 2022	MECP representative provided information on drinking water and natural gas pipelines for consideration in the Environmental Report.
11.1	April 11, 2022	MECP Waste Approvals <i>Contact: Mohsen Keyvani</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
12.1	April 11, 2022	MECP Windsor Area Office <i>Contact: David Racz</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
13.1	April 11, 2022	Hydro One Networks Inc.	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
14.1	April 11, 2022	Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNR) <i>Contacts: Karina Cerniavskaja</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
14.2	April 27, 2022	MNDMNRF <i>Contact: Kristen Wagner</i>	NDMNR representative provided comments regarding the Notice of Commencement.	April 28, 2022	Dillon representative thanked NDMNR representative for providing comments.
15.1	April 11, 2022	Lower Thames Valley Conservation Authority (LTVCA) <i>Contact: Randall Van Wagner</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
15.2	April 28, 2022	LTVCA <i>Contact: Valerie Towsley, Emily Brammer, Connor Wilson, Jason Homewood, Elizabeth Philip</i>	LTVCA representative provided information about known drains in the vicinity of the identified routes. LTVCA noted that there are no Provincially Significant Wetlands, Local Wetlands, Areas of Natural and Scientific Interest, or Source Protection concerns for any of the project routes. A permit may be required if undercrossing or working within close proximity to a waterway.	April 28, 2022	Dillon representative thanked LTVCA representative and informed them that they would be in touch once the preferred route is selected to discuss potential permitting requirements.
15.3	June 17, 2022	LTVCA <i>Contacts: Randall Van Wagner, Valerie Towsley, Emily Brammer, Jason Homewood, Connor Wilson, Elizabeth Philip</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
ONTARIO PIPELINE COORDINATING COMMITTEE (OPCC)					
16.1	April 11, 2022	OPCC – Ontario Energy Board (OEB) Representative <i>Contact: Zora Crnojacki</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
16.2	June 17, 2022	OPCC – OEB Representative <i>Contact: Zora Crnojacki</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
17.1	April 11, 2022	OPCC – OMAFRA Representative <i>Contact: Helma Geerts</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
17.2	June 17, 2022	OPCC – OMAFRA Representative <i>Contact: Helma Geerts</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
18.1	April 11, 2022	OPCC – MECP Representative <i>Contact: Katy Potter</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
18.2	June 17, 2022	OPCC – MECP Representative <i>Contact: Katy Potter</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
19.1	April 11, 2022	OPCC – Technical Standards and Safety Authority (TSSA) Representative <i>Contact: Kourosh Manouchehri</i>	Dillon representative sent Project letter and Notice of Commencement via email.	April 18, 2022	TSSA representative had no comments. TSSA representative directed Enbridge to submit Application for Review of Pipeline Project to TSSA, in addition to the submission of the Leave-to-Construct application to the OEB.
19.2	June 17, 2022	OPCC – TSSA Representative <i>Contact: Kourosh Manouchehri</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	June 17, 2022	TSSA representative thanked Dillon representative for the information and provided a link to the TSSA Application for Review of Pipeline Project to be filled out by Enbridge.

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
19.3	June 17, 2022	OPCC – TSSA Representative Contact: <i>Kourosh Manouchehri</i>	Dillon representative thanked TSSA representative and noted that the information was passed along to Enbridge Gas.	N/A	N/A
20.1	April 11, 2022	OPCC – MMAH Representative Central Municipal Services Office Contact: <i>Maya Harris</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
20.2	June 17, 2022	OPCC – MMAH Representative Central Municipal Services Office Contact: <i>Maya Harris</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
21.1	April 11, 2022	OPCC – MMAH Representative Western Municipal Services Office Contact: <i>Michelle Knieriem</i>	Dillon representative sent Project letter and Notice of Commencement via email.	April 11, 2022	MMAH representative is on maternity leave and provided the contact of their manager (Erick Boyd).
21.2	June 17, 2022	OPCC – MMAH Representative Western Municipal Services Office Contact: <i>Erick Boyd (contacted in lieu of Michelle Knieriem)</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
22.1	April 11, 2022	OPCC – MMAH Representative Municipal Services Office – North Contact: <i>Bridget Schulte-Hostedde</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
22.2	June 17, 2022	OPCC – MMAH Representative Municipal Services Office – North Contact: <i>Bridget Schulte-Hostedde</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
23.1	April 11, 2022	OPCC – MMAH Representative Eastern Municipal Services Office Contact: <i>Mike Elms</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
23.2	June 17, 2022	OPCC – MMAH Representative Eastern Municipal Services Office Contact: <i>Mike Elms</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
24.1	April 11, 2022	OPCC – Ministry of Energy (MOE) Representative Contact: <i>Jonathon Wilkinson</i>	Dillon representative sent Project letter and Notice of Commencement via email.	April 11, 2022	MOE representative's auto-reply message stated he is no longer with MOE and provided name of Unit Manager (Amy Gibson).
24.2	June 17, 2022	OPCC – MOE Representative Contact: <i>Amy Gibson (contacted in lieu of Jonathon Wilkinson)</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
25.1	April 11, 2022	OPCC – MHSTCI Representative Contact: <i>Karla Barboza</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
25.2	June 17, 2022	OPCC – MHSTCI Representative <i>Contact: Karla Barboza</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	June 17, 2022	MHSTCI representative thanked Dillon representative for providing the ER and asked for confirmation on the deadline to submit comments.
25.3	June 17, 2022	OPCC – MHSTCI Representative <i>Contact: Karla Barboza</i>	Dillon representative confirmed July 29, 2022 as the deadline for the submission of comments on the ER.	June 17, 2022	MHSTCI representative thanked Dillon representative for confirming.
25.4	July 26, 2022	OPCC – MHSTCI Representative <i>Contacts: Karla Barboza, Joseph Harvey, and Laura Hatcher</i>	MHSTCI representative provided a letter with comments on the ER.	July 26, 2022	Dillon representative thanked MHSTCI representative for their review and comments and noted that they would incorporate their suggestions into the ER.
26.1	April 11, 2022	OPCC – MNDMNR Representative <i>Contact: Keith Johnston</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
26.2	June 17, 2022	OPCC – MNDMNR Representative <i>Contact: Keith Johnston</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
27.1	April 11, 2022	OPCC – Infrastructure Ontario Representative <i>Contact: Cory Ostrowka</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
27.2	June 17, 2022	OPCC – Infrastructure Ontario Representative <i>Contact: Cory Ostrowka</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
28.1	April 11, 2022	OPCC – MTO Representative <i>Contact: Tony DiFabio</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
28.2	June 17, 2022	OPCC – MTO Representative <i>Contact: Tony DiFabio</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
MUNICIPAL AGENCIES AND ELECTED OFFICIALS					
29.1	March 1, 2022	Municipality of Chatham-Kent Mayor <i>Contacts: Darrin Canniff (Mayor) and Ward 2 Councillors, Anthony Ceccaci, Mary Clare Latimer, and Trevor Thompson</i>	Enbridge Gas representative sent a letter to the Mayor and Ward 2 Councillors from Jim Redford, Vice President, Energy Services, regarding the proposed Project.	March 1, 2022	Ward 2 Councillor, Clare Latimer, responded stating she was excited to read the formal Project announcement and is looking forward to the realization of the local collaborative RNG project.
29.2	April 11, 2022	Municipality of Chatham-Kent Mayor <i>Contact: Darrin Canniff</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
29.3	April 25, 2022	Municipality of Chatham-Kent Mayor <i>Contact: Darrin Canniff</i>	Enbridge Gas representative presented information on the Project at the Chatham-Kent Council Meeting.	April 26, 2022	Mayor provided a letter of support for the Project on behalf of Chatham-Kent Council.

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
29.4	June 17, 2022	Municipality of Chatham-Kent Mayor <i>Contact: Darrin Canniff</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
30.1	April 11, 2022	Municipality of Chatham-Kent Ward 1: West Kent Councillors <i>Contacts: Mark Authier and Melissa Harrigan</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
30.2	June 17, 2022	Municipality of Chatham-Kent Ward 1: West Kent Councillors <i>Contacts: Mark Authier and Melissa Harrigan</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
31.1	April 11, 2022	Municipality of Chatham-Kent Ward 2: South Kent Councillors <i>Contact: Anthony Ceccaci, Mary Clare Latimer, and Trevor Thompson</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
31.2	June 17, 2022	Municipality of Chatham-Kent Ward 2: South Kent Councillors <i>Contacts: Anthony Ceccaci, Mary Clare Latimer, and Trevor Thompson</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
32.1	April 11, 2022	Municipality of Chatham-Kent Ward 3: East Kent Councillors <i>Contacts: John Wright and Steve Pinsonneault</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
32.2	June 17, 2022	Municipality of Chatham-Kent Ward 3: East Kent Councillors <i>Contacts: John Wright and Steve Pinsonneault</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
33.1	April 11, 2022	Municipality of Chatham-Kent Ward 4: North Kent Councillors <i>Contacts: Jamie McGrail and Joe Faas</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
33.2	June 17, 2022	Municipality of Chatham-Kent Ward 4: North Kent Councillors <i>Contacts: Jamie McGrail and Joe Faas</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
34.1	April 11, 2022	Municipality of Chatham-Kent Ward 5: Wallaceburg Councillors <i>Contacts: Aaron Hall and Carmen Mcgregor</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
34.2	June 17, 2022	Municipality of Chatham-Kent Ward 5: Wallaceburg Councillors <i>Contacts: Aaron Hall and Carmen Mcgregor</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
35.1	April 11, 2022	Municipality of Chatham-Kent Ward 6: Chatham Councillors <i>Contacts: Amy Finn, Brock McGregor, Doug Sulman, Karen Kirkwood-Whyte, Michael Bondy, and Marjorie Crew</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
35.2	June 17, 2022	Municipality of Chatham-Kent Ward 6: Chatham Councillors <i>Contacts: Amy Finn, Brock McGregor, Doug Sulman, Karen Kirkwood-Whyte, Michael Bondy, and Marjorie Crew</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
36.1	April 11, 2022	Municipality of Chatham-Kent Chief Administrative Officer (CAO) <i>Contact: Tony Haddad</i>	Dillon representative sent the Notice of Commencement via email.	April 11, 2022	Receipt confirmed by representative's office.
36.2	June 17, 2022	Municipality of Chatham-Kent CAO <i>Contact: Tony Haddad</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
37.1	April 11, 2022	Municipality of Chatham-Kent Community Development <i>Contact: Bruce McAllister</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
37.2	June 17, 2022	Municipality of Chatham-Kent Community Development <i>Contact: Bruce McAllister</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
38.1	April 11, 2022	Municipality of Chatham-Kent Economic Development <i>Contacts: Stuart McFadden and Jamie Rainbird</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
38.2	June 17, 2022	Municipality of Chatham-Kent Economic Development <i>Contacts: Stuart McFadden and Jamie Rainbird</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
39.1	April 11, 2022	Municipality of Chatham-Kent Municipal Governance/Clerk <i>Contact: Judy Smith</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
39.2	June 17, 2022	Municipality of Chatham-Kent Municipal Governance/Clerk <i>Contact: Judy Smith</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
40.1	April 11, 2022	Municipality of Chatham-Kent Public Utilities Commission, Water and Wastewater Services <i>Contact: Rob Bernardi</i>	Dillon representative sent Project letter and Notice of Commencement via email.	May 14, 2022	Representative from Chatham-Kent Public Utilities Commission responded stating that they are in agreement with the preliminary preferred route for the Project as shown in the map provided in the Notice of Commencement. The Public Utilities Commission representative noted that the Blenheim Water Pollution Control Plant (WPCP) and treatment lagoons are located along the preliminary preferred route and that when the WPCP expands in the future one day, there may be opportunities at the WPCP to create RNG. Representative stated that having a natural gas pipeline available close by could potentially allow future injection of RNG from the WPCP.
40.2	May 17, 2022	Municipality of Chatham-Kent Public Utilities Commission, Water and Wastewater Services <i>Contact: Rob Bernardi</i>	Dillon representative thanked Chatham-Kent Public Utilities Commission representative for their comments and input on the Project.	N/A	N/A
40.3	June 17, 2022	Municipality of Chatham-Kent Public Utilities Commission, Water and Wastewater Services <i>Contact: Rob Bernardi</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
41.1	April 11, 2022	Municipality of Chatham-Kent Planning Services <i>Contact: Ryan Jacques</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
41.2	June 17, 2022	Municipality of Chatham-Kent Planning Services <i>Contact: Ryan Jacques</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
42.1	April 11, 2022	Municipality of Chatham-Kent Engineering Department <i>Contact: Mark McFadden</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
42.2	June 17, 2022	Municipality of Chatham-Kent Engineering Department <i>Contact: Mark McFadden</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
43.1	April 11, 2022	Municipality of Chatham-Kent Growth and Sustainability <i>Contact: Gabriel Clarke</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
43.2	June 17, 2022	Municipality of Chatham-Kent Growth and Sustainability <i>Contact: Gabriel Clarke</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
44.1	April 11, 2022	Municipality of Chatham-Kent Drainage, Asset and Waste Management <i>Contact: Tim Dick</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
44.2	June 17, 2022	Municipality of Chatham-Kent Drainage, Asset and Waste Management <i>Contact: Tim Dick</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
45.1	April 11, 2022	Municipality of Chatham-Kent Public Utilities Commission <i>Contact: Tim Sunderland</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
45.2	June 17, 2022	Municipality of Chatham-Kent Public Utilities Commission <i>Contact: Tim Sunderland</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
46.1	April 11, 2022	Municipality of Chatham-Kent Fire and Emergency Services <i>Contact: Chris Chase (Fire Chief)</i>	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
46.2	June 17, 2022	Municipality of Chatham-Kent Fire and Emergency Services <i>Contact: Chris Chase (Fire Chief)</i>	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
47.1	April 11, 2022	Municipality of Chatham-Kent Public Works Department	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
48.1	April 11, 2022	Municipality of Chatham-Kent Engineering and Transportation Department	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A
49.1	April 11, 2022	Municipality of Chatham-Kent Public Utilities Commission	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A

Line Item	Date of Consultation	Name of Agency and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
50.1	April 11, 2022	Municipality of Chatham-Kent Planning Services	Dillon representative sent Project letter and Notice of Commencement via email.	N/A	N/A

Interest Group Correspondence

Line Item	Date of Consultation	Name of Group and/or Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
51.1	April 11, 2022	Chatham-Kent Chamber of Commerce <i>Contact: Gail Hundt</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
52.1	April 11, 2022	Kent Federation of Agriculture <i>Contacts: Jay Cunningham and Carol Vestraete</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
53.1	April 11, 2022	Waste Connections of Canada <i>Contact: Catherine Smith</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A
54.1	April 11, 2022	Chatham-Kent Municipal Airport <i>Contact: Marion Smith</i>	Dillon representative sent the Notice of Commencement via email.	April 25, 2022	Representative attended the Virtual Information Session and requested information regarding the construction of the RNG injection station.
54.2	May 2, 2022	Chatham-Kent Municipal Airport <i>Contact: Marion Smith</i>	Dillon representative provided a high-level overview of the Waste Connections of Canada biomethane station and the Enbridge Gas RNG injection station being built at the Ridge Landfill site and provided the planned construction timeline for the Enbridge Gas infrastructure. Dillon representative provided the contact information for Catherine Smith at Waste Connections of Canada should the Airport Manager have further questions about the biomethane station.	N/A	N/A
55.1	May 2, 2022	Ontario Federation of Agriculture <i>Contact: Ian Nokes</i>	Dillon representative sent the Notice of Commencement via email.	N/A	N/A

Public Correspondence

Line Item	Date of Consultation	Name of Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
56.1	April 20, 2022	██████████ Landowner/Resident in Study Area	Individual noted that they live in proximity to the Project and inquired about the potential for a customer connection to the new pipeline.	April 20, 2022	Enbridge representative thanked individual for their interest in the Project, informed them that the routing for the Project is not confirmed yet, and that the transmission pipeline is for large volumes at high pressures and is not safe for direct customer delivery. Once the new pipeline has been constructed and is fully in-service, new customer attachments are possible and will follow existing attachment policies.
57.1	May 5, 2022	██████████ Landowner/Resident in the Study Area	Individual submitted comments via the Virtual Information Session comment form. They noted that they live along the preliminary preferred route and are supportive of the Project; however, they are concerned about impacts to their property access during construction and disruption of traffic and farming operations along Allison Line. They stated they would like natural gas service to their property if the preliminary preferred route is constructed, but that they would prefer the pipeline follows the alternative route via Erieau Road and Drury Line.	May 9, 2022	Dillon representative sent a letter to the individual thanking them for their interest in the Project and acknowledging their preference for the alternative routing on Erieau Road and Drury Line. Dillon representative informed them that the routing for the Project is not confirmed yet, and that the transmission pipeline is for large volumes at high pressures and is not safe for direct customer delivery. Once the new pipeline has been constructed and is fully in-service, new customer attachments are possible and will follow existing attachment policies.
58.1	May 6, 2022	██████████ Landowner/Resident in the Study Area & Project Mailing List Subscriber	Individual submitted comments and questions via the Virtual Information Session comment form. They noted they are supportive of the Project and stated that they feel the best route option is the one that causes the least amount of disruption to homeowners and local business operations.	May 11, 2022	Dillon representative thanked individual for their interest in the Project and provided responses to their questions.
58.2	June 17, 2022	██████████ Landowner/Resident in the Study Area & Project Mailing List Subscriber	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
59.1	May 13, 2022	██████████ Landowner/Resident in the Study Area	Individual called Dillon representative and asked which side of Erieau Road the pipeline would be installed on when it leaves the landfill. They noted they are concerned about trees along their property line being impacted by construction and would prefer the pipeline stay on the Ridge Landfill side of the road. Dillon representative responded by noting that the side of the road the pipeline would be installed on was not yet determined, but it would be starting on the Ridge Landfill side due to the required connection to the RNG injection station. Dillon representative stated that construction would be within the municipal road allowance and measures would be implemented during construction to prevent and avoid adverse impacts on trees. Individual noted that they are supportive of the Project and would have liked to have seen this type of project pursued sooner, as they do not like the gas flaring at the landfill. They also inquired about the potential for getting natural gas service to their property once the pipeline is built and the Dillon representative offered to provide contact information for Enbridge Gas so that they could learn more about service connections. The individual declined any contact information for Enbridge Gas and declined sharing their email address for Project updates.	N/A	N/A
60.1	June 17, 2022	██████████ Project Mailing List Subscriber	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A

Line Item	Date of Consultation	Name of Contact	Description of Consultation Activity	Date of Response	Response and Issue Resolution (if applicable)
61.1	June 17, 2022	██████████ Project Mailing List Subscriber	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
62.1	June 17, 2022	██████████ Project Mailing List Subscriber	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A
63.1	June 17, 2022	██████████ Project Mailing List Subscriber	Dillon representative emailed a notice that the ER is available for review and provided a link to the report on the Enbridge Gas project website.	N/A	N/A

Appendix H

Agency Letters



April 11, 2022

RE: Enbridge Gas Inc.
Proposed Ridge Landfill RNG Project
Chatham-Kent, Ontario
Notice of Study Commencement and Virtual Information Session

177 Colonnade Road
Suite 101
Ottawa, Ontario
Canada
K2E 7J4
Telephone
613.745.2213
Fax
613.745.3491

To whom it may concern,

Enbridge Gas Inc. has retained Dillon Consulting Limited to conduct an environmental study for the proposed Ridge Landfill Renewable Natural Gas (RNG) Project located in the Municipality of Chatham-Kent, near the community of Blenheim.

Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed for injection into the local natural gas distribution system. The project is expected to reduce greenhouse gas emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year, or about 40% of the homes in Chatham-Kent.

The project will involve the construction of a new RNG injection station at the Ridge Landfill and a new 4-inch extra high-pressure steel pipeline, running from northwest of an existing Enbridge Gas pressure regulating station on Communication Road to the Ridge Landfill on Erieau Road. Enbridge Gas has identified a preliminary preferred route and two alternative routes ranging in length from approximately 6 to 8 km. The routes under consideration are shown on the attached Notice of Commencement.

The preliminary preferred route runs from a location just northwest of the existing Enbridge Gas pressure regulating station on Communication Road for 300 m. It then then turns southwest and runs along Allison Line for 1.4 km, along Fargo Road for 20 m, along Allison Line for 2.8 km, then north along Erieau Road for 1.5 km to the Ridge Landfill. Alternative Route 1 begins southwest of the intersection of Drury Line and Huffman Road, follows Drury Line southwest for approximately 5.5 km to Erieau Road, then proceeds southeast to the Ridge Landfill. Alternative Route 2 begins at a location on Communication Road approximately 1.5 km southeast of the intersection with Drury Line, proceeds northwest to Drury Line, then southwest to Erieau Road and southeast to the Ridge Landfill.

The study is being conducted in accordance with the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition. Once the study is complete, Enbridge Gas will apply to the OEB for approval to construct the project. If approved, construction may begin in spring 2023.

Dillon Consulting
Limited



Stakeholder involvement will play a key role in the project. In order to undertake a successful consultation program, we have developed a mailing list of government agencies (federal, provincial, and municipal), Indigenous communities, and potential interest groups that may have an interest in the study. Enbridge Gas will also be hosting a virtual information session as part of the study. Details about this session are provided in the attached Notice of Commencement.

As part of the initial phase of the study, we are collecting information on socio economic, natural environment, and archaeological or heritage resource features along the potential routes. Examples of data being collected include information on archaeological and heritage resources, community facilities and infrastructure, terrestrial and aquatic vegetation and wildlife, as well as water, sewage, industrial, and commercial utilities.

We are interested in hearing from you with any comments that you or your organization may have regarding this project. We are also requesting any information relating to natural and/or human environments along the potential routes that may fall within your mandate.

Please send this information to my attention at the above address or by email to RNGRidgeLandfillEA@dillon.ca by May 24, 2022. If you require any further information at this time, please do not hesitate to contact me.

If there is a more appropriate contact at your organization who should receive this letter, please kindly forward the letter at your discretion and notify us as we will update our stakeholder consultation list.

Sincerely,

DILLON CONSULTING LIMITED

Alissa Lee, MES, MLIS
Environmental Assessment Project Manager
Tel: 613-745-2213 ext. 3024

Attachment: Notice of Study Commencement and Virtual Information Session

PROPOSED RIDGE LANDFILL RNG PROJECT

NOTICE OF STUDY COMMENCEMENT AND VIRTUAL INFORMATION SESSION

CHATHAM-KENT, ONTARIO

ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge Gas) has retained Dillon Consulting Limited to begin an environmental study for the proposed Ridge Landfill Renewable Natural Gas (RNG) Project located in the Municipality of Chatham-Kent, Ontario.

Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed for injection into the local natural gas distribution system. The project is expected to reduce greenhouse gas emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year or about 40% of the homes in Chatham-Kent.

The project will involve the construction of a new RNG injection station at the Ridge Landfill and a 4-inch extra high pressure steel pipeline. Enbridge Gas has identified a preliminary preferred route that runs 5.7 km between Enbridge's Chatham East Line at Blenheim North Station to the Ridge Landfill, and two alternative routes (see map).

Once the study is complete, Enbridge Gas will apply to the Ontario Energy Board (OEB) for approval to construct the project. If approved, construction may begin in spring 2023.

The Process

The study is being conducted in accordance with the OEB's Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The study will review the need and justification for the project, describe the natural and socio-economic environment, evaluate the project from a social and environmental perspective, outline safety measures, and describe appropriate measures for impact mitigation and monitoring.

Invitation to the Community

Stakeholder and Indigenous consultation is a key component of this study. Members of the general public, landowners, government agencies, current customers, Indigenous communities, and other interested parties are invited to participate in the study. We are hosting a Virtual Information Session to provide you with an opportunity to review the project and provide input.

Virtual Information Session Website: www.RidgeRNG.ca

Active Dates: Monday, April 25 to Sunday, May 8, 2022

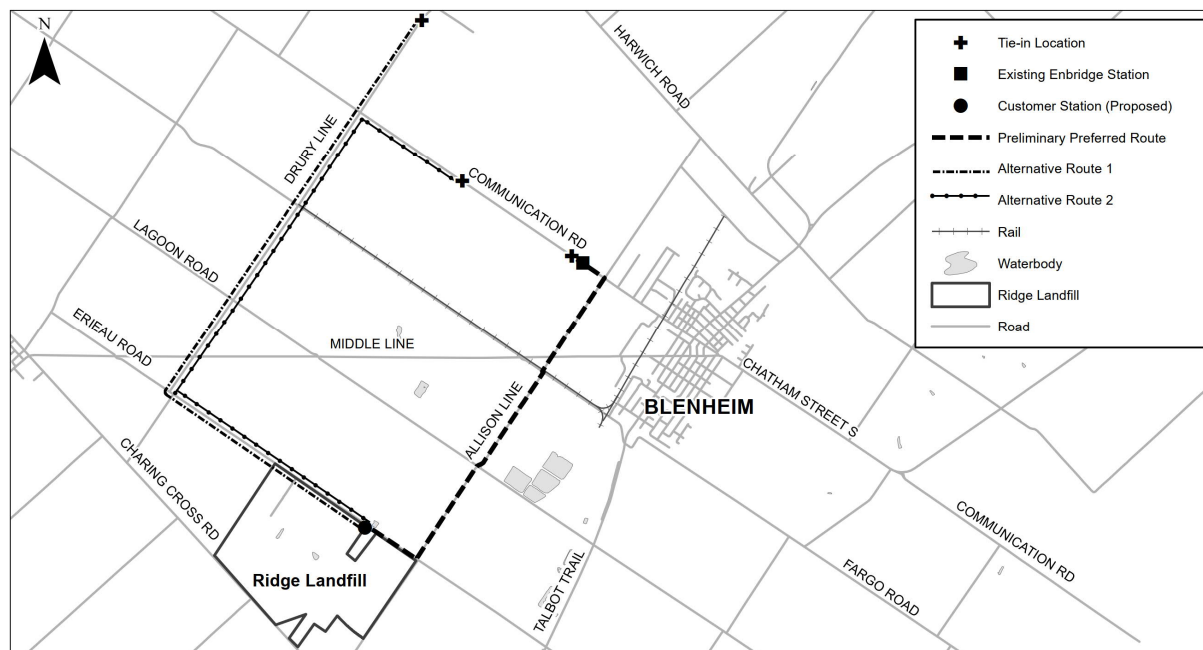
Your input will be used to confirm the preferred route and create mitigation plans to be implemented during construction. If you are interested in participating, or would like to provide comments, please visit the Virtual Information Session website or contact one of the individuals listed here. The last day to submit comments for consideration in the environmental study is May 24, 2022.

Enbridge Gas Project Website: www.enbridgegas.com/RidgeRNG

Tanya Turk
Environmental Advisor
Enbridge Gas Inc.
101 Honda Blvd.
Markham, ON L6C 0M6

Alissa Lee
Environmental Assessment
Project Manager
Dillon Consulting Limited
Suite 101 - 177 Colonnade Rd.
South, Ottawa, ON K2E 7J4

Project Contact Info:
RNGRidgeLandfillEA@dillon.ca
613-745-2213 ext. 3024





April 11, 2022

RE: Enbridge Gas Inc.
Proposed Ridge Landfill RNG Project
Chatham-Kent, Ontario
Notice of Study Commencement and Virtual Information Session

177 Colonnade Road
Suite 101
Ottawa, Ontario
Canada
K2E 7J4
Telephone
613.745.2213
Fax
613.745.3491

Dear Mr. Van Wagner,

Enbridge Gas Inc. has retained Dillon Consulting Limited to conduct an environmental study for the proposed Ridge Landfill Renewable Natural Gas (RNG) Project located in the Municipality of Chatham-Kent, near the community of Blenheim.

Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed for injection into the local natural gas distribution system. The project is expected to reduce greenhouse gas emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year, or about 40% of the homes in Chatham-Kent.

The project will involve the construction of a new RNG injection station at the Ridge Landfill and a new 4-inch extra high-pressure steel pipeline, running from northwest of an existing Enbridge Gas pressure regulating station on Communication Road to the Ridge Landfill on Erieau Road. Enbridge Gas has identified a preliminary preferred route and two alternative routes ranging in length from approximately 6 to 8 km. The routes under consideration are shown on the attached Notice of Commencement.

The preliminary preferred route runs from a location just northwest of the existing Enbridge Gas pressure regulating station on Communication Road for 300 m. It then then turns southwest and runs along Allison Line for 1.4 km, along Fargo Road for 20 m, along Allison Line for 2.8 km, then north along Erieau Road for 1.5 km to the Ridge Landfill. Alternative Route 1 begins southwest of the intersection of Drury Line and Huffman Road, follows Drury Line southwest for approximately 5.5 km to Erieau Road, then proceeds southeast to the Ridge Landfill. Alternative Route 2 begins at a location on Communication Road approximately 1.5 km southeast of the intersection with Drury Line, proceeds northwest to Drury Line, then southwest to Erieau Road and southeast to the Ridge Landfill.

The study is being conducted in accordance with the Ontario Energy Board (OEB) Environmental Guidelines for the Location, Construction, and Operation of Hydrocarbon Pipelines and Facilities in Ontario, 7th Edition. Once the study is complete, Enbridge Gas will apply to the OEB for approval to construct the project. If approved, construction may begin in spring 2023.

Dillon Consulting
Limited



Stakeholder involvement will play a key role in the project. In order to undertake a successful consultation program, we have developed a mailing list of government agencies (federal, provincial, and municipal), Indigenous communities, and potential interest groups that may have an interest in the study. Enbridge Gas will also be hosting a virtual information session as part of the study. Details about this session are provided in the attached Notice of Commencement.

As part of the initial phase of the study, we are collecting information on socio-economic, natural environment, and archaeological or heritage resource features along the potential routes. Examples of data being collected include information on archaeological and heritage resources, community facilities and infrastructure, terrestrial and aquatic vegetation and wildlife, as well as water, sewage, industrial, and commercial utilities.

We are interested in hearing from you with any comments that you or your organization may have regarding this project. We are also requesting any information relating to natural and/or human environments along the potential routes that may fall within your mandate and, in particular, whether the following are within, or in the vicinity of, the potential routes:

- environmentally sensitive areas;
- floodplains; and,
- distinctive natural features that would warrant protection.

Please send this information to my attention at the above address or by email to RNGRidgeLandfillEA@dillon.ca by May 24, 2022. If you require any further information at this time, please do not hesitate to contact me.

If there is a more appropriate contact at your organization who should receive this letter, please kindly forward the letter at your discretion and notify us as we will update our stakeholder consultation list.

Page 3
April 11, 2022



Sincerely,

DILLON CONSULTING LIMITED

A handwritten signature in black ink that reads "Alissa Lee".

Alissa Lee, MES, MLIS
Environmental Assessment Project Manager
Tel: 613-745-2213 ext. 3024

Attachment: Notice of Study Commencement and Virtual Information Session



PROPOSED RIDGE LANDFILL RNG PROJECT

NOTICE OF STUDY COMMENCEMENT AND VIRTUAL INFORMATION SESSION

CHATHAM-KENT, ONTARIO

ENBRIDGE GAS INC.

The Study

Enbridge Gas Inc. (Enbridge Gas) has retained Dillon Consulting Limited to begin an environmental study for the proposed Ridge Landfill Renewable Natural Gas (RNG) Project located in the Municipality of Chatham-Kent, Ontario.

Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed for injection into the local natural gas distribution system. The project is expected to reduce greenhouse gas emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year or about 40% of the homes in Chatham-Kent.

The project will involve the construction of a new RNG injection station at the Ridge Landfill and a 4-inch extra high pressure steel pipeline. Enbridge Gas has identified a preliminary preferred route that runs 5.7 km between Enbridge's Chatham East Line at Blenheim North Station to the Ridge Landfill, and two alternative routes (see map).

Once the study is complete, Enbridge Gas will apply to the Ontario Energy Board (OEB) for approval to construct the project. If approved, construction may begin in spring 2023.

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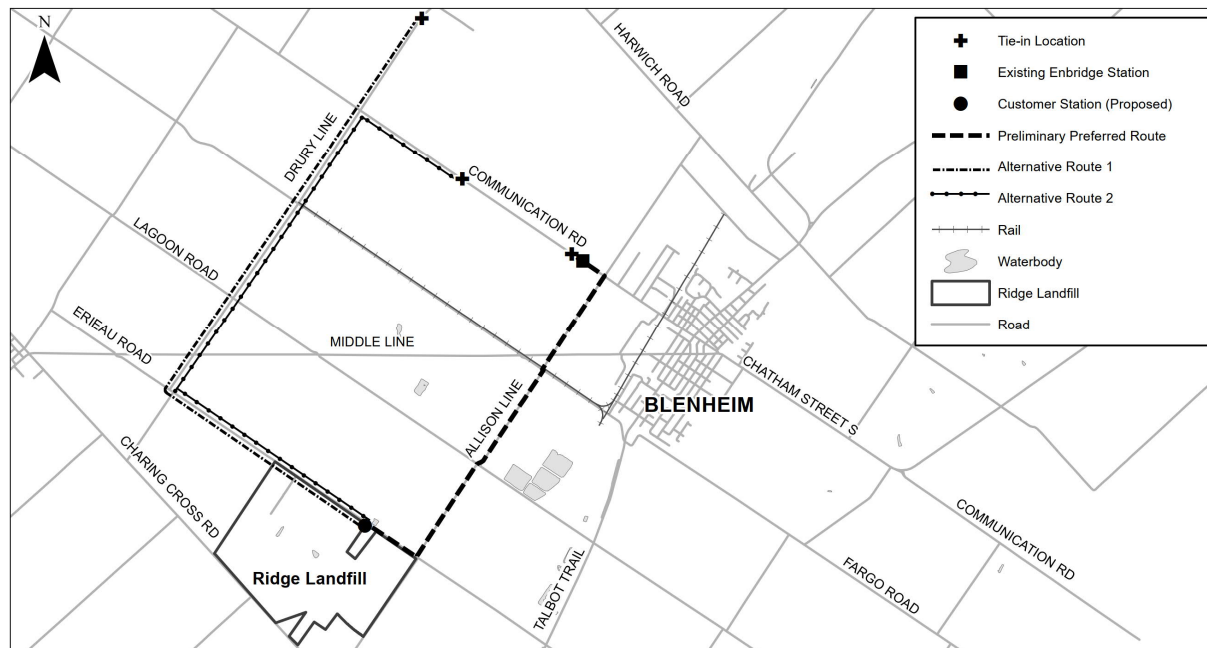
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April 11, 2022

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Proposed Ridge Landfill RNG Project
Chatham-Kent, Ontario
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177 Colonnade Road
Suite 101
Ottawa, Ontario
Canada
K2E 7J4
Telephone
613.745.2213
Fax
613.745.3491

Dear Ms. Cerniavskaja,

Enbridge Gas Inc. has retained Dillon Consulting Limited to conduct an environmental study for the proposed Ridge Landfill Renewable Natural Gas (RNG) Project located in the Municipality of Chatham-Kent, near the community of Blenheim.

Landfill gas generated by decomposing waste will be captured and transformed into RNG that will be processed for injection into the local natural gas distribution system. The project is expected to reduce greenhouse gas emissions by 110,000 tonnes per year. This is enough to heat more than 18,000 Ontario homes every year, or about 40% of the homes in Chatham-Kent.

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We are interested in hearing from you with any comments that you or your organization may have regarding this project. We are also requesting any information relating to natural and/or human environments along the potential routes that may fall within your mandate and, in particular, whether any of the following are within, or in the vicinity of, the potential routes:

- wetlands;
- woodlands;
- environmentally sensitive areas;
- rare (S1-S3) species occurrences;
- designated areas of wildlife habitat;
- areas of natural and scientific interest; and,
- any distinctive natural features that would warrant protection.

Please send this information to my attention at the above address or by email to RNGRidgeLandfillEA@dillon.ca by May 24, 2022. If you require any further information at this time, please do not hesitate to contact me.

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Alissa Lee, MES, MLIS
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Tel: 613-745-2213 ext. 3024

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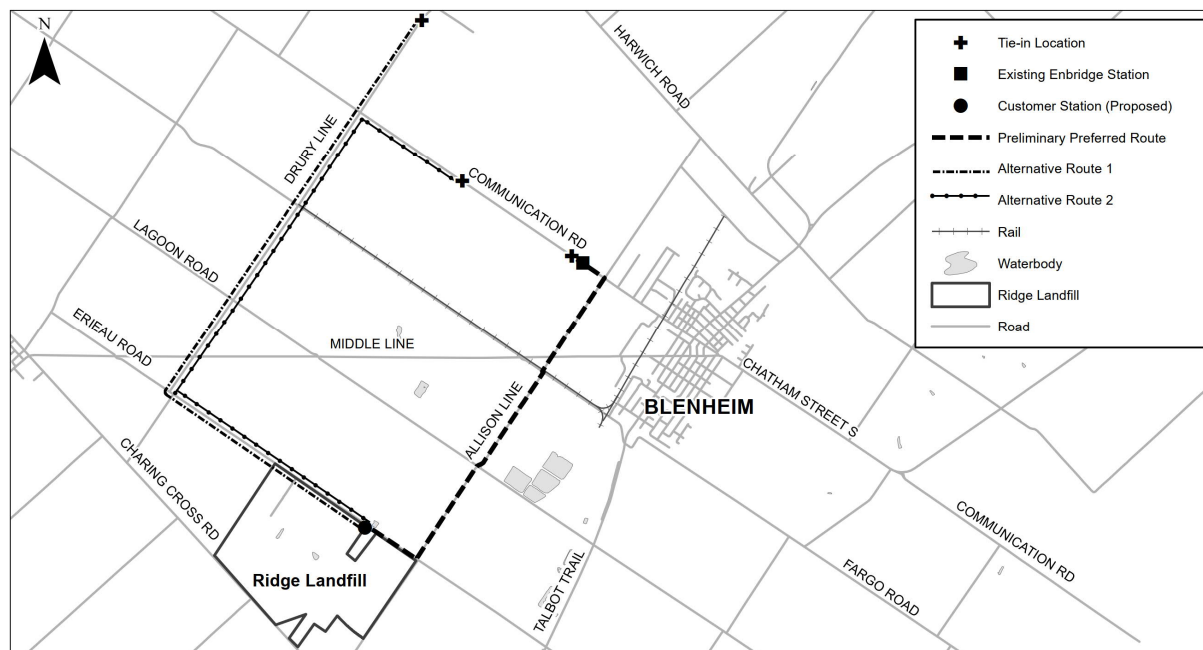
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Appendix I

Virtual Information Session Presentation and Video Transcript

Proposed Ridge Landfill Renewable Natural Gas (RNG) Project

Virtual Information Session

April 25, 2022 – May 8, 2022



Welcome!

This Virtual Information Session will be live for 2 weeks from Monday, April 25, 2022 – Sunday, May 8, 2022.



You can provide your input on the Ridge Landfill RNG Project by completing the questionnaire available on the Virtual Information Session website at www.RidgeRNG.ca. Please submit your comments by **May 24, 2022**.



After Sunday, May 8, 2022, this presentation, accompanying video transcript, and the questionnaire will be available for download on the Enbridge Gas website at www.enbridgegas.com/RidgeRNG.

Enbridge Gas Commitment

Enbridge Gas provides safe and reliable delivery of natural gas to more than 3.8 million residential, commercial, and industrial customers across Ontario.



Enbridge Gas will carefully consider all input. They are committed to involving community members and will provide up-to-date information in an open, honest, and respectful manner.

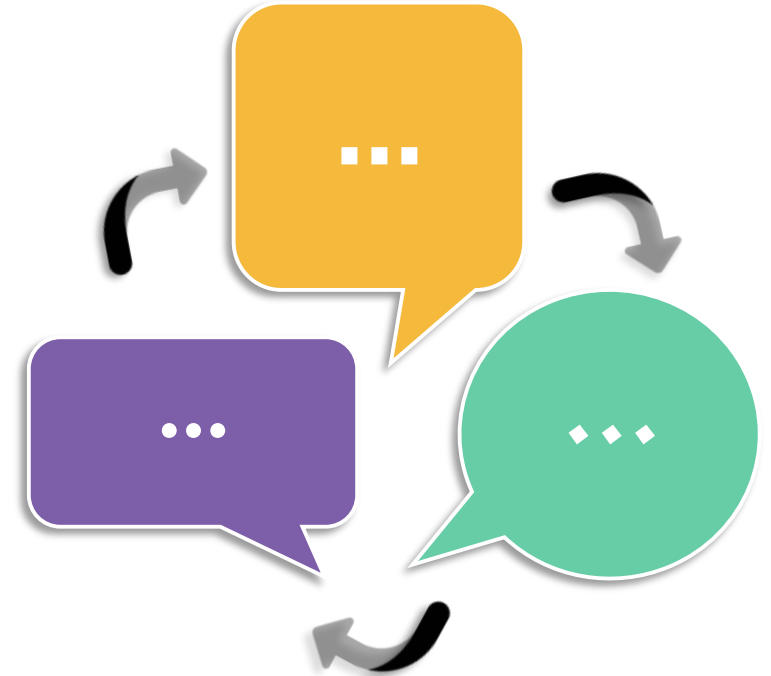


Enbridge Gas is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.



Purpose of the Virtual Information Session

- ✓ Provide information on the project purpose and illustrate the preliminary preferred route and alternative routes
- ✓ Provide a safe alternative to an in-person meeting
- ✓ Inform landowners, Indigenous communities, municipalities, stakeholders, and regulatory authorities about the Ridge Landfill RNG Project and gather feedback about the assessment of the pipeline routes
- ✓ Give everyone the chance to participate during the process of completing the Environmental Report, which will be included in the Ontario Energy Board application
- ✓ Provide an opportunity to identify any unknown constraints and review draft plans to mitigate impacts to the local community and the environment
- ✓ Create a space for you to ask questions and/or provide comments to Enbridge Gas or Dillon



Consultation Approach



We are committed to a comprehensive consultation process and want to hear from you about this project.

Our consultation approach is:

- ✓ **Inclusive** – reaching out to all who may be interested or affected and providing opportunities to become informed and get involved.
- ✓ **Transparent** – providing access to information and clear explanations for decisions.
- ✓ **Accountable** – explaining how your input will be used in the decision-making process.

As an important part of the consultation process, we will work with all stakeholders to identify and resolve potential project-related issues.

Enbridge Gas' Indigenous Peoples Policy

Enbridge Gas recognizes the diversity of Indigenous Peoples who live where they work and operate. They understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge Gas 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 from Indigenous communities.

Enbridge Gas commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge Gas conducts business. To achieve this, Enbridge Gas will govern itself by the following principles.

Enbridge Gas **recognizes** the legal and constitutional rights of Indigenous Peoples, and the importance of the relationships between Indigenous Peoples and their traditional lands and resources. They 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. Enbridge Gas commits to ensuring that Enbridge Gas projects and operations are carried out in an environmentally responsible manner.

Enbridge Gas **engages** in forthright and sincere consultation with Indigenous Peoples about their projects and operations through processes that seek to achieve early and meaningful engagement. Indigenous engagement helps define projects that may occur on lands traditionally occupied by Indigenous Peoples.

Enbridge Gas **fosters** an understanding of the history and culture of Indigenous Peoples among their employees and contractors, in order to create better relationships between Enbridge Gas and Indigenous communities.



Enbridge Gas **understands** the importance of the United Nations Declaration of 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.

Enbridge Gas **commits** to working with Indigenous Peoples to achieve benefits for them resulting from Enbridge Gas' projects and operations, including opportunities in training and education, employment, procurement, business development, and community development.

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

Project Overview

To reduce greenhouse gas (GHG) emissions and help Ontario reach its 2030 climate change goals, Enbridge Gas and Waste Connections of Canada are proposing to create a brand new renewable natural gas (RNG) facility at the Ridge Landfill in Chatham-Kent, Ontario.



The proposed facility will capture landfill gas generated by decomposing waste and transform it into renewable natural gas (RNG). The project is expected to reduce emissions by 110,000 tonnes of GHGs per year. This is enough to heat over 18,000 Ontario homes every year or about 40% of the homes in Chatham-Kent.



The project will involve the construction of a new RNG injection station at the Ridge Landfill and a 4-inch extra high pressure steel pipeline, which would begin at a tie-in location on Enbridge Gas' Chatham East Line, northwest of the existing Blenheim North Station on Communication Road, and run to the Ridge Landfill on Erieau Road.

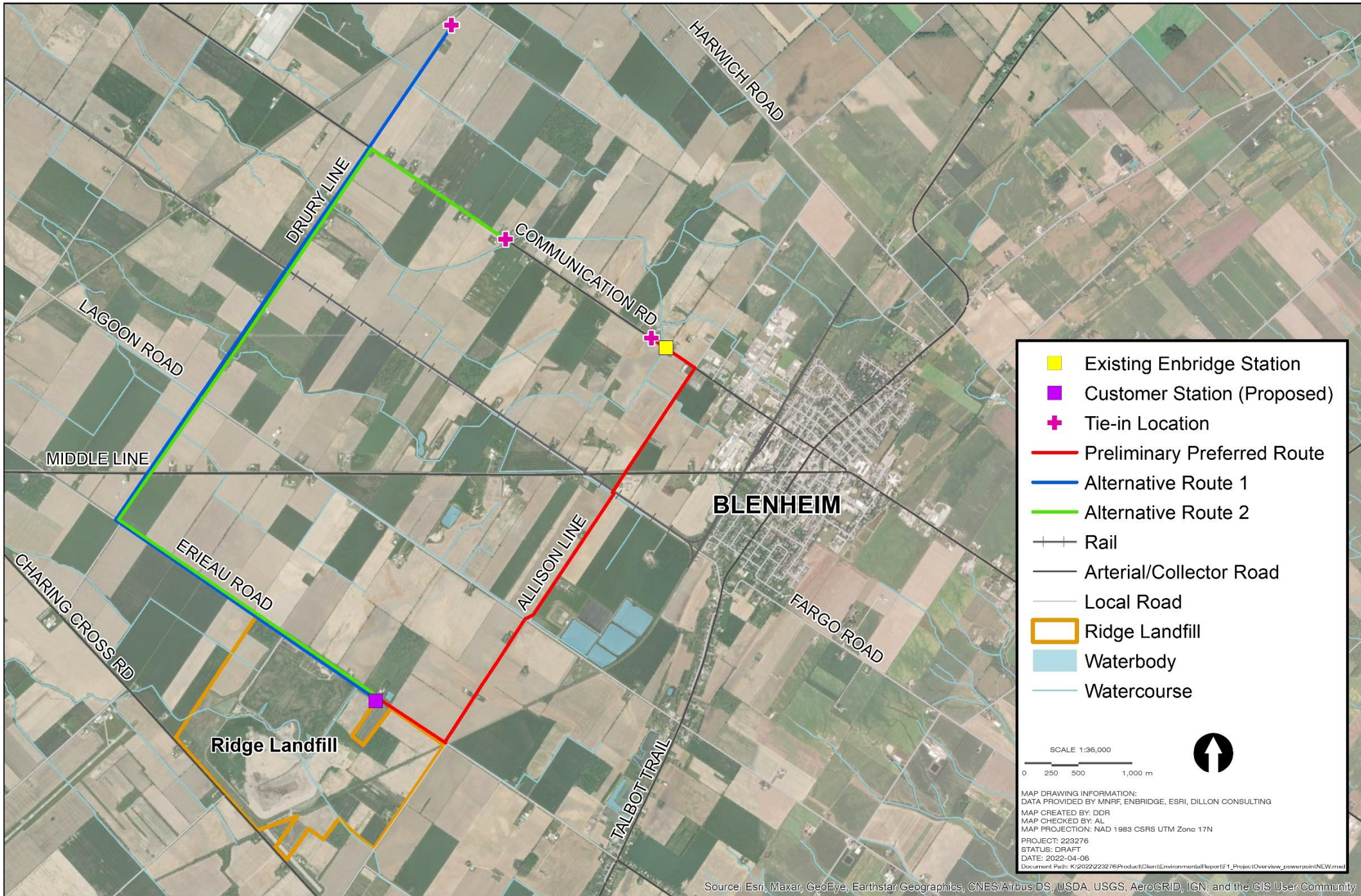


Enbridge Gas has identified a preliminary preferred route and two alternative routes ranging between approximately 6 km and 8 km in length.

The pipeline will be installed within the municipal road rights-of-way, where possible.



See project overview map on next slide...



Natural Environment Considerations

A natural environment field survey of the Project Footprint* was conducted by a Dillon biologist on April 8, 2022.

* The Project Footprint is defined as a 30 m buffer on each side of the municipal road allowance along each potential pipeline route.



The Project Footprint consists of the following land classifications outside of the municipal road allowance:

- Mixed meadow
- Agricultural row crops
- Drainage ditches (including the following municipal drains - Weatherford Drain, Walker Drain, McGregor Drain, Cameron Drain, and Duke Drain)

Natural Environment Considerations

The Species at Risk (SAR) shown below are known to occur in the Project area

Eastern Fox
Snake
(*Pantherophis
gloydi*)



© Ryan M. Bolton

© Doris Brockens



Eastern
Meadowlark
(*Sturnella
magna*)

Barn Swallow
(*Hirundo
rustica*)

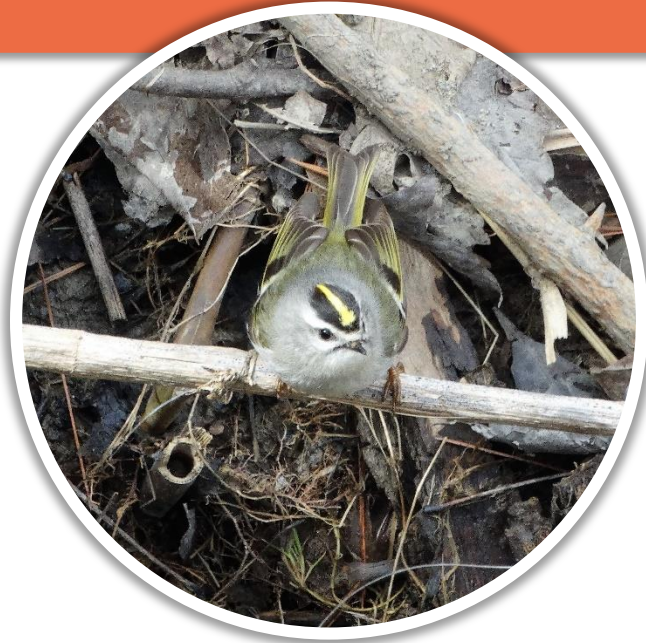


© Mark Peck

Natural Environment Considerations

Potential Effects:

- Temporary loss or alteration of vegetation during construction.
- Temporary alteration of wildlife habitat and/or disruption of wildlife movement during construction.
- Temporary alteration of SAR habitat and/or disruption of SAR movement during construction.



Example Mitigation Measures:

- Minimize the width of the construction area to reduce the amount of vegetation affected.
- Flag or fence off environmentally sensitive areas prior to construction.
- Document wildlife and SAR encounters and notify appropriate regulatory authorities, where required.
- Provide SAR identification sheets to workers that outline habitat, identifying characteristics and mitigation measures.

Socio-Economic Considerations

- The Project is located in the Municipality of Chatham-Kent, near the Community of Blenheim.
- The Community of Blenheim supports a variety of commercial and retail activities including clothing stores, automotive and boating, health and wellness, restaurants, personal services, along with sports and recreation.
- Blenheim, while also housing a number of manufacturing plants producing plastics, steel and automotive parts, is instrumental in building Chatham-Kent's reputation as the "Classic Car Capital of Canada".
- Agriculture plays an important role in Blenheim's culture and economy, housing large agricultural processing companies such as Rol-Land Farms, Platinum Produce, and The Andersons.



Socio-Economic Considerations

Potential Effects:

- Temporary increase in nuisance noise during construction.
- Temporary traffic disruptions during construction.
- Temporary increase in wastes during construction.



Example Mitigation Measures:

- Construction activities will be carried out in compliance with municipal noise by-laws with respect to noise and construction equipment usage. Applicable noise by-law exemptions will be sought if construction activities cannot be avoided on Statutory Holidays, Sundays or at night.
- Traffic access will be maintained, where possible, during construction. Good management and best practices will be implemented during construction to minimize traffic disruption. If required, temporary detour routes will be provided to reduce potential impacts to commuters.
- Solid waste will be collected and disposed of appropriately in accordance with applicable regulations at a licensed waste facility.

Archaeology and Cultural Heritage Considerations



- The Project is within the Geographic Township of Harwich in former Kent County.
- The Project area is rural in nature and is made up of roadways and adjacent grassed and agricultural fields.
- The Stage 1 Archaeological Assessment (AA) identified the potential for discovery of archaeological sites by the presence of 19th century travel routes, settlement and structures; however, the Stage 1 AA confirmed the majority of the proposed pipeline routes was disturbed and no longer retained archaeological potential.
- Areas outside the municipal road allowance have archaeological potential and should be subject to Stage 2 Archaeological Assessment.
- The Cultural Heritage Screening found potential heritage properties along the pipeline routes. Once the preferred route is selected, a Cultural Heritage Assessment Report is recommended to further evaluate heritage resources.

Archaeology and Cultural Heritage Considerations

Potential Effects:

- Disturbance of previously undiscovered archaeological resources during construction.
- Disturbance of cultural heritage resources during construction.

Example Mitigation Measures:

- Follow recommendations from the Stage 1 and Stage 2 Archaeological Assessments.
- Implement recommendations in the Cultural Heritage Assessment Report and/or Heritage Impact Assessment to be completed prior to construction.



Pipeline Design, Construction and Safety

Pipeline Design



The proposed 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 Authority (TSSA).

Pipeline Construction



Our construction work is temporary and transitory – once the pipe is laid, the area is restored to as close to pre-construction condition as possible.

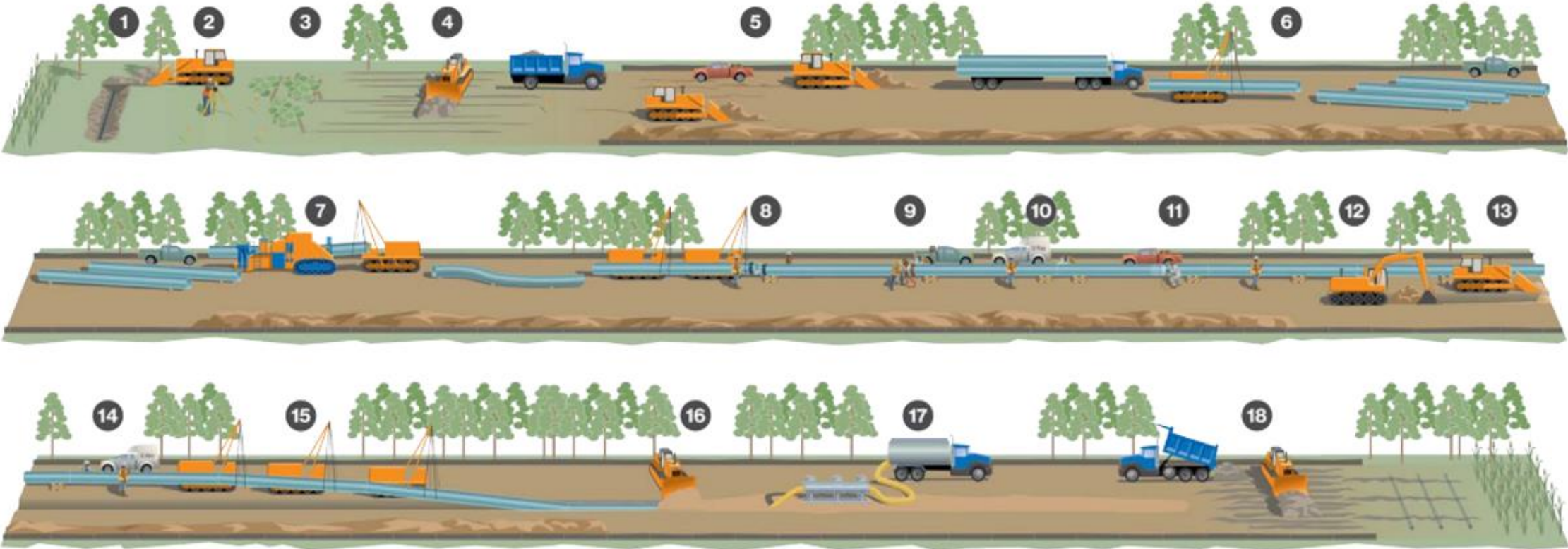
Pipeline Safety and Integrity



Enbridge Gas takes many steps to safely and reliably operate their network of natural gas pipelines, such as:

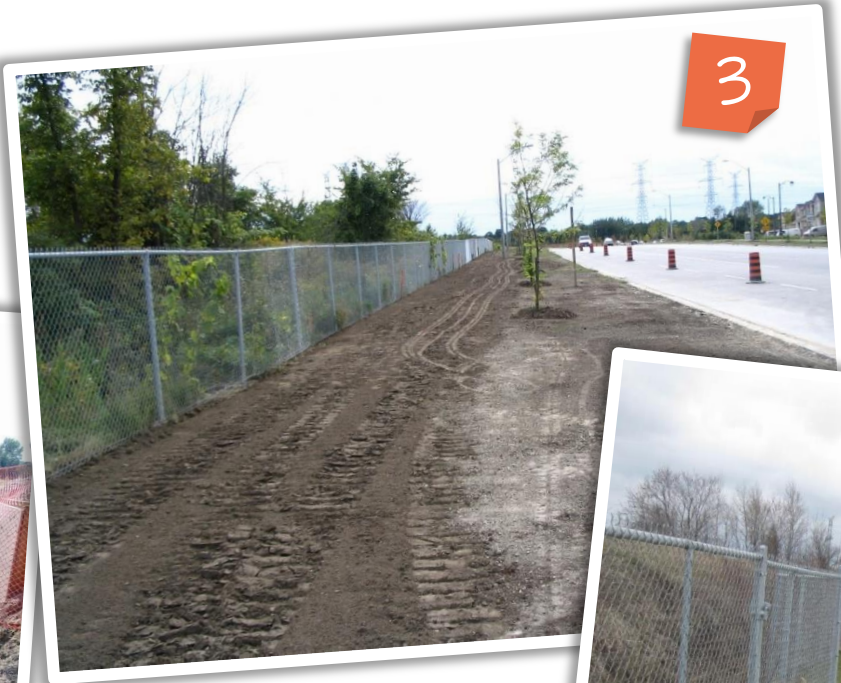
- ✓ Designing, constructing, and testing our pipelines to meet or exceed requirements set by industry standards and regulatory authorities.
- ✓ Ensuring that any work is respectful of community activities, regulations and bylaws.
- ✓ Continuously monitoring the entire network.
- ✓ Performing regular field surveys to detect leaks and confirm corrosion prevention methods are working as intended.

General Construction Overview



- | | | | | | |
|----------------------------|-----------------------------------|-----------------------|---|---|---|
| 1. Pre-construction tiling | 4. Right-of-way topsoil stripping | 7. Field bending pipe | 10. X-ray or ultrasonic inspection, weld repair | 13. Padding trench bottom | 16. Backfilling |
| 2. Surveying and staking | 5. Front-end grading | 8. Lining-up pipe | 11. Field coating | 14. Final inspection and coating repair | 17. Hydrostatic testing |
| 3. Clearing | 6. Stringing pipe | 9. Welding process | 12. Digging the trench | 15. Lowering pipe | 18. Site restoration and post-construction tiling |

Example of Pipeline Installation in Road Allowance



Mitigation and Monitoring

Enbridge Gas is committed to working with the community on construction planning, mitigation, and post-construction monitoring. Post-construction monitoring will be conducted so that impacted areas are restored to as close to pre-construction conditions as possible.



Enbridge Gas recognizes that the construction of the pipeline may result in short-term adverse impacts and they commit to applying mitigation measures to reduce these impacts and work with the municipality and landowners so that issues are resolved in a timely manner.

Regulatory Framework

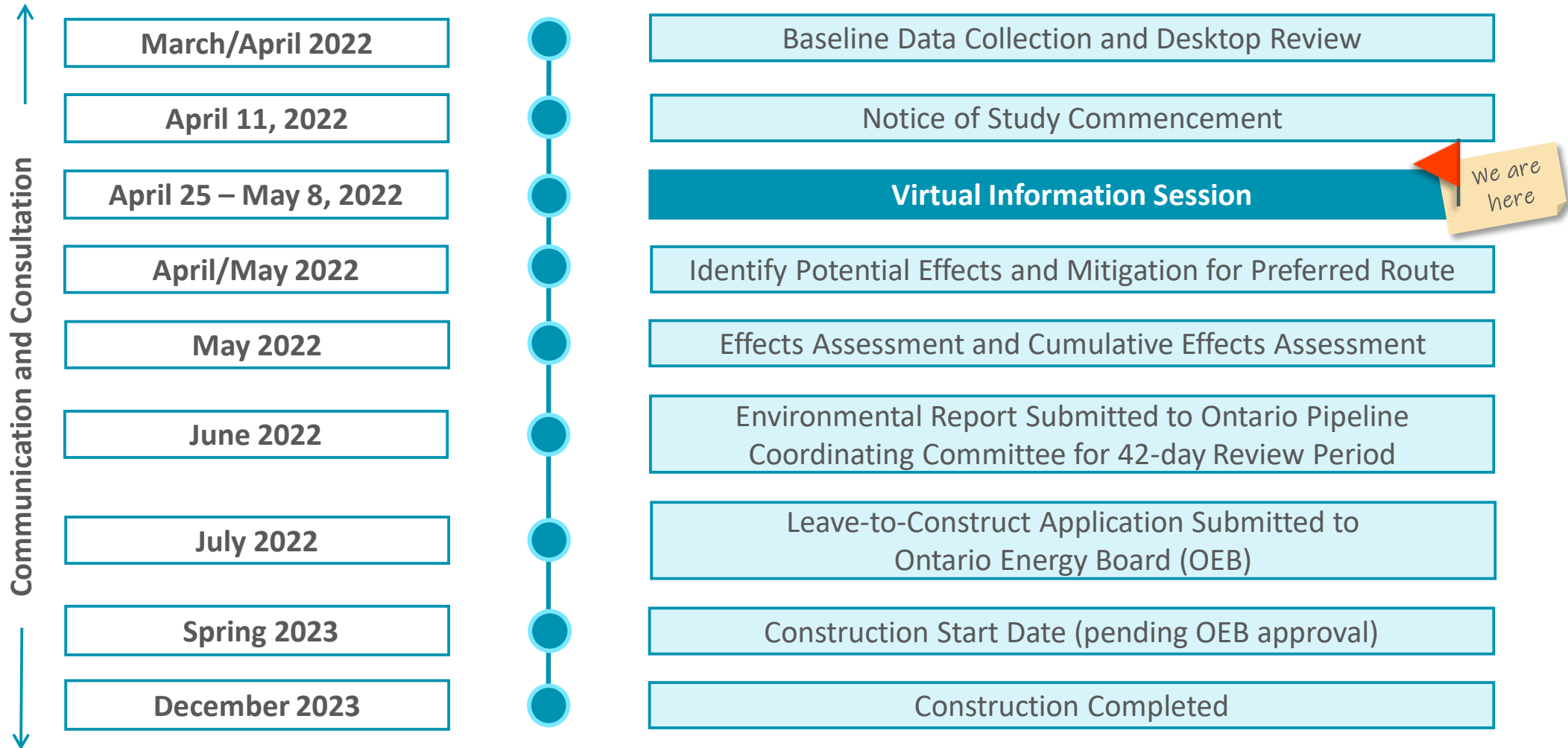
For the project to proceed, approval from the Ontario Energy Board (OEB) is required. The OEB requires that Enbridge Gas complete an environmental assessment and route selection study.



Role of the Ontario Energy Board:

- ✓ Reviews the Environmental Report (including details of consultation) as part of the application, known as the “Leave-to-Construct” Application.
- ✓ Once the Leave-to-Construct Application is submitted to the OEB, any party with an interest in the project may apply to the OEB to become intervenors or interested parties.
- ✓ Provides a public forum during the review of the Leave-to-Construct Application for people to participate in the decision-making process.
- ✓ Determines whether a proposed pipeline is in the public interest.

Environmental Assessment Process and Project Schedule



Continuous Stakeholder Engagement

Enbridge Gas is committed to open dialogue throughout the environmental assessment and the OEB Leave-to-Construct Application process. Stakeholders will have the opportunity to remain engaged in the process after the environmental assessment is completed, through:

- ✓ Participation in the OEB hearing as an intervenor or interested party (details can be found at www.oeb.ca)
- ✓ Contacting project team members (project contact information provided on next slide)
- ✓ Visiting the Enbridge Gas project website at www.enbridgegas.com/RidgeRNG



Thank you for participating in our Virtual Information Session!



We want to hear from you! Please complete the Project questionnaire on the Virtual Information Session website at

www.RidgeRNG.ca/comment-form



After Sunday, May 8, 2022, this presentation, accompanying video transcript, and the questionnaire will be available for download on the Enbridge Gas website at www.enbridgegas.com/RidgeRNG



Please submit your feedback by **May 24, 2022** so it can be considered in the Environmental Report that will be submitted to the Ontario Energy Board.

Project Contact Information:



RNGRidgeLandfillEA@dillon.ca



613-745-2213, ext. 3024

Staying Informed

Ridge Landfill RNG Project – Virtual Information Session Presentation Transcript

Slide No.	Slide Title	Transcript
1	N/A –Title Slide	<p>Hello and welcome to the Virtual Information Session for the Enbridge Gas Ridge Landfill Renewable Natural Gas Project!</p> <p>At any time, you can press pause or stop this presentation. You will also have the opportunity to download the transcript to this video on our Virtual Information Session website, or on the Enbridge Gas project website. Links are provided on the next slide and at the end of the presentation.</p>
2	Welcome	<p>This Virtual Information Session will be live for 2 weeks, beginning Monday, April 25th and ending Sunday, May 8th.</p> <p>Dillon Consulting has been hired to conduct an environmental study to assess the potential environmental and socio-economic effects that may result from the proposed Ridge Landfill Renewable Natural Gas Project. This presentation will provide you with information about the proposed project, potential pipeline routes and Ontario Energy Board process, and will outline how you can stay informed and participate.</p> <p>You can provide your input on the project by completing the questionnaire available on the Virtual Information Session website at www.RidgeRNG.ca. Please submit your comments by May 24th.</p> <p>After Sunday, May 8th, this presentation, the accompanying video transcript, and the questionnaire will be available for download on the Enbridge Gas website at www.enbridgegas.com/RidgeRNG.</p>
3	Enbridge Gas Commitment	<p>Enbridge Gas provides safe and reliable delivery of natural gas to more than 3.8 million residential, commercial, and industrial customers across Ontario.</p> <p>Enbridge Gas will carefully consider all input on the project and is committed to involving local communities and affected stakeholders throughout the regulatory process. Enbridge Gas commits to providing up-to-date information in an open, honest, and respectful manner.</p> <p>Enbridge Gas is committed to environmental stewardship and conducts all of its operations in an environmentally responsible manner.</p>
4	Purpose of the Virtual Information Session	<p>The purpose of this Virtual Information Session is to:</p> <ul style="list-style-type: none"> • Provide information on the project purpose and illustrate the preliminary preferred route and alternative routes • Provide a safe alternative to an in-person meeting • Inform landowners, Indigenous communities, municipalities, stakeholders, and regulatory authorities about the Ridge Landfill RNG Project and gather feedback about the assessment of the pipeline routes • Give everyone the chance to participate during the process of completing the Environmental Report, which will be included in the Ontario Energy Board application • Provide an opportunity to identify any unknown constraints and review draft plans to mitigate impacts to the local community and the environment • Create a space for you to ask questions and/or provide comments to Enbridge Gas or Dillon Consulting
5	Consultation Approach	<p>We are committed to a comprehensive consultation process and want to hear from you. Our consultation approach is:</p> <ul style="list-style-type: none"> • Inclusive – by reaching out to all who may be interested or affected and providing opportunities to become informed and get involved. • Transparent – by providing access to information and clear explanations for decisions. • Accountable – we do this by explaining how your input will be used in the decision-making process. <p>As an important part of the consultation process, we will work with all stakeholders to identify and resolve potential Project-related concerns.</p>

Slide No.	Slide Title	Transcript
6	Enbridge Gas' Indigenous Peoples Policy	Enbridge Gas recognizes the diversity of Indigenous Peoples who live where they work and operate. They understand from history the destructive impacts on the social and economic wellbeing of Indigenous Peoples. Enbridge Gas 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 from Indigenous communities. Enbridge Gas commits to pursue sustainable relationships with Indigenous Nations and groups in proximity to where Enbridge Gas conducts business. To achieve this, Enbridge Gas will govern itself by the principles listed on this slide. You may pause this video if you wish to review this slide further.
7	Project Overview	<p>To reduce greenhouse gas emissions and help Ontario reach its 2030 climate change goals, Enbridge Gas and Waste Connections of Canada are proposing to create a brand new renewable natural gas facility at the Ridge Landfill in Chatham-Kent, Ontario.</p> <p>The proposed facility will capture landfill gas generated by decomposing waste and transform it into renewable natural gas. The project is expected to reduce emissions by 110,000 tonnes of GHGs per year. This is enough to heat over 18,000 Ontario homes every year or about 40% of the homes in Chatham-Kent.</p> <p>The project will involve the construction of a new renewable natural gas injection station at the Ridge Landfill and a 4-inch extra high pressure steel pipeline, which would begin at a tie-in location on Enbridge Gas' Chatham East Line, northwest of the existing Blenheim North Station on Communication Road, and run to the Ridge Landfill on Erieau Road.</p> <p>Enbridge Gas has identified a preliminary preferred route and two alternative routes ranging between approximately 6 km and 8 km in length. The pipeline will be installed within the municipal road rights-of-way, where possible.</p>
8	N/A –Map	This figure provides an overview of the project components. Please refer to the legend in the bottom right hand corner of the map to reference the pipelines with the colour you see on the map. You may pause this video at any time if you need additional time to review the map. An interactive version of the map is also provided on the Virtual Information Session website (www.RidgeRNG.ca).
9	Natural Environment Considerations (slide 1 of 3)	<p>A natural environment field survey of the Project Footprint was conducted by a Dillon Consulting biologist on April 8, 2022. The Project Footprint is defined as a 30 m buffer on each side of the municipal road allowance along each potential pipeline route.</p> <p>The Project Footprint consists of the following land classifications outside of the municipal road allowance:</p> <ul style="list-style-type: none"> • Mixed meadow • Agricultural row crops • Drainage ditches
10	Natural Environment Considerations (slide 2 of 3)	Eastern Fox Snake, Eastern Meadowlark, and Barn Swallow are species at risk that are likely to occur in the Project area. Dillon Consulting did not observe any of these species during the April 8 site visit, however, we know they have a high likelihood of occurrence based on our past experience working in this area.
11	Natural Environment Considerations (slide 3 of 3)	<p>This slide lists examples of potential effects on the natural environment and the types of mitigation measures that may be considered in the environmental assessment.</p> <p>The Project will be constructed within the municipal road allowance, therefore limiting the potential for adverse effects on the natural environment. Temporary workspace, where required, will be sited to avoid sensitive environmental features.</p>
12	Socio-Economic Considerations (slide 1 of 2)	<p>The Project is located in the Municipality of Chatham-Kent, near the Community of Blenheim.</p> <p>The Community of Blenheim supports a variety of commercial and retail activities including clothing stores, automotive and boating, health and wellness, restaurants, personal services, along with sports and recreation. Blenheim, while also housing a number of manufacturing plants producing plastics, steel and automotive parts, is instrumental in building Chatham-Kent's reputation as the "Classic Car Capital of Canada".</p> <p>Agriculture plays an important role in Blenheim's culture and economy, housing large agricultural processing companies such as Rol-Land Farms, Platinum Produce, and The Andersons.</p>

Slide No.	Slide Title	Transcript
13	Socio-Economic Considerations (slide 2 of 2)	<p>This slide lists examples of potential effects on the socio-economic environment and the types of mitigation measures that may be considered in the environmental assessment.</p> <p>The Project will be constructed in a rural area where residences and businesses are widely spaced and congestion is not a major concern. Measures will be implemented during construction to reduce noise, control dust, and maintain traffic flow on affected roads.</p>
14	Archaeology and Cultural Heritage Considerations (slide 1 of 2)	<p>The Project is within the Geographic Township of Harwich in former Kent County. As noted previously, the Project area is rural in nature and is made up of roadways and adjacent grassed and agricultural fields.</p> <p>The Stage 1 Archaeological Assessment conducted for the Project identified the potential for discovery of archaeological sites by the presence of 19th century travel routes, settlement and structures; however, the report confirmed the majority of the proposed pipeline routes was disturbed and no longer retained archaeological potential. Areas outside the municipal road allowance have archaeological potential and should be subject to Stage 2 Archaeological Assessment.</p> <p>The Cultural Heritage Screening conducted for the Project found potential heritage properties along the pipeline routes. Once the preferred route is selected, a Cultural Heritage Assessment Report is recommended to further evaluate heritage resources.</p>
15	Archaeology and Cultural Heritage Considerations (slide 2 of 2)	<p>This slide lists examples of potential effects on archaeology and cultural heritage resources and the types of mitigation measures that may be considered in the environmental assessment.</p> <p>The Project will be constructed within the municipal road allowance where there is no archaeological potential due to existing deep disturbances. Where ground disturbance may occur outside of the municipal road allowance, a Stage 2 Archeological Assessment will be completed in keeping with the recommendations of the Stage 1 Archaeological Assessment.</p>
16	Pipeline Design, Construction, and Safety	<p>Enbridge Gas has been bringing safe, reliable natural gas to homes and businesses for more than 170 years. Safety is a top priority for Enbridge Gas and the pipeline will be built in compliance with all provincial safety requirements for pipeline design and operation. Enbridge Gas has an extensive pipeline integrity management program to ensure that once installed, their pipelines remain in safe operating condition. This includes regular monitoring of the inside and outside of transmission pipelines for corrosion, leaks, or any other potential damage.</p> <p>The high-grade steel pipeline material that will be used for the Project is designed to meet or exceed the regulations of the Canadian Standards Association and the applicable regulations of the Technical Standards and Safety Authority. Pipeline construction work is temporary and transitory. Once the pipe is laid, the area is restored to as close to pre-construction condition as possible. Enbridge takes many steps to ensure safe, reliable operations of their network of natural gas pipelines.</p>
17	General Construction Overview	<p>This slide shows a figure depicting a typical pipeline construction sequence in a rural setting. Steps 1-5 (Site Preparation) may not necessarily apply to this project, since the pipeline is going to be installed within the existing municipal road allowance; however, it still provides a useful illustration of the general steps in the pipeline construction process. You may wish to pause the video at this time, in order to review the construction phases illustrated here.</p>
18	Example of Pipeline Installation in Road Allowance	<p>The photos on this slide show a typical pipeline construction sequence in a road right-of-way, from stringing, to lowering in, and site restoration.</p>
19	Mitigation and Monitoring	<p>Enbridge Gas is committed to working with the community on construction planning, mitigation, and post-construction monitoring. Post-construction monitoring will be conducted so that impacted areas are restored to as close to pre-construction conditions as possible. Enbridge Gas recognizes that the construction of the pipeline may result in short-term adverse impacts and commits to applying mitigation measures to reduce these impacts and work with the municipality and landowners so that issues are resolved in a timely manner.</p>
20	Regulatory Framework	<p>For the Project to proceed, approval from the Ontario Energy Board is required. The Ontario Energy Board requires that Enbridge Gas complete an Environmental Report, which consists of an environmental assessment and route selection study. This report will also be submitted to the Ontario Pipeline Coordinating Committee for review and comment.</p> <p>The Ontario Energy Board will review the Environmental Report for the Project (including details of consultation) as part of what is known as a “Leave-to-Construct” Application. Once Enbridge Gas submits a Leave-to-Construct Application to the Ontario Energy Board, any party with an interest in the Project may apply to the Board to become intervenors or interested parties in order to participate in the decision-making process. Following their review of the Leave-to-Construct Application, the Ontario Energy Board will make a determination about whether the proposed Project is in the public interest.</p>

Slide No.	Slide Title	Transcript
21	Environmental Assessment Process and Project Schedule	This slide outlines the general timeline and environmental assessment process for the Project, beginning with the collection of baseline data, through to submission of a Leave-to-Construct Application to the Ontario Energy Board and anticipated construction commencement and completion.
22	Continuous Stakeholder Engagement	<p>Enbridge Gas is committed to open dialogue throughout the environmental assessment and the Ontario Energy Board Leave-to-Construct Application process. Stakeholders will have the opportunity to remain engaged in the process after the Environmental Report is completed through the methods listed on this slide, including:</p> <ul style="list-style-type: none"> • Participation in the Ontario Energy Board hearing as an intervenor or interested party – you can find details on the Ontario Energy Board website at www.oeb.ca • Contacting Enbridge Gas or Dillon Consulting project team members via the contact information provided at the end of this presentation • Visiting the Enbridge Gas project website at www.enbridgegas.com/RidgeRNG
23	Staying Informed	<p>Thank you for participating in our Virtual Information Session!</p> <p>We want to hear from you! Please complete the project questionnaire on the Virtual Information Session website at www.RidgeRNG.ca/comment-form to provide your input and opinion of the Project. If you would prefer, you can also download the comment form and submit your feedback by email at RNGRidgeLandfillEA@dillon.ca.</p> <p>After Sunday, May 8, this presentation, the accompanying video transcript, and questionnaire will be available for download on the Enbridge Gas website at www.enbridgegas.com/RidgeRNG.</p> <p>Please submit your feedback by May 24, 2022 so it can be considered in the Environmental Report that will be submitted to the Ontario Energy Board.</p> <p>For more information, or to submit comments or questions, please use the contact information provided on this slide to contact a member of the project team.</p>

Appendix J

Project Comment Form

Virtual Information Session – Comment Form

We want to hear from you! We encourage you to review the Virtual Information Session material and then fill out and submit this comment form by May 24, 2022. Your input is welcome and appreciated.

You can also provide your input by email. Please download the comment form from the Virtual Information Session website (www.RidgeRNG.ca) and submit it by email to RNGRidgeLandfillEA@dillon.ca.

After Sunday, May 8, this comment form will be available for download from the Enbridge Gas website at www.enbridgegas.com/RidgeRNG.

Contact Information and General Questions

If you would like to be added to the Project's mailing list and receive Project updates, please provide your contact information.

1. Name / Email Address or Mailing Address

2. How did you hear about the Ridge Landfill RNG Project? (Select all that apply)

- Received Notice via Email
- Received Notice via Standard Mail (Canada Post)
- Newspaper
- From a Friend or Neighbour
- Facebook
- Twitter
- Instagram
- Other, please specify:

-
3. Do you own property, live, or work beside any of the following? (Select all that apply):
- Preliminary Preferred Route (Communication Road, Allison Line, Fargo Road, Erieau Road)
 - Alternative Route 1 (Drury Line, Erieau Road)
 - Alternative Route 2 (Communication Road, Drury Line, Erieau Road)
 - I do not own property, live, or work along any of the routes but I am interested in the Project

4. Please explain your interest in the Project.

5. Which group represents you best? (Please choose one answer)

- I am a member of an Indigenous community
- I am a landowner or resident in the study area
- I am a member of a community interest group
- I am a government employee or official
- Other, please specify:

6. What is your view of the proposed Project?

- I am supportive
- I am not supportive
- No opinion at this time (Go to Question 8)

7. Please explain your view (supportive or not supportive).

8. Are there any environmental, socio-economic, or cultural heritage features along the potential routes that you would like to identify? Please indicate which route option or street you are commenting on.

9. Are there any potential effects (e.g., to you, your property, business, or otherwise) and any mitigation measures that Enbridge Gas should consider and address prior to Project construction? Please indicate which route option or street you are commenting on.

10. Please provide any additional comments, questions, or feedback that you have with regards to the Project. If applicable, please indicate which route option or street you are commenting on.

Feedback on the Virtual Information Session

11. Was sufficient information about the Project provided on the Virtual Information Session website and in the presentation slides?

Yes (Go to Question 13)

No

12. Please describe what other information you would have liked to see.

13. Was sufficient information provided on the Ontario Energy Board and Environmental Assessment process?

Yes (Go to Question 15)

No

Partly

14. Please tell us what else you would like to know about the Ontario Energy Board and Environmental Assessment process.

15. How did you like the Virtual Information Session format versus having an in-person drop-in style open house? Do you have any suggestions to help us improve on this virtual format?

Thank you for participating in the Virtual Information Session for the Ridge Landfill RNG Project!

If you require further information about the Project, please contact one of the following individuals:

<p>Tanya Turk Environmental Advisor Enbridge Gas Inc. 101 Honda Boulevard Markham, ON L6C 0M6</p>	<p>Alissa Lee Environmental Assessment Project Manager Dillon Consulting Limited Suite 101 – 177 Colonnade Road South Ottawa, ON K2E 7J4</p>
<p>RNGRidgeLandfillEA@dillon.ca 613-745-2213 ext. 3024</p>	

You can also stay up-to-date on the Project by visiting the Enbridge Gas website at:

www.enbridgegas.com/RidgeRNG

Collection and Use of Personal Information:

Any personal information (PI), such as names and addresses, collected by Enbridge Gas Inc. (EGI) on this comment form (or through the Virtual Information Session process) for this project will be used for the purpose of conducting an environmental assessment and related activities, such as creating an environmental assessment report. EGI may also share PI with its consultant(s) for this purpose and will share PI with the Ontario Energy Board (OEB) and other government agencies as required for the project. In accordance with the Ontario Freedom of Information and Protection of Privacy Act, PI provided to the OEB will not be disclosed on the public record or to any third parties. However, comments, questions and other information collected may be disclosed on the public record provided that any PI will be redacted.

Appendix K

Indigenous Consultation Logs

Ridge Landfill RNG Project: Indigenous Engagement Log

As of July 15, 2022

Aamjiwnaang First Nation (AFN)					
Line item	Date	Method	Summary of Enbridge Gas Engagement Activity	Summary of Community's Engagement Activity	Outstanding Issues or Concerns
1.1	March 1, 2022	Email	The Enbridge Gas representative sent an email to the AFN representative providing a notification letter regarding the Ridge Landfill Renewable Natural Gas (RNG) Project ("Project"). The Project notification letter provided an overview of the Project and requested information on any potential adverse impacts the Project may have on Aboriginal or treaty rights. The Enbridge Gas representative advised that capacity funding was available to support AFN's engagement on the Project. The Enbridge Gas representative requested feedback regarding the Project by June 1, 2022, if possible.		
1.2	April 13, 2022	Email	The Enbridge Gas representative sent an email to the AFN representatives along with a letter providing a Notice of Study Commencement for the Project highlighting the Virtual Information Session occurring from April 25 to May 8, 2022. The Enbridge Gas representative invited AFN representatives to get in touch if they would like to discuss the Project further.		
1.3	May 6, 2022	Email	The Enbridge Gas representative sent an email to the AFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status, Outstanding Engagement Request and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas projects.		
1.4	May 12, 2022	Email		An AFN representative emailed the Enbridge Gas representative to request Enbridge Gas present to the Environmental Committee on all the proposed Enbridge Gas projects.	
			An Enbridge Gas representative responded on the same day and the agreed to a June 7 presentation date.		
1.5	May 24, 2022	Multiple Emails		An AFN representative emailed the Enbridge Gas representative to request that the presentation be rescheduled to later in June.	
			An Enbridge Gas representative responded the same day and advised they would work with the AFN representative to reschedule the meeting date. The meeting/presentation was rescheduled to June 28, 2022.		
1.6	June 9, 2022	Email	The Enbridge Gas representative sent an email to the AFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status, Outstanding Engagement Request and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas projects.		
1.7	June 20, 2022	Email	An Enbridge Gas representative emailed the AFN representative to advise that the Environmental Report was available and provided the Internet link for the report. The Enbridge Gas representative requested that any comments be provided on the Environmental Report by July 29, 2022, as per Guidelines		
1.8	June 28, 2022	Virtual Meeting	Enbridge Gas and AFN met to discuss Enbridge Gas projects. Enbridge Gas reviewed the scope of the Project and showed a map. An Enbridge Gas representative advised that field surveys would be completed this summer and Indigenous monitors would be invited to attend.		
				An AFN representative asked if Enbridge Gas has used RNG in pipelines before and what the cost of RNG is?	
			An Enbridge Gas representative advised that RNG is being collected at a facility in London and injected back into Enbridge Gas lines as well as within the City of Toronto. Enbridge Gas to follow up with additional information on RNG to AFN.		
1.9	July 15, 2022	Email	An Enbridge Gas representative emailed the AFN representative a guide produced by Enbridge Gas on RNG. The Enbridge Gas		

			representative advised that an information meeting on RNG could be set up for AFN if they'd like further information.		
Caldwell First Nation (CFN)					
Line item	Date	Method	Summary of Enbridge Gas Engagement Activity	Summary of Community's Engagement Activity	Outstanding Issues or Concerns
2.1	March 1, 2022	Email	The Enbridge Gas representative sent an email to the CFN representative providing a notification letter regarding the Ridge Landfill Pipeline project ("Project"). The Project notification letter provided an overview of the Project and requested information on any potential adverse impacts the Project may have on Aboriginal or treaty rights. The Enbridge Gas representative advised that capacity funding was available to support AFN's engagement on the Project. The Enbridge Gas representative requested feedback regarding the Project by June 1, 2022, if possible.		
2.2	April 13, 2022	Email	The Enbridge Gas representative sent the CFN representatives a letter along with the Notice of Study Commencement for the Project highlighting the Virtual Information Session occurring from April 25 to May 8, 2022. The Enbridge Gas representative invited CFN representatives to get in touch if they would like to discuss the Project further.		
2.3	May 6, 2022	Email	The Enbridge Gas representative sent an email to the CFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas's proposed projects.		
2.4	June 9, 2022	Email	The Enbridge Gas representative sent an email to the CFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status, Outstanding Engagement Request and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas projects.		
2.5	June 20, 2022	Email	An Enbridge Gas representative emailed the CFN representative to advise that the Environmental Report was available and provided the Internet link for the report. The Enbridge Gas representative requested that any comments be provided on the Environmental Report by July 29, 2022, as per Guidelines		
2.6	July 5, 2022	Telephone call	An Enbridge Gas representative called the CFN representative to follow up on emails. Left a message with a return number.		
2.7	July 11, 2022	In person discussion	An Enbridge Gas representative talked in person with a CFN representative who confirmed that Enbridge Gas was reaching out to the appropriate contact within the community.		
Chippewa of Kettle and Stony Point First Nation (CKSPFN)					
Line item	Date	Method	Summary of Enbridge Gas Engagement Activity	Summary of Community's Engagement Activity	Outstanding Issues or Concerns
3.1	March 1, 2022	Email	The Enbridge Gas representative sent an email to the CKSPFN representative providing a notification letter regarding the Ridge Landfill Pipeline project ("Project"). The Project notification letter provided an overview of the Project and requested information on any potential adverse impacts the Project may have on Aboriginal or treaty rights. The Enbridge Gas representative advised that capacity funding was available to support AFN's engagement on the Project. The Enbridge Gas representative requested feedback regarding the Project by June 1, 2022, if possible.		
3.2	April 13, 2022	Email	The Enbridge Gas representative sent the CKSPFN representatives a letter along with the Notice of Study Commencement for the Project highlighting the Virtual Information Session occurring from April 25 to May 8, 2022. The Enbridge Gas representative invited the CKSPFN representatives to get in touch if they would like to discuss the Project further.		
3.3	May 6, 2022	Email	The Enbridge Gas representative sent an email to the CKSPFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas's proposed projects.		
				The CKSPFN representative acknowledged the email on the same day.	
3.4	May 11, 2022	Virtual Meeting	Enbridge Gas and CKSPFN representatives had a virtual meeting to discuss issues of ongoing engagement, fugitive emissions and cumulative impacts.	A CKSPFN representative addressed a water assertion within	

				CKSFPN traditional territory.	
3.5	May 31, 2022	In person meeting	Enbridge Gas and CKSFPN representatives met to discuss ongoing engagement.		
3.6	June 9, 2022	Email	The Enbridge Gas representative sent an email to the CKSFPN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status, Outstanding Engagement Request and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas projects.		
3.7	June 20, 2022	Email	An Enbridge Gas representative emailed the CKSFPN representative to advise that the Environmental Report was available and provided the Internet link for the report. The Enbridge Gas representative requested that any comments be provided on the Environmental Report by July 29, 2022, as per Guidelines		
3.8	July 11, 2022	In person meeting	Enbridge Gas and CKSFPN met in person. An Enbridge Gas representative provided a presentation on RNG and the process of producing and using RNG. The parties also discussed ongoing engagement.		
Chippewas of the Thames First Nation (COTTFN)					
Line item	Date	Method	Summary of Enbridge Gas Engagement Activity	Summary of Community's Engagement Activity	Outstanding Issues or Concerns
4.1	March 1, 2022	Email	The Enbridge Gas representative sent an email to the COTTFN representative providing a notification letter regarding the Ridge Landfill Pipeline project ("Project"). The Project notification letter provided an overview of the Project and requested information on any potential adverse impacts the Project may have on Aboriginal or treaty rights. The Enbridge Gas representative advised that capacity funding was available to support AFN's engagement on the Project. The Enbridge Gas representative requested feedback regarding the Project by June 1, 2022, if possible.		
4.2	April 11, 2022	Email	The Enbridge Gas representative provided the COTTFN representative with the Notice of Study Commencement for the Project highlighting the Virtual Information Session occurring from April 25 to May 8, 2022. The Enbridge Gas representative invited the COTTFN representative to get in touch if they would like to discuss the Project further.		
4.3	April 19, 2022	Email		The COTTFN representative emailed the Enbridge Gas representative requesting the spatial files for the Project.	
			The Enbridge Gas representative responded the following day to provide the file.		
4.4	April 21, 2022	In-person meeting	The Enbridge Gas representative met with the COTTFN to review the Project. COTTFN had no Project-related concerns at this time.		
4.5	May 26, 2022	Email	The Enbridge Gas representative sent an email to the COTTFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided the Project status and proposed OEB Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas's proposed projects.		
4.6	June 9, 2022	Email	The Enbridge Gas representative sent an email to the COTTFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status, Outstanding Engagement Request and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas projects.		
4.7	June 20, 2022	Email	An Enbridge Gas representative emailed the COTTFN representative to advise that the Environmental Report was available and provided the Internet link for the report. The Enbridge Gas representative requested that any comments be provided on the Environmental Report by July 29, 2022, as per Guidelines		
Oneida Nation of the Thames (Oneida Nation)					
Line item	Date	Method	Summary of Enbridge Gas Engagement Activity	Summary of Community's Engagement Activity	Outstanding Issues or Concerns
5.1	March 1, 2022	Email	The Enbridge Gas representative sent an email to the Oneida Nation representative providing a notification letter regarding the Ridge Landfill Pipeline project ("Project"). The Project notification letter provided an overview of the Project and requested information on any potential adverse impacts the Project may have on Aboriginal or treaty rights. The Enbridge Gas		

			representative advised that capacity funding was available to support AFN's engagement on the Project. The Enbridge Gas representative requested feedback regarding the Project by June 1, 2022, if possible.		
5.2	April 11, 2022	Email	The Enbridge Gas representative provided the Oneida Nation representative with the Notice of Study Commencement for the Project highlighting the Virtual Information Session occurring from April 25 to May 8, 2022. The Enbridge Gas representative invited the Oneida Nation representative to get in touch if they would like to discuss the Project further.		
5.3	May 26, 2022	Email	The Enbridge Gas representative sent an email to the Oneida Nation representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided the Project status and proposed OEB Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas's proposed projects.		
5.4	June 9, 2022	Email	The Enbridge Gas representative sent an email to the Oneida Nation representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status, Outstanding Engagement Request and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas projects.		
				An Oneida Nation representative responded asking for a meeting to discuss Enbridge Gas Projects. The parties agreed on a in person meeting on June 10, 2022.	
5.5	June 10, 2022	Email		An Oneida Nation representative emailed the Enbridge Gas representative that they would not be able to meet on June 10, 2022. The parties agreed to meet on June 29, 2022.	
5.6	June 20, 2022	Email	An Enbridge Gas representative emailed the Oneida Nation representative to advise that the Environmental Report was available and provided the Internet link for the report. The Enbridge Gas representative requested that any comments be provided on the Environmental Report by July 29, 2022, as per Guidelines		
5.7	June 29, 2022	In person meeting	An Enbridge Gas representative met with the Oneida Nation representative to discuss the Project. An Enbridge Gas representative reviewed the scope of the Project and showed a map.		
Walpole Island First Nation (WIFN)					
Line item	Date	Method	Summary of Enbridge Gas Engagement Activity	Summary of Community's Engagement Activity	Outstanding Issues or Concerns
6.1	March 1, 2022	Email	The Enbridge Gas representative sent an email to the WIFN representative providing a notification letter regarding the Ridge Landfill Pipeline project ("Project"). The Project notification letter provided an overview of the Project and requested information on any potential adverse impacts the Project may have on Aboriginal or treaty rights. The Enbridge Gas representative advised that capacity funding was available to support AFN's engagement on the Project. The Enbridge Gas representative requested feedback regarding the Project by June 1, 2022, if possible.		
6.2	April 13, 2022	Email	The Enbridge Gas representative sent the WIFN representatives a letter along with the Notice of Study Commencement for the Project highlighting the Virtual Information Session occurring from April 25 to May 8, 2022. The Enbridge Gas representative invited the WIFN representatives to get in touch if they would like to discuss the Project further.		
				The WIFN replied to the Enbridge Gas representative on the same day to acknowledge the email and advise that capacity funding would be required to review the Project.	

			The Enbridge Gas representative responded on the same day acknowledging capacity funding was available and requested a proposal.		
6.3	May 6, 2022	Email	The Enbridge Gas representative sent an email to the WIFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided the Project status and proposed OEB Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas's proposed projects.		
6.4	May 12, 2022	Email		The WIFN representative emailed the Enbridge Gas representative to provide the capacity funding proposal for the Project.	
			The Enbridge Gas representative replied the same day to confirm receipt and agreed to the capacity funding proposal.		
6.5	May 26, 2022	Email		The WIFN representative emailed the Enbridge Gas representative to provide WIFN's comments on the technical documents to date.	
			An Enbridge Gas representative acknowledged the email and advised that the environmental report would be released shortly. An Enbridge Gas representative advised they would provide follow up to the WIFN comments.		
6.6	June 9, 2022	Email	The Enbridge Gas representative sent an email to the WIFN representative to provide a monthly update of Enbridge Gas's proposed projects. The update provided information regarding the Project status, Outstanding Engagement Request and proposed OEB Project Application filing date. The Enbridge Gas representative advised that capacity funding was available to support engagement on Enbridge Gas projects.		
6.7	June 20, 2022	Email	An Enbridge Gas representative emailed the WIFN representative to advise that the Environmental Report was available and provided the Internet link for the report. The Enbridge Gas representative requested that any comments be provided on the Environmental Report by July 29, 2022, as per Guidelines		
6.8	June 24, 2022	Email		A WIFN representative emailed an Enbridge Gas representative requesting a meeting on Enbridge Gas projects.	
			The parties agreed to meeting on July 13, 2022.		
6.9	June 30, 2022	Email	An Enbridge Gas representative sent an email to the WIFN representative to provide a response back to the comments received from WIFN on the Project.		
6.10	July 7, 2022	Email		A WIFN representative sent an email to an Enbridge Gas representative to provide the finalized proposal to review the Project environmental report	
			An Enbridge representative responded on July 11, 2022 to advise WIFN to proceed with the finalized proposal.		
6.11	July 13, 2022	In Person meeting	Enbridge Gas and WIFN met in person. The parties discussed RNG and the Project. A meeting will be set up for WIFN to provide further information on RNG and Enbridge Gas' role in these type of projects.		

Appendix L

Wildlife Species Records

Table L1: Species with the Potential and/or Known Occurrences within the Study Area

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
BIRDS				
<i>Accipiter cooperii</i>	Cooper's Hawk	---	---	S4
<i>Accipiter gentilis</i>	Northern Goshawk	---	---	S4
<i>Accipiter striatus</i>	Sharp-shinned Hawk	---	---	S5
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	---	---	S4
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	---	---	S4
<i>Aix sponsa</i>	Wood Duck	---	---	S5
<i>Anas acuta</i>	Northern Pintail	---	---	S5
<i>Anas Americana</i>	American Wigeon	---	---	S4
<i>Anas clypeata</i>	Northern Shoveler	---	---	S4
<i>Anas crecca</i>	Green-winged Teal	---	---	S4
<i>Anas discors</i>	Blue-winged Teal	---	---	S4
<i>Anas platyrhynchos</i>	Mallard	---	---	S5
<i>Anas rubripes</i>	American Black Duck	---	---	S4
<i>Anas strepera</i>	Gadwall	---	---	S4
<i>Anser albifrons</i>	Greater White-fronted Goose	---	---	SNA
<i>Anthus rubescens</i>	American Pipit	---	---	S4
<i>Aquila chrysaetos</i>	Golden Eagle	---	END	S2B
<i>Ardea alba</i>	Great Egret	---	---	S2B
<i>Ardea Herodias</i>	Great Blue Heron	---	---	S4
<i>Asio flammeus</i>	Short-eared Owl	SC	SC	S2N,S4B
<i>Asio otus</i>	Long-eared Owl	---	---	S4
<i>Aythya affinis</i>	Lesser Scaup	---	---	S4
<i>Aythya Americana</i>	Redhead	---	---	S2B,S4N
<i>Aythya collaris</i>	Ring-necked Duck	---	---	S5
<i>Aythya marila</i>	Greater Scaup	---	---	S4
<i>Aythya valisineria</i>	Canvasback	---	---	S1B,S4N
<i>Baeolophus bicolor</i>	Tufted Titmouse	---	---	S4
<i>Bombycilla cedrorum</i>	Cedar Waxwing	---	---	S5B
<i>Branta Canadensis</i>	Canada Goose	---	---	S5
<i>Branta hutchinsii</i>	Cackling Goose	---	---	S4N
<i>Bubo scandiacus</i>	Snowy Owl	---	---	SNA
<i>Bubo virginianus</i>	Great Horned Owl	---	---	S4
<i>Bucephala albeola</i>	Bufflehead	---	---	S4
<i>Bucephala clangula</i>	Common Goldeneye	---	---	S5
<i>Buteo jamaicensis</i>	Red-tailed Hawk	---	---	S5
<i>Buteo lagopus</i>	Rough-legged Hawk	---	---	S1B,S4N

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Buteo lineatus</i>	Red-shouldered Hawk	---	---	S4B
<i>Calcarius lapponicus</i>	Lapland Longspur	---	---	S3B
<i>Calidris alpina</i>	Dunlin	---	---	S4B,S5N
<i>Calidris maritima</i>	Purple Sandpiper	---	---	SNA
<i>Cardinalis cardinalis</i>	Northern Cardinal	---	---	S5
<i>Carduelis flammea</i>	Common Redpoll	---	---	S4B
<i>Carduelis pinus</i>	Pine Siskin	---	---	S4B
<i>Carduelis tristis</i>	American Goldfinch	---	---	S5B
<i>Carpodacus mexicanus</i>	House Finch	---	---	SNA
<i>Carpodacus purpureus</i>	Purple Finch	---	---	S4B
<i>Cathartes aura</i>	Turkey Vulture	---	---	S5B
<i>Catharus guttatus</i>	Hermit Thrush	---	---	S5B
<i>Certhia Americana</i>	Brown Creeper	---	---	S5B
<i>Chaetura pelagica</i>	Chimney Swift	THR	THR	S4B,S4N
<i>Charadrius vociferous</i>	Killdeer	---	---	S5B,S5N
<i>Chen caerulescens</i>	Snow Goose	---	---	S5B
<i>Chen rossii</i>	Ross's Goose	---	---	S1B
<i>Chlidonias niger</i>	Black Tern	---	SC	S3B
<i>Chordeiles minor</i>	Common Nighthawk	THR	SC	S4B
<i>Circus cyaneus</i>	Northern Harrier	---	---	S4B
<i>Cistothorus palustris</i>	Marsh Wren	---	---	S4B
<i>Clangula hyemalis</i>	Long-tailed Duck	---	---	S3B
<i>Colaptes auratus</i>	Northern Flicker	---	---	S4B
<i>Columba livia</i>	Rock Pigeon	---	---	SNA
<i>Contopus virens</i>	Eastern Wood-pewee	SC	SC	S4B
<i>Corvus brachyrhynchos</i>	American Crow	---	---	S5B
<i>Cyanocitta cristata</i>	Blue Jay	---	---	S5
<i>Cygnus columbianus</i>	Tundra Swan	---	---	S4
<i>Cygnus olor</i>	Mute Swan	---	---	SNA
<i>Dolichonyx oryzivorus</i>	Bobolink	THR	THR	S4B
<i>Dryocopus pileatus</i>	Pileated Woodpecker	---	---	S5
<i>Eremophila alpestris</i>	Horned Lark	---	---	S5B
<i>Euphagus carolinus</i>	Rusty Blackbird	SC	---	S4B
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	---	---	S4B
<i>Falco columbarius</i>	Merlin	---	---	S5B
<i>Falco peregrinus</i>	Peregrine Falcon	SC	SC	S3B
<i>Falco sparverius</i>	American Kestrel	---	---	S4
<i>Fulica Americana</i>	American Coot	---	---	S4B

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Gallinago delicata</i>	Wilson's Snipe	---	---	S5B
<i>Gavia immer</i>	Common Loon	---	---	S5B,S5N
<i>Geothlypis trichas</i>	Common Yellowthroat	---	---	S5B
<i>Grus Canadensis</i>	Sandhill Crane	---	---	S5B
<i>Haliaeetus leucocephalus</i>	Bald Eagle	---	SC	S2N,S4B
<i>Hirundo rustica</i>	Barn Swallow	THR	THR	S4B
<i>Hylocichla mustelina</i>	Wood Thrush	END	SC	S4B
<i>Icteria virens virens</i>	Yellow-breasted Chat	END	END	S2B
<i>Junco hyemalis</i>	Dark-eyed Junco	---	---	S5B
<i>Lanius excubitor</i>	Northern Shrike	---	---	SNA
<i>Larus argentatus</i>	Herring Gull	---	---	S5B,S5N
<i>Larus delawarensis</i>	Ring-billed Gull	---	---	S5B,S4N
<i>Larus fuscus</i>	Lesser Black-backed Gull	---	---	SNA
<i>Larus glaucooides</i>	Iceland Gull	---	---	S4N
<i>Larus hyperboreus</i>	Glaucous Gull	---	---	S4N
<i>Larus marinus</i>	Great Black-backed Gull	---	---	S2B
<i>Larus Philadelphia</i>	Bonaparte's Gull	---	---	S4B,S4N
<i>Larus thayeri</i>	Thayer's Gull	---	---	SNA
<i>Lophodytes cucullatus</i>	Hooded Merganser	---	---	S5B,S5N
<i>Loxia leucoptera</i>	White-winged Crossbill	---	---	S5B
<i>Megaceryle alcyon</i>	Belted Kingfisher	---	---	S4B
<i>Megascops asio</i>	Eastern Screech-Owl	---	---	S4
<i>Melanerpes carolinus</i>	Red-bellied Woodpecker	---	---	S4
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	THR	SC	S4B
<i>Melanitta fusca</i>	White-winged Scoter	---	---	S4B,S4N
<i>Melanitta nigra</i>	Black Scoter	---	---	S4B,S4N
<i>Melanitta perspicillata</i>	Surf Scoter	---	---	S4B,S4N
<i>Meleagris gallopavo</i>	Wild Turkey	---	---	S5
<i>Melospiza georgiana</i>	Swamp Sparrow	---	---	S5B
<i>Melospiza melodia</i>	Song Sparrow	---	---	S5B
<i>Mergus merganser</i>	Common Merganser	---	---	S5B,S5N
<i>Mergus serrator</i>	Red-breasted Merganser	---	---	S4B,S5N
<i>Mimus polyglottos</i>	Northern Mockingbird	---	---	S4
<i>Molothrus ater</i>	Brown-headed Cowbird	---	---	S4B
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	---	---	S3B,S3N
<i>Oreothlypis celata</i>	Orange-crowned Warbler	---	---	S4B
<i>Oxyura jamaicensis</i>	Ruddy Duck	---	---	S4B,S4N
<i>Passer domesticus</i>	House Sparrow	---	---	SNA

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Passerculus sandwichensis</i>	Savannah Sparrow	---	---	S4B
<i>Passerella iliaca</i>	Fox Sparrow	---	---	S4B
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	---	---	S5B
<i>Phasianus colchicus</i>	Ring-necked Pheasant	---	---	SNA
<i>Picoides pubescens</i>	Downy Woodpecker	---	---	S5
<i>Picoides villosus</i>	Hairy Woodpecker	---	---	S5
<i>Pipilo erythrophthalmus</i>	Eastern Towhee	---	---	S4B
<i>Plectrophenax nivalis</i>	Snow Bunting	---	---	SNA
<i>Podiceps auritus</i>	Horned Grebe	---	SC	S1B,S4N
<i>Podiceps grisegena</i>	Red-necked Grebe	---	---	S3B,S4N
<i>Podilymbus podiceps</i>	Pied-billed Grebe	---	---	S4B,S4N
<i>Poecile atricapillus</i>	Black-capped Chickadee	---	---	S5
<i>Quiscalus quiscula</i>	Common Grackle	---	---	S5B
<i>Regulus calendula</i>	Ruby-crowned Kinglet	---	---	S4B
<i>Regulus satrapa</i>	Golden-crowned Kinglet	---	---	S5B
<i>Riparia riparia</i>	Bank Swallow	THR	THR	S4B
<i>Sayornis phoebe</i>	Eastern Phoebe	---	---	S5B
<i>Scolopax minor</i>	American Woodcock	---	---	S4B
<i>Setophaga coronata</i>	Yellow-rumped Warbler	---	---	S5B
<i>Sialia sialis</i>	Eastern Bluebird	---	---	S5B
<i>Sitta Canadensis</i>	Red-breasted Nuthatch	---	---	S5
<i>Sitta carolinensis</i>	White-breasted Nuthatch	---	---	S5
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	---	---	S5B
<i>Spizella passerine</i>	Chipping Sparrow	---	---	S5B
<i>Spizella pusilla</i>	Field Sparrow	---	---	S4B
<i>Spizelloides arborea</i>	American Tree Sparrow	---	---	S4B
<i>Sterna forsteri</i>	Forster's Tern	---	---	S2B
<i>Sturnella magna</i>	Eastern Meadowlark	THR	THR	S4B
<i>Sturnus vulgaris</i>	European Starling	---	---	SNA
<i>Thryothorus ludovicianus</i>	Carolina Wren	---	---	S4
<i>Troglodytes troglodytes</i>	Winter Wren	---	---	S5B
<i>Turdus migratorius</i>	American Robin	---	---	S5B
<i>Tyto alba</i>	Barn Owl	END	END	S1
<i>Zenaidura macroura</i>	Mourning Dove	---	---	S5
<i>Zonotrichia albicollis</i>	White-throated Sparrow	---	---	S5B
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	---	---	S4B
MAMMALS				
<i>Blarina brevicauda</i>	Northern Short-tailed Shrew	---	---	S5

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Canis latrans</i>	Coyote	---	---	S5
<i>Castor canadensis</i>	Beaver	---	---	S5
<i>Clethrionomys gapperi</i>	Southern Red-backed Vole	---	---	S5
<i>Condylura cristata</i>	Star-nosed Mole	---	---	S5
<i>Cryptotis parva</i>	Least Shrew	---	---	SH
<i>Didelphis virginiana</i>	Virginia Opossum	---	---	S4
<i>Eptesicus fuscus</i>	Big Brown Bat	---	---	S5
<i>Glaucomys volans</i>	Southern Flying Squirrel	---	---	S4
<i>Lasionycteris noctivagans</i>	Silver-haired Bat	---	---	S4
<i>Lasiurus borealis</i>	Eastern Red Bat	---	---	S4
<i>Lasiurus cinereus</i>	Hoary Bat	---	---	S4
<i>Lontra canadensis</i>	North American River Otter	---	---	S5
<i>Marmota monax</i>	Woodchuck	---	---	S5
<i>Mephitis mephitis</i>	Striped Skunk	---	---	S5
<i>Microtus pennsylvanicus</i>	Meadow Vole	---	---	S5
<i>Microtus pinetorum</i>	Woodland Vole	SC	SC	S3?
<i>Mustela ermine</i>	Ermine	---	---	S5
<i>Mustela frenata</i>	Long-tailed Weasel	---	---	S4
<i>Mustela nivalis</i>	Least Weasel	---	---	SU
<i>Mustela vison</i>	American Mink	---	---	S4
<i>Myotis leibii</i>	Eastern Small-footed Myotis	---	END	S2S3
<i>Myotis lucifugus</i>	Little Brown Myotis	END	END	S4
<i>Myotis septentrionalis</i>	Northern Myotis	END	END	S3
<i>Napaeozapus insignis</i>	Woodland Jumping Mouse	---	---	S5
<i>Odocoileus virginianus</i>	White-tailed Deer	---	---	S5
<i>Ondatra zibethicus</i>	Muskrat	---	---	S5
<i>Peromyscus leucopus</i>	White-footed Mouse	---	---	S5
<i>Peromyscus maniculatus</i>	Deer Mouse	---	---	S5
<i>Pipistrellus subflavus</i>	Tri-colored Bat	END	END	S3?
<i>Procyon lotor</i>	Northern Raccoon	---	---	S5
<i>Scalopus aquaticus</i>	Eastern Mole	SC	SC	S2
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	---	---	S5
<i>Sorex cinereus</i>	Masked Shrew	---	---	S5
<i>Sorex fumeus</i>	Smoky Shrew	---	---	S5
<i>Sylvilagus floridanus</i>	Eastern Cottontail	---	---	S5
<i>Tamias striatus</i>	Eastern Chipmunk	---	---	S5
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	---	---	S5

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Taxidea taxus jacksoni</i>	American Badger (Southwestern Ontario population)	END	END	---
<i>Urocyon cinereoargenteus</i>	Gray Fox	THR	THR	S1
<i>Vulpes vulpes</i>	Red Fox	---	---	S5
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	---	---	S5
HERPETOZOA				
<i>Chelydra serpentina</i>	Snapping Turtle	SC	SC	S3
<i>Chrysemys picta marginata</i>	Midland Painted Turtle	---	---	S4
<i>Apalone spinifera</i>	Spiny Softshell	THR	END	S3
<i>Anaxyrus americanus</i>	American Toad	---	---	S5
<i>Hyla versicolor</i>	Gray Treefrog	---	---	S5
<i>Lithobates pipiens</i>	Northern Leopard Frog	---	---	S5
<i>Pseudacris triseriata</i> pop. 2	Western Chorus Frog (Carolinian Population)	---	---	S4
<i>Plethodon cinereus</i>	Eastern Red-backed Salamander	---	---	S5
<i>Pantherophis gloydi</i> pop. 2	Eastern Foxsnake (Carolinian population)	END	END	S2
ODONATA				
<i>Anax junius</i>	Common Green Darner	---	---	S5
<i>Argia apicalis</i>	Blue-fronted Dancer	---	---	S4
<i>Argia moesta</i>	Powdered Dancer	---	---	S5
<i>Argia tibialis</i>	Blue-tipped Dancer	---	---	S3
<i>Calopteryx maculata</i>	Ebony Jewelwing	---	---	S5
<i>Enallagma civile</i>	Familiar Bluet	---	---	S5
<i>Enallagma ebrium</i>	Marsh Bluet	---	---	S5
<i>Enallagma exsulans</i>	Stream Bluet	---	---	S5
<i>Enallagma geminatum</i>	Skimming Bluet	---	---	S4
<i>Enallagma hageni</i>	Hagen's Bluet	---	---	S5
<i>Epiaeschna heros</i>	Swamp Darner	---	---	S2S3
<i>Erythemis simplicicollis</i>	Eastern Pondhawk	---	---	S5
<i>Gomphus fraternus</i>	Midland Clubtail	---	---	S4
<i>Hetaerina americana</i>	American Rubyspot	---	---	S4
<i>Ischnura posita</i>	Fragile Forktail	---	---	S4
<i>Lestes inaequalis</i>	Elegant Spreadwing	---	---	S4
<i>Leucorrhinia intacta</i>	Dot-tailed Whiteface	---	---	S5
<i>Libellula luctuosa</i>	Widow Skimmer	---	---	S5
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	---	---	S5
<i>Macromia illinoensis</i>	Illinois River Cruiser	---	---	S4
<i>Pachydiplax longipennis</i>	Blue Dasher	---	---	S5

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
LEPIDOTERA				
<i>Danaus plexippus</i>	Monarch	SC	SC	S2N,S4B
<i>Hylephila phyleus</i>	Fiery Skipper	---	---	SNA
<i>Junonia coenia</i>	Common Buckeye	---	---	SNA
<i>Limenitis archippus</i>	Viceroy	---	---	S5
<i>Lycaena Hyllus</i>	Bronze Copper	---	---	S5
<i>Megisto cymela</i>	Little Wood-Satyr	---	---	S5
<i>Nymphalis antiopa</i>	Mourning Cloak	---	---	S5
<i>Papilio cresphontes</i>	Giant Swallowtail	---	---	S4
<i>Papilio glaucus</i>	Eastern Tiger Swallowtail	---	---	S5
<i>Papilio polyxenes</i>	Black Swallowtail	---	---	S5
<i>Pholisora catullus</i>	Common Sootywing	---	---	S4
<i>Phyciodes cocyta</i>	Northern Crescent	---	---	S5
<i>Phyciodes tharos</i>	Pearl Crescent	---	---	S4
<i>Pieris rapae</i>	Cabbage White	---	---	SNA
<i>Polites peckius</i>	Peck's Skipper	---	---	S5
<i>Polygonia comma</i>	Eastern Comma	---	---	S5
<i>Polygonia interrogationis</i>	Question Mark	---	---	S5
<i>Pyrgus communis</i>	Common Checkered Skipper	---	---	SNA
<i>Pyrisitia lisa</i>	Little Yellow	---	---	SNA
<i>Speyeria cybele</i>	Great Spangled Fritillary	---	---	S5
<i>Thymelicus lineola</i>	European Skipper	---	---	SNA
<i>Vanessa atalanta</i>	Red Admiral	---	---	S5
<i>Vanessa cardui</i>	Painted Lady	---	---	S5
<i>Vanessa virginiensis</i>	American Lady	---	---	S5
<i>Wallengrenia egeremet</i>	Northern Broken-Dash	---	---	S5
BOTANICAL				
<i>Abutilon theophrasti</i>	Velvetleaf	---	---	SNA
<i>Acer campestre</i>	Hedge Maple	---	---	SNA
<i>Acer ginnala</i>	Amur Maple	---	---	SE1
<i>Acer negundo</i>	Manitoba Maple	---	---	S5
<i>Acer platanoides</i>	Norway Maple	---	---	SNA
<i>Acer rubrum</i>	Red Maple	---	---	S5
<i>Acer saccharinum</i>	Silver Maple	---	---	S5
<i>Acer saccharum</i>	Sugar Maple	---	---	S5
<i>Acer xfreemanii</i>	Freeman's Maple	---	---	SNA
<i>Achillea filipendulina</i>	Fern-leaved Yarrow	---	---	SNA
<i>Actaea pachypoda</i>	White Baneberry	---	---	S5

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Agrimonia gryposepala</i>	Hooked Agrimony	---	---	S5
<i>Agrostis gigantea</i>	Redtop	---	---	SNA
<i>Alisma gramineum</i>	Narrow-leaved Water-plantain	---	---	S4
<i>Alliaria petiolata</i>	Garlic Mustard	---	---	SNA
<i>Ambrosia artemisiifolia</i>	Annual Ragweed	---	---	S5
<i>Ambrosia x helena</i>	(<i>Ambrosia artemisiifolia</i> X <i>Ambrosia trifida</i>)	---	---	SNA
<i>Amphicarpaea bracteata</i>	American Hog-peanut	---	---	S5
<i>Apocynum cannabinum</i>	Hemp Dogbane	---	---	S5
<i>Arctium minus</i>	Common Burdock	---	---	SNA
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	---	---	S5
<i>Asclepias incarnate</i>	Swamp Milkweed	---	---	S5
<i>Asclepias syriaca</i>	Common Milkweed	---	---	S5
<i>Asparagus officinalis</i>	Garden Asparagus	---	---	SNA
<i>Barbarea vulgaris</i>	Bitter Wintercress	---	---	SNA
<i>Bidens cernuus</i>	Nodding Beggarticks	---	---	S5
<i>Bidens frondosa</i>	Devil's Beggarticks	---	---	S5
<i>Carex flava</i>	Yellow Sedge	---	---	S5
<i>Carex sp.</i>	Carex sps.	---	---	---
<i>Carpinus caroliniana</i>	Blue-beech	---	---	S5
<i>Carya cordiformis</i>	Bitternut Hickory	---	---	S5
<i>Carya laciniosa</i>	Shellbark Hickory	---	---	S3
<i>Carya ovata</i>	Shagbark Hickory	---	---	S5
<i>Chenopodium album</i>	White Goosefoot	---	---	SNA
<i>Circaea alpina</i>	Small Enchanter's Nightshade	---	---	S5
<i>Cirsium arvense</i>	Canada Thistle	---	---	SNA
<i>Cirsium vulgare</i>	Bull Thistle	---	---	SNA
<i>Clematis virginiana</i>	Virginia Virgin's-bower	---	---	S5
<i>Convolvulus arvensis</i>	Field Bindweed	---	---	SNA
<i>Cornus obliqua</i>	Silky Dogwood	---	---	S5
<i>Cornus racemosa</i>	Gray Dogwood	---	---	S5
<i>Cornus sericea ssp sericea</i>	Red-osier Dogwood	---	---	S5
<i>Crataegus crus-galli</i>	Cockspur Hawthorn	---	---	S5
<i>Crataegus mollis</i>	Downy Hawthorn	---	---	S5
<i>Cryptotaenia canadensis</i>	Canada Honewort	---	---	S5
<i>Dactylis glomerata</i>	Orchard Grass	---	---	SNA
<i>Dasiphora fruticosa</i>	Shrubby Cinquefoil	---	---	S5
<i>Daucus carota</i>	Wild Carrot	---	---	SNA

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Digitaria ischaemum</i>	Smooth Crabgrass	---	---	SNA
<i>Dipsacus fullonum</i>	Fuller's Teasel	---	---	SE5
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	---	---	S5
<i>Echinochloa crus-galli</i>	Large Barnyard Grass	---	---	SNA
<i>Elaeagnus umbellata</i>	Autumn Olive	---	---	SNA
<i>Elymus repens</i>	Creeping Wildrye	---	---	SNA
<i>Equisetum arvense</i>	Field Horsetail	---	---	S5
<i>Euonymus alatus</i>	Winged Euonymus	---	---	SNA
<i>Euonymus europaeus</i>	European Euonymus	---	---	SNA
<i>Euonymus fortune</i>	Climbing Euonymus	---	---	SNA
<i>Euonymus obovate</i>	Running Strawberry Bush	---	---	S5
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	---	---	S5
<i>Fragaria virginiana</i>	Wild Strawberry	---	---	S5
<i>Fraxinus Americana</i>	White Ash	---	---	S4
<i>Fraxinus nigra</i>	Black Ash	---	---	S4
<i>Fraxinus pennsylvanica</i>	Green Ash	---	---	S4
<i>Galium triflorum</i>	Three-flowered Bedstraw	---	---	S5
<i>Geranium maculatum</i>	Spotted Geranium	---	---	S5
<i>Geum canadense</i>	White Avens	---	---	S5
<i>Gleditsia triacanthos</i>	Honey-locust	---	---	S2
<i>Helianthus annuus</i>	Common Sunflower	---	---	SNA
<i>Hemerocallis fulva</i>	Orange Daylily	---	---	SNA
<i>Hesperis matronalis</i>	Dame's Rocket	---	---	SNA
<i>Hieracium caespitosum</i> ssp. <i>Caespitosum</i>	Yellow or Field Hawkweed	---	---	SE5
<i>Hydrophyllum virginianum</i>	Virginia Waterleaf	---	---	S5
<i>Hypericum perforatum</i>	Common St. John's-wort	---	---	SNA
<i>Impatiens capensis</i>	Spotted Jewelweed	---	---	S5
<i>Juglans cinerea</i>	Butternut	END	END	S3?
<i>Juglans nigra</i>	Black Walnut	---	---	S4
<i>Juniperus virginiana</i>	Eastern Red Cedar	---	---	S5
<i>Leersia oryzoides</i>	Rice Cutgrass	---	---	S5
<i>Leucanthemum vulgare</i>	Oxeye Daisy	---	---	SNA
<i>Liatris spicata</i>	Dense Blazing Star	THR	THR	S2
<i>Ligustrum vulgare</i>	European Privet	---	---	SNA
<i>Lindera benzoin</i>	Spicebush	---	---	S5
<i>Liriodendron tulipifera</i>	Tulip Tree	---	---	S4
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	---	---	SNA

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil	---	---	SNA
<i>Maianthemum racemosum</i>	False Solomon's-seal	---	---	S5
<i>Maianthemum stellatum</i>	Star-flowered False Solomon's-seal	---	---	S5
<i>Malus pumila</i>	Common Apple	---	---	SNA
<i>Malva neglecta</i>	Dwarf Cheeseweed	---	---	SNA
<i>Medicago lupulina</i>	Black Medic	---	---	SNA
<i>Medicago sativa</i>	Alfalfa	---	---	SNA
<i>Melilotus albus</i>	White Sweet-clover	---	---	SNA
<i>Menispermum canadense</i>	Canada Moonseed	---	---	S4
<i>Morus alba</i>	White Mulberry	---	---	SNA
<i>Onoclea sensibilis</i>	Sensitive Fern	---	---	S5
<i>Osmorhiza claytonia</i>	Hairy Sweet Cicely	---	---	S5
<i>Ostrya virginiana</i>	Eastern Hop-hornbeam	---	---	S5
<i>Oxyypolis rigidior</i>	Stiff Cowbane	---	---	S2
<i>Panicum dichotomiflorum</i>	Fall Panicgrass	---	---	SNA
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	---	---	S4?
<i>Phalaris arundinacea</i>	Reed Canary Grass	---	---	S5
<i>Phleum pretense</i>	Common Timothy	---	---	SNA
<i>Phragmites australis</i> ssp. <i>Australis</i>	European Common Reed	---	---	SNA
<i>Physalis heterophylla</i>	Clammy Ground-cherry	---	---	S4
<i>Picea abies</i>	Norway Spruce	---	---	SNA
<i>Picea glauca</i>	White Spruce	---	---	S5
<i>Picea pungens</i>	Blue Spruce	---	---	SNA
<i>Pilea pumila</i>	Canada Clearweed	---	---	S5
<i>Pinus nigra</i>	Black Pine	---	---	SNA
<i>Pinus resinosa</i>	Red Pine	---	---	S5
<i>Pinus rigida</i>	Pitch Pine	---	---	S2?
<i>Pinus sylvestris</i>	Scotch Pine	---	---	SNA
<i>Plantago major</i>	Common Plantain	---	---	S5
<i>Platanus occidentalis</i>	Sycamore	---	---	S4
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Bluegrass	---	---	S5
<i>Podophyllum peltatum</i>	May-apple	---	---	S5
<i>Populus deltoides</i> ssp. <i>deltoides</i>	Eastern Cottonwood	---	---	S5
<i>Populus tremuloides</i>	Trembling Aspen	---	---	S5
<i>Populus x canadensis</i>	(<i>Populus deltoides</i> X <i>Populus nigra</i>)	---	---	SNA
<i>Potentilla recta</i>	Sulphur Cinquefoil	---	---	SNA

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	Self-heal	---	---	S5
<i>Prunus serotina</i>	Wild Black Cherry	---	---	S5
<i>Pyrus communis</i>	Common Pear	---	---	SNA
<i>Quercus alba</i>	White Oak	---	---	S5
<i>Quercus bicolor</i>	Swamp White Oak	---	---	S4
<i>Quercus macrocarpa</i>	Bur Oak	---	---	S5
<i>Quercus palustris</i>	Pin Oak	---	---	S4
<i>Quercus rubra</i>	Northern Red Oak	---	---	S5
<i>Quercus shumardii</i>	Shumard Oak	---	SC	S3
<i>Ranunculus abortivus</i>	Kidney-leaved Buttercup	---	---	S5
<i>Rhus hirta</i>	Staghorn Sumac	---	---	S5
<i>Ribes americanum</i>	Wild Black Currant	---	---	S5
<i>Ribes cynosbati</i>	Prickly Gooseberry	---	---	S5
<i>Rubus allegheniensis</i>	Alleghany Blackberry or Common Blackberry	---	---	S5
<i>Rubus occidentalis</i>	Black Raspberry	---	---	S5
<i>Rubus odoratus</i>	Purple-flowering Raspberry	---	---	S5
<i>Rubus sachalinensis</i> var. <i>sachalinensis</i>	Wild Red Raspberry	---	---	S5
<i>Rumex crispus</i>	Curly Dock	---	---	SNA
<i>Salix alba</i>	White Willow	---	---	SNA
<i>Sanicula odorata</i>	Clustered Sanicle	---	---	S5
<i>Schedonorus arundinaceus</i>	Tall Fescue	---	---	SNA
<i>Setaria viridis</i>	Green Foxtail	---	---	SNA
<i>Shepherdia canadensis</i>	Canada Buffalo-berry	---	---	S5
<i>Sium suave</i>	Hemlock Water-parsnip	---	---	S5
<i>Smilax tamnoides</i>	Hispid Greenbrier	---	---	S4
<i>Solidago canadensis</i> var. <i>hageri</i>	Harger's Canada Goldenrod	---	---	S4?
<i>Solidago flexicaulis</i>	Zigzag Goldenrod	---	---	S5
<i>Solidago rugosa</i> var. <i>rugosa</i>	Northern Rough-leaved Goldenrod	---	---	S5
<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Field Sow-thistle	---	---	SNA
<i>Symphotrichum ericoides</i> var. <i>ericoides</i>	White Heath Aster	---	---	S5
<i>Symphotrichum lanceolatum</i> ssp. <i>lanceolatum</i>	Panicled Aster	---	---	S5
<i>Symphotrichum lateriflorum</i>	Starved Aster	---	---	S5
<i>Symphotrichum novae-angliae</i>	New England Aster	---	---	S5

Scientific Name	Common Name	SARA ¹	ESA ²	S-Rank ³
<i>Syringa reticulata</i> ssp. <i>pekinensis</i>	Peking Tree Lilac	---	---	SNA
<i>Syringa vulgaris</i>	Common Lilac	---	---	SNA
<i>Taraxacum officinale</i>	Common Dandelion	---	---	SNA
<i>Thalictrum dioicum</i>	Early Meadow-rue	---	---	S5
<i>Thuja occidentalis</i>	Eastern White Cedar	---	---	S5
<i>Tilia americana</i>	American Basswood	---	---	S5
<i>Tilia cordata</i>	Little-leaf Linden	---	---	SNA
<i>Toxicodendron radicans</i>	Climbing Poison Ivy	---	---	S5
<i>Trifolium hybridum</i>	Alsike Clover	---	---	SNA
<i>Trifolium pratense</i>	Red Clover	---	---	SNA
<i>Typha angustifolia</i>	Narrow-leaved Cattail	---	---	SNA
<i>Ulmus americana</i>	American Elm	---	---	S5
<i>Ulmus rubra</i>	Slippery Elm	---	---	S5
<i>Viburnum lentago</i>	Nannyberry	---	---	S5
<i>Viburnum rafinesquianum</i>	Downy Arrowwood	---	---	S5
<i>Vitis riparia</i>	Riverbank Grape	---	---	S5
<i>Zanthoxylum americanum</i>	Northern Prickly Ash	---	---	S5

Notes:

- 1 Species at Risk Act (END = Endangered, THR = Threatened, SC = Special Concern)
- 2 Endangered Species Act, 2007 (END = Endangered, THR = Threatened, SC = Special Concern)
- 3 Ontario S-Rank (S5= widespread in Ontario; S4 = apparently secure; S3 = vulnerable; S2 = imperilled; S1 = extremely rare in Ontario; ? = inexact or uncertain; B = breeding status; N = non-breeding status; SNA = not applicable/non-native)