Dawn Parkway Renewal Program: Dawn to Enniskillen: Environmental Report

Draft Report

November 6, 2026

Prepared for:
Enbridge Gas Inc.

Prepared by:
Stantec Consulting Ltd.

Project/File:
160901400

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Stantec

Limitations and Sign-off

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Prepared by _____
(signature)

Sydney Canhoto, BES
Environmental Consultant

Reviewed by _____
(signature)

Mark Knight, MA, RPP, MCIP
Senior Environmental Planner

Approved by _____
(signature)

Dave Wesenger, BES
Operations Leader – Environmental Services

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Executive Summary

Enbridge Gas Inc. (Enbridge Gas) is proposing the Dawn Parkway Renewal Program: Dawn to Enniskillen (the Project). The Project is driven by the need to restore capacity, due to identified integrity features, and to ensure the continued safe and reliable operation of the existing system. The Project involves removing approximately 16.7 kilometres of nominal pipeline size (NPS) 26-inch natural gas pipeline between the existing Dawn Natural Gas Storage and Transportation Facility (the Dawn Hub) in the Township of Dawn-Euphemia and the existing Enniskillen Station in the Township of Enniskillen. The removed pipeline will be replaced with a new NPS 48-inch diameter natural gas pipeline in the location of or in proximity to the existing easement; new permanent easement will be required. Small sections of the NPS 26-inch pipeline may be abandoned in place, in consultation with landowners, where removal is detrimental or not practicable. Upgrades to the Dawn Hub and Enniskillen Station are required at the two stations.

Enbridge Gas has retained Stantec Consulting Ltd. to undertake an environmental study of the construction and operation of the proposed Project. The environmental study will fulfill the requirements of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition* (2023), as well as relevant federal and provincial environmental guidance and regulations. The Environmental Report, which summarizes the environmental study, will accompany a future Enbridge Gas Leave to Construct application to the OEB for the Project.

Because the new pipeline will parallel the existing Dawn Parkway Transmission System, no alternative routes were proposed. Engagement and consultation were undertaken with Indigenous communities, federal and provincial agencies and authorities, municipal personnel and elected officials, special interest groups and third-party utility owners/operators, and directly affected landowners. Engagement and consultation

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activities included letters and emails, newspaper notices, social media, a Project webpage, a Virtual and In-Person Information Session, and meetings.

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

The potential cumulative effects of the Project were assessed by considering development that may begin during construction or that may begin sometime in the future. A 100-meter Study Area boundary was used to assess potential effects of the Project and other developments on environmental and socio-economic features. The cumulative effects assessment determined that, provided the mitigation and protective measures outlined in this report are implemented and that concurrent projects implement similar mitigation and protective measures, potential cumulative effects are not anticipated to occur, or if they do occur are not anticipated to be significant.

With the implementation of the recommendations in this Report, continued engagement and consultation, and compliance with applicable permit, regulatory, and legislative requirements, potential adverse residual environmental and socio-economic impacts of the Project are not anticipated to be significant.

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Acronyms / Abbreviations

AMO	Atlas of the Mammals of Ontario
CLI	Canada Land Inventory
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COTTFN	Chippewas of the Thames First Nation
DFO	Fisheries and Oceans Canada
EASR	Environmental Activity and Sector Registry
ECCC	Environment and Climate Change Canada
ELC	Ecological Land Classification
Enbridge Gas	Enbridge Gas Inc.
ER	Environmental Report
ESC	Erosion and sediment control
FCSI	Federal Contaminated Sites Inventory
GEO	Geospatial Ontario
KM	kilometre
MBCA	*Migratory Birds Convention Act*
MBR	*Migratory Birds Regulation*
MECP	Ministry of the Environment, Conservation and Parks
MCM	Ministry of Citizenship and Multiculturalism
MNR	Ministry of Natural Resources
MTO	Ministry of Transportation
NHIC	Natural Heritage Information Centre
NPS	Nominal Pipeline Size

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OBBA	Atlas of Breeding Birds of Ontario
OEB	Ontario Energy Board
OGS	Ontario Geological Survey
OPCC	Ontario Pipeline Coordinating Committee
O. Reg.	Ontario Regulation
Project	Dawn Parkway Renewal Program: Dawn to Enniskillen
PSOL	Protected Species in Ontario List
SAR	Species at Risk
SARA	*Species at Risk Act*
SCA	*Species Conservation Act*
SCN	Soybean Cyst Nematode
SCRCA	St. Clair Region Conservation Authority
SOCC	Species of Conservation Concern
Stantec	Stantec Consulting Ltd.
SWH	Significant Wildlife Habitat
SWHTG	Significant Wildlife Habitat Technical Guide

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1 Introduction

1.1 Project Description

Enbridge Gas Inc. (Enbridge Gas) is proposing the Dawn Parkway Renewal Program: Dawn to Enniskillen (the Project). The Project is driven by the need to restore capacity, due to identified integrity features, and to ensure the continued safe and reliable operation of the existing system. As part of the Dawn Parkway Renewal Program, Enbridge Gas Inc. (Enbridge Gas) is proposing the removal of approximately 16.7 kilometres (km) of nominal pipeline size (NPS) 26-inch diameter natural gas pipeline between the existing Dawn Natural Gas Storage and Transportation Facility (the Dawn Hub) located at Bentpath Line and Dawn Valley Road in the Township of Dawn-Euphemia, and the existing Enniskillen Station located north of Oil Springs Line on Oakdale Road in the Township of Enniskillen (the Project). The removed pipeline will be replaced with a new NPS 48-inch diameter natural gas pipeline in the location of or in proximity to the existing easement; new permanent easement will be required. Small sections of the NPS 26-inch pipeline may be abandoned in place, in consultation with landowners, where removal is detrimental or not practicable. Upgrades to the Dawn Hub and Enniskillen Station are required at the two stations.

Enbridge Gas has retained Stantec Consulting Ltd. (Stantec) to undertake an environmental study of the construction and operation of the proposed Project. The environmental study will fulfill the requirements of the Ontario Energy Board's (OEB) *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Projects and Facilities in Ontario, 8th Edition* (2023) (OEB Environmental Guidelines).

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1.2 Environmental Study

1.2.1 Objectives

A multidisciplinary team of environmental planners and scientists from Stantec conducted the environmental study. Enbridge Gas provided environmental support and engineering expertise throughout the study. The environmental study was completed in accordance with the OEB *Environmental Guidelines* (2023), as well as relevant federal and provincial environmental guidelines and regulations.

The principal objective of the environmental study was to outline various environmental mitigation and protection measures for the construction and operation of the Project while meeting the intent of the OEB *Environmental Guidelines* (2023). To meet this objective, the environmental study was prepared to:

- Complete a detailed review of environmental and socio-economic features and assess the potential environmental impacts of the Project on these features.
- Establish mitigation and protective measures that may be used to reduce or avoid potential environmental impacts of the Project.
- Develop an engagement and consultation program to receive input from interested and potentially affected parties.
- Identify any necessary supplemental studies, monitoring, and contingency plans.

1.2.2 Process

The environmental study was divided into two main phases:

Phase I: Consultation on the Project

The environmental study began by delineating the Study Area for the Project; as the new NPS 48 will parallel the existing Dawn Parkway Transmission System, no alternative routes were proposed.

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The following groups were notified of the Project:

- Indigenous communities
- Federal and provincial agencies and authorities
- Municipal personnel and elected officials
- Special interest groups and third-party utility owners/operators
- Directly affected landowners
- Residents and businesses in proximity to the Project

Communication on the Project with these groups occurred through newspaper notices, letters and emails, social media, and a Project webpage. Feedback on the Project was sought from these groups through a Virtual Information Session, and an In-person Information Session.

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

The Study Area and maps of existing conditions are in **Appendix A.**

Phase II: Confirmation of the Pipeline Route and Development of the Environmental Report

No feedback was received during the engagement and consultation to result in a change to the pipeline route. The final phase of the environmental study involved the determination of potential environmental and socio-economic impacts and cumulative effects that would result from the Project, and recommending supplemental studies and developing mitigation and protective measures, monitoring, and contingency plans to reduce or avoid potential impacts.

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The environmental study concluded with the preparation of this Environmental Report (ER) and accompanying Environmental Alignment Sheets to identify site-specific mitigation and protective measures to be implemented during construction (Appendix B).

1.2.3 The Environmental Report

The environmental study has relied on technically sound and consistently applied procedures that are replicable and transparent. The ER, which documents the environmental study, will form the foundation for future environmental management activities related to the Project.

The ER is organized into the following sections:

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

2.0 **Engagement and Consultation Program**: provides a description of engagement and consultation activities that were undertaken during the environmental study

3.0 **Existing Conditions**: describes the existing conditions of the physical, biophysical, and socio-economic features in the Study Area

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

5.0 **Potential Impacts, Mitigation, and Protective Measures**: predicts potential effects and impacts the Project may have upon the existing conditions; describes the mitigation and protective measures to eliminate or reduce the potential effects and impacts of the Project on physical, biophysical, and socio-economic features that have been assessed in the Study Area

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

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

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

The ER also includes references, and appendices for documentation.

1.2.4 The OEB Regulatory Process

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

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

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1.2.5 Additional Regulatory Processes

Enbridge Gas will also be required to obtain additional environmental permits, approvals, and notifications from federal, provincial, and municipal authorities as outlined in Table 1.1 below. This ER will serve to support these permit and approval applications and notifications.

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Table 1.1 Summary of Potential Environmental Permit and Approval Requirements

Federal Permits and Approvals

Permit/Approval Name	Administering Agency	Description
Clearing of vegetation in accordance with the *Migratory Birds Convention Act, 1994* (MBCA) and *Migratory Birds Regulation 2022* (MBR)	Environment and Climate Change Canada (ECCC)	ECCC does not require a permit to be issued for vegetation clearing, however, precautions need to be taken so that breeding birds and their nests are not harmed or destroyed during the bird nesting season because of construction of the Project. A registration under the Abandoned Nest Registry and monitoring program or a permit is required to remove nests of MBR Schedule 1 species. This includes Pileated Woodpecker (*Dryopcopus pileatus)* and Great Blue Heron (*Ardea herodias)* which could occur in the Project area, with monitoring periods of 36 and 24 months, respectively, under the registration approach.
Review and authorization under the *Fisheries Act* (amended in November 2024)	Fisheries and Oceans Canada (DFO)	At detailed design, proposed work at locations that provide fish habitat will be reviewed to determine the potential for the Project to result in the death of fish or the harmful alteration, disruption, or destruction of fish habitat. The new project submission tool, implemented in October 2026, will be employed to submit the project for review by DFO if it is deemed that the project cannot adhere to the DFO-Enbridge Generic Watercourse Crossing Drawings (see **Appendix G**).

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Permit/Approval Name	Administering Agency	Description
Species at Risk Act (SARA) (2002) (amended in February 2026)	DFO (aquatic species) ECCC (terrestrial species)	Permits are required by those persons conducting activities that may affect species listed on Schedule 1 of the *SARA* as extirpated, endangered, or threatened and which contravene the Act's general or critical habitat prohibitions in watercourses (aquatic species), on federal lands (terrestrial species), or are migratory birds on lands throughout Canada.

Provincial Permits and Approvals

Permit/Approval Name	Administering Agency	Description
Development Permit under Ontario Regulation (O. Reg.) 41/24 of the *Conservation Authorities Act*	St. Clair Region Conservation Authority (SCRCA)	Required for works in SCRCA Regulated Areas.
Environmental Activity and Sector Registry (EASR) (surface and groundwater) under the *Ontario Water Resources Act* (1990) (amended in July 2025)	Ministry of the Environment, Conservation and Parks (MECP)	Under O. Reg 63/16, all construction dewatering projects regardless of dewatering volume can be completed under an EASR.
Species Conservation Act, 2025 (SCA)	MECP	A registration under the *SCA* is required for activities that could adversely affect species listed on the Protected Species in Ontario List (PSOL).

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Permit/Approval Name	Administering Agency	Description
Wildlife Scientific Collector's Authorization under the *Fish and Wildlife Conservation Act* (1997) (amended in June 2023)	Ministry of Natural Resources (MNR)	Permit required to relocate wildlife encountered during construction activities.
License to Collect Fish for Scientific Purposes under the *Fish and Wildlife Conservation Act* (1997) (amended in June 2023)	MNR	Permit required to relocate fish during construction activities.
Entry of archaeological assessment report(s) into the Ontario Public Register of Archaeological Reports	Ministry of Citizenship and Multiculturalism (MCM)	An Archaeological Assessment is required to identify areas of archaeological potential or archaeological resources prior to any ground disturbances and/ or site alterations.
Review of impacts to Built Heritage Resources and Cultural Heritage Landscapes	MCM	Assessments are required to determine the presence or absence of heritage resources in the Study Area.

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Municipal Permits and Approvals

Permit/Approval Name	Administering Agency	Description
By-Law No. 28 of 2016 - A By-Law Restricting Weight of Loads on Highways During a Reduced Load Period	County of Lambton	Seasonal load restrictions apply to designated County roads between March 1 and May 1 each year to protect road infrastructure. Construction vehicle routing, haul routes, and delivery of equipment and materials may be affected during the reduced load period. The roads subject to the restrictions are identified in Figure 1 of the County's Half Load Restrictions By-Law.
Drainage Act, 1990	Lambton County, Township of Dawn-Euphemia, Township of Enniskillen	Notification will be provided to the local drainage superintendent to outline all drain crossings. Depending on the site-specific nature of the drain and crossing activity, approval for the watercourse crossing under the *Drainage Act (1990)* may be required.
Woodland Conservation By-law No. 04 of 2012	Lambton County	Notification will be provided to Lambton County for all tree clearing operations in regulated woodlands. Restoration and compensation in Lambton County are required to meet the intent of the municipal Woodland Conservation By-law.

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2 Engagement and Consultation Program

2.1 Objectives

Consultation is an important component of the OEB *Environmental Guidelines* (2023). Consultation emphasizes the processes of identifying interested and potentially affected parties, informing them about the Project, soliciting information about their values and local environmental and socio-economic circumstances, and receiving input into key Project decisions before those decisions are finalized.

Stantec believes that community involvement and consultation is a critical and fundamental component of this environmental study, and that Indigenous community participation is essential to the Project. To demonstrate that we respect this view, we will use the term “engagement” throughout the remainder of this Report when we refer to seeking input from Indigenous peoples. The engagement and consultation program for the Project included the following objectives:

- Identify interested and potentially affected parties early in the process
- Inform and educate interested parties about the nature of the Project, potential impacts, proposed mitigation measures, and how to participate in the engagement and consultation program
- Provide a forum for the identification of issues
- Identify how input will be used in the planning stages of the Project
- Summarize issues for resolution, and resolve as many issues as feasible
- Revise the program to meet the needs of those being consulted, as feasible
- Develop a framework for ongoing engagement and communication during the construction and operation phases of the Project

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2.2 Identifying Interested and Potentially Affected Parties

2.2.1 Identifying Indigenous Communities

Engagement with Indigenous communities was guided by the OEB *Environmental Guidelines* (2023), as noted above, and by the Enbridge Gas's Indigenous Peoples Policy.

Indigenous engagement commenced with the submission of a Project description to the Ministry of Energy and Mines; this submission provided details on the Project location and sought to determine the requirements of the duty to consult. In **Appendix C.1**, potentially impacted Indigenous communities were identified by the MEM in a Letter of Delegation dated August 19, 2026.

The Letter of Delegation confirmed that the MEM would be delegating the procedural aspects of consultation in respect to the Project to Enbridge Gas, and that, based on the Crown's assessment, the Aamjiwnaang First Nation, Walpole Island First Nation, Chippewas of Kettle and Stony Point First Nation, Chippewas of the Thames First Nation, and Oneida Nation of the Thames should be consulted.

2.2.2 Identifying Interested and Potentially Affected Parties

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

The parties listed below were among those considered when developing the initial stakeholder contact lists:

- Federal and provincial agencies and authorities.

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- Municipal personnel.
- Special interest groups and third-party utility owners/operators.

The initial contact list was updated as the environmental study progressed because of changes in personnel, correspondence received, and attendees at the Information Session. The final Stakeholder Contact List, and Indigenous Contact List, is in **Appendix C.2**.

Directly affected and adjacent landowners were identified by Enbridge Gas.

2.3 Communication Methods

2.3.1 Letters and Emails

2.3.1.1 Notice of Upcoming Environmental Study

A Notice of Upcoming Environmental Study letter was sent via email to the Indigenous Contact List and the Stakeholder Contact List and mailed to landowners along the pipeline route on July 6, 2026. The Notice contained a description of the Project, a map of the general area where the Project would take place, and contact details.

Along with the Notice to the Indigenous Contact List, a Preliminary Desktop Environmental and Cultural Heritage Summary Memo was circulated. The Summary Memo outlined the preliminary findings of natural heritage features and cultural heritage information of the environmental study based on initial desktop research and was shared with Indigenous communities to support and facilitate ongoing consultation efforts.

A copy of the Notice, Landowner Letter, and Summary Memo is included in **Appendix C.3**.

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2.3.1.2 Notice of Environmental Study Commencement and Information Sessions

A Notice of Environmental Study Commencement and Information Sessions letter was sent via email to the Stakeholder Contact List on August 4, 2026, and to the Indigenous Contact List on August 6, 2026. The Notice of Environmental Study Commencement and Information Session letter was mailed to landowners along the pipeline route on August 4, 2026, and mailed to landowners via Canada Post Admail on August 4, 2026. The Notice provided information on the Project, the Project route, and the Virtual Information Session and In-Person Information Session.

On August 7, 2026, an email was sent to the previously listed parties with a corrected Virtual Information Session web address. On August 10, 2026, a letter was sent to landowners with a corrected Virtual Information Session web address.

A copy of the Notices and Landowner Letters are provided in **Appendix C.4**.

2.3.2 Newspaper Notices

A Notice of Environmental Study Commencement and Virtual Information Session and In-Person Information Session was published on August 8, 2026, in the Sarnia Observer. The notice provided information on the Project, the Project route, and the Virtual Information Session and In-Person Information Session.

In addition to the formal newspaper notice, information regarding the Project and consultation opportunities was also published by Sarnia News Today on August 27, 2026. The online article provided an overview of the Project and informed the public of the available consultation opportunities. The article also encouraged interested parties to provide feedback to Enbridge Gas as part of the environmental study process.

A copy of the tear sheet from the Sarnia Observer, and a copy of the article in the Sarnia News Today, are in **Appendix C.5**.

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2.3.3 Social Media

The Information Sessions and consultation opportunities were promoted through social media channels managed by Enbridge Gas, including Facebook and X. The social media campaign was used to raise awareness of the Project, provide information on public consultation opportunities, and direct interested parties to additional project information.

The campaign generated engagement, receiving approximately 15,640 views and reaching 8,225 individual viewers. The social media posts resulted in 1,252 engagements, including 1,186 link clicks directing users to project information, 980 landing page views, 45 reactions, 17 shares, and 4 saves.

2.3.4 Project Webpage

A Project webpage was developed by Enbridge Gas which contained information about the Project, a map of the Study Area, and the Project timeline. In the Project Information section, there were tabs which contained other significant information such as project updates, calendar, consultation, regulatory information, and contact information. The Project webpage was communicated to interested and potentially affected parties on the letters, emails, and notice.

2.4 Engagement and Consultation Events

2.4.1 Virtual Information Session

The Virtual Information Session was accessible from August 17, 2026, to September 16, 2026, on a separate project website developed by Stantec. This period was selected to allow ample opportunity to review the Project information and provide input.

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Presentation slides with a voice-over were developed for the Virtual Information Session. The presentation slides included the following general topics:

- Introduction
    - Project Overview and Purpose
    - Consultation & Indigenous Engagement
- Processes
    - Environmental Study Process
    - Regulatory approvals (OEB review and Leave to Construct application process)
    - Access and Land Requirements
- Technical Processes
    - Open Trenching
    - Maintaining Agricultural Drainage Systems
- Existing Conditions (socio-economic features, cultural heritage resources, aquatic resources, terrestrial resources, agricultural soils)
- Next Steps

A link to a questionnaire and an interactive map were also provided. A downloadable version of the presentation slides, script, and the exit questionnaire were provided. The questionnaire requested feedback on a variety of topics including potential impacts, the Project route, and the content of the Virtual Information Session. The interactive map allowed attendees to view the route and Study Area on a web-based map. A search function was made available on the interactive map to locate a specific address, and to review natural environment map layers such as waterways and wooded areas.

For the Virtual Information Session, there were: forty-eight (48) visits to the Project webpage, and five (5) visits to the presentation. No questionnaires were submitted for the Virtual Information Session.

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2.4.2 In-Person Information Session

An In-Person Information Session took place on August 27, 2026, from 5:00 PM to 8:00 PM at the Oil Springs Youth Centre (14517 Victoria Street, Oil Springs, ON). Parties attending the In-Person Information Session were offered an opportunity to register their attendance; a total of forty-five (45) individuals attended the Session, and a total of thirty-one (31) individuals registered their attendance.

The In-Person Information Session provided attendees with an opportunity to review display boards and maps describing the Project. The display boards included the same content as described above for the Virtual Information Session.

Representatives from Enbridge Gas and Stantec were available to answer questions, provide clarification on Project information, and discuss comments or concerns raised by attendees. A questionnaire was made available to attendees to provide feedback on the Project. Light refreshments and snacks were also provided during the event.

One (1) questionnaire was submitted from the In-Person Information Session.

Copies of the display boards and questionnaire are provided in **Appendix C.6**.

2.4.3 Meetings with Indigenous Communities

As a component of the environmental study, Enbridge Gas has reached out to Indigenous communities to meet and discuss the Project. To-date the following meetings have occurred:

- July 24 – Chippewas of Kettle and Stony Point First Nation/Three Fires Group
- August 5 – Chippewas of Kettle and Stony Point First Nation/Three Fires Group
- September 21 – Chippewas of Kettle and Stony Point First Nation/Three Fires Group
- October 5 – Aamjiwnaang First Nation
- October 7 – Chippewas of the Thames First Nation

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Discussions with Indigenous communities will continue as Project planning progresses.

2.5 Input Received

The engagement and consultation program allowed input into the Project, which was evaluated and integrated as appropriate. The following sections summarize the input received.

A copy of the Project correspondence tracker is provided in **Appendix C.7**.

2.5.1 Public Input

One landowner contacted the Project Team to inquire whether the proposed pipeline would traverse their property. It was confirmed that the property would not be directly affected by the Project, and no further concerns were identified.

One questionnaire was received during the In-Person Information Session. The respondent questionnaire expressed support for the Project, citing potential employment opportunities, benefits to local businesses, and contributions to Ontario's energy reliability. The respondent also requested that construction-related traffic adhere to local speed limits and stop signs and emphasized the importance of protecting and restoring soil conditions, particularly in areas near tile drains and watercourses. The respondent indicated that the information provided was adequate, did not require additional information, and requested notification once the Project receives approval.

Verbal questions, comments, and feedback received during the In-Person Information Session were documented and reviewed to assist in understanding community interests and concerns. Table 2.1 summarizes the key themes and discussion topics identified through verbal stakeholder feedback received at the In-Person Information Session.

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Table 2.1 Summary of Public Input Received at In-Person Information Session

Theme	Summary of Discussion
Project and Construction Details	• Attendees expressed interest in understanding the purpose of the Project and the need for replacement of the existing pipeline. • Questions were raised regarding Project timing, anticipated construction schedules, and construction activities. • Community members sought additional information regarding Project implementation and anticipated timelines. • Attendees requested additional Project-specific information, including property mapping and Project plans. • Attendees sought clarification regarding construction methods, including lift-and-lay activities and how increased pipeline size may affect workspace requirements. • Discussion focused on understanding the relationship between construction approaches, easement widths, and access requirements. • Questionnaire feedback identified anticipated community benefits associated with the Project, including employment opportunities for local skilled trades, support for local businesses, and contributions to Ontario's energy supply.
Land Rights	• Attendees requested information regarding easement agreements, land rights requirements, and Project-related agreements. • Questions were raised regarding potential impacts to properties, easement requirements, and fair compensation for Project-related effects. • Interest was expressed in understanding how additional land requirements would be determined through future surveys and Project design.

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Theme	Summary of Discussion
Agriculture	• Attendees discussed existing drainage features, privately maintained ditches, and site-specific agricultural considerations. • Questions were raised regarding potential effects to soils and drainage systems during construction. • Project representatives noted that site-specific conditions would continue to be considered through Project planning and field investigations. • Questionnaire feedback emphasized the importance of protecting and restoring landowner soil conditions, with particular care near creeks and drains.
Environmental	• Landowners discussed potential tree removal and vegetation clearing requirements associated with the Project. • Questions were raised regarding impacts to woodlots and the management of vegetation within the Project area. • Some attendees expressed interest in restoration opportunities following construction. • Attendees identified site-specific environmental considerations that may require attention during Project planning. • Discussion included protection of existing natural features, vegetation management considerations, and awareness of existing site conditions in the Study Area.
Experience from Previous Enbridge Projects	• Community members shared experiences and lessons learned from previous pipeline projects in the area. • Discussion highlighted both historical concerns and positive outcomes from previous projects. • Attendees generally emphasized the value of communication, field representation, and ongoing engagement throughout Project implementation.

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Theme	Summary of Discussion
Ongoing Consultation and Communication	• Several attendees emphasized the importance of clear communication and timely responses throughout Project planning and implementation. • Discussion focused on maintaining ongoing communication with affected landowners as the Project advances. • Questionnaire feedback indicated that the information presented provided an adequate understanding of the Project, Environmental Study, and Ontario Energy Board review and approval process, and that the Information Session content met the respondent's needs. • The respondent did not request additional Project or approval-process information but expressed interest in receiving an announcement following Project approval and being contacted if public support is required.

2.5.2 Agency and Elected Officials Input

Six (6) agencies (including OPCC members) and elected officials provided input at the time of writing this ER.

- The Ontario Ministry of Agriculture, Food and Agribusiness provided guidance materials regarding agricultural impact assessments for consideration during the Project.
- The Technical Standards and Safety Authority requested confirmation that Enbridge Gas will apply for Review of Pipeline Project to the OEB.
- SCRCA noted that portions of the Study Area are regulated and that certain activities may require a permit before development begins. SCRCA indicated that additional information could be provided once the Project plans are finalized.
- The Office of the Member of Provincial Parliament for Lambton-Kent-Middlesex acknowledged receipt of the Notice of Upcoming Environmental Study and indicated that the Project information was under review.
- The MCM provided guidance regarding the consideration of cultural heritage resources in pipeline projects. The Ministry recommended completing a combined Stage 1 and Stage 2 archaeological assessment for the entire Study

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Area, or at minimum a Stage 1 archaeological assessment, and making every attempt to complete an Existing Conditions and Preliminary Impact Assessment.

- The MNR provided an information package for external proponents undertaking environmental assessments, including information regarding the Ministry's regulatory authority to issue authorizations, permits, licences, and approvals.

2.5.3 Municipal Input

One (1) formal comment was received from municipal representatives at the time of writing this ER:

- The County of Lambton confirmed that it is the road authority for County Road 21, Oil Heritage Road, within the Study Area. The County advised that a county right-of-way permit would be required and requested that it continue to receive Project updates.

The remaining municipal correspondence consisted of acknowledgements and administrative communications, including circulation of Project notices and a correction to the Virtual Information Session web address.

2.5.4 Interest Group Input

The following comments were received from stakeholders and interest groups at the time of writing this ER:

- Hydro One Networks Inc. advised that there are no existing Hydro One transmission lines in the Study Area. Hydro One further noted that if the Study Area is expanded in the future, additional consultation should be undertaken. Hydro One also indicated that any drainage works located in proximity to a Hydro One transmission corridor must be directed away from the corridor.
- Conservation Ontario acknowledged receipt of the Project notices and requested confirmation that the applicable conservation authority had been advised of the corrected Virtual Information Session web address. Stantec subsequently confirmed that the SCRCA had been notified.

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- The Lambton Area Water Supply System acknowledged receipt of Project information and advised that it does not have infrastructure assets in the Study Area.

2.5.5 Indigenous Input

Several comments were received from Indigenous communities regarding participation in Project-related ecological surveys (see **Section 3.4.1**). Comments primarily relate to opportunities for Indigenous participation, scheduling and attendance coordination, survey logistics, and information requests.

- COTTFN expressed interest in participating in the ecological surveys. Subsequent correspondence focused on the participation agreement and attendance logistics. COTTFN representatives participated in the three days of ecological surveys. COTTFN also asked for a copy of the Environmental Report, to participate in the archaeological assessment, and asked about the change in pipe diameter.
- Three Fires Group expressed interest in participating in the ecological surveys. Subsequent correspondence focused on the participation agreement and attendance logistics. Three Fires Group representatives participated in the three days of ecological surveys.
- Aamjiwnaang First Nation expressed interest in participating in the ecological surveys. Subsequent correspondence focused on the participation agreement and attendance logistics. An Aamjiwnaang First Nation representative participated in one day of ecological surveys.
- Walpole Island First Nation expressed interest in participating in the ecological surveys. Subsequent correspondence focused on the participation agreement and attendance logistics. A Walpole Island First Nation representative participated in the three days of ecological surveys.

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In addition, during meetings with Indigenous communities (see **Section 2.4.3**), discussions have included cumulative-effects considerations, access to and review of environmental information, fieldwork notification and participation for both archaeology and ecology, capacity support, and impacts and accommodations regarding traditional treaty lands.

To accurately document Indigenous engagement activities and ensure follow-up, applicable supporting documents are tracked. Indigenous consultation has been included in the comment-response summary table and corresponding comment records will be submitted to the OEB upon the filing of the Project application. Details of consultation completed up to October 23, 2026, are presented in the Enbridge Gas Indigenous Consultation Record located in **Appendix C.8**.

2.6 Issues Resolution

Through the engagement and consultation program, no input was received that remains unresolved. Should feedback occur that cannot immediately be resolved, Enbridge Gas will endeavor to reach a resolution through meetings and discussions as appropriate and will inform the OEB where there are issues that have not been resolved.

2.7 Refinements Based on Input

At each stage of the engagement and consultation program, input received was compiled, reviewed, and incorporated into the environmental study process. Responses were provided, as applicable, to questions and comments received. To-date no input has been received that has resulted in a change to the environmental study or Project.

Enbridge Gas has committed to on-going engagement and consultation with directly affected and interested parties through detailed design and construction and will continue to respond to concerns through the life of the Project.

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3 Existing Conditions

3.1 Study Area

A Study Area is the area in which existing conditions are reviewed to understand where direct Project interactions with the environment could occur. For the purposes of the environmental study, the boundary of the Study Area was selected by developing a rectangle to encompass the existing Dawn Hub to the south-west and the existing Enniskillen Station to the north-east (see **Appendix A**).

3.2 Data Sources

The existing conditions figures (**Appendix A**) have been generated from data identified on the respective maps. For the socio-economic elements of the assessment, the most recent economy and employment statistics are provided in the 2021 Census of Population (Statistics Canada 2023a). The selected census divisions included Ontario, Lambton County, and the Townships of Dawn-Euphemia and Enniskillen, which are in Lambton County (Statistics Canada 2023a).

3.3 Physical Features

3.3.1 Bedrock Geology and Drift Thickness

The bedrock geology of the Study Area is Upper Devonian-aged shale, predominantly of the Kettle Point Formation (Ontario Geological Survey [OGS] 2022). Hamilton Group shale and limestone is also found in the northcentral area of the Study Area (OGS 2022). A map of bedrock geology is provided in **Appendix A, Figure 1**.

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To determine the general depth from the soil surface to the bedrock, drift thickness (also referred to as overburden) was reviewed and results indicate that, in the Study Area, the layer of overburden ranges from 10 to 60 m. As shown on **Figure 2 (Appendix A)**, drift thickness is fairly consistent along the preferred route, with higher drift mapped to the west of the Dawn Compressor Station.

A review of available Water Well Records (WWR) within 500 m of the pipeline reveals there are 58 WWR. These WWR indicate that the depth to shale bedrock is between about 16 to 22 m below ground surface (MECP 2026b).

3.3.2 Physiography and Surficial Geology

The Study Area is in the St. Clair Clay Plains physiographic region of southern Ontario, which is a region characterized as relatively flat, reworked till plains that were deposited and then over-ridden by subsequent glaciation; see **Figure 3, Appendix A** (Chapman and Putnam 1984). These beveled till plains were subsequently smoothed by shallow deposits of lacustrine clay laid down by glacial lakes Whittlesey and Warren (Chapman and Putnam 1984).

As shown in surficial geology mapping (**Figure 4, Appendix A**), the Study Area is predominately underlain by massive well laminated fine-textured glaciolacustrine deposits and glaciolacustrine-derived silty to clayey till (OGS 2010). Modern alluvial deposits are also encountered in association with several creeks and tributaries (OGS 2010) that generally flow into the North Sydenham River (MECP 2026a).

3.3.3 Groundwater

The Study Area contains no significant groundwater recharge areas or highly vulnerable aquifers (MECP 2026a).

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There are a total of 58 MECP WWRs located within 500 m of the pipeline (MECP 2026b). Based on well completion depths, the wells are generally screened within the deep overburden gravel deposits just above the shale or within the shale, at depths between 16 m BGS and 22 m below ground surface. No shallow overburden supply wells were noted. For these overburden wells, water levels ranged from 1.5 m to 12.8 m below ground surface.

Regional groundwater flow near the Study Area in the overburden aquifer is generally to the southwest towards Lake St. Clair (WHI 2007), with local groundwater flow conditions impacted by surface water features.

There are no municipal groundwater supply wells in the SCRCA regulated limits (MECP 2026a).

Groundwater conditions are shown on **Figure 5, Appendix A**.

3.3.4 Aggregates and Petroleum Resources

A review of the County of Lambton Official Plan (2020), the Township of Dawn-Euphemia Official Plan (2014), the Township of Enniskillen Official Plan (2026), the Oil, Gas and Salt Resources Library (OGSR 2026), and the MNR Pits and Quarries Map (MNR 2023) determined that there are no aggregate resources located in the Study Area, though there are a number of active, suspended, and abandoned petroleum pools. The proposed pipeline route intersects three active natural gas storage areas and one abandoned oil pool.

Oil and gas pools are shown on **Figure 6, Appendix A**.

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3.3.5 Soil and Soil Capability

Along the proposed pipeline, two soil types are mapped in the Ontario Ministry of Natural Resources data base, Brookston clay and Bottom Land soils (Ontario GeoHub, 2019a) – see **Figure 7, Appendix A**. As described in the Lambton County Soil Survey, Brookston clay is the most found soil in the county. Historically, the agricultural uses considered viable on these heavy textured lands were pasture, hay, and some grains because Brookston clay is the poorly drained soil in the Huron catena. Modern farming practices, including installing agricultural tile drainage, greatly improve these lands to the extent of making them able to produce good yields of wheat, alfalfa, corn, soybeans and sugar beets (Mathews et al. 1957).

Soil adjacent to watercourses and subject to flooding during part or all the year are mapped as Bottom Land in the county level soil surveys. These recently deposited soils consist of layered sand, silts, and clays interspersed with layers of organic matter. Good yields of farm crops can be obtained if flooding does not occur during the normal growing season of the crop.

Soil capability for agriculture is mapped as the Canada Land Inventory for Agriculture (CLI) by Agriculture and Agri-Food Canada. Lands classified as Class 1 are the most agriculturally productive, while those classified as Class 7 have the lowest capability for agriculture. Class 1 to 5 agricultural lands are generally arable, while classes 1 through 3 are prime agricultural soils for common field crop production. The CLI system of classification assumes that all cost-effective improvements have been undertaken therefore it is assumed that Brookston clay lands have been tile drained. Most soil along the pipeline route is Class 2 prime agricultural soils, with soil adjacent to watercourses mapped as Class 5 (see **Figure 8, Appendix A**).

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3.3.6 Soybean Cyst Nematode (SCN)

Soybean cyst nematode (SCN) (*Heterodera glycines*) is a soil borne parasite that can significantly impact soybean yields. SCN can be spread in many ways such as wind, animals, or in topsoil stuck to machinery as the machinery passes from an impacted field to a non-impacted field. Once a field has been infested, there is significant potential for soybean crop yield reductions (Olechowski 1990).

3.3.7 Agricultural Tile Drainage

Along the proposed pipeline route there are multiple properties mapped as containing systematic agricultural tile drains, and there are no properties mapped as containing random agricultural tile drains (Ontario GeoHub 2019b).

Agricultural tile drains are shown on **Figure 9, Appendix A**.

3.3.8 Natural Hazards and Regulated Areas

Natural hazards are elements of the physical environment that have the potential to affect a project in an adverse manner. Potential natural hazards in the Study Area are limited. Natural hazards that may occur in the Study Area are seismic activity, and extreme weather causing flooding and high winds.

The Study Area is in the Southern Great Lakes Seismic Zone (Natural Resources Canada 2026). This zone has a low to moderate level of seismicity when compared to the more active seismic zones to the east, along the Ottawa River and in Quebec. Over the past 30 years, on average, 2 to 3 magnitude 2.5 or larger earthquakes have been recorded in the southern Great Lakes region. By comparison, over the same time period, the smaller region of Western Quebec experienced 15 magnitude 2.5 or greater earthquakes per year.

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The proposed pipeline route crosses floodplain and regulation limits as mapped by the SCRCA. Floodplain and regulation limits of the SCRCA are shown on **Figure 10, Appendix A**.

3.4 Biophysical Features

3.4.1 Methods

3.4.1.1 Background Data Review

The purpose of the background review was to complete a desktop review of terrestrial and aquatic resources that may occur in the Study Area. This includes determining locations and characteristics (e.g., flow regime, thermal regime, drain classification) of potential surface water features, and identifying the presence of designated natural heritage areas and records of species at risk (SAR) and species of conservation concern (SOCC). A variety of background documents and sources of information were consulted during the preparation of the ER including:

- Natural Heritage Information Centre (NHIC) (MNR 2026a)
- Geospatial Ontario (GEO) Mapping (MNR 2026b)
- DFO Species at Risk Mapping (DFO 2026a)
- Atlas of Breeding Birds of Ontario (OBBA) (Cadman et al. 2007)
- Ontario Butterfly Atlas Online (Macnaughton et al. 2026)
- Ontario Moth Atlas (Kaposi et al. 2026)
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2019)
- Atlas of the Mammals of Ontario (AMO) (Dobbyn 1994)
- iNaturalist (iNaturalist 2026)
- eBird Canada (eBird 2026)
- County of Lambton Official Plan (2020)
- Township of Dawn-Euphemia Official Plan (2014)
- Township of Enniskillen Official Plan (2026)

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- Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), and the Tri colored Bat (*Perimyotis subflavus*): recovery strategy 2018 (ECCC 2018)
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Assessment and Status Report on Hoary Bat *Lasiurus cinereus* Eastern Red Bat *Lasiurus borealis* and Silver-haired Bat *Lasionycteris noctivagans* in Canada (COSEWIC 2023)
- High resolution satellite imagery of the Study Area (Google Earth Pro 2026)
- Tree Atlas (MNR 2026c)

A list of SAR and SOCC with recent records (i.e., within the past 20 years) in the Study Area was compiled based on the results of this background data review. Some of the desktop sources provide data at a scale of 10 x 10 km, and therefore a recent species record is not confirmation that the species may be present in the Study Area. Therefore, SAR and SOCC desktop results were screened and species were removed from consideration if there was no potential habitat identified in the Study Area on satellite imagery or during preliminary field investigations. SAR and SOCC that have the potential to occur in the Study Area are discussed in **Sections 3.4.3.3.3 and 3.4.3.3.4**.

3.4.1.2 Site Investigations

A site investigation was completed by Stantec in the Study Area from September 1-3, 2026. The site investigation was limited to documenting aquatic and terrestrial features in the Study Area from municipal lands (i.e., road allowance) and did not include accessing privately-owned lands.

The purpose of the site investigation was to supplement the results of the background data review and document existing biophysical conditions in the Study Area. Preliminary vegetation classification was completed using Ecological Land Classification (Lee et al. 1998, with 2008 updates) to identify habitat features that may have potential to support SAR, SOCC and significant wildlife habitat (SWH). Additionally, roadside searches for plant SAR documented in the background review were completed, and incidental

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observations of wildlife were recorded. For aquatic resources, all roadside watercourses identified in the background data review were visited to determine hydrologic regimes and habitat characteristics. If fish were observed, they were also recorded.

3.4.2 Aquatic Features

3.4.2.1 Fish and Fish Habitat

The proposed pipeline crosses portions of the Black Creek subwatershed in the jurisdiction of the SCRCA. The proposed pipeline crosses 25 watercourses, many of which are municipal drains.

Where available, the thermal regime and DFO Drain Class of watercourses crossed by the proposed pipeline is provided below by subwatershed, along with the hydraulic regime, and summarized in Table 3.1. Fish species documented in each watershed are provided in Table 3.2. Watersheds and watercourses crossed by the proposed pipeline are shown on **Figures 11** and **Figure 12**, respectively, in **Appendix A**.

Black Creek Subwatershed

Watercourse crossings along the proposed pipeline are in the Black Creek Subwatershed, which drains an area of approximately 324 km^2 to the Sydenham River. According to the SCRCA, approximately 62% of the watercourses in this subwatershed consist of open municipal drains and 16% are classified as natural (SCRCA 2018).

Fifty-one fish species have been recorded in the subwatershed, including large gamefish species such as Northern Pike (*Esox lucius*), Largemouth Bass, and Yellow Perch (SCRCA 2018). Six SAR fish species have been documented in the subwatershed, including: Blackstripe Topminnow, Channel Darter, Eastern Sand Darter, Lake Sturgeon, Pugnose Minnow, and Pugnose Shiner (SCRCA 2018).

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In the Black Creek Subwatershed, in the Study Area, three Special Concern SAR fish have been mapped by DFO (see **Figure 12**) as follows

- Blackstripe Topminnow – SC3, SC18, SC19, SC21, SC23, and SC25
- Northern Sucker – SC18, and SC19
- Spotted Sucker – SC3, SC18, and SC19

Ten freshwater mussel species have been identified in the subwatershed report card (SCRCA 2018) however they are not listed by name. In addition to these ten species, the following SAR mussels have also been documented: Eastern Pondmussel (*Ligumia nasuta*), Fawnsfoot, Kidneyshell, Mapleleaf Mussel, Northern Riffleshell, Rayed Bean, Round Hickorynut, Round Pigtoe, Salamander Mussel. Snuffbox, and Wavy-rayed Lampmussel. Mapleleaf mussels are mapped by DFO in Currie Creek Drains (SC8), A tributary of Black Creek (SC18), and McLister Drain (SC19) crossings however they are Special Concern species and not protected under SARA.

The proposed pipeline crosses a ditch (SC1) beside Cuthbert Road, just to the east of the existing Dawn Hub. This ditch flows north towards Booth Creek Drain, not south towards Bentpath Line as suggested in mapping available on GeoHub (MNR 2026) and DFO (DFO 2026).

Table 3.1 Watercourses Crossed by the Proposed Pipeline

Station ID	Watercourse Name	Drain Type[1]	Thermal Regime[2]	Hydraulic Regime[3]	Fish Habitat[4]	SAR
SC1	Unnamed Tributary of Booth Creek Drain	Not Ranked	Unknown	Intermittent	Seasonal	No
SC2	Unnamed Tributary of Booth Creek	Not Ranked	Unknown	Intermittent	Seasonal	No

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Station ID	Watercourse Name	Drain Type[1]	Thermal Regime[2]	Hydraulic Regime[3]	Fish Habitat[4]	SAR
SC3	Booth Creek	E2	Warm	Permanent	Yes, fish observed	BT, SS
SC4	Unnamed Tributary of Booth Creek at Robinson	Not Ranked	Unknown	Permanent	Yes, fish observed in standing water	No
SC5	McKay Drain	E2	Unknown	Permanent	Yes, not surveyed	No
SC6	Unnamed Tributary of Booth Creek at Marthaville	Not Ranked	Unknown	Intermittent	Yes, fish observed in standing water	No
SC7	Stevenson Drain	F	Unknown	NS	NS	No
SC8	Unnamed Tributary of Currie Creek Drain	F	Unknown	Permanent	Yes, fish observed in standing water	BT, NS, SS, MM
SC9	Unnamed Tributary of Currie Creek Drain at Teamway	F	Unknown	Intermittent	Seasonal	No
SC10	Crooked Creek (Elsam Drain)	C	Warm	Permanent	Yes, fish observed	No
SC11	Crooked Creek at Esterville	NR	Warm	Permanent	Yes, fish not observed	No
SC12	Unnamed Tributary of Crooked Creek	NR	Unknown	NS	NS	No

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Station ID	Watercourse Name	Drain Type[1]	Thermal Regime[2]	Hydraulic Regime[3]	Fish Habitat[4]	SAR
SC13	Unnamed Tributary	F	Unknown	Intermittent	Seasonal	No
SC14	Unnamed Tributary	F	Unknown	Intermittent	No, not connected to fish habitat.	No
SC15	Unnamed Tributary at Pantry School	F	Unknown	Intermittent	Seasonal	No
SC16	Unnamed Tributary at Aberfeldy	NR	Unknown	Intermittent	Seasonal	No
SC17	Tributary of Black Creek	NR	Unknown	Intermittent	No	No
SC18	Scott Drain	NR	Unknown	Permanent	Yes, fish observed	BT, NS, SS, MM
SC19	McLister Drain	F	Unknown	Intermittent	Seasonal	BT, NS, SS, MM
SC20	Black Creek	NR	Unknown	Permanent	Yes, fish observed	No
SC21	Unnamed Tributary of Black Creek	F	Unknown	Intermittent	Seasonal	BT
SC22	Dale Drain at Wanstead	F	Unknown	Intermittent	Seasonal	No

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Station ID	Watercourse Name	Drain Type[1]	Thermal Regime[2]	Hydraulic Regime[3]	Fish Habitat[4]	SAR
SC23	Black Creek (Groves Drain)	NR	Unknown	Permanent	Yes, fish not observed	BT
SC24	Unnamed tributary of Black Creek at Oil Springs	NR	Unknown	Intermittent	Seasonal	No
SC25	Cameron Drain	F	Unknown	Intermittent	Yes, fish observed	BT

Notes:

[1]DFO Drain Classification:

C – Permanent flow, no sensitive fish species

E2 – Contains sensitive species that require gravel substrate, and riparian and in-stream vegetation.

F – Intermittent or ephemeral drain

NR – Not ranked.

[2]GEO (MNR 2026)

[3]Hydraulic Regime as determined from GEO and field visit in Sept 2026:

Intermittent – Observed to be dry or only pool of standing water during survey or recorded as intermittent on GEO

Permanent – Permanent flow regime as observed in field or recorded on GEO

NS – Not surveyed

[4]Fish Habitat Potential as determined in Sept 2026:

Seasonal – Likely provides fish habitat seasonally

Yes – Fish observed or assumed to be present based on suitable habitat t

NS – Not surveyed

[5]Aquatic Special Concern SAR (DFO 2026a):

BT – Blackstripe Topminnow

NS-Northern Sunfish

SS – Spotted Sucker

MM – Mapleleaf Mussel

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Table 3.2 Fish Species Recorded in the Vicinity of the Proposed Pipeline

Fish Species		Watercourse		
Species Common Name	**Species Scientific Name**	**Booth Creek**	**Crooked Creek**	**Black Creek**
Blackside Darter	*Percina maculata*	X	X	
Blackstripe Topminnow	*Fundulus notatus*	X	X	
Bluntnose Minnow	*Pimephales notatus*	X	X	
Brown Bullhead	*Ameiurus nebulosus*	X		
Central Mudminnow	*Umbra limi*		X	X
Common Carp	*Cyprinus carpio*	X		
Common Shiner	*Luxilus cornutus*		X	X
Creek Chub	*Semotilus atromaculatus*		X	X
Emerald Shiner	*Notropis atherinoides*		X	
Fathead Minnow	*Pimephales promelas*		X	
Golden Shiner	*Notemigonus crysoleucas*		X	
Green Sunfish	*Lepomis cyanellus*	X	X	
Johnny Darter	*Etheostoma nigrum*	X	X	
Northern Pike	*Esox lucius*	X		
Pugnose Minnow	*Opsopoeodus emiliae*		X	
Redfin Shiner	*Lythrurus umbratilis*	X		
Spotfin Shiner	*Cyprinella spiloptera*	X	X	
Spotted Sucker	*Minytrema melanops*	X		
Sunfish Species	*Centrarchidae sp.*	X	X	
Tadpole Madtom	*Noturus gyrinus*	X		
White Crappie	*Pomoxis annularis*	X		

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Fish Species		Watercourse		
Species Common Name	**Species Scientific Name**	**Booth Creek**	**Crooked Creek**	**Black Creek**
Yellow Bullhead	*Ameiurus natalis*	X		

Notes:
Data compiled from the following sources:
GEO Aquatic Resources Area Data (MNR, 2026a)
SCRCA Subwatershed Report Cards (SCRCA 2013a and 2013b)

3.4.2.2 Aquatic Species at Risk

According to DFOs aquatic SAR mapping (DFO 2026a), none of the watercourses at the proposed crossings support aquatic SAR that are regulated under Schedule 1 of the SARA (**Figure 12, Appendix A**). In-water work at locations that support a SARA Schedule 1 Threatened or Endangered species would require approval under the SARA. Based on DFO's aquatic SAR mapping (2026a) three fish and one mussel species listed as Special Concern under SARA may occur in the vicinity (1km) of the proposed pipeline (Table 3.3). These include Blackstriped Topminnow, Northern Sunfish, Spotted Sucker, and Mapleleaf.

According to GEO (MNR 2026b) fish community data, Pugnose Minnow has been documented in Crooked Creek and Elsam Drain downstream of the Study Area, but they are not mapped as occurring in the vicinity of the proposed crossings (SC10, SC11).

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Table 3.3 Aquatic Species at Risk Recorded in the vicinity (1km) of the Proposed Pipeline

Common Name	Scientific Name	Provincial Status (SCA)	Federal Status (SARA)
Blackstripe Topminnow	*Fundulus notatus*		Schedule 1 – Special Concern
Northern Sunfish	*Lepomis peltastes*		Schedule 1 – Special Concern
Spotted Sucker	*Minytrema melanops*		Schedule 1 – Special Concern
Mapleleaf	*Quadrula quadrula*		Schedule 1 – Special Concern

Sources: DFO 2026a, MNRF 2026a, SCRCA and 2018

3.4.3 Terrestrial Features

3.4.3.1 Designated Natural Features

The following designated natural features occur in the Study Area:

- Watercourses (MNR 2026b; see **Section 3.4.2.1**)
- Wooded Areas (MNR 2026b; see **Section 3.4.2.2**)
- Significant Woodlands (Township of Dawn-Euphemia Official Plan 2014, Township of Enniskillen Official Plan 2026)
- Group C Features (County of Lambton Official Plan 2020)

A woodland is defined as a treed area, woodlot or forested area. According to Section 5.2.6.6 of the Township of Enniskillen Official Plan (2026) significant woodlands are "…*forested areas which are designated Environmental Protection in a Primary corridor or Significant Natural Area, or any contiguous forested area that is 2 hectares, or greater in size*." According to the Section 6.2.10 of the Township of Dawn-Euphemia Official Plan (2014), significant woodlands are "…*forested areas which are designated Environmental Protection, in a Primary corridor or Significant Natural Area, or any*

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contiguous forested area that is 4 hectares, or greater in size.". Based on these definitions significant woodlands occur in the Study Area. Significant woodlands are mapped on Schedule A the Township of Dawn-Euphemia Official Plan (2014) and on Schedule A of the Township of Enniskillen Official Plan (2026). Wooded areas can be found on **Figure 13, Appendix A**.

According to Section 8 of the County of Lambton Official Plan (2020), Group C features include:

- *features primary corridors, including core areas*
- *linkage features*
- *highly vulnerable aquifers*
- *significant groundwater recharge areas*
- *other surface water features*
- *woodlots other than significant woodlands*
- *other significant natural areas including shrublands, meadows and prairies*

A review of MNR GEO mapping (MNR 2026b) and the NHIC (MNR 2016a) indicates there are no provincially significant wetlands or unevaluated wetlands near the pipeline route. One wetland community (FODM9 / SWDM3-3) was identified during the roadside site investigation in September 2026. Detailed botanical and Ecological Land Classification (ELC) surveys will be conducted in 2027 to confirm the presence and delineate the boundaries of wetlands along the proposed pipeline route. No Areas of Natural and Scientific Interest are located near the pipeline route (MNR 2026b, County of Lambton Official Plan 2020).

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3.4.3.2 Forest and Vegetation Cover

Ecodistrict

The Study Area falls in Ecoregion 7E in the St. Thomas Ecodistrict, Ecodistrict 7E-2 (Wester et al. 2018). This Ecodistrict is approximately 82% pasture/cropland, 15% deciduous forest (associated with the Eastern Temperate Deciduous Forest Vegetation Zone) and 2% of other natural communities. Common trees on fresh to moist sites include Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*), Silver Maple (*Acer saccharinum*), Yellow Birch (*Betula alleghaniensis*), Black Ash (*Fraxinus nigra*), American Elm (*Ulmus americana*), Red Maple (*Acer rubrum*), Bur Oak (*Quercus macrocarpa*), American Basswood (*Tilia americana*), Eastern Hop-hornbeam (*Ostrya virginiana*), Green Ash (*Fraxinus pennsylvanica*), Black Cherry (*Prunus serotina*), Bitternut Hickory (*Carya cordiformis*), Trembling Aspen (*Populus tremuloides*), Large-toothed Aspen (*Populus grandidentata*), Balsam Poplar (*Populus balsamifera*), Butternut (*Juglans cinerea*), and Manitoba Maple (*Acer negundo*). Northern Red Oak (*Quercus rubra*) and White Oak (*Quercus alba*) occur more frequently on drier sites. Mixed and coniferous forests are limited, with Tamarack (*Larix laricina*) and Eastern White Cedar (*Thuja occidentalis*) more common on wetter sites, and Eastern White Pine (*Pinus strobus*) mixed with Red Pine (*Pinus resinosa*) occurring in drier areas.

Vegetation Communities

Natural vegetation communities in the Study Area include meadow, naturalized hedgerow, woodland, and forest communities. Table 3.4 summarizes the vegetation communities observed during the 2026 roadside site investigation. As many areas could only be assessed from publicly accessible roadside locations, detailed botanical surveys and ELC assessments will be completed in 2027 to confirm the boundaries and classification of vegetation communities along the proposed pipeline.

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Table 3.4 Preliminary Ecological Land Classification in the Study Area

Forest Communities

ELC Code	ELC Name
FOD	Deciduous Forest
FODM2-2	Dry – Fresh Oak – Hickory Deciduous Forest Type
FODM9 / SWDM3-3	Fresh – Moist Oak – Maple – Hickory Deciduous Forest Ecosite / Swamp Maple Mineral Deciduous Swamp Type
FODM9-4	Fresh – Moist Shagbark Hickory Deciduous Forest Type
FODM11	Naturalized Deciduous Hedge-row Ecosite
FOCM6-1	Dry - Fresh White Pine Naturalized Coniferous Plantation Type

Woodland Communities

ELC Code	ELC Name
WOD	Deciduous Woodland
WODM4	Dry - Fresh Deciduous Woodland Ecosite
WODM5	Fresh - Moist Deciduous Woodland Ecosite

Meadow Communities

ELC Code	ELC Name
ME	Meadow
MEMM3	Dry - Fresh Mixed Meadow Ecosite
MEM / OAGM4	Mixed Meadow / Open Pasture
MEGM4 / THDM3-2	Fresh - Moist Graminoid Meadow Ecosite / Native Shrub Deciduous Hedgerow Thicket Type
MAMM1-2 / MAMM1-12	Cattail Graminoid Mineral Meadow Marsh Type / Common Reed Graminoid Mineral Meadow Marsh Type

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Anthropogenic Communities

ELC Code	ELC Name
CV	Constructed
CVC_3	Heavy Industry
CVR_4	Rural Property
CVR_4 / IAGM1	Rural Property / Agricultural Buildings
IAGM1	Agricultural Buildings
OAG	Open Agriculture
OAG / ME	Open Agriculture / Meadow
OAGM1	Annual Row Crops
OAGM2	Perennial Cover Crops
OAGM3	Specialty Crops
OAGM4	Open Pasture
TAGM5	Fencerow

3.4.3.3 Significant Wildlife Habitat

The Significant Wildlife Habitat Technical Guide (SWHTG) (MNR 2000) and Ecoregion Criteria Schedules for 7E (MNR 2015) provide standard provincial guidance and were used to identify SWH and assess their significance and sensitivity in the Study Area.

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 that are important to migratory and non-migratory species (MNR 2010). Wildlife habitat is considered significant if it is ecologically important in terms of features, functions, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or Natural Heritage System (MNR 2010).

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Habitats in the Study Area were assessed for candidate SWH using the Ecoregion 7E Criteria Schedules (MNR 2015). The presence of SWH was determined through desktop review (NHIC database) and, if present in the Study Area, were characterized during field investigations.

Targeted surveys, and in some cases, multi-year targeted species-use surveys are generally required to determine if candidate features qualify as confirmed SWH. Because multi-year targeted species-use surveys have not been conducted, SWH features identified during field investigations are considered as candidate, unless they were confirmed through direct observations or background review.

The SWHTG defines four categories of SWH:

1. Habitats of Seasonal Concentrations of Animals
2. Rare Vegetation Communities or Specialized Habitats for Wildlife
3. Habitats of Species of Conservation Concern
4. Animal Movement Corridors

Detailed results of the SWH assessment are provided in **Appendix F**.

3.4.3.3.1 Seasonal Concentration Areas

Habitats of seasonal concentrations of animals are those sites where large numbers of a species gather at one time of the year, or where several species congregate. These areas include deer yards, turtle overwintering areas, snake and bat hibernacula, bat maternity colonies, waterfowl staging areas, raptor roosts, bird nesting colonies, shorebird staging areas, and passerine migration concentrations. Only the best examples of these concentration areas are usually designated as SWH. Areas that support a SAR, or areas where a large proportion of the population may be lost if the habitat is destroyed, are examples of habitats of seasonal concentrations of animals which should be designated as significant (MNR 2000).

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The following Seasonal Concentration Areas may potentially occur in the Study Area:

- Bat maternity colonies: The forest and woodland communities in the Study Area may provide candidate SWH habitat for bat maternity colonies.
- Turtle wintering areas: Watercourses in the candidate SWH for turtle wintering areas in the Study Area.
- Snake Hibernacula: Suitable features for snake hibernacula may occur in the Study Area.

3.4.3.3.2 Rare Vegetation Communities or Specialized Habitats

Rare vegetation communities and specialized habitats for wildlife are two separate components. Rare vegetation communities are those with vegetation communities that are considered rare in the province (e.g., S1-S3). The SWHTG (MNR 2000) identifies many habitats that could be considered specialized habitats, such as habitat for area sensitive species, forests providing a high diversity of habitats, amphibian woodland breeding ponds, turtle nesting habitat, highly diverse sites, as well as seeps and springs. High-quality habitat features generally occur in interior landscapes where habitat is not influenced by edge effects and wildlife mortality that are associated with major roadways.

No rare vegetation communities were identified in the Study Area.

The following Specialized Habitats may potentially occur in the Study Area:

- Amphibian Breeding Habitat (Woodland): Forest habitat in the Study Area may support amphibian breeding through the presence of unmapped wetlands and vernal pools.

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3.4.3.3.3 Habitat for Species of Conservation Concern

Habitat for SOCC includes four types of species: (a) those that are rare, (b) those whose populations are significantly declining, (c) those that have been identified as being at risk to certain common activities, and (d) those with relatively large populations in Ontario compared to the remainder of the globe.

Rare species are considered at five levels: globally rare, federally rare with designations by COSEWIC, provincially rare by the Committee on the Status of Species at Risk in Ontario, regionally rare (at the site region level), and locally rare (at the municipality or site district level). This is also the order of priority that should be assigned to the importance of maintaining species.

Some species have been identified as being susceptible to certain practices, and their presence may result in an area being designated SWH.

For this report, SOCC includes species that are listed as nationally endangered or threatened by COSEWIC; terrestrial species listed on Schedule 1 of the federal SARA but not the SCA; or provincially rare (with a Provincial S-rank of S1 to S3).

Provincial sub-national ranks (S-ranks) are used by the NHIC to set protection priorities for rare species and vegetation communities. They are based on the number of factors such as abundance, distribution, population trends and threats in Ontario and are not legal designations.

The Natural Heritage Reference Manual was developed to provide technical guidance for implementing the natural heritage policies of the Provincial Policy Statement (MNR 2010). SWH includes the habitat of SOCC. Although SOCC do not receive legal protection under the SCA or SARA, their habitat is protected under the PPS (e.g., if it qualifies as SWH), and they may also be afforded protection under the MBCA or the Ontario Fish and Wildlife Conservation Act, 1997.

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Based on the background data review, suitable habitat for a total of 22 SOCC was assessed as potentially present in the Study Area. The SOCC habitat suitability assessment is provided in Table 3.5.

Based on the detailed habitat assessment, the following 18 SOCC were assessed as having suitable habitat in the Study Area:

- Bird SOCC: Barn Swallow (*Hirundo rustica*), Bobolink (*Dolichonyx oryzivorus*), Common Nighthawk (*Chordeiles minor*), Eastern Meadowlark (*Sturnella magna*), Eastern Wood-Pewee (*Contopus virens*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Wood Thrush (*Hylocichla mustelina*)
- Insect SOCC: Blue-tipped Dancer (*Argia tibialis*), Monarch (*Danaus plexippus*), Tawny Emperor (*Asterocampa clyton*)
- Reptile SOCC: Midland Painted Turtle (*Chrysemys picta marginata*), Snapping Turtle (*Chelydra serpentina*)
- Plant SOCC: Carolina Vetch (*Vicia caroliniana*), Muskingum Sedge (*Carex muskingumensis),* Prairie Milkweed *(Asclepias hirtella),* Ravenfoot Sedge *(Carex crus-corvi),* Shumard Oak (*Quercus shumardii*), Two-flowered Dwarf-dandelion (*Krigia biflora*)

3.4.3.3.4 Animal Movement Corridors

Migration corridors are areas that are traditionally used by wildlife to move from one habitat to another, typically to access different seasonal habitat requirements. Amphibian Corridors require consideration in Ecoregion 7E once significant amphibian breeding habitat is confirmed.

Candidate SWH for wetland amphibian breeding habitat was absent from the Study Area; therefore, candidate SWH for amphibian movement corridors is also absent from the Study Area.

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Table 3.5 Terrestrial Species of Conservation Concern Recorded in the Vicinity of the Pipeline Route

Birds

Common Name	Scientific Name	S-RANK	COSEWIC	SARA	Source	Potential Habitat in the Study Are
Bank Swallow	*Riparia riparia*	S4B	Threatened	Threatened	OBBA	No – vertical eroding banks are absent from the Study Area.
Barn Swallow	*Hirundo rustica*	S4B	Special Concern	Special Concern	OBBA	Yes ─ anthropogenic features (bridges, barns) may provide suitable nesting habitat for Barn Swallow within the Study Area.
Bobolink	*Dolichonyx oryzivorus*	S4B	Special Concern	Special Concern	NHIC, OBBA	Yes – hay fields and pastures may provide suitable nesting habitat for Bobolink in the Study Area.
Chimney Swift	*Chaetura pelagica*	S3B	Threatened	Threatened	OBBA	No – suitable nesting structures (i.e. chimneys) are absent from the Study Area.
Common Nighthawk	*Chordeiles minor*	S4B	Special Concern	Threatened	OBBA	Yes – suitable nesting habitat for Common Nighthawk may occur in the meadows in the Study Area.

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Common Name	Scientific Name	S-RANK	COSEWIC	SARA	Source	Potential Habitat in the Study Are
Eastern Meadowlark	*Sturnella magna*	S4BS3N	Threatened	Threatened	NHIC, OBBA	Yes – hay fields and pastures may provide suitable nesting habitat for Eastern Meadowlark in the Study Area.
Eastern Wood-Pewee	*Contopus virens*	S4B	Special Concern	Special Concern	OBBA	Yes ─ suitable habitat for Eastern Wood-Pewee may occur in the forest communities within the Study Area.
Grasshopper Sparrow	*Ammodramus savannarum*	S4B	Special Concern	-	OBBA	No – suitable grassland habitat absent in the Study Area.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	Endangered	Endangered	NHIC, OBBA	Yes ─ suitable habitat for Red-headed Woodpecker may occur in the forest, hedgerow and woodland communities within the Study Area.
Wood Thrush	*Hylocichla mustelina*	S4B	Special Concern	Threatened	OBBA	Yes ─ suitable habitat for Wood Thrush may occur in the forest communities within the Study Area.

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Insects

Common Name	Scientific Name	S-RANK	COSEWIC	SARA	Source	Potential Habitat in the Study Are
Blue-tipped Dancer	*Argia tibialis*	S3	-	-	Odonata	Yes - suitable habitat for Blue-tipped Dancer may occur in the lowland forest communities within the Study Area.
Monarch	*Danaus plexippus*	S4BS2N	Endangered	Endangered	OBA	Yes – meadows and flowering plants in the Study Area may provide suitable habitat for Monarch.
Tawny Emperor	*Asterocampa clyton*	S3	-	-	OBA	Yes - suitable habitat for Tawny Emperor may occur in the woodland communities within the Study Area.

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Reptiles

Common Name	Scientific Name	S-RANK	COSEWIC	SARA	Source	Potential Habitat in the Study Are
Midland Painted Turtle	*Chrysemys picta marginata*	S4	Special Concern	Special Concern	ORRA	Yes – Watercourses in the Study Area may provide suitable habitat for Midland Painted Turtle.
Snapping Turtle	*Chelydra serpentina*	S3	Special Concern	Special Concern	NHIC	Yes – Watercourses in the Study Area may provide suitable habitat for Snapping Turtle.

Plants

Common Name	Scientific Name	S-RANK	COSEWIC	SARA	Source	Potential Habitat in the Study Are
Carolina Vetch	*Vicia caroliniana*	S2	-	-	NHIC	Yes – forest communities in the Study Area may provide habitat for Carolina Vetch.
Crowned Beggarticks	*Bidens trichosperma*	S2	-	-	NHIC	No – suitable wetland habitat for Crowned Beggartick is absent from the Study Area.
Muskingum Sedge	Carex muskingumensis	S3	-	-	NHIC	Yes –moist meadows in the Study Area may provide habitat for Muskingum Sedge .

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Common Name	Scientific Name	S-RANK	COSEWIC	SARA	Source	Potential Habitat in the Study Are
Prairie Milkweed	*Asclepias hirtella*	S3	-	-	NHIC	Yes – meadow communities in the Study Area may provide suitable habitat for Prairie Milkweed.
Ravenfoot Sedge	*Carex crus-corvi*	S1	-	-		Yes – moist meadows or roadside ditches in the Study Area may provide habitat for Ravenfoot Sedge.
Shumard Oak	*Quercus shumardii*	S3	Special Concern	Special Concern	NHIC	Yes – forest communities in the Study Area may provide habitat for Shumard Oak.
Two-flowered Dwarf-dandelion	*Krigia biflora*	S2	-	-	NHIC	Yes – meadow communities in the Study Area may provide suitable habitat for Two-flowered Dwarf-dandelion.

S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled—Imperiled in the province, few populations (often 20 or fewer)

S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure—Uncommon but not rare

S? – Rank Uncertain

S#B- Breeding status rank

S#N- Non-Breeding status rank

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3.4.3.4 Species at Risk

For this report, SAR are defined as terrestrial and aquatic species listed as threatened, endangered, and/or extirpated on the PSOL (O.Reg. 60/26) as well as aquatic species listed on Schedule 1 of the federal SARA.

Species listed as threatened, endangered and/or extirpated on the PSOL receive both individual and habitat protection under the SCA. Migratory birds not listed (or protected) on the PSOL are still protected under other regulations, such as the MBCA as well as SARA for species that have federal status (threatened, endangered, and/or extirpated).

Based on the background data review, suitable habitat for a total of 11 SAR was assessed as potentially present in the Study Area. The SAR habitat suitability assessment used background data review, satellite imagery, and field investigation results to assess the habitat suitability for a SAR that had the potential to occur in the Study Area. The SAR habitat suitability assessment is provided in Table 3.6.

The following SAR were assessed as having suitable habitat in the Study Area:

- Mammal SAR: Eastern Small-footed Myotis (*Myotis leibii),* Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), Tri-colored Bat (*Perimyotis subflavus*), Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Silver-haired Bat (*Lasionycteris noctivagans*)
- Insects: Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*)
- Plant SAR: Butternut (*Juglans cinerea*), False Hop Sedge (*Carex lupuliformis*), American Chestnut (*Castanea dentata*)

No SAR were observed during the site investigation completed by Stantec from September 1-3, 2026 (see **Section 3.4.1.2**).

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Table 3.6 Terrestrial Species at Risk Recorded in the Vicinity of the Pipeline Route

Mammals

Common Name	Scientific Name	SRANK	PSOL	SARA	Source	Potential Habitat in the Study Area
Eastern Red Bat	*Lasiurus borealis*	S3	Endangered	Endangered	COSEWIC 2023	Yes - suitable roosting habitat for SAR bats may occur in the forest and woodland communities in the Study Area.
Eastern Small-footed Myotis	*Myotis leibii*	S2S3	Endangered	-	AMO	Yes - suitable roosting habitat for SAR bats may occur in the forest and woodland communities in the Study Area.
Little Brown Myotis	*Myotis lucifugus*	S3	Endangered	Endangered	AMO, ECCC 2018	Yes - suitable roosting habitat for SAR bats may occur in the forest and woodland communities in the Study Area.
Hoary Bat	*Lasiurus cinereus*	S3	Endangered	-	COSEWIC 2023	Yes - suitable roosting habitat for SAR bats may occur in the forest and woodland communities in the Study Area.

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Common Name	Scientific Name	SRANK	PSOL	SARA	Source	Potential Habitat in the Study Area
Northern Myotis	*Myotis septentrionalis*	S3	Endangered	Endangered	ECCC 2018	Yes - suitable roosting habitat for SAR bats may occur in the forest and woodland communities in the Study Area.
Silver-haired Bat	*Lasionycteris noctivagans*	S3	Endangered	-	COSEWIC 2023	Yes - suitable roosting habitat for SAR bats may occur in the forest and woodland communities in the Study Area.
Tricolored Bat	*Perimyotis subflavus*	S3?	Endangered	Endangered	ECCC 2018	Yes - suitable roosting habitat for SAR bats may occur in the forest and woodland communities in the Study Area.

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Insects

Common Name	Scientific Name	SRANK	PSOL	SARA	Source	Potential Habitat in the Study Area
Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	S1S2	Endangered	Endangered	NHIC	Yes – suitable habitat for Gypsy Cuckoo Bumble Bee may occur in meadow, forest or open communities in the Study Area.

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Plants

Common Name	Scientific Name	SRANK	PSOL	SARA	Source	Potential Habitat in the Study Area
American Chestnut	*Castanea dentata*	S2	Endangered	Endangered	NHIC, Tree Atlas	Yes - suitable habitat for American Chestnut occurs in treed areas in the Study Area.
Butternut	*Juglans cinerea*	S3?	Endangered	Endangered	NHIC, Tree Atlas	Yes - suitable habitat for Butternut occurs in treed areas in the Study Area.
False Hop Sedge	*Carex lupuliformis*	S1	Endangered	Endangered	NHIC	Yes - suitable habitat for False Hop Sedge occurs in wet areas in the Study Area.

S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled—Imperiled in the province, few populations (often 20 or fewer)

S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure—Uncommon but not rare

S? – Rank Uncertain

S#B- Breeding status rank

S#N- Non-Breeding status rank

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The proposed pipeline route is comprised primarily of agricultural lands. Isolated woodlots are present.

Maternity roost habitat for SAR bats, including Little Brown Myotis, Eastern Small-footed Myotis, Eastern Red Bat, Hoary Myotis, Northern Myotis, Silver-haired Bat, and Tricolored Bat, may be present in mature trees located in the woodlands along the pipeline route. During the active season (March 15 – November 30), SAR bats roost during the day in a variety of structures, including behind flaking bark, in leaf clusters, and within tree cavities. During a portion of the active period, some female bat species establish maternity colonies in buildings or large-diameter trees where they give birth and rear their young (COSEWIC 2023).

Suitable habitat for Gypsy Cuckoo Bumble Bee may also be present in agricultural field margins, meadows, hedgerows, cultural communities, and woodland edges along the pipeline route. Gypsy Cuckoo Bumble Bee is a social parasite of other bumble bee species and occurs in a variety of habitats, including meadows, agricultural lands, urban areas, woodlands, and forest edges where suitable host bumble bee colonies and flowering resources are present. The species depends on host bumble bees for reproduction and utilizes a variety of flowering plants as nectar sources.

There is a probability of encountering American Chestnut, Butternut, and False Hop-sedge in the vicinity of the pipeline route.

Butternut is a medium-sized tree commonly found in a variety of habitats throughout Southern Ontario, including woodlands and hedgerows (Farrar 1995). Habitat exists for this species along the pipeline route in the deciduous and mixed forests, cultural woodlands, and hedgerows.

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False Hop-sedge is restricted to the Carolinian Zone in Ontario, and occurs in wet forests, in openings around forest ponds, riverine wetlands, marshes and wet thickets (Oldham 2010). Preferred habitat includes open wetlands that are subject to periodic flooding and vernal pools (COSEWIC 2011a). A record of False Hop-sedge near the Dawn Hub suggests there is potential for this sedge to occur in the woodlots along the pipeline route.

American Chestnut (*Castanea dentata*) historically occurred throughout southern Ontario and is typically associated with dry to mesic deciduous forests, woodland edges, and well-drained sandy or gravelly soils (COSEWIC 2004). Habitat for this species exists along the pipeline route in the deciduous and mixed forests, along fencerows and forest edges.

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3.5 Socio-Economic Environment

3.5.1 Demographics

The population breakdown of the Project area in 2021 is presented in Table 3.7 below.

Table 3.7 Population, 2021

Location	Total Population	Land Area (km^2)	Population Density per km^2	Percent Change from 2016
Ontario	14,223,942	892,411	15.9	5.8
Lambton (County)	128,154	2,999	42.7	1.2
Dawn-Euphemia (Township)	1,968	445	4.4	0.1
Enniskillen (Township)	2,825	338	8.4	1.0

Source: Statistics Canada 2023a, 2023b, 2023c, 2023d

Lambton County has a small population relative to the province of Ontario. The populations of the Townships of Dawn-Euphemia and Enniskillen account for 1.5% and 2.2% of the population of Lambton County respectively. Over half (56.2%) the population of Lambton County resides in the City of Sarnia, which was 72,047 people in 2021 (Statistics Canada 2023e). The Project area is not densely populated and reflects a rural environment.

There was an increase in population in Dawn-Euphemia, Enniskillen, and Lambton County between 2016 and 2021. The percent change in population in Dawn-Euphemia, Enniskillen and Lambton County overall was lower than that of the province of Ontario.

Information regarding the demographics of the population is presented in Table 3.8.

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Table 3.8 Gender, Age and Indigenous Peoples, 2021

Location	Male[1]	Female[1]	Median Age	Population Identifying as Aboriginal[2,3]
Ontario	6,970,855	7,253,085	41.6	406,585
Lambton (County)	63,170	64,980	46.4	6,030
Dawn-Euphemia (Township)	1,055	915	43.6	50
Enniskillen (Township)	1,435	1,390	47.2	70

Notes:

1. Numbers are rounded by Statistics Canada and are reported herein exactly as they are reported by Statistics Canada. Totals may not necessarily add up because of rounding.
2. Estimates associated with this variable are more affected than most by the incomplete enumeration of certain Indian reserves and Indian settlements in the 2021 Census of Population.
3. Aboriginal identity' includes persons who are First Nations (North American Indian), Métis or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is, registered under the Indian Act of Canada) and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act, 1982, section 35 (2) as including the Indian, Inuit and Métis peoples of Canada.

Source: Statistics Canada 2023a, 2023b, 2023c, 2023d

There were more individuals identifying as female than male in Lambton County overall, which is consistent with the province of Ontario. In Dawn-Euphemia and Enniskillen, there were fewer individuals identifying as female than male. The median age is younger in Dawn-Euphemia than Enniskillen township, and Lambton County overall. Additionally, the median age in Enniskillen Township is older than Lambton County. The median age in all 3 municipalities is older than the wider province of Ontario. There were few individuals identifying as Indigenous in either Dawn-Euphemia or Enniskillen. The number of Indigenous people in Lambton County comprise 1.5% of the Indigenous people in Ontario.

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3.5.2 Employment and Business

The most recent economy and employment statistics are provided in the 2021 Census of Population. Table 3.9 summarizes labour characteristics at the time of census in Ontario, County of Lambton, and the Townships of Dawn-Euphemia and Enniskillen.

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Table 3.9 Labour Characteristics for Persons > 15 years, 2021

Location	Total Population 15 years and Over	Labour Force	Employed	Participation Rate (%)	Employment Rate (%)	Unemployment Rate (%)
Ontario	11,782,845	7,399,200	6,492,895	62.8	55.1	12.2
Lambton (County)	106,375	59,655	53,000	56.1	49.8	11.2
Dawn-Euphemia (Township)	1,570	1,025	945	65.3	60.2	7.8
Enniskillen (Township)	2,260	1,455	1,380	64.4	61.1	5.2

Source: Statistics Canada 2023a, 2023b, 2023c, 2023d

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As shown in Table 3.9**Error! Reference source not found.**, in 2021, Lambton County overall had lower participation and employment rates than the wider province of Ontario, whereas Dawn-Euphemia and Enniskillen had overall higher participation and employment rates than the wider province of Ontario.

Median income for households and individuals is presented in Table 3.10.

Table 3.10 Median Income, 2020

Location	Median Total Income of Households ($)	Median Total Income of Individuals ($)
Ontario	$ 79,500	$ 41,200
Lambton (County)	$ 83,000	$ 42,400
Dawn-Euphemia (Township)	$ 83,000	$ 39,200
Enniskillen (Township)	$ 90,000	$ 47,200

Source: Statistics Canada 2023a, 2023b, 2023c, 2023d

Median income of households in Lambton County overall was greater than the provincial median by $3,500. Median income of individuals in Lambton County was greater than the provincial median by $1,200. In Lambton County, the median income of households and individuals was higher in Enniskillen than in Dawn-Euphemia.

The top three occupation classifications in Lambton County included sales and service occupations (24.2%), trades, transport and equipment operators and related occupations included (21.3%), and business, finance and administration occupations (12.1%). These are the same top three occupation classifications in Ontario overall (Statistics Canada 2022). The top three occupation classifications in Dawn-Euphemia included natural resources, agriculture and related production occupations (25.9%), trades, transport and equipment operators and related occupations (25.4%), and sales and service occupations (12.7%). The top three occupation classifications in Enniskillen

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included trades, transport and equipment operators and related occupations (22.7%), natural resources agricultural and related production occupations (19.9%), and sales and service occupations (13.4%).

3.5.3 Community Services & Infrastructure

Permanent and Temporary Accommodations

In 2021, there were 765 occupied private dwellings in the Township of Dawn-Euphemia. Most homes were single-detached houses (745) and the average household size was 2.6 persons. Most occupants were owners and not renters (83%) (Statistics Canada 2023c). In 2021 in Enniskillen Township there were 1,040 occupied private dwellings, the majority of which were also single-detached houses (985), and the average household size was 2.6 persons. Most occupants were owners and not renters (83.3%) (Statics Canada 2023d). In Lambton County overall, in 2021 there were 55,205 occupied private dwellings, the majority of which were single-detached houses (41,905) and the average household size was 2.3 persons. Most occupants were owners and not renters (74.4%) (Statistics Canada 2023b).

The Townships of Dawn-Euphemia and Enniskillen are in Provincial Tourism Region 1 (Southwest Ontario) (MCM 2022). In 2022, the hotel occupancy rate (temporary accommodations) in the Region 1 was 60.6%, an increase from 47.8% in 2021 (MCM 2022) – most likely influenced by COVID-19 restrictions. In 2022 there was a total of 478 temporary accommodations establishments within the Provincial Tourism Region 1. Most of the establishments were hotels (including motor hotels and motels) which numbered 198 (41.4%). There were also 99 RV parks (including campgrounds) (20.7%), 63 camps (including hunting and fishing and recreational vacation camps) (13.2%) and 40 bed and breakfasts (8.4%). The remaining accommodation types included housekeeping cottages/cabins, resorts, and all other types of traveller accommodations (MCM 2022).

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Temporary accommodations within and adjacent to the Study Area are limited to small bed-and-breakfasts.

Water Services

The Lambton Area Water Supply System supplies water to over 100,000 customers located across the County of Lambton, but excluding Dawn-Euphemia (AECOM 2021). The Lambton Area Water Supply System includes a direct filtration water treatment plant and 250km of water main; the system is operated by the Ontario Clean Water Agency (Lambton Area Water Supply System n.d.).

The Township of Enniskillen maintains municipal water infrastructure that supplies potable water to residents and neighbouring municipalities. The Township's water system includes a water reservoir, pumping station, and distribution network that receives treated water from the Town of Petrolia's water treatment plant for delivery throughout the service area (Township of Enniskillen n.d.).

The Township of Dawn-Euphemia Public Works Department is responsible for the operation and maintenance of these systems, including over 143 km of municipal watermains that distribute water to rural areas and the communities of Florence and Rutherford. Water supplied through the Township's distribution system is purchased from the Township of Enniskillen (Township of Dawn-Euphemia n.d.a; Township of Dawn-Euphemia n.d.b).

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Health and Education Services

All of Lambton County is served by the Lambton Public Health. Bluewater Health operations two hospitals in Lambton County; Charlotte Englehart Hospital in Petrolia, Ontario and Bluewater Health in Sarnia, Ontario (County of Lambton 2019a).

There is one elementary public school, Dawn-Euphemia School, in the Study Area which is part of the Lambton Kent District School Board (Lambton Kent District School Board 2017). The Conseil scolaire Viamonde, the Conseil scolaire catholique



Providence and the St. Clair Catholic District School Board also operate schools in Lambton County, but there are no schools in the Study Area (Conseil scolaire Viamonde 2021; Conseil scolaire catholique Providence n.d.; St. Clair Catholic District School Board n.d.). Secondary school students attend high school in nearby Petrolia, Dresden, and Chatham (Ministry of Education, 2022).

Roads, Highways and Culverts

The Public Works department of the County of Lambton is responsible for managing the County of Lambton Road system, which includes almost 650 km of roadway and over 190 bridges and major culverts in both Enniskillen and Dawn-Euphemia Township (County of Lambton n.d.). The Study Area is served by a network of County roads, local municipal roads, and rural concession roads. Key County roads in or adjacent to the Study Area include County Road 26 (Oil Heritage Road), County Road 80 (St. Clair Parkway), County Road 31 (Gravel/Plowing Match Road corridor), and County Road 79 (Nauvoo Road), which provide north-south and east-west. Numerous local roads and concession roads are also present and provide access to agricultural properties and rural residences. The nearest provincial highway is Highway 402, located north of the Study Area in the Township of Enniskillen. No Ministry of Transportation (MTO) highways are in the Study Area.

Policing, Fire and Emergency Response Services

The Township of Dawn-Euphemia and the Enniskillen Township have contracted their Police Services with the Ontario Provincial Police. There are no detachments in the Study Area; the nearest detachments are in Petrolia and Corunna (OPP 2019).

Fire protection services in the Township of Dawn-Euphemia are provided through agreements with the Chatham-Kent Fire and Rescue Service and the Brooke Fire Department. The Chatham-Kent Fire Department (Bothwell Fire Station) provides fire protection services to the western portion of the municipality, while the Brooke Fire

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Department provides service to the eastern portion of the municipality (Township of Dawn-Euphemia n.d.c).

Fire protection services in the Township of Enniskillen are provided through agreements with the Oil Springs Fire Department and the Petrolia and North Enniskillen Fire Department. The Oil Springs Fire Department serves the southern portion of the municipality, while the Petrolia and North Enniskillen Fire Department serves the northern portion of the municipality (Township of Enniskillen n.d.).

Land ambulance services are provided by Lambton County's Emergency Medical Services (Lambton EMS) Department to all the residents of Lambton County.

3.5.4 Culture, Tourism and Recreational Facilities

Residents and visitors to the Township of Dawn-Euphemia have access to a number of cultural, recreational, and community facilities. The Township Official Plan identifies the Florence Fairgrounds and Community Centre and the Shetland Conservation Area as major recreational assets in the municipality. The Florence Fairgrounds and Community Centre support community events and recreational programming, while the Shetland Conservation Area provides opportunities for outdoor recreation and nature appreciation. The Township also supports the development of community trails and linkages between recreational areas and natural features (Township of Dawn-Euphemia 2015). No identified facilities are in the Study Area.

Township of Enniskillen residents, as well as visitors, have access to several cultural, tourism, community, and recreational facilities located in the Study Area, particularly in and around the Village of Oil Springs. The Village contains the Oil Museum of Canada National Historic Site, a significant tourism destination that commemorates the early history of Ontario's petroleum industry. Community and recreational facilities in Oil Springs include the Oil Springs Youth Centre, the Oil Springs Library, and an adjacent baseball diamond used for local recreational activities and community events. Several churches, the Black Creek Golf & Country Club, and other community gathering places

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are also in the Study Area. Additional recreational opportunities are available through local parks and open spaces in Oil Springs and the surrounding rural area (Township of Enniskillen 2015).

3.5.5 Air Quality and Noise

3.5.5.1 Air Quality

The nearest provincial ambient air quality monitoring station to the Project is the Sarnia Air Quality Monitoring Station, located at 700 Christina Street North, Sarnia, Ontario. The station continuously monitors key criteria air contaminants. Based on Air Quality Health Index data recorded at the Sarnia Air Quality Monitoring Station, air quality conditions during 2026 Year-to-Date have been predominately categorized as low risk, with occasional moderate-risk days. No high-risk or very high-risk Air Quality Health Index conditions were identified during the reviewed period. These results indicate that ambient air quality in the vicinity of the Project is generally good and consistent with typical background conditions in the area (Air Quality Ontario 2026).

The landscape in the Study Area comprises agricultural land and natural heritage features. Agricultural operations have the potential to expel air emissions. Although the Study Area does not have a high population density, air emissions will be released through vehicle use.

3.5.5.2 Noise

According to the NPC-300 Environmental Noise Guideline (MECP 2013), the landscape in the Study Area is expected to be categorized as a Class 3 area. This means “a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as a small community; agricultural area; a rural recreational area such as a cottage or a resort area; or a wilderness area.” Portions of the landscape in the Study Area in proximity to town centers and sub-urban areas would be categorized as a Class 2 area. This means “an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 areas” with an acoustical

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environmental dominated by the activities of people, usually road traffic during the day, and evening and night background sound defined by natural environment and infrequent human activity.

The area is expected to experience a low traffic volume that represents a minimal source of noise. Other minor noise sources in the Study Area include occasional sounds due to agricultural activities and occasional sounds due to domestic activities such as property maintenance and recreation.

3.5.6 Land Use

The Study Area includes portions of the Township of Dawn-Euphemia and the Township of Enniskillen, in the County of Lambton. The pipeline route intersects various land uses designated by these municipalities. Land use in the Study Area is predominantly agriculture.

County of Lambton

The County of Lambton is the upper-tier municipality. The County of Lambton Official Plan was adopted in 2017 and was declared to be in full force and effect on September 18, 2020 (County of Lambton 2020). The pipeline route crosses lands designated Agricultural Area and Natural Heritage System features and corridors associated with watercourses and natural heritage features (County of Lambton 2020).

According to Section 7.8 (Utility Corridors: Electricity/Pipelines/Communications) of the County of Lambton Official Plan, it is the goal of the County to facilitate the provision of utility services important to the County economy while ensuring agricultural lands, natural heritage features, and settlement areas are protected (County of Lambton 2020).

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Township of Dawn-Euphemia

The Township of Dawn-Euphemia is a lower-tier municipality in Lambton County. The Township of Dawn-Euphemia Official Plan has been in effect since 2015. Based on Schedule A of the Official Plan, the Study Area is located primarily in lands designated Agricultural Area, with portions of the Study Area also associated with Hazard and Environmental Protection Areas and Significant Woodlands (Township of Dawn-Euphemia 2014).

According to Section 12.1.1(f) of the Township of Dawn-Euphemia Official Plan, pipelines for the transmission of oil, gas, brine or other liquid products of the oil and gas industry, including associated appurtenances, are permitted in all land use designations, subject to the development policies of the Official Plan (Township of Dawn-Euphemia 2014).

The Township of Dawn-Euphemia Zoning By-law 53 of 2014 has been in effect since November 24, 2014. The Study Area lands are predominantly zoned Agricultural (A1). Environmental Protection zones may also occur in association with natural heritage features, woodlands, wetlands, and hazard lands identified by the Township. According to Section 3.1.5 of Zoning By-law 53 of 2014, nothing in the by-law shall prevent the use of any land for gas, oil, brine or other liquid or gaseous product transmission or distribution pipelines and appurtenances thereto that have been approved by the National Energy Board or the OEB (Township of Dawn-Euphemia 2014).

Township of Enniskillen

The Township of Enniskillen is a lower-tier municipality in Lambton County. The Township of Enniskillen Official Plan has been in effect since 2015. The proposed pipeline crosses lands designated Agricultural Area and Hazard and Environmental Protection Areas. According to the Official Plan, natural gas pipelines and related utility infrastructure are permitted subject to the applicable development policies of the Plan.

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The Township of Enniskillen Zoning By-law 58 of 2015 (Consolidated February 2026) applies to the Study Area. The proposed pipeline is located on lands zoned Agricultural 1 (A1) and may intersect Environmental Protection zones, including Environmental Protection - Hazard (EP-H), Environmental Protection - Woodlot (EP-WD), and/or Environmental Protection - Significant Natural Area (EP-SNA), where applicable. According to Section 3.1.5, nothing in the Zoning By-law prevents the use of land for gas, oil, brine or other liquid or gaseous product transmission or distribution pipelines and associated appurtenances approved by the National Energy Board or Ontario Energy Board.

3.5.7 Landfills and Contaminated Sites

Landfills

In accordance with the MECP's Guideline D-4 Land Use on or Near Landfills and Dumps (1994), active and closed landfills within 500 m of the Study Area were reviewed. The potential location of these sites in the Study Area was determined by cross-referencing Official Plan mapping for the Township of Enniskillen (2026) and the County of Lambton Official Plan mapping (2020) and the MECP's Small and Large Landfill Sites listed on the MECP website (2021).

A review of the MECP Ontario Landfill Sites Map and available municipal planning documents was completed to identify active and closed landfill sites within and adjacent to the Study Area. No active or closed landfill sites were identified within the Study Area or within 500 m of the preferred route. The nearest municipally operated landfill is the Dawn Landfill (4084 Langbank Line), located in the Township of Dawn-Euphemia outside the Study Area (MECP 2026c; County of Lambton 2019).

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Contaminated Sites

Potential contaminated sites within and adjacent to the Study Area were identified through a review of available federal, provincial, and municipal sources, including municipal planning documents, the MECP Brownfields Environmental Site Registry, and the Federal Contaminated Sites Inventory (FCSI).

A review of municipal and County of Lambton planning documents did not identify any designated brownfield areas or known contaminated sites within the Study Area. A review of the Federal Contaminated Sites Inventory (FCSI) did not identify any federal contaminated sites within the Study Area or within 500 m of the preferred route.

3.5.8 Archaeological Resources

A Stage 1 Archaeological Assessment (**Appendix D**) was completed in 2017 for the Study Area. Stage 1 Archaeological Assessments are conducted in compliance with the provincial standards and guidelines set out by the MCM in the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). A Stage 1 Archaeological Assessment provides information about a study area's geography, history, previous archaeological assessments, and includes a property inspection by a licensed archaeologist to assist in the evaluation of a study area's archaeological potential. Its purpose is to identify areas of archaeological potential and recommend further Archaeological Assessments as necessary (i.e., Stage 2). A property inspection was completed by a licensed Stantec archaeologist on March 30, 2016.

Stantec applied archaeological potential criteria commonly used by the MCM to determine areas of archaeological potential in the Study Area. These variables include proximity to previously identified archaeological sites, historical transportation routes or structures, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. Extensive land disturbance can eradicate archaeological potential.

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Overall, the Stage 1 Archaeological Assessment determined that the majority of the Study Area retains potential for the identification of Indigenous and Euro-Canadian archaeological resources.

The Stage 1 Archeological Assessment was reviewed and entered into the Ontario Public Register of Archaeological Reports on July 05, 2017 (see **Appendix D**).

3.5.9 Built Heritage Resources and Cultural Heritage Landscapes

A Cultural Heritage Assessment Report was completed in 2017 for the proposed pipeline route. The report included agency consultation and review of historic mapping available to determine the presence of potential heritage resources and protected properties. In addition, the Cultural Heritage Assessment Report included a site visit, inventory of potential heritage properties, evaluation of cultural heritage value and interest, impact assessment, and development of mitigation recommendations. The assessment determined that one heritage resource was potentially within 50m of the Project footprint. A copy of the Cultural Heritage Assessment Report is provided in **Appendix E**.

In 2026, Stantec completed a Cultural Heritage Memo to re-assess the Study Area, confirm whether the cultural heritage resources identified in the 2017 Cultural Heritage Assessment Report remained present, and identify any additional built heritage resources or cultural heritage landscapes. The assessment identified two additional potential built heritage resources and expanded the potential for indirect impacts from construction-related vibration to three properties.

A copy of the draft 2026 Cultural Heritage Memo can be found in **Appendix E**.

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4 Route Evaluation and Selection

4.1 The Process

The route evaluation and selection process was undertaken in accordance with the OEB *Environmental Guidelines* (2023), which identify the environmental and socio-economic features, and the routing principles, to be considered. As the new NPS 48 will parallel the existing Dawn Parkway Transmission System and will be adjacent to the NPS 26 on the north side of the existing easement, no alternative routes were proposed.

4.2 Input on the Pipeline Route

The pipeline route was presented during the engagement and consultation program (see **Section 3**).

4.3 Confirmation of the Pipeline Route

Through the engagement and consultation program, and the review of potential Project impacts, no concerns were identified that would warrant a change to the pipeline route.

Detailed design will determine the precise location of the pipeline running line and any temporary workspace requirements. Detailed design will be influenced by supplemental studies (including environmental studies) and site-specific requests; this information will be used to locate the pipeline to further reduce environmental and socio-economic impacts. Additional information on the detailed design will be provided in the Leave to Construct application to the OEB.

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5 Potential Impacts, Mitigation and Protective Measures and Net Impacts

5.1 Methods

The potential effects and impacts of the Project on physical, biophysical, and socio-economic features have been assessed in the Study Area upon review of the existing conditions outlined in **Section 3**. With an understanding of pipeline construction and operation activities (see **Sections** Error! Reference source not found. and Error! Reference source not found., respectively) the assessment:

- Describes the environmental and socio-economic setting
- Predicts the effects and associated impacts of construction and operation activities
- Recommends supplemental studies, mitigation, and protective measures (including construction methods and timing, site-specific mitigation, environmental protection measures, and compensation measures)
- Outlines the net impacts that are likely to remain

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

- Comments expressed during the consultation program
- Information available from published and unpublished literature
- Maps and digital data
- Mitigation guidance documents
- The pipeline development experience of Enbridge Gas and Stantec

By necessity, the analysis, integration, and synthesis of the data is an iterative process since information becomes available at various stages of the environmental study and

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at different mapping scales. The level of detail of data and mapping increases as the environmental study moves from analysis of the Study Area to a site-specific survey of features in the Project footprint. The data available at the current stage of the environmental study is appropriate for predicting effects and potential impacts and recommending mitigation and protective measures.

The information collected assisted in identifying environmental and socio-economic features and constraints located on and adjacent to the Project footprint, predicting effects and potential impacts, and developing mitigation and protective measures. Where agencies requested that information be kept confidential, such information has been withheld from the report or mapped in such a way that specific site locations cannot be determined.

The existing conditions maps in **Appendix A** have been generated from data obtained from Ontario GeoHub and other sources as indicated on the maps and in the references. Scales have been adjusted from the original source to better represent the features mapped.

There are instances where field investigations will occur after completion of the ER and before construction. Given the location of the Project components and experience of Stantec in providing environmental services for natural gas pipelines, these supplemental studies are not expected to change the conclusions regarding potential adverse residual impacts.

The environmental and socio-economic information presented in the ER is based on sources cited throughout.

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5.1.1 Construction

The pipeline construction process includes various activities as described below:

- **Site Preparation and Clearing**: The first activity is typically the survey and staking, which delineates the boundaries of the Project footprint. Next, the temporary work areas are cleared of brush and trees, as necessary. Safety barriers are then installed at the limits of the temporary work areas where public safety considerations are required, and aspects of the Traffic Management Plan are implemented (i.e., signs, vehicle access). Erosion and sediment control (ESC) measures are installed at required locations, and pre-tiling work is completed to accommodate agricultural drainage. Soil separation is then completed.
- **Pipeline Removal:** Following site preparation and clearing, pipeline removal includes exposure of the existing pipe, removing the pipe, and backfilling the trench. During backfilling, excavated subsoil is placed in the trench. Once the pipe is removed from the trench, it is cut and removed for salvage. Select sections of pipe may be abandoned in place in accordance with Canadian Standards Association requirements, such as at watercourse and road crossings.
- **Pipeline Installation:** Following site preparation and clearing, pipeline installation includes excavation of a trench, pipe welding, lowering the pipe into place, and backfilling the trench. During backfilling the originally excavated subsoil is placed on the pipe in the trench, followed by the topsoil. In stony areas, the pipe may be sand padded to protect the coating. In shallow water table areas, the pipe may be weighted to provide negative buoyancy. Landowners with tile drainage are given the opportunity to inspect tile repairs.
- **Pressure Testing**: The pipeline will be pressure tested by filling the pipe with water. The water will be pressurized above the operating pressure and held for a set period of time, per the requirements of CSA Z662-19 Clause 8 and applicable Enbridge Gas specifications for pressure testing.

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- **Clean-Up and Restoration:** This final phase will include the restoration of all work areas disturbed during construction. On agricultural land, this may require decompaction of the subsoil, and in natural areas regrading and reseeding. ESC installed during construction will be removed. Clean-up will also restore landscaping, roads, laneways, and driveways.

5.1.2 Operation and Maintenance

Pipeline operation consists of pressurized natural gas flowing through the pipeline. Mainline valves located at the valve sites will serve to shut off and isolate the pipeline for maintenance and security purposes. Additional above-ground facilities along the pipeline include post-mounted signs identifying the pipeline, aerial patrol signs for aircraft patrols, fence stiles, foot bridges for watercourse crossings (if applicable), and test boxes located along fence lines at roads that are used to assess the adequacy of the corrosion protection system.

Once the Project is operational, the following maintenance activities will be undertaken as required:

- Completing a ‘line walk’ of the entire pipeline by Enbridge Gas personnel per the maintenance program to check for evidence of damage to aboveground equipment and piping, evidence of damage to underground piping and gas leaks, and identify any unassociated construction activity near the pipeline.
- Conducting aircraft patrols weekly to detect the presence of soil erosion and third-party structures or activities that could damage the pipeline.
- Checking cathodic corrosion protection.
- Completing regular checks and maintenance at pipeline facilities such as valve sites.
- Completing visual check of subsidence, so that the amount of ground cover over the pipeline is maintained.

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- Performing periodic inspection by running electronic tools through the interior of the pipeline to assess for the presence of corrosion or dents and the need for repairs.
- Completing class location surveys.
- Vegetation management.

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5.2 Summary Table

Table 5.1 Potential Impacts and Recommended Mitigation and Protective Measures

Physical Features

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Bedrock Geology and Drift Thickness *Section 3.3.1*	The planned excavation depth for the Project is approximately 2 m below grade with the potential to exceed this depth for watercourse and road crossings. Based on the depth of the excavation and the significant depth to bedrock shown in the published information, bedrock is not likely to be encountered.	As no potential impacts are anticipated, no mitigation or protective measures are required.	As no impacts to bedrock are anticipated, no net impacts will be present.
Physiography and Surficial Geology *Section 3.3.2*	Disturbance to the overburden may cause surface soil erosion and trench slumping during construction.	• Surface soil erosion can occur in the absence of vegetative cover. Where there is potential for soil erosion, the need for and location of ESC measures should be determined by an inspector with appropriate qualifications and installed prior to the commencement of work in the area. Measures should be maintained until soils have stabilized. • When land is exposed, the exposure should be kept to the shortest practical period. Natural features should be preserved to the extent practical. Temporary vegetation and mulching should be used to protect areas as appropriate. Where required, natural vegetation should be re-established as soon as practical. • The contractor must obtain adequate quantities of materials to control erosion. Additional supplies should be maintained in a readily accessible location for maintenance and contingency purposes. ESC structures should be monitored to maintain their effectiveness through the life of construction and post-construction rehabilitation. • Even with ESC measures, extreme precipitation events could result in collapse of silt fencing, overflow or bypass of barriers, and other situations which could lead to erosion. When site conditions permit, permanent protection measures should be installed on erosion susceptible surfaces. If the erosion is resulting from a construction-related activity, the activity should be halted immediately until the situation is rectified.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts to or from the overburden material are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• To avoid the trench from slumping, trench walls should be sloped and should be monitored during wet conditions for the potential to slump. • Slope stability should be reviewed at watercourse crossing locations. Watercourse banks should be seeded and stabilized immediately following crossing. ESC and stabilization measures should be maintained during construction, restoration, and rehabilitation until vegetative cover is established. Where evidence of erosion exists, corrective control measures should be implemented as soon as conditions permit. Permits obtained from the SCRCA may contain conditions pertaining to ESC.	
Groundwater *Section 3.3.3*	<u>Hydrostatic Testing and Dewatering</u> The pipeline will be hydrostatically tested before commissioning. Select sections of pipe may also be pre-tested, such as at road crossings. Water required for the testing may be obtained from a municipal or natural source. Before the withdrawal of water from a municipal source, the municipality will be contacted to confirm the maximum rate of withdrawal. Where trenches encounter shallow groundwater conditions or following a large precipitation event, removing water from the trench (known as dewatering) may be necessary. During trench dewatering, discharge water will be released to the environment. An uncontrolled discharge of water could cause downstream flooding, erosion, sedimentation, or contamination. Other potential effects of uncontrolled discharge may include the introduction of hazardous materials or pollutants to soils or bodies of water. <u>Private Water Wells</u> Depending on the proximity to wells, the depth of the well installation and the groundwater levels encountered during excavation, trench dewatering	<u>Hydrostatic Testing and Dewatering</u> • Under O. Reg. 63/16, all construction dewatering projects regardless of dewatering volume can be completed under an EASR. Should dewatering be required a dewatering and discharge report would be required to support the registration of an EASR for the Project. If surface water is used as the source water for the hydrostatic test, the report will also assess the capacity of the source to provide the required water volume without impacting the ecosystem, and will outline mitigation measures such as screened water intakes. • Before discharge, hydrostatic test water should be sampled for a risk assessment against applicable human health and ecological guidelines. Should the assessment determine on-site discharge is unacceptable, disposal will be required at a facility registered to accept the waste. • To reduce the potential for erosion and scouring at discharge locations during construction dewatering and/or hydrostatic testing, energy dissipation techniques should be used. Discharge piping should be free of leaks and should be properly anchored to prevent bouncing or snaking during surging. Protective measures may include dewatering at low velocities, dissipating water energy by discharging into a filter bag or diffuser and utilizing protective riprap or equivalent. If energy dissipation measures are found to be inadequate, the rate of dewatering should be reduced or dewatering discontinued until satisfactory mitigation measures are	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on groundwater are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	may impact water well quality or quantity at some of the overburden supply wells. <u>Source Water Protection</u> No designated source water protection areas are located in the Study Area.	in place. Discharge should be monitored to make sure that no erosion or flooding occurs. <u>Private Water Wells</u> • A private well survey should be conducted to assess domestic groundwater use near the Project and a private well monitoring program may be recommended for residents who rely on overburden groundwater supply for domestic use. This monitoring program may include pre—construction water quality monitoring as well as water level monitoring, if available. Further details are provided in **Section 7.1.2**. Should a private water well be affected by project construction, a potable water supply should be provided, and the water well should be repaired or restored as required. Further details are provided in **Section 7.2.2**. <u>Source Water Protection</u> During construction, the primary concern to groundwater is the potential for a contaminant spill. To address this concern, the following mitigation measures are proposed: • Special refueling procedures for sensitive areas should be undertaken that include, at a minimum, using a two-person refueling system with one worker at each end of the hose. Spill containment devices and absorbent material should be on hand and readily available. • To reduce the impact of potential contaminant spills, the contractor should implement spill management protocols such as secondary containment of any temporary fuel storage and preparation of a spill response plan. • Work should be limited or stopped during and immediately following significant precipitation events (i.e., 100-year storm event), at the discretion of on-site environmental personnel. • Bulk fuel trucks, service vehicles, and pick-up trucks equipped with box mounted fuel tanks should carry spill prevention, containment, and clean up materials that are suitable for the volume of fuels or oils carried. Spill contingency material carried on bulk fuel and service vehicles should be suitable for use on land and water. • Inspect hydraulic, fuel, and lubrication systems of equipment so that systems are in good working condition and free of leaks.	

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• An impervious tarp should be in place underneath equipment/vehicles when servicing equipment/vehicles with the potential for accidental spills (e.g., oil changes, servicing of hydraulic systems, etc.) in accordance with regulatory conditions. • The contractor should prepare a Spill Response Plan prior to construction.	
Aggregates and Petroleum Resources *Section 3.3.4*	The proposed pipeline route will not cross lands currently used for resource extraction, or land on which future resource extraction is likely. The proposed pipeline route will cross both active and abandoned petroleum pools, resulting in potential interaction with their current or future operation.	• During the detailed design phase Enbridge Gas should review available mapping to determine locations of the suspected petroleum resources. • Enbridge Gas will avoid conflicts with existing natural gas storage wells and associated infrastructure during construction. No additional mitigation measures are anticipated, as natural gas storage pools in the area are located more than 500 m from the Project.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on aggregate or petroleum resources are anticipated.
Soil and Soil Capability *Section 3.3.5*	Trenching and construction activities across agricultural land have the potential to affect soil quality and agricultural capability. The movement of heavy machinery on wet soil may cause rutting, compaction, and mixing of topsoil with subsoil. When exposed, soils are more prone to erosion due to the loss of vegetative cover. Improperly salvaged topsoil can result in topsoil and subsoil mixing, compaction, rutting, and erosion, which can potentially decrease crop yields.	• To avoid loss of soil, topsoil from agricultural lands directly affected by construction of the pipeline should be stripped. Topsoil should be stripped during dry soil conditions and stockpiled for use during clean-up and rehabilitation. Identification of the topsoil and subsoil interface should be carefully monitored to check that all topsoil with limited subsoil is stripped from the ROW. • Topsoil stripping should be sufficiently wide to allow for topsoil to be stockpiled on topsoil and subsoil to be stockpiled on subsoil. Inspection staff should check separation between topsoil storage piles and subsoil storage piles is maintained to reduce potential for soil mixing. If topsoil is required to be imported, it should be from an approved source to check that it is not contaminated. • As an initial stage of construction, standard ESC measures should be implemented on all active areas. ESC features should be regularly inspected and maintained. Additionally, ESC features should be improved or added to in areas requiring more protection. • In locations prone to erosion, soil stockpiles should be protected with silt fencing. Soil piles should be separated by at least 1 m, unless separated by a barrier, to avoid mixing topsoil with subsoil. On agricultural lands, subsoil should be stored on lands stripped of topsoil (subsoil on subsoil).	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on soil or soil capability are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• Following periods of excessive rainfall or saturated soil conditions, construction activities on agricultural lands should be suspended. During wet soil conditions heavy tracked and rubber-tired vehicles should be restricted from movement on agricultural soils. Usually, construction may continue from gravel or existing roadside work surfaces during wet soil conditions. • To the extent feasible, construction activities should occur during drier times of the year. Lands affected by heavy rainfall events and wet soil conditions should be monitored, to avoid the potential for topsoil and subsoil mixing. Construction activities should be temporarily halted on lands where excessively wet soil conditions are encountered. Enbridge Gas's on-site inspection team should determine when construction activities may be resumed. • If a situation develops that necessitates construction during wet soil conditions, soil protection measures should be implemented, such as confining construction activity to the narrowest area practical, installing surface protection measures, and using wide tracked or low ground pressure vehicles. • During construction activities, weather should be monitored to identify the potential onset of high wind conditions which can cause wind erosion. If high winds occur, protective measures such as the following will be implemented: ▪ Suspend earth moving operations. ▪ Apply dust suppressants. ▪ Protect soil stockpiles with a cover, barrier, or windscreen. • In conjunction with the above measures, all required materials, and equipment should be readily accessible and available for use as required. • On agricultural lands where soil has been compacted by the construction process, an agrologist should determine where decompaction may be necessary. Compaction can be alleviated by using farm equipment such as an agricultural subsoiler prior to replacing the topsoil. Sub-soiling with an agricultural subsoiler, bulldozer or similar, followed by discing, chisel ploughing and cultivating, to smooth the surface, should be considered on agricultural lands. In high traffic areas of the easement where deep	

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		compaction persists, additional deep tillage or subsoiling may be required on a site-specific basis. Soil density and/or penetrometer measurements on and off the easement may be used as a means of assessing the relative degree of soil compaction caused by construction along the easement as well as determining that the easement has been sufficiently decompacted. • If clean-up is not practical during the construction year, it should be undertaken in the year following construction, starting in May or June once the soils have sufficiently dried. Interim soil protection measures should be undertaken in sensitive areas to stabilize the easement for over-wintering.	
Soybean Cyst Nematode (SCN) *Section 3.3.6*	The potential exists for SCN to be spread from an impacted field to a non-impacted field by means such as contaminate machinery, wind, contaminated boots, and water erosion.	Enbridge Gas should consult with landowners of agriculture fields to determine if they would like to proceed with soil sampling for SCN. If a field is identified as having SCN, in consultation with potentially impacted landowners, the following mitigation measures should be considered: • All properties impacted with SCN should be identified and communicated to the contractor. A best practice protocol should be developed to mitigate the spread of SCN. • If an adjacent farm field has SCN, advise the contractor to remove soil from equipment before moving to the area that has not been impacted by SCN. This may involve thorough washing of equipment before moving equipment from an impacted field to non-impacted field. • If topsoil is required to be imported, it should be from approved sources to avoid it being contaminated.	With adherence to the best construction practices discussed in this report, no significant adverse residual impacts from SCN are anticipated.
Agricultural Tile Drainage *Section 3.3.7*	Construction activities, including trenching and the movement of heavy machinery, have the potential to crush and/or sever agricultural tile drains.	Enbridge Gas should undertake consultation with landowners of agricultural fields to confirm where tile drainage is present. If tile drainage is present, Enbridge Gas should undertake standard mitigation during trenching, including: • Develop site specific tile plans with an independent tile contractor. • Conduct pre-tiling and install header tile to maintain tile system function.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on agricultural tile drains are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• Excavate the pipeline trench to a depth that allows clearance between the top of the proposed pipeline and the bottom of existing drainage systems. • Record and flag severed or crushed tile drains. • If a main drain, header drain, or large diameter drain is severed, maintain field drainage and prevent flooding of the work area and adjacent lands through temporary repairs. • Cap the downstream side of severed drains that cross the trench to prevent the entry of soil, debris and rodents, as required. • Repair damaged and severed drains following construction. • After repair and before backfilling, invite the landowner to inspect and approve the repair.	
Natural Hazards and Regulated Areas *Section 3.3.8*	The probability of significant seismic activity in the Study Area is low; therefore, no potential impacts are anticipated. The likelihood of a flooding event interfering with Project construction is reduced by construction occurring outside of the spring freshet. A flooding event during construction could result in construction delays, soil erosion, sedimentation of a watercourse, trench slumping, and damage or loss of construction equipment and contamination of a watercourse because of equipment entering a watercourse. The nature of these impacts would depend on the spatial extent, duration, and magnitude of the flooding event. The likelihood of a high wind event interfering with Project construction is possible and would result in dust impacts to nearby properties and residents.	• If flooding necessitates a change in the construction schedule, affected landowners and regulatory agencies should be notified and construction should continue at non-affected locations. • Temporary workspaces should be located above the floodplain to the extent practical, unless necessary for watercourse crossings. • All work in the floodplain will be subject to a permit under O. Reg. 41/24 from SCRCA. • Mitigation and protective measures for high winds are found in the Air Quality and Noise section below.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from natural hazards or to regulated areas are anticipated.

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Biophysical Features

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Aquatic Features *Section 3.4.2*	A field investigation was conducted to confirm the presence of the identified watercourses. There is the potential to affect fish or mussels directly through impacts on water quality (erosion, sedimentation, and accidental spills), disruption and harassment (vibration and noise), and loss of habitat. Indirect impacts include restrictions to habitat use and fish passage. Long-term impacts can include changes to habitat such as substrate, increased erosion potential, and loss of in-stream cover and riparian shading.	• None of the watercourses at the proposed crossings support aquatic SAR that are regulated under Schedule 1 of SARA. <u>General Mitigation Measures</u> • In-water work for warmwater habitats is typically permitted from July 1 to March 14 (no in-water work from March 15 to June 30 (MNRF 2013). Booth Creek and Crooked Creek have been identified as warmwater features. All other watercourses in the Study Area will be treated as warmwater features unless field surveys determine otherwise. • Prior to removal of terrestrial vegetation cover, effective ESC measures should be in place to protect water quality from the effects of soil erosion. Disturbance to the area during construction should be limited and grubbing activities should be delayed until immediately prior to grading operations. • Soil exposure should be reduced prior to commencing construction, and the period that soil remains exposed for grading should be limited to the extent possible. • Temporary ESC measures should be monitored, maintained, and kept in place until work within or near a watercourse has been completed and stabilized. • Additional supplies should be kept on-site, in a readily accessible location, for maintenance and contingency purposes. Prior to construction, adequate quantities of the materials listed below, or comparable substitutions, should be on site to control erosion and sediment deposition: ▪ Spill kit ▪ Sediment control fencing ▪ Sediment control logs (i.e., SiltSoxx™) ▪ Straw bales ▪ Wooden stakes ▪ Sandbags ▪ Water energy dissipater ▪ Filter cloth	With the implementation of the mitigation and protective measures, no significant adverse residual impacts to aquatic features are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		▪ Water pumps with secondary containment (including stand-by pumps, sufficient lengths of hose and fish cages) • Construction material, excess material, construction debris, and empty containers should be stored a minimum of 30 m from watercourses, unless required during crossings. • Refueling of equipment should be undertaken 30 m from the watercourses to reduce potential impacts to surface water if an accidental spill occurs. If a 30 m refueling distance is not possible, and under approval from on-site environmental personnel and if approved by permit conditions, special refueling procedures for sensitive areas should be undertaken that include, at a minimum, using a two-person refueling system with one worker at each end of the hose and secondary containment, as needed. • Deleterious substances (fuel, oil, spoil) should be stored >30 m from the watercourse. Any such material that inadvertently enters a watercourse should be immediately removed in a manner satisfactory to the Environmental Inspector. If a 30 m distance is not possible, conditions noted under relevant permits should be followed so that a minimum required distance is implemented. • Contingency measures for accidental spills are outlined in **Section 7.2.4**. • Exposed soils surrounding watercourses should be seeded immediately following construction. Enhanced stabilization may be required. • Conditions of water crossings from the SCRCA, if applicable, are to be adhered to. <u>Dam and Pump Mitigation Measures</u> • All watercourse crossings will occur via the dam and pump method and will adhere to the DFO-Enbridge Gas Generic Watercourse Crossing Drawings (see **Appendix G**). • Downstream flows should be maintained using dam and pump techniques. • When dewatering the work area, dewatering operations should be managed to prevent erosion and/or release of sediment-laden or contaminated water to the waterbody (e.g. settling basin, filter bag, energy dispersion measures). An isolation/contamination plan	

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		should be designed and implemented to isolate temporary in-water work zones and maintain flow around the work zone. • The intakes of pumping hoses should be equipped with an appropriate device to avoid entraining and impinging fish (DFO 2026c). • Fish rescue plans should be developed on a site-specific basis and implemented by qualified professionals with the appropriate licence in place (i.e., Licence to Collect Fish for Scientific Purposes). • Following construction, stream beds should be restored to maintain slopes and tie-in with existing grades. Bed material should be replaced to match pre-construction conditions.	
Terrestrial Features *3.4.3*	<u>Designated Natural Features and Vegetation</u> Natural vegetation in the Study Area is comprised of meadow, forest, woodland, naturalized hedgerow communities, and wetlands. One wetland community (FODM9 / SWDM3-3) was identified during the roadside site investigation in September 2026. Detailed botanical and ELC surveys will be conducted in 2027 to confirm the presence and delineate the boundaries of wetlands in the Project footprint. Vegetation removal may be required in or adjacent to these natural areas to accommodate Project construction. Without appropriate mitigation measures, construction activities can adversely impact trees and other vegetation through soil compaction, removal of topsoil, and equipment encroachment, causing irreversible damage to roots or trunks and destroying the structural integrity of vegetation or soils. Filling, excavation, grading or trenching in the root area of a tree has the potential to cause irreversible damage. The potential impacts on wetlands during construction include accidental contaminant release, sedimentation and turbidity from surface runoff, introduction of invasive species and temporary lowering of the water table during	<u>Designated Natural Features and Vegetation</u> • Construction material, excess material, construction debris and empty containers should be stored away from adjacent wetlands. • Temporary workspace width should be reduced when working within 30 m of wetlands, where practical. • Staging areas should be located at least 30 m away from the edge of wetlands to the extent possible. • Clearing should be reduced to the extent possible in sensitive areas such as significant woodlands, wetlands, and along watercourses. • Municipal requirements or permits for tree cutting will be determined prior to construction. • Limits of the workspace should be clearly marked to reduce encroachment into adjacent natural areas and avoid unnecessary encroachment and tree removal. • Clearing should be done during dry soil conditions to the extent practical to limit disturbance to vegetation and terrain. • Select trees or other vegetation to be retained within approved work areas should be surrounded by temporary protective fencing or other measures before clearing or grading occurs and maintained until all construction work is completed in that area and the site is restored. Barriers should be large enough to encompass the essential root zone of the vegetation to be protected.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts to terrestrial features are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	trench dewatering. Clean-up and restoration activities to contain or remove contaminant and sediment releases can cause more damage to sensitive wetland ecology than the initial impact of the release; therefore, it is important to institute appropriate mitigation measures to reduce interactions with adjacent wetlands. <u>Wildlife, Wildlife Habitat, and Species at Risk (SAR)</u> The presence of woodlands, forests, and open habitats potentially provide SAR habitat. A field program will be developed and completed during the 2026 season to document the presence of SWH and SAR habitat in the Study Area. Potential impacts on wildlife populations from construction include direct loss of habitat (e.g., removal or alteration of habitat), direct mortality from animal-vehicle collisions from increased construction traffic, vibration, noise, and dust from construction machinery, and temporary avoidance behavior due to the presence of humans and equipment.	• Vegetation clearing should not be conducted within 30 m of a wetland unless required for site construction activity. • If work will occur in or near features with phragmites, equipment will be cleaned to avoid reuse of soil containing phragmites at other sites. • Implement clean equipment protocol using guidance from the Clean Equipment Protocol for Industry (Halloran et al. 2013). • Native topsoil should be preserved through topsoil salvage and separation. • High-traffic or erosion-prone areas should be revegetated with suitable protective cover during and post-construction. • Reclamation should involve seeding disturbed areas, and tree replacement at a minimum 3:1 ratio by area. Replacement of ornamental trees and shrubs are determined on an individual basis in consultation with impacted landowners. • If there is no suitable local native seed mix available, but seeding is deemed desirable to promote rapid revegetation of an area, a non-invasive annual nurse crop such as annual ryegrass should be used instead. • Purchased seed should be certified free of weeds. • If vegetation regeneration is unlikely immediately following construction (i.e., outside the growing season), slopes adjacent to wetlands should be stabilized using geogrids or weed-free mulch for a minimum of 30 m from the wetland. <u>Wildlife, Wildlife Habitat, and Species at Risk (SAR)</u> • Prior to construction activities, a worker awareness program should be implemented that includes details on SOCC and SAR identification and their associated habitat or nesting characteristics. • Equipment and vehicles should yield the road allowance to wildlife. • Trench operations should be followed as closely as practical with backfill operations, to facilitate the movement of wildlife across the trench.	

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• Gaps in stockpiles should be created, in consultation with a biologist, to allow for the potential movement of wildlife. • Fencing should be installed around deep excavations, excluding standard trench depths, to prevent wildlife entrapment. • The contractor should inform their personnel not to threaten, harass or injure wildlife. • If wildlife is encountered during construction, personnel are required to move away from the animal and wait for the animal to move off the construction site. SAR cannot be handled unless authorized by MECP and MNR. • A Registration under O. Reg. 75/26 of the SCA may be required if the Project impacts SAR and/or SAR habitat. • Tree removal should be limited to the extent possible and should avoid the active season for bats (March 15 – November 30). • Include nectar producing plants in the restoration seed mix(es) to provide habitat for monarch. • Avoid pesticide use in the Study Area and reduce application as much as possible. • Where practical, avoid vegetation clearing in milkweed patches during the monarch breeding season, when eggs, caterpillars or chrysalids may be present (June 1 to September 30). • Vegetation clearing should be avoided during the breeding season which is generally from April 1- August 31 in southern Ontario (ECCC 2026). Some birds nest outside of this window and are protected while active. Should vegetation clearing activities be unavoidable during this window, a mitigation program should be developed, which includes measures to reduce and avoid impacts to migratory birds and their nests (ECCC 2026). This program should include preventative and mitigation measures but may also include avoidance of clearing during key sensitive periods and in key locations. • Vegetation clearing during the core migratory bird nesting period shall be avoided to the greatest extent possible. If clearing must occur during this period, qualified personnel shall conduct nest surveys no later than five (5) days prior to clearing, using transect based or acoustic methods suitable to the habitat type. If active	

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		nests are found, a no-disturbance buffer appropriate to the species (typically 5 – 50 m) shall be established and maintained until fledging is confirmed. • Eastern Meadowlark may occur in meadows in the Study Area. Avoidance of work in these areas between May 1 and July 31 are recommended to avoid impacts to these species, which are protected under SARA. • Red-headed Woodpecker may occur in forested areas in the Study Area. Avoid tree cutting in these areas between May 1 and August 31 to avoid impacts to this species, which is protected under SARA. • Avoid impacts to nests for species with residence descriptions under SARA (e.g., Barn Swallow, Chimney Swift). If not possible, permitting under SARA may be required. • Exclusion fencing (e.g., silt fence) should be installed on both sides of the easement prior to activities occurring in areas identified as having turtles/amphibians/snakes or as being high potential, such as stream/river crossings, ponds, wetlands, and nesting areas in the gravel shoulders of road rights-of-way. • Consideration should be made for the use of fiber-based ESC materials in lieu of synthetic erosion control blankets/mats. • A daily survey of the active work area (i.e., prior to construction each day) should occur to check that no turtles have entered the area. Inspection of exclusion fencing at regular intervals throughout the active season (weekly, and after any rainfall events) is recommended. • In the unlikely event that a turtle enters the work area and is in immediate danger, a 30 m buffer should be placed on the work area, and construction activities should cease until the individual has vacated the work area on its own accord before recommencing construction activity. Alternately, the turtle should be relocated by a qualified biologist. • If a nesting turtle is observed or if a turtle nest is identified in the Study Area during construction, a 5 m buffer should be applied to the nest site, or 30 m to a nesting female, and maintained. Turtle nests should not be touched as it can damage eggs.	

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		• In the event of an injured turtle, the turtle should be transported to the Salthaven Wildlife Rehabilitation & Education Centre Inc., or another appropriate accredited wildlife rehabilitator.	

Socio-Economic Environment

Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Demographics *Section 3.5.1*	During construction residents and businesses in the Study Area may experience a general nuisance, and temporary disruption in the use and enjoyment of their property and in the use of local roads from associated vehicular traffic, dust, and equipment exhaust. Residents and business owners may experience temporary access disturbance. Construction activities also have the potential to disturb the perceived aesthetic value that residents place on their property and the area in general. Potential safety concerns for residents also exist at locations where properties, residents, and vehicles come in proximity to construction activities.	• Additional correspondence with residents and businesses adjacent to the Project should be held in advance of construction commencement. Contact information for a designated representative should be available prior to and during construction to address questions and concerns. • Mitigation and protective measures are noted in the Air Quality and Noise section below. • Construction should be conducted as expeditiously as possible, to reduce duration of activities. • Tree removal should be reduced to the extent possible. Where tree removal is necessary, re-vegetation should occur in consultation with the landowner. Vegetative buffers at watercourse and road crossings should be restored where feasible. • Access to driveways and roads should be maintained as practical during the construction period. • The Contractor should protect lawns against damage by spoil, using tarpaulins, and/or plywood sheets. Wherever necessary, the Constructor must provide crossings to permit the landowner or tenant to have access to their property. • Safety fence should be installed at the edge of the construction area where public safety considerations are required. • The contractor should implement a Traffic Management Plan for all roads affected by construction, which at a minimum outlines measures to: ▪ Control the movement of materials and personnel to and from the construction site. ▪ Post signs to warn oncoming motorists of construction activity. ▪ Control traffic at road crossings.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on residents or businesses are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
		▪ Reduce on-road disturbance and land closures. ▪ Store equipment as far from the edge of the road as practical. ▪ Install construction barricades at road crossings.	
Employment and Business *Section 3.5.2*	Project demands for labour and goods and services can result in both beneficial and adverse effects. Positive effects may not be evenly distributed among populations, with some residents in a better position to receive economic benefits than others. Similarly, adverse effects may affect some residents more than others. Residual effects on employment are related to the Project's labour demand compared to the labour supply. Three types of employment are considered: • Direct employment: labour that is hired directly for the Project. • Indirect employment: labour hired by companies to produce and provide goods and services needed for the Project. • Induced employment: labour hired by industries that produce and provide consumer items and services purchased by people who are directly or indirectly employed by the Project. Labour conditions will be affected by direct, indirect, and induced employment during all Project phases. The Project could affect business through purchases of labour, goods, and services from local businesses, including businesses owned by Indigenous peoples, and will result in increased local employment income and municipal government revenue. Local businesses will likely benefit from supplying the Project with goods and services.	• It is expected that the Project will generally result in positive effects on employment by employing local and Indigenous people, and by reducing the unemployment rate in the County. These positive effects do not require mitigation, but Enbridge Gas should identify and implement various mechanisms to enhance project benefits. • The potential effects of the Project because of purchasing labour, goods, and services is expected to be positive during construction and operation, so no mitigation will be required. However, Enbridge Gas has and will continue to work with local and Indigenous businesses to enhance their potential for successfully bidding on Project contracts regarding the supply of goods and services, particularly for the operation phase. One initiative to help encourage further local and Indigenous content on the Project is to post Project purchasing requirements in advance, so that businesses can position themselves to effectively bid to supply goods and services needed for construction and operation. Increased participation of local and Indigenous businesses will enhance positive local economic effects.	With the aforementioned initiatives to encourage local and Indigenous participation on the Project, it is anticipated that the effects from the Project on employment and business will be positive, including creating positive economic activity through new direct, indirect, and induced employment. Project expenditures on local businesses and suppliers also have the potential to positively affect the local economies. Consultation with residents and businesses will address any concerns to their operations. With the implementation of the mitigation and protective measures, no significant adverse residual impacts on employment and business are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Community Services and Infrastructure *Section 3.5.3*	The presence of temporary workers in the local communities during the construction period has the potential to increase the demand for housing and local community services and infrastructure. Non-local Project workers are expected to stay in temporary accommodations, including hotels, motels, and campgrounds. Non-local Project workers may also choose to rent cottages or apartments. The vacancy rate for temporary rentals will likely be able to accommodate the temporary increase. The short duration of the Project, as well as the structure of the work shifts, will limit the need for workers to use the services and infrastructure in local communities. The transportation of Project goods, services, and workers has the potential to lead to increased use of existing transportation infrastructure. Also, increased traffic volumes along local road networks could increase travel times and reduce road safety, which might lead to increased use of local emergency services due to potential vehicle accidents and workplace accidents. In addition, the production of Project-related waste could place additional stress on the capacity of local landfills.	• Project employees might require medical attention while staying in the area. The contractor and Enbridge Gas should have emergency response equipment and trained personnel on-site during construction. In addition, an Emergency Response Plan will be developed and implemented, which will address field health services, emergency call-out procedures, and fire response plans. Safety fencing will be used where necessary to separate the work area. • Environmental mitigation will be in place to reduce the likelihood of emergency events and to prepare for the management of emergency events on site. If an emergency incident were to occur, it is anticipated that the comprehensive mitigation, contingency plans, and safety strategies will result in a localized and low-intensity response. • A Traffic Management Plan will be in place for all roads affected by construction, see row “Demographics Section 3.5.1”. • The capacity of waste disposal sites will be considered and if Project needs are not easily accommodated, alternative disposal locations will be considered. • Enbridge Gas should provide Project information to local communities and service providers so that they are prepared for any possible demand on community services and infrastructure related to a temporary population increase. Additional correspondence with residents and businesses adjacent to the Project footprint will be held in advance of construction commencement to discuss potential specific impacts to the property or business. Contact information for a designated Enbridge Gas representative should be available to address questions and concerns during construction. Consultation has been initiated and should continue with municipal personnel. • Approvals should be obtained from the municipalities for all road crossings.	Community services and infrastructure appear to have additional capacity to absorb potential increased temporary demands that may result from the Project, if not in the Study Area, then in adjacent communities. Adverse effects on traffic will be minimal because of the rural nature in the Study Area where roads currently have low levels of traffic and alternative routes are readily accessible. Given the available capacity of community services and infrastructure, along with the implementation of the mitigation and protective measures, no significant adverse residual impacts on community services and infrastructure are anticipated.
Culture, Tourism and Recreational Facilities *Section 3.5.4*	The Project will result in no impacts to culture, tourism, or recreational facilities.	• As no impacts to land use designations are anticipated, no mitigation or protective measures are recommended.	As no impacts to culture, tourism, or recreational are anticipated, no net impacts will be present.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Air Quality and Noise *Section 3.5.5*	Residential, agricultural, and business properties may experience noise, dust and equipment exhaust associated with construction activity. During operation, no substantial air or noise emissions are anticipated to occur.	• During construction, motorized construction equipment should be equipped with appropriate mufflers and silencers as available. Company and construction personnel should avoid excessive idling of vehicles; vehicles and equipment should be turned off when not in use unless required for operation. To the greatest extent practical, activities that could create noise should be restricted to daylight hours. Sources of continuous noise, such as portable generators, should be shielded or located to reduce disturbance to residents and businesses. • The contractor should implement site practices during construction that are in line with the Environment Canada document 'Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities' (Cheminfo Services Inc. 2005), which may include: ▪ Maintaining equipment in compliance with regulatory requirements ▪ Covering loads of friable materials during transport ▪ Dust suppression of source areas ▪ Watering for dust control must not result in the formation of puddles, rutting by equipment or vehicles, the tracking of mud onto roads or the siltation of watercourses	With the implementation of the mitigation and protective measures, no significant adverse residual impacts from air quality and noise are anticipated.
Land Use *Section 3.5.6*	Natural gas pipelines and their associated facilities/structures are permitted land uses, and there are no proposed changes to land use.	• As no impacts to land use designations are anticipated, no mitigation or protective measures are recommended.	As no impacts to land use designations are anticipated, no net impacts will be present.
Landfills and Contaminated Sites *Section 3.5.7*	Improper disposal of waste material generated during construction may result in contamination to soil, groundwater, and/or surface water resources on and off the construction site. Litter generated during construction may also become a nuisance to adjacent properties if not contained. No active landfills or contaminated sites are along the pipeline route or are in the Study Area. The pipeline route is not expected to cross or be in the vicinity of lands that may have contaminants of concern, however the application of road salt for de-	• All construction wastes should be disposed of in accordance with applicable regulations. Additionally, Enbridge Gas should undertake responsible management of excess fill. When details on excess fill volumes are known, disposal locations should be determined, and appropriate permitting obtained. • A site-specific waste collection and disposal management plan should be implemented, which may include: ▪ Waste materials, sanitary waste, and recycling transported off-site by private waste contractors licensed by the MECP. ▪ Contractors required to remove their excess materials from the site.	With the recommended mitigation measures in place to properly test, treat, and dispose of contaminated water/soils, no significant adverse residual impacts from contamination are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
	icing activities along the roadways in the Study Area represent a potential source of contamination.	▪ Labelling and storage of hazardous and liquid wastes in a secure area that would contain material in the event of a spill. ▪ Implementation of a waste management program consisting of reduction, reuse, and recycling of materials. ▪ Should contaminated soils be encountered during construction (e.g., if observed material contains anthropogenic substances, petroleum hydrocarbon/solvent odours/staining, sheen, and debris/waste), construction will cease, and the Enbridge Suspect Soil Program will be implemented. Representative soil samples should be collected for chemical analysis to determine appropriate handling or disposal requirements as well as to identify necessary health and safety requirements. • Should excess soil be generated on-site during construction activities that will require off-site management, soil will be managed in accordance with *O. Reg 406/19*. Should the project meet the Reuse Planning Requirements of *O. Reg 406/19,* the associated reporting, soil sampling, and chemical analysis and registry requirements will be completed. • The potential for leachate or landfill gas to interact with the hydrogeologic and geologic settings of the Project is outlined in the D-4 Guideline. Similar to the assumption made on contaminated soils, Enbridge Gas will assume and treat any water that is dewatered as suspect, either through testing or proper disposal.	
Archaeological Resources *Section 3.5.8*	The Stage 1 Archaeological Assessment has determined that the majority of the Study Area retains potential for the recovery of archaeological resources. Construction has the potential to impact areas that retain archaeological potential and unidentified cultural resources.	• A Stage 2 Archaeological Assessment (and further stages of assessment, if recommended) will be carried out as early as possible and prior to any ground disturbing activities. • The results of the Stage 2 Archaeological Assessment will provide recommendations for further assessment, protection, and mitigation of archaeological resources. Where feasible for the Project, archaeological sites that are determined to retain further cultural heritage value and interest should be mitigated in whole or in part by avoidance and preservation. If it should evolve that avoidance and preservation is not feasible, the site or sites should be mitigated by the implementation of Stage 3 and 4 salvage excavations in discussions with the appropriate Indigenous communities.	With the Stage 2 Archaeological Assessment and implementation of subsequent mitigation and protective measures, if necessary, no significant adverse residual impacts to archaeological resources are anticipated.

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Environmental Feature(s)	Potential Impact(s)	Mitigation and Protective Measures	Net Impacts
Built Heritage Resources and Cultural Heritage Landscapes *Section 3.5.9*	Depending upon the final Project footprint, construction may occur within 50m of built heritage resources that could be impacted from vibration.	Avoidance of construction activities within 50 m of built heritage resources is recommended. Where avoidance is not feasible, a pre-construction vibration assessment should be completed by a qualified building condition specialist or engineer to determine whether condition surveys, vibration monitoring, or site plan controls are required.	With the implementation of the mitigation and protective measures, no significant adverse residual impacts on built heritage resources or cultural heritage landscapes are anticipated.

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6 Cumulative Effects Assessment

The recognition of cumulative effects assessment as a best practice is reflected in many regulatory and guidance documents. Regarding the development of hydrocarbon pipelines in Ontario, the OEB *Environmental Guidelines* (2023) notes that cumulative effects should be identified and discussed in the ER.

Building upon the intent of the OEB *Environmental Guidelines* (2023), the OEB has specified that only those effects that are additive or interact with the effects that have already been identified as resulting from the Project are to be considered under cumulative effects. In such cases, it will be necessary to determine whether these effects warrant mitigation measures. The cumulative effects assessment has been prepared with consideration of this direction from the OEB.

6.1 Methods

The cumulative effects assessment describes the potential cumulative effects resulting from the interaction of residual effects of constructing and operating the proposed Project with the effects of other unrelated projects. The other projects assessed are those that are either existing or approved and that have a high likelihood of proceeding.

Cumulative effects include the temporal and spatial accumulations of change that occur in an area or system due to past, present, and future activities. Change can accumulate in systems by either an additive (i.e., cumulative) or interactive (i.e., synergistic) manner. Positive residual effects have not been assessed in the cumulative effects assessment.

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

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

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

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

6.2 Study Boundaries

Spatial

To make assumptions about the magnitude and probability of effects, an approximate 100 m boundary around the Project was used for the cumulative effects assessment. The 100 m boundary has been found, through previous experience with pipeline construction, to be appropriate for the most encountered net effects.

Temporal

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

1. ER and Technical Design – 2026/2027
2. Construction – 2028
3. Operation and Maintenance – 2029 to 2079*

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

Based upon these milestone activities, two time periods were selected for evaluation: 2028 and 2032. The year 2028 was selected to represent the construction period, and the year 2032 was selected to represent the operation and maintenance period. Forecasting beyond 2032 increases the uncertainty in predicting whether projects will proceed, and the effects associated with these projects.

6.3 Project Inclusion List

As part of the study of cumulative effects, projects that are either currently existing, and those that have been approved and are scheduled (or likely to be scheduled) during the construction period and early operation and maintenance of the Project, were reviewed. The Project inclusion list was developed by reviewing publicly available information on projects and activities whose effects could potentially interact with the identified effects of the proposed Project in the spatial and temporal study boundaries. The following resources were reviewed:

- Canadian Energy Regulator, Major Facilities Applications (Canadian Energy Regulator, 2026)
- County of Lambton, 2026-2030 Roads Construction Program (County of Lambton, 2026b)
- Government of Ontario, Environmental Assessment Projects by Category (Government of Ontario, 2026a)
- Government of Ontario, Ontario Builds (Government of Ontario, 2026b)
- Government of Ontario, Renewable Energy Projects Listing (Government of Ontario, 2026c)
- Impact Assessment Agency of Canada, Canadian Impact Assessment Registry (IAAC, 2025)
- MTO, Ontario’s Highways Program Interactive Map (2026-2027) (MTO, 2026)
- OEB Applications Currently Before the Board (facilities applications only) (OEB, 2021)

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Based on the review of publicly available resources, there were no projects for consideration of cumulative effects. It is assumed that on-going improvements, upgrades, and maintenance to municipal infrastructure such as bridges, culverts, drains, electrical utilities, municipal developments, or roads may occur in the spatial and temporal study boundaries outlined above.

6.4 Analysis of Cumulative Effects

The ER considers the potential impacts of the Project on specific features and conditions and proposes mitigation and protective measures to eliminate or reduce the potential impacts. The cumulative effects assessment evaluates the significance of residual impacts (after mitigation) of the Project along with the effects of other unrelated projects.

6.4.1 Construction – Year 2028

Residual Project impacts which may occur during Project construction are outlined in **Table 5.1**. To consider the additive and interactive effects at their maximum intensity, the cumulative effects assessment assumes that construction of other unrelated projects and the proposed Project construction will occur concurrently.

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

Soil

Soil erosion is a potential residual effect associated with construction of the Project. Provided that concurrent projects implement similar mitigation and protective measures as those outlined in this report, including monitoring as outlined in **Sections 7.1.2 and 7.1.3**, the probability of erosion control failure occurring concurrently is predicted to be of low probability and magnitude, and short duration. As such, adverse cumulative residual effects from erosion are not anticipated to be significant.

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Reduced crop yield is also a potential residual effect associated with construction of the Project. It is assumed that the previously disturbed soil along the NPS 26 experiences reduced crop yield compared to undisturbed soil; this impact is anticipated to remain following construction. The previously disturbed soil will be disturbed again where sections of the NPS 26 will be removed, resulting in a cumulative residual effect.

This cumulative residual effect will be mitigated through the soil handling techniques outlined in **Table 5.1**. A review of previous crop monitoring studies determined that construction and clean-up practices have improved over time and now result in improvements in crop yield performance compared to previous practices. In fact, the most recent crop monitoring study conducted by Enbridge Gas determined that five years following construction the majority of assessed fields had equal to or greater than crop counts and biomass weights compared to undisturbed soil, reflecting the positive benefit of current soil handling techniques. As such, while previously disturbed soil impacts are anticipated to remain, adverse cumulative residual effects on crop yield due to soil disturbance for the current Project will be of short duration, will be managed through agreement with Enbridge Gas, and are not anticipated to be significant.

Vegetation

Where there is natural vegetation in or adjacent to the Project footprint, potential impacts include the removal of native vegetation, and indirect effects such as dust, erosion, and accidental spills. However, with the implementation of the mitigation and protective measures outlined in this report, such as 3:1 vegetation replanting, and provided that concurrent projects implement similar mitigation and protective measures as those outlined in this report, cumulative effects on vegetation are predicted to be of low magnitude and adverse residual cumulative effects are not anticipated to be significant.

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Wildlife and Wildlife Habitat

Potential residual effects on wildlife and wildlife habitat associated with construction of the Project are accidental direct mortality, habitat removal and degradation, and sensory disturbance. Provided that concurrent projects implement similar mitigation and protective measures as those outlined in this report, including monitoring as outlined in **Section 7.1.5**, and vegetation replanting as discussed above, cumulative effects on wildlife and wildlife habitat are predicted to be of low magnitude and probability, and therefore adverse residual cumulative effects are not anticipated to be significant.

Air Quality and Acoustic Environment

Project construction will lead to an increase in noise and air pollutants from operation of vehicles and equipment, and an increase in dust from construction activities. Provided that the concurrent projects implement similar mitigation and protective measures as those outlined in this report, cumulative effects are predicted to be of low magnitude and reversible. Therefore, adverse residual cumulative effects on air quality and the acoustic environment are not anticipated to be significant.

6.4.2 Operation and Maintenance – Year 2032

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

- Road works: Future road rehabilitation and resurfacing
- Water works: Future installation of water and wastewater pipelines
- Pipeline construction and maintenance: Future pipeline construction and maintenance (including integrity digs) of existing hydrocarbon pipelines

Operation and maintenance of the Project will have relatively little impact on the environment. On a day-to-day basis there is no operational noise that is anticipated to occur following Project construction. Should an integrity dig be necessary, this will be the only anticipated instance when the Project would have potential temporary impacts during its operation.

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Consultation will continue with municipal staff and other utilities that intersect with the Project to identify new projects that may occur concurrently with the proposed Project operation. New projects could include municipal road and infrastructure upgrades and maintenance programs. There is the potential that cumulative effects may occur for residual impacts as outlined in the ER related to accidental spills, ESC, and residents.

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

6.5 Summary of Cumulative Effects

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

The cumulative effects assessment determined that, provided the mitigation and protective measures outlined in this report are implemented and that concurrent projects implement similar mitigation and protective measures, potential cumulative effects are not anticipated to occur, or if they do occur are not anticipated to be significant.

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7 Monitoring and Contingency Plans

7.1 Monitoring

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

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

- Trained personnel should be on-site to monitor construction and should be responsible for checking that the mitigation and protective measures and monitoring requirements in the ER are executed. Enbridge Gas should implement an orientation program for inspectors and contractor personnel to provide information regarding Enbridge Gas' environmental program and commitments, as well as safety measures.
- Construction techniques, procedures, and contract provisions that will be applied by the contractor during construction. Agency notification requirements, permits required during the construction phase, and monitoring program descriptions - including sampling - will be shared with the contractor and adhered to.
- A walking inspection of the Project footprint should be completed three (3) months and fifteen (15) months after the in-service date to determine whether areas require further rehabilitation or as required by OEB conditions of approval.

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

7.1.1 Exposed Soils

Where soils are exposed for construction activities, potential effects may include surface soil erosion and sedimentation of watercourses. Improper water discharge can lead to erosion and sedimentation. Monitoring of potential effects on exposed soils should occur by Enbridge Gas' on-site inspection team and the Environmental Inspector.

7.1.2 Water Wells

A Water Well Monitoring Program should be implemented prior to construction to determine preconstruction quality and quantity conditions.

The proposed monitoring program should include delivery of notification letters to all potential groundwater users within a certain distance of the pipeline route. Due to well access limitations and resident's willingness to participate in the Water Well Monitoring Program, it will not be possible to monitor every well within the selected distance; typically, response rates for this type of request ranges between 10 and 20 percent. The notification letter will detail the proposed Project construction and the potential risk of well interference, as well as include appropriate contact information for Enbridge Gas.

Landowner complaints regarding well interference received during or after the construction period, whether the landowner is a participant in the Water Well Monitoring Program or not, should be investigated individually as described in **Section 7.2.1**.

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7.1.3 Watercourse Crossings

An Environmental Inspector should be on-site during the watercourse crossings to monitor adherence to requirements, that pre-construction preparation is complete prior to commencement of any work, and that conditions are restored to as close to preconstruction conditions as possible.

Follow-up inspections, summarized in monitoring reports, will be completed to assess the state of restoration. Appropriate remediation measures will be completed as necessary, and additional follow-up monitoring will be conducted.

7.1.4 Vegetation

Where required, re-establishment of vegetative cover should be monitored. Sediment control fencing and other protective measures should be retained in place until cover is fully established. Should any new trees be planted as part of compensation plans, a year following construction, any planted trees should be inspected for survival. In areas of severe dieback, dead and diseased trees should be replaced.

7.1.5 Species at Risk

Should the presence of SAR be identified in the Study Area, construction monitoring will need to be undertaken. The exact nature of monitoring will be determined in consultation with applicable agencies and as per regulatory requirements.

7.1.6 Residents and Businesses

Construction activities may impact directly affected landowners and surrounding residents and businesses. During construction, a designated Enbridge Gas representative should be available to monitor and respond to requests and concerns voiced by residents and business owners. Landowners affected by construction should be notified in advance of construction activities in their area, as feasible. The notification should provide the contact information for a designated Enbridge Gas representative.

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

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

Following completion of construction, Enbridge Gas should contact residents and businesses along the easement to continue ongoing communications where necessary. During the first 15 months particular attention should be paid to monitoring and documenting impacts associated with construction and restoration of the Project.

7.1.7 Municipal Roads

Roads affected by Project construction should be restored to their pre-construction conditions to the satisfaction of the appropriate authorities' engineers. Road Superintendents should be given an opportunity to inspect any repairs or modifications. Once re-established, the crossing location of roads should be monitored to ensure no road subsidence or major rutting has occurred and that the drainage system is functioning properly.

7.1.8 Cultural Heritage Resources

Any cultural heritage resources within 50 m of the proposed pipeline will require site plan controls that will need monitoring. In addition, if a vibration assessment results in additional mitigation measures, these will need to be monitored where construction activities occur within 50 m of a cultural heritage resource.

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7.2 Contingency

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

The following unexpected events require contingency planning during construction: contaminated sites, private water well complaint, watercourse sedimentation, accidental spills, and unexpected finds.

Although unexpected problems are not anticipated to occur during construction, Enbridge Gas and the pipeline contractor should be prepared to act when unexpected events occur. Construction personnel should be made aware of and know how to implement contingency measures prior to starting any activities in the field.

7.2.1 Contaminated Sites (Suspect Soils Program)

Efforts have been made to identify potentially contaminated sites in the vicinity of Study Area through a review of readily available information. Through circulation of the ER, the MECP will have an opportunity to review if other unknown areas of potential contamination may exist.

Regardless, the potential exists for unknown material to be encountered during construction. If evidence of potential contamination is found, such as buried tanks, drums, oil residue or gaseous odour, construction should cease, and Enbridge Gas's Suspect Soil Program should be implemented.

If potentially contaminated sites are encountered, the on-site contractor supervisor and owner representative should be notified immediately, as well as the following:

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- Enbridge's Environment Department
- Enbridge's designated Environmental Inspector

7.2.2 Private Water Well Complaint

Enbridge Gas' Private Water Well Complaint contingency plan should be implemented in the unlikely event that residential well complaints arise during or after construction. The depth and existing condition of a given well is a significant factor in whether the well may be adversely impacted by nearby construction activities. The objective of any investigation related to interference of private water supply is to respond to the resident expediently and courteously and ultimately arrive at a resolution that is agreeable to both Enbridge Gas and the well owner.

In the event a resident registers a complaint with Enbridge Gas regarding a reduction of well water quality and/or quantity, Enbridge Gas will offer to arrange immediate provision of temporary potable or non-potable water, depending on the resident's needs, until the matter is resolved.

Enbridge Gas will also offer to have a qualified hydrogeologist complete a well inspection, subject to the well owner granting permission. The hydrogeologist will visit the site to discuss the complaint with the resident and inspect the well and related complaint to the extent possible. The hydrogeologist will then provide advice to Enbridge Gas on further assessment if required, or advice on possible remedial options should they determine that the complaint may be related to the Project's construction works.

7.2.3 Watercourse Sedimentation

Properly installed ESC measures are designed to reduce the risk of sediment laden runoff being transported towards watercourses and other natural heritage features. Extreme runoff events could result in collapse of silt fencing, overflow or bypass of

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barriers, slope or trench failures, and other problems which could lead to sedimentation of watercourses.

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

7.2.4 Accidental Spills

During construction, there is the potential for an accidental spill to occur. The impact of the spill will depend upon the magnitude and extent of the spill, and the environmental and socio-economic conditions in which it takes place.

Upon release of a hydrocarbon-based construction fluid, Enbridge Gas should immediately determine the magnitude and extent of the spill and rapidly take measures to contain it. Release of sediment should also be treated as a potential spill depending on the magnitude and extent.

Spills should be immediately reported to Enbridge Gas' on-site inspection team and Environment Department. The MECP Spills Action Center should be notified at 1-800-268-6060. If requested through consultation, other stakeholders identified on the Project contact list should be notified of reportable spills.

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

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7.2.5 Unexpected Finds: Archaeological or Heritage Resources

Should previously undocumented archaeological resources be discovered, they may constitute 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. A site-specific response plan should then be employed following further investigation of the specific find. The response plan would indicate under which conditions the ground disturbance activity in the find location may resume.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (Government of Ontario 2002) requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Government and Consumer Services (1-800-889-9768). If the coroner does not suspect foul play in the disposition of the remains, in accordance with O. Reg. 30/11, the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the MCM should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

Enbridge Gas is committed to notifying and keeping interested Indigenous communities engaged on any unearthed artifacts and/or human remains discovered in relation to all their Projects.

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8 Conclusion

The environmental study investigated data on the physical, biophysical, and socio-economic environment along the pipeline route and related facilities. In the opinion of Stantec, the recommended program of supplemental studies, mitigation, protective, and contingency measures are considered appropriate to protect the features encountered. Monitoring will assess that mitigation, and protective measures, have been effective in the short and long term.

With the implementation of the recommendations in this Report, continued engagement and consultation, and compliance with applicable permit, regulatory, and legislative requirements, potential adverse residual environmental and socio-economic impacts of the Project are not anticipated to be significant.

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9 References

AECOM. 2021. Lambton Area Water Supply System (LAWSS) Water Master Plan Update. Public Information Centre (PIC) 2. Available online at: https://www.lawss.org/sites/default/files/Final%20PRES-2021-03-16-LAWSS_Water%20MP%20Update_PIC2-60624749%2011x17.pdf. Accessed September 2026.

Air Quality Ontario. (2026). Sarnia: Current Air Quality Health Index (AQHI). Retrieved from https://www.airqualityontario.com/aqhi/today.php?stationid=14111&submit_station=Choose+station

Cadman, M. D., Sutherland, D.A., Beck, G.G., Lepage, D., and A.R. Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. (eds) Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706pp. Available: http://www.birdsontario.org/atlas/index.jsp

Chapman and Putnam, 1984. The Physiography of Southern Ontario. 3rd Edition. Published by the Government of Ontario, Ministry of Natural Resources.

Cheminfo Services Inc., 2005. Best Practices for the Reduction of Air Emissions From Construction and Demolition Activities. Prepared by Cheminfo Services for Environment Canada. Available online: http://www.bieapfremp.org/Toolbox%20pdfs/EC%20-%20Final%20Code%20of%20Practice%20-%20Construction%20%20Demolition.pdf.

Conseil scolaire Viamonde. 2021. Trouver une ecole. Available at: https://csviamonde.ca/nos-ecoles/trouver-une-ecole/.

DRAFT

Conseil scolaire catholique Providence n.d. Trouver une ecole. Available at: https://www.cscprovidence.ca/apps/pages/index.jsp?uREC_ID=1109666&type=d&pREC_ID=1368336.

COSEWIC 2004. COSEWIC assessment and status report on the American chestnut Castanea dentata in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 19 pp.

COSEWIC. 2011a. COSEWIC assessment and status report on the False Hop Sedge Carex lupuliformis in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 35 pp

COSEWIC. 2011b. COSEWIC assessment and status report on the barn swallow Hirunda rustica in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp. (www.sararegistry.gc.ca/status/status_e.cfm)

COSEWIC. 2023. Hoary Bat (Lasiurus cinereus) Eastern Red Bat (Lasiurus borealis) Silver-haired Bat (Lasionycteris noctivagans): COSEWIC assessment and status report 2023. Available online: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/hoary-bat-eastern-red-bat-silver-haired-bat-2023.html

County of Lambton. 2019a. Resident Services. Available at: https://www.lambtononline.ca/en/resident-services/resident-services.aspx.

County of Lambton. 2026b. Resident Services – Construction Projects. Available at: https://www.lambtononline.ca/en/resident-services/construction-projects.aspx.

County of Lambton. 2020. Official Plan. Available at: https://www.lambtononline.ca/en/business-and-development/official-plan.aspx. Accessed September 2026.

DRAFT

County of Lambton. N.d. County Road Network. Map. Available at: https://www.lambtononline.ca/en/resident-services/resources/Documents/Roads/County-Road-Network.pdf.

DFO [Fisheries and Oceans Canada], 2026a. Aquatic Species at Risk Mapping. Available at: http://www.dfo-mpo.gc.ca/species-especes/fpp-ppp/index-eng.htm.

DFO [Fisheries and Oceans Canada], 2026b. Measures to Avoid and Mitigate Risks to Fish and Fish Habitat. Available at: http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures.html.

DFO [Fisheries and Oceans Canada], March 2026c. Water intake end-of-pipe fish screens. Available at: Water intake end-of-pipe fish screen

Dobbyn, J., 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists.

eBird Canada, 2026. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available at: http://www.ebird.org. Accessed September 2026.

ECCC [Environment and Climate Change Canada]. 2018. Little Brown Myotis (Myotis lucifugus), the Northern Myotis (Myotis septentrionalis), and the Tri-colored Bat (Perimyotis subflavus): recovery strategy 2018. Available online: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/little-brown-myotis-2018.html

Environment and Climate Change Canada, 2026. Severe thunderstorms and tornadoes. Government of Canada. https://www.canada.ca/en/services/environment/weather/severeweather/severe-thunderstorms-tornadoes.html.

DRAFT

Environment Canada, 2020. General nesting periods of migratory birds. https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html.

Farrar, J.L., 1995. Trees in Canada. Fitzhenry & Whiteside Limited and the Canadian Forest Service. Canada. 398 pp.

Google. 2026. Google Earth Pro. Available online: https://www.google.ca/earth

Government of Canada. 1985. Fisheries Act. R.S.C. 1985, c. F-14. Last amendment November 2024. Electronic document. http://laws-lois.justice.gc.ca/eng/acts/F-14/

Government of Canada. 1994. Migratory Birds Convention Act, S.C. 1994, c. 22. Last amendment 2017. Electronic document. http://laws-lois.justice.gc.ca/eng/acts/m-7.01/

Government of Canada. 2002. Species at Risk Act. S.C. 2002, c. 29. Last amendment February 2026. Electronic document. http://laws.justice.gc.ca/eng/acts/S-15.3/

Government of Ontario. 1990. Ontario Water Resources Act, R.S.O. 1990, c. O.40. Last amendment: 2021, c. 2, Sched. 11, s. 4. Electronic document: https://www.ontario.ca/laws/statute/90o40#top.

iNaturalist. 2026. Search Directory. Available online: https://www.inaturalist.org/places/canada. Accessed September 2026.

IAAC [Impact Assessment Agency of Canada], 2021. Canadian Impact Assessment Registry. Available online: https://iaac-aeic.gc.ca/050/evaluations.

Infrastructure Ontario [Government of Ontario], No date. Instructure Ontario Projects – Interactive Map. Available at: https://www.ontario.ca/page/building-ontario.

Kaposi, D., Macnaughton, A., and Edwards, B. Ontario Moth Atlas. Available online: https://ontarioinsects.org/moth/part2.html. Accessed September 2026.

DRAFT

Lambton County. 2019. County of Lambton: Landfills. Available online: https://www.lambtononline.ca/en/resident-services/landfills.aspx#Dawn-Landfill.

Lambton County. 2020. County of Lambton Official Plan. October 1, 2020 Office Consolidation. Available online: https://www.lambtononline.ca/en/business-and-development/resources/Documents/PlanningandDevelopment/OfficialPlan/Lambton-County-Official-Plan---In-force---Oct.-2020.pdf.

Lambton Kent District School Board. 2017. Google Map of LKDSB School Locations. Available online: https://www.lkdsb.net/Elementary/ElementarySchools/Pages/default.aspx#/=.

LAWSS [Lambton Area Water Supply System]. N.d. About. Available online: http://www.lawss.org/about.

Lee, H., Bakowsky, W., Riley, J., Bowles, J., Puddister, M., Uhlig, P., McMurray, S. 1998. Ecological Land Classification for Southern Ontario. Available online: https://www.ontario.ca/files/2024-10/mnr-psd-ecological-land-classification-for-southern-ontario-2024-10-07.pdf

Macnaughton, A., Layberry, R., Cavasin, R., Edwards, B, and Jones, C. Ontario Butterfly Atlas. Available online: https://www.ontarioinsects.org/atlas/part2.html. Accessed September 2026.

Mathews, B.C., Richards, N.R., Wicklund, R.E. 1957. Soil Survey of Lambton County. Report number 22 of the Ontario Soil Survey. Experimental Farm Service, Canada Department of Agriculture and the Ontario Agricultural College. pp.71.

MCM [Ministry of Citizenship and Multiculturalism]. 2022. Regional tourism profile: Region 1: Southwest Ontario. Retrieved from https://www.ontario.ca/document/tourism-regions/region-1-southwest-ontario

DRAFT

MECP [Ministry of the Environment, Conservation and Parks], 2013. Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning (NPC-300). Retrieved from: https://www.ontario.ca/page/environmental-noise-guideline-stationary-and-transportation-sources-approval-and-planning

MECP [Ministry of Environment, Conservation and Parks]. 1994. D-4 Land Use On or Near Landfills and Dumps. Available online: https://www.ontario.ca/page/d-4-land-use-or-near-landfills-and-dumps.

MECP [Ministry of Environment, Conservation and Parks]. 2026a. Source Protection Information Atlas. Retrieved on September 4, 2026 from www.gisapplication.lrc.gov.on.ca/SourceWaterProtection/Index.html?site=SourceWaterProtection&viewer=SWPViewer&locale=en-US

MECP [Ministry of Environment, Conservation and Parks]. 2026b. Water Well Records. Available online: https://www.ontario.ca/environment-and-energy/map-well-records. Accessed September 2026.

MECP [Ministry of Environment, Conservation and Parks]. 2026c. Landfill sites map. Available online: https://www.ontario.ca/page/landfill-sites-map. Accessed September, 2026.

MECP [Ministry of Environment, Conservation and Parks]. 2021. Ontario Landfills - Data. Available online: https://data.ontario.ca/dataset/ontario-landfills/resource/b7c52570-83bd-40a7-939a-8eb3742c4140. Accessed September, 2026.

MECP [Ministry of the Environment, Conservation and Parks]. 2026. Protected Species in Ontario List. Available online: https://www.ontario.ca/laws/regulation/r26060. Accessed September, 2026.

DRAFT

Ministry of Education. 2022. Find an elementary or secondary school – Interactive Map. Retrieved from: https://www.ontario.ca/page/find-elementary-or-secondary-school. Accessed September, 2026.

MNR [Ontario Ministry of Natural Resources]. 2023. Pits and Quarries Map. Available online: https://www.ontario.ca/page/find-pits-and-quarries?redirect_id=environment-and-energy%2Ffind-pits-and-quarries&redirect_year=2021

MNR [Ontario Ministry of Natural Resources], 2000. Significant wildlife habitat technical guide. Fish and Wildlife Branch, Wildlife Section, Science Development and Transfer Branch, South Central Sciences Branch. pp.151.

MNR [Ontario Ministry of Natural Resources], March 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp.

MNR [Ontario Ministry of Natural Resources]. January 2015. Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E. Significant wildlife habitat ecoregions. Retrieved from https://www.ontario.ca/files/2025-02/schedule-7e-jan-2015-access-vers-final-s.pdf

MNR [Ontario Ministry of Natural Resources], 2026a. Natural Heritage Information Centre (NHIC). Available online: https://www.ontario.ca/page/natural-heritage-information-centre Accessed September 2026.

MNR [Ontario Ministry of Natural Resources], 2026b. GeoHub (GEO). Available online: Ontario GeoHub (geohub.lio.gov.on.ca). Accessed September 2026.

MNR (Ministry of Natural Resources). 2026c. *The Tree Atlas: Southwest Region (Ecodistrict 7E-2).* Government of Ontario. Available: https://www.ontario.ca/page/tree-atlas/ontario-southwest?id=7E-2. Accessed September 2026.

DRAFT

Natural Resources Canada, 2026. Earthquake zones in Eastern Canada. Available at: https://www.seismescanada.rncan.gc.ca/zones/eastcan-en.php#SGLSZ

OEB [Ontario Energy Board], 2023. *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines in Ontario, 8th Edition*.

Oldham. 2010. Checklist of the Vascular Plants of Niagara Regional Municipality, Ontario. Ontario Natural Heritage Information Centre, Ministry on Natural Resources, Peterborough, ON. Prepared for the Niagara Peninsula Conservation Authority. March, 2010.

Olechowski, H. 1990. The Soybean Cyst Nematode. Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) Factsheet, Order No. 90.119, Agdex 141/628, May 1990, Reviewed January 1997.

Ontario Geological Survey. 2010. Surficial Geology of Southern Ontario. Ontario Geological Survey, Miscellaneous Release—Data 128-REV.

OGS, 2011. Bedrock geology of Ontario, Southern Sheet; Ontario Geological Survey, Map 2544, scale 1:1,000,000.

Ontario GeoHub. 2019a. Soil Survey Complex - Interactive Map. Available online: https://geohub.lio.gov.on.ca/datasets/ontarioca11::soil-survey-complex/explore?location=42.764180%2C-81.774572%2C9

Ontario GeoHub. 2019b. LIO - Tile Drainage Area - Interactive Map. Available at: https://geohub.lio.gov.on.ca/datasets/ontarioca11::tile-drainage-area/explore?location=42.797182%2C-82.045099%2C11

Ontario Geological Survey. 2022. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release---Data 126-Revision 1.

OGSR [Oil, Gas and Salt Resources]. 2026. Ontario Oil, Gas and OGSRA Wells | OGSR Library. https://www.ogsrlibrary.com/maps/wells/

DRAFT

OPP [Ontario Provincial Police]. 2019. Detachments. Available at: https://www.opp.ca/index.php?id=119.

Ontario Nature, 2019. Ontario Reptile and Amphibian Atlas. Available online: http://www.ontarionature.org/protect/species/herpetofaunal_atlas.php. Accessed: September 2026.

St. Clair Catholic District School Board. n.d. Schools. Available at: https://register.sccdsb.net/back-to-home-page/schools.

St. Clair Region Conservation. 2026 Regulation Limit Explored. Available at: https://maps.scrca.on.ca/st-clair-conservation/maps/143020/regulation-limit-explorer

St. Clair Region Conservation Authority (SCRCA). 2018. Black Creek Subwatershed Report Card. Available online: https://www.scrca.on.ca/wp-content/uploads/2019/02/2018-SCRCA-WRC-Black-Creek.pdf Accessed September 2026.

Statistics Canada. 2023a. Ontario [Province] (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (Accessed September, 2026).

Statistics Canada. 2023b. Lambton, County (CTY) [Census division] (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (Accessed September, 2026).

DRAFT

Statistics Canada. 2023c. Dawn-Euphemia, Township (TP) [Census subdivision] (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (Accessed September, 2026).

Statistics Canada. 2023d. Enniskillen, Township (TP) [Census subdivision] (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (Accessed September, 2026)

Statistics Canada. 2023. Sarnia, City (CY) [Census subdivision] (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (Accessed September, 2026).

Township of Dawn-Euphemia. 2014. The Corporation of the Township of Dawn-Euphemia Official Plan. Available at: https://dawneuphemia.ca/wp-content/uploads/2021/03/D-E-Official-Plan-2014.pdf

Township of Dawn-Euphemia. n.d.a. *Public Works*. Retrieved from: https://dawneuphemia.ca/municipal-services/public-works/

Township of Dawn-Euphemia. n.d.b. *Water Services*. Retrieved from: https://dawneuphemia.ca/municipal-services/water-services/

Township of Dawn-Euphemia. n.d.c. *Fire Services*. Retrieved from: https://dawneuphemia.ca/municipal-services/fire-services/

Township of Enniskillen. n.d.a. *Public Utilities*. Retrieved from: https://www.enniskillen.ca/services/public-utilities/

DRAFT

Township of Enniskillen. n.d.b. Services - Fire. Retrieved from: https://www.enniskillen.ca/services/fire/

Township of Enniskillen. 2026. The Corporation of the Township of Dawn-Euphemia Official Plan. Office Consolidation February 2026. Available at: https://www.enniskillen.ca/wp-content/uploads/2026/02/Enniskillen-Official-Plan-2015-February-2026-Office-Consolidation.pdf

Wester, M.C., Henson, B.L., Crins, W.J., Uhling, P.W.C., Gray, P.A. 2018. The Ecosystems of Ontario, Part 2: Ecodistricts. Ministry of Natural Resources and Forestry. Retrieved from https://files.ontario.ca/ecosystems-ontario-part2-03262019.pdf

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