DILLON CONSULTING

Oxford County

Environmental Study Report

Oxford Road 119 (Harris Street) and Clarke Road Intersection Improvements and Oxford Road 119 Widening

May 2026 – 25-1417

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Acronyms, Abbreviations, Definitions

AA	Archaeological Assessment
Class EA	Class Environmental Assessment
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
Dillon	Dillon Consulting Limited
ECP	Erosion Control Plan
ELC	Ecological Land Classification
ESA	*Endangered Species Act*
ESC	Erosion and Sediment Control
ESR	Environmental Study Report
ExTAC	External Technical Advisory Committee
FFHECR	Fish and Fish Habitat Existing Conditions Report
ha	Hectare
HADD	Harmful alteration, disruption, or destruction
HDI	Haudenosaunee Development Institute
HVA	Highly Vulnerable Aquifer
I.D. #	Identification Number
InTAC	Internal Technical Advisory Committee
km/hr	Kilometres per hour
LIO	Land Information Ontario
LOS	Level of Service
m	Metre

m^2	Square Metre
MCEA	Municipal Class Environmental Assessment
MCM	Ministry of Citizenship and Multiculturalism
MEA	Municipal Engineers Association
MECP	Ministry of the Environment, Conservation and Parks
mm	Millimetres
MNR	Ministry of Natural Resources
MTO	Ministry of Transportation, Ontario
MURC	Multi-Use Recreation Centre
NHIC	Natural Heritage Information Centre
OR119	Oxford Road 119
OSAP	Ontario Stream Assessment Protocol
PCC	Public Consultation Centre
pH	Potential of Hydrogen
PIF	Project Information Form
PPS	Provincial Planning Statement
Provincial Class EA	Class EA for Provincial Transportation Facilities and Municipal Expressways
PXOs	Pedestrian crossovers
RAU	Rural Arterial Undivided
ROW	Right-of-way
SAR	Species at Risk
SARA	*Species at Risk Act*

SARO	Species at Risk in Ontario
SCA	*Species Conservation Act*
SGRA	Significant Groundwater Recharge Area
SWH	Significant Wildlife Habitat
TMP	Transportation Master Plan
TPA	Technically Preferred Alternative
UTRCA	Upper Thames River Conservation Authority
WHPA	Wellhead Protection Areas

Executive Summary

Dillon Consulting Limited was retained by the County of Oxford to undertake a Harmonized Class Environmental Assessment (Class EA) to address transportation needs within the Town of Ingersoll. This harmonized Class EA study is following the requirements for the Schedule C projects as outlined in the Municipal Class EA, as well as fulfilling the requirements of the Class EA for Provincial Transportation Facilities and Municipal Expressways, Group B. As detailed in **Section 1.0**, the primary purpose of this undertaking is to evaluate and select improvements for the intersection of Oxford Road 119 (Harris Street) and Clarke Road, as well as to address widening requirements for Oxford Road 119 extending south to the Highway 401 interchange. The undertaking is driven by the 2024 Oxford County Transportation Master Plan, which identified that Oxford Road 119 is currently congested and will face capacity challenges due to anticipated regional growth and development.

The study area includes a diverse range of engineering, natural, and socio-economic features which were inventoried to establish a baseline for evaluation. As described in **Section 2.0**, the existing two-way stop-controlled intersection currently operates at acceptable levels of service but poses safety concerns regarding sightlines and collision risks. The surrounding environment includes significant natural features, such as the Halls Creek corridor, Significant Woodlands, and habitat for Species at Risk (SAR), including several bat species and the Eastern Wood-Pewee. Furthermore, the area sits over a Highly Vulnerable Aquifer, necessitating careful consideration of drainage and groundwater impacts. A Stage 1 Archaeological Assessment identified areas of archaeological potential requiring further investigation. The Problem and Opportunity Statement, outlined in **Section 3.0**, confirms the need for infrastructure upgrades to manage projected traffic volumes, improve safety, and align with the County's long-term transportation goals.

To address the identified needs, the project team generated and evaluated a variety of Alternative Solutions as presented in **Section 4.0**. Options include a "Do Nothing" approach, signalization and roundabout configurations. Following a comparative evaluation based on natural, socio-economic, engineering, and cost criteria, the construction of a roundabout combined with the widening of Oxford Road 119 was selected as the preferred solution. Subsequently, **Section 5.0** details the assessment of

three specific design concepts for the roundabout. Alternative Design Concept #3, a single-lane roundabout with a right-turn exit lane, was identified as the preferred design concept because it offers a balance of traffic performance, cost-effectiveness, and minimized environmental impact, particularly regarding the Halls Creek culvert and adjacent woodlots.

The Description of Preferred Design is provided in **Section 6.0**. The recommended plan involves converting the intersection to a single-lane roundabout with a dedicated northbound right-turn exit lane and widening Oxford Road 119 to include two northbound lanes and one southbound lane. The design incorporates urban cross-sections with curb and gutter and includes a multi-use path on the north side of Clarke Road. Stormwater management strategies will be implemented to preserve existing drainage patterns, and property acquisitions will be required at each quadrant of the intersection to accommodate the new geometry and grading.

Potential impacts associated with the preferred design and corresponding mitigation measures are discussed in **Section 7.0**. Construction will require vegetation removal, including portions of Significant Woodlands; however, measures such as timing restrictions to protect nesting birds and active bats, as well as sediment control plans for Halls Creek, will be implemented to minimize impacts. A Stage 2 Archaeological Assessment is recommended for specific areas prior to ground disturbance. **Section 9.0** outlines the comprehensive consultation program undertaken, which included engagement with Indigenous communities, regulatory agencies, and the public through two Public Consultation Centres.

The report concludes with a summary of commitments and next steps in **Sections 10.0** through **12.0**. The project will proceed to detailed design and construction following the completion of the 30-day public review period initiated by the Notice of Study Completion. Implementation is subject to funding and the acquisition of necessary permits, including those from the Upper Thames River Conservation Authority and the Ministry of Transportation, Ontario (MTO).

1.0 Introduction and Background

Dillon Consulting Limited (Dillon) was retained by the County of Oxford (the County) to complete a Harmonized Class Environmental Assessment (Class EA) under both the **Municipal Class Environmental Assessment** (MCEA; 2024) and the **Class EA for Provincial Transportation Facilities and Municipal Expressways** (Provincial Class EA; 2024). The purpose of this Harmonized Class EA is to consider and evaluate a wide range of alternative improvements to the Oxford Road 119 (Harris Street) and Clarke Road intersection, as well as the widening of Oxford Road 119 from Clarke Road to Highway 401, located in the Town of Ingersoll, Ontario.

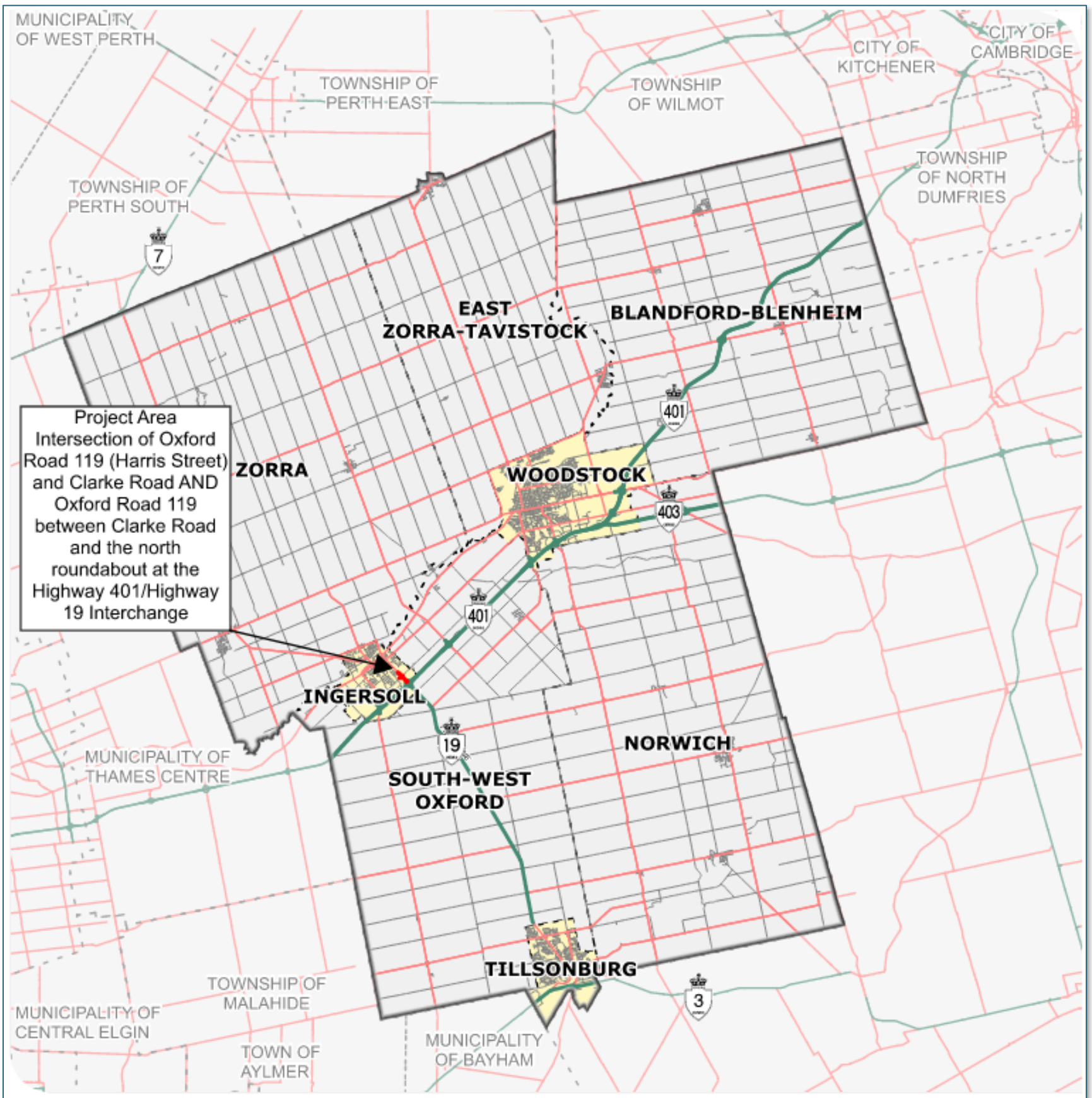
This Harmonized Class EA follows a comprehensive planning and design process to protect the environment, facilitate a proactive and meaningful consultation process with a broad range of stakeholders and Indigenous communities, determine a solution that mitigates disruption to the existing residents and businesses, and to produce comprehensive documentation that meets the requirements of the MCEA and Provincial Class EA processes.

1.1 Study Area

The Study Area, as shown in **Figure 1**, is located at the intersection of Oxford Road 119 (Harris Street) and Clarke Road within the Town of Ingersoll, and on Oxford Road 119 (OR119) between Clarke Road and the north roundabout at the Highway 401/Highway 19 interchange in the County of Oxford.

OR119, also referred to as Harris Street within the project limits, is a north/south two-lane, rural, arterial roadway and a key connection between the Town of Ingersoll and Highway 401. Clarke Road is a two-lane east/west rural cross section to the east of OR119 and urban cross section west of OR119 with on-street bike lanes and a pedestrian sidewalk within the north boulevard. The Study Area extends approximately 150 metres (m) west, 150 metres north and 50 metres east from the existing intersection of OR119 and Clarke Road. The southerly Study Area Limits extend approximately 500 metres south to the north roundabout at the Highway 401 and Highway 19 interchange and thus falls within the Ministry of Transportation, Ontario (MTO) Corridor Control area.

Figure 1: Project Study Area



1.2 Study Needs and Justification

OR119 serves as a major access to the provincial highway network and experiences high traffic volumes, particularly during peak hours. The **2024 Oxford County Transportation Master Plan** (Oxford County, 2024) determined that OR119 was exhibiting early signs of restricted traffic flow, with anticipated capacity challenges in the near future as the County continues to experience growth and development. Future discussion on existing traffic and collision history is provided in **Section 2.1.3**.

Numerous ongoing developments in various stages of approval are underway in the vicinity of the OR119 and Clarke Road intersection in the Town of Ingersoll. Developments include:

- Additional planned residential developments in the area south of David Street;
- An ongoing industrial development at Clarke Road and Ken McKee Street;
- Ongoing and planned residential developments at Clarke Road and Cash Crescent;
- A draft approved plan for residential development at Clarke Road and Thames Street;
- Built out plans for residential development on Clarke Road between Kirin Drive and Thames Street; and
- Additional planned residential developments along Hollingshead Road.

East of the intersection of OR119 and Clarke Road, additional residential development is planned to the northeast, and a Multi-Use Recreational Facility site development is underway on the south side of Clarke Road.

1.3 Study Objectives

The harmonized Class EA was completed to address the traffic growth in the Study Area. Key objectives include:

- To consider what improvements to the road and intersection may be needed to support future traffic conditions, population growth, and County goals;
- To understand the location and significance of natural, archaeological, and cultural heritage features that may be impacted by improvements to the road and intersection;

- To see which private properties might be affected by the road and intersection improvements;
- To obtain and address input from relevant agencies, adjacent landowners and other stakeholders;
- To obtain and address input from Indigenous communities with Treaty and Aboriginal Rights in the study area; and
- To identify a preferred solution and design concept to address all current and future road needs while considering sensitive features, stakeholder input, and Indigenous rights.

1.4 Study Schedule and Key Dates

The harmonized Class EA Study was initiated in June 2025. Key dates throughout the Study are shown in **Table 1**.

Table 1: Key Harmonized Class EA Study Dates

EA Stage	Date
Notice of Study Commencement and Public Consultation Centre (PCC) #1	September 4, 2025
PCC #1	September 25, 2025
Notice of PCC #2	October 24, 2025
PCC #2	November 27, 2025
Notice of Study Completion	May, 2026

1.5 Harmonized Class EA Process

1.5.1 Municipal Class Environmental Assessment Process

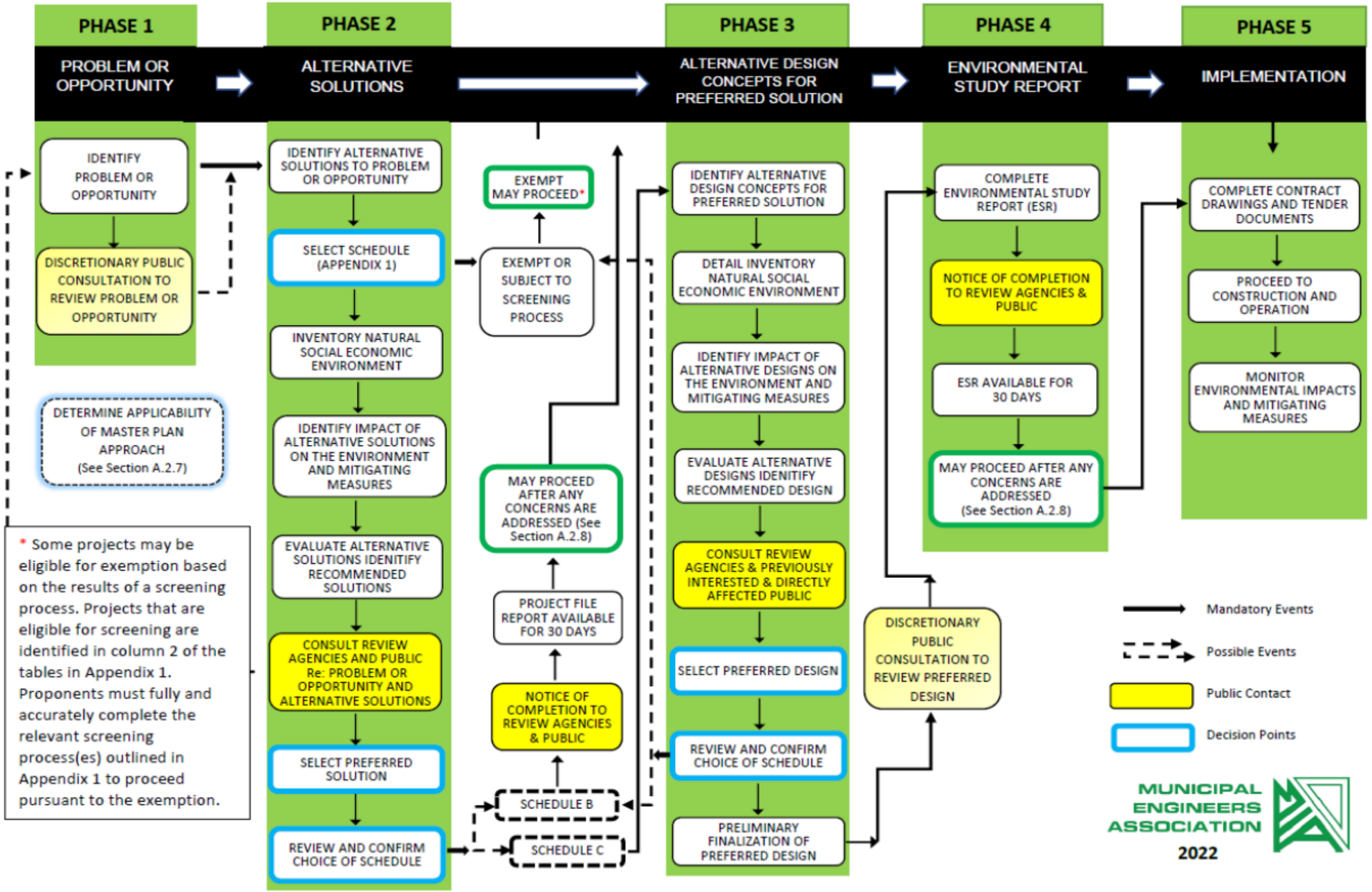
This Study was conducted in accordance with the requirements of the **Municipal Class Environmental Assessment** (MCEA) – Schedule 'C', which is an approved process under the *Environmental Assessment Act*. **Figure 2** below illustrates the framework for the Municipal Class EA process which is a legislated planning process comprising of up to 5 phases with mandatory points of public contact. The focus of the framework is a comprehensive and transparent decision-making process.

The Class EA is broken down into phases, as follows:

- **Phase 1** – Identify problem or opportunity;
- **Phase 2** – Identify alternative solutions, evaluate, and select the preferred solution;
- **Phase 3** – Identify alternative design concepts, evaluate, and select the preferred design concepts;
- **Phase 4** – Complete the Environmental Study Report (ESR) and place it on the public record; and
- **Phase 5** – Project implementation, which is to undertake the detailed design, contract drawings and tender documents for the project and proceed to construction and operation of the project.

This Schedule 'C' study requires the completion of Phases 1 through 4 of the MCEA process, with the final deliverable comprising the documentation of the planning process as provided in this Environmental Study Report. The project will then proceed to Phase 5.

Figure 2: Municipal Class Environmental Assessment Process (Municipal Engineers Association, 2024)

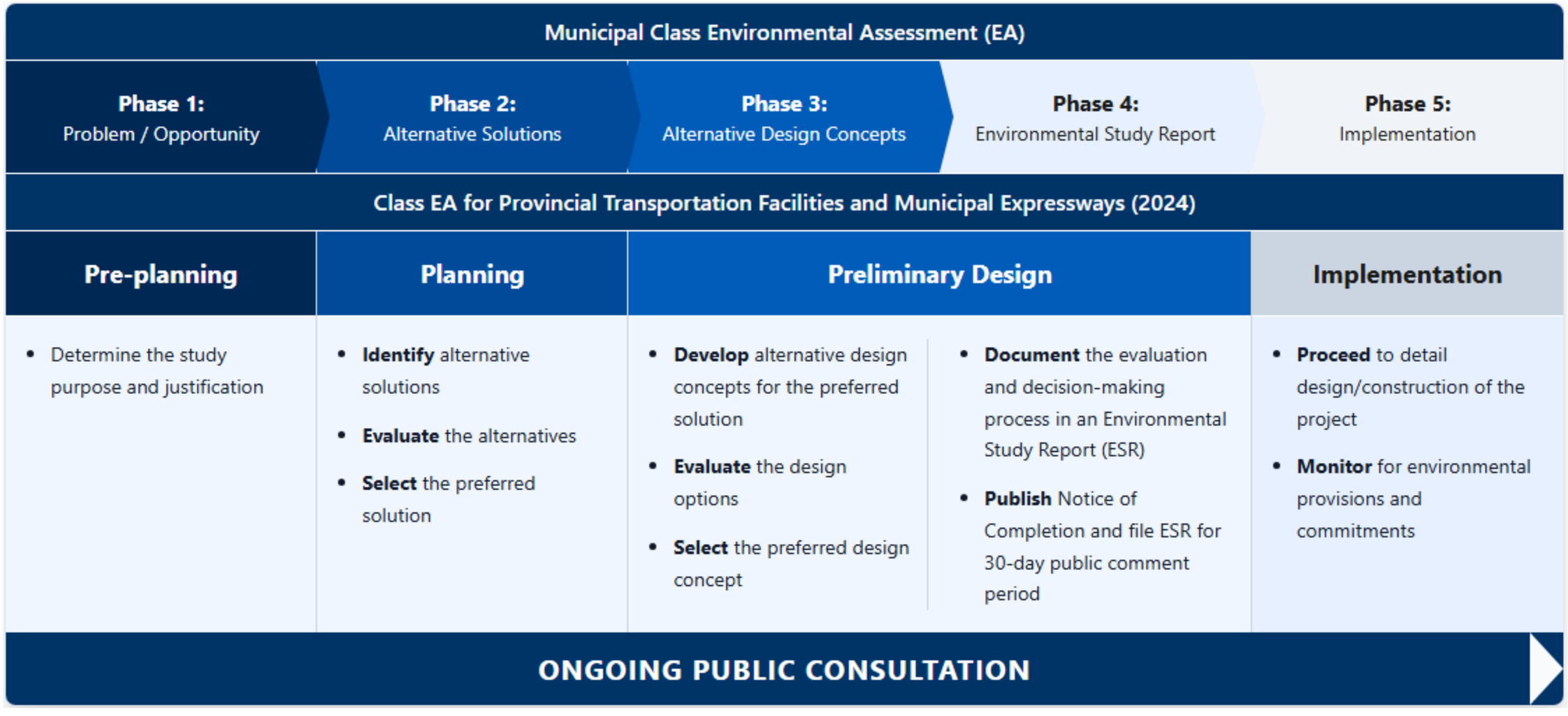


1.5.2 Class EA for Provincial Transportation Facilities and Municipal Expressways Process

As a portion of this project is within MTO right-of way (ROW) and permit control area, the project must also consider the **Class EA for Provincial Transportation Facilities and Municipal Expressways**. This Class EA was approved under the *Ontario Environmental Assessment Act* in 1999 and amended in 2000, 2020, 2023, and 2024. It defines the EA process to be followed for projects and activities similar in complexity that are undertaken by the MTO on provincial highways and other areas within MTO jurisdiction.

Based on the preliminary understanding that OR119 would require widening and likely additional property from private landowners, it was determined that the project would be classified as a Group 'B' project, which include projects that modify access or add capacity to existing provincial transportation facilities or municipal expressways. This harmonized Class EA Study and ESR will satisfy both the **MCEA** (2024) and the **Class EA for Provincial Transportation Facilities and Municipal Expressways** (Provincial Class EA; 2024). **Figure 3** below shows the harmonized Class EA process undertaken for this project.

Figure 3: Schedule 'C' MCEA and Group 'B' Provincial Class EA Processes



1.6 Policy and Planning

1.6.1 Provincial Planning Statement (2024)

Ontario's development and land use planning are now governed by the Provincial Planning Statement (2024) (PPS), which replaces the 2019 Growth Plan and the 2020 PPS. Serving as the foundation for all local and provincial planning decisions, the PPS guides critical issues such as land supply, environmental protection, public safety, and Indigenous engagement.

The proposed project improvements align fully with these provincial policies. Specifically, the selection process prioritized traffic control and support. By choosing a design concept that minimizes negative impacts, the project satisfies the requirements of Section 3.2 regarding Transportation Systems.

1.6.2 Regional Planning Documents

1.6.2.1 Oxford County Transportation Master Plan

The Oxford County Transportation Master Plan (TMP, 2024) serves as a comprehensive strategic framework guiding the region's mobility for the next two decades. This document outlines the essential policies, programs, and infrastructure upgrades necessary to meet the county's evolving transportation demands. The TMP is organized around several core pillars, including Active Transportation, Road Networks, Sustainable Transportation, and an analysis of Future Transportation Needs.

Policies in the TMP were reviewed and considered such as 'Table ES.2 Implementation Plan – Major Road Reconstruction/Rehabilitation' which identifies the need for roadway improvements on Oxford Road 119 from Clarke Road to Highway 401. Roundabout screening was completed using the TMP's Roundabout Screening Tool and is included in **Appendix H**.

1.6.2.2 Oxford County Official Plan

The Oxford County Official Plan (2023) serves as a comprehensive, long-range framework for land use and planning. It explicitly identifies areas designated for protection, dictates the location and nature of regional growth, and establishes the policy tools necessary for successful implementation. These policies are designed to

steer development and inform economic, environmental, and planning decisions over a 25-year growth horizon, extending to 2046. The Town of Ingersoll's transportation planning is primarily guided by this document.

Policies in the Oxford County Official Plan (2023) were reviewed and considered such as Section 8.0 'Town of Ingersoll Land Use Policies' and I-4 'Transportation Network Plan for the Town of Ingersoll'.

1.6.2.3 Oxford County Cycling Master Plan

The Oxford County Cycling Master Plan (2021) outlines the long-term cycling infrastructure that will primary cycling routes on the County road network, connecting urban/settlement areas, neighbouring municipalities, local cycling/trail networks, tourist destinations and employment areas.

Policies, goals and actions in the Cycling Master Plan were reviewed and considered recognizing the important of cycling infrastructure in the County related to the Economy, Community and Environment.

1.6.2.4 Town of Ingersoll and Oxford County South West Ingersoll Secondary Plan

The Town of Ingersoll and Oxford County South West Ingersoll Secondary Plan (2024) is a planning document that provides the long-term principles, land use and infrastructure strategy for the South West Ingersoll Secondary Plan Area to support the long term growth for the Town of Ingersoll and is primarily implemented to the Official Plan policy.

The planning document was reviewed to determine transportation need, municipal infrastructure needs, land uses, natural heritage and any community design needs.

2.0 Existing Conditions

The existing conditions were documented using a variety of information sources, including available background information and several site visits by project team members. The description of existing conditions provides a baseline that was used for evaluating alternatives and identifying potential effects on significant environmental features, and for identifying appropriate mitigation measure. The limits of impact identified for assessing the existing conditions were developed by reviewing the existing terrain, identifying the limits of natural features, and assessment of expected disturbance for roadway improvements.

2.1 Engineering

2.1.1 Roadway Conditions

Oxford Road 119 (OR119), also referred to as Harris Street, is a two-lane north-south rural road, with unpaved shoulders and a posted speed of 60 kilometres per hour (km/hr). Approximately 250 m south of the intersection of Clarke Road OR119 transitions to Highway 19 (Plank Line), which is classified as a 2B Arterial Highway for Access Management under MTO's Highway Corridor Management Manual (April 2025) and is considered a Rural Arterial Undivided (RAU) Highway under MTO's Functional Classification System (MTO Design Supplement for TAC Geometric Design Guide, October 2023). The OR119 and Highway 19 corridor is a direct connecting point to Highway 401 from the town of Ingersoll south of the Study Area.

Clarke Road is a two-lane east-west road with a posted speed limit of 50 km/h. East of OR119, Clarke Road is a rural cross-section with unpaved shoulders. West of OR119, Clarke Road is an urban section with on road bike lanes and sidewalk present on the north side of the road.

2.1.2 Oxford Road 119/Clarke Road Intersection

The existing intersection of OR119 and Clarke Road operates as a two-way stop-controlled intersection, with free-flowing traffic on OR119 and stop control for the traffic on Clarke Road. Dedicated left turn lanes are present in the northbound, southbound and eastbound directions.

2.1.3 Traffic Engineering

2.1.3.1 Existing Intersection Operations

The intersection of Oxford Road 119 and Clarke Road is currently operating acceptably under existing conditions, with eastbound lane movement performing at a Level of Service (LOS) 'C' during the AM Peak Hour (17 seconds per vehicle delay) and a LOS 'D' during the PM Peak Hour (33 seconds per vehicle delay).

2.1.3.2 Collision History

Oxford County provided collision data for the period between 2014 and 2025. The collision records indicate that there were 38 collisions over the period, with 5 collisions resulting in non-fatal injuries and no fatalities.

2.1.4 Electrical

Continuous street lighting is present along OR119. The existing lighting consists of luminaires mounted on hydro poles, except at the south limit, where separate light standards are present approaching the roundabout at the Highway 401 north ramp terminal intersection. Street lighting is present on Clarke Road west of OR119 within the study area; however, it does not continue up to the intersection with OR119.

An existing aerial hydro line is present on OR119 throughout the study limits and on Clarke Road west of the intersection with OR119.

2.1.5 Watermain

An existing 300 millimetres (mm) watermain is present on the west side of OR119 which terminates at the Elmhurst Inn and Spa entrance. A 200 mm watermain is present on Clarke Road west of the intersection at OR119.

2.1.6 Wastewater

An existing 300 to 375 mm sanitary sewer is located on the west side of OR119, which terminates at the Elmhurst Inn and Spa entrance. A 200 mm sanitary sewer and a 100mm sanitary forcemain are located on Clarke Road, west and east of OR119, respectively.

2.1.7 Drainage and Hydrology

Currently, surface drainage within the Study Area is managed through a combination of ditches, culverts, and storm sewers. Drainage catchments at the intersection flow into Halls Creek, which is located east of OR119. An existing 450 mm storm sewer is present on Clarke Road west of OR119 and an 865x1345 elliptical storm sewer outlets to the north-east quadrant of the intersection to Halls Creek.

Field investigations noted evidence of ponding water along the west edge of OR119 north of Clarke Road suggesting localized drainage issues.

2.1.8 Utilities

The following utilities are present within the vicinity of the OR119 and Clarke Road intersection:

- Aerial Hydro One lines are present along the west side of OR119 throughout the project limits and on the north side of Clarke Road, west of OR119;
- Enbridge gasmain is present on the west side of OR119 from the north Study Area limits and crosses to the east side south of Clarke Road terminating at the Elmhurst Inn and Spa entrance. Multiple gasmains are present on the north side of Clarke Road on the west side of OR119, with one continuing to the east of OR119; and
- Bell infrastructure and existing conduit is present on the east side of OR119.

2.2 Natural Environment

A Terrestrial Existing Conditions Report and an Aquatic Existing Conditions Report were prepared for this harmonized Class EA Study to present a summary of the terrestrial and aquatic environments within the Study Area along Oxford Road 119 and Clarke Road. The complete reports are provided in **Appendix B** and **Appendix C**, respectively. Figures documenting existing terrestrial features and conditions is included as **Figure 4** and **Figure 5** at the completion of **Section 2.2.9**.

2.2.1 Natural Environment Studies Approach and Methods

The terrestrial and aquatic environment studies were comprised of three distinct components:

1. **Acquire background biophysical information and mapping** available for the local landscape surrounding the Study Area, including:
   - Ortho-rectified aerial photographs (1954 to 2025);
   - Natural feature mapping obtained from the Oxford County Official Plan, Land Information Ontario (LIO), and the Upper Thames River Conservation Authority (UTRCA) regulation mapping;
   - Physiographic resource mapping and datasets obtained from the Ontario Base Mapping produced by the Ministry of Natural Resources (MNR), Provincial Digital Terrain Model, the Agricultural Information Atlas, and the Physiography of Southern Ontario map series;
   - Ecological resource mapping and datasets obtained from the Natural Heritage Information Centre (NHIC) database, iNaturalist, the Ontario Breeding Bird Atlas, the Ontario Reptile and Amphibian Atlas, the Ontario Butterfly Atlas, the Atlas of Ontario Odonata, and the Atlas of the Mammals of Ontario; and
   - The Draft Oxford Natural Heritage Systems Study (Oxford County, 2016).
2. **Conduct a site assessment and ecological surveys** to field-verify the accuracy of the background biophysical information and collect additional biophysical information as necessary. **Table 2** indicates the terrestrial and aquatic assessments and surveys performed during each site visit. The following targeted assessments were undertaken:
   - Vegetation mapping according to Ecological Land Classification (ELC);
   - Wetland boundaries delineation;
   - Woodland boundaries delineation;
   - Vascular plant survey;
   - Breeding bird surveys in accordance with the Ontario Breeding Bird Atlas Protocol (Bird Studies Canada et. al., 2001);
   - Bat maternal roosting habitat assessment and acoustic monitoring in accordance with Ministry of the Environment, Conservation and Parks (MECP's) "Treed Habitats – Maternity Roost Surveys" protocol (MECP, 2022); and
   - Aquatic habitat assessment in accordance with the Ontario Stream Assessment Protocol (Stanfield, 2010).
3. **Assess the significance** of the biophysical information collected and natural features identified within the context of applicable natural heritage and environmental policies, including:

- Oxford County Official Plan (Oxford County, 2023);
- Ontario PPS (Ontario, 2024), pursuant to the *Planning Act*;
- UTRCA regulated features pursuant to the provincial *Conservation Authorities Act*;
- Provincial *Endangered Species Act* (ESA);
- Provincial *Fish and Wildlife Conservation Act*;
- Federal *Fisheries Act*;
- Federal *Species at Risk Act* (SARA); and
- Federal *Migratory Birds Convention Act*.

Locations of survey points, including Anuran Calling Stations, Bat Acoustic Monitoring Stations, and Breeding Bird Survey Stations are also shown in **Figure 4** at the conclusion of **Section 2.2.9**.

Table 2: Site Assessments and Ecological Surveys performed in the Study Area

Assessment/Survey Performed	Date
Site Reconnaissance	30 April and 19 September 2025
Bat Snag Assessment	30 April 2025
Aquatic Habitat Assessment	30 April and 3 July 2025
Breeding Bird Survey (Round 1)	6 June 2025
Bat Detector Deployment and Collection	19 June 2025 – 3 July 2025
Vegetation Community Mapping	19 June, 3 July, and 19 September 2025
Breeding Bird Survey (Round 2)	27 June 2025
Vascular Plants Survey	6 June, 27 June, 3 July, 8 September, and 19 September 2025

2.2.2 Vegetation Communities

Vegetation communities located in or adjacent to the project footprint include Dry-Fresh Graminoid Meadows (which are generally associated with roadside ditches and former agricultural fields), Deciduous and Coniferous Hedgerows, the edge of a small Dry-Fresh Black Walnut Deciduous Woodland, and the edge of a Fresh-Moist Black Walnut Lowland Deciduous Forest associated with Halls Creek Valley.

Vegetations communities located within the Study Area outside of the project footprint include Fresh-Moist Black Walnut Lowland Deciduous Forest, Black Walnut-White Pine

Mixed Plantation, Deciduous Forest, Dry-Fresh Black Walnut Deciduous Woodland, Sugar Maple Deciduous Woodland, Deciduous, Coniferous, and Thicket Hedgerows, Dry-Fresh Graminoid Meadow, and Reed-canary Grass Graminoid Mineral Meadow Marsh.

A total of 144 vascular plant species were recorded within the Study Area. Of these, approximately 51% are considered native to Ontario, and 49% are exotic. No provincially rare or species at risk vascular plants were documented.

Vegetation Communities are shown visually in **Figure 4** at the conclusion of **Section 2.2.9**.

2.2.3 Breeding Birds

A total of 20 birds were recorded during the breeding bird surveys, undertaken on June 6 and June 27, 2025. Bird species frequently recorded within the Study Area included American Goldfinch (*Spinnus tristis*), American Robin (*Turdus migratorius*), Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), Brown-headed Cowbird (*Molothrus ater*), Cedar Waxwing (*Bombycilla cedrorum*), and Red-winged Blackbird (*Agelaius phoeniceus*).

One significant species, Eastern Wood-Pewee (*Contopus virens*), which is listed as Special Concern under the provincial ESA and federal SARA, was recorded during the targeted breeding bird surveys within the woodlands east of Oxford Road 119.

Breeding bird survey stations are shown visually in **Figure 4** at the conclusion of **Section 2.2.9**. The locations of significant bird species recorded are shown in **Figure 4**.

2.2.4 Bats

Assessment of bat habitat within the Study Area was undertaken consistent with MECP protocols (MECP, 2022) and involved:

1. A leaf-off, visual assessment of potential roosting habitat of trees within the project footprint, which may be impacted by proposed site alteration activities; and
2. Ultrasonic acoustic monitoring.

A bat roosting habitat survey was undertaken during leaf-off conditions on April 30, 2025. A total of 12 potential tree roosts (i.e., trees containing cavities, loose bark,

cracks, seams, or other characteristics that could support roosting bats) were identified within the wooded areas in or near the project footprint.

The ultrasonic acoustic monitoring occurred over a 12 evening survey period in June. A total of six bat species were recorded, of which five were species at risk:

- Eastern Red Bat (*Lasiurus borealis*);
- Hoary Bat (*Lasiurus cinereus*);
- Little Brown Myotis (*Myotis lucifugus*);
- Northern Myotis (*Myotis septentrionalis*); and,
- Silver-haired Bat (*Lasionycteris noctivagans*).

Timestamps of Big Brown Bat and Silver-haired Bat recordings revealed that 25 recordings were triggered by an individual flying in the vicinity of the recording device within 30 minutes (before or after) sunset or 30 (before or after) sunrise. This suggests the possible presence of roosting activity by Big Brown Bat and/or Silver-haired Bat within the Study Area; however, bats may move considerable distances over short periods so this is not confirmed. The Study Area is not expected to provide better or more suitable roosting habitat for bats when compared with the adjacent forested areas or forests within the boarder local landscape.

Eastern Red Bats and the Myotis species generated less than 1% of total detections, suggesting that these individuals may have been moving through the Study Area.

Bat acoustic monitoring stations are shown visually in **Figure 4** at the conclusion of **Section 2.2.9**.

2.2.5 Incidental Wildlife Observations

Incidental wildlife observations (i.e., species which were not recorded during targeted wildlife surveys) include the following:

- Three bird species: Belted Kingfisher (*Megaceryle alcyon*), Wild Turkey (*Meleaagris gallopavo*), and White-breasted Nuthatch (*Sitta carolinensis*);
- Three insects: Common Eastern Bumblebee (*Bombus impatiens*), Common Ringlet (*Coenonympha tullia*), and White Cabbage (*Pieris rapae*);
- Three mammals: White-tailed Deer (*Odocoileus virginianus*), Raccoon (*Procyon lotor*), and Eastern Grey Squirrel (*Sciurus carolinensis*); and

- Two mussel species: Cylindrical Papershell (*Anodontoides ferussacianus*), and Slippershell Mussel (*Alasmidonta viridis*).

2.2.6 Significant Woodlands

The Natural Heritage Reference Manual (MNR, 2010) recommends that woodlots of 4 hectare (ha) or more should be considered significant in landscapes with 5 to 15% woodland cover. Based on 2010 photography, there is approximately 13.18% woodland cover within Oxford County. Woodlands within the Study Area are part of a larger wooded area associated with the Halls Creek that exceed 4 h) in size and is therefore identified as Significant Woodland. The presence of Significant Woodlands within the Study Area is depicted visually in **Figure 5**.

2.2.7 Significant Valleylands

The Halls Creek Valley in the eastern portion of the Study Area is identified as Significant Valleyland on Schedule C-1 of the Oxford County Official Plan (Oxford County, 2023). The physical top of slope of the valley south of Clarke Road is located east of the project footprint. North of Clarke Road, the physical top of slope coincides with the existing Oxford Road 119 right-of-way. The east side of the valley within the Study Area does not have a clear physical top of bank. Based on this, the extent of the valley in this area would likely be defined by the greater of the Halls Creek floodplain or meander belt, both of which have not been determined as part of the EA. The presence of Significant Valleylands within the Study Area is depicted visually in **Figure 5**.

2.2.8 Significant Wildlife Habitat

One terrestrial Special Concern or provincially rare species, Eastern Wood-pewee (*Contopus virens*) has been confirmed to occur within the Study Area.

Potential habitat for the following species with either broad or general habitat requirements, or that may be associated with Halls Creek, may also occur within the Study Area:

- Monarch (*Danaus plexippus*);
- American Bumble Bee (*Bombus pensylvanicus*);
- Yellow-banded Bumblebee (*Bombus terricola*);
- Azure Darner (*Aeshna septentrionalis*);

- Black Dash (*Euphyes conspicua*);
- Painted Skimmer (*Libellula semifasciata*);
- Pronghorn Clubtail (*Phanogomphus graslinellus*);
- River Bluet (*Enallagma anna*); and
- Unicorn Clubtail (*Arigomphus villosipes*).

The presence of Significant Wildlife Habitat within the Study Area is depicted visually in **Figure 5**.

2.2.9 Species at Risk

A total of six Endangered species have been confirmed within the Study Area:

- Butternut (*Juglans cinerea*);
- Eastern Red Bat (*Lasiurus borealis*);
- Hoary Bat (*Lasiurus cinereus*);
- Little Brown Myotis (*Myotis lucifugus*);
- Northern Myotis (*Myotis septentrionalis*); and
- Silver-haired Bat (*Lasionycteris noctivagans*).

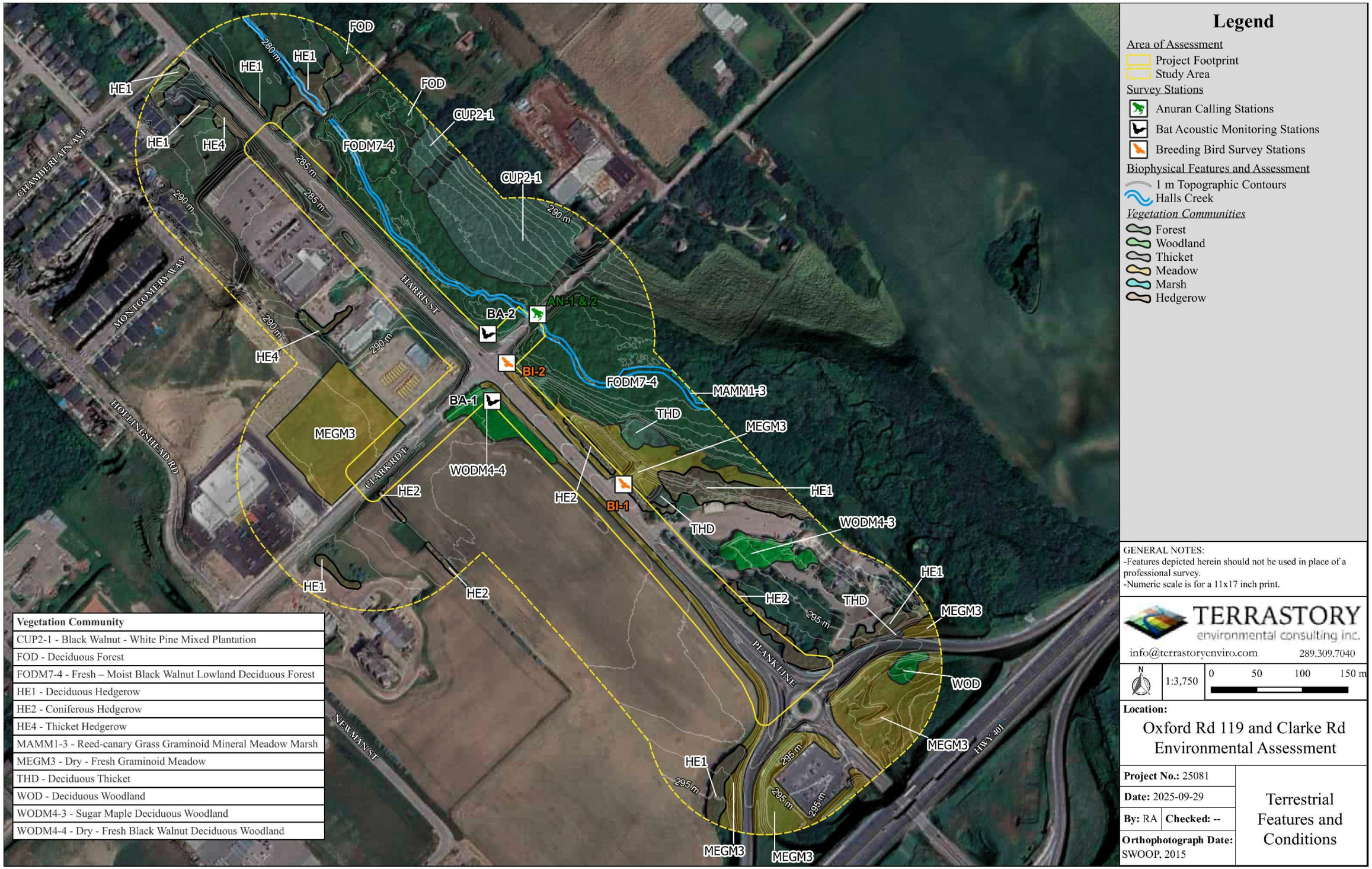
There is one additional Endangered species that was not recorded during site assessments or surveys, but that is considered to have a possible likelihood of occurrence within the Study Area given its habitat associations and current distribution in southern Ontario: Tri-colored Bat (*Perimyotis subflavus*).

The six bat species listed above are designated Endangered in Ontario per O.Reg. 230/08 pursuant to the ESA and are federally designated Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Acoustic monitoring confirmed the presence of five of these species, while the Tri-colored Bat is considered possible due to the presence of suitable roosting and foraging habitat. The Black Walnut dominated forest in the vicinity of the project footprint may provide limited roosting opportunities for Silver-haired Bat, and it is expected that the contiguous forest in the surrounding landscape provides suitable habitat for all six SAR bat species.

Butternut is designated Endangered in Ontario per O.Reg. 230/08 pursuant to the ESA and is listed as Endangered on Schedule 1 of the SARA. A single Butternut was documented within the woodlands in the Study Area, southeast of the OR 119 and

Clarke Road intersection. This species is known to occupy a variety of treed habitats, including mature forests and early-successional forests. Refer to **Figure 5** for the location of the observed Butternut tree within the Study Area.

Figure 4: Terrestrial Features and Conditions



Vegetation Community
CUP2-1 - Black Walnut - White Pine Mixed Plantation
FOD - Deciduous Forest
FODM7-4 - Fresh – Moist Black Walnut Lowland Deciduous Forest
HE1 - Deciduous Hedgerow
HE2 - Coniferous Hedgerow
HE4 - Thicket Hedgerow
MAMM1-3 - Reed-canary Grass Graminoid Mineral Meadow Marsh
MEGM3 - Dry - Fresh Graminoid Meadow
THD - Deciduous Thicket
WOD - Deciduous Woodland
WODM4-3 - Sugar Maple Deciduous Woodland
WODM4-4 - Dry - Fresh Black Walnut Deciduous Woodland

Legend

Area of Assessment
- Project Footprint
- Study Area

Survey Stations
- Anuran Calling Stations
- Bat Acoustic Monitoring Stations
- Breeding Bird Survey Stations

Biophysical Features and Assessment
- 1 m Topographic Contours
- Halls Creek

Vegetation Communities
- Forest
- Woodland
- Thicket
- Meadow
- Marsh
- Hedgerow

GENERAL NOTES:
-Features depicted herein should not be used in place of a professional survey.
-Numeric scale is for a 11x17 inch print.

TERRASTORY environmental consulting inc.
info@terrastoryenviro.com 289.309.7040

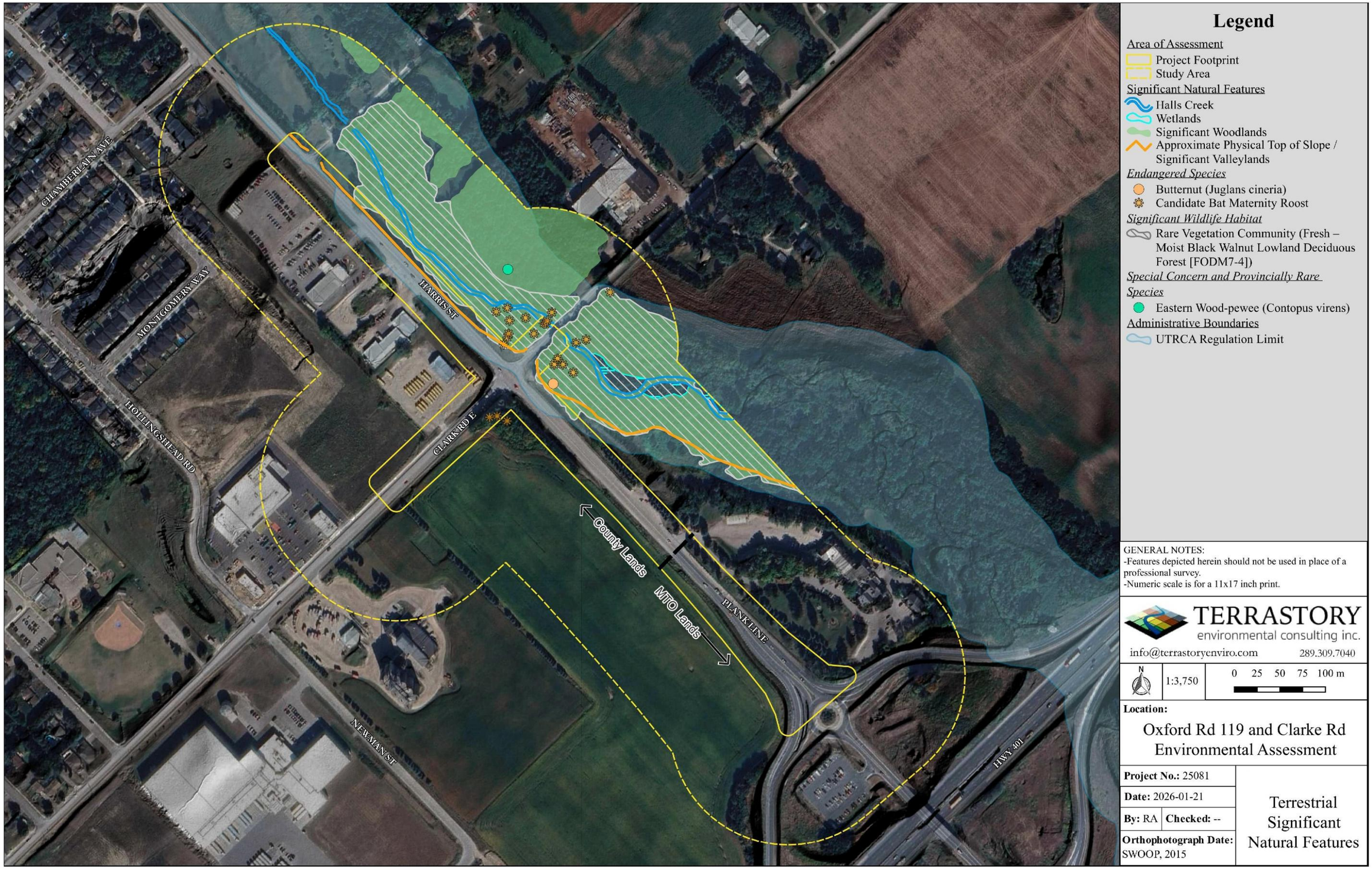
N | 1:3,750 | 0 50 100 150 m

Location:
Oxford Rd 119 and Clarke Rd Environmental Assessment

Project No.: 25081
Date: 2025-09-29
By: RA **Checked:** --
Orthophotograph Date: SWOOP, 2015

Terrestrial Features and Conditions

Figure 5: Terrestrial Significant Natural Features



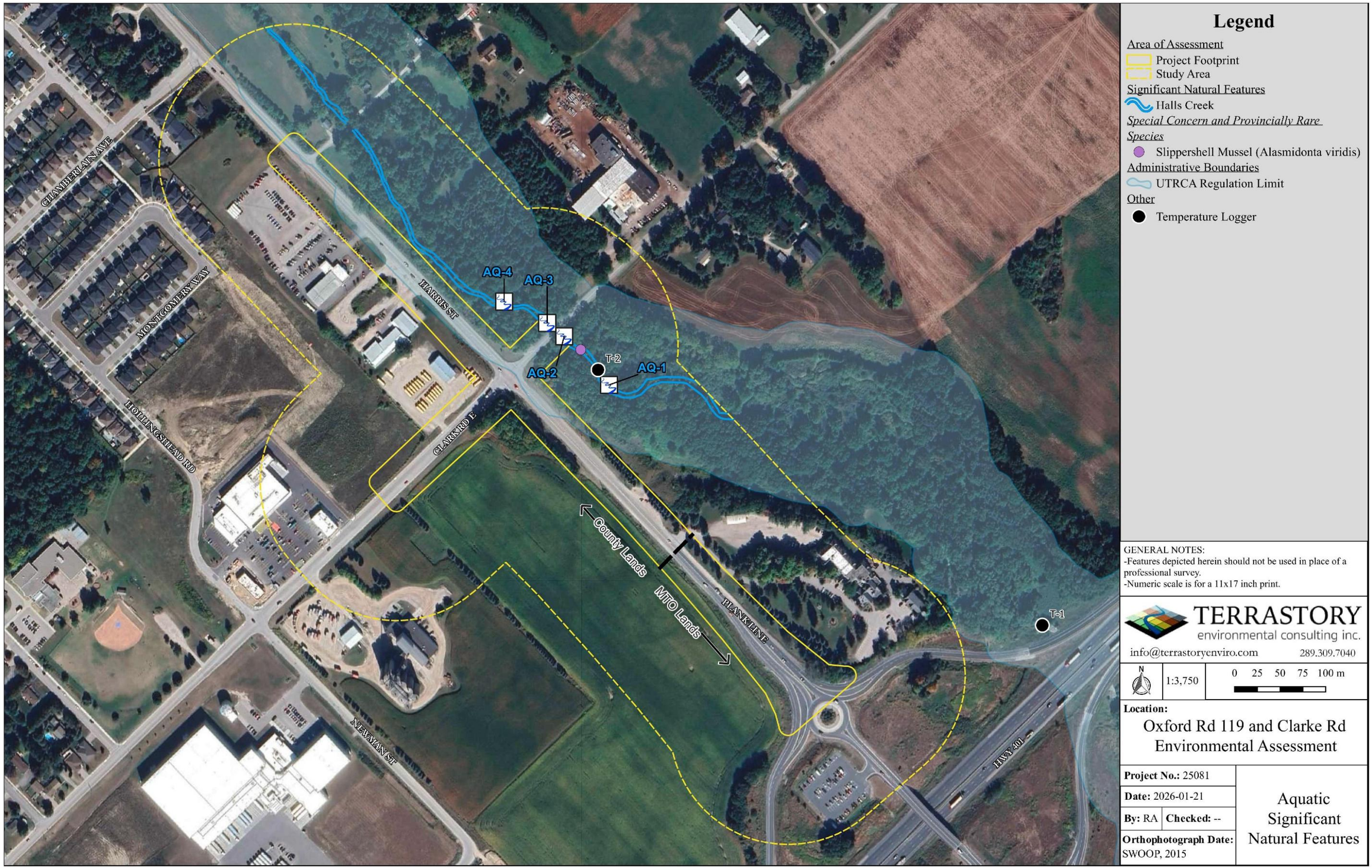
2.2.10 Aquatic Habitats and Communities

The Fish and Fish Habitat Existing Conditions Report (FFHECR), prepared by Terrastory, January 2026, characterizes the aquatic environment within 120 m of the project footprint, primarily the Halls Creek corridor, which is a permanent, highly sinuous watercourse that flows north toward the Thames River at the eastern limits of the Study Area. Field investigations were conducted between April and August 2025 and included aquatic habitat assessments that followed the Ontario Stream Assessment Protocol (OSAP), as well as continuous water temperature monitoring. Refer to **Figure 6** for the location of data collection stations and installed water temperature loggers.

The morphology of Halls Creek is characterized by pools, riffles, and runs, while bankfull channel dimensions averaged 5.7 m in width and 1.2 m in depth. Bed substrates are dominated by sand and gravel, though larger elements like erratic boulders and till were observed. Riparian vegetation along the banks includes species such as Black Walnut, Hybrid Crack Willow, Red-osier Dogwood, and Reed-canary Grass. Specific groundwater indicators, including Watercress and Skunk Cabbage, were confirmed at several locations, suggesting significant seepage and discharge into the creek. Halls Creek was determined to provide fish habitat and represents a cool-warmwater thermal regime for fish based on the temperature data collected and a review of the fish records for Halls Creek.

One Significant Wildlife Habitat (SWH) type has been confirmed within the Study Area, corresponding to habitat for the provincially rare Slippershell Mussel (*Alasmidonta viridis*), which was found within Halls Creek during incidental surveys. This mussel species has a provincial ranking of S3 (Vulnerable), indicating it is at moderate risk of extirpation due to a very restricted range, few populations, or other factors. This species is not formally listed as *Endangered* or *Threatened* on the main Species at Risk in Ontario (SARO) list, however. No aquatic *Endangered* or *Threatened* species were recorded during site assessments, and none are considered to have a possible likelihood of occurrence within the Study Area given their habitat associations and current distribution. While Halls Creek is mapped as providing potential habitat for the Northern Sunfish a species of Special Concern), this species has not been documented in local sampling records dating back to 2007.

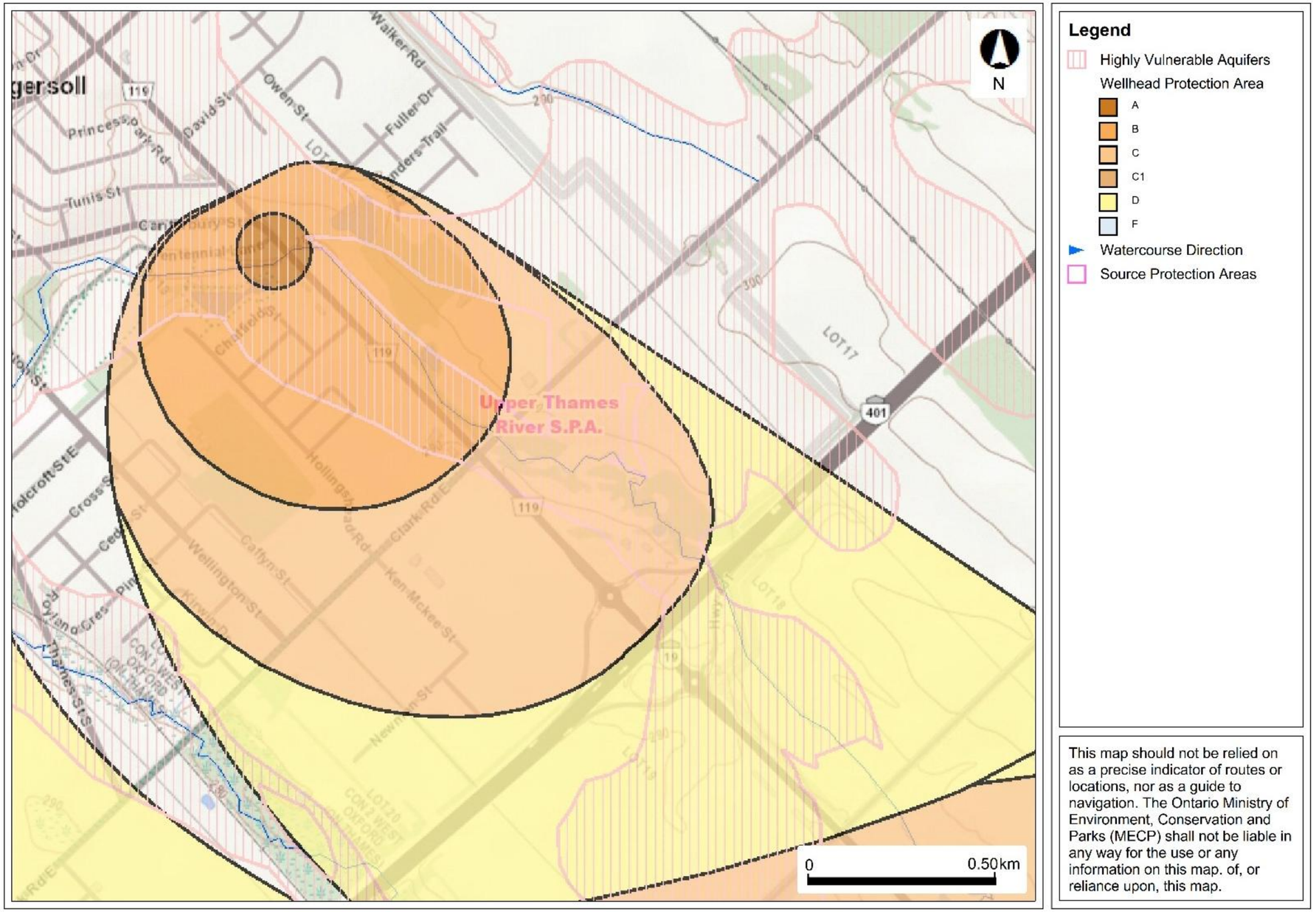
Figure 6: Aquatic Significant Natural Features



2.2.11 Source Water Protection Areas

The lands surrounding the Study Area are situated within the Thames-Sydenham and Region Source Protection Region and are subject to the regulatory framework of the *Clean Water Act*, 2006. Within the Upper Thames River Source Protection Area, the subject lands are characterized by high-permeability geological formations and soils that result in their classification as both a Highly Vulnerable Aquifer (HVA) and a Significant Groundwater Recharge Area (SGRA). While the OR 119/Clarke Rd intersection and the section of OR 119 that is proposed for widening is located outside the immediate Wellhead Protection Areas (WHPA-A or B) associated with Ingersoll's municipal well supply, these regional designations necessitate oversight of development. The high permeability of the region means that surface activities can more readily impact the underlying aquifer that supplies the town's drinking water, requiring proactive measures to prevent groundwater degradation. Mapping showing the proximity of the proposed intersection improvements and widening to Highly Vulnerable Aquifers & Wellhead Protection Areas is shown in **Figure 7**.

Figure 7: Highly Vulnerable Aquifers and Wellhead Protection Areas



2.3 Cultural Heritage

2.3.1 Archaeological Resources

A Stage 1 Archaeological Assessment (AA) was conducted for the project under Project Information Form number (PIF) P1189-0099-2025 in August 2025. A Stage 1 AA consists of a review of geographic, land use, and historical information for the property and the relevant surrounding area, and contacting MCM to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g., Stages 2 to 4) as necessary. The Stage 1 AA Report is provided in **Appendix D**.

The Stage 1 background research confirmed that portions of the project area were previously assessed in accordance with the Standards and Guidelines for Consultant Archaeologists. The previous assessment determined that the southern section of Oxford Road 119 was disturbed. In total, 1.11 ha (19.2%) of the project area has been previously assessed with no further assessment recommended.

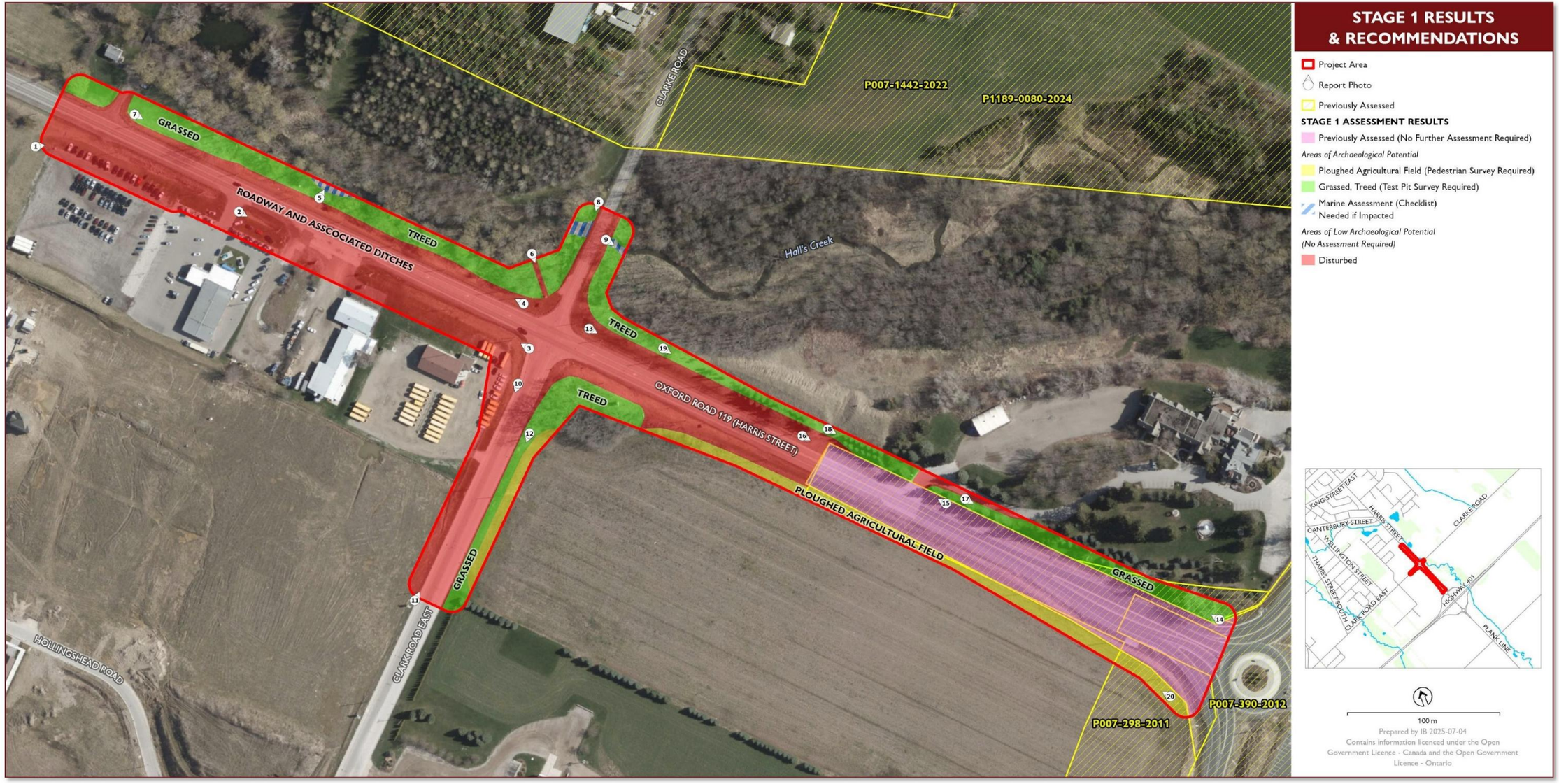
As the project area contained several features signaling archaeological potential, as well as imagery indicating that disturbance had occurred throughout, a Stage 1 property inspection was conducted to evaluate the current conditions of the project area and determine if any areas of archaeological potential remained intact within the project area.

Based on the results of both the Stage 1 background review and property inspection, it was recommended that a Stage 2 AA be conducted for the grassed and treed portions of the Study Area that demonstrate archaeological potential (1.25 ha, or 21.6% of the Study Area), as well as the agricultural fields within the Study Area that demonstrate archaeological potential (0.37 ha, or 6.4% of the Study Area). The results of the Stage 1 AA, including the areas recommended for a Stage 2 AA, are shown on **Figure 8**.

2.3.2 Built Heritage and Resources and Cultural Heritage Landscapes

A Cultural Heritage Screening was completed using the Ministry of Citizenship and Multiculturalism's (MCM) Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes, which indicated there is low potential for built heritage or cultural heritage landscapes within the study area.

Figure 8: Stage 1 AA Results (TMHC, 2025)



2.4 Socio-Economic Environment

2.4.1 Land Use

The intersection of Oxford County Road 119 and Clarke Road functions as a transition point between the established urban fabric of Ingersoll and the strategic growth areas designated by the Oxford County Official Plan. Oriented as a primary north-south arterial, OR 119/Harris Street serves as the principal gateway connecting the Town's core to the Highway 401 interchange, while Clarke Road provides an essential east-west link that divides the more established service commercial sectors to the north from the emerging residential and community employment lands to the south. This area is a central focus of the South-West Ingersoll Secondary Plan, which manages the evolution of lands brought into the municipal boundary to accommodate long-term urban expansion.

North of the intersection, the land use is characterized by Highway Service Commercial and Service Commercial designations, including retail developments designed to capitalize on the high traffic volumes of the Harris Street corridor, providing both local shopping and regional services. The planning framework in the northwest intersection quadrant supports a mixture of commercial and institutional uses, where recent amendments have allowed for community-oriented facilities to sit alongside traditional highway-oriented businesses. This northern portion of the intersection represents the completion of a commercial node that bridges the gap between the town's southern industrial gateway and its residential interior.

In contrast, the landscape to the south of Clarke Road is undergoing a transformation from its agricultural and manufacturing origins into a planned urban community and institutional campus. The southeast quadrant serves as the anchor for this expansion, featuring the Town of Ingersoll's planned Multi-Use Recreation Centre (MURC) situated on a significant land parcel east of the intersection. This facility is envisioned as a regional hub that will include a single-pad arena with future expansion potential, a gymnasium, a walking track, and various multi-purpose community rooms. The MURC is designed within a broader campus model that integrates a proposed elementary school, a long-term care facility, and significant open space, effectively serving as a social and recreational heart for lands where Low and Medium Density Residential designations are replacing former livestock operations. Additionally, the Elm Hurst Inn, located east

of Oxford Road 119, is planning a future expansion, although further details are not presently available.

To the southwest, the planning priorities shift toward employment, with significant tracts of land designated for Industrial and Prime Industrial uses. These designations mean that the lands immediately north of the Highway 401 corridor are reserved for high-traffic, industrial functions that benefit from direct access to the provincial highway network while remaining buffered from the residential and recreational clusters to the east.

3.0 Problem and Opportunity Statement

Per Phase 1 requirements of the Municipal Class EA process for a Schedule 'C' project, a Problem and Opportunity Statement was prepared to identify in detail the various problems and opportunities to be addressed by the Harmonized Class EA. In essence, the Problem and Opportunity Statement outline the need and justification for the overall project and establishes the general parameters, or scope, of the Harmonized Class EA study.

The 2024 Oxford County Transportation Master Plan (Parsons, 2024) determined that the span of Oxford Road 119 between Clarke Road and Highway 401 was experiencing some restricted traffic flow, with anticipated capacity challenges in the near future (within 5 years) as the County continues to experience growth and development. The Plan identified the need to undertake a Class EA to improve the Oxford Road 119 and Clarke Road intersection, as well as widen Oxford Road 119 between Clarke Road and the north roundabout at the Highway 401 and Highway 19 interchange to accommodate existing and future capacity issues.

Based on the review of background documents and discussions with County staff regarding transportation and infrastructure needs, the Problem and Opportunity Statement developed for the Harmonized Class EA is as follows:

> As Oxford County continues to experience growth and development, the section of Oxford Road 119 from Clarke Road to Highway 401 is anticipated to face capacity challenges in the near future. The current infrastructure is not equipped to handle the projected increase in traffic volume, which could lead to congestion, delays, and safety concerns.

4.0 Alternative Solutions

Under Phase 2 of the Class EA process, reasonable solutions to address the problem and opportunity are identified and described, including the "Do Nothing" alternative. After general inventories of the technical, natural, social, cultural, and economic environments are prepared and potential environmental impacts are determined for each alternative, the net positive and negative effects are identified, and the alternatives are evaluated resulting in a recommended solution. The recommended solution is then presented to the public, Indigenous communities, key interested parties, and government review agencies to solicit input into the selection of the preferred solution.

4.1 Evaluation Criteria

Evaluation criteria were developed based on the broad definition of the environment as described in the *Environmental Assessment Act* to comparatively evaluate the alternative solutions. The general evaluation criteria used in evaluating the alternative solutions and design concepts are outlined in **Table 3**.

Table 3: Alternative Solutions Evaluation Criteria

Factor Area	Evaluation Criteria
Natural Environment	• Terrestrial Ecosystems • Fish and Fish Habitat • Species at Risk • Groundwater and Surface Water • Source Water Protection • Air Quality and Climate Change
Socio-Economic Environment	• Land Use/Official Plan • Emergency Services • Alignment with Public Input • Cultural Heritage Resources • Archaeological Resources

Factor Area	Evaluation Criteria
	• Noise • Impacts to Property/Business Operations
Engineering	• Traffic Operations and Capacity • Collision Severity • Constructability • Impacts to utilities
Cost	• Capital and Maintenance Cost (high-level estimates)

4.2 Evaluation Methodology and Ranking System

Each alternative solution was ranked from least preferred to most preferred for each criterion described in **Table 3**. The alternative solution that best met all criteria was selected. All Factor Areas were weighted equally for the purposes of the evaluation.

4.3 Alternative Solutions – Oxford Road 119 Capacity

Table 4 describes the full list of alternative solutions considered to address the capacity issues identified for Oxford Road 119, including whether or not the alternative solution was carried forward in the evaluation.

Table 4: Alternative Solutions for Oxford Road 119 Capacity Concerns

Alternative Solution	Justification	Carried Forward to Evaluation
Do Nothing	Oxford Road 119 would remain a two-lane road. Required to be considered as part of the Harmonized Class EA process.	Yes
Widen Oxford Road 119 with additional through traffic lanes	Additional through traffic lanes would address the Problem and Opportunity Statement by adding additional capacity to Oxford Road 119.	Yes
Constructure of a new roadway on a new alignment	Significant impacts anticipated on adjacent property and natural and socio-economic environments.	No

Alternative Solution	Justification	Carried Forward to Evaluation
Provision of a lane for high-occupancy vehicles	Alternative unlikely to address the immediate capacity issues of Oxford Road 119, as it would not provide a sufficient length to incentivize divers to change their behaviour.	No
Provide alternative transportation modes, e.g., public transit	Alternative unlikely to address the immediate capacity issues of Oxford Road 119, as much of the existing traffic on Oxford Road 119 streams directly to and from the Highway 401.	No

4.4 Alternative Solutions – Oxford Road 119 and Clarke Road Intersection

Table 5 describes the full list of alternative solutions considered to address the improvements identified for the Oxford Road 119 and Clarke Road intersection, including whether or not the alternative solution was carried forward in the evaluation.

Table 5: Alternative Solutions for the Oxford Road 119 and Clarke Road Intersection

Alternative Solution	Justification	Carried Forward to Evaluation
Do Nothing (with no widening on Oxford Road 119)	Oxford Road 119 and Clarke Road would remain a two-way stop-controlled intersection, and Oxford Road 119 would remain a two-lane road. Required to be considered as part of the Harmonized Class EA process.	Yes
Maintain the two-way stop-controlled intersection with minor improvements (with widening on Oxford Road 119)	Minor improvements could include additional signage, pavement markings adjustments or illumination. Alternative unlikely to address the immediate safety and capacity issues of the Oxford Road 119 and Clarke Road intersection.	No

Alternative Solution	Justification	Carried Forward to Evaluation
Signalized Intersection (with widening on Oxford Road 119)	A signalized intersection would address the Problem and Opportunity Statement by improving overall safety of the Oxford Road 119 and Clarke Road intersection and by adding additional capacity to Oxford Road 119.	Yes
Roundabout (with widening on Oxford Road 119)	A roundabout would address the Problem and Opportunity Statement by improving overall safety of the Oxford Road 119 and Clarke Road intersection and by adding additional capacity to Oxford Road 119.	Yes

4.5 Final List of Alternative Solutions

While Sections 4.3 and 4.4 separately identify the initial alternative solutions for the Oxford Road 119 capacity concerns and the Oxford Road 119 and Clarke Road intersection improvements, the final list of alternative solutions presented below combines them for the purpose of environmental evaluation. Because the roadway widening and the intersection footprint are physically adjacent and functionally linked, evaluating them as combined concepts (e.g., a signalized intersection with widening versus a roundabout with widening) allows for a more accurate and comprehensive assessment of their cumulative environmental, socio-economic, and traffic impacts. However, it is important to clarify that the County of Oxford considers the intersection improvements and the road widening to be two separate projects from a funding and implementation perspective. They are integrated in this final alternative list solely to facilitate a holistic evaluation under the Harmonized Class EA process, while maintaining an understanding of their administrative separation as distinct County projects.

4.5.1 Alternative Solution #1: Do Nothing

The alternative of 'Do Nothing' would be to leave the Oxford Road 119 and the Oxford Road 119 and Clarke Road intersection as is, with no improvements or changes to be made. This alternative does not address the Problem and Opportunity Statement, nor

would it address anticipated traffic growth within the Study Area over the next 20 years. This alternative is required to be considered under the Municipal Class EA planning process as a baseline for the comparison of alternative solutions.

Alternative Solution #1 is shown in **Figure 9**.

Figure 9: Alternative Solution #1, Do Nothing

4.5.2 Alternative Solution #2: Signalized Intersection and Widening

This alternative considers implementing traffic signals at the Oxford Road 119 and Clarke Road intersection, as well as adding additional through traffic lanes to Oxford Road 119. Alternative Solution #2 addresses the concerns for traffic operations and safety by supporting traffic capacity, improving safety, addressing sightline issues, and speed control. Alternative Solution #2 would require only moderate property acquisitions, resulting in an overall smaller project footprint when compared to Alternative Solution #3. Drivers are familiar with traffic signals, which can aid usability and reduce adjustment time. This alternative also offers lower overall construction costs and is less complex to construct than a roundabout alternative. However, Alternative Solution #2 would have higher overall maintenance requirements relative to Alternative Solution #3 and would tend to increase stop-and-go traffic. It also presents an increased risk of severe or high-speed collisions when compared to Alternative Solution #3.

Alternative Solution #2 is shown in **Figure 10**.

Figure 10: Alternative Solution #2, Signalized Intersection

4.5.3 Alternative Solution #3: Roundabout and Widening

This alternative considers building a roundabout at the intersection to improve the flow of traffic. This alternative improves traffic operations and safety by anticipating future traffic needs. Alternative Solution #3 would result in fewer stops and delays, reducing idling time and lowering vehicle emissions. Roundabouts tend to decrease the severity of collisions and functions as a traffic-calming measure by slowing vehicles. It can also serve as a gateway feature and point of interest when entering the Town of Ingersoll, while creating corridor consistency with the existing roundabouts to the south of the Study Area. However, construction is more complex and has higher upfront costs when compared to Alternative Solution #2. It requires a larger overall project footprint and is less accessible for pedestrians relative to Alternative Solution #2.

Alternative Solution #3 is shown on **Figure 11**.

Figure 11: Alternative Solution #3, Roundabout

4.6 Evaluation of Alternative Solutions

Table 6 summarizes the evaluation of alternative solutions for improvements at the Oxford Road 119 and Clarke Road intersection, as well as the improvements required to address capacity issues on Oxford Road 119, based on the criteria described in **Table 3**. The ranking system described in **Section 4.2** is used to determine the preferred alternative solution.

4.7 Preferred Alternative Solution

The preferred alternative solution for addressing the traffic operations and safety concerns and anticipated future capacity issues at the Oxford Road 119 and Clarke Road Intersection as well as on Oxford Road 119 between Clarke Road and the Highway 401 is Alternative Solution #3, construction a roundabout and widening Oxford Road 119 with additional through traffic lanes.

Table 6: Evaluation of Alternative Solutions

Legend:

● Preferred ◕ Moderately Preferred ◑ Less Preferred ◔ Least Preferred

Factor Area	Alternative Solution #1 Do Nothing		Alternative Solution #2 Signalized Intersection and Widening		Alternative Solution #3 Roundabout and Widening	
Natural Environment	●	• No additional disruptions to local environment due to construction. • Increased idling time due to anticipated capacity issues leading to congestion.	◕	• Smallest proposed area of disturbance; limited vegetation removals required. • Potential for longer idling time and vehicle emissions.	◑	• Largest proposed area of disturbance; more vegetation removals required. • Reduces idling time and vehicle emissions. • Potential for green spaces to be incorporated into design.
Socio-Economic Environment	◔	• Does not accommodate planned growth in the surrounding area. • Not in alignment with Oxford County Transportation Master Plan (2024) – does not address existing and future capacity concerns.	◑	• May not accommodate planned growth in the surrounding area, particularly during peak hours. • Not in alignment with Oxford County Transportation Master Plan (2024) – does not address future capacity concerns.	●	• Accommodates planning growth in the surrounding area. • In alignment Oxford County Transportation Master Plan (2024) – addresses existing and future capacity concerns.
Engineering	◑	• No additional requirements beyond existing maintenance. • Potential increase in collisions due to higher traffic volumes.	◕	• Higher maintenance requirements (electrified infrastructure, etc.). • May not significantly alleviate congestion, particularly during peak hours. • Moderate risk for severe/high speed collisions.	●	• Limited maintenance. • Decreases number and severity of collisions. • Efficient traffic flow (fewer stops and delays).
Cost	●	• No additional cost beyond existing maintenance.	◕	• Moderate capital cost, but moderate maintenance costs.	◑	• Highest capital and property costs, but relatively low maintenance cost.
Evaluation Summary	**Not Recommended**		**Not Recommended**		**Preferred**	

5.0 Alternative Design Concepts

Under Phase 3 of the Class EA, a range of design concepts to implement the preferred alternative solution (as identified in Phase 2) are identified and evaluated based on functionality and impacts to the surrounding environment.

Per the MCEA, the potential impact of each alternative design concept identified was addressed in consideration of the detailed inventory of the environment described and comparatively evaluated based on these potential impacts to identify the recommended design concept.

The preferred design concepts are the presented to the public, Indigenous communities, key interested parties, and government review agencies to solicit input into the selection of the preferred design.

5.1 Description of Alternative Design Concepts

Building upon the selection of the preferred Alternative Solution, the following sections detail the specific Alternative Design Concepts developed for implementation. Consistent with the approach taken in Phase 2, the design configurations for the Oxford Road 119 and Clarke Road intersection are evaluated in combination with the Oxford Road 119 widening. Evaluating these design concepts as cohesive packages is essential, as the geometric design, grading limits, and environmental footprint of the intersection transition directly into those of the widened roadway corridor. However, it must be reiterated that while they are evaluated together to allow for a comprehensive assessment of cumulative impacts under the Harmonized Class EA process, the County of Oxford continues to recognize and manage the intersection improvements and the corridor widening as two distinct projects subject to separate funding and implementation schedules.

5.1.1 Alternative Design Concept #1: Multi-Lane Roundabout with widening on OR119

Alternative Design Concept #1 includes a multi-lane roundabout with widening on Oxford Road 119 (two northbound and two southbound lanes). When compared to the other alternative design concepts, Alternative Design Concept #1 is expected to have less impact to Halls Creek and the related Clarke Road culvert but will likely have the

greatest impact to the woodlot to the southwest of the Study Area. A multi-lane roundabout is likely to result in the longest crossing distance for pedestrians, which can increase safety risks. Alternative Design Concept #1 is anticipated to have the most complex and longest-duration construction and highest capital costs.

Alternative Design Concept #1 is shown in **Figure 12**.

Figure 12: Alternative Design Concept #1, Multi-Land Roundabout

5.1.2 Alternative Design Concept #2: Single-Lane Roundabout with Right-Turn Bypass Lane and Widening on OR119

Alternative Design Concept #2 includes a single-lane roundabout with a right-turn bypass and widening on Oxford Road 119 (two northbound lanes and one southbound lane) between Clarke Road and Highway 401. When compared to the other design concepts, Alternative Design Concept #2 is expected to have the greatest impact to Halls Creek and the related Clarke Road culvert, overall moderate property impacts, and less impact to the woodlot to the southwest of the Study Area compared to Alternative Design Concept #1. A single lane roundabout with right-turn bypass lane would likely have the shortest crossing distance for pedestrians when compared to the other alternative design concepts. Alternative Design Concept #2 is anticipated to have less complex and shorter duration construction and moderate capital costs.

Alternative Design Concept #2 is shown in **Figure 13**.

Figure 13: Alternative Design Concept #2, Single-Lane Roundabout with Right-Turn Bypass Lane

5.1.3 Alternative Design Concept #3: Single-Lane Roundabout with Right-Turn Exit Lane and widening on OR119

Alternative Design Concept #3 includes a single-lane roundabout with a right-turn exit lane and widening on Oxford Road 119 (two northbound lanes and one southbound lane) between Clarke Road and Highway 401. When compared to the other design concepts, Alternative Design Concept #3 is expected to have a similar level of impact to Halls Creek and related Clarke Road Culvert as Alternative Design Concept #1, a moderate impact to property, and overall less impact to the woodlot to the southwest of the Study Area. A single lane roundabout with right-turn exit lane would likely have a moderate crossing distance for pedestrians when compared to the other alternative design concepts. Alternative Design Concept #3 is anticipated to have largely similar construction complexity and duration as Alternative Design Concept #2 and the lowest capital costs.

Alternative Design Concept #3 is shown in **Figure 14**.

Figure 14: Alternative Design Concept #3, Single-Lane Roundabout with Right-Turn Exit Lane

5.2 Evaluation of Alternative Design Concepts

Table 7 summarizes the evaluation of alternative solutions for improvements at the Oxford Road 119 and Clarke Road intersection, as well as the improvements required to address capacity issues on Oxford Road 119, based on the criteria described in **Table 3**. The ranking system described in **Section 4.2** is used to determine the preferred alternative solution.

5.3 Preferred Alternative Design Concept

The preferred alternative design concept for addressing the traffic operations and anticipated future capacity issues at the Oxford Road 119 and Clarke Road Intersection, as well as on Oxford Road 119 between Clarke Road and the Highway 401, is Alternative Design Concept #3: construction of a single-lane roundabout with a right-turn exit lane and widening of OR119. Preferred alternative design drawings are provided in **Appendix G**.

Table 7: Evaluation of Alternative Design Concepts

Legend:

Factor Area	Alternative Design Concept #1 Multi-Lane Roundabout		Alternative Design Concept #2 Single-Lane Roundabout with Right-Turn Bypass Lane		Alternative Design Concept #3 Single-Lane Roundabout with Right-Turn Exit Lane	
Natural Environment		• Less impact to the Halls Creek culvert when compared with Alternative Design Concept #2. • Additional impacts to the woodlot to the southwest.		• Greatest impact to the Halls Creek culvert due to wider road platform. • Less impact to the southwest woodlot when compared with Alternative Design Concept #1.		• Less impact to the Halls Creek culvert when compared with Alternative Design Concept #2. • Less impact to the southwest woodlot when compared with Alternative Design Concept #1.
Socio-Economic Environment		• Accommodates planned growth and addresses capacity concerns. • Aligns with the Oxford County Transportation Master Plan (2024). • Provides a Gateway feature into the Town of Ingersoll. • Provides speed control/traffic calming.		• Accommodates planned growth and addresses capacity concerns. • Aligns with the Oxford County Transportation Master Plan (2024). • Provides a Gateway feature into the Town of Ingersoll. • Provides speed control/traffic calming.		• Accommodates planned growth and addresses capacity concerns. • Aligns with the Oxford County Transportation Master Plan (2024). • Provides a Gateway feature into the Town of Ingersoll. • Provides speed control/traffic calming.
Engineering		• Longest crossing distance for pedestrians due to additional pavement width. • Longest construction due to additional lanes at roundabout and additional Oxford Road 119 southbound lane.		• Shortest crossing distance for pedestrians. • Shorter construction when compared with Alternative Design Concept #1.		• Moderate crossing distance requirements for pedestrians. • Shorter construction when compared with Alternative Design Concept #1.
Cost		• Highest capital cost. • Highest property cost. • Relatively low maintenance cost.		• Moderate capital cost. • Moderate property cost. • Similar maintenance costs to Alternative Design Concept #1.		• Lowest capital cost. • Lowest property cost. • Similar maintenance costs to the other alternatives.
Evaluation Summary	**Not Recommended**		**Not Recommended**		**Preferred**	

6.0 Description of Preferred Design

The following sections outline the features of the Preferred Design, detailing the recommended infrastructure upgrades for both the Oxford Road 119 corridor and its intersection with Clarke Road. The preferred design for the improvements to Oxford Road 119 and Clarke Road Intersection are intended to enhance intersection traffic flow and accommodate active transportation, while minimizing property and environmental impacts.

While these elements are described together to present a cohesive and unified engineering strategy—ensuring seamless transitions in roadway geometry, stormwater management, and active transportation networks—the County of Oxford maintains the administrative distinction between the two initiatives. For the purposes of future funding allocations, detailed design execution, and construction phasing, the intersection improvements and the Oxford Road 119 widening remain two separate and distinct County projects.

6.1 Roadway Design

Key design elements include intersection geometry and cross-section elements.

Oxford Road 119

- **Geometry:** Oxford Road 119 will meet a design standard for 70 kilometres per hour (km/h), with a posted speed of 60 km/h; and
- **Cross Section:** From the Highway 401 north ramp terminal to Clarke Road, Oxford Road 119 will be widened to expand to two northbound lanes, while maintaining a single southbound lane. In the vicinity of the intersection with Clarke Road, OR119 will be upgraded to an urban cross-section with curb and gutter.

Clarke Road

- **Geometry:** Clarke Road will meet a design standard for 60 km/h, with a posted speed of 50 km/h; and
- **Cross Section:** Throughout the project limits, Clarke Road will be upgraded to an urban cross-section featuring curb and gutter. This segment will maintain one westbound lane and expand to two eastbound lanes east of the intersection.

6.2 Intersections

The intersection of OR119 and Clarke Road will be converted to a single-lane roundabout with an inscribed circular diameter of 46m. To support dedicated northbound right-turn volumes, the configuration includes a dedicated northbound right exit and a corresponding two westbound receiving lanes on Clarke Road; all other approaches consist of single-lane entries and exits.

6.3 Active Transportation

On street bike lanes and a sidewalk are currently present on Clarke Road west of the intersection and will be maintained and a multi-use path is proposed on the north side of Clarke Road, east of the intersection. The are currently no designated cycling facilities on OR119 or Clarke Road east of the intersection and no planned upgrades were noted in the Oxford County Cycling Master Plan (2021). However, Clarke Road is a designated cycling route (part of the Ingersoll Woodstock Loop) identified by Tourism Oxford via mapping available at rideoxford.ca. The Halls Creek/Elmhurst Trail, an off-road walking trail along Halls Creek, is present on the southeast quadrant of the intersection and will be maintained.

Pedestrian crossovers (PXOs) will be provided at the north, east and west crosswalks at the roundabout to connect the Halls Creek/Elmhurst trail, Clarke Road bike lanes and sidewalk to the proposed multi-use path.

6.4 Drainage and Stormwater Management

The recommended intersection stormwater management strategy includes adjustments to roadside ditches, additional storm sewers and replacements of culverts that are not performing to minimum design standards. Current drainage patterns will be preserved.

6.5 Roadside Safety

All new construction within the project limits will feature 4:1 or flatter foreslopes extending to the required clear zone width. These gradual slopes provide a recovery area for vehicles that leave the travel lane. In locations where site constraints prevent the use of these slopes, mitigation measures will be implemented. These measures

include the installation of barrier systems to shield potential hazards or the relocation of such hazards outside of the recovery area.

6.6 Property

Permanent property acquisitions will be required for the grading, sightlines and construction of the roundabout and approaches. A preliminary assessment indicates that properties at each quadrant at the existing intersection will potentially be impacted.

6.7 Utilities

Anticipated utility impacts include Hydro One and Bell relocations. Ongoing correspondence with utility companies is required to determine extents of impacts as design progresses.

6.8 Preliminary Construction Staging and Timelines

The timing for construction at the Oxford Road 119 and Clarke Road intersection is dependent on funding and approvals. It is anticipated that construction will be able to be completed in one construction season with through traffic on OR119 maintained during construction and access to local businesses remain open. Construction staging requirements will be developed during the future design phase.

7.0 Environmental Impacts and Mitigation Measures

7.1 Natural Environment

The following subsections discuss the potential impacts associated with the proposed improvements on the identified natural heritage components with recommendations to avoid and/or mitigate these impacts. The complete Terrestrial Ecosystems Impact Assessment Report and Fish and Fish Habitat Impact Assessment Report are provided in **Appendix E** and **Appendix F**.

7.1.1 Construction Impacts

Implementation of the Preferred Design will require earthworks and material management, including excavation, soil stockpiling, aggregate deposition, and the application of concrete and asphalt. These activities necessitate the removal of vegetative cover and the modification of existing topography and site gradients. Such alterations inherently change natural drainage patterns and increase the risk of sediment and deleterious material discharge into adjacent environments and waterbodies. Specifically, airborne particulate matter (dust) can impair plant productivity through photosynthetic interference, while both dust and concrete leachate can result in chemical and physical degradation of aquatic habitats. Furthermore, the operation of heavy machinery introduces the risk of hydrocarbon contamination (e.g., fuel, oil, grease) via subsurface infiltration or surface runoff. Mechanical equipment may also cause soil compaction, which negatively impacts future vegetative re-establishment and poses physical risks to local fauna.

To mitigate these identified environmental risks, the following protocols must be strictly adhered to during the excavation and grading phases:

- Schedule work to avoid weather conditions which increase the potential or erosion and sedimentation (i.e., rain, strong wind, etc.);
- Exposed soils will be restricted to the smallest area for the shortest period of time feasible.

- Erosion and Sediment Control (ESC) will be further considered during the subsequent design phase and a dedicated Erosion Control Plan (ECP) Plan will be developed if impacts cannot be addressed/mitigated by implementing standard best management practices for ESC;
- Sediment fence will be installed prior to the commencement of site preparation and other construction-related activities per an approved Erosion and Sediment Control Plan (or equivalent). Sediment fence will be installed properly (e.g., trenched in, etc.), inspected regularly (i.e., daily, following storm events, etc.), and repaired immediately when necessary (e.g., breached eliminated, sediment accumulations removed, etc.);
- Necessary stockpiles or temporarily stored topsoil, sill, or aggregate materials will be piled as low as practicable and isolated by sediment fence;
- Locate fuels, construction materials, and other potentially deleterious substances (if needed on-site) within the existing road right-of-way. Minimize storage of such materials to the extent feasible;
- Refueling of equipment should be completed away from surface water features whenever possible to minimize potential impacts to surface water and groundwater quality in the event of a spill;
- To minimize the impact of potential contaminant spills, the Contractor should implement best management practices, such as containment of any temporary fuel storage, preparation of a spill response plan, and proper facility management during operation and maintenance;
- Materials for spill response, such as drip pans and spill contingency kits, must be maintained on site during construction; and
- The Contractor shall be prepared to immediately deploy spill response equipment (e.g., absorption pads, etc.), if necessary. Spills will be reported to the Ontario Spills Action Centre (1-800-268-6060) as soon as possible.

7.1.2 Impacts to Vegetation

Implementing the Preferred Design solution, including its physical footprint and necessary grading, is expected to result in the removal of approximately 2,861 square metres (m^2) of Significant Woodland east of the OR 119 and Clarke Road intersection. It will also result in the removal of approximately 2,377 m^2 from a small, wooded area southwest of the OR 119 and Clarke Road intersection. These removals will occur at the

edges of the woodlands adjacent to the existing road right-of-way, in narrow strips extending approximately 6 m from the right-of-way on both sides of the road. Following construction, the planting of native self-sustaining vegetation adjacent the remaining significant woodlands and outside the area that is to be maintained as part of the active road right of way is recommended to mitigate impacts to woodlands.

The following measures are recommended to reduce impacts from vegetation removal:

- Time vegetation removals to occur outside of the migratory bird nesting period (April 1 to August 31), the primary active bat season (April 1 to September 30), and the sensitive life stages for monarch (May 1 to September 30):
  - If vegetation clearing will proceed when Monarch larvae may be present (May 1 to September 30), identification and inspection of milkweed plants shall be completed to locate Monarch larvae;
  - If larvae are identified, a trained Environmental Monitor may relocate the species to a suitable and safe location under the direction of a Qualified Biologist. Monarch caterpillars may be moved to other milkweed plants; for other larval stages (i.e., eggs and chrysalis), entire milkweed plants should be transplanted; and
  - Milkweed and nectar producing plants are recommended to be included in seed mixes for areas restored to meadow to provide habitat for Monarch.
- Demarcate work zones to ensure work remains within the construction limits;
- Utilize appropriate vegetation clearing techniques and limit clearing, grubbing, and grading to only include areas necessary to complete the work (i.e., trees to be felled away from the retained natural areas);
- Temporarily disturbed areas shall be restored and vegetated to pre-construction conditions or better. Vegetation plantings shall include seed mixes that are appropriate for the area, and include a mix of native species, including salt-tolerant varieties (as needed) that are appropriate to the site and conditions. Seed mixes should include fast-growing, short-lived perennial cover crop to stabilize soil and reduce competition from weedy exotics;
- Potential cavity trees to be retained shall be identified and their root zone protected by clearly demarcating vegetation clearing/construction limits within the dripline;
- Submission of a Butternut Health Assessment and/or Information Gathering Form to the MECP at the Detail Design Stage of the project is recommended to determine if

the proposed activity is considered a negative impact to Butternut or Butternut habitat; and

- Any Landscape Plans prepared as part of the project should incorporate species native to the local landscape.

7.1.3 Impacts to Wildlife and Wildlife Habitat

Construction activities pose potential risks to local wildlife and their associated habitats through direct physical injury, habitat loss, and indirect stressors such as noise, vibration, and light pollution. These factors may cause temporary shifts in established daily movement patterns as fauna avoid active work zones; however, such disruptions are expected to be short-term, given that local species likely possess some degree of habituation to existing anthropogenic disturbances.

Vegetation removal represents a specific risk to breeding birds, as the destruction of nests, eggs, or young and the disturbance of nesting individuals can occur during clearing operations. Furthermore, removal of dead, dying, or injured trees, may destroy candidate maternity colony sites for at-risk bat species. Implementing the preferred alternative requires the removal of approximately 2,855 m² of Significant Woodland and an additional 2,377 m² from smaller wooded areas, which includes eleven trees identified as having cavities that may provide specialized roosting habitat. This removal could pose a risk to several Endangered species confirmed within the study area, including the Little Brown Myotis, Northern Myotis, and Tri-colored Bat, as well as the Silver-haired Bat, which acoustic data suggests may be active in the area.

The following measures are recommended to reduce these impacts:

- The design shall minimize encroachment of natural areas, including siting staging areas and other temporary construction activities appropriately to minimize disturbance of natural areas to the extent feasible;
- The design shall consider areas where vegetated buffers can be maintained to allow for cover and protection of wildlife, where appropriate and feasible;
- Time vegetation removals to occur outside of the migratory bird nesting period (April 1 to August 31), the primary active bat season (April 1 to September 30), and the sensitive life stages for monarch (May 1 to September 30);

- Stockpiles shall be covered, protected and/or stored in a way to prevent and discourage wildlife from accessing the materials for nesting (i.e., birds, reptiles), burrows or refuge and install exclusionary measures around the perimeter to prevent access from wildlife (i.e., mammals, reptiles/amphibians);
- Direct artificial light away from natural areas to reduce disturbance to wildlife habitat;
- Where feasible, limit the extent and duration of construction noise and lighting to daylight hours during the wildlife active season (i.e., April to October);
- Avoid installing light figures (permanent or temporary) near bat habitat to lessen the likelihood of effects of light pollution. If not feasible, efforts to reduce illumination and light spill shall consider the following: height of light, light shields, lighting intensity, direction, and spectral composition;
- Construction activities within 30 m of known cavity trees that will be retained, and surrounding bat habitat (woodland edge) shall be restricted to daylight hours when possible;
- Wildlife shall not be harmed or harassed;
- Construction equipment and vehicles are to yield to wildlife;
- If snake hibernacula is discovered, work must cease in the area, and a Qualified Biologist shall be contacted to discuss mitigation options. Overwintering snakes shall not be relocated. If Species at Risk are encountered, MECP shall be contacted;
- Wildlife protocols should be developed to educate workers of potential wildlife occurrences, including species at risk, and measures to take in the event of potential encounters. Preventative measures to reduce the likelihood of encounters, injury, and incidental take should also be provided;
- Monitoring of environmental features during construction to confirm works are carried out in accordance with the design and specifications. Environmental monitoring during construction could include:
    - Conduct daily visual inspections for wildlife prior to the start of construction during the active season (i.e., April to October). This shall include a thorough walk-through of the work area and searching any vegetation, brush piles, logs or rock piles, and equipment. If wildlife is observed, work shall be suspended until the species is out of harm's way;

  - Regular inspections of sensitive features to confirm that setbacks are adhered to and that damage/alteration to the demarcations of these features is addressed; and
  - Required monitoring activities to confirm that spills and sediment releases are prevented or addressed quickly and effectively.
- If construction activities occur during the active bat season (i.e. April 1 to September 30), work will be restricted to daylight hours only and the use of artificial lighting will be avoided;
- If work must take place during the core nesting period and the area is small enough to be effectively searched for nesting birds, then a breeding bird nest survey can be completed by a Qualified Biologist. conditions. Seed mixes should include fast-growing, short-lived perennial cover crop to stabilize soil and reduce competition from weedy exotics;
- Potential cavity trees to be retained shall be identified and their root zone protected by clearly demarcating vegetation clearing/construction limits within the dripline;
- Submission of a Butternut Health Assessment and/or Information Gathering Form to the MECP at the Detail Design Stage of the project is recommended to determine if the proposed activity is considered a negative impact to Butternut or Butternut habitat; and
- Landscape Plans prepared as part of the project should incorporate species native to the local landscape.

7.1.4 Impacts to Aquatic Habitat

The Study Area includes Halls Creek, which flows northerly along the eastern edge of the project site. This watercourse is confirmed to provide Fish Habitat and Aquatic Significant Wildlife Habitat. Specifically, the creek supports the Slippershell Mussel (*Alasmidonta viridis*), a provincially rare species designated as a Species of Conservation Concern. Additionally, the creek exhibits evidence of groundwater inputs, such as watercress and skunk cabbage, identifying it as a candidate Environmental Feature of Local Significance.

The Preferred Design involves a single-lane roundabout and road widening, which will extend the width of Clarke Road and into areas near Hall's Creek. This has the potential to result in negative environmental impacts through the following pathways:

- **Sedimentation and Water Quality:** Construction activities pose a risk of increased sediment loadings and nutrient enrichment within the watercourse via runoff exiting development areas. This may alter water quality or degrade habitat through increased turbidity, eutrophication, or changes in Potential of Hydrogen (pH);
- **Contamination:** There is a potential for contamination by toxic substances, such as fuels, lubricants, and coolants, derived from the refueling and maintenance of mobile equipment or accidental spills during construction;
- **Hydrological Alterations:** Grading that modifies existing topography, construction-related dewatering, and increased coverage of impervious surfaces (e.g., roads) may alter surface water and/or groundwater contributions to the watercourse; and
- **Biological and Physical Disturbance:** The works carry a risk of introducing invasive aquatic organisms and plants. Furthermore, increased human activity and encroachment near the watercourse could result in bank compaction and the exploitation of fish.

Given that no in-water work is proposed to implement the Preferred Design, the mitigation measures that have been identified for construction, vegetation, and wildlife/wildlife habitat have been deemed sufficient to safeguard aquatic resources, including fish and fish habitat.

7.1.5 Potentially Contaminated Property and Excess Material Management

Excess materials may be generated/encountered during construction and require proper management/disposal. This is potentially contaminated materials. The following mitigation measures are proposed:

- The Preferred Design may result in impacts to the Areas of Potential Environmental Concern and will be confirmed during the subsequent phase of the project;
- Sampling programs should be developed and undertaken under the supervision of a qualified person, as defined in O.Reg. 406/19, and sample selection should take into consideration the presence of anthropogenic substances, such as debris/waste, and unusual odours or staining;
- O.Reg. 406/19 (On-Site and Excess Soil Management) and the associated document, Rules for Soil Management and Excess Soil Quality Standards, as referenced by O.Reg. 406/19, should be followed for soil that is excavated and managed on-site or off-site during construction; and

- Non-biodegradable erosion and sediment control materials (including accumulated sediment, if any) will be removed once construction is complete and the disturbed areas are stabilized.

7.2 Climate Change

Part of Oxford County's 2023 to 2026 Strategic Plan outlines enhancing environmental sustainability with a goal of climate change mitigation and adaption. The project's impact and resiliency to climate change were taken into consideration during the study and will be carried forward into future stages of design. One of the considerations when evaluating the Alternative Solutions and Design Concepts was the impact of idling cars contributing to air quality and greenhouse gas emissions. The roundabout option selected as the Preferred Design, including its right-turn exit lane, reduces the likelihood that vehicles will queue unnecessarily and facilitates free-flowing movement. This is expected to reduce traffic congestion and idling time for vehicles, thereby having a minimal (positive) impact to climate change.

7.3 Cultural Heritage

A Stage 2 archaeological assessment is recommended for the treed/grassed areas and agricultural fields that retain archaeological potential, according to the results of the Stage 1 background review and property inspection. Refer to the Stage 1 AA included as **Appendix D** as well as **Figure 8** of this report for the lands that have been identified for assessment.

The following summary of findings and recommendations apply:

- All previously assessed portions of the project area where no further archaeological assessment was recommended do not require further assessment (1.11 ha; 19.2% of the study area);
- Portions of the project area were found to be previously disturbed (i.e., paved roads, driveways, drainage ditching, buried utilities, artificial berms, and culvert), lack integrity, do not retain archaeological potential, and are not recommended for further assessment (3.03 ha; 52.5% of the study area);
- The grassed and treed portions of the project area that demonstrate archaeological potential

(1.25 ha; 21.6% of the study area) are recommended for Stage 2 archaeological assessment prior to ground disturbing activities. The Stage 2 assessment should consist of a test pit survey at 5 m intervals to achieve the provincial standard;

- Agricultural fields within the project area that demonstrate archaeological potential (0.37 ha; 6.4% of the study area) are recommended for Stage 2 archaeological assessment prior to ground disturbing activities. The Stage 2 assessment should consist of a pedestrian survey at 5 m intervals after ploughing and weathering to achieve the provincial standard:
  - For any impact areas that are linear corridors less than 10 m wide, test pit survey can be undertaken.
- No in-water impacts are planned for the project. If in-water impacts are planned, the Marine Archaeology Checklist must be completed (0.03 ha; 0.5% of the study area); and
- Should proposed impacts extend beyond the lands assessed for this project, then additional assessment may be required.

There is low potential for built heritage or cultural heritage landscapes within the study area, and none have been identified through this Class EA study. Therefore, no impacts to cultural heritage resources are anticipated as a result of implanting the Preferred Design.

7.4 Socio-Economic Environment

It is anticipated that the Preferred Design will require the acquisition of property to facilitate construction, although this will be confirmed during the subsequent phase of the project. Impacted property owners will continue to be engaged to review, discuss, and confirm impacts to property and associated mitigation/compensation measures.

7.4.1 Noise and Air Quality Impacts During Construction

Although no long-term air quality impacts from the proposed works are anticipated, dust and/or emissions during construction have the potential to degrade air quality in the short term. Measures to minimize these impacts include best management practices such as reducing unnecessary idling, regular cleaning of construction sites, covering fine-grained material loads, prompt cleaning of paved streets where tracking of soil or dust has occurred; and reduced speeds when travelling on sites with unpaved surfaces.

Construction may also result in temporary noise impacts. Measures to minimize noise and air quality-related impacts during construction include:

- All construction equipment should be properly maintained to limit noise emissions. As such, all construction equipment should be operated with effective muffling devices that are in good working order;
- There should be explicit indication that Contractors are expected to comply with all applicable requirements of the Contract and any applicable local by-laws;
- The Contract documents should contain a provision that any initial noise complaint will trigger verification of construction noise and typical noise control measures; and
- In the presence of persistent noise complaints, all construction equipment should be verified to comply with MECP NPC115 and NPC-118 limits.

8.0 Summary of Environmental Concerns and Commitments

A summary of environmental effects, proposed mitigation, and commitments to future work, as identified during the course of this study, is provided in **Table 8**. This summary forms a comprehensive 'checklist' of outstanding issues identified at the end of the harmonized Class EA and will serve as a starting point for the subsequent design phase of the project.

Table 8: Summary of Environmental Concerns and Commitments

Identification Number (I.D. #)	I.D. # Sub-issues	Environmental Issues/Concerns and Potential Effects	Potentially Interested Agencies/Stakeholders	Mitigation/Protection/Monitoring
1.0 Transportation & Utilities	1.1 Construction Traffic	It is currently anticipated that temporary lane and road closures will be required during construction. This may result in short-term delays and inconvenience to road users.	Local residents/ businesses/road users, Oxford County, Town of Ingersoll	• Continue consultation with agencies and the public during the subsequent phases of the project to provide and receive input on construction staging, laydown areas, traffic impacts, etc. • Establish and confirm construction staging and laydown areas. • Adhere to the Traffic Management Plan to be developed in the next design phase. • Maintain access to private entrances and sideroads during construction.
	1.2 Emergency Services Access	Potential emergency vehicle delays to incident locations during construction due to closures.	Emergency Service Providers, Local residents/ businesses/road users, Oxford County, Town of Ingersoll	• Potential delays minimized by regular communication with Emergency Service Providers during the next design phase and construction • Advance notice of road and lane closures.
	1.3 Utilities	Potential for impacts to municipal services by the Preferred Design.	Bell Canada, Hydro One, Enbridge, Oxford County, Town of Ingersoll	• Disruptions to utility service, if required, will be communicated to those to be affected prior to commencement of the activities impacting the service. Currently, utilities owner/operation by Bell Canada, Hydro One, Enbridge, Oxford County and the Town of Ingersoll.
2.0 Natural Features	2.1 Physiography, Geology, and Soils	Potential for erosion and sedimentation during construction activities, which may impact watercourses and drainage ditches within the Study Area.	MNR, Oxford County, Town of Ingersoll	• Schedule work to avoid weather conditions which increase the potential or erosion and sedimentation (i.e., rain, strong wind, etc.) • Exposed soils will be restricted to the smallest area for the shortest period of time feasible. • Erosion and Sediment Control (ESC) will be further considered during the subsequent design phase and a dedicated ECP Plan will be developed if impacts cannot be addressed/mitigated by implementing standard best management practices for ESC. • Sediment fence will be installed prior to the commencement of site preparation and other construction-related activities per an approved Erosion and Sediment Control Plan (or equivalent). Sediment fence will be installed properly (e.g., trenched in, etc.), inspected regularly (i.e., daily, following storm events, etc.), and repaired immediately when necessary (e.g., breached eliminated, sediment accumulations removed, etc.).

Identification Number (I.D. #)	I.D. # Sub-issues	Environmental Issues/Concerns and Potential Effects	Potentially Interested Agencies/Stakeholders	Mitigation/Protection/Monitoring
				• Necessary stockpiles or temporarily stored topsoil, sill, or aggregate materials will be piled as low as practicable and isolated by sediment fence.
	2.2 Drainage, Surface Water, Groundwater, and Source Water	Potential impacts to surface water and groundwater from contaminant spills and soils, leaks, accidental spills, and dewatering activities.	MNR, Oxford County, Town of Ingersoll	• Locate fuels, construction materials, and other potentially deleterious substances (if needed on-site) to the existing road right-of-way. Minimize storage of such materials to the extent feasible. • Refueling of equipment should be completed away from surface water features whenever possible to minimize potential impacts to surface water and groundwater quality in the event of a spill. • To minimize the impact of potential contaminant spills, the Contractor should implement best management practices, such as containment of any temporary fuel storage, preparation of a spill response plan, and proper facility management during operation and maintenance. • Materials for spill response, such as drip pans and spill contingency kits, must be maintained on site during construction. • The Contractor shall be prepared to immediately deploy spill response equipment (e.g., absorption pads, etc.), if necessary. Spills will be reported to the Ontario Spills Action Centre (1-800-268-6060) as soon as possible. • Obtain a draft Permit to Take Water (PTTW) or complete an Environmental Sector Activity Registration (EASR), if required.

	2.3 Vegetation and Vegetation Communities	• Vegetation impacts due to necessary clearing for the construction of the new roundabout and approaches.
		• Potential for localized impacts to vegetation due to disturbance of existing species beyond the limits of Oxford Road 119.
		• Increased vulnerability of the areas cleared of vegetation to invasion by non-native species
			MNR, Oxford County, Town of Ingersoll	• Time vegetation removals to occur outside of the migratory bird nesting period (April 1 to August 31), the primary active bat season (April 1 to September 30), and the sensitive life stages for monarch (May 1 to September 30).
				  ○ If vegetation clearing will proceed when Monarch larvae may be present (May 1 to September 30), identification and inspection of milkweed plants shall be completed to locate Monarch larvae.
				  ○ If larvae are identified, a trained Environmental Monitor may relocate the species to a suitable and safe location under the direction of a Qualified Biologist. Monarch caterpillars may be moved to other milkweed plants; for other larval stages (i.e.,

Identification Number (I.D. #)	I.D. # Sub-issues	Environmental Issues/Concerns and Potential Effects	Potentially Interested Agencies/Stakeholders	Mitigation/Protection/Monitoring
				eggs and chrysalis), entire milkweed plants should be transplanted. ○ Milkweed and nectar producing plants are recommended to be included in seed mixes for areas restored to meadow to provide habitat for Monarch. • Demarcate work zones to ensure work remains within the construction limits. • Utilize appropriate vegetation clearing techniques and limit clearing, grubbing, and grading to only include areas necessary to complete the work (i.e., trees to be felled away from the retained natural areas). • Temporarily disturbed areas shall be restored and vegetated to pre-construction conditions or better. Vegetation plantings shall include seed mixes that are appropriate for the area, and include a mix of native species, including salt-tolerant varieties (as needed) that are appropriate to the site and conditions. Seed mixes should include fast-growing, short-lived perennial cover crop to stabilize soil and reduce competition from weedy exotics. • Potential cavity trees to be retained shall be identified and their root zone protected by clearly demarcating vegetation clearing/construction limits within the dripline. • Submission of a Butternut Health Assessment and/or Information Gathering Form to the MECP at the Detail Design Stage of the project is recommended to determine if the proposed activity is considered a negative impact to Butternut or Butternut habitat. • Landscape Plans prepared as part of the project should incorporate species native to the local landscape.
	2.4 Wildlife and Wildlife Habitat	Potential for species at risk habitat within or adjacent to the Study Area and potential interactions with wildlife during construction.	MNR, Environment and Climate Change Canada	• The design shall minimize encroachment of natural areas, including siting staging areas and other temporary construction activities appropriately to minimize disturbance of natural areas to the extent feasible. • The design shall consider areas where vegetated buffers can be maintained to allow for cover and protection of wildlife, where appropriate and feasible. • Time vegetation removals to occur outside of the migratory bird nesting period (April 1 to August 31), the primary active bat

Identification Number (I.D. #)	I.D. # Sub-issues	Environmental Issues/Concerns and Potential Effects	Potentially Interested Agencies/Stakeholders	Mitigation/Protection/Monitoring
				season (April 1 to September 30), and the sensitive life stages for monarch (May 1 to September 30). • Stockpiles shall be covered, protected and/or stored in a way to prevent and discourage wildlife from accessing the materials for nesting (i.e., birds, reptiles), burrows or refuge and install exclusionary measures around the perimeter to prevent access from wildlife (i.e., mammals, reptiles/amphibians). • Direct artificial light away from natural areas to reduce disturbance to wildlife habitat. • Where feasible, limit the extent and duration of construction noise and lighting to daylight hours during the wildlife active season (i.e., April to October). • Avoid installing light figures (permanent or temporary) near bat habitat to lessen the likelihood of effects of light pollution. If not feasible, efforts to reduce illumination and light spill shall consider the following: height of light, light shields, lighting intensity, direction, and spectral composition. • Construction activities within 30 m of known cavity trees that will be retained, and surrounding bat habitat (woodland edge) shall be restricted to daylight hours when possible. • Wildlife shall not be harmed or harassed. • Construction equipment and vehicles are to yield to wildlife. • If snake hibernacula is discovered, work must cease in the area, and a Qualified Biologist shall be contacted to discuss mitigation options. Overwintering snakes shall not be relocated. If Species at Risk are encountered, MECP shall be contacted. • Wildlife protocols should be developed to educate workers of potential wildlife occurrences, including species at risk, and measures to take in the event of potential encounters. Preventative measures to reduce the likelihood of encounters, injury, and incidental take should also be provided. • Environmental monitoring during construction could include: ○ Conduct daily visual inspections for wildlife prior to the start of construction during the active season (i.e., April to October). This shall include a thorough walk-through of the work area

Identification Number (I.D. #)	I.D. # Sub-issues	Environmental Issues/Concerns and Potential Effects	Potentially Interested Agencies/Stakeholders	Mitigation/Protection/Monitoring
				and searching any vegetation, brush piles, logs or rock piles, and equipment. If wildlife is observed, work shall be suspended until the species is out of harm's way. ○ Regular inspections of sensitive features to confirm that setbacks are adhered to and that damage/alteration to the demarcations of these features is addressed. ○ Required monitoring activities to confirm that spills and sediment releases are prevented or addressed quickly and effectively. ○ Monitoring of environmental features during construction to confirm works are carried out in accordance with the design and specifications.
	2.5 Migratory Birds & Protected bats	Potential for protected birds and bats to establish nests or carry out necessary life processes (e.g., roosting) on existing structures and in vegetation slated for removal	Environment and Climate Change Canada, MNR	• Time vegetation removals to occur outside of the migratory bird nesting period (April 1 to August 31), the primary active bat season (April 1 to September 30), and the sensitive life stages for monarch (May 1 to September 30). • If construction activities occur during the active bat season (i.e. April 1 to September 30), work will be restricted to daylight hours only and the use of artificial lighting will be avoided. • If work must take place during the core nesting period and the area is small enough to be effectively searched for nesting birds, then a breeding bird nest survey can be completed by a Qualified Biologist. The area where vegetation is to be removed must be searched within five days prior to the work commencing. • If an active nest, or signs of an active nest are observed during construction, a designated buffer will be delineated within which no activity will be allowed to occur while the nest is active (i.e., with eggs or young). The radius of the buffer will be determined by a Qualified Biologist. Once the nest is determined to be inactive (i.e., the young have fledged the nest), clearing and other activities in the area may proceed. • Any lighting incorporated into the design should be directed downwards (i.e., towards the ground) or away from woodlots to the extent practicable. • Installation of two rocket boxes is recommended within restoration areas outside of the maintained road right-of-way.

Identification Number (I.D. #)	I.D. # Sub-issues	Environmental Issues/Concerns and Potential Effects	Potentially Interested Agencies/Stakeholders	Mitigation/Protection/Monitoring
				This recommendation should be reviewed as part of preparing and submitting an Information Gathering Form to the MECP at the Detail Design stage of the project to determine of the proposed activity is considered a negative impact to Endangered bat habitat.
	2.6 Potentially Contaminated Property	Contaminated materials may be encountered during construction activities.	MECP	• The Preferred Design may result in impacts to the Areas of Potential Environmental Concern and will be confirmed during the subsequent phase of the project. • O. Reg. 406/19 (On-Site and Excess Soil Management) and the associated document, Rules for Soil Management and Excess Soil Quality Standards, as referenced by O. Reg. 406/19, should be followed for soil that is excavated and managed on-site or off-site during construction. • Sampling programs should be developed and undertaken under the supervision of a qualified person, as defined in O. Reg. 406/19, and sample selection should take into consideration the presence of anthropogenic substances, such as debris/waste, and unusual odours or staining.
	2.7 Excess Materials Management	Excess materials may be generated/encountered during construction and require proper management/disposal.	MECP	• O. Reg. 406/19 (On-Site and Excess Soil Management) and the associated document, Rules for Soil Management and Excess Soil Quality Standards, as referenced by O. Reg. 406/19, should be followed for soil that is excavated and managed on-site or off-site during construction. • Non-biodegradable erosion and sediment control materials (including accumulated sediment, if any) will be removed once construction is complete and the disturbed areas are stabilized.
3.0 Socio-Economic Environment	3.1 Land Use/Property	It is anticipated that the Preferred Design will require the acquisition of property to facilitate construction.	Affected property owners	• Confirm property impacts and/or acquisitions during the subsequent phase of the project. • Engage with impacted property owners to review, discuss, and confirm impacts to property and associated mitigation/compensation measures.
	3.2 Noise	Potential increase in noise during construction associated with construction equipment.	Adjacent residents and businesses	• All construction equipment should be properly maintained to limit noise emissions. As such, all construction equipment should be operated with effective muffling devices that are in good working order.

Identification Number (I.D. #)	I.D. # Sub-issues	Environmental Issues/Concerns and Potential Effects	Potentially Interested Agencies/Stakeholders	Mitigation/Protection/Monitoring
				• There should be explicit indication that Contractors are expected to comply with all applicable requirements of the Contract and any applicable local by-laws. • The Contract documents should contain a provision that any initial noise complaint will trigger verification of construction noise and typical noise control measures. • In the presence of persistent noise complaints, all construction equipment should be verified to comply with MECP NPC115 and NPC-118 limits.
	3.3 Air Quality	Potential for dust and air quality impacts on adjacent land uses during construction.	Adjacent residents and businesses	• Air quality impacts are anticipated to be largely temporary in nature and restricted to the construction phase of the project. Standard mitigation measures, such as reducing unnecessary idling, are recommended.
4.0 Cultural Resources	4.1 Archaeological Resources	Previously unknown/deeply buried artifacts/human remains could be discovered during construction.	MCM, Indigenous communities	• A Stage 2 AA is recommended for areas that retain archaeological potential. • Should previously undocumented archaeological resources be discovered, there may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately (i.e., stop work in the area) and notify MTO representatives. • The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33, requires any person discovering human remains notify the police or coroner and the Registrar of Cemeteries at the Ministry of Public and Business Service Delivery.

9.0 Consultation

9.1 Consultation Approach

9.1.1 Master Contact List

Various government agencies, utility companies, interest groups, authorities, and Indigenous communities were informed of the Harmonized Class EA study commencement and Public Consultation Centres (PCCs), through direct email. The Master Contact List is provided in **Appendix A**.

9.1.2 Harmonized Class EA Notification

Residents within and adjacent to the Study Area received hand delivery of all notices, while members of the general public were invited to participate in the Harmonized Class EA and notified of the project website for project updates through notices published in the newspaper and advertised over the radio. Residents who asked to be added to the Master Contact List were also notified by email if they had provided contact information. **Table 9** below provides a summary of notifications published and distribution methods used throughout the duration of the Study. A copy of all Harmonized Class EA notifications is provided in **Appendix A**.

Table 9: Summary of Harmonized Class EA Notification

Notice	Distribution Methods
Notice of Study Commencement and Notice of PCC #1	• Posted to project website on September 4, 2025. • Emailed to Master Contact List on September 4, 2025. • Distributed to properties directly abutting the Study Area via hand delivery on September 8, 2025. • Published in the Oxford Review newspaper on September 11, 2025, and Published in the Woodstock Ingersoll Echo newspaper on September 12, 2025. • Advertised over the radio on HeartFM on September 10, 11, 12, 15 and 16.

Notice	Distribution Methods
Notice of PCC #2	• Posted to project website on October 24, 2025. • Emailed to Master Contact List on November 18, 2025. • Distributed to properties directly abutting the Study Area via hand delivery on November 21, 2025. • Published in the Oxford Review newspaper on October 30, 2025, and November 13, 2025. Published in the Woodstock Ingersoll Echo newspaper on November 7, 2025. • Advertised over the radio from November 13 to November 26, 2025
Notice of Study Completion	• Posted to project website on May 12, 2026. • Distributed to properties directly abutting the Study Area via hand delivery on May 12, 2026. • Emailed to Master Contact List on May 12, 2026. • Published in the Oxford Review newspaper on May 14, 2026. Published in the Ingersoll Echo newspaper on May 22, 2026.

9.2 Public Consultation

9.2.1 Public Consultation Centre #1

PCC #1 was hosted on September 25, 2025, at the Town of Ingersoll Town Hall, located at 130 Oxford Street, Ingersoll Ontario. The PCC was held as an open house with a drop-in format, with no formal presentation. PCC #1 included an overview of the Harmonized Class EA process, problems and opportunities to be addressed, existing conditions within the Study Area, identification and evaluation of alternative solutions, preliminary technically preferred alternative solution.

A total of 13 individuals attended the event and actively participated in project-related discussions. Attendees were encouraged to fill in the general comment form and provide comments and feedback on the materials presented and the Study, however, no written comments were received at the PCC.

A summary of the comments received during PCC #1 is provided in **Table 10**.

Table 10: Summary of Comments Received during PCC #1

Topic of Comment Received	Comment Summary	Consideration in the Harmonized Class EA
Traffic Concerns on Clarke Road	There is significant existing traffic on Clarke Road, particularly around the Oxford Road 119 and Clarke Road intersection. Some attendees noted that traffic issues are exacerbated when the 401 is blocked or closed. The Oxford Road 119 and Clarke Road intersection was also described as dangerous, with difficulties in seeing oncoming traffic when turning onto Oxford Road 119 from Clarke Road.	The preferred roundabout design directly addresses concerns regarding safety, visibility, and traffic surges at the Oxford Road 119 and Clarke Road intersection. By guiding traffic into a circular flow, the roundabout significantly reduces the potential for high-risk accidents, such as head-on and "T-bone" (right-angle) collisions. The configuration also improves sightlines for drivers entering the intersection by simplifying the viewing angles needed to identify gaps in traffic. Furthermore, roundabouts manage variable traffic volumes more efficiently than traditional signals; this provides better operational resilience during Highway 401 closures, as the system can adapt to increased detour flows in real-time without the fixed delays associated with traffic signals.

Topic of Comment Received	Comment Summary	Consideration in the Harmonized Class EA
Concerns around Construction Delays	Attendees expressed considerable concerns about potential construction delays. There were strong requests to ensure that at least two lanes remain open at all times on Clarke Road to minimize disruption.	Traffic staging options will be evaluated during the next design phase, and maximizing the number of lanes remaining open on both Oxford Road 119 and Clarke Road will be considered.
401 Roundabout Feedback	Opinions were mixed regarding the roundabout by Highway 401. While some attendees liked it, others found it challenging to navigate.	Based on the comparative evaluation of alternative solutions, a roundabout was selected as the preferred alternative.
Support for the Roundabout Alternative Solution	Multiple attendees expressed support for the roundabout option, recognizing its potential to improve traffic flow, though many did note a concern for pedestrian safety.	The preferred roundabout design incorporates multi-use path crossings to facilitate movement for both pedestrians and cyclists.
Stop at OR119 and Old Harris Street	There were several complaints about the three-way stop at Oxford Road 119 and Old Harris Street, indicating a need for improvements in that area.	This concern does not fall within the scope of the Harmonized Class EA.
Active Transportation Infrastructure	There was strong support for enhancing infrastructure for active transportation, such as cycling and walking paths, especially with the upcoming construction of the Multi-Use Recreation Centre on Clarke Road.	The preferred roundabout design incorporates multi-use path crossings to facilitate movement for both pedestrians and cyclists.

9.2.2 Public Consultation Centre #2

PCC #2 was help on November 27, 2025, at the Town of Ingersoll Town Hall, located at 130 Oxford Street, Ingersoll Ontario. The PCC was held as an open house with a drop-in format, with no formal presentation. Materials presented at PCC #2 included an update on the Harmonized Class EA progress, including what was heard during PCC #1, alternative design concepts and evaluation criteria, and the preliminary technically preferred alternative design concept.

A total of 16 individuals attended the event and actively participated in project-related discussions. Attendees were encouraged to fill in the general comment form, to provide comments and feedback on the materials presented and the Harmonized Class EA. One general comment form was completed and submitted during the PCC.

A summary of the comments received during PCC #2 is provided in **Table 11**.

Table 11: Summary of Comments Received During PCC #2

Topic of Comment Received	Comment Summary	Consideration in the Harmonized Class EA
Shared Driveway Access Improvements	Residents on the shared driveway north of the intersection (east side of Oxford Road 119) are finding it difficult to leave their driveway. The driveway is much lower than the road in this location and they need a "running start" to get up to the road.	This concern does not fall within the scope of the Harmonized Class EA.
Increase in Runoff	General drainage concerns were voiced by two individuals noting that the increased footprint of the roundabout would increase runoff.	To manage stormwater effectively, new sewers will capture runoff from the roundabout while maintaining existing drainage patterns. Halls Creek, located to the west, will remain unaffected. The final drainage configuration will be

Topic of Comment Received	Comment Summary	Consideration in the Harmonized Class EA
		confirmed during the next design phase.
Pedestrian Access	Several comments were received on prioritizing pedestrian access at the roundabout, particularly crossing Oxford Road 119.	The preferred roundabout design incorporates multi-use path crossings to facilitate movement for both pedestrians and cyclists. Details regarding the pedestrian crossing will be determined during the next design phase.
Highway 401 Traffic	There were many discussions about the Oxford Road 119 and Clarke Road intersection being used as a detour route when Highway 401 is congested.	Roundabouts manage variable traffic volumes more efficiently than traditional signals; this provides better operational resilience during Highway 401 closures, as the system can adapt to increased detour flows in real-time without the fixed delays associated with traffic signals.
Roundabout versus Signalized Intersection	Many of the attendees supported the construction of a roundabout. Two individuals preferred a signalized intersection. One individual had concerns with trucks navigating the roundabout and the other was concerned that the roundabout would not provide enough gaps in Oxford Road 119 traffic.	The roundabout design accommodates semi-trucks through the inclusion of mountable truck aprons. A traffic analysis has confirmed that the roundabout will operate at an acceptable level of service with the projected traffic volumes (cars will be able to find gaps to enter the circulating flow).

Topic of Comment Received	Comment Summary	Consideration in the Harmonized Class EA
Prior Widening Design Option	One individual was disappointed that an additional southbound lane on Oxford Road 119 was not proposed, as it was shown as a potential option at PCC #1.	The additional southbound lane was removed based on an assessment of traffic needs and stakeholder feedback.
Construction Timing	Multiple individuals asked about construction timing, noting that improvements to the Oxford Road 119 and Clarke Road intersection are required.	The timing for construction at the Oxford Road 119 and Clarke Road intersection is dependent on funding and approvals.
General Harmonized Class EA Communications	One general request was heard that more advertising through social media would be appreciated (Facebook, etc.) as this would allow participants to share with others on social media directly.	This comment is noted and will be taken into consideration for future communications.

9.2.3 Speak Up, Oxford!

As part of the consultation program, the project team utilized **Speak Up, Oxford!**, the County's online engagement platform, to facilitate public and Indigenous participation. The project-specific webpage, located at https://speakup.oxfordcounty.ca/or119-clarke-ea, served as a central repository for all study-related information.

- **Project Documentation:** Display materials and presentation boards from Public Consultation Centres (PCCs) were made available for digital review;
- **Study Updates:** The platform was used to post notices of study commencement and upcoming consultation events;
- **Public Comments:** Stakeholders and community members were encouraged to provide feedback and comments directly through the website at any time during the Class EA process; and

- **Transparency:** All updates and technical backgrounders were hosted on the site to allow the open flow of information regarding project alternatives and design concepts.

9.3 Indigenous Communities Engagement

Oxford County has committed to an open flow of information and interest-based engagement with Indigenous communities to ensure meaningful opportunities for input. Engagement follows the mandatory guidelines of the Municipal Engineers Association (MEA) and the Ministry of the Environment, Conservation and Parks (MECP). The primary objectives include:

- Identifying preliminary comments or concerns regarding the project undertakings;
- Establishing the level of interest for further engagement and preferred communication methods;
- Inviting input on cultural heritage, archaeology, traditional land use, and areas of cultural significance; and
- Understanding potential adverse impacts on asserted or established Indigenous or treaty rights.

Formal outreach commenced on September 4, 2025, with the issuance of the Notice of Study Commencement to multiple Indigenous communities and organizations. This was followed by invitations to Public Consultation Centres (PCC) #1 and #2, to present design alternatives and the preliminary technically preferred design. The following communities were contacted:

- Aamjiwnaang First Nation;
- Caldwell First Nation;
- Chippewas of Kettle and Stony Point First Nation;
- Chippewas of the Thames First Nation;
- Delaware Nation Eelünaapéewi Lahkéewiit;
- Haudenosaunee Confederacy Chiefs Council/Haudenosaunee Development Institute;
- Mississaugas of the Credit First Nation;
- Munsee-Delaware Nation;
- Oneida Nation of the Thames;
- Six Nations of the Grand River; and

- Walpole Island First Nation (Bkejwanong Territory).

Oxford County provided Project Response Forms to facilitate community participation and identify specific interests, such as land claims or areas of cultural importance. One response was received from the Haudenosaunee Confederacy Chiefs Council/Haudenosaunee Development Institute that stated (HDI) is within its rights to participate in all stages of this project. HDI's communication also contained questions that were applicable to establishing a monitoring agreement for the project. The project team provided a letter response on September 25, 2025, stating Oxford County is committed to fostering consistent, transparent, and respectful engagement moving forward, and the basis for HDI's request is understood and acknowledged. The County was not able to provide consultation funding for this project, but it was noted that Oxford County remains committed to working in good faith to build a stronger and more effective consultation framework in partnership.

9.4 Engagement with Key Interested Parties, Interest Groups, and Technical Agencies

To support the Oxford Road 119/Clarke Road Harmonized EA series of technical advisory meetings were held with project partners and regulatory agencies to guide the selection of the preferred design. The consultation process began with an Internal Technical Advisory Committee (InTAC) meeting on September 16, 2025, where the County of Oxford and Dillon established the project's problem statement and evaluated initial alternative solutions. This was followed by the first External Technical Advisory Committee (ExTAC) meeting on October 20, 2025, which included the County, the Town of Ingersoll, the UTRCA, and MTO to review the Technically Preferred Alternative (TPA) and environmental constraints related to Halls Creek.

A second In TAC meeting was conducted on November 11, 2025, to refine the evaluation criteria and project schedule ahead of further public consultation. Finally, a second ExTAC meeting took place on December 2, 2025, involving the County, the Town, UTRCA, and MTO. During this session, the committee reviewed specific design concepts, including the selection of a single-lane roundabout with a right-turn must-exit lane, and discussed necessary environmental mitigation measures and archaeological requirements.

10.0 Monitoring

Technical drawings and specifications will be finalized at the end of the Detail Design phase to for project tendering. Throughout the construction period, an on-site Contract Administrator will be responsible for verifying work follows design plans and meets environmental protection requirements. This means that the commitments established within this Environmental Study Report and conditions in the environmental permits and approvals found in **Section 11.0** are followed.

The Contract Administrator will evaluate the performance of implemented mitigation strategies to confirm they provide the intended level of environmental protection. Routine inspections will help verify that these measures remain operational and effective, with identified deficiencies addressed through corrective action. Should unforeseen environmental challenges occur, the Contract Administrator will oversee the implementation of supplemental mitigation measures, as required.

In the event of environmental non-compliance or emergent issues, designated County staff and relevant external stakeholders will be notified to provide technical input and fulfill statutory reporting obligations.

11.0 Permits and Approvals

Approval will be required from the UTRCA under O.Reg. 41/24 (Prohibited Activities, Exemptions, and Permits). This regulation applies to development or site alteration within 15 m of the top of bank or stable slope of the Halls Creek valley, within 15 m of the floodplain or meander belt, and within 30 m of any unevaluated wetlands. Additionally, since Halls Creek is confirmed permanent fish habitat, in-water and near-water works must comply with the federal *Fisheries Act* and associated policy statements to avoid the harmful alteration, disruption, or destruction (HADD) of fish habitat, although in-water work to construct the proposed intersection improvements and road widening is not anticipated.

Compliance with the applicable Species at Risk legislation is also required and authorizations from the MECP may be necessary due to the confirmed presence of bat species and a Butternut tree within the study limits. It is important to note, however, that Ontario's *Species Conservation Act, 2025* (SCA) came into force on March 30, 2026, and replaces the *Endangered Species Act, 2007* (ESA), marking a shift toward streamlining development by reducing provincial oversight for at-risk species. Therefore, SAR permitting needs will need to be further considered during Detail Design to reflect the current regulatory regime. Finally, all project activities must adhere to the *Migratory Birds Convention Act* and the *Fish and Wildlife Conservation Act* to protect local wildlife and nesting habitats.

Given that the Study Area for this project extends into the provincially-owned right-of-way associated with Highway 401, a formal MTO Encroachment Permit will be required for physical works, grading, or site alterations within the provincial property limits. This project is proceeding under the Class EA for Provincial Transportation Facilities and Municipal Expressways (2024) as a Group "B" project, necessitating MTO's ongoing involvement in the review of project documentation and design concepts. Coordination with the MTO is necessary so that the proposed intersection improvements and road widening do not adversely affect provincial infrastructure or the safety and efficiency of the provincial highway system. Additional traffic analysis will be completed to support the preferred design during the detailed design phase for MTO acceptance and approval.

12.0 Distribution of Notice of Study Completion and Environmental Study Report

In accordance with the requirements of the MCEA Schedule 'C' and Class EA for Provincial Transportation Facilities and Municipal Expressways, a Notice of Study Completion is anticipated to be issued in the first quarter in 2026. Through issuance of the Notice of Study Completion, this ESR will be placed on the public record for the mandatory 30-day review period to document the planning process undertaken, details of the study recommendations, as well as the potential impacts and mitigation measures that have been identified.

The Notice of Study Completion will also advise the public that during the 30-day review period, a request may be made to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights.

Following the close of the 30-day public review period, the MECP has an additional 30 days to consider the project and review any potential Section 16 Order requests submitted during the 30-day public review period. The County may not proceed with the project for at least these 30 days following the end of the public review period. Following this 30-day MECP review period, the project may proceed to detailed design and construction, provided the ministry is not reviewing Section 16 Order requests related to the project, and subject to other permits and approvals that may be required.