



BURNSIDE

**Binbrook Road, Trinity Church Road,
White Church Road Municipal Class
Environmental Assessment**

**City of Hamilton
71 Main Street West
Hamilton ON L8P 1P9**



BURNSIDE

**Binbrook Road, Trinity Church Road,
White Church Road Municipal Class
Environmental Assessment**

**City of Hamilton
71 Main Street West
Hamilton ON L8P 1P9**

**R.J. Burnside & Associates Limited
1266 South Service Road, Suite C2-1
Stoney Creek ON L8E 5R9 CANADA**

**July 2026
300059627.0000**

Distribution List

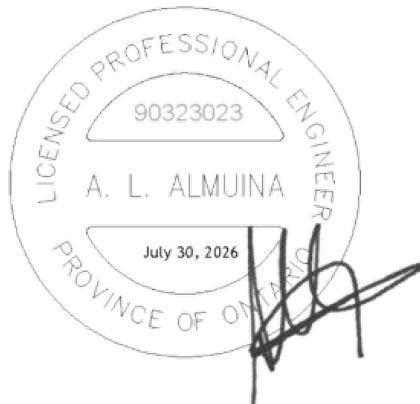
No. of Hard Copies	PDF	Email	Organization Name
-	Yes	Yes	City of Hamilton
-	Yes	Yes	Ministry of Environment, Conservation and Parks

Record of Revisions

Revision	Date	Description
-	June 19, 2026	Draft Submission
1	July 30, 2026	Final Submission

R.J. Burnside & Associates Limited**Report Prepared By:**

Mishaal Rizwan, RPP, MCIP, MES (PI.)
Environmental Planner
MR:af

Report Reviewed By:

Alvaro Almuina, P.Eng.
Project Manager

Executive Summary

R.J. Burnside & Associates Limited (Burnside) was retained by the City of Hamilton (the City) to complete a Schedule C Municipal Class Environmental Assessment (MCEA) to develop and evaluate alternative solutions to improve the intersection at Binbrook Road, Trinity Church Road, and White Church Road.

This MCEA will examine pedestrian, cyclist, and traffic concerns for safety as well as operation of the intersection. The study will evaluate transportation improvements options including (but not limited to) realignment of the intersections and implementation of design alternatives, such as a roundabout, signals or stop control at the intersection of Binbrook Road, Trinity Church Road, and White Church Road.

In Phase 2 of the MCEA process, three Alternative Solutions for intersection improvements were considered:

- Do Nothing
- Single Intersection
- Two Intersections

Based on a comparative evaluation against natural, socio-cultural, technical, and financial factors, Alternative Solution 3: Two Intersections was selected as the Preferred Solution.

Three Alternative Design Concepts were developed for the Preferred Alternative. All concepts feature identical lane configurations. The variation among the alternative design concepts is the treatment for the intersections. Alternative Design Concepts for intersection improvements considered in Phase 3 of the MCEA process include:

- Two Roundabouts with Road Realignment
- Two Signalized Intersections with Road Realignment
- Two Signalized Intersections within Existing Road Alignment
- Peanut-shaped roundabout
- Two Roundabouts within Existing Road Alignment

The preferred Alternative Design Concept 1 involves the development of two roundabouts connected by a road. Two new roundabouts are proposed: one at Trinity Church Road and Binbrook Road, and another at Trinity Church Road and White Church Road. In this design concept, both intersections are shifted from their existing locations. As part of this realignment, Trinity Church Road; currently

functioning as a north-south corridor, would be reconfigured so that it shifts to the northeast at the Binbrook Road intersection and to the southwest at the White Church Road intersection.

This Alternative Design Concept 1 addresses operational deficiencies with minor impact to vegetation, terrestrial habitat and Species at Risk. The preferred has no anticipated impact to potential Built Heritage Resource or Cultural Heritage Landscapes and no property acquisition requirements.

A key component of the study included consultation and engagement with the public, Indigenous Nations, and regulatory agencies. Engagement efforts included a Notice of Commencement, two Public Information Centres (PICs), and a Notice of Completion. Project information was also provided on the City's project webpage for public review.

As per the requirements of the MCEA, this Environmental Study Report (ESR) is available for public review and comment for a period of 30 calendar days following the publication of the Notice of Completion. The Notice of Completion provides contact information for the project team to whom written comments can be sent during this period.

If there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and Treaty rights that cannot be resolved, a request for a Section 16 Order may be addressed in writing to the Minister of Environment, Conservation and Parks (MECP), the Director of the Environmental Assessment Branch, and the project team. Requests on other grounds will not be considered. Requests must be received by the Minister within 30 calendar days of the publication of the Notice of Completion and should include the requester's contact information and full name for the Ministry.

Table of Contents

1.0	Introduction.....	1
2.0	Study Area.....	1
3.0	Municipal Class Environmental Assessment Process.....	2
3.1	Class Environmental Assessment Section 16(6) Order (Formerly Part II Order).....	4
4.0	Problem / Opportunity Statement.....	4
5.0	Planning and Policy Review.....	5
5.1	Federal Planning Context	5
5.1.1	Migratory Birds Convention Act and Migratory Birds Regulations....	5
5.2	Provincial Planning Context.....	6
5.2.1	Endangered Species Act.....	6
5.2.2	Provincial Planning Statement.....	8
5.2.3	NPCA Ontario Regulation 41/24 Regulated Area	9
5.2.4	Clean Water Act – Source Water Protection.....	9
5.2.5	Greenbelt Plan	10
5.3	Local Planning Context.....	11
5.3.1	City of Hamilton Rural Official Plan.....	11
5.3.2	City of Hamilton Transportation Master Plan: City in Motion.....	12
5.3.3	City of Hamilton Vision Zero Action Plan	12
5.3.4	City of Hamilton Cycling Master Plan	12
5.3.5	City of Hamilton Truck Route Master Plan.....	13
6.0	Existing Conditions	13
6.1	Socio Cultural Environment	13
6.1.1	Cultural Heritage Resources	13
6.1.2	Archaeological Resources.....	15
6.2	Technical Environment	17
6.2.1	Existing Road Network.....	17
6.2.2	Existing Traffic / Collision and Safety Review.....	18
6.2.3	Future Traffic.....	20
6.2.4	Stormwater and Drainage	20
6.2.5	Geotechnical Conditions	21
6.3	Natural Environment.....	23
6.3.1	Climate Normals.....	23
6.3.2	Terrestrial Environment.....	23
6.3.3	Wildlife and Wildlife Habitat.....	24
6.3.4	Species at Risk (SAR).....	25
6.3.5	Significant Wildlife Habitat (SWH)	26
7.0	Alternative Solutions	26
7.1	Evaluation of Alternative Solutions.....	29
8.0	Alternative Design Concepts	33
8.1	Evaluation of Alternative Design Concepts	38

9.0	Consultation and Engagement Summary	40
9.1	Notices	41
9.2	Public Information Centres (PICs).....	41
9.3	Agency Comments	44
9.4	Indigenous Nations	44
10.0	Preferred Design Concept.....	47
11.0	Air and Noise Considerations	49
11.1	Noise Impact Assessment	49
11.2	Air Quality	50
12.0	Climate Change Considerations	50
12.1	Effects of the Project on Climate Change	51
12.2	Effects of Climate Change on the Project	51
13.0	Preliminary Cost Estimate.....	52
14.0	Impacts and Mitigations	52
15.0	Conclusions	58
16.0	References	59

Tables

Table 7-1: Evaluation of Alternative Solutions.....	31
Table 8-1: Evaluation of Alternative Design Concepts	39
Table 9-1: Summary of Communication with Indigenous Nations	45
Table 14-1: Potential Impacts and Proposed Mitigation Measures.....	53

Figures

Figure 2-1: Study Area	2
Figure 3-1: MCEA Flow Chart.....	4
Figure 6-1: Archaeological Potential Within Study Area – Stage 1 Archaeological Assessment.....	17
Figure 7-1: Alternative Solution 1 – Do Nothing	27
Figure 7-2: Alternative Solution 2 – Single Intersection.....	28
Figure 7-3: Alternative Solution 3 – Two Intersections	29
Figure 7-4: Preferred Alternative – Two Intersections	32
Figure 8-1: Alternative Design Concept 1: Two Roundabouts with Realigned Road	34
Figure 8-2: Alternative Design Concept 2 - Two Signalized Intersections	35
Figure 8-3: Alternative Design Concept 3	36
Figure 8-4: Alternative Design Concept 4	37
Figure 8-5: Alternative Design Concept 5	38
Figure 10-1: Preferred Design Concept	48

Appendices

- Appendix A Cultural Heritage Report
- Appendix B Stage 1 Archaeological Assessment
- Appendix C Stormwater Management Report
- Appendix D Natural Heritage Evaluation of Alternatives
- Appendix E Evaluation of Alternative Solutions and Alternative Design Concepts
- Appendix F Engagement and Consultation
- Appendix G Cost Estimate
- Appendix H Noise Impact Assessment
- Appendix I Drawings

1.0 Introduction

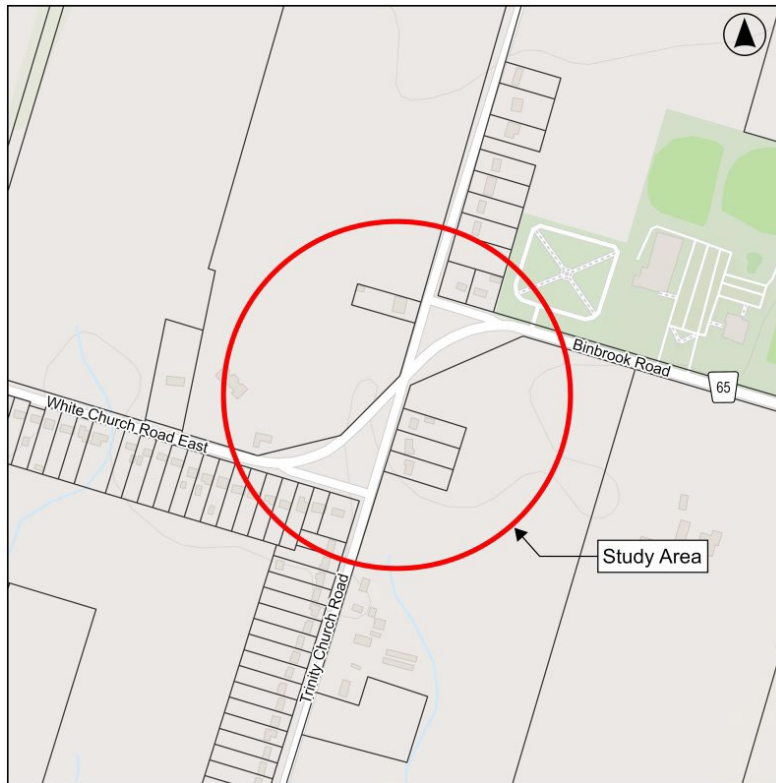
R.J. Burnside & Associates Limited (Burnside) was retained by the City of Hamilton (the City) to complete a Schedule C Municipal Class Environmental Assessment (MCEA) to develop and evaluate alternative solutions to improve the intersection at Binbrook Road, Trinity Church Road, and White Church Road.

This MCEA will examine pedestrian, cyclist, and traffic concerns for safety as well as operation of the intersection. The study will evaluate transportation improvements options including (but not limited to) realignment of the intersections and implementation of design alternatives, such as a roundabout, signals or stop control at the intersection of Binbrook Road, Trinity Church Road, and White Church Road.

The Environmental Study Report (ESR) documents the planning and decision-making process for the transportation improvements within the study corridor. The existing conditions, proposed design alternatives, and the method of public notification and consultation conducted for this Schedule C MCEA, as well as future works and commitments beyond this study, are summarized in this ESR.

2.0 Study Area

The study area consists of the intersection of Binbrook Road, Trinity Church Road, and White Church Road. The land use in the study area is predominantly rural, consisting of farmland and scattered residential developments. Key access points within the study area include the entrances to Glanbrook Cemetery and the Glanbrook Municipal Service Centre and Sports Complex. Residential driveways are located along Binbrook Road, Trinity Church Road, and White Church Road. South of the study area, along Trinity Church Road, the road passes through farmland.

Figure 2-1: Study Area

3.0 Municipal Class Environmental Assessment Process

The planning of public sector projects or activities that have the potential for environmental effect is subject to an MCEA as required by *Ontario's Environmental Assessment Act*, R.S.O. 1990.

The MCEA process was developed by the Municipal Engineers Association (MEA), in consultation with the Ministry of the Environment, Conservation and Parks (MECP), as an alternative method to Individual Environmental Assessments for recurring Municipal projects that were similar in nature, usually limited in scale and with a predictable range of environmental impacts, which were responsive to mitigating measures.

The MCEA solicits input from regulatory agencies, the Municipality, Indigenous Nations, and the public. This process leads to an evaluation of the alternatives in view of the significance of the environmental effects, including the technical, natural, social / cultural, and economic impact of a project, and the choice of effective mitigation measures.

The planning of the road improvements was carried out in accordance with the Schedule C requirements (Phases 1 to 4) of the MEA Municipal Class Environmental Assessment Guide for Municipal Class EAs (February 2024), which is approved under the *Ontario Environmental Assessment Act*.

Schedule C type projects have the potential for significant environmental impacts and must proceed under the full planning (Phases 1 to 4) and documentation procedures of the MCEA document.

As a minimum, public consultation is required at three stages under a Schedule C project.

At the conclusion of Phase 2, the appropriate MCEA Planning Schedule is reviewed. For an MCEA completed as a Schedule C Project, the completion of Phases 1 and 2 of the MCEA process forms the basis for a more detailed assessment completed in Phase 3 for the evaluation of design concepts.

In Phase 4, an ESR outlining the EA decision-making and planning process is prepared for public review, prior to being approved by the Municipality and proceeding to design and implementation of the project.

The phases of the MCEA process are illustrated in Figure 3-1 and summarized as follows:

Phase 1 – Identify the problem (deficiency) or opportunity.

Phase 2 – Identify Alternative Solutions to address the problem or opportunity by taking into consideration the existing environment and establish the Preferred Alternative, taking into account the public and review agency input. At this point, determine the appropriate schedule for the undertaking and document decisions in a project file for Schedule B projects, or proceed through the following phases for Schedule C projects.

Phase 3 – Examine Alternative Design Concepts for implementing the Preferred Design Concept, based upon the existing environment, public and review agency input, anticipated environmental effects, and methods of minimizing negative effects and maximizing positive effects.

Phase 4 – Document, in an ESR, a summary of the rationale and the planning, design, and consultation process of the project as established through the above phases and make such documentation available for scrutiny by review agencies and the public.

Phase 5 – Complete contract drawings and documents and proceed to construction and operation monitor construction for adherence to environmental provisions and commitments. Where special conditions dictate, also monitor the operation of the completed facilities.

3.1 Class Environmental Assessment Section 16(6) Order (Formerly Part II Order)

In accordance with the requirements of the MCEA, this ESR is available for public review and comment for a period of 30 calendar days following the publication of the Notice of Completion.

Interested persons may provide written comments to our project team within the 30-day comment period. All comments and concerns should be sent directly to the project team at:

Olivia Stanciu, M.Sc., PMP

Project Manager, Infrastructure Renewal
City of Hamilton
71 Main Street West
Hamilton ON L8P 4Y5
Tel: 905- 546-2424 x4101
Email: Olivia.Stanciu@hamilton.ca

Alvaro Almuina, P.Eng.

Consultant Project Manager
R.J. Burnside & Associates Limited
1266 South Service Road, Suite C2-1
Stoney Creek ON L8E 5R9
Tel: 705-797-4383
Email: Alvaro.Almuina@rjburnside.com

In addition, a request may be made to the MECP for an order requiring a higher level of study (i.e., requiring an individual / comprehensive MCEA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate, or remedy adverse impacts on constitutionally protected Aboriginal and Treaty rights. Requests on other grounds will not be considered.

The Minister of the Environment (or delegate) has the authority and discretion to make an Order under Section 16 of the *Environmental Assessment Act*. Section 16 Order requests were previously known as Part II Order requests.

A Section 16 Order may require that the proponent of a project going through an MCEA process:

1. Submit an application for approval of the project before they proceed. This may require a proponent to complete a comprehensive EA (Section 16(1) Order).
2. Meet further conditions in the Section 16 Order (Section 16(3) Order). This could include, but is not limited to conditions for:
 - a) Further study
 - b) Monitoring
 - c) Consultation

The Minister can also refer a matter in relation to a Section 16(6) Order request to mediation.

A Section 16(6) Order can be requested if:

1. You have outstanding concerns that a project going through an MCEA process may have a potential adverse impact on constitutionally protected Aboriginal and Treaty rights.
2. You believe that an Order may prevent, mitigate, or remedy this impact.

Requests should include the following:

- Requester contact information and full name
- Project name
- Proponent name
- They type of Order that is being requested (comprehensive EA or conditions be imposed)
- Specific reasons on how an Order may prevent, mitigate, or remedy potential adverse impacts on Aboriginal and Treaty rights
- Information about efforts to date to discuss and resolve concerns with the proponent
- Any other information in support of statements in the request

Binbrook Road, Trinity Church Road, White Church Road Municipal Class Environmental Assessment
July 2026

The request should be sent in writing or by email to:

Minister of the Environment, Conservation and Parks
Ministry of the Environment, Conservation and Parks
777 Bay Street 5th Floor
Toronto ON M7A 2J3
Minister.MECP@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5
EABDirector@ontario.ca

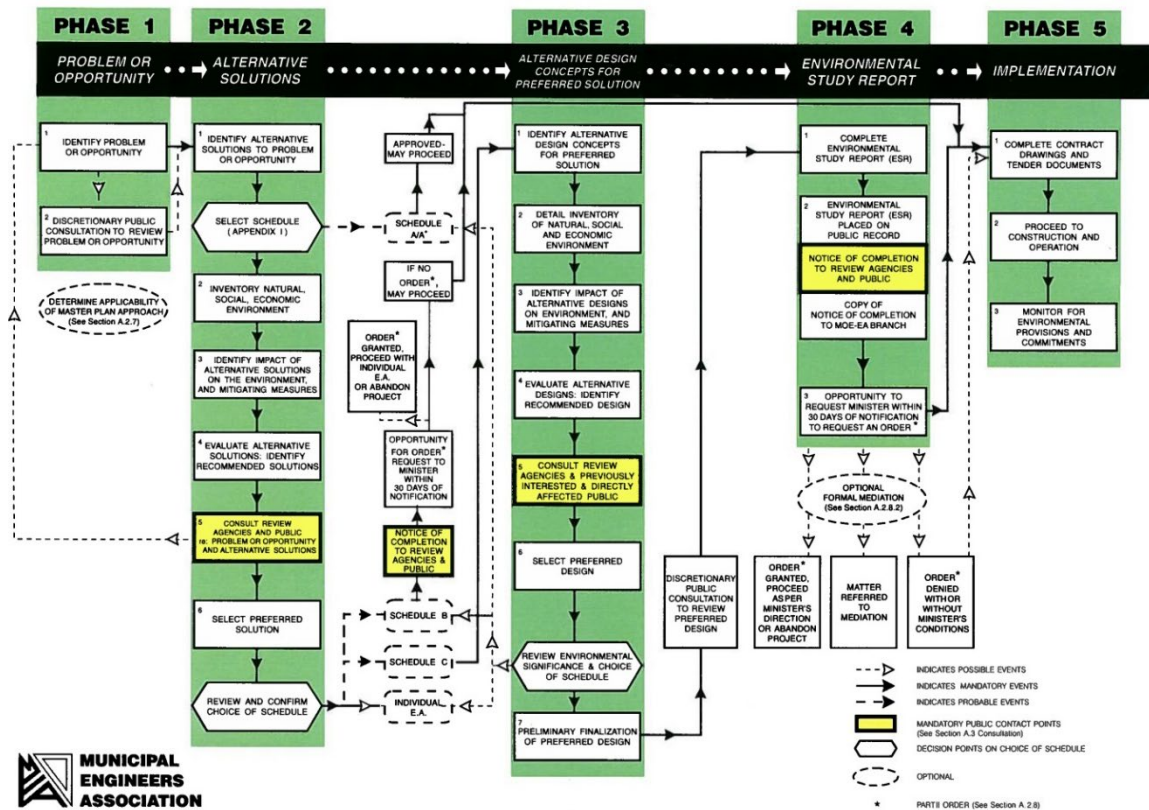
Requests must also be sent to the project team.

If the Minister does not receive a request for a Section 16 Order within the 30 calendar days, then the project will move forward to Detailed Design, approvals process and subsequent implementation of the Preferred Design Concept.

Binbrook Road, Trinity Church Road, White Church Road Municipal Class Environmental Assessment
July 2026

Figure 3-1: MCEA Flow Chart

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



4.0 Problem / Opportunity Statement

The Problem / Opportunity Statement has been defined as follows:

“The City of Hamilton has identified a need for improvements to the intersection of Binbrook Road, Trinity Church Road, and White Church Road to address concerns for safety and operation of the intersection, accommodate active transportation and goods movement.”

The intersection of Binbrook Road, Trinity Church Road, and White Church Road is currently operating within a rural cross-section context and serves a mix of local and regional travel demands. The existing intersection configuration presents operational and safety challenges associated with traffic movements, intersection capacity, and overall efficiency. The study area exhibits limitations in its ability to accommodate all modes of transportation, including absence of pedestrian and cycling facilities, which restrict safe and accessible travel options for non-motorized users.

The intersection functions as an important node within the broader transportation network, supporting a range of users, including goods movement. As such, improvements are required to address existing deficiencies and ensure that the intersection can safely and efficiently accommodate current transportation needs across all modes. The City of Hamilton has identified the need to evaluate and implement improvements that enhance operational performance, improve safety for all users, and incorporate complete streets principles, including provisions for pedestrians, cyclists, and vehicular traffic.

Accordingly, the study will explore a range of alternatives to reconfigure and upgrade the intersection, with consideration given to traffic operations, active transportation infrastructure, and goods movement efficiency. Opportunities will also be examined to enhance connectivity, accessibility, and overall network performance while supporting broader municipal objectives related to safety, sustainability, and coordinated land use planning within the study area.

5.0 Planning and Policy Review

5.1 Federal Planning Context

5.1.1 Migratory Birds Convention Act and Migratory Birds Regulations

The *Migratory Birds Convention Act*, 1994 (MBCA) and the *Migratory Bird Regulations*, 2022 (MBR) are federal legislative requirements that are binding on members of the public and all levels of government, including federal and provincial governments. The legislation protects certain species, controls the harvest of others, and prohibits commercial sale of all species.

One key responsibility under the MBCA is described in Section 6 of the associated MBR:

“Subject to subsection 5(9), no person shall disturb, destroy or take a nest, egg, nest shelter, eider duck shelter, or duck box of a migratory bird, or have in his possession a live migratory bird, or a carcass, skin, nest, or egg of a migratory bird except under authority of a permit therefor.”

The “incidental take” of migratory bird nests or the disturbance, destruction or taking of the nest of a migratory bird are prohibited under Section 6 of the MBR under the authority of the MBCA. Nests’ contents (eggs and young) are protected by virtue of the MBCA which has implications on development and construction

activities that might occur during the breeding season (*Canadian Wildlife Service*, July 2012).

The nests of all migratory bird species are protected when they contain a live bird or a viable egg. The nests of 18 species (listed in Schedule 1 of the regulations), whose nests are reused by migratory birds, continue to have year-round nest protection, unless they have been shown to be abandoned.

The MBCA has recently updated and modernized the MBR. The new MBR came into force on July 30, 2022. Further regulatory amendments are planned.

Implementation of the preferred solution will consider potential impacts to terrestrial habitat, including habitat for migratory birds and mitigation measures such as seasonal timing of tree and vegetation removal to avoid or minimize potential impacts to terrestrial habitat.

5.2 Provincial Planning Context

5.2.1 Endangered Species Act

The *Endangered Species Act*, 2007 (ESA) provides protection for species at risk (SAR) and their habitat. The ESA is now administered by the MECP and provides policies for the protection of Extirpated, Endangered, and Threatened species. Species listed as provincially rare or special concern do not receive legal protection under the provincial ESA; however, a species management plan is to be prepared and they may receive protection from some agencies, such as provincial and national parks, or other *Acts*, such as the *Ontario Fish and Wildlife Conservation Act*, which prohibits the killing, capturing, injuring, harassment, and trapping of specially protected species. These four categories of species form the Species at Risk in Ontario (SARO) List, which are classified by the Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is also responsible for maintaining criteria for assessing and classifying SAR.

The ESA helps protect species (Section 9) and their habitat (Section 10). Section 9(1)(a) of the ESA states:

“...no person shall kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species.”

Section 10(1)(a) of the ESA states:

“...no person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species.”

The ESA includes general habitat regulations, as well as species-specific habitat regulations. Species uplisted to Endangered or Threatened, automatically receive general habitat protection under the ESA. The province is then required to prepare a species recovery strategy and establish a habitat regulation according to requirements of the ESA.

Regulatory amendments under the ESA were issued by the Province in 2022 which streamlines ESA Authorizations for activities that have “predictable effects and common and routine mitigation actions with well understood requirements to minimize adverse impacts”. Proponents are still required to avoid and minimize impacts on SAR and their habitats.

The use of a SAR Conservation Fund was enabled for five designated conservation fund species when they seek permits and agreements related to these species [Eastern Whip-poor-will (*Antrostomus vociferus*), Blanding’s Turtle (*Emydoidea blandingii*)] or register for conditional exemptions [Eastern Meadowlark (*Sturnella magna*), Bobolink (*Dolichonyx oryzivorus*), or Butternut (*Juglans cinerea*)].

In 2024, the Province repealed the ESA and replaced it with the new *Species Conservation Act* (SCA). The SCA will eventually come into force when new regulations are developed, and public consultation is complete. While the new SCA is not fully enacted, several changes to the existing ESA have been made including among others:

1. ESA authorizations for aquatic and migratory birds that are protected under the federal *Species at Risk Act* (SARA) continue to be required until the new SCA is enacted.
2. A new “habitat” definition replaced the definition of “habitat” that was in the ESA, and “harass” has been removed from the prohibitions regarding harm to species.
3. The requirement for the government to develop recovery strategies for species has been removed.

4. The Species Conservation Program has been created.
5. The Species at Risk Conservation Fund will no longer accept funds, and there is no longer an option for proponents to pay a charge.
6. New permits and amendments to existing permits are available, however, agreements are no longer available.
7. There are no longer specific permit types or specific preconditions to the issuance of a permit.

The SARO List is updated from time to time; therefore, it is the proponent's responsibility to be apprised of any updates to the SARO list and amendments to *The Act* that may come into force for the duration of this project. If potential SAR or associated habitat is present within the study area, it is the proponent's responsibility to consider potential impacts and practice due diligence to ensure that the ESA and its regulations are not violated.

5.2.2 Provincial Planning Statement

The Provincial Planning Statement, 2024 (PPS) came into effect on October 20, 2024, and was issued under Section 3 of the *Planning Act*. The 2024 PPS effectively replaces both the Provincial Policy Statement, 2020, and A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019. Provincial policies are implemented through Municipal official plans and planning decisions and set the foundation for the efficient use of land, resources, and public investment in infrastructure. Land use planning decisions made by Municipalities must be consistent with the PPS.

The PPS provides directions to guide land use planning and optimize land resources and public investments for the next 30 years. It promotes efficient development patterns through transit-oriented development and active transportation, prioritizing intensification near transit corridors, while integrating diverse housing options, including affordable units, employment, recreation, parks, and open spaces to align development with infrastructure.

The PPS focuses growth and development within settlement areas. Development in natural heritage areas is not permitted unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. In general, projects should have consideration for energy conservation, air quality, climate change, management of resources, and protecting public health and safety. Relevant policies are to be applied to each situation.

Chapter 3 of the PPS provides specific direction for the planning and development of infrastructure and facilities including: transportation related policies, land use compatibility, servicing, and public spaces. Chapter 4 of the PPS provides guidance on the wise use and management of resources including protection of natural heritage features, water, agriculture, cultural heritage and archaeology. Chapter 5 of the PPS provides guidance on protecting public health and safety from natural and humanmade hazards.

The evaluation of the intersection improvements within the study area considers the direction and guidance for transportation, protection of natural and cultural heritage features, and efficient traffic flow.

5.2.3 NPCA Ontario Regulation 41/24 Regulated Area

The study area is located within the regulated area of the NPCA. O. Reg. 41/24, Prohibited Activities, Exemptions, and Permits, under the *Conservation Authorities Act*, requires written permission for some works within an area which is regulated by the Conservation Authorities, including but not limited to site grading, changing, or interference with a wetland or watercourse. Construction activities within the regulated limits of NPCA will require a permit from the respective Conservation Authority.

5.2.4 Clean Water Act – Source Water Protection

As a result of the *Clean Water Act*, (O. Reg. 287/07) communities in Ontario are required to develop Source Protection Plans to protect their Municipal sources and develop strategies to reduce or eliminate these risks.

Ontario's Source Water Protection initiative is focused on protecting Municipal drinking water sources. Key areas include wellhead protection areas (areas that drain down towards Municipal wells), highly vulnerable aquifers (where groundwater lies close to ground surface), and significant groundwater recharge areas (areas that feed aquifers).

The study area falls within the Grand River Source Protection Area, which is part of the Lake Erie Source Protection Region. Surrounding wetlands provide important hydrological and ecological functions. There are no Significant Groundwater Recharge Areas within the study area; however, the study area does fall within a Highly Vulnerable Aquifer. The study area is located within the Big Creek subwatershed, which is characterized as having low groundwater vulnerability. The vulnerability of an aquifer is dependent on the overlying

geological materials. The vulnerability increases as the amount of protection provided by the overlying geological materials decreases.

One Wellhead Protection Area is located approximately 6 km west of the study area. The size of a Wellhead Protection Area is determined by how quickly water travels underground to the well, measured in years. The study area is not located within a Wellhead Protection Area.¹

The *Clean Water Act* defines a “prescribed threat” as “an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water and includes an activity or condition that is prescribed by source protection regulation as a drinking water threat”. The province has identified 22 activities that could pose a threat if they are present in vulnerable areas, (listed in Section 1.1 of O. Reg. 287/07, under the *Clean Water Act*, 2006)². Project activities associated with the intersection improvements are not identified as prescribed drinking water threats. The application of road salt is identified as a prescribed drinking water threat.

The improvements to the intersection may represent an indirect potential to impact the quality of water that is or may be used as a source of drinking water as it relates to the application of road salt with winter maintenance; however, the potential impact is not anticipated to be greater than under existing conditions. As such, project activities are not anticipated to pose an increased risk to drinking water.

5.2.5 Greenbelt Plan

The Greenbelt Plan (Government of Ontario, 2017) includes agriculturally and environmentally protected lands within the NEP and the Oak Ridges Moraine Conservation Plan (ORMCP) as well as lands established as the Protected Countryside designation of the Greenbelt Plan, while enhancing the linkages between these areas and the surrounding major lake systems and watersheds.

The majority of the study area is within the Greenbelt, under the Protected Countryside designation.

¹ Government of Ontario. (2022, March 1). *Funeral, Burial and Cremation Services Act*, 2002 S.O. 2002, Chapter 33. *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33. <https://www.ontario.ca/laws/statute/02f33>

² Government of Ontario. (2022, March 1). *Funeral, Burial and Cremation Services Act*, 2002 S.O. 2002, Chapter 33. *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33. <https://www.ontario.ca/laws/statute/02f33>

Section 4.2.1, General Infrastructure Policies, states that new or expanded infrastructure is permitted within the Protected Countryside if it follows the requirements of the *Environmental Assessment Act* or *Planning Act* and demonstrates that there are no negative impacts on key natural heritage or hydrologic features or their functions.

5.3 Local Planning Context

5.3.1 City of Hamilton Rural Official Plan

The Rural Hamilton Official Plan (RHOP) provides a comprehensive policy framework to guide land use, infrastructure planning, and environmental stewardship across Hamilton's rural area to the year 2051. The Plan envisions rural Hamilton as a connected, sustainable, and complete community that balances agricultural viability, natural heritage protection, and infrastructure needs.

Relevant to the improvement of the intersection, the RHOP contains policies under Chapter C: City-wide Systems and Designations, and Chapter F: Implementation, which emphasize safe, efficient, and context-sensitive transportation infrastructure while maintaining rural character and protecting natural heritage features.

Key policy directions include the following:

- C.2.1 – Infrastructure projects shall avoid or minimize impacts on wetlands, watercourses, and other natural features, and maintain ecological connectivity. Where impacts are unavoidable, mitigation measures shall be implemented consistent with provincial and Municipal requirements.
- C.4.1 – Seeks to maintain and improve the rural transportation network to ensure safe and efficient movement of people and goods. Improvements shall be designed to respect rural character and minimize environmental impacts.
- C.4.5.6 – In the design or reconstruction of intersections, the City may require road widening or daylighting triangles to improve safety and functionality. Where full widening is not feasible, easements or reduced dimensions may be permitted, subject to technical review and public consultation.
- C.5.1 – The City shall encourage the development of pedestrian and cycling connections along rural roads and at intersections to support multi-modal travel and recreational use. Where improvements occur adjacent to existing or planned trails, public consultation shall be undertaken to inform design and connectivity.

- F.1.1.1 to F.1.1.7 – All Municipal works shall conform to the policies of this Plan. Complete applications, including technical studies addressing stormwater, traffic, and environmental impacts are required prior to approval.

5.3.2 City of Hamilton Transportation Master Plan: City in Motion

The City's Transportation Master Plan (TMP) provides a strategic framework that provides direction for future transportation-related studies, project, initiatives, and decisions. The plan contains policies to align with the City's Strategic Plan and vision to be the best place to raise a child and age successfully, focusing on a sustainable and balanced transportation system, healthy and safe communities, and economic prosperity and growth. Key policy directions include the following:

- 32 (Roads): Continue to implement intersection modifications on an ongoing basis to address road network bottlenecks and improve safety for all users
- 41 (Complete-Livable-Better Streets): Evaluate options for providing sidewalks or multi-use trails in rural areas where the road leads to a school or community facility

5.3.3 City of Hamilton Vision Zero Action Plan

The City is currently developing its next Vision Zero Action Plan (2026-2031), which will guide road safety initiatives from 2026 to 2031. This follows the City's first Vision Zero Action Plan (2019-2025). The City of Hamilton uses the vision zero framework to improve road safety for all users, drivers, pedestrians, and cyclists. Focus areas include:

- Eliminate fatalities and serious injuries
- Improve roadway strategies for drivers, pedestrians and cyclists
- Implement road safety initiatives to reduce societal costs

5.3.4 City of Hamilton Cycling Master Plan

The Cycling Master Plan identifies paved shoulders for cycling or multi-use recreational trails as a potential cycling accommodation for rural roads. Binbrook Road from Trinity Church Road to Fletcher Road and White Church Road from Glancaster to Trinity Church Road are both included on the Cycling Project Priority List.

5.3.5 City of Hamilton Truck Route Master Plan

The City's 2022 Truck Route Master Plan indicates that there are no roads in the study area that are currently designated as truck routes. The City's Truck Route Master Plan identifies a proposed truck route along White Church Road between Upper James Street and Fletcher Road. A truck route is also proposed along Fletcher Road between Binbrook Road and Guyatt Road, which is near the study intersections.

6.0 Existing Conditions

6.1 Socio Cultural Environment

A review of existing planning and policy information was conducted to obtain secondary source information relating to the social-cultural environment within the study area and to provide an overview of the existing policy framework in the study area. A review and summary of the cultural and archaeological conditions is provided based on studies completed in support of the MCEA.

6.1.1 Cultural Heritage Resources

Cultural heritage resources include Archaeological Resources, Built Heritage Resources (BHRs), and Cultural Heritage Landscapes (CHLs).

Archaeological Resources include artifacts, archaeological sites, and marine archaeological sites, as defined under the *Ontario Heritage Act* (Ministry of Municipal Affairs and Housing, 2024, p. 41).

BHRs consist of a building, structure, monument, installation, or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest (CHVI) as identified by a community, including an Indigenous community (Ministry of Municipal Affairs and Housing, 2024, p. 40).

CHLs are a defined geographical area that may have been modified by human activity and is identified as having CHVI by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association (Ministry of Municipal Affairs and Housing, 2024, p. 41).

The Cultural Heritage Report is provided in Appendix A and Stage 1 Archaeological Assessment is provided in Appendix B.

6.1.1.1 Built Heritage Resource (BHR) and Cultural Heritage Landscape (CHL)

A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment study was completed by ASI in September 2025 and updated in June 2026 to provide an inventory of known and potential cultural heritage landscapes and built heritage resources, identify existing conditions of the project study area and provides a preliminary impact assessment and mitigation measures. An analysis of historical research and review of available secondary source materials indicates a study area with an Indigenous settlement history spanning several millennia and a rural Euro-Canadian land use history dating back to the early 19th century. Based on a review of federal, provincial, and Municipal registers, inventories, and databases revealed that there is one known BHR in the study area. Two additional potential CHLs were identified during background research and field review.

No direct impacts are anticipated to any identified BHR or CHL based on the proposed works. There is some potential for indirect impacts due to disruption and vibrations to identified heritage attributes resulting from close proximity of proposed construction activities, which are avoidable with suitable mitigation measures. Based on the results of the assessment, the following recommendations have been developed:

1. Planning, staging, and execution of construction activities should be suitably planned and undertaken to avoid unintended negative impacts to identified BHRs and CHLs. Mitigation measures such as remaining within the rights-of-way, establishing buffer zones with fencing if feasible, and issuing instructions to construction workers to avoid identified BHRs and CHLs should be considered and implemented.
 - a) Particular emphasis should be placed on mitigating such impacts from occurring to the historical barn at 5080 White Church Road (B.H.R. 1), and the main entrance of the Glanbrook Cemetery at 4350 Binbrook Road (C.H.L. 1), due to the close proximity of identified heritage attributes to the construction activities as proposed.
2. Detailed Design and construction staging should incorporate vibration limits and mitigation measures consistent with recognized best-practice guidelines

for heritage resources to prevent indirect impacts to B.H.R. 1 (5080 White Church Road) and C.H.L. 1 (4350 Binbrook Road). A vibration monitoring and response plan should be prepared and implemented as part of Detailed Design to lessen vibration impacts or ground instability related to construction activities, namely excavation.

3. This Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment should be submitted by the proponent to heritage staff at the City of Hamilton and to the Ministry of Citizenship and Multiculturalism for review and feedback. (Note: This recommendation has been completed.)

6.1.2 Archaeological Resources

A Stage 1 Archaeological Assessment, consisting of background research and property inspection, was completed in accordance with the *Ontario Heritage Act* and the 2011 Standards and Guidelines for Consultant Archaeologists (S&Gs).

The Stage 1 background research determined that 12 previously registered archaeological sites are located within 1 km of the project area. The Stage 1 property inspection determined that parts of the project area retain archaeological potential and Stage 2 assessment will be required if impacted.

The following recommendations are made in the Stage 1 report:

- Parts of the study area exhibit archaeological potential. These lands require Stage 2 Archaeological Assessment by test pit and pedestrian surveys at 5 m intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands.
- The Glanbrook Cemetery is within the Project Area and must be avoided by any project designs.
- The remainder of the study area does not retain archaeological potential on account of deep and extensive land disturbance. These lands do not require further archaeological assessment.
- Should the proposed work extend beyond the current study area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

Should previously undocumented archaeological resources be discovered, they may be new archaeological sites; therefore, subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the Site immediately and engage a licensed

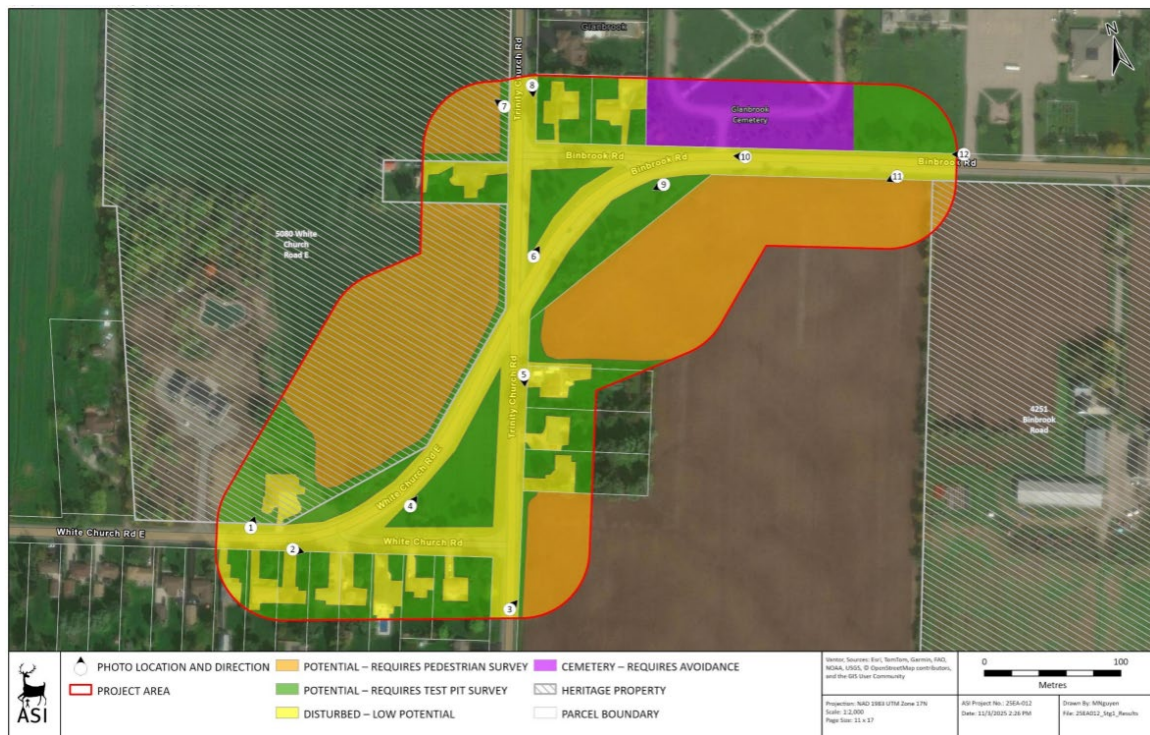
consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with O. Reg. 30/11, the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of *that Act* related to burial sites.³ In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

Archaeological assessments are required to be undertaken by an archaeologist licensed under the *Ontario Heritage Act*, who is responsible for submitting the report directly to Ministry of Citizenship and Multiculturalism for review.

The Stage 1 Archaeological Assessment is presented in Appendix B.

³ Government of Ontario. (2022, March 1). *Funeral, Burial and Cremation Services Act*, 2002 S.O. 2002, Chapter 33. *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33. <https://www.ontario.ca/laws/statute/02f33>

**Figure 6-1: Archaeological Potential Within Study Area – Stage 1
Archaeological Assessment**

6.2 Technical Environment

Burnside completed a review of the physical condition, traffic, and drainage conditions of the study area to inform intersection options as supporting documentation for the current MCEA and future Detailed Design. Additional details are provided in the technical reports in Appendices and summarized in the following sections.

6.2.1 Existing Road Network

Trinity Church Road is a collector road under the jurisdiction of the City of Hamilton. The road runs north-south and has one lane in each direction. The posted speed limit is 60 km/h, and there are no sidewalks or cycling facilities provided on either side of the road within the study area.

Binbrook Road is an arterial road under the jurisdiction of the City of Hamilton. The road runs east-west and has one lane in each direction. The posted speed limit is 60 km/h, and there are no sidewalks or cycling facilities provided on either side of the road within the study area.

White Church Road is an arterial road under the jurisdiction of the City of Hamilton. The road runs east-west and has one lane in each direction. The posted speed limit is 60 km/h, and there is no sidewalk or cycling facility provided on either side of the road within the study area. Currently, there are no transit stops in the vicinity. The City of Hamilton's 2022 Truck Route Master Plan indicates that there are no roads in the study area that are designated truck route.

6.2.2 Existing Traffic / Collision and Safety Review

Binbrook Road (City Road 65) between Binbrook Road and Trinity Church Road currently carries an estimated Average Annual Daily Traffic of approximately 6,490 vehicles. White Church Road between Trinity Church Road and White Church Road currently carries an estimated Average Annual Daily Traffic of 4,975 vehicles.

At the southbound approach of Trinity Church Road and White Church Road, the skewed intersection geometry requires drivers making left turns to perform a substantial head turn to the left. This design characteristic may contribute to gap misjudgment and an increased likelihood of angle collisions.

The Level of Service (LOS) standards for traffic capacity and design of streets is set out in the Highway Capacity Manual (Transportation Research Board National Research Council) and described using letters A through F, with A being the best and F being the worst. Most transportation facilities are typically designed for service flow rates at LOS C or D, to ensure an acceptable operating service for road users. The City's transportation assessment guidelines have established that the analysis summaries must note all conditions and movements that, in general, exceed the following critical values:

- LOS based on average delay per vehicle or individual movement with LOS > D
- 95th percentile queues for individual movements that exceed available storage

Under existing conditions, during both the peak hours, all movements are operating with excess capacity and a level of service C or better.

The link capacity analysis to assess the transportation corridor requirements for number of lanes shows that all midblock locations operate below capacity during both AM and PM peak hours.

A traffic safety assessment reviewed five years of historical collision data available from June 6, 2019 to December 16, 2023, within the study area. Collision data showed no consistent or significant collision patterns at the study intersections; however, the collision rates for one segment and one intersection were found to be high (above or near 1.5 crashes per million vehicle-kilometers travelled). This roadway segment with a high collision rate was identified as White Church Road (Hamilton City Road 65) between Trinity Church Road and White Church Road. The intersection with a high collision rate was identified as Trinity Church Road at White Church Road, at the T-intersection. The collisions in these areas were primarily influenced by intersection geometry. This could contribute to driver confusion represented by a proportionally higher number of angle and head-on collisions. A roadway reconfiguration that improves sight lines was recommended to reduce collision risk.

The safety analysis reflected an opportunity to reconfigure the roadway geometry to reduce potential conflicts and improve overall roadway safety. A total of 25 collisions were recorded, including three resulting in non-fatal injuries, ten involving property damage only, and 12 that were non-reportable. No fatal collisions occurred, and most reportable collisions involved only property damage, indicating generally low severity. Rear-end and angle collisions were the most frequent types, accounting for the largest proportion of reportable crashes. At the southbound approach of Trinity Church Road and White Church Road, the skewed intersection geometry requires drivers making left turns to perform a substantial head turn to the left. This design characteristic may contribute to gap misjudgment and an increased likelihood of angle collisions.

The existing conditions analysis indicated that during both the peak hours, all movements operate with excess capacity and a level of service C or better. Future condition analyses for 2031 indicated that overall operations are expected to remain adequate. However, the southbound movement at the Trinity Church Road and Binbrook Road / White Church Road intersection is projected to operate at LOS F, with a v/c ratio of 0.83 and an average delay of 56 seconds. Although LOS F is noted, the v/c ratio indicates that some residual capacity remains. The reduced performance is primarily due to the short spacing between this intersection and the adjacent Trinity Church Road / Binbrook Road intersection.

6.2.3 Future Traffic

The existing conditions analysis indicated that during both the AM and PM peak hours, all movements operate with excess capacity and a level of service C or better.

Traffic volumes for 2031, 2041 and 2051 horizon years were modelled. A growth rate of 3.0% per annum was applied to through movements and 1.5% per annum to turning movements at intersections along Trinity Church Road. For all other intersections within the study area, a uniform annual traffic growth rate of 1.5% was applied to all movements recognizing local travel patterns until 2041. An annual growth rate of 0.5% was applied to all movements between 2041 and 2051.

Future condition analyses for 2031 indicated that overall operations are expected to remain adequate. However, the southbound movement at the Trinity Church Road and Binbrook Road / White Church Road intersection is projected to operate at LOS F, with a v/c ratio of 0.83 and an average delay of 56 seconds. Although LOS F is noted, the v/c ratio indicates that some residual capacity remains. The reduced performance is primarily due to the short spacing between this intersection and the adjacent Trinity Church Road / Binbrook Road intersection. The 2041 and 2051 traffic forecasts were used to evaluate the preliminary design alternatives.

6.2.4 Stormwater and Drainage

The study area is located within the Welland River West Subwatershed within the Upper Welland River Watershed. The area is within the jurisdiction of the NPCA with NPCA regulated areas adjacent to the roadway. Existing drainage is conveyed through roadside ditches and crossing and entrance culverts. There is an existing ditch inlet with a bird cage lid adjacent to Trinity Church Road directly east of the existing intersection with White Church Road. The ditch inlet is assumed to be connected to the tile bed of the adjacent agricultural field, but this is to be confirmed in detailed design. A low-lying channel through the agricultural field adjacent to the ditch inlet is located within the NPCA regulation limits, has been assumed to function as a watercourse, and serves as the ultimate outlet for runoff generated within the study area. Appendix A of the Preliminary Stormwater Management Study in Appendix C of this ESR includes photos of the ditch inlet and low-lying channel.

There are four existing road crossing culverts within the project limits. A hydrologic assessment was completed for all four culverts, while the driveway and entrance culverts will be evaluated during detailed design. As three of the four road crossing culverts are proposed for removal, a hydraulic assessment was undertaken only for the remaining culvert. Further details are provided in the following sections.

The hydraulic analysis will be refined during detailed design, including driveway and entrance culverts.

A copy of the Preliminary Stormwater Management Study can be found in Appendix C.

6.2.5 Geotechnical Conditions

The study area is located within a physiographic region named Haldimand Clay Plan, and physiographic landform names as Till Moraines. The Haldimand Clay Plain occupies an area of about 3,500 square kilometres lying between the Niagara Escarpment and Lake Erie. The Haldimand Clay Plain varies in elevation from approximately 183 to 229 metres above sea level (masl) except on the gravel hills at Fonthill which reaches an altitude of approximately 259 masl (Chapman & Putnam, 2007).

The surficial geology of the area is mapped as fine-textured glaciolacustrine deposits (massive to well laminated silt and clay, minor sand and gravel) (Ontario Geological Survey, 2010). The dominant bedrock geology of the area is mapped as Lower Silurian sandstone, shale, dolostone, and siltstone belonging to the Guelph Formation. The bedrock in the area shows potential karstic conditions.

Regional groundwater flow across the area is mapped to be in a southerly direction, towards Lake Niapenco. It is expected that groundwater flow directions may vary locally from the regional flow directions due to various natural factors including local topographic and stratigraphic variations, submerged riverbeds, and engineering structures such as buildings and infrastructure.

A site visit was also completed to observe on site conditions. The following high level geotechnical risks and constraints were identified that are to be confirmed by a Geotechnical Report during the detailed design stage.

- **Slope Stability:** The study area is relatively flat, with observed ditches having an elevation difference of up to approximately 1.5 m to the pavement surface. Inclination of side slopes appeared to be roughly 2H:1V.

- **Excavation and Utility Constraints:** Potential buried utilities may be present in the study area. Relocation and/or protection for these utilities during construction should be considered. Based on the study, excavations within combined work areas and/or live traffic on and/or adjacent to the roadway may be required.
- **Subsurface Conditions (Soil and Groundwater):** Variation in soil and groundwater conditions deviating from the information obtained from the desktop review. Presence of clay (based on available MECP well record information) type soils and/or compressible soils such as topsoil / fill (encountered within agricultural lands). Presence of shallow bedrock (based on the bedrock depths from the desktop review, it is unlikely that shallow bedrock exists within the study area) to be confirmed via an intrusive investigation. Potential high groundwater conditions (perched groundwater) may exist and affect excavations, especially in the agricultural lands.
- **Pavement, Subgrade Protection & Performance:** Compositions of existing pavement structure and existing road embankment, and traffic loads were not known. Potential damages due to frost action, local drainage, and/or traffic loads cannot be assessed.

The assessment completed made the following conclusions and recommendations:

- Significant feasibility issues were not noted.
- Based on site conditions, there should be no significant slope stability issues, provided that side slopes are designed with a minimum 2H:1V slope.
- Roadside ditches were noted along roads.
- Consideration should be given to the agricultural properties along the study area. The surficial and underlying soils may be comprised of topsoil and/or fill material that may require removal prior to construction activities.
- Geotechnical Investigation is recommended to further and/or better understand the on-site soil and groundwater conditions. The geotechnical investigation will allow the project owner and design consultant to mitigate and/or reduce potential future uncertainties / risks related to design and construction.
- Consideration should be given to a hydrogeological assessment/investigation to further understand the groundwater condition and/or potential dewatering estimated during construction activities.

6.3 Natural Environment

A review of existing natural heritage conditions and secondary source information was conducted to characterize the natural environment of the study area.

A summary of findings is provided in the sections below. The Natural Heritage Report is provided in Appendix E.

6.3.1 Climate Normals

Local climate conditions were obtained from Canada's Environment and Climate Change Hamilton meteorological station (ID 6153194, Latitude 43°10'18.072" N, Longitude 79°56'03.036" W). The Hamilton meteorological station is located approximately 10 km northeast of the study area.

According to the Canadian Climate Normals (calendar years 1991 to 2020) for this station, the daily average annual temperature is 8.1°C. The warmest month of the year is July with an average temperature of 20.9°C and the coldest month is January with an average temperature of -5.3°C.

The Hamilton meteorological station recorded a total annual precipitation (snow and rain) of 902.3 mm, 764.6 mm of which was rain. The maximum mean monthly precipitation is 97.5 mm and occurs in July.⁴

6.3.2 Terrestrial Environment

The entirety of the Study Area is located within the Greenbelt Plan Area, designated as Protected Countryside. The Study Area is located outside the boundaries of the Niagara Escarpment Plan (NEP) Area. The boundary of the NEP lies approximately 8 kilometres north of the Study Area.

⁴ Environment and Climate Change Canada. (n.d.). Climate Normals 1991 to 2020 Data. https://climate.weather.gc.ca/climate_normals/results_1991_2020_e.html?searchType=stnProx&xtRadius=25&selCity=&selPark=&optProxType=custom&txtCentralLatDeg=43&txtCentralLatMin=13&txtCentralLatSec=36.65&txtCentralLongDeg=80&txtCentralLongMin=3&txtCentralLongSec=18.14&txtLatDecDeg=&txtLongDecDeg=&stnID=174000000&dispBack=0#metadata-thread

Vegetation communities within the study area were assessed and described using the Ecological Land Classification System for Southern Ontario (ELC) (Lee et al., 1998, updated 2008). A total of five ecological communities were observed within the study area. The identified ELC communities are:

- Greenlands (CGL)
- Transportation (CVI_1)
- Commercial and Institutional (CVC)
- Agricultural (OAGM1)
- Low Density Residential (CVR_1)

Significant Valleylands, wetlands, and Area of Natural and Scientific Interest were not observed to be present in the study area.

6.3.2.1 Headwater Drainage Features (HDFs)

A single mapped watercourse with associated NPCA-regulated lands is found southeast of the corner of White Church Road and Trinity Church Road, that runs through annual row crop land. Upstream of this feature is a culvert that conveys flow from the annual row crop lands at the northwest, through a culvert that extends under Trinity Church Road. This upstream feature may represent a Headwater Drainage Feature (HDF) but is highly disturbed and would be assigned 'No Management Concern' if present.

6.3.3 Wildlife and Wildlife Habitat

Scoped species-specific field surveys for breeding birds as well as incidental wildlife observations were conducted concurrently during the terrestrial habitat assessment.

6.3.3.1 Breeding Birds

Standard breeding bird surveys were completed by Avian Biologists according to the Ontario Breeding Bird Atlas Guide for Participants, tailored to the needs of the project. The survey stations were located within and immediately adjacent to the Study Area along the ROW of White Church Rd E, Trinity Church Rd, and Binbrook Rd.

A total of 21 bird species were recorded during the breeding bird surveys. Of these, 16 species are ranked S5 or S4 by the Ministry of Natural Resources, indicating they are secure or apparently secure within the province. The Chipping Sparrow (*Spizella passerina*) and Savannah Sparrow (*Passerculus*

sandwichensis) are designated as S5B, S3N, reflecting differing conservation statuses for breeding and non-breeding populations. European Starling (*Sturnus vulgaris*), House Finch (*Haemorhous mexicanus*), and House Sparrow (*Passer domesticus*) are classified as Status Not Applicable (SNA), meaning they are not considered in provincial conservation assessments. The Great Blue Heron (*Ardea herodias*) was the only species recorded as locally uncommon according to the Hamilton Natural Areas Inventory Project, 3rd Edition Species Checklist (2013), and it was only observed as a 'flyover'.

All other species were classified as either common or abundant. None of the recorded bird species are listed under the Provincial SCA. However, two species observed including Barn Swallow (*Hirundo rustica*) and Eastern Wood-pewee (*Contopus virens*) are listed under the Federal SARA as threatened and special concern, respectively. Both Barn Swallow and Eastern Wood-pewee exhibited possible breeding activity, as indicated by the presence of singing males or adults displaying breeding behavior in suitable nesting habitat during the surveys. Barn Swallow were observed at BBS-005 and BBS-006, and Eastern Wood-Pewee were only observed at BBS-005. BBS-005 is within the Study Area, while BBS-006 is just south of the Study Area.

6.3.3.2 Incidental Wildlife Observations

Incidental wildlife observations were documented during all field investigations to provide a general characterization of the habitat functions of the study area.

Monarch (*Danaus plexippus*) was observed as an adult flying.

6.3.4 Species at Risk (SAR)

The only Endangered or Threatened species listed under the provincial SCA observed within the Study Area during site investigations in 2025 & 2026 was the Kentucky Coffee-tree as an ornamental species not naturally occurring. Three species listed as endangered or threatened on the Federal SARA included Barn Swallow (threatened), Kentucky Coffee-tree (threatened), and Monarch (Endangered).

Based on potential habitat within the study area, Species at Risk could be present which were not observed at the time of the site visit. To identify potential Habitat of Endangered and Threatened Species, a review of aerial photography, the Ontario Reptile and Amphibian Atlas, Ontario Breeding Bird Atlas and Natural Heritage Information Centre on-line databases was conducted. Based on the

conditions observed within the study area, it is anticipated that the ecosites may support terrestrial SAR species, including species at risk bats, Butternut (*Juglans cinerea*), Eastern Flowering Dogwood (*Cornus florida*), Rusty-patched Bumble Bee (*Bombus affinis*) and Nine-spotted Lady Beetle (*Coccinella novemnotata*).

6.3.5 Significant Wildlife Habitat (SWH)

The identification and evaluation of SWH is undertaken at the local planning level. Determination of SWH is broadly categorized and described in the Natural Heritage Reference Manual (MNR, 2010), and Significant Wildlife Habitat Technical Guide (MNR, 2000). Ecoregion 7E Criteria Schedules also list a number of different types of habitat that are considered significant. The four categories of SWH are identified as:

- Habitats of seasonal concentrations of animals
- Rare vegetation communities or specialized habitat for wildlife
- Habitat of species of conservation concern
- Animal movement corridors

The presence of SWH within the study area and beyond was evaluated and is summarized in the Natural Environment Report (Appendix F). Based on this review, Habitat for Special Concern and Rare Wildlife was the only habitat type that may be present. However, based on conditions observed within the study area and repeated disturbance, habitat features are unlikely to support a significant number of Special Concern species.

7.0 Alternative Solutions

Alternative Solutions were developed and assessed to determine which solution would best address the objectives as defined by the Problem and Opportunity statement. As a result, the following three alternatives were identified for the study area:

- Do Nothing
- Single Intersection
- Two Intersections

The alternative solutions were assessed in terms of how well they would address the Problem and Opportunity statement, as well as impacts to criteria including natural environment, socio-cultural environment, financial factors, and technical factors, as summarized below.

Alternative Solution 1: Do Nothing

Do Nothing is a mandatory requirement for consideration in the MCEA process. The road corridor and intersections would remain the same – no improvements to the intersection will be made. Regular maintenance would be performed as required.

This alternative does not address the Problem / Opportunity Statement and is not carried forward.

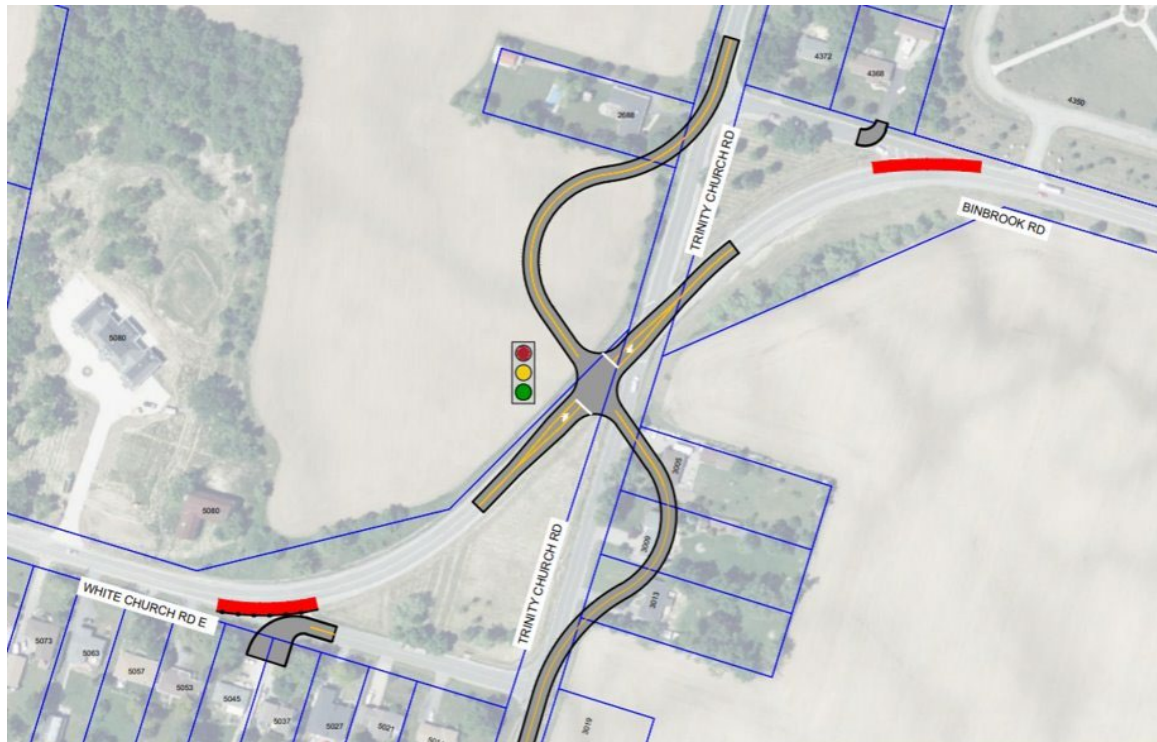
Figure 7-1: Alternative Solution 1 – Do Nothing



Alternative Solution 2: Single Intersection

Alternative Solution 2 features the consolidation of the existing road alignments and intersections into a single intersection, requiring a major road realignment. Design alternatives may include roundabouts, traffic signals, or stop-controlled configurations, along with added turning lanes where needed. Options would incorporate facilities for pedestrians, cyclists, and support for commercial and agricultural vehicles. Implementation may require significant property acquisition and could have environmental considerations, such as impacts to Species at Risk habitat and the potential need to decommission residential wells.

Figure 7-2: Alternative Solution 2 – Single Intersection



Alternative Solution 3: Two Intersections

Alternative Solution 3 features the consolidation of the existing road alignments and intersections into two intersections.

Figure 7-3: Alternative Solution 3 – Two Intersections



7.1 Evaluation of Alternative Solutions

The evaluation of Alternative Solutions is a step-by-step process that compares alternatives that are feasible within the project environment and meet the project objectives outlined in the Problem / Opportunity Statement.

The impacts of the alternatives are evaluated relative to each other, against a set of equally weighted criteria, including possible mitigating measures by applying a ranking from most preferred to least preferred, with an empty pie representing the greatest anticipated impact; and therefore, least preferred, compared to full pie representing the least anticipated impact; and therefore, most preferred.

The criteria are developed based on the inventory of the natural, socio-cultural, technical, and financial environments of the study area, and identification of key considerations, examples include:

- Potential impact to existing natural features
- Minimizing encroachment onto private property and the potential for land acquisition
- Consideration for air quality and climate change impacts
- Maintaining property access
- Consideration of active transportation along the corridor
- Conformity / working within existing planning policy and regulations
- Maintaining traffic flow and connection as well as providing capacity for future growth and traffic
- Maintaining effective storm drainage
- Financial costs
- Potential impact to utilities
- Consideration of community and agency input

Tables showing the detailed Evaluation of Alternative Solutions is presented in Appendix F. A summary of the evaluation results is presented below.

Table 7-1: Evaluation of Alternative Solutions

Criteria	Alternative Solution 1: Do Nothing	Alternative Solution 2: One Intersection	Alternative Solution 3: Two Intersections
Natural Environment	●	◐	◑
Socio-Cultural Environment	◐	◑	●
Financial Factors	●	◑	◐
Technical Factors	◐	◐	◑
Problem Statement	✕	✓	✓
Overall Summary	Not Carried Forward	Least Preferred	Most Preferred

Order of Preference:

Most Preferred ● More Preferred ◐ Somewhat Preferred ◑ Less Preferred ◒ Least Preferred ○

Alternative Solution 3: Two Intersections was evaluated as the Preferred Alternative. Under the Natural Environment criteria, it was found that this option has the least impact on the Natural Environment, with no impacts to residential wells and minimal impacts to drainage. Within the Socio-Cultural Environment criteria, this alternative is not anticipated to impact cultural heritage features in the study area. For the Technical Environment, it was found primarily that this alternative would require the least design effort and associated design impacts. Under the Financial Environment, this alternative was found to have the lower property acquisition costs as the footprint of the existing road would mostly be maintained.

Figure 7-4: Preferred Alternative – Two Intersections



8.0 Alternative Design Concepts

Three Alternative Design Concepts were developed for the Preferred Alternative. All concepts feature identical lane configurations. The variation among the alternative design concepts is the treatment for the intersections. Alternative Design Concepts for intersection improvements considered in Phase 3 of the MCEA process include:

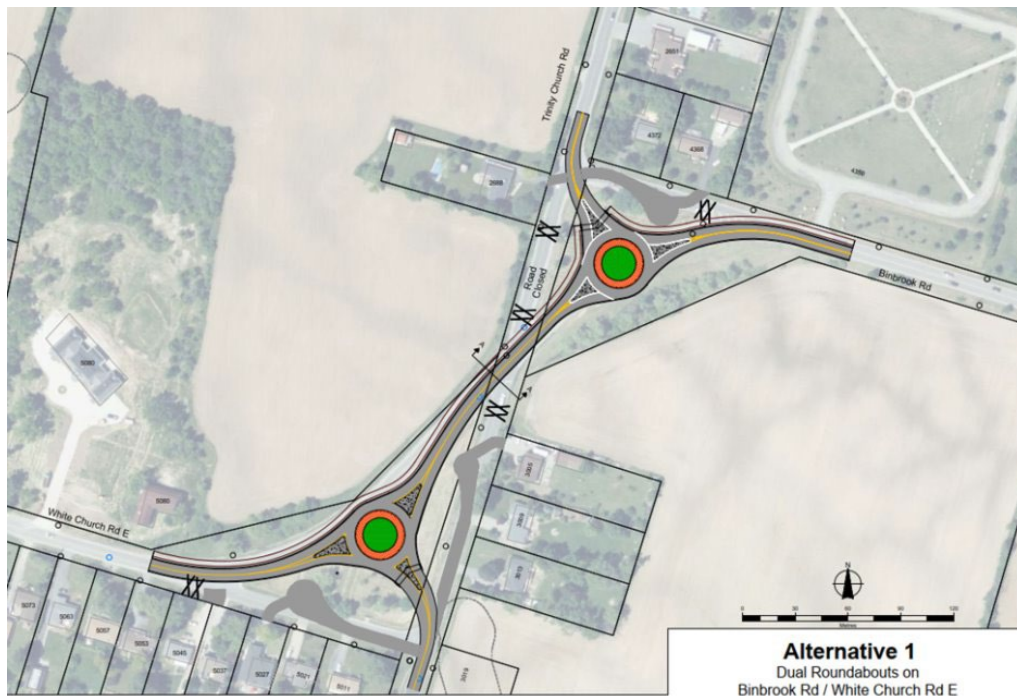
- Two Roundabouts with Road Realignment
- Two Signalized Intersections with Road Realignment.
- Two Signalized Intersections within Existing Road Alignment.
- Peanut-shaped roundabout.
- Two Roundabouts within Existing Road Alignment

Each of the Alternative Design Concepts would allow for the addition of active transportation facilities.

Alternative Design Concept 1: Two Roundabouts with Realigned Road

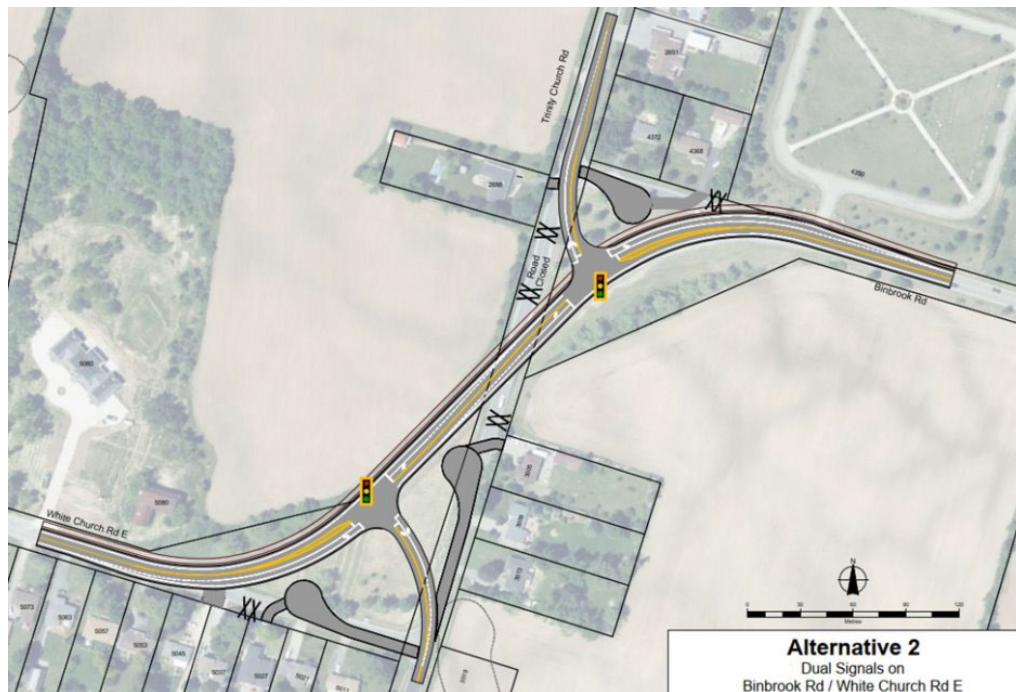
Alternative Design Concept 1 involves the development of two roundabouts connected by a road. Two new roundabouts are proposed: one at Trinity Church Road and Binbrook Road, and another at Trinity Church Road and White Church Road. In this design concept, both intersections are shifted from their existing locations. As part of this realignment, Trinity Church Road; currently functioning as a north-south corridor, would be reconfigured so that it shifts to the northeast at the Binbrook Road intersection and to the southwest at the White Church Road intersection.

The impacts from Alternative Design Concept 1 include minor vegetation removal, some impact to wildlife and SAR wildlife habitats, and any air quality will be minor. There is potential impact to archeological resources, which will be assessed in a Stage 2 AA. This design concept does not include any significant technical design constraints, including the roundabout option providing less conflict points between active transportation users and vehicles. The associated construction costs will be higher, but the maintenance costs will be lowered.

Figure 8-1: Alternative Design Concept 1: Two Roundabouts with Realigned Road**Alternative Design Concept 2: Two Signalized Intersections**

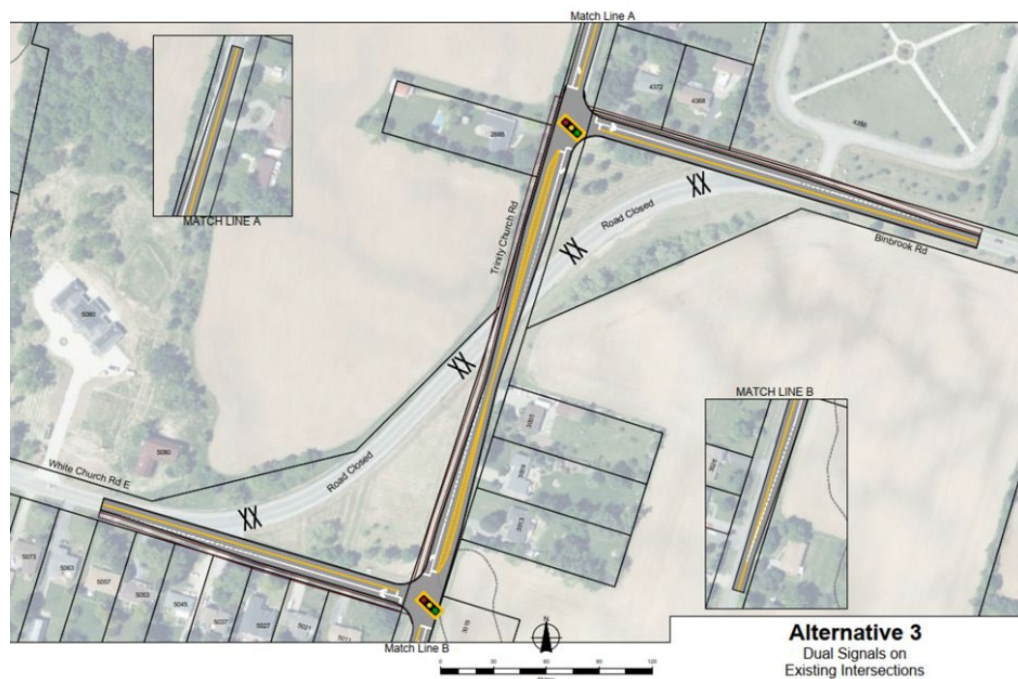
In this option, the intersections will both be signalized. This concept is similar to Alternative Design Concept 1; however, instead of roundabouts, both intersections are proposed to be controlled by traffic signals.

The impacts from Alternative Design Concept 2 include minor vegetation removal and some impact to wildlife and SAR wildlife habitats. There is potential impact to archeological resources, which will be assessed in a Stage 2 AA. These intersections have more conflict points than roundabouts, creating a slightly lower level of safety for active transportation and will also require power for traffic light signals. The associated construction costs will be higher, and the maintenance costs will be moderate due to the operation of the traffic signals.

Figure 8-2: Alternative Design Concept 2 - Two Signalized Intersections**Alternative Design Concept 3: Two Signalized Intersections on Existing Road Alignment**

This alternative maintains the existing Trinity Church Road and involves the development of intersections at their existing locations, and both intersections are signalized.

The impacts from Alternative Design Concept 3 include minimal vegetation removal and no anticipated impact to SAR habits. No impact is anticipated to impact any potential archeological resources. These intersections have more conflict points than roundabouts, creating a slightly lower level of safety for active transportation. This design also carries a greater collision risk as the existing intersection have a skew angle that would not be improved by maintaining the existing alignment. The associated construction costs will be the primary cost of the design.

Figure 8-3: Alternative Design Concept 3**Alternative Design Concept 4: Peanut-shaped Roundabout**

This alternative involves the development of a peanut-shaped roundabout that connects both Binbrook Road and White Church Road to Trinity Church Road.

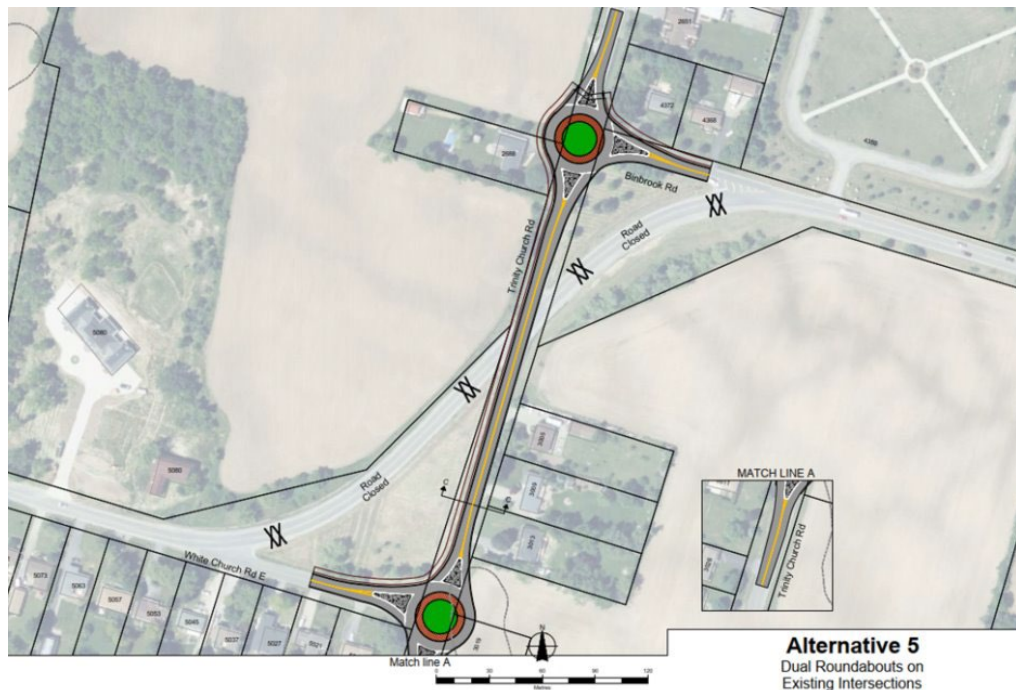
The impacts from Alternative Design Concept 4 include minor vegetation removal and some impact to wildlife and SAR wildlife habitats. Minor to moderate BHR impacts are potentially anticipated associated with the roundabout footprint. Additionally, some property acquisition would be required at 5080 White Church Road East with impacts to potential archeological resources, to be assessed in a Stage 2 AA. Roundabouts have less conflict points between active transportation users and vehicles, however the peanut roundabout is an uncommon form. The associated construction costs will be higher with additional property acquisition costs, but the maintenance costs will be lowered.

Figure 8-4: Alternative Design Concept 4

Alternative Design Concept 5: Two Roundabouts on Existing Road Alignment

Similar to Alternative Design Concept 3, the original location of the two intersections is maintained in this Alternative Design Concept. The traditional intersection will be replaced by two roundabouts.

The impacts from Alternative Design Concept 5 include minor vegetation removal and some impact to wildlife and SAR wildlife habitats. Minor to moderate BHR and CHL impacts are potentially anticipated associated with the roundabout footprint. There is potential impact to archeological resources, which will be assessed in a Stage 2 AA. Additionally, some property acquisition would be required to accommodate the roundabouts. The associated construction costs will be the primary cost with medium to high property acquisition costs, associated with acquisition to multiple properties.

Figure 8-5: Alternative Design Concept 5

8.1 Evaluation of Alternative Design Concepts

Similar to the evaluation of Alternative Solutions, the evaluation of Alternative Design Concepts is a step-by-step process that compares alternatives that are feasible within the project environment and meet the project objectives outlined in the Problem / Opportunity Statement.

The impacts of the alternatives are evaluated relative to each other, against a set of equally weighted criteria, including possible mitigating measures by applying a ranking from most preferred to least preferred, with an empty pie representing the greatest anticipated impact; and therefore, least preferred, compared to full pie representing the least anticipated impact; and therefore, most preferred.

The criteria are developed based on the inventory of the natural, socio-cultural, technical, and financial environments of the study area, and identification of key considerations.

Tables showing the detailed Evaluation of Alternative Solutions and Alternative Design Concepts for each of the criteria is presented in Appendix F. A summary of the evaluation results is presented below.

Table 8-1: Evaluation of Alternative Design Concepts

Criteria	Alternative Design Concept 1: Two Roundabouts with Road Realignment	Alternative Design Concept 2: Two Signalized Intersections with Road Realignment	Alternative Design Concept 3: Two Signalized Intersections within Existing Alignment	Alternative 4: Peanut- shaped roundabout	Alternative 5: Two Roundabouts within Existing Road Alignment
Natural Environment					
Socio-Cultural Environment					
Financial Factors					
Technical Factors					
Overall Summary	Most Preferred	Somewhat Preferred	Somewhat Preferred	Least Preferred	Least Preferred

Order of Preference:

Most Preferred  More Preferred  Somewhat Preferred  Less Preferred  Least Preferred 

In Alternative Design Concept 1, there are some impacts to vegetation to accommodate the roundabout footprint and minor anticipated impact to terrestrial habitat and Species at Risk.

Under Socio-Cultural Environment this design will require a Stage 2 Archaeological Assessment to be completed during the Detailed Design phase. There is no anticipated impact to the heritage property, and no anticipated impact to potential Built Heritage Resource or Cultural Heritage Landscapes.

In Alternative Design Concept 1, the north-south segment is angled northeast-southwest, which supports smoother and faster through-movement. For operational performance across both intersections and the resulting queue lengths, Alternative Design Concept 1 exhibits the strongest operational performance among all alternatives. Roundabouts provide the best operational safety and speed management, and the road realignment allows for improvement of the skew angle at the existing intersection.

Under Financial Environment there are no property acquisition costs, and an estimated moderate capital cost with low maintenance costs.

9.0 Consultation and Engagement Summary

Consultation is an important part of the MCEA process to ensure that anyone with an interest in the project has an opportunity to provide input into the decision-making process.

The key features of the consultation process included:

- Identifying key stakeholders, agencies, local residents, Indigenous Nations, and other interested or potentially affected parties to be consulted during the MCEA process.
- Notifying key stakeholders, agencies, local residents, Indigenous Nations, and other interested or potentially affected parties of the study at key points of the MCEA process.
- Engaging key stakeholders, agencies, local residents, Indigenous Nations, and other interested or potentially affected parties at key points of the MCEA process to gather input and help inform key decision-making.
- Responding to inquiries or comments in an efficient and timely manner.

A Project Contact List was developed as a mailing list to distribute project Notices. The Project Contact List consisted of technical and provincial agencies,

municipalities, utilities, local interest groups, businesses, and Indigenous Nations that may have an interest in the project, as well as local residents within the vicinity of the study area. Throughout the MCEA process, the Project Contact List was used to maintain contact information for those interested in the study, as well as to summarize comments received about the project and responses from the study team. The comments received throughout the MCEA were considered in the evaluation of the alternatives.

A copy of the Project Contact List is provided in Appendix G. A summary of project comments and responses is provided further in this section.

9.1 Notices

The Schedule C MCEA requirements include three mandatory public points of contact during the MCEA process. The points of contact for this project included a combined Notice of Commencement and PIC #1, Notice of PIC #2, and a Notice of Completion to obtain input from interested stakeholders.

Project notices were published in the local newspaper, the Hamilton Spectator, emailed or mailed to those on the Project Contact List, and posted on the project webpage of the City's website (www.hamilton.ca/BinbrookRdEA). Project information was also posted through the City's social media platforms.

The combined Notice of Commencement and PIC #1 inviting public input was first issued on November 7, 2025. The Notice for the second PIC #2 inviting public input was first issued on May 8, 2026. A copy of the Notice of Commencement and PIC #1, and Notice of PIC #2 are provided in Appendix C. At the conclusion of the MCEA process for the project, a Notice of Completion will be published in the Hamilton Spectator and on the project webpage, as well as on the City's social media platforms, and mailed / emailed to all on the Project Contact List. The Notice of Completion will provide members of the public with the dates and method to view the ESR, including names and addresses of individuals to whom they can send their comments.

9.2 Public Information Centres (PICs)

Two PICs were hosted in-person to share information and gather feedback about the project. The first PIC was hosted November 18, 2025, from 6:00 pm to 8:00 pm at the Glanbrook Arena. The second PIC was hosted on May 21, 2026, from 6:00 p.m. to 8:00 p.m. at the Glanbrook Community Service Centre.

PIC #1

The first PIC was held as a drop-in style open house with project information displayed around the room, including a review of the study area's existing conditions, alternative solutions, the preliminary preferred alternative.

Representatives from the study team were present to answer questions as well as discuss the project with interested members of the public. The PIC materials were posted on the City's project webpage following the PIC for the public to view and download anytime during the PIC comment period from November 18 to December 9, 2025.

Opportunities for public feedback were made available through a printed Comment Sheet available at the PIC and a digital comment form provided on the City's webpage for the project, or by contacting the study team with written comments by email.

A copy of PIC information materials and comments received during the PIC commenting period are included in Appendix G. Comments received during the PIC comment period are summarized further in this section.

PIC #2

The second PIC was held as a drop-in style open house with project information displayed around the room, including a review of the Preferred Alternative (as presented in PIC #1), three Alternative Design Concepts, the Evaluation of Alternative Design Concepts, and the Preferred Design Concept.

Representatives from the study team were present to answer questions as well as discuss the project with interested members of the public. The PIC materials were posted on the City's project webpage for the public to view and download anytime during the PIC comment period from May 20 to June 11, 2026.

Opportunities for public feedback were made available through a printed Comment Sheet available at the PIC and a digital comment form provided on the City's webpage for the project, or by contacting the study team with written comments by email.

A copy of PIC information materials and comments received during the PIC commenting period are included in Appendix G. Comments received during the PIC comment period are summarized in this section.

Summary of Comments

A summary of comments received during the MCEA PIC #1 and PIC #2 are provided under the following themes, along with study team responses or how the comments were considered in the evaluation of the alternatives.

Key themes:

- Safety and accidents in the study area
 - Interest in rumble strips, flashing warning lights, lighting, and clear turn signal instructions
 - Request for a design that prevents accidents and keeps traffic moving freely
 - Support for roundabouts as a method to reduce traffic hazards.
- Timing for implementation
 - Request for a quick process to implement within three to five years.
- Active Transportation
 - Question if the multi-use path on the traffic circle will connect to the new multi-use path on the south side of Binbrook Road
- Preference for roundabouts, or signalization
 - Support for two roundabouts, as a solution to resolve safety concerns without causing additional traffic.
 - Alternative 1 Do Nothing is not acceptable.
 - Support for Alternative Design Concept 1
 - Comments that a roundabout would require the least property acquisition, allow for the best access to residential homes, and improve vehicle emission associated with acceleration and traffic at signals

The benefits and impacts of roundabouts / traffic signals (signalization) / stop control are considered as part of the alternative design options in the MCEA Phase 3 of the study.

The location and configuration of the multi-use path will be confirmed during detailed design of the preferred solution to provide connectivity of the active transportation network in the study area.

9.3 Agency Comments

In addition to comments from residents, Niagara Peninsula Conservation Authority provided their comments on both PIC #1 and PIC #2, noting NPCA is supportive of Alternative Design Concept 1 being the Preliminary Preferred Design Concept, and with no comments or concerns (though an NPCA permit may be required). NPCA also noted that Alternative Design Concept 5 appears to encroach into the watercourse, possibly requiring a watercourse alteration, and therefore this is not a preferred alternative. NPCA noted they would like to continue to be circulated throughout the EA process and detailed design.

Ministry of Environment, Conservation and Parks provided comments in response to the Notice of Study Commencement providing a Letter of Acknowledgement including confirmation of the recommended list of Indigenous Nations to contact and the Guide to preliminary Screening for Species at Risk.

9.4 Indigenous Nations

MECP has developed guidance on the steps to rights-based consultation with Indigenous Nations. Indigenous Nations with a potential interest in the project were identified through correspondence and direction provided by the MECP (correspondence: Joan Del Villar Cuicas, Environmental Assessment and Planning Coordinator, MECP, dated November 12, 2025). A copy of this correspondence with MECP is provided in Appendix G.

Individual correspondences along with project notices were sent by email / mail to the Indigenous Nations identified as having a potential interest in the MCEA. Follow-up phone calls were made following the Notice of Commencement and PIC #1 on November 10, 2025, and following PIC #2 on May 15, 2026, to confirm receipt of the notice, inquire about interest in the project, and any concerns or questions about the project. Follow up calls will also be made following the Notice of Study Completion.

A summary of communication with Indigenous Nations was maintained on the Project Contact List and is summarized in Table 3 and in Appendix G.

Table 9-1: Summary of Communication with Indigenous Nations

Indigenous Nation	Notices Sent	Comment Received	Study Team Correspondence
Six Nations of the Grand River	Yes	250120_Email. At this time SNGR have no comments pertaining to assessment review re: Binbrook Road / Trinity Church Road. 260507_Email. As you know from other Hamilton EAs, we will file a Section 16 request if capacity funding is not made available.	250617_Email. Circulated Project Introduction Letter 251103_Letter direct mail. Circulated NOCm / PIC 1 251110_Email. Circulated Notice of NOCm / PIC 1 260105_Email. Circulated Stage 1 Archaeological Assessment (AA) for comments / review 260120_Email. Study team followed up on comments on the Stage 1 AA comments / review 260511_Letter direct mail. Circulated Notice of PIC 2 260512_Circulated Notice of PIC 2 260527_Email. Circulated Natural Heritage Assessment for comments / review
Haudenosaunee Development Institute (HDI)	Yes	260121_Email. Requested the City not proceed with Stage 2 AA without engaging HDI and that HDI has not been meaningfully engaged in the process.	250617_Email. Circulated Project Introduction Letter 251103_Letter direct mail. Circulated NOCm / PIC 1 251110_Email. Circulated Notice of NOCm / PIC 1 260105_Email. Circulated Stage 1 AA for comments / review 260119_Email. Study team followed up on comments on the Stage 1 AA review 260511_Letter direct mail. Circulated Notice of PIC 2 260512_Circulated Notice of PIC 2 260527_Email. Circulated Natural Heritage Assessment for comments / review
Wendat Nation	Yes	260106_Email. Advised they will not be reviewing and providing comments for the Stage 1 AA.	250617_Email. Circulated Project Introduction Letter 251103_Letter direct mail. Circulated NOCm / PIC 1 251110_Email. Circulated NOCm / PIC 1 260105_Email. Circulated Stage 1 AA for comments / review 260511_Letter direct mail. Circulated Notice of PIC 2 260512_Circulated Notice of PIC 2 260527_Email. Circulated Natural Heritage Assessment for comments / review

Binbrook Road, Trinity Church Road, White Church Road Municipal Class Environmental Assessment
July 2026

Indigenous Nation	Notices Sent	Comment Received	Study Team Correspondence
Mississauga of the Credit First Nation	Yes	251107_Email. Confirmed MCFN would like to proceed with the review of the draft Stage 1 Archaeological Assessment. Review agreement attached with estimated costs. 251117_Inquired if any archeological work was to be done as part of the study. 251128_Advised the City a ‘flagged for review’ response had been drafted for the upcoming archeological and environmental reports, as well as a TRA (agreement). 260119_Email. Confirmed no concerns, comments or questions about the Stage 1 Archaeological Assessment. 260306_Email. Inquired if additional environmental or archeological assessments will be completed.	250617_Email. Circulated Project Introduction Letter 251103_Letter direct mail. Circulated NOCm / PIC 1 251110_Email. Circulated Notice of NOCm / PIC 1 251118_Email. Confirm Stage 1 AA is to be completed by the end of November and Stage 2 AA to be completed in 2026 260119_Email. Follow-up email for Stage 1 AA comments 260512_Circulated Notice of PIC 2 260527_Email. Circulated Natural Heritage Assessment for comments / review 260306_Confirmed a Stage 2 AA will be completed
Metis Nation of Ontario	Yes		250617_Letter direct mail. Circulated Project Introduction 250617_Email. Circulated Project Introduction 251103_Letter direct mail. Circulated NOCm and PIC 1

10.0 Preferred Design Concept

Based on the evaluation of the Alternative Solutions and Alternative Design Concepts, the comments received from stakeholders, agencies, Indigenous Nations, and interested parties, the Preferred Design for the study area is Alternative Design Concept 1: Two Roundabouts with Road Realignment. The design elements of the Preferred Design, including width of vehicle travel lane and active transportation features of the cross-sections may be refined during detailed design.

Overall, the Preferred Design concept improves the skewed intersection geometry at the southbound approach of Trinity Church Road and White Church Road and provides improved operational safety for road users (vehicles, pedestrians, cyclists) while minimizing impacts to adjacent properties and natural features, with moderate capital costs when compared to the other alternatives.

This alternative is anticipated to have sufficient road capacity, and when considering performance across both intersections and the resulting traffic, this alternative performs the best. The road realignment would allow for improvement over the skew angle at the existing intersections. Considerations for details for pedestrian crossing, signage, and street lighting are to be reviewed at the detailed design.

Drainage will continue to be conveyed through roadside ditches and culverts to the regulated watercourses. The preferred solution will impact existing culverts (1 to 3) as a result of widening for road improvements. Impact to culverts and conveyance is to be further reviewed during detailed design to meet provincial standards. The need for culvert replacements or extensions, and hydraulic design is to be confirmed at detailed design, based on culvert condition and detailed grading.

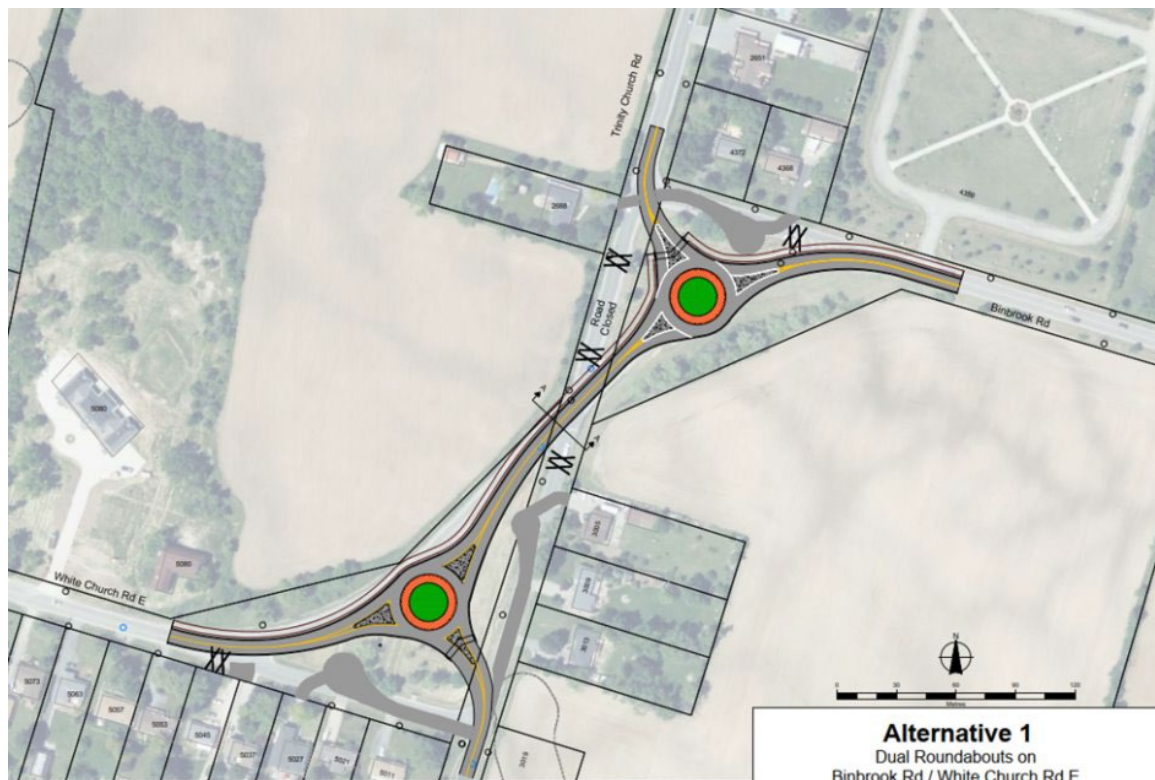
The preferred solution will result in an increase in impervious area, resulting in increased peak flows in the ROW. To mitigate this increase and maintain post-development peak flows at pre-development levels, approximately 46 m³ of storage will be required for the 100-year storm. This storage is proposed to be provided through a Low Impact Development (LID) measure, although alternative approaches may also be evaluated during detailed design.

The preferred is not anticipated to impact local wells in the study area. This design concept would have some impact to vegetation and associated impact to general wildlife habitat. Direct impact to terrestrial species, including migratory

birds and Species at Risk is not anticipated with the implementation of avoidance and timing windows for vegetation removal associated with construction.

Roundabouts have less conflict points between active transportation users and vehicles and the best operational safety and speed management. This alternative is not anticipated to have direct impact on built heritage or cultural heritage landscape features. There is potential for indirect impact to identified heritage attributes as a result of disruption and vibrations resulting from close proximity of proposed construction activities, which are avoidable with suitable mitigation measures. Based on the footprint of the preferred solution, there is potential to impact areas of potential archaeological resources. A Stage 2 Archaeological Assessment in select areas will be required for this option. Where feasible, the footprint of the preferred design concept will be refined during detailed design to avoid or minimize impact to adjacent properties and cultural heritage features.

Figure 10-1: Preferred Design Concept



11.0 Air and Noise Considerations

11.1 Noise Impact Assessment

A Noise Impact Assessment was completed for the preferred Alternative Design Concept. The assessment used 66 Noise Sensitive Areas (NSAs) with assessment at the most exposed Outdoor Living Area (OLA) location. Modelled noise levels were calculated for three scenarios: Current, Future No Build, and Future Build. The Future No Build scenario represents conditions in the future without proposed road improvements, while the Future Build scenario represents conditions with the proposed road improvement. The results of this assessment for each of the scenarios were compared to criteria in the Ontario Ministry of Transportation's (MTO) Environmental Guide for Noise, 2022.

To determine the potential noise impact, future predicted sound levels with and without the proposed road improvements were compared for the worst-case OLA locations of each NSA, which is in general 3 m off the rear façade of the dwelling. Sound levels were predicted using the most up to date version of United States Federal Highway Administration's (FHWA) Traffic Noise Model (TNM) software (version 3.2), as required by the Ministry of Transportation (MTO). The MTO Noise Guide outlines that ultimate traffic data should be used in the analysis for high-density urban areas, whereas for rural environments, the 10-year future traffic volumes should be used.

The sound levels were predicted based on the Annual Average Daily Traffic (AADT) value as required by the MTO for three scenarios: Present, Future No Build, and Future Build. The future scenarios are based on forecasted traffic (to 2041), as the study area is rural. The Future No Build scenario represents conditions in the future without the proposed road improvements, while the Future Build scenario represents conditions with the proposed road improvement.

If the proposed improvements to the Binbrook Road, Trinity Church Road, and White Church Road Intersection are constructed, the increase in sound levels expected throughout the study area are expected to be less than 5 dBA and no receptor is expected to be exposed to sound levels of 65 dBA or higher; therefore, noise mitigation measures are not recommended following the guidance in the MTO Noise Guide. Based on the MECP interpretation of the noise impact levels, the noise impact due to the proposed improvements to the Binbrook Road, Trinity Church Road, and White Church Road Intersection is considered to be insignificant.

The Noise Impact Assessment is in Appendix I.

11.2 Air Quality

The house at 4368 Binbrook Road is approximately 40 m from the closest point on the existing alignment of City Road 65 / White Church Road. Under the proposed alignment in Alternative 1 this distance is the same.

As vehicles proceed through the roundabout, traffic in the roundabout will be approximately 55 m from the same point which is slightly farther than the current path of traffic on White Church Road. Alternative Design Concept 1 will force all traffic to use the roundabout where some traffic used to travel straight west along Binbrook Road to Trinity Church Road. For this traffic, the impacts on 4368 Binbrook Road will be reduced. Vehicles approaching the roundabout will have to slow more than they would have under the current alignment but the vehicles that currently stop at the stop signs will not have to slow as much.

Therefore, since there is no significant change in distance between the road and the houses, many vehicles will slow more but some vehicles will no longer need to stop, some vehicles will be farther away, it is understood that any change in air quality impacts will be small.

12.0 Climate Change Considerations

Climate change is defined as any significant change in long-term weather patterns. The term can apply to any major variation in temperature, wind patterns, or precipitation that occurs over time. Global warming describes the recent rise in the average global temperature caused by increased concentrations of Greenhouse Gases (GHGs) trapped in the atmosphere. Scientists have concluded that human activity is largely responsible for recently observed changes to our climate since GHGs are mainly caused by burning fossil fuels to produce energy.

The MECP finalized a document entitled “*Considering Climate Change in the Environmental Assessment Process*” in 2017 that provides guidance relating to the Ministry’s expectations for considering climate change during the EA process. It is suggested that this guide be consulted if an approved Class EA has no climate consideration method.

There are two types of climate change effects that can be considered. The first is the effect that a project can have on climate change. In this case, the degree to

which the project can provide some climate change mitigation measures is to be assessed. The second is the effect climate change has on the project. In this case, the degree to which the project can demonstrate adaptation to climate change impacts is assessed. Climate change was considered during this Class EA and is discussed in this section.

12.1 Effects of the Project on Climate Change

There is potential for the works proposed to impact the atmosphere through the emission of GHGs on an ongoing basis. An increase in traffic over time may result in an increase in associated GHG emissions. Road improvements are anticipated to reduce traffic congestion, thereby reducing emissions from idling vehicles. The potential GHG emission effect from the Preferred Solution is anticipated to be insignificant on a regional and local scale.

Other carbon sources and emissions associated with this project would relate to construction vehicle emissions during the construction period. Emissions can be decreased by increasing efficiency and through regular maintenance of equipment.

Landscape changes associated with a project can also impact climate change. A carbon sink is described as a land or ocean mass that can take in carbon, in particular carbon dioxide, from the atmosphere. Vegetation can assist in removing carbon dioxide from the atmosphere. The proposed undertaking will result in limited vegetation removal during grading activities. Vegetation loss (and related carbon sink removal) is anticipated to be minimized as much as possible by reducing the footprint of grading activities where feasible.

The provision of active transportation facilities will improve comfort for non-motorized modes of travel, and as a result may change the modal split.

12.2 Effects of Climate Change on the Project

The road pavement infrastructure is susceptible to deterioration from freeze-thaw events and roadside drainage features may be impacted by increased precipitation events that are becoming more prevalent in Southern Ontario due to climate change effects which can result in potential flooding and erosion.

The Detailed Design of the road improvements and associated drainage infrastructure will consider peak flows and capacity. Stormwater management for the project should be designed with consideration for increased precipitation as a

result of climate change. Stormwater quality control should consider Low Impact Development (LID) measures, if feasible.

To mitigate the overall environmental impact, several measures are recommended, including minimizing the footprint of disturbed areas, implementing Erosion and Sediment Control plans, and stabilizing and re-vegetating disturbed areas with native seed mix.

13.0 Preliminary Cost Estimate

Based on the preliminary cost estimate, the construction cost of the recommended improvement is estimated at approximately \$5.6 million (excluding HST).

The preliminary cost estimate includes costs for road work and engineering services. Items that have been excluded from the estimate include property acquisition (none anticipated), utility relocation (none anticipated), and construction contract administration and inspection. Preliminary costs based on conceptual design will be reviewed and confirmed during the detailed design phase of the project.

Further details on the construction costs are provided in Appendix H.

14.0 Impacts and Mitigations

Project activities associated with the preferred solution are anticipated to include excavation, grading, and some vegetation and tree removal within the ROW and construction limits to accommodate the proposed intersection designs.

Potential impacts and proposed mitigation measures are identified and summarized in Table 14-1. Mitigation measures are intended to inform the future detailed design and be included in the mitigation and monitoring measures developed during the detailed design phase.

All Design and Construction Reports and Plans are expected to be based on a best management approach centered on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of impacted areas.

Table 14-1: Potential Impacts and Proposed Mitigation Measures

Environmental Component	Environmental Sub-component	Potential Environmental Effects	Proposed Mitigation Measures and Future Commitments
Natural Environment	Trees and Vegetation	Trees adjacent to the ROW may be subject to impacts within the rootzone from grading and other construction activities.	Minimize disturbance to existing vegetation. Adjust grading prior to construction to reduce impacts to trees by increasing the steepness of slopes in isolated locations, where feasible. Disturbed areas shall be stabilized and re-vegetated using an appropriate seed mix suitable to the site conditions upon project completion and restored to a pre-disturbed state where practical. An appropriate seed mix to be selected based on consultation with the appropriate reviewing agency (NPCA). Erosion and Sediment Control (ESC) measures shall be developed during the detailed design phase of the project and installed prior to commencement of any grading or vegetation disturbance. Impacts to remaining trees will be minimized by implementing tree protection (e.g., ESC fencing) to protect against grading impacts. An environmental inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies. A certified arborist should carry out or oversee the mitigation of any impacts to trees, including proper pruning techniques (crown or root) throughout the construction period and before the contractor demobilizes. Tree planting will be considered to mitigate vegetation removal; a 1:10 ratio is to be confirmed at Detailed Design.
Natural Environment	Wildlife and Wildlife Habitat	Temporary displacement and disturbance to wildlife and habitat during the construction phase (e.g., vegetation removals, noise disturbance) may include SAR. Potential for increased road mortality and mortality during construction activities. Potential for disturbance / destruction of migratory breeding birds and their habitat. Select tree removal may impact bat roosting habitat. Noise, dust impacts from construction.	The footprint of the disturbed area shall be minimized as much as possible. Avoid vegetation clearing between April 1 and October 31 to prevent impacts to active periods for breeding birds, and bats. Vegetation clearing must be completed outside of the core breeding bird window (April 1 to August 31), and bat window (March 31 to October 31) to avoid potential for direct impact to species. Active nests (nests with eggs or young birds) of protected migratory birds cannot be destroyed at any time of the year. Temporary silt fence barriers are recommended to exclude wildlife from earthwork and construction activities. Temporary exclusion fencing shall be installed to allow wildlife to leave the fenced area during vegetation clearing. Once the work area has been cleared, it can be securely fenced to prevent wildlife from returning. The excluded area shall be searched immediately following fencing installation for any wildlife that may have become trapped. Any wildlife shall be permitted to escape to a suitable habitat. If a nesting migratory bird is identified within or adjacent to the construction site and activities are such that continuing works in that area would result in a contravention of the MBCA, all activities should stop and the Contract Administrator (with assistance from an Avian Biologist) should discuss mitigation measures with the City. Should SAR be identified, all activities shall stop and MECP shall be contacted immediately. As required, dust from the work area will be monitored and controlled using suppressants. Environmental noise will be reduced through the standard operating practices and conformity with noise by-law requirements. An environmental inspector shall be engaged during the construction phase to review ESC measures that protect adjacent natural features and prevent certain wildlife from entering the work zone. The environmental inspector will identify all deficiencies and ensure the contractor will address the deficiencies.

Environmental Component	Environmental Sub-component	Potential Environmental Effects	Proposed Mitigation Measures and Future Commitments
Physical Environment	Surface Water A single mapped watercourse associated with NPCA-regulated lands (southeast of the corner of White Church Road and Trinity Church Road)	Potential for localized water quality impacts in the case of spills. Low potential for sediments to enter the watercourse features due to stockpiling, excavation, and construction. This upstream feature may represent a Headwater Drainage Feature (HDF) but is highly disturbed and would be assigned ‘No Management Concern’ if present.	An ESC Plan shall be developed during detailed design, conforming to Ontario Provincial Standard Specifications (OPSS) and NPCA requirements. Silt fence shall be used to delineate the limit of the construction area. No storage, stockpiling, or staging shall occur beyond the work area delineated by silt fencing. A permit from NPCA under O. Reg. 41/24 will be required prior to conducting any works in the Regulated Area. Stockpiled material will be stored and stabilized a minimum of 30 m from the regulated area. Equipment fueling and maintenance shall be done at least 30 m from the regulated area to ensure no deleterious substances enter. All equipment must arrive onsite clean to prevent the potential transfer of invasive species to the local environment. Any culverts that do not meet design criteria are recommended to be reviewed during detailed design.
Physical Environment	Stormwater	Impact to existing culverts (1 to 3), anticipated to be re-located and replaced with pipes of equal or larger diameters. Increase in impervious area, resulting in increased peak flows in the ROW.	The Contractor must develop Spill Prevention and Contingency Plans. ESC plans must be monitored and maintained prior to, and after precipitation events. The need for culvert replacements or extensions, including driveway and entrance culverts and hydraulic design is to be confirmed at detailed design, based on culvert condition and detailed grading. Maintain post-development peak flows at pre-development levels, storage will be required for the 100-year storm, which may be provided through a Low Impact Development (LID) measure. Alternative approaches may also be considered during detailed design. The proposed stormwater management components should be designed with consideration for increased precipitation as a result of climate change. Stormwater quality control is recommended to be provided through a “Best Efforts” approach including maintaining roadside ditches and CB treatment devices and LID measures, if feasible.
Physical Environment	Soil and Groundwater	Potential for localized groundwater quality impacts from spills. Potential for excess soil generation.	The Geotechnical Report must assess soil and groundwater conditions and dewatering requirements to ensure that impacts are suitably mitigated. A monitoring and mitigation plan will be a condition of any permits for dewatering. Management of excess soil must comply with O. Reg. 406/19 and the MECP’s current guidance document Management of Excess Soil – A Guide for Best Management Practices (2014). A well interference and reporting protocol should be established before construction that outlines the actions taken should a complaint from a private well owner be received and ensures that a supply of water is provided for the private resident. Mitigation measures should include the following: • Notification of residents of construction with contact information • A reporting and investigation protocol to address complaints • Supply of alternate water source in case of confirmed impact

Environmental Component	Environmental Sub-component	Potential Environmental Effects	Proposed Mitigation Measures and Future Commitments
Socio-Cultural Environment	Air Quality	Temporary increase in dust in air, emissions from construction activities.	A complaint response protocol for nuisance impacts including dust emissions will be prepared during the detailed design phase of the project and implemented prior to construction. The Contractor will be required to develop a Construction Management Plan (CMP) that specifically addresses dust controls and contingency plans to mitigate dust when it occurs. Vehicles and machinery shall be in good repair, equipped with emission controls, as applicable and operated within regulatory requirements. The Contractor shall also be required to implement dust suppression measures to reduce the potential for airborne particulate matter resulting from construction activities. This should be in the form of water applications on exposed soils.
Socio-Cultural Environment	Noise	Temporary nuisance noise during construction activities.	A complaint response protocol for nuisance impacts including construction noise shall be prepared during the detailed design phase of the project and implemented prior to construction. Noise control measures shall be implemented where required during the construction phase, such as restricted hours of operation and the use of appropriate machinery and mufflers. The noise produced by the equipment can be limited through proper equipment maintenance. All construction activities shall conform to the criteria set out in NPC115 of 83dB. The Contractor will be required to develop a CMP that specifically addresses noise controls, mitigation to be implemented and frequency of equipment inspection.

Environmental Component	Environmental Sub-component	Potential Environmental Effects	Proposed Mitigation Measures and Future Commitments
Socio-Cultural Environment	Archaeological Resources	Potential impact areas of archaeological potential located within the existing ROW.	Comply with the recommendations of the Stage 1 AA: • Parts of the study area exhibit archaeological potential. These lands require Stage 2 Archaeological Assessment by test pit and pedestrian surveys at 5 m intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands. • The Glanbrook Cemetery is within the Project Area and must be avoided by any project designs. • The remainder of the study area does not retain archaeological potential on account of deep and extensive land disturbance. These lands do not require further archaeological assessment. • Should the proposed work extend beyond the current study area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands. Should previously undocumented archaeological resources be discovered, they may be new archaeological sites; therefore, subject to Section 48(1) of the <i>Ontario Heritage Act</i>. The proponent or person discovering the archaeological resources must cease alteration of the Site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the <i>Ontario Heritage Act</i>. The <i>Funeral, Burial and Cremation Services Act</i>, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with O. Reg. 30/11, the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of <i>that Act</i> related to burial sites. ⁵ In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the <i>Ontario Heritage Act</i>. Archaeological assessments are required to be undertaken by an archaeologist licensed under the <i>Ontario Heritage Act</i>, who is responsible for submitting the report directly to Ministry of Citizenship and Multiculturalism for review. The need for further AA is to be confirmed during detailed design once grading limits have been established and the extent of disturbance is known. Any further recommended assessment (i.e., Stage 2 AA) shall be completed as early as possible in the detailed design phase and prior to any ground disturbing activities. Indigenous Nations are to be informed and engaged for participation in any future Stage 2 AA.

⁵ Government of Ontario. (2022, March 1). *Funeral, Burial and Cremation Services Act*, 2002 S.O. 2002, Chapter 33. *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33. <https://www.ontario.ca/laws/statute/02f33>
R.J. Burnside & Associates Limited
059627_Binbrook ESR_July 2026.docx

300059627.0000

Environmental Component	Environmental Sub-component	Potential Environmental Effects	Proposed Mitigation Measures and Future Commitments
Socio-Cultural Environment	Built Heritage Resources and Cultural Heritage Landscapes	No direct impacts are anticipated to any identified BHR or CHL based on the proposed works. There is some potential for indirect impacts due to disruption and vibrations to identified heritage attributes resulting from close proximity of proposed construction activities, which are avoidable with suitable mitigation measures.	Planning, staging, and execution of construction activities should be suitably planned and undertaken to avoid unintended negative impacts to identified B.H.R.s and C.H.L.s. Mitigation measures such as remaining within the rights-of-way, establishing buffer zones with fencing if feasible, and issuing instructions to construction workers to avoid identified B.H.R.s and C.H.L.s should be considered and implemented. Particular emphasis should be placed on mitigating such impacts from occurring to the historical barn at 5080 White Church Road (B.H.R. 1), and the main entrance of the Glanbrook Cemetery at 4350 Binbrook Road (C.H.L. 1), due to the close proximity of identified heritage attributes to the construction activities as proposed. Detailed Design and construction staging should incorporate vibration limits and mitigation measures consistent with recognized best-practice guidelines for heritage resources to prevent indirect impacts to B.H.R. 1 (5080 White Church Road) and C.H.L. 1 (4350 Binbrook Road). A vibration monitoring and response plan should be prepared and implemented as part of Detailed Design to lessen vibration impacts or ground instability related to construction activities, namely excavation. The Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment should be submitted by the proponent to heritage staff at the City of Hamilton and to the Ministry of Citizenship and Multiculturalism for review and feedback.
Socio-Cultural Environment	Human Health and Safety	Potential safety hazard to humans from construction activities, heavy equipment, and increased construction traffic.	The Health and Safety Plan shall be developed in accordance with the Occupational Health and Safety Act, 1990, and regulatory requirements.
Transportation and Built Environment	Transportation Infrastructure	Temporary traffic flow / access disruptions during construction. Safety concerns related to collisions. Potential safety hazards on roadways from construction activities, heavy equipment, and increased construction traffic.	The Contractor shall develop and implement a Traffic Management Plan. • Adequate signage shall be provided to give advance notice of disruptions and detours. • Consult with public agency and / or adjacent landowners / tenants regarding temporary access routes. • Operation of construction related vehicles will be done in accordance with all appropriate safety policies and procedures and based on Canadian Standards (e.g., Transport Canada, etc.). All contractors will be required to complete and follow appropriate construction site training and adhere to appropriate road safety regulations during construction. Work shall be done in such a manner as to minimize disruption to adjacent properties. Noise and dust emissions shall be controlled. Contract specifications shall ensure that all equipment and vehicles are compliant with noise and air emission standards for applicable equipment.

15.0 Conclusions

The Preferred Design provides improved operational safety for all road users (vehicles, pedestrians, cyclists) while minimizing impacts to adjacent properties and natural features, with moderate capital costs when compared to the other alternatives. Property acquisition is not anticipated to be required.

During Detailed Design and construction of the project, the following commitments are required:

- Mitigation measures as detailed in Section 14.0
- The City will be required to secure all necessary Permits and/or Authorizations required for the Project, including:
 - Consultation with the NPCA with respect to working within a Regulated Area and required permissions

The design elements of the preferred solution, including width of vehicle travel lanes and active transportation features, may be refined during detailed design. Property easement limits and agreements with affected owners will be reviewed and finalized during detailed design.

As per the requirements of the MCEA, this ESR is available for public review and comment for a period of 30 calendar days, following the publication of the Notice of Completion. Interested individuals may provide written comments to the study team within the 30-day comment period. All comments and concerns should be sent directly to either of the following study team members:

Olivia Stanciu, M.Sc., PMP

Project Manager, Infrastructure Renewal
City of Hamilton
71 Main Street West
Hamilton ON L8P 4Y5
Tel: 905-546-2424 x4101
Olivia.Stanciu@hamilton.ca

Alvaro Almuina, P.Eng.

Consultant Project Manager
R.J. Burnside & Associates Limited
1266 South Service Road, Suite C2-1
Stoney Creek ON L8E 5R9
Tel: 705-797-4383
Alvaro.Almuina@rjburnside.com

16.0 References

Chapman, L.J., and Putnam, D.F. 1984: Physiography of Southern Ontario; Ontario Geological Survey, Map. P. 2715

City of Hamilton. (2012, March 7). Rural Hamilton Official Plan.
<https://www.hamilton.ca/build-invest-grow/planning-development/official-plan/rural-hamilton-official-plan#volume-1-parent-policies>

Environment and Climate Change Canada. (n.d.). Climate Normals 1991-2020 Data.
https://climate.weather.gc.ca/climate_normals/results_1991_2020_e.html?searchType=stnProx&txtRadius=25&selCity=&selPark=&optProxType=custom&txtCentralLatDeg=43&txtCentralLatMin=13&txtCentralLatSec=36.65&txtCentralLongDeg=80&txtCentralLongMin=3&txtCentralLongSec=18.14&txtLatDecDeg=&txtLongDecDeg=&stnID=174000000&dispBack=0#meta-data-thread

GeologyOntario. (n.d.). GeologyOntario Spatial Search.
<https://mndm.maps.arcgis.com/apps/webappviewer/index.html?id=66ee0efe4d3c4816963737dbdb890708>

GeologyOntario. (n.d.). Physiography of Southern Ontario (MRD228).
<https://mndm.maps.arcgis.com/apps/mapviewer/index.html?webmap=651b93b051a549c490a7772fc0f8e760>

Government of Canada. (2026, March 2). Fisheries Act R.S.C., 1985, c. F-14. Justice Laws Website. <https://laws.justice.gc.ca/eng/acts/f-14/page-1.html>

Government of Canada. (2026, March 2). Migratory Birds Convention Act, 1994 S.C. 1994, c.22. Justice Laws Website. <https://laws-lois.justice.gc.ca/eng/acts/m-7.01/>

Government of Canada. (2026, March 2). Migratory Birds Regulations, 2022 SOR/2022-105. Justice Laws Website. <https://laws-lois.justice.gc.ca/eng/regulations/SOR-2022-105/page-1.html>

Government of Ontario. (2022, March 1). Funeral, Burial and Cremation Services Act, 2002 S.O. 2002, Chapter 33. Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c. 33. <https://www.ontario.ca/laws/statute/02f33>

Binbrook Road, Trinity Church Road, White Church Road Municipal Class Environmental Assessment
July 2026

Government of Ontario. (2017, July 1). Greenbelt Plan (2017).

<https://files.ontario.ca/greenbelt-plan-2017-en.pdf>

Government of Ontario. (2017, June 1). Niagara Escarpment Plan (2017).

<https://escarpment.org/wp-content/uploads/2021/05/NEP-Consolidation-April-5-2021-FINAL.pdf>

Government of Ontario. (2024, February 16). Ontario Regulation 41/24

Prohibited Activities, Exemptions and Permits. O. Reg. 41/24: Prohibited Activities, Exemptions and Permits.

<https://www.ontario.ca/laws/regulation/r24041>

Government of Ontario. (2025, September 1). Ontario Regulation 287/07

General. Clean Water Act, 2006 O. Reg. 287/07 General.

<https://www.ontario.ca/laws/regulation/070287#BK3>

Ministry of the Environment, Conservation and Parks. (n.d.). Source Protection Information Atlas.

<https://www.lioapplications.lrc.gov.on.ca/SourceWaterProtection/index.html?viewer=SourceWaterProtection.SWPViewer&locale=en-CA>

Ministry of Municipal Affairs and Housing. (2024, October 20). Provincial

Planning Statement, 2024. <https://www.ontario.ca/files/2024-10/mmah-provincial-planning-statement-en-2024-10-23.pdf>

