BURNSIDE

# Highway 52 and Powerline Road Municipal Class Environmental Assessment

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

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**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**

**May 2026**
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### R.J. Burnside & Associates Limited

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## Executive Summary

R.J. Burnside & Associates Limited (Burnside) was retained by the City of Hamilton (City) to complete a Schedule C Municipal Class Environmental Assessment (MCEA) to consider options for intersection improvements at the intersection of Highway 52 (Hwy 52) and Powerline Road West.

The City identified a need for these improvements to address operational concerns at the existing intersection, better accommodate active transportation users, and consider opportunities to realign Powerline Road East.

The planning for improvements was conducted in accordance with the Schedule C requirements (Phases 1 to 4) of the MCEA process (MEA, February 2024), which is an approved process under the *Ontario Environmental Assessment Act*.

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

**Alternative 1** – New Turning Lanes / Signal: Includes signalization at Hwy 52 and Powerline Road West and new left-turn lanes at Powerline Road West and East.

**Alternative 2** – North Roundabout and South Left-turning Lane: Includes construction of a roundabout at the intersection of Hwy 52 and Powerline Road West and a new turning lane at the Hwy 52 and Powerline Road East intersection.

**Alternative 3** – North Roundabout and Extend Powerline Road East Across the Existing Ravine Lands: Features a new roundabout at the intersection of Hwy 52 and Powerline Road West and an extension of Powerline Road East westerly across the ravine lands to coincide with the new roundabout closing the south intersection at Hwy 52 and Powerline Road East.

**Alternative 4** – Two Roundabouts and New Bridge to Carry Powerline Road West Across Hwy 52: Features construction of two roundabouts, one at the intersection of Hwy 52 and Powerline Road East, and the second at end of the Powerline Road West extension and an overpass bridge for Powerline Road West across Hwy 52.

**Alternative 5** – North and South Roundabouts on Hwy 52: Features construction of two new roundabouts, the first at the intersection of Hwy 52 and Powerline Road West, and the second at Powerline Road East on Hwy 52.

**Alternative 6** – Do Nothing: The road corridor and intersections would remain in their current state. This Alternative is mandatory for consideration in the MCEA process.

Based on a comparative evaluation against natural, socio-cultural, technical, and financial factors, Alternative 2 – North Roundabout and South Left-turning Lane was selected as the Preferred Solution.

Three Alternative Design Concepts were developed for the Preferred Solution. All Alternative Design Concepts feature identical lane configurations. The variation among the concepts is the placement of the median for the roundabout at the intersection of Hwy 52 and Powerline Road West. As a result, traffic operational performance is anticipated to be the same across all three alternatives. Alternative Design Concepts for intersection improvements considered in Phase 3 of the MCEA process include:

1. Centred Roundabout.
2. Roundabout Shifted West.
3. Roundabout Shifted East.

The Preferred Design involves constructing a two-lane, 3-leg roundabout at Hwy 52 and Powerline Road West, shifted westerly to improve sightlines and operational safety for all users. The Hamilton-Brantford Rail Trail crossing will be realigned to the roundabout intersection and protected with a Pedestrian Cross Over (PXO). At the Hwy 52 and Powerline Road East intersection, a new southbound left-turn lane and painted median will be installed. This solution addresses operational deficiencies while minimizing impacts to Provincially Significant Wetlands, Significant Woodlands, and adjacent properties, with no property acquisition anticipated.

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, 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.

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# 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 consider options for intersection improvements at the intersection of Highway 52 (Hwy 52) and Powerline Road West.

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

**Figure 1: Study Area**

The study area consists of the intersection of Powerline Road West and Hwy 52 and includes the intersection of Powerline Road East and Hwy 52, located approximately 430 m south of the intersection. The Hamilton to Brantford Rail Trail crosses Hwy 52 within the study area between the two intersections. The entrance to the Hamilton to Brantford Rail Trail parking lot is located at the Powerline Road West and Hwy 52 intersection, opposite Powerline Road West. Adjacent properties consist of residential and commercial agricultural land use, as well as natural features including a Provincially Significant Wetland, Area of Natural and Scientific Interest, wooded areas, and a watercourse and waterbody and associated regulated areas of the Grand River Conservation Authority (GRCA). The study area also includes lands designated under the Provincial

Greenbelt Plan and the Niagara Escarpment Plan (NEP) and contains areas of known and potential cultural heritage features.

## 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 communities, and the public at the local level. 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 1.2 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:

**Stephen Oguegbu**
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Infrastructure Renewal, Engineering
Services, Public Works
City of Hamilton
71 Main Street West
Hamilton ON L8P 4Y5
Tel: (905) 546-2424, Ext.3871
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Tel: 705-797-4383
Alvaro.Almuina@rjburnside.com
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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:

a) Requester contact information and full name.

b) Project name.

c) Proponent name.

d) They type of Order that is being requested (comprehensive EA or conditions be imposed).

e) Specific reasons on how an Order may prevent, mitigate, or remedy potential adverse impacts on Aboriginal and Treaty rights.

f) Information about efforts to date to discuss and resolve concerns with the proponent.

g) Any other information in support of statements in the request.

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

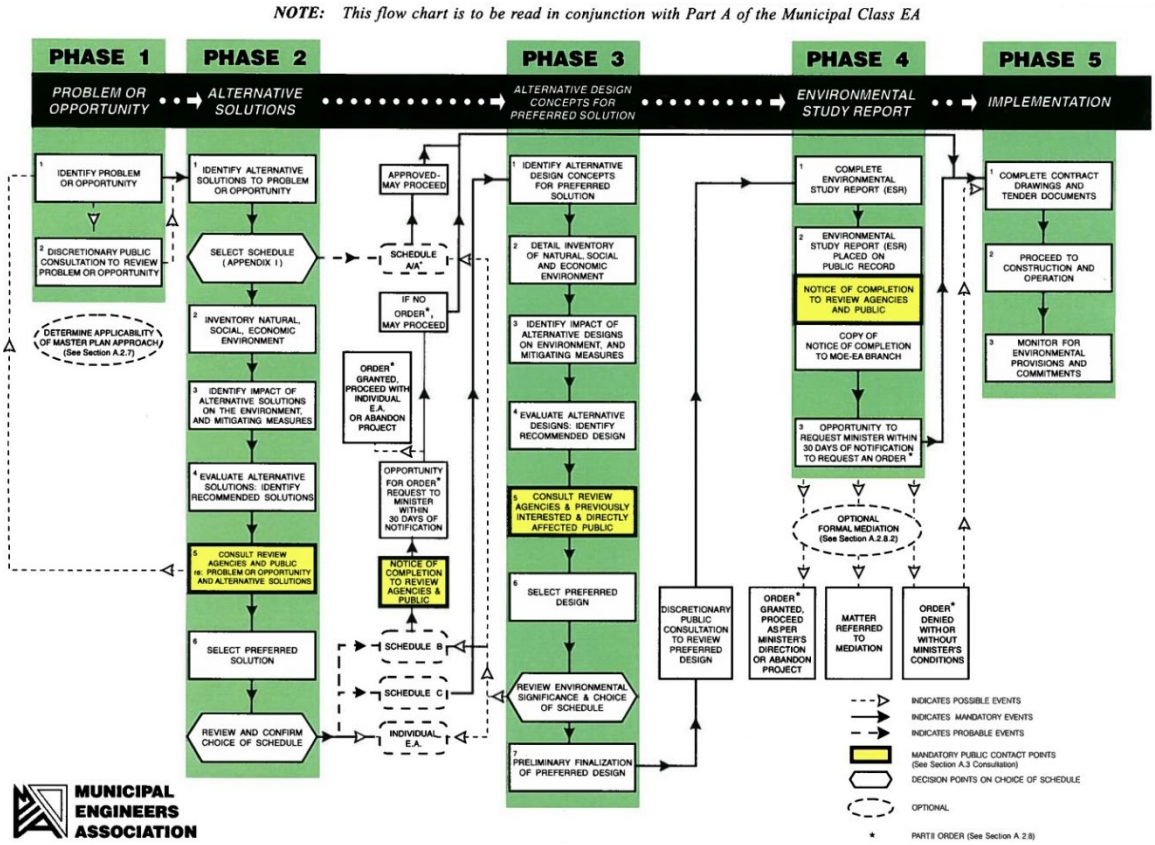
and

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.

**Figure 2: MCEA Flow Chart**




## 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 Highway 52 and Powerline Road West to address concerns for the operation of the intersection. Improvements are to accommodate active transportation and consider opportunities to realign Powerline Road East.*

# 5.0 Existing Conditions

## 5.1 Socio-Cultural Environment

A review of existing planning and policy information as conducted to obtain secondary source information relating to the natural and social environment within the study area and to provide an overview of the existing policy framework in the study area.

### 5.1.1 Federal Planning Context

#### 5.1.1.1 Fisheries Act

The federal *Fisheries Act* prohibits causing the "death of fish by means other than fishing", and the "harmful alteration, disruption or destruction (HADD) of fish habitat". If construction activities have the potential to cause the death of fish, or HADD of fish habitat, then the project must be submitted to the Fisheries and Oceans Canada (DFO) as a Request for Review. The proponent responsible for the activities is required to obtain an Authorization from DFO as per Paragraph 34.4 (2) and 35 (2)(b) of the *Fisheries Act*.

Fish habitat is present within the study area. Should project activities occur below the highwater mark of any identified watercourses or HDFs, an assessment of potential impacts to fish and fish habitat is required. DFO has provided standardized Codes of Practice and Measures to Protect Fish and Fish Habitat to mitigate contraventions of the *Fisheries Act*.

Proponents are required to ensure that activities meet the criteria outlined on the Fish and Fish Habitat Protection Program website (http://www.dfompo.gc.ca/indexeng.htm) and are responsible for the implementation of best management practices (i.e., Codes of Practice) into the project design.

If it is determined that impacts of the proposed works can be avoided and a HADD is unlikely to occur, then the project does not require a review by the DFO. If HADD is anticipated because of the project, even following the application of feasible avoidance and mitigation strategies, then DFO review is recommended, and authorization may be required.

The project may involve near, or in-water work related to an unnamed tributary of Big Creek, which is considered to provide and contribute to a warmwater habitat. The Preferred Alternative may have the potential for direct impacts to fish and

fish habitat with culvert extensions and in-water work. Given the presence of permanent and indirect fish habitat within the study area, the design process must include avoidance and mitigation measures that will minimize the potential for HADD of fish habitat. Permits and approvals from DFO and GRCA will likely be required.

#### 5.1.1.2 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.

### 5.1.2 Provincial Planning Context

#### 5.1.2.1 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 is 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.

#### 5.1.2.2 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 PPS 2024 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.

#### 5.1.2.3 HCA and GRCA Ontario Regulation 41/24 Regulated Area

The study area is located within the regulated area of the GRCA. 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 GRCA will require a permit from the respective Conservation Authority.

#### 5.1.2.4 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

[1] 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

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 Hwy 52 and Powerline Road 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.

#### 5.1.2.5 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.

Along with NEP and ORMCP lands, the Greenbelt Plan sets out three geographic specific policies that apply within the Protected Countryside designation: the Agricultural System, the Natural System, and Settlement Areas, as well as general policies that apply throughout the Protected Countryside.

The majority of the study area is within the Greenbelt, under the Protected Countryside designation. Specifically, the Site is located primarily in the Agricultural System; however, portions of the study area fall within the Natural Heritage System (NHS) given the presence of nearby natural features such as wetlands, woodlands, and streams. The NHS is intended to protect and enhance biodiversity, ecological connectivity, and hydrologic functions across the Greenbelt. It includes key natural heritage features (e.g., wetlands, woodlands, valleylands, significant wildlife habitat (SWH)) and key hydrologic features (e.g., streams, lakes, recharge areas) along with their associated vegetation protection zones. Infrastructure projects, including intersection improvements, are permitted within the NHS.

[2] 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

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.

#### 5.1.2.6 Niagara Escarpment Plan (NEP)

The NEP (2017) is a comprehensive provincial land use planning document, designed to guide development and conservation activities within the NEP area. The NEP area is included within the Greenbelt Plan Area, and the Greenbelt Plan provides that the policies of the NEP are the policies of the Greenbelt Plan for the NEP area.

The core purpose of this Plan is to provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment, and to ensure only such development occurs as is compatible with the natural environment.

Key objectives of the NEP include:

- To protect unique ecologic and historic areas.
- To maintain and enhance the open landscape character of the Niagara Escarpment.
- To conserve cultural heritage resources, including features and areas of interest to First Nations and Métis communities.
- To ensure that all new development is compatible with the purpose of the Plan.
- To provide for adequate public access to the Niagara Escarpment.

The NEP is intended to be read in conjunction with the PPS and other provincial plans. Decisions made by the implementing authority, including the Niagara Escarpment Commission, must generally be consistent with the PPS; however, within the NEP area, the NEP prevails in the event of any conflict between its policies and those of the PPS.

The Plan outlines seven land use designations that explain how land shall be used throughout the area: Escarpment Natural Area, Escarpment Protection Area, Escarpment Rural Area, Minor Urban Centre, Urban Area, Escarpment Recreation Area, and Mineral Resource Extraction Area. Implementation emphasizes a landscape approach focused on the continuous landform of the Escarpment to protect the natural environment.

A portion of the road right-of-way (ROW) at northeast corner of the intersection of Hwy 52 and Powerline Road West falls within the Escarpment Protection Area designation. This designation is intended to maintain and enhance the open landscape character of the Escarpment while allowing limited development that is compatible with the natural environment. For transportation and infrastructure projects, the NEP's Development Criteria requires that improvements be essential, minimize environmental and visual impacts, and be designed to blend with the surrounding landscape. Policies for the Escarpment Protection Area also permit public access and trail development where these do not compromise ecological integrity. Any Works within the NEP area will require review and approval by the Niagara Escarpment Commission to ensure compliance with the Plan if proposed improvements extend into the NECs Development Control Area.

In addition, to the northeast of the intersection, adjacent to the road ROW, a portion of the study area is identified as Escarpment Natural Area, which represents the most ecologically significant and visually sensitive lands within the NEP area. These lands are intended to remain in a natural state to protect unique ecological features, wildlife habitat, and scenic resources. Development within the Escarpment Natural Area is generally prohibited except for essential public infrastructure, and such works must demonstrate that no reasonable alternatives exist outside the designation. Where infrastructure is permitted, it must be carefully designed to avoid or minimize impacts on natural heritage features, maintain ecological connectivity, and preserve the visual character of the Escarpment. As with the Escarpment Protection Area, any proposed works will require detailed review and approval by the Niagara Escarpment Commission to ensure full compliance with the NEP policies and objectives if proposed improvements extend into the NECs Development Control Area.

### 5.1.3 Local Planning Context

#### 5.1.3.1 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 Hwy 52 and Powerline Road 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.

### 5.1.4 Cultural Heritage Resources (CHLs)

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, Heritage Impact Assessment and Stage 1 Archaeological Assessment are provided in Appendix A.

#### 5.1.4.1 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 August 2025 and updated in February 2026. An analysis of available primary and secondary source materials, including historical mapping, reveals a study area with an Indigenous history spanning several millennia and a rural history dating back to the 1770's and the arrival of Loyalist settlers following the close of the American Way of Independence. Based on a review of federal, provincial, and Municipal registers, inventories, and databases revealed that there is one known CHL, two potential CHLs, and three potential BHRs. Two additional potential CHLs were identified during background research and field review.

Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified BHRs and the CHL. Avoidance measures may include, but are not limited to erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified BHRs, etc. should all be considered.

2. Where feasible, the proposed construction activities should be designed in a manner that limits potential indirect impacts to CHL 4. The removal of trees and vegetation within the ROW should be limited where possible adjacent to the CHL. Where tree removals are required, post-construction rehabilitation with sympathetic plantings should be implemented.

3. Should future work require an expansion of the study area, then a qualified heritage consultant with recent and relevant experience should

be contacted in order to confirm the impacts of the proposed work on potential heritage resources.

4. This report should be submitted by the proponent to heritage staff at the City of Hamilton and the Ministry of Citizenship and Multiculturalism for review and comment, along with any other local heritage stakeholders that may have an interest in this project.

#### 5.1.4.2 Cultural Heritage Impact Assessment (CHIA)

The Cultural Heritage Impact Assessment (CHIA) for the property at 1334 Powerline Road West in the city of Hamilton, was conducted by Archaeological Services Incorporated (ASI) in September 2025 and updated in February 2026. The CHIA was undertaken as part of the Hwy 52 and Powerline Road Intersection Improvements MCEA. This assessment was required to evaluate the cultural heritage value of the property based on the criteria outlined in O. Reg. 9/06 of the *Ontario Heritage Act*. The evaluation determined that the property does not have design and physical, historical and associative, or contextual value.

As the property does not retain CHVI, an impact assessment was determined unnecessary. Consequently, there will be no impacts to heritage attributes.

Additionally, the report determined that because the property does not have CHVI and; therefore, did not meet the O. Reg. 9/06 criteria, no mitigation recommendations are required.

#### 5.1.4.3 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 15 previously registered archaeological sites are located within 1 km of the project area, one of which (AhHa-153), located within 50 m, has further CHVI and will require Stage 3 investigations if there will be changes in the project that will impact the Site. The Stage 1 property inspection determined that parts of the project area preserve archaeological potential and Stage 2 assessment will be required.

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, as appropriate. Stage 2 is required prior to any proposed construction activities on these lands.
- The remainder of the study area does not retain archaeological potential on account of deep and extensive land disturbance, permanently wet conditions, or being previously assessed. 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*.

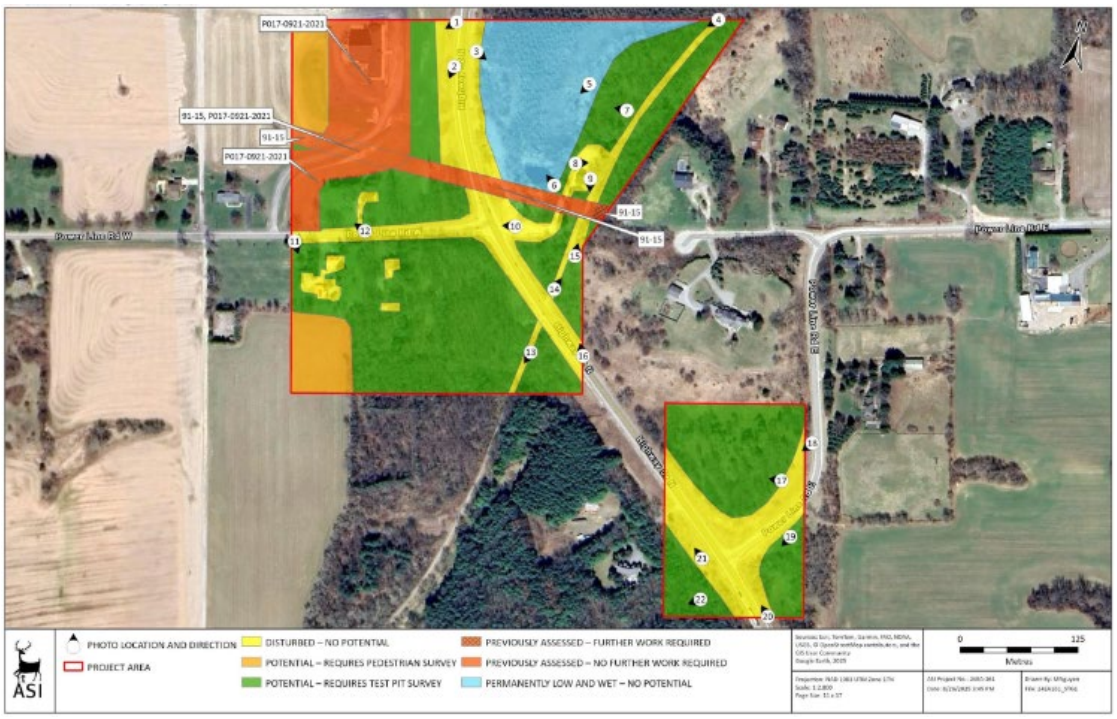
The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with O. Reg. 30/11, 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 A.

[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 3: Archaeological Potential Within Study Area – Stage 1 Archaeological Assessment**




## 5.2 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 Appendix A and summarized in the following sections.

### 5.2.1 Existing Road Network

Hwy 52 is a two-lane rural arterial road that runs north-south, featuring one lane per direction and a posted speed limit of 70 km/h and is designated as a full-time truck route in the City of Hamilton's 2022 Truck Route Master Plan. Both Powerline Road West and Powerline Road East are two-lane rural arterial roads with a posted speed limit of 50 km/h.

The study area encompasses two intersections – Hwy 52 and Powerline Road West, and Hwy 52 and Powerline Road East. Both intersections function as a 3-legged intersection, situated approximately 430 m apart. An unpaved connection to the Hamilton-Brantford Rail Trail parking lot leads east from the

Hwy 52 and Powerline Road West intersection. A Canada Post community mailbox is also located at this access.

Land use in the study area is rural, including residential, farmlands, and conservation areas, with a large dairy farm located on the northwest quadrant of the Hwy 52 and Powerline Road West Intersection.

### 5.2.2 Transit Network and Active Transportation

There are no transit stops in the study area. There are no dedicated pedestrian sidewalks or bicycle facilities on Hwy 52, or Powerline Road East or West. Powerline Road East and Powerline Road West feature unpaved shoulders and no sidewalks. Hwy 52 features unpaved and partially paved shoulders, which may be used by pedestrians and cyclists. The Hamilton-Brantford Rail Trail crosses Hwy 52 approximately 110 m south of Powerline Road West. This crossing is uncontrolled, requiring pedestrians and cyclists to wait for gaps in traffic before crossing safely.

The City provided trail counts for a seven-day period, including weekends and a statutory holiday for the volume of pedestrians and cyclists traveling along Hwy 52 and crossing it to access the Rail Trail. The data indicates the most volume of pedestrian and cyclist activity on Hwy 52 occurs during the long weekends.

It should be noted that the trail is also used by the equestrian community. However, data on equestrian usage was not available.

### 5.2.3 Existing Traffic / Collision and Safety Review

Hwy 52 currently carries an Average Annual Daily Traffic of approximately 16,000 vehicles as of 2024. The Hwy 52 approach at each intersection features designated right-turn lanes in both directions. The Powerline Road West and Powerline Road East approach at each intersection features a single, shared lane for both left and right turns.

Peak-hour turning movement data indicates significant truck traffic at the intersection of Hwy 52 and Powerline Road West. During the AM peak hour, 50% of heavy trucks turning from southbound Hwy 52 proceed west on Powerline Road West, while 17% of northbound trucks turn left onto Powerline Road West. Additionally, 33% of southbound trucks turn left onto Powerline Road East. This heavy truck movement is likely influenced by the dairy farm located 200 m north of Powerline Road West.

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.

The existing traffic operations analysis showed that the westbound left-right movement on Powerline Road East experiences significant delays, operating at a LOS E (in the morning) and LOS F (in the evening) due to high traffic volumes on Hwy 52. All north-south approaches on Hwy 52 operate at LOS A. All other movements function efficiently with sufficient capacity. The 95th percentile queues for each movement at the study intersections showed that queues for all movements at all intersections during both the AM and PM peak hours can be accommodated within the available storage.

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

A traffic safety assessment reviewed five years of historical collision data available from January 1, 2018 to December 31, 2022 for the road segments and intersections within the study area. There were 28 total collisions during this period, including six non-fatal injuries (21%), eight were property damage only, and 14 were non-reportable collisions (50%). No pedestrian or cyclist collisions were recorded.

The section of Hwy 52 between Powerline Road West and Powerline Road East had the highest frequency of total collisions, with ten occurrences, followed by the Hwy 52 / Powerline Road West intersection (eight occurrences), between Mineral Springs Road and Powerline Road West (seven occurrences), the Hwy 52 / Powerline Road East intersection (two occurrences), and the Hwy 52 / Mineral Springs Road intersection (one occurrence).

The most frequent collision types were rear-end collisions (39%) followed by single motor vehicle (SMV) (36%) impacts, including collisions involving an animal. While not included in the available data analysis period, it is noted that a fatal collision occurred in March 2024 just south of Powerline Road West. Another collision in June 2024 resulted in minor injuries.

### 5.2.4 Future Traffic

Future traffic forecasts for horizon years of 2031 and 2041 were utilized to estimate traffic growth rates for the study area. A growth rate of 3% was applied for Powerline Road West and Powerline Road East, and a 1.5% growth rate was applied for Hwy 52 to develop future base conditions for 2031.

Under the Future (2031) Base Scenario that maintains the current lane configuration but incorporates forecasted traffic volumes, the minor approaches at both intersections are expected to fail, confirming the need for intersection improvements.

Specifically, the eastbound left-right movement at Hwy 52 and Powerline Road West will operate with LOS F during the PM peak hour, and the westbound left-right movement at Hwy 52 and Powerline Road East is projected to operate with LOS F for the AM and PM peak hours. All north-south approaches on Hwy 52 operate at a LOS A, as an uncontrolled intersection that allows free-flow movement. All other movements function efficiently with sufficient capacity.

### 5.2.5 Stormwater and Drainage

The study area is located within the headwaters of Big Creek within the Lower Middle Grand River Subwatershed. The area is within the jurisdiction of the GRCA with GRCA regulated areas adjacent to the roadway. There is one watercourse crossing within the project limits. Two Provincially Significant Wetlands, the Copetown Bog and the Big Creek Headwaters Wetland Complex, are present within the study area.

Existing drainage is conveyed through roadside ditches and crossing and entrance culverts to a GRCA regulated watercourse which drains to the Big Creek Headwaters Wetland Complex. Existing drainage is conveyed through roadside ditches and culverts to a GRCA regulated watercourse located to the east of Hwy 52, south of the Copetown Bog, crossing under Hwy 52 to drain to the Big Creek Headwaters Wetland Complex to the west of the intersection of

Hwy 52 and Powerline Road East. The watercourse south of the Copetown Bog within the study area was found to be dry during multiple field visits.

There are a total of four culverts crossing Hwy 52 within the study area. An assessment of the four crossing culverts found that two of the four culverts meet all applicable MTO and City of Hamilton design standards. During the design storm, one of the four culverts has less than the required 0.30 m of freeboard to the top of subgrade and another of the four culverts does not meet hydraulic standards, as the Regional storm velocity multiplied by depth on the roadway exceeds 0.8 $m^2/s$.

The hydraulic analysis will be refined during detailed design, including the Hamilton-Brantford Rail Trail, driveway and entrance culverts.

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

### 5.2.6 Geotechnical

A desktop review of geotechnical conditions was conducted. No major concerns were identified due to groundwater or sub-artesian water pressures or any other geotechnical anomalies.

### 5.2.7 Utilities

Buried Enbridge Gas (150 mm to 250 mm) is found along Hwy 52 west ROW, crossing Hwy 52 approximately 50 m south of the intersection (approx. 2 m depth). Buried Telecom (two conduits, 50 mm and 100 mm) crosses Hwy 52 approximately 50 m north of the intersection (approx. 1.2 m depth) and then runs along north edge of pavement of Powerline Road West.

Aerial Hydro plants are found along Hwy 52 west ROW and along the south edge of pavement along Powerline Road West. A Hydro Transmission plant crosses Hwy 52 north leg diagonally with the tower and footing well outside of Hwy 52 ROW.

Existing intersection lighting on east side of intersection appears to be powered aerially from nearest hydro pole further east.

## 5.3 Natural Environment

A review of existing natural heritage conditions and secondary source information was conducted to characterize vegetation and aquatic communities and assess the potential for wildlife habitat and habitat of SAR in the study area.

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

### 5.3.1 Physiography and Topography

A review of available mapping by Geology Ontario was undertaken to characterize the general topography, and surficial and bedrock geology of the study area.

The study area is generally level to gently undulating with an elevation of approximately 284 masl and is located within the Norfolk Sand Plain physiographic region of southern Ontario.[4] This region forms a wedge-shaped feature extending inland from the Lake Erie shoreline and northward towards Brantford on the Grand River (Chapman & Putnam, 1984).[5] More specifically, the area includes landforms associated with Kame Moraines, which reflect ice-contact processes during glacial retreat. While the overall landscape is relatively flat, localized variations in relief occur along moraine ridges and wetland depressions.

Surficial geology mapping indicates the study area is primarily underlain by coarse-textured glaciolacustrine deposits consisting of sand and gravel, with minor amounts of silt and clay. Organic deposits are present in low-lying wetland areas. Bedrock geology is classified as Unit 56b, comprising sandstone, shale, dolostone, and siltstone. Local soils are typical of sand plain environments, characterized by well-drained sandy textures overlying glaciolacustrine materials.[6]

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

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

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

### 5.3.2 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 11 km southeast 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.[7]

### 5.3.3 Terrestrial Environment

The study area is located within the Greenbelt Protected Countryside and Greenbelt NHS. A portion of the northeast corner of the Hwy 52 and Powerline Road East falls within the NEP area. Components of the NHS present in the general area include wetlands associated with the Copetown Bog, watercourses and associated valleylands, significant woodlands, and other wetlands.

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). Wetland boundary delineation in accordance with the Ontario Wetland Evaluation System protocol with a GRCA ecologist. A total of 19 ecological communities were observed within the study area. The identified ELC communities are:

- Meadow Marsh (MAM).
- Reed Canary Grass Mineral Shallow Marsh Type / Duckweed Floating-leaved Shallow Aquatic Type (MASM1-14/SAF_1-3).
- Shallow Marsh / Thicket Swamp (MAS/SWT).
- Tamarack – Leatherleaf Treed Kettle Bog Type / Leatherleaf Shrub Bog Type (BOTC2-1/BOSD1-1).

[7] 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&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#metadata-thread

- Dry – Fresh Graminoid Meadow Ecosite (MEGM3).
- Dry – Fresh Mixed Meadow Ecosite (MEMM3).
- Dry – Fresh Forb Meadow Ecosite / Dry – Fresh Deciduous Regeneration Thicket Ecosite (MEFM1/THDM4).
- Dry – Fresh Deciduous Woodland Ecosite (WODM4a).
- Dry – Fresh Deciduous Woodland Ecosite (WODM4b).
- Dry – Fresh Black Walnut Deciduous Woodland Type (WODM4-4).
- Fresh – Moist Manitoba Maple Deciduous Woodland Type (WODM5-3).
- Mixed Forest (FOM).
- Deciduous Forest (FOD).
- Dry – Fresh Sugar Maple Deciduous Forest Ecosite (FODM5).
- Coniferous Plantation (TAGM1a).
- Coniferous Plantation (TAGM1b).
- Agricultural Infrastructure (IAG).
- Agricultural (OAGM1).
- Residential (CVR_4).

Of the identified communities, one associated with the Copetown Bog is considered to be rare (S3) within Ontario. No provincially rare species were documented during the course of the Burnside's field investigations.

Based on the definitions of the RHOP, it is likely that FODM5, FOD, FOM, TAGM1a, and TAGM1b communities are considered to be significant within the city of Hamilton.

Significant Valleylands were not observed to be present in the study area.

Two Provincially Significant Wetlands, the Copetown Bog and the Big Creek Headwaters Wetland Complex, are present in the study area. The Copetown Bog is an isolated kettle bog located within the largest kame in the kettle topography within the Dundas Valley and is located north of Powerline Road. The Big Creek Headwaters Wetland Complex occurs in association with the unnamed tributary of Big Creek and occurs south of Powerline Road.

One Life Sciences provincial ANSI, the Summit Muskeg Preserve, is present within the Study Area. The Dundas Valley Earth Sciences provincial ANSI is also present within the study area. The Earth Sciences ANSI encroaches into the existing ROW north of the intersection of Hwy 52 and Powerline Road West.

### 5.3.4 Aquatic Habitat

The study area is located within the headwaters of Big Creek within the Lower Middle Grand Subwatershed. An unnamed tributary of Big Creek is present within the study area and originates at the northern margin of the Summit Muskeg Preserve. This watercourse flows along the eastern margin of the bog before becoming an impoundment immediately west of the parking area for the Hamilton Brantford Rail Trail. The tributary consisted primarily of vegetated swales. Channel morphology characteristics observed include:

- Substrate: Primarily topsoil (vegetated) across all assessed reaches.
- Vegetation: The watercourse is heavily vegetated, with upland vegetation species including shrub and tree regeneration present throughout. The riparian areas generally consist of deciduous woodland, providing greater than 90% cover to the watercourse in several reaches (R2 and R4).

#### 5.3.4.1 Fish Habitat

The unnamed tributary is classified as a warmwater thermal regime with intermittent flow. A review of DFO SAR mapping confirmed that no aquatic SAR occur within the watercourse. Based on the MNRF's Aquatic Resources Area (ARA) mapping, seven species of fish have been reported within the tributary. The reported species include:

- Brook Stickleback.
- Central Mudminnow.
- Common Carp.
- Common Shiner.
- Fathead Minnow.
- Pumpkinseed.
- White Sucker.

Based on the assessment of field conditions, the impoundment (MASM1-14/SAF_1-3 community) associated with the Copetown Bog Lagg may support permanent fish habitat and may be considered fish habitat as defined under the federal *Fisheries Act*. The outfall at the impoundment represents a physical barrier to fish passage. Water was not observed downstream of the impoundment. Given the extent of vegetation growth and establishment of woody species within the channel, and lack of sediment sorting, it is unlikely that this portion of the unnamed tributary of Big Creek is subject to regular flows with water rarely being present. The portions of the unnamed tributary of Big Creek downstream of the impoundment should be considered indirect fish habitat. The

mapped watercourse may provide minor amounts of sediment transport and conveyance of overland flows to downstream areas.

#### 5.3.4.2 Headwater Drainage Features (HDFs)

HDFs within the study were assessed from constriction points (i.e., culverts) from the ROWs. Features varied in structure and permanence ranging from undefined channels to swales. A total of two features were identified within the study area. Of the reaches in each HDF, three are classified as 'No Management Concern' and four are classified as 'Maintain Terrestrial Linkage'. In addition, the unnamed tributary of Big Creek should be considered an HDF. The Ontario Hydrologic Network mapping identifies this watercourse as intermittent. The portions of the unnamed tributary occurring within the study area were found to be dry during field visits. The ponds and wetlands in Copetown Bog are generally hydrologically isolated from the stream system, except for intermittent outflow into the Big Creek system through a drainage culvert located at the southern end.

### 5.3.5 Wildlife and Wildlife Habitat

Scoped species-specific field surveys were completed for the study, including surveys for amphibians and breeding birds as well as incidental wildlife observations conducted concurrently with the terrestrial habitat assessment.

#### 5.3.5.1 Amphibians

Amphibian call surveys were conducted following the protocols outlined in the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians. Three surveys were completed between April and June 2025 to detect potential early-mid, and late-season amphibian breeding activity. The surveys were conducted at one location within the shallow marsh community of the study area.

In total, three species of amphibians were recorded calling during targeted amphibian breeding surveys: Spring Peeper (*Pseudacris crucifer*), Wood Frog (*Lithobates sylvaticus*), and Green Frog (*Lithobates clamitans*). All three recorded species are ranked as S5 (Secure) within Ontario and are considered common and widespread.

#### 5.3.5.2 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.

A total of 35 resident bird species, exhibiting some level of breeding evidence (possible, probable, or confirmed), were observed within the study area during the targeted breeding bird surveys.

Four “area sensitive” bird species, were observed: American Redstart (*Setophaga ruticilla*), Red-breasted Nuthatch (*Sitta canadensis*), Savannah Sparrow (*Passerculus sandwichensis*), and White-breasted Nuthatch (*Setophaga petechia*). According to MNR’s Significant Wildlife Habitat Technical Guide (2000), “area sensitive” species are defined as species that require large areas of suitable habitat for long term population survival. Fragmentation of essential habitats can result in overall declines in populations.

One species listed as both provincially and federally significant was observed: Eastern Wood-pewee (*Contopus virens*) (Special Concern) was observed within the wooded area to the southwest of the intersection of Hwy 52 and Powerline Road West.

The limited clearing required is unlikely to impact the ability for area-sensitive forest birds including American Redstart, Red-breasted Nuthatch, and White-breasted Nuthatch to continue persisting within the study area.

Purple Martin (*Progne subis,* S3) which is considered “Vulnerable” in Ontario, was observed foraging overhead. Nesting habitat was not observed in the study area, as such, it is assumed they are breeding well beyond the ROW within rural residential or agricultural communities.

One ‘rare’ species to the City of Hamilton, Carolina Wren (*Thryothorus ludovicianus*), was documented during the course of breeding bird surveys observed within the wooded areas to the northwest and southwest of the Hwy 52 and Powerline Road West intersections.

#### 5.3.5.3 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 foraging and is designated as “Special Concern” under the provincial ESA and “Endangered” under COSEWIC and the *Federal Species at Risk Act*. No Monarch larvae were incidentally observed.

Other species observed included Red Squirrel (*Sciurus vulgaris*), Gray Squirrel (*Sciurus carolinensis*), Autumn Meadowhawk (*Sympetrum vicinum*), Twelve-spotted Skimmer (*Libellula pulchella*), and Green Frog (*Rana clamitans*).

With the exception of Monarch, all species are ranked as S4 (Apparently Secure) within Ontario and are considered common and widespread throughout the province.

Turtles overwinter in the mucky bottom of deep pools or slow-moving streams. The impoundment along the unnamed tributary of Big Creek immediately west of the Hamilton-Brantford Rail Trail has been confirmed to provide overwintering habitat for the Midland Painted Turtle. Based on iNaturalist research grade records from March 21, 2021, a minimum of five Midland Painted Turtles were reported within the MAS/SAF_1-3 community. This species is ranked provincially as S4 (Apparently Secure) and is not listed as a SARO.

The forested communities throughout the greater study area also may continue to function as foraging and perching habitat for Bald Eagle and Osprey.

### 5.3.6 Species at Risk (SAR)

Based on a review of background database information and field observations of existing habitat conditions, the following Threatened or Endangered SAR (provincial / federal status) may be supported within the study area:

**Plants**

- Black Ash (*Fraxinus nigra*) (Endangered / Not at Risk).
- Butternut (*Juglans cinerea*) (Endangered / Endangered).

**Mammals**

- Eastern Red Bat (*Lasiurus borealis*) (Endangered / Not at Risk).
- Hoary Bat (*Lasiurus cinereus*) (Endangered / Not at Risk).
- Little Brown Myotis (*Myotis lucifugus*) (Endangered / Endangered).
- Northern Myotis (*Myotis septentrionalis*) (Endangered / Endangered).
- Silver-haired Bat (*Lasionycteris noctivagans*) (Endangered / Not at Risk).
- Tri-coloured Bat (*Perimyotis subflavus*) (Endangered / Endangered).

SAR were not observed during field investigations. Of the above-listed species, both Black Ash and Butternut are absent from the existing ROW. Black Ash and Butternut may occur in association with wetland and upland communities

respectively beyond the ROW as identified through Burnside's desktop review. These communities and any regulated Butternut / Black Ash habitats are located well beyond the proposed limits of disturbance. Habitat for SAR bats may be supported in the wetland and wooded areas of the study area.

### 5.3.7 Significant Wildlife Habitat (SWH)

While unmapped, SWH features may be supported within the general area.

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 A). Based on this review, the following SWH may be present in the study area:

- Habitats of Seasonal Concentrations of Animals:
  - Turtle wintering areas (Confirmed).
  - Deer wintering areas (Confirmed).
  - Bat maternity colonies (Candidate).
  - Bald Eagle and Osprey nesting, foraging and perching habitat (Candidate).
  - Marsh breeding bird habitat (Candidate).
  - Terrestrial Crayfish habitat (Candidate).
- Rare Vegetation Communities or Specialized Habitat:
  - Rare vegetation communities – BOS1-1 and BOT201 communities associated with the Copetown Bog.
  - Seeps and springs (Candidate).
  - Amphibian breeding habitat – Woodland (Candidate).
- Habitat of Species of Conservation Concern:
  - Confirmed – Monarch (SC), Eastern Wood-pewee (SC), Purple Martin (S3), and Billing's Three-seeded Sedge (*Carex billingsii*) (S2S3).

  - Candidate – Eastern Ribbon Snake (*Thamnophis sauritus*) (SC), Snapping Turtle (*Chelydra serpentina*) (SC), and Perfoliate Bellwort (*Uvularia perfoliata*) (S1S2).

Unconfirmed potential for SWH for the following exists within the study area:

- Bat Maternity Colonies – Candidate. This feature may be supported within deciduous and mixed forest communities.
- Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat – Candidate. Given the proximity to the Copetown Bog and unnamed watercourse, there is potential for this SWH to be supported on-site within the FODM5, FOM, and TAGM1 communities. No stick nests were encountered during the course of all field investigations. The forested communities may continue to function as foraging and perching habitat.
- Marsh Breeding Bird Habitat – This feature was confirmed absent in association with the MASM1-14/SAF_1-3 community, the MAM community, located beyond the ROW may meet the criteria for significance. This SWH feature is sensitive to road runoff and salt spray as well as alterations to water levels.
- Terrestrial Crayfish – Suitable habitat for terrestrial crayfish include meadow marsh, shallow marsh, or swamp. Terrestrial crayfish are confirmed absent in association with the MASM1-14 community. Suitable habitat may occur in association with MAM and MAS/SWT communities beyond the ROW.
- Seeps and Springs – Candidate. Seeps and springs may be supported in the FODM5 or FOM communities as the study area is located within the headwaters of Big Creek; however, no seeps or springs were documented within the ROW.
- Amphibian Breeding Habitat (Wetland) is confirmed absent due to two species not reported to be calling at a Call Code 3 during surveys.
- Habitat for Special Concern and Rare Wildlife. Based on the conditions observed within the study area, it is anticipated that the forest, swamp, and open water communities may support species of special concern and rare wildlife

## 6.0 Identification of Alternative Solutions

Alternative Solutions for intersection improvements considered in Phase 2 of the MCEA process include:

1. New Turning Lanes / Signals.

2. North Roundabout and South Left-turning Lane.
3. North Roundabout and Extend Powerline Road East Across the Existing Ravine Lands.
4. Two Roundabouts and New Bridge to Carry Powerline Road West Across Hwy 52.
5. North and South Roundabouts on Hwy 52.
6. Do Nothing.

**Alternative Solution 1: New Turning Lanes / Signal:**

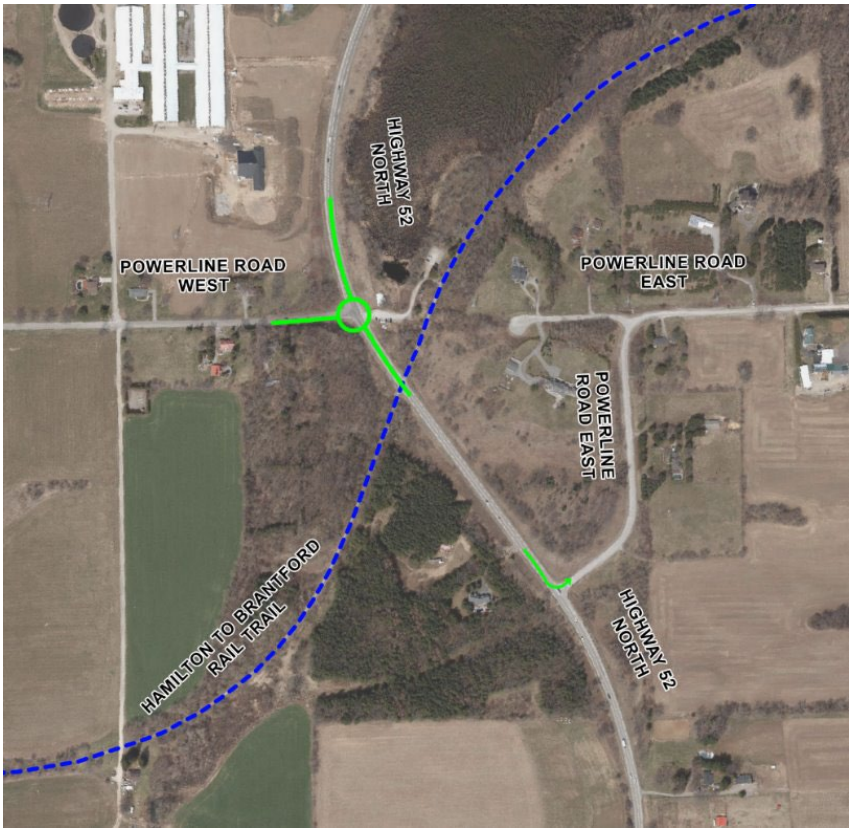
Alternative Solution 1 features signalization (new signals) at the intersection of Hwy 52 and Powerline Road West, along with the addition of new left turn lanes at Powerline Road West and East. This alternative would improve the existing right turning lanes at Powerline Road West and East with consideration of active transportation users.

**Figure 4: Alternative Solution 1**

### Alternative Solution 2: North Roundabout and South Left-turning Lane

Alternative Solution 2 features the construction of a roundabout at Hwy 52 and Powerline Road West as well as the addition of a new left-turning lane at Powerline Road East and improve the existing right turning lanes at Powerline Road East with consideration of active transportation users.

**Figure 5: Alternative Solution 2**



## Alternative Solution 3: North Roundabout and Extend Powerline Road East Across the Existing Ravine Lands

Alternative Solution 3 features the construction of a new roundabout at the intersection of Hwy 52 and Powerline Road West and an extension of Powerline Road East westerly across the ravine lands to coincide with the new roundabout. This alternative would include the closure of the south intersection.

**Figure 6: Alternative Solution 3**

## Alternative Solution 4: Two Roundabouts and New Bridge to Carry Powerline Road West Across Hwy 52

Alternative Solution 4 features the construction of two new roundabouts, one at the intersection of Hwy 52 and Powerline Road East, and the second at end of the Powerline Road West extension. This alternative would provide an overpass of Powerline Road at Hwy 52.

**Figure 7: Alternative Solution 4**

## Alternative Solution 5: North and South Roundabouts on Hwy 52

Alternative Solution 5 features the two new roundabouts, the first at the intersection of Hwy 52 and Powerline Road West, and the second at Powerline Road East.

**Figure 8: Alternative Solution 5**

### Alternative Solution 6: Do Nothing

Alternative Solution 6: Do Nothing, is a Mandatory requirement for consideration in the MCEA process. The road corridor and intersections would remain the same and operate as a 2-lane, 2-way road with stop-control on the minor approaches to the intersections. Regular maintenance would be performed as required.

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

**Figure 9: Alternative Solution 6**

## 7.0 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 least anticipated impact; and therefore, most preferred, compared to full pie representing the greatest anticipated impact; and therefore, least 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.
- 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 B. A summary of the evaluation results is presented below.

## Table 1: Evaluation of Alternative Solutions

| Criteria | Alternative Solution 1: New Turning Lanes and Signals | Alternative Solution 2: North Roundabout and South Left-turning Lane | Alternative Solution 3: North Roundabout and Extend Powerline Road East Across the Ravine | Alternative Solution 4: Two Roundabouts and New Bridge to Carry Powerline Road West Across Hwy 52 | Alternative Solution 5: North and South Roundabouts on Hwy 52 | Alternative Solution 6: Do Nothing |
|---|---|---|---|---|---|---|
| Natural Environment | ◕ | ◕ | ◔ | ◕ | ◕ | ◕ |
| Socio-Cultural Environment | ◕ | ◕ | ◕ | ◕ | ◕ | ◑ |
| Financial Factors | ◕ | ◕ | ◑ | ○ | ◑ | ◕ |
| Technical Factors | ◕ | ● | ◔ | ◕ | ● | ○ |
| Problem Statement | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| Overall Summary | More Preferred | Most Preferred | Least Preferred | Somewhat Preferred | More Preferred | Not Carried Forward |

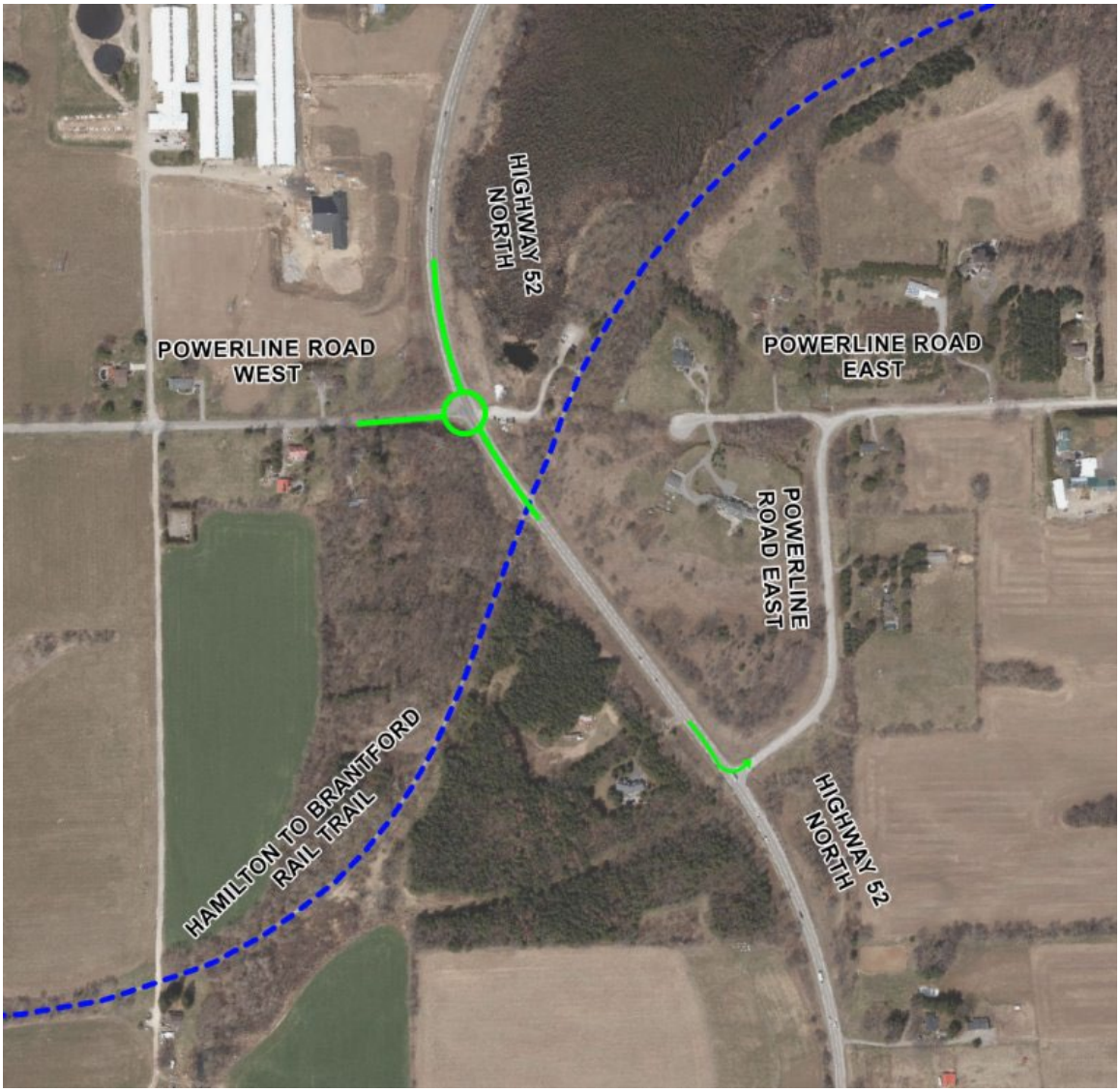
Order of Preference:

Most Preferred ● More Preferred ◕ Somewhat Preferred ◑ Less Preferred ◔ Least Preferred ○

Each of the alternatives is anticipated to have a similar impact to the natural environment and socio-cultural environment with the exception of Alternative Solution 3. The North Roundabout and extension of Powerline Road East through natural areas and ravine lands is anticipated to have the greatest impact to the natural environment and greatest socio-cultural impact as a result of the impact to the rail trail. This alternative is anticipated to have a moderate to high cost and impact to the financial environment. Alternative 4: Two Roundabouts and new Bridge to Carry Powerline Road West Across Hwy 52 is anticipated to have the greatest costs compared to the other Alternative Solutions. Alternative Solution 2 and Alternative Solution 5 are preferred from a technical perspective, as roundabouts are generally recognized as safer than traditional signalized or stop-controlled intersections and more efficient intersection control for current and future intersection traffic conditions. However, placing two roundabouts in close proximity, as with Alternative Solution 4, poses potential challenges, such as queue spillback from one roundabout to the next, which can result in gridlock and difficulty for large vehicles to maneuver the intersection.

Alternative Solution 2: North Roundabout and South Left-turning Lane is the Preferred Alternative as it provides better operational safety for all road users (vehicles, pedestrians, cyclists) while minimizing impacts to adjacent properties, natural features including wetland, watercourse, and wooded area as well as the trail, with moderate capital costs when compared to the other alternatives.

## Figure 10: Preferred Alternative – North Roundabout and South Left-turning Lane



## 8.0 Identification of Alternative Design Concepts

Three Alternative Design Concepts were developed for the Preferred Design Concept. All concepts feature identical lane configurations. The variation among the alternative design concepts is the placement of the median for the roundabout at the intersection of Hwy 52 and Powerline Road West. As a result, traffic operational performance is anticipated to be the same across all three alternatives. Alternative Design Concepts for intersection improvements considered in Phase 3 of the MCEA process include:

1. Centred Roundabout.
2. Roundabout Shifted West.
3. Roundabout Shifted East.

### Alternative Design Concept 1: Centred Roundabout

In this option, the 3-legged roundabout is centred at the current Hwy 52 and Powerline Road intersection and has good visibility for drivers as the north approach has a moderate sight distance. The Canada Post community mailbox will be relocated in the same general area. Property acquisition is not anticipated for this alternative.

**Figure 11: Alternative Design Concept 1**

### Alternative Design Concept 2: Roundabout Shifted West

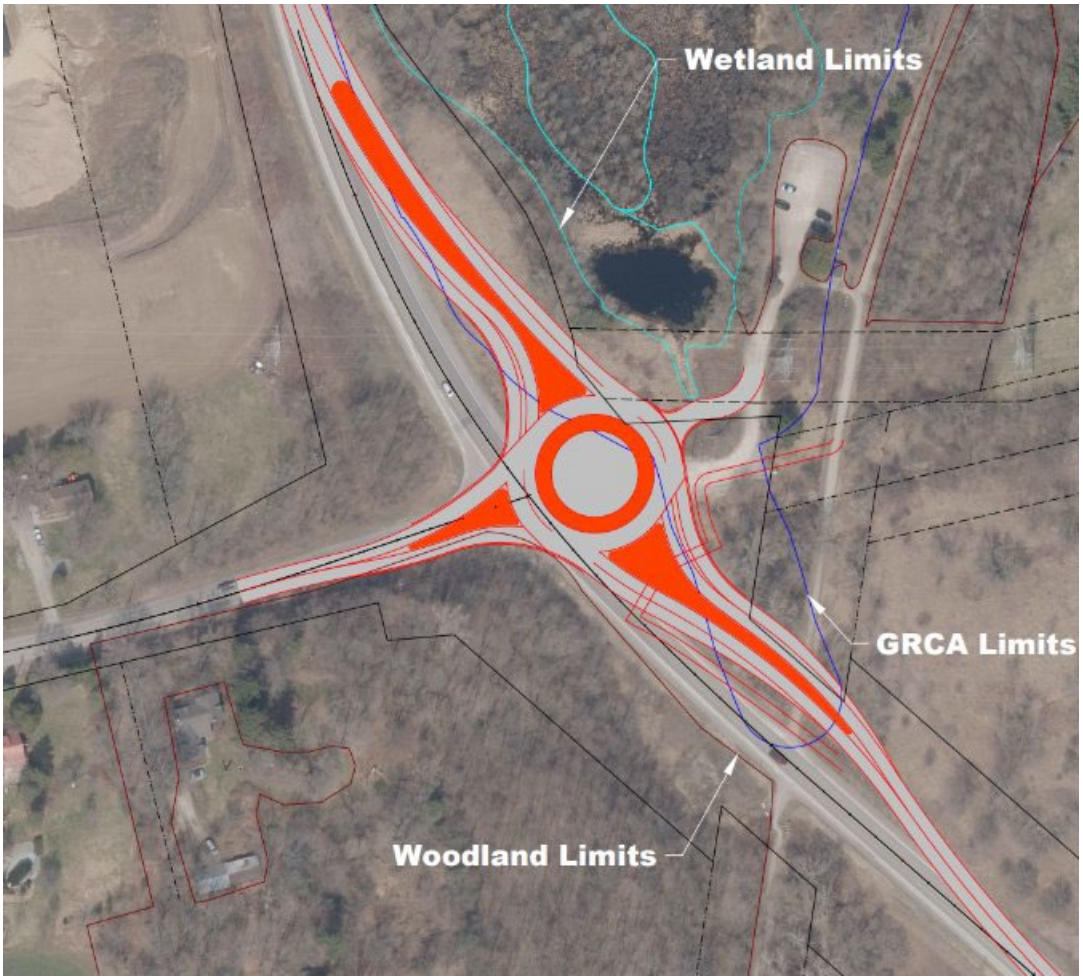
In this option, the 3-legged roundabout is shifted to the west to improve visibility both to and from Powerline Road West as the north approach has a long sight distance. The community mailbox located within the access to the trail parking lot would be relocated in the same general area. Property acquisition is not anticipated for this alternative.

**Figure 12: Alternative Design Concept 2**

### Alternative Design Concept 3: Roundabout Shifted East

In this option, the 3-legged roundabout is shifted to the east. The shift decreases visibility for drivers as the north approach has a short sight distance. The community mailbox would be relocated in the same general area. Some property acquisition is required to accommodate the shift for this option.

**Figure 13: Alternative Design Concept 3**




## 9.0 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 least anticipated impact; and therefore, most preferred, compared to full pie representing the greatest anticipated impact; and therefore, least 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 B. A summary of the evaluation results is presented below.

**Table 2: Evaluation of Alternative Design Concepts**

| Criteria | Alternative Design Concept 1: Roundabout Maintaining Current Approach | Alternative Design Concept 2: Roundabout with Approach Shifted West | Alternative Design Concept 3: Roundabout with Approach Shifted East |
|---|---|---|---|
| Natural Environment | | | |
| Socio-Cultural Environment | | | |
| Financial Factors | | | |
| Technical Factors | | | |
| Overall Summary | Somewhat Preferred | Most Preferred | Least Preferred |

Order of Preference:

Most Preferred More Preferred Somewhat Preferred Less Preferred Least Preferred

Alternative Design Concept 3 is anticipated to have the greatest impact on the natural environment as the alignment of the roundabout is in close proximity to the Provincially Significant Wetland and ANSI and may have potential impacts to water resources. Alternative Design Concept 2 is anticipated to have the least impact to the natural environment, with the greatest distance from sensitive natural features and improvements completed within the existing ROW. Each of the concepts will improve levels of service for users, with Alternative Design Concept 2 having the greatest improvements to safety through improved sight lines. Land acquisition is not anticipated for Alternative Design Concepts 1 and 2; however, land acquisition would be needed for Alternative Design Concept 3. Alternative Design Concept 3 is estimated to have the highest cost for property acquisition and capital cost compared to Alternative Design Concepts 1 and 2. Alternative Design Concept 2 is preferred from a technical perspective as this alternative has the most improved sight and is not anticipated to have significant design constraints.

Alternative Design Concept 2 Roundabout with Approach Shifted West is the Preferred Design Concept. The concept provides improved sight lines and operational safety for all road users (vehicles, pedestrians, cyclists) while minimizing impacts to adjacent properties, natural features including wetland, watercourse and wooded area as well as the rail trail, with moderate capital costs when compared to the other concepts.

## 10.0 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 that need 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. 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 C.

## 10.1 Notices

The Schedule C MCEA requirements include three mandatory public points of contact during the MCEA process. The mandatory points of contact for this project included a 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 were also posted on https://engage.hamilton.ca/hwy52ea and the project webpage of the City's website. A project webpage on the City's website at https://www.hamilton.ca/environmental-assessments/highway-52-powerline-road-west-intersection-improvements was established to provide project information, including project notices, throughout the MCEA process and engage residents and the public that may have an interest in the project. Project information was also posted through the City's social media platforms.

The Notice of Commencement and PIC #1 inviting public input on April 8, 2025. The Notice for the second PIC #2 inviting public input on October 21, 2025. 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.

## 10.2 Public Information Centres (PICs)

Two PICs were hosted in-person to share information and gather feedback about the project. The first PIC was hosted on April 8, 2025, from 6:00 p.m. to 8:00 p.m. at the Copetown Community Centre. The second PIC was hosted on October 21, 2025, from 6:00 p.m. to 8:00 p.m. at the Rotary Community Centre.

### PIC #1

The first PIC was held as a drop-in style open house with project information displayed around the room, and representatives from the study team present to answer questions as well as discuss the project with interested members of the public. An overview presentation including the history and background information was held at 6:30 p.m. 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 April 8 to April 22, 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 C.

### 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 again 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 October 21, 2025, to November 14, 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 C.

## 10.3 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 March 4, 2025). A copy of this correspondence with MECP is provided in Appendix C.

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 to confirm receipt of the notice, inquire about interest in the project, and any concerns or questions about the project.

Wendat Nation requested to receive a copy of the Stage 1 Archaeological Assessment report and noted they would be interested in participating in Stage 2 Archaeological Assessment. Subsequently Wendat Nation noted they would not be providing any comments on the Stage 1 Archaeological Assessment report but requested the continued sharing of reports for their review.

Haudenosaunee Development Institute (HDI) requested to be engaged for the Stage 2 Archaeological Assessment.

Mississaugas of the Credit First Nation expressed interest in reviewing the Stage 1 Archaeological Assessment. Following review, they noted they had no concerns with the Stage 1 Archaeological Assessment and requested to participate in a Stage 2 Archaeological Assessment.

A summary of communication with Indigenous Nations was maintained on the Project Contact List and is summarized in Table 3. Copies of all correspondence with Indigenous Nations is provided in Appendix C.

**Table 3: Summary of Communication with Indigenous Nations**

| Indigenous Nation | Notices Sent | Comment Received | Study Team Correspondence |
|---|---|---|---|
| Six Nations of the Grand River | Yes | 250407_Email. Requested information for project area<br>251002_Email. Advised City they will follow-up later today | 250312_Letter direct mail. Circulated Project Introduction<br>250312_Email. Circulated Project Introduction<br>250317_Email. Circulated NOCm / PIC1<br>250317_Letter direct mail. Circulated NOCm / PIC1<br>250414_Email. Emailed copy of Background Memo with map of study area<br>250905_Email. Circulated Draft Stage 1 Archaeological Assessment (AA) for information and / or review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA<br>250929_Letter direct mail. Circulated Notice of PIC2<br>251001_Email. Circulated Notice of PIC2<br>251002_Email. Follow-up email to previous circulation, asking if they will be providing comments on Stage 1 AA<br>251010_Email. Advising that follow-up (i.e., to Stage 1 AA) as indicated in previous email had not been received. Requested response be provided the following week if possible<br>251119_Email. Advising that City had not received follow-up (i.e., to Stage 1 AA) and asking if intent was still to provide comments |

| Indigenous Nation | Notices Sent | Comment Received | Study Team Correspondence |
|---|---|---|---|
| Mississaugas of the Credit First Nation | Yes | 251003_Email. Confirmed no concerns with Stage 1 AA and advised they would like to be involved if any Stage 2 AA work is done<br>251008_Email. Provided a letter advising they had no concerns with the Stage 1 AA | 250312_Email. Circulated Project Introduction<br>250312_Letter direct mail. Circulated Project Introduction<br>250317_Email. Circulated NOCm / PIC1<br>250317_Letter direct mail. Circulated NOCm / PIC1<br>250905_Email. Circulated Stage 1 AA for comments / review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA<br>250929_Letter direct mail. Circulated Notice of PIC2<br>251001_Email. Circulated Notice of PIC2<br>251002_Email. Follow-up email to previous circulation, asking if they will be providing comments on Stage 1 AA |
| Wendat Nation | Yes | 250320_Email. Please send the Stage 1 AA when it is complete. Wendat Nation will be interested in participating in the fieldwork for an eventual Stage 2 AA. Please note that we have updated our way of processing consultations. Any new consultation or project notice must be sent to the following email address: consultations@wendake.ca. We kindly ask that you remove any other email address that you have on file from all your mailing lists.<br>250910_Email. Advised they would not be reviewing or providing comments on Stage 1 AA, but to continue sharing future reports for their consideration. | 250312_Email. Circulated Project Introduction<br>250312_Letter direct mail. Circulated Project Introduction<br>250317_Email. Circulated NOCm / PIC1<br>250317_Letter direct mail. Circulated NOCm / PIC1<br>250905_Email. Circulated Stage 1 AA for comments / review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA<br>250929_Letter direct mail. Circulated Notice of PIC2<br>251001_Email. Circulated Notice of PIC2 |

| Indigenous Nation | Notices Sent | Comment Received | Study Team Correspondence |
|---|---|---|---|
| Haudenosaunee Development Institute | Yes | 250922_Email. Requested the City not proceed with Stage 2 AA without engaging HDI and that HDI has not been meaningfully engaged in the process; provided a copy of HDI Standard Monitoring Agreement for Stage 2 AA fieldwork. | 250312_Email. Circulated Project Introduction<br>250312_Letter direct mail. Circulated Project Introduction<br>250317_Email. Circulated NOCm / PIC1<br>250317_Letter direct mail. Circulated NOCm / PIC1<br>250905_Email. Circulated Stage 1 AA for comments / review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA<br>250929_Letter direct mail. Circulated Notice of PIC2<br>251001_Email. Circulated Notice of PIC2 |
| Métis Nation of Ontario | Yes | | 250312_Email. Circulated Project Introduction<br>250312_Letter direct mail. Circulated Project Introduction<br>250317_Email. Circulated NOCm / PIC1<br>250317_Letter direct mail. Circulated NOCm / PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2<br>251001_Email. Circulated Notice of PIC2 |

## 11.0 Preferred Design

Based on the evaluation of the Alternative Solutions and Alternative Design Concepts, the comments received from stakeholders, agencies, Indigenous communities, and interested parties, the Preferred Design for the study area is provided below. 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.

Alternative Solution 2: North Roundabout and South Left-turning Lane along with Alternative Design Concept 2 Roundabout with Approach Shifted West is most preferred overall. Together, the Preferred Design provides improved operational safety for all road users (vehicles, pedestrians, cyclists) while minimizing impacts to adjacent properties, natural features including wetland, watercourse and wooded areas as well as the trail, with moderate capital costs when compared to the other alternatives.

The Preferred Design consists of a two-lane, 3-leg roundabout shifted westerly from the existing alignment of the Hwy 52 and Powerline Road West intersection. The unpaved connection to the Hamilton-Brantford Rail Trail parking lot to the east of the Hwy 52 and Powerline Road West intersection will be realigned slightly to the north within the ROW and connect to the roundabout intersection. The Canada Post community mailbox will be relocated in the same general area.

The Hamilton-Brantford Rail Trail crossing of Hwy 52 will be realigned to the roundabout intersection at Hwy 52 and Powerline Road West, located within the roundabout limits, crossing Hwy 52, protected with a PXO, via the south leg of the roundabout intersection. It will then run along the west side of Hwy 52, offset by approximately 3 m from the edge of the roadway, and reconnect to the existing trail.

Intersection improvements to Hwy 52 and Powerline Road East consists of the installation of a new southbound left turn lane and inclusion of a painted median on the south leg to offset the left turn lane from northbound through traffic. A minor shift of the roadway to the east is needed, to be accommodated within the existing ROW. No property acquisition is anticipated for the Preferred Design.

## Figure 14: Preferred Design – Highway 52 and Powerline Road West

## Figure 15: Preferred Design – Trail Crossing of Hwy 52

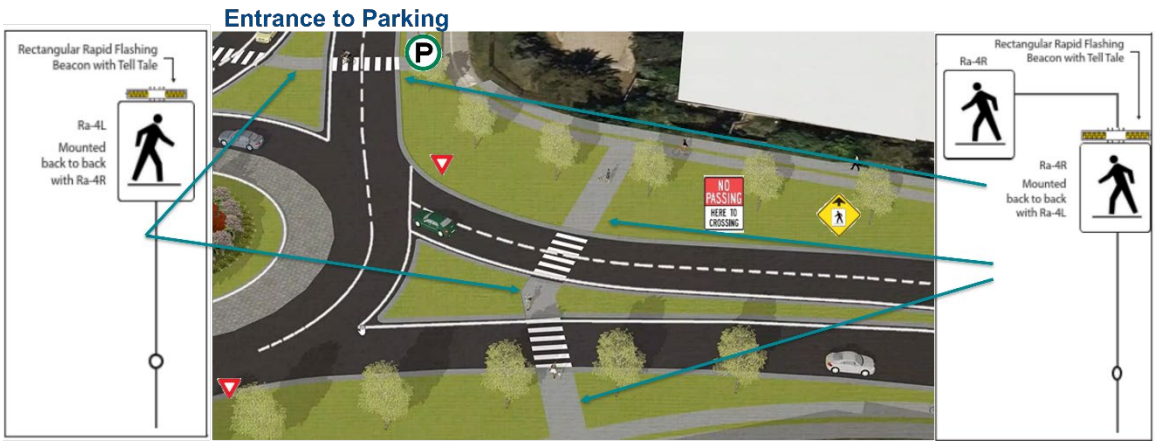


**Figure 16: Preferred Design – Hwy 52 and Powerline Road East**

## 12.0 Preliminary Cost Estimate:

Based on the preliminary cost estimate, the construction cost of the recommended improvement is estimated at approximately $4.75 million (excluding HST).

The preliminary cost estimate includes costs for road work, low impact development feature installation, PXO, culvert replacement, and engineering services. Items that have been excluded from the estimate include property acquisition, utility relocation, 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 D.

## 13.0 Impacts and Mitigations

Project activities associated with the preferred solution for the Hwy 52 and Powerline Road Intersection Improvements 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 4. 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 4: 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. Potential loss of woody vegetation along the WODM4-4 and WODM4b boundaries and creation of new woodland edges causing new growing conditions. Minor encroachment into the wooded area (WODM4b and WODM4-4) and meadow community adjacent to the ROW (MEFM1/THDM4) may be required. | 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.<br>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 will be selected based on consultation with the appropriate reviewing agency (GRCA).<br>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.<br>Impacts to remaining trees will be minimized by implementing tree protection (e.g., ESC fencing) to protect against grading impacts.<br>An environmental inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies.<br>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.<br>If encroachment into woodlands is anticipated, a Restoration Plan should be prepared during detailed design, including edge management and re-vegetation using native species to compensate for vegetation loss. |
| Natural Environment | Significant Natural Features | Direct impacts to the Summit Muskeg Preserve Provincial Life Sciences ANSI are not proposed. No intrusion into the Provincially Significant Wetland (Copetown Bog) will occur beyond the construction area. Indirect impacts (e.g., sedimentation, erosion, invasive species encroachment) to the Summit Muskeg Preserve Provincial Life Sciences ANSI. | Indirect impacts will be mitigated through implementing standard measures such as ESC fencing and monitoring. |

| Environmental Component | Environmental Sub-component | Potential Environmental Effects | Proposed Mitigation Measures and Future Commitments |
|---|---|---|---|
| Natural Environment | Wildlife and SAR and Wildlife and SAR Habitat | Temporary displacement and disturbance to wildlife and habitat during the construction phase (e.g., vegetation removals, noise disturbance). May include SAR and Species of Special Concern. Potential for increased road mortality and mortality during construction activities (i.e., amphibians, reptiles, etc.). Potential for disturbance / destruction of migratory breeding birds and their habitat. Minor encroachment into wooded areas may impact candidate SAR bat maternity roosting habitat.<br>Noise, dust impacts from construction. | The footprint of the disturbed area shall be minimized as much as possible.<br>Avoid vegetation clearing between April 1 and October 31 to prevent impacts to active periods for breeding birds, amphibians, reptiles, and bats. Any clearing must be completed outside of the core breeding bird window (April 1 to August 31), amphibian and reptile window (April to mid-October), and bat window (March 31 to October 31).<br>Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the ESA, cannot be destroyed at any time of the year.<br>Further assessment during detailed design is required to confirm the extent of grading impacts and SAR wildlife habitat, such as bat roost trees and whether surveys are required to determine absence or presence of SAR bats during the detailed design phase.<br>An edge management plan and restoration plan should be implemented to ensure the integrity and continued ecological functioning of any impacted Significant Woodlands.<br>Temporary silt fence barriers are recommended to exclude wildlife (reptiles and amphibians) from earthwork and construction activities in areas adjacent to low-lying areas. Refer to MNRF Best Practices Technical Note – Reptile and Amphibian Exclusion Fencing (Version 1.1) July 2013 (OMNR, 2013).<br>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.<br>If a nesting migratory bird (or SAR protected under the ESR) 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 or ESA, all activities should stop and the Contract Administrator (with assistance from an Avian Biologist) should discuss mitigation measures with the City.<br>Should SAR be identified, all activities shall stop and MECP shall be contacted immediately.<br>As required, dust from the work area will be monitored and controlled using suppressants.<br>Environmental noise will be reduced through the standard operating practices and conformity with noise by-law requirements.<br>An environmental inspector shall be engaged during the construction phase to review ESC measures that protect adjacent natural features and prevent certain wildlife such as reptiles and amphibians from entering the work zone. The environmental inspector will identify all deficiencies and ensure the contractor will address the deficiencies. |
| Physical Environment | Aquatic Habitat / Watercourses | Potential for sediments to enter the watercourse due to stockpiling, excavation, and construction.<br>Potential for localized water quality impacts in the case of spills<br>Culvert 1 has less than the required 0.30 m of freeboard to the top of subgrade.<br>Culvert 3 does not meet hydraulic standards (Regional storm velocity multiplied by depth exceeds 0.8 $m^2/s$).<br>Four culverts may be impacted and require extension or replacement. | An ESC Plan shall be developed during detailed design, conforming to OPSS and GRCA requirements. Silt fence shall be used to delineate the limit of the construction area adjacent to wetland communities (i.e., through the Copetown Bog area).<br>No intrusion into the Copetown Bog shall occur beyond the construction area delineated by silt fencing. No storage, stockpiling, or staging shall occur beyond the work area delineated by silt fencing.<br>A permit from GRCA under O. Reg. 41/24 will be required prior to conducting works in the Regulated Area.<br>Stockpiled material will be stored and stabilized a minimum of 30 m from the watercourse and wetlands.<br>Equipment fueling and maintenance shall be done at least 30 m from the watercourse and wetlands to ensure no deleterious substances enter.<br>All equipment must arrive onsite clean to prevent the potential transfer of invasive species to the local environment<br>Culverts that do not meet design criteria are recommended to be reviewed during detailed design. |

| Environmental Component | Environmental Sub-component | Potential Environmental Effects | Proposed Mitigation Measures and Future Commitments |
|---|---|---|---|
| Physical Environment | Stormwater Management and Hydrology | Potential for localized water quality impacts in the case of spills.<br>The hydraulic analysis will be refined during detailed design, including the Hamilton-Brantford Rail Trail, driveway and entrance culverts.<br>Road pavement is susceptible to deterioration from freeze-thaw events and increased precipitation. | The proposed stormwater management components should be designed with consideration for increased precipitation as a result of climate change.<br>The Contractor must develop Spill Prevention and Contingency Plans.<br>ESC plans must be monitored and maintained prior to, and after precipitation events.<br>Refined peak flows from the Copetown Bog are to be determined in detailed design. |
| Physical Environment | Geotechnical and Groundwater | Potential dewatering of the work area may be required.<br>Potential for localized groundwater quality impacts from spills.<br>Potential for excess soil generation. | The Geotechnical Report shall fully assess 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.<br>Management of excess soil should comply with O. Reg. 406/19 and the MECP's current guidance document Management of Excess Soil – A Guide for Best Management Practices (2014). |
| 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 phased of the project and implemented prior to construction.<br>During construction, the following mitigation measures shall be used: The road shall be graded as required to remove potholes, ruts, and ripples in the road surface. Efforts to prevent contamination of the road surface, such as spilling sands, silts, and clays, will also help minimize dust.<br>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.<br>Vehicles and machinery shall be in good repair, equipped with emission controls, as applicable and operated within regulatory requirements.<br>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.<br>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.<br>All construction activities shall conform to the criteria set out in NPC115 of 83dB.<br>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 to archaeological sites or areas of archaeological potential are not anticipated as areas subject to ground disturbance, located within the existing ROW, are identified as previously disturbed | Comply with the recommendations of the Stage 1 AA.<br>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.<br>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.<br>Indigenous Nations including Wendat Nation and Mississaugas of the Credit First Nation have expressed interest in participating in future AA and must be informed and engaged for participation in any future Stage 2 AA. |
| Socio-Cultural Environment | Cultural Heritage (BHRs and CHLs) | Potential direct or indirect negative impacts to CHLs or BHRs within the study area are not anticipated. | Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified BHRs and the CHL. Avoidance measures may include, but are not limited to erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified BHRs, etc. should all be considered.<br>Where feasible, the proposed construction activities should be designed in a manner that limits potential indirect impacts to CHL 4.<br>The removal of trees and vegetation within the ROW should be limited where possible adjacent to the CHL Where tree removals are required, post-construction rehabilitation with sympathetic plantings should be implemented.<br>Should future work require an expansion of the study area then a qualified heritage consultant with recent and relevant experience should be contacted in order to confirm the impacts of the proposed work on potential heritage resources. |
| 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 | Traffic Flow | Temporary traffic flow / access disruptions during construction.<br>Safety concerns related to collisions.<br>Potential safety hazards on roadways from construction activities, heavy equipment, and increased construction traffic. | The Contractor shall develop and implement a Traffic Management Plan.<br>Adequate signage shall be provided to give advance notice of disruptions and detours.<br>Consult with public agency and / or adjacent landowners / tenants regarding temporary access routes.<br>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.).<br>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. |

## 13.1 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 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.

## 13.2 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. 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.

### 13.3 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.

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

## 14.0 Conclusions

Alternative Solution 2: North Roundabout and South Left-turning Lane along with Alternative Design Concept 2 Roundabout with Approach Shifted West comprise the Preferred Design. The Preferred Design provides improved operational safety for all road users (vehicles, pedestrians, cyclists) while minimizing impacts to adjacent properties, natural features including wetland, watercourse and wooded areas as well as the trail, with moderate capital costs when compared to the other alternatives. This solution avoids direct impacts to the Provincially Significant Wetland (Copetown Bog), and Significant Woodlands as well as cultural heritage features. 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 12.0.
- The City will be required to secure all necessary Permits and / or Authorizations required for the Project, including:

- Consultation with the GRCA and HCA with respect to working within a Regulated Area and required permissions.
- Any works within the NEP area will require review and approval by the Niagara Escarpment Commission to ensure compliance with the Plan if proposed improvements extend into the NECs Development Control Area.

The design elements of the preferred solution, including width of vehicle travel lanes and active transportation features, may be refined during Detailed Design. The location of the rail trail crossing will be further refined 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:

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# Appendix A

# Existing Conditions

# Cultural Heritage Report:
# Existing Conditions and Preliminary Impact Assessment

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

# City of Hamilton, Ontario

**Final Report**

Prepared for:

**R.J. Burnside & Associates Limited**
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Archaeological Services Inc. File: 24CH-116

August 2025 (Updated February and May 2026)

# Executive Summary

Archaeological Services Inc. was contracted by R.J. Burnside & Associates Limited on behalf of the City of Hamilton, to conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (Cultural Heritage Report) as part of the Highway 52 and Powerline Road West Intersection Improvements, City of Hamilton. The Highway 52 and Powerline Road West Intersection Improvements project, being completed under Schedule C of the Municipal Class Environmental Assessment process (M.C.E.A.), is an examination of the feasibility of implementing a roundabout at the intersection of Highway 52 and Powerline Road West, relative to other transportation improvement options. Also under consideration for this project is a review of the intersection of Highway 52 and Powerline Road East, approximately 430 metres south of the above-named intersection, and an assessment of the feasibility of realigning/extending Powerline Road East from a cul-de-sac approximately 200 metres east of the intersection with Highway 52, to coincide with the potential roundabout (City of Hamilton, 2024b).

The purpose of this report is to present an inventory of known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s), identify existing conditions of the project study area, provide a preliminary impact assessment, and propose appropriate mitigation measures.

An analysis of available primary and secondary source materials, including historical mapping, reveals a study area with an Indigenous history spanning several millennia and a rural history dating back to the 1770s and the arrival of Loyalist settlers following the close of the American War of Independence. Based on a review of federal, provincial, and municipal registers, inventories, and databases revealed that there is one known C.H.L., two potential C.H.L.s, and three potential B.H.R.s. Two additional potential C.H.L.s were identified during background research and field review.

Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified B.H.R.s and the C.H.L. Avoidance measures may include, but are not limited to: erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified B.H.R.s, etc. should all be considered.

2. Where feasible, the proposed construction activities should be designed in a manner that limits potential indirect impacts to C.H.L. 4. The removal of trees and vegetation within the right-of-way should be limited where possible adjacent to the C.H.L. Where tree removals are required, post-construction rehabilitation with sympathetic plantings should be implemented.

3. Should future work require an expansion of the study area then a qualified heritage consultant with recent and relevant experience should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.

4. This report should be submitted by the proponent to heritage staff at the City of Hamilton and the Ministry of Citizenship and Multiculturalism for review and comment, along with any other local heritage stakeholders that may have an interest in this project.

# Report Accessibility Features

This report has been formatted to meet the Information and Communications Standards under the *Accessibility for Ontarians with Disabilities Act*, 2005 (A.O.D.A.). Features of this report which enhance accessibility include: headings, font size and colour, alternative text provided for images, and the use of periods within acronyms. Given this is a technical report, there may be instances where additional accommodation is required in order for readers to access the report's information. If additional accommodation is required, please contact Annie Veilleux, Manager of the Cultural Heritage Practice Area at Archaeological Services Inc., by email at aveilleux@asiheritage.ca or by phone 416-966-1069 ext. 255.

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# Glossary

**Built Heritage Resource (B.H.R.)**
Definition: "…a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community" (Ministry of Municipal Affairs and Housing, 2024, p. 40).

**Cultural Heritage Landscape (C.H.L.)**
Definition: "…a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest 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).

**Known Built Heritage Resource or Cultural Heritage Landscape**
Definition: A known built heritage resource or cultural heritage landscape is a property that has recognized cultural heritage value or interest. This can include a property listed on a Municipal Heritage Register, designated under Part IV or V of the *Ontario Heritage Act*, or protected by a heritage agreement, covenant or easement, protected by the *Heritage Railway Stations Protection Act or the Heritage Lighthouse Protection Act*, identified as a Federal Heritage Building, or located within a U.N.E.S.C.O. World Heritage Site (Ministry of Citizenship and Multiculturalism, 2022).

**Impact**
Definition: Includes negative and positive, direct and indirect effects to an identified built heritage resource and cultural heritage landscape. Direct impacts include destruction of any, or part of any, significant heritage attributes or features and/or unsympathetic or incompatible alterations to an identified resource. Indirect impacts include, but are not limited to, creation of shadows, isolation of heritage attributes, direct or indirect obstruction of significant views, change in land use, and land disturbances (Ministry of Citizenship and

Multiculturalism, 2006b). Indirect impacts also include potential vibration impacts (See Section 2.6 for complete definition and discussion of potential impacts).

**Mitigation**
Definition: Mitigation is the process of lessening or negating anticipated adverse impacts to built heritage resources or cultural heritage landscapes and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the cultural heritage landscape and/or built heritage resource if to be demolished or relocated (Ministry of Citizenship and Multiculturalism, 2006a).

**Potential Built Heritage Resource or Cultural Heritage Landscape**
Definition: A potential built heritage resource or cultural heritage landscape is a property that has the potential for cultural heritage value or interest. This can include properties/project area that contain a parcel of land that is the subject of a commemorative or interpretive plaque, is adjacent to a known burial site and/or cemetery, is in a Canadian Heritage River Watershed, or contains buildings or structures that are 40 or more years old (Ministry of Citizenship and Multiculturalism, 2022).

**Significant**
Definition: With regards to cultural heritage and archaeology resources, significant means "resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the *Ontario Heritage Act*" (Ministry of Municipal Affairs and Housing, 2024, p. 52).

**Vibration Zone of Influence**
Definition: Area within a 50-metre buffer of construction-related activities in which there is potential to affect an identified built heritage resource or cultural heritage landscape. A 50-metre buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature (Carman et al., 2012; Crispino & D'Apuzzo, 2001; P. Ellis, 1987; Rainer,

1982; Wiss, 1981). This buffer accommodates the additional threat from collisions with heavy machinery or subsidence (Randl, 2001).

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# 1.0 Introduction

Archaeological Services Inc. (A.S.I.) was contracted by R.J. Burnside & Associates Limited on behalf of the City of Hamilton, to conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (Cultural Heritage Report) as part of the Highway 52 and Powerline Road West Intersection Improvements, City of Hamilton Municipal Class Environmental Assessment (M.C.E.A.).

The purpose of this report is to present an inventory of known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s), identify existing conditions of the project study area, and provide a preliminary impact assessment appropriate mitigation measures based upon a review of preferred design solutions.

## 1.1 Project Overview

The Highway 52 and Powerline Road West Intersection Improvements project, being completed under Schedule C of the M.C.E.A. process, is an examination of the feasibility of implementing a roundabout at the intersection of Highway 52 and Powerline Road West, relative to other transportation improvement options. Also under consideration for this project is a review of the intersection of Highway 52 and Powerline Road East, approximately 430 metres south of the above-named intersection, and an assessment of the feasibility of realigning/extending Powerline Road East from a cul-de-sac approximately 200 metres east of the intersection with Highway 52, to coincide with the potential roundabout (City of Hamilton, 2024b).

## 1.2 Description of Study Area

This Cultural Heritage Report will focus on the project study area (Figure 1). This project study area has been defined as inclusive of those lands that may contain B.H.R.s or C.H.L.s that may be subject to direct or indirect impacts because of

the proposed undertaking. Properties within the study area are located within the City of Hamilton's municipal boundaries.

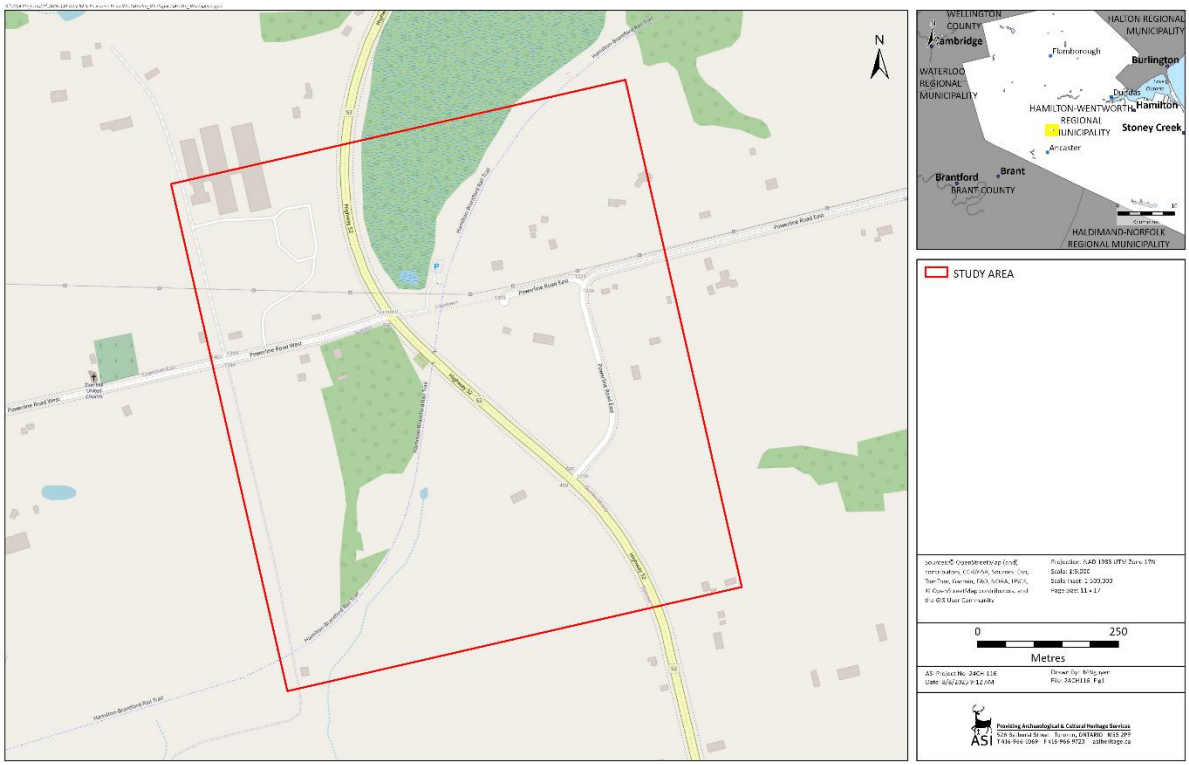


Figure 1: Location of the study area (Base Map: ©OpenStreetMap and contributors, Creative Commons-Share Alike License (C.C.-By-S.A.))

# 2.0 Methodology

The following sections provide a summary of regulatory requirements and municipal and regional heritage policies that guide this cultural heritage assessment. In addition, an overview of the process undertaken to identify known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s) is provided, along with a description of how the preliminary impact assessment will be undertaken.

## 2.1 Municipal Class Environmental Assessment

A Municipal Class Environmental Assessment (M.C.E.A.) is a process through which municipalities investigate projects related to infrastructure, including transportation, water, wastewater, and stormwater. M.C.E.A.'s generally have five phases:

- Phase 1: Problem or Opportunity Statement
- Phase 2: Alternative Solutions
- Phase 3: Alternative Design Concepts for Preferred Solution
- Phase 4: Environmental Study Report (E.S.R.)
- Phase 5: Implementation (B.M. Ross & Associates Limited, 2018).

As stated above, the Highway 52 and Powerline Road West Intersection Improvements Project is a Schedule C project under the M.C.E.A., and thus has the:

> potential for more significant environmental effects than a Schedule B project and as such a proponent is required to complete the full planning and documentation process set out in the MCEA. For Schedule C projects, proponents are required to prepare an Environmental Study Report for review by the public and review agencies. If there are no outstanding concerns, the proponent may proceed to implementation once the regulatory process has been completed. Schedule C projects generally include the construction of new facilities and major expansions to existing facilities (Municipal Engineers Association, 2024).

## 2.2 Regulatory Requirements

The *Ontario Heritage Act* (O.H.A.) (Ontario Heritage Act, R.S.O. c. O.18 [as Amended in 2024], 1990) is the primary piece of legislation that determines policies, priorities and programs for the conservation of Ontario's heritage. There are many other provincial acts, regulations and policies governing land

use planning and resource development that support heritage conservation, including:

- The *Planning Act* (Planning Act, R.S.O. 1990, c. P.13, 1990), which states that "conservation of features of significant architectural, cultural, historical, archaeological or scientific interest" is a "matter of provincial interest". The *Provincial Planning Statement* (Ministry of Municipal Affairs and Housing, 2024), issued under the *Planning Act*, requires municipalities and the Crown to conserve significant B.H.R.s and C.H.L.s.
- The *Environmental Assessment Act* (Ministry of the Environment, 1990), which defines "environment" to include cultural conditions that influence the life of humans or a community. Cultural heritage resources, which includes archaeological resources, B.H.R.s and C.H.L.s, are important components of those cultural conditions.

The Ministry of Citizenship and Multiculturalism (hereafter "The Ministry") is charged under Section 2.0 of the O.H.A. with the responsibility to determine policies, priorities, and programs for the conservation, protection, and preservation of the heritage of Ontario. The *Standards and Guidelines for Conservation of Provincial Heritage Properties* (Government of Ontario, 2010) (hereinafter "*Standards and Guidelines")* apply to properties the Government of Ontario owns or controls that have "cultural heritage value or interest" (C.H.V.I.). The *Standards and Guidelines* provide a series of guidelines that apply to provincial heritage properties in the areas of identification and evaluation; protection; maintenance; use; and disposal. For the purposes of this report, the *Standards and Guidelines* provide points of reference to aid in determining potential heritage significance in the identification of B.H.R.s and C.H.L.s. While not directly applicable for use in properties not under provincial ownership, the *Standards and Guidelines* are regarded as best practice for guiding heritage assessments and ensure that additional identification and mitigation measures are considered.

Similarly, the *Ontario Heritage Tool Kit* (Ministry of Citizenship and Multiculturalism, 2025) provides a guide to evaluate heritage properties. To conserve a B.H.R. and C.H.L., the *Ontario Heritage Tool Kit* states that a municipality or approval authority may require a heritage impact assessment and/or a conservation plan to guide the approval, modification, or denial of a proposed development.

## 2.3 Municipal/Regional Heritage Policies

The study area is located within the City of Hamilton. Policies relating to B.H.R.s and C.H.L.s were reviewed from the following sources:

- Rural Hamilton Official Plan (City of Hamilton, 2021a)
- Built Heritage Inventory Process (City of Hamilton, 2023)
- Greenbelt Act (Greenbelt Act, 2005, 2023)
- Provincial Greenbelt Plan (Government of Ontario, 2017)

## 2.4 Identification of Built Heritage Resources and Cultural Heritage Landscapes

This Cultural Heritage Report follows guidelines presented in the *Ontario Heritage Tool Kit* (Ministry of Citizenship and Multiculturalism, 2025) and *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (Ministry of Citizenship and Multiculturalism, 2022). The objective of this report is to present an inventory of known and potential B.H.R.s and C.H.L.s, and to provide a preliminary understanding of known and potential B.H.R.s and C.H.L.s located within areas anticipated to be directly or indirectly impacted by the proposed project.

In the course of the cultural heritage assessment process, all potentially affected B.H.R.s and C.H.L.s are subject to identification and inventory. Generally, when conducting an identification of B.H.R.s and C.H.L.s within a study area, three stages of research and data collection are undertaken to appropriately establish

the potential for and existence of B.H.R.s and C.H.L.s in a geographic area: background research and desktop data collection; field review; and identification.

Background historical research, which includes consultation of primary and secondary source research and historical mapping, is undertaken to identify early settlement patterns and broad agents or themes of change in a study area. This stage in the data collection process enables the researcher to determine the presence of sensitive heritage areas that correspond to nineteenth- and twentieth-century settlement and development patterns. To augment data collected during this stage of the research process, federal, provincial, and municipal databases and/or agencies are consulted to obtain information about specific properties that have been previously identified and/or designated as having cultural heritage value. Typically, resources identified during these stages of the research process are reflective of particular architectural styles or construction methods, associated with an important person, place, or event, and contribute to the contextual facets of a particular place, neighbourhood, or intersection.

A field review is then undertaken to confirm the location and condition of previously identified B.H.R.s and C.H.L.s. The field review is also used to identify potential B.H.R.s and C.H.L.s that have not been previously identified on federal, provincial, or municipal databases or through other appropriate agency data sources.

During the cultural heritage assessment process, a property is identified as a potential B.H.R. or C.H.L based on research, the Ministry screening tool, and professional expertise and best practice. In addition, use of a 40-year-old benchmark is a guiding principle when conducting a preliminary identification of B.H.R.s and C.H.L.s. While identification of a resource that is 40 years old or older does not confer outright heritage significance, this benchmark provides a means to collect information about resources that may retain heritage value.

Similarly, if a resource is slightly younger than 40 years old, this does not preclude the resource from having C.H.V.I.

## 2.5 Background Information Review

To make an identification of previously identified known or potential B.H.R.s and C.H.L.s within the study area, the following sections present the resources that were consulted as part of this Cultural Heritage Report.

### 2.5.1 Review of Existing Heritage Inventories

Several resources were consulted in order to identify previously identified B.H.R.s and C.H.L.s within the study area. These resources, reviewed on 16 July 2025 include:

- Hamilton *Cultural Heritage Resources* interactive map (City of Hamilton, 2024a);
- Ancaster Pre-Confederation Inventory (City of Hamilton, 2021b);
- The *Ontario Heritage Act Register* (Ontario Heritage Trust, n.d.b);
- The *Places of Worship Inventory* (Ontario Heritage Trust, n.d.c);
- The inventory of Ontario Heritage Trust easements (Ontario Heritage Trust, n.d.a);
- The Ontario Heritage Trust's *An Inventory of Provincial Plaques Across Ontario*: a PDF of Ontario Heritage Trust Plaques and their locations (Ontario Heritage Trust, 2023);
- The Ontario Heritage Trust's *An Inventory of Ontario Heritage Trust-owned properties across Ontario*: a PDF of properties owned by the Ontario Heritage Trust (Ontario Heritage Trust, 2019);
- Inventory of known cemeteries/burial sites in the Ontario Genealogical Society's online databases (Ontario Genealogical Society, n.d.);
- Canada's Historic Places website: available online, the searchable register provides information on historic places recognized for their heritage value at the local, provincial, territorial, and national levels (Parks Canada, n.d.a);

- Directory of Federal Heritage Designations: a searchable on-line database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses (Parks Canada, n.d.b);
- Canadian Heritage River System: a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage (Canadian Heritage Rivers Board and Technical Planning Committee, n.d.); and,
- United Nations Educational, Scientific and Cultural Organization (U.N.E.S.C.O.) World Heritage Sites (U.N.E.S.C.O. World Heritage Centre, n.d.).

### 2.5.2 Review of Previous Heritage Reporting

Additional cultural heritage studies undertaken within parts of the study area were also reviewed. These include:

- Ancaster Elevated Water Reservoir Municipal Class Environmental Assessment, City of Hamilton, Ontario (A.S.I., 2018);
- Stage 1 & 2 Archaeological Assessment of 104 Paddy Greene Road, Part of Lot 33, Concession 2, Geographic Township of Ancaster, Wentworth County, Now in the City of Hamilton (A.S.I., 2013); and,
- Stage 1 & 2 Archaeological Assessment – Corrosion Protection Program within the MLV 1301 Pipeline Section, Regional Municipality of Hamilton-Wentworth, Ontario (A.S.I., 2005).

### 2.5.3 Information Gathering

The following individuals, groups, and/or organizations were contacted to gather information on known and potential B.H.R.s and C.H.L.s, active and inactive cemeteries, and areas of identified Indigenous interest within the study area:

- Andra Popp, Assistant Cultural Heritage Planner, City of Hamilton (email communication 9 July, 2025; and 10 July 2025). Email correspondence requested confirmation of the heritage status of a list of Inventoried Properties and a Registered Non-Designated Property within the study area, as well as any previously conducted cultural heritage studies in the study area. A response confirmed the provided list, indicated there were no prior cultural heritage studies in the area, and that heritage planning staff had no outstanding cultural heritage concerns.
- Mariana Nito, The Ministry of Citizenship and Multiculturalism (email communication 9 July, 2025; and 11 July, 2025). Email correspondence confirmed that there are no properties designated by the Minister and that they have no records of a Provincial Heritage Property within or adjacent to the study area.
- Samuel Bayefsky, The Ontario Heritage Trust (email communications 9 July, 2025; and 10 July, 2025). A response indicated that there are no conservation easements or Trust-owned properties within the study area.

## 2.6 Community Engagement

The City of Hamilton is undertaking Indigenous engagement for this project. The list of communities notified includes:

- Six Nations of the Grand River;
- Mississaugas of the Credit First Nation;
- Wendat First Nation at Wendake;
- Haudenosaunee Development Institute; and
- The Metis Nation of Ontario.

No feedback has been received regarding the Cultural Heritage Report for this project at the time of report submission (February 2026). Any feedback received will be considered and incorporated into the final report.

## 2.7 Preliminary Impact Assessment Methodology

To assess the potential impacts of the undertaking, identified B.H.R.s and C.H.L.s are considered against a range of possible negative impacts, based on the *Ontario Heritage Tool Kit InfoSheet #5: Heritage Impact Assessments and Conservation Plans* (Ministry of Citizenship and Multiculturalism, 2006b). These include:

Direct impacts:

- Destruction of any, or part of any, significant heritage attributes or features; and
- Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance.

Indirect impacts:

- Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden;
- Isolation of a heritage attribute from its surrounding environment, context or a significant relationship;
- Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features;
- A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces; and
- Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.

Indirect impacts from construction-related vibration have the potential to negatively affect B.H.R.s and C.H.L.s depending on the type of construction methods and machinery selected for the project and proximity and composition of the identified resources. Potential vibration impacts are defined as having

potential to affect an identified B.H.R.s and C.H.L.s where work is taking place within 50 metres of features on the property. A 50-metre buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature (Carman et al., 2012; Crispino & D'Apuzzo, 2001; P. Ellis, 1987; Rainer, 1982; Wiss, 1981). This buffer accommodates any additional or potential threat from collisions with heavy machinery or subsidence (Randl, 2001).

Several additional factors are also considered when evaluating potential impacts on identified B.H.R.s and C.H.L.s. These are outlined in a document set out by the Ministry of Culture and Communications (now Ministry of Citizenship and Multiculturalism) and the Ministry of the Environment entitled *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (1992). While this document has largely been superseded in some respects by more current policies and legislation, the guidance provided that continues to be of relevance to this specific project includes the following definitions:

- Magnitude: the amount of physical alteration or destruction which can be expected;
- Severity: the irreversibility or reversibility of an impact;
- Duration: the length of time an adverse impact persists;
- Frequency: the number of times an impact can be expected;
- Range: the spatial distribution, widespread or site specific, of an adverse impact; and
- Diversity: the number of different kinds of activities to affect a heritage resource.

The proposed undertaking should endeavor to avoid adversely affecting known and potential B.H.R.s and C.H.L.s and interventions should be managed in such a way that identified features are conserved. When the nature of the undertaking is such that adverse impacts are unavoidable, it may be necessary to implement alternative approaches or mitigation strategies that alleviate the negative

effects on identified B.H.R.s and C.H.L.s. Mitigation is the process of lessening or negating anticipated adverse impacts and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the B.H.R.s and C.H.L.s if it is to be demolished or relocated.

Various works associated with infrastructure improvements have the potential to affect B.H.R.s and C.H.L.s in a variety of ways, and as such, appropriate mitigation measures for the undertaking need to be considered.

# 3.0 Summary of Historical Development Within the Study Area

This section provides a brief analysis of the available primary and secondary source materials regarding this area and was undertaken to produce a contextual overview of the study area, including a general description of physiography, Indigenous land use, and Euro-Canadian settlement.

## 3.1 Physiography

The study area is located within the Norfolk Sand Plain physiographic region of southern Ontario. The Norfolk Sand Plain physiographic region is a wedge-shaped feature that extends from the Lake Erie shoreline and tapers northward to a point in Brantford on the Grand River (Chapman & Putnam, 1984). The region encompasses an area of 3,134 square kilometres and consists of sands and silts that were deposited as a delta in glacial Lakes Whittlesey and Warren. A massive discharge of meltwater from the Grand River area entered the lakes between the ice front and the moraines to the northwest, building the delta from west to east as the glacier withdrew, thus covering most of the area west of the Galt Moraine with sand. In the vicinity of the subject property, glaciolacustrine deep water sediments belonging to mainly glacial Lake Warren and younger deposits and consisting of stratified to varved silt and clay, minor sand, are overlain by veneer of sand (Zone 10) (Cowan, 1972).

Located to the east of the study area is the Niagara Escarpment. The Niagara Escarpment is by far one of the most prominent features in southern Ontario, and extends from the Niagara River to the northern tip of the Bruce Peninsula, continuing through the Manitoulin Islands (Chapman & Putnam, 1984, pp. 114–122). Vertical cliffs along the brow mostly outline the edge of the dolostone of the Lockport and Amabel Formations, which the slopes below are carved in red shale. Flanked by landscapes of glacial origin, the rock-hewn topography stands in striking contrast, and its steep-sided valleys are strongly suggestive of non-glacial regions. From Queenston, on the Niagara River, westward to Ancaster, the escarpment is a simple topographic break separating the two levels of the Niagara Peninsula. The Niagara Escarpment is a designated U.N.E.S.C.O. World Biosphere Reserve.

The Beverly Swamp, located to the west of the study area, is an important natural landscape that extends into the Flamborough Plain, spanning much of the physiographic region on its west and south sides (Carolinian Canada, 2022). It forms one of the largest forested wetlands in southern Ontario that is crucial to the stability of the region's ecology and water systems. The extensive wetland areas are drained by the Fairchild Creek, Spencer Creek, and Bronte Creek stream systems, which drain into Lakes Erie and Ontario.

Another significant ecological feature is the Copetown Bog/Summit Muskeg Preserve, which is a small, 27-hectare nature reserve located outside of Copetown that runs adjacent to the Hamilton-Brantford Rail Trail (Greenbelt Indigenous Botanical Survey, 2024).

It is the only bog that is known to occur in Hamilton-Wentworth County, and was formed during the last ice age, 12,000 to 18,000 years ago, when glacial scouring created a deep depression in the ground. As the glaciers retreated, the depression filled with meltwater, creating a small lake, and vegetation grew around the periphery. Dying plant matter fell and settled into the lake, and over the course of thousands of years, created a seven-meter-deep mat of peat. The leaching of organic acids from the peat creates an acidic and low nutrient

environment favoring Sphagnum moss, which floats on top of the peat, and unique vegetation assemblages that are rare in southern Ontario. The bog is separated from the surrounding land by a 'moat' of acidic water and is inaccessible by foot but can be observed from several vantage points along the rail trail. Today, Summit Bog is managed by the Hamilton Conservation Authority, and is a popular spot for birding. (Greenbelt Indigenous Botanical Survey, 2024)

## 3.2 Indigenous Land Use and Settlement

Current archaeological evidence indicates humans were present in southern Ontario approximately 13,000 years before present (B.P.) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 B.P., the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (C. J. Ellis & Deller, 1990).

Between approximately 10,000-5,500 B.P., the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 B.P.; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest archaeological evidence for cemeteries dates to approximately 4,500-3,000 B.P. and is interpreted by archaeologists to be indicative of increased social organization and the investment of labour into social infrastructure (Brown, 1995, p. 13; C. J. Ellis et al., 1990, 2009).

Between 3,000-2,500 B.P., populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The

Woodland period begins around 2,500 B.P. and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 B.P., evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 B.P. there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 B.P. – it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers, 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 B.P., lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (C.E.), larger settlement sites focused on horticulture begin to dominate the archaeological record. Seasonal dispersal of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 C.E., archaeological research focusing on these horticultural societies note that this episodic community dispersal was no longer practised and these populations now occupied sites throughout the year (Dodd et al., 1990, p. 343). By the mid-sixteenth century these small villages had coalesced into larger communities (Birch et al., 2021). Through this process, the socio-political organization of these First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. Other First Nation communities continued to practice residential mobility and to harvest available resources across landscapes they returned to seasonally/annually.

By 1600 C.E., the Confederation of Nations were encountered by the first European explorers and missionaries in Simcoe County. Samuel de Champlain in

1615 reported that a group of Iroquoian-speaking people situated between the Haudenosaunee and the Huron-Wendat were at peace and remained "la nation neutre". Like the Huron-Wendat, Petun, and Haudenosaunee, the Neutral or Attawandaron people were settled village agriculturalists.

By the 1640s, devastating epidemics and the traditional enmity between the Haudenosaunee[1] and the Attawandaron and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to their dispersal from southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. Peace was achieved between the Haudenosaunee and the Anishinaabe Nations in August of 1701 when representatives of more than twenty Anishinaabe Nations assembled in Montreal to participate in peace negotiations. Peace was confirmed again at council held at Lake Superior when the Haudenosaunee delivered a wampum belt to the Anishinaabe Nations. This agreement between the Haudenosaunee and Anishinaabe nations is referred to as the Dish with One Spoon.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century. The Crown acknowledged the Mississaugas of the Credit as the owners of the lands between Georgian Bay and Lake Simcoe and entered into negotiations for additional tracts of land as the need arose to facilitate European settlement.

[1] The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian–speaking nations - the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.

### 3.2.1 Treaty Information

The study area is within Treaty 3, the Between the Lakes Purchase.

Following the American Revolutionary War (1775-1783), the British Crown needed to find lands on which to settle United Empire Loyalists, including approximately 2,000 members of the Six Nations confederacy who had fought alongside British troops. Led by Sir Frederick Haldimand who was the governor of Quebec at that time, the Crown was initially planning on providing lands for Loyalist settlers in Quebec and Southeastern Ontario, including providing land in the Bay of Quinte for Six Nations refugees. This was not suitable for many of the members of Six Nations and a contingent of approximately 1,800 community members, led by Chief Joseph Brant, requested land north of Lake Erie along the Grand River. Brant felt that the location in the Bay of Quinte was too isolated and that his followers could be better served by being closer to the Six Nations communities that chose to remain in the United States in western New York (Surtees, 1984, p. 21).

Recognizing that, under the terms of the Royal Proclamation of 1763, the land needed to be purchased prior to settlement, Colonel John Butler was sent to negotiate with the Mississaugas of the Credit for lands east of Lake Ontario and north of Lake Erie. On May 22, 1784, the Mississaugas of the Credit agreed to cede approximately 3,000,000 acres (1,214,057 hectares) of land containing all or part of Brant, Elgin, Middlesex, Oxford, and Wellington Counties as well as the Regions of Haldimand-Norfolk, Halton, Hamilton-Wentworth, Niagara, and Waterloo. In exchange for these lands, the Mississaugas received £1180.74 worth of trade goods (Crown-Indigenous Relations and Northern Affairs 2016; Surtees 1984). Of the 3,000,000 acres (1,214,057 hectares), approximately 550,000 acres (222,577 hectares) was set aside for the settlement of Six Nations people.

However, due to uncertainties with the description of the lands in the original surrender, Treaty 3 was renegotiated on December 7, 1792, to clarify what was

ceded. This largely revolved around the northern boundary of the Treaty area and in particular the area set aside for Six Nations settlement along the Grand River (see Haldimand Tract and Treaty 4). The signees on the side of the British included Lieutenant Governor John Graves Simcoe, John Butler, Robert Kerr, Peter Russell, John McGill, and Davie William Smith. The signees on the side of the Mississauga included Chiefs Wabakayne, Wabanip, Kautabus, Wabaniship and Mottotow (Crown-Indigenous Relations and Northern Affairs, 2016; Mississaugas of the Credit First Nation, 2017; Surtees, 1984).

The original text stipulated that the north-west boundary of the parcel was an imaginary line between Burlington Bay and the Thames River, which is inconsistent with the geography of the area. The boundaries of the parcel were corrected to create a polygon encompassing the Niagara peninsula up to Burlington Bay and then up north to the present-day town of Arthur then south to the present-day town of Woodstock to finally meet Lake Erie at Port Bruce. Treaty 3 lands exclude a corridor along the Grand River set aside for Six Nations (Crown-Indigenous Relations and Northern Affairs, 2016; Native Land Digital, 2018).

## 3.3 Historical Euro-Canadian Township Survey and Settlement

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes continued the use of existing Indigenous trails that typically followed the highlands adjacent to various creeks and rivers (Archaeological Services Inc., 2006). Early European settlements occupied similar locations as Indigenous settlements as they were generally accessible by trail or water routes and would have been in locations with good soil and suitable topography to ensure adequate drainage.

Throughout the period of initial European settlement, Indigenous groups continued to inhabit Southern Ontario, and continued to fish, gather, and hunt within their traditional and treaty territories, albeit often with legal and informal restrictions imposed by colonial authorities and settlers. In many cases, Indigenous peoples acted as guides and teachers, passing on their traditional knowledge to Euro-Canadian settlers, allowing them to sustain themselves in their new homes. Indigenous peoples entered into economic arrangements and partnerships, and often inter-married with settlers. However, pervasive and systemic oppression and marginalization of Indigenous peoples also characterized Euro-Canadian colonization, with thousands being displaced from their lands, denied access to traditional and treaty hunting, fishing, and collecting grounds, and forced to assimilate with Euro-Canadian culture through mandatory attendance at Day and Residential Schools (Ray, 2005; Rogers & Smith, 1994).

Historically, the study area is located in the former Township of Ancaster, County of Wentworth. The study area covers parts of the following lots: Lots 29-31, Concession 1; and Lots 29-31, Concession 2.

### 3.3.1 County of Wentworth and the Township of Ancaster

The land within Ancaster Township was acquired by the British from the Mississaugas in 1784. The first township survey was undertaken in 1793, and the first Euro-Canadian settlers occupied their land holdings two years later. The township is said to have been named after a town in Lincolnshire, England. Ancaster was one of the largest townships at the Head-of-the-Lake and was quickly settled due to the vast expanse of good land suitable for farming. Ancaster was initially settled by disbanded soldiers, mainly Butler's Rangers, and other Loyalists following the end of the American Revolutionary War. Major settlements in relative proximity to the study area include Copetown and Jerseyville, both of which were founded in the 1770's and 1780's by Loyalist settlers, many of whom were from New Jersey. In 1805, Boulton noted that this township contained both excellent and indifferent soils. By the 1840s, the

township was noted for its fine farms (Armstrong, 1985; Boulton, 1805; Rayburn, 1997; Smith, 1846).

In the second half of the nineteenth century, the township was populated by several industries. By 1875, Ancaster Township was famous for mineral springs, the waters from which were considered therapeutic and medicinal. Ancaster remained a rural township until the mid-twentieth century, when housing subdivision construction began to take up farmland and increase the population (Mika & Mika, 1977; Rayburn, 1997).

The former Toronto, Hamilton, and Buffalo Railway (T.H.&B.) passes through the study area, which, despite the name, never fully reached Toronto or Buffalo. Officially opened in 1894, it was forced to close in 1988 following a landslide that threatened the structural integrity and viability of the rail. Following the closure, portions of the rail were acquired by both the Grand River and Hamilton Conversation Authorities in the mid-1990's and was subsequently turned into the Hamilton to Brantford Trail, "Canada's first fully developed, entirely off-road interurban trail. (Grand River Conservation Authority, 2020)

## 3.4 Review of Historical Mapping

The 1859 *Map of the County of Wentworth* (Surtees, 1859) and the 1875 *Illustrated Historical Atlas of the County of Wentworth* (Page & Smith, 1875) were examined to determine the presence of historical features within the study area during the nineteenth century (Figure 2 and Figure 3).

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical

maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

Historically, the study area is located in the former Township of Ancaster, County of Wentworth. The study area covers parts of the following lots: Lots 29-31, Concession 1; and Lots 29-31 on Concession 2. Some of the more significant families to live on the lots in question were the Kitchen's, Howell's, Richards', Bigg's, Behimer's, and Crawfords. Many members of these families were buried just outside in the study area, in the Zion Hill Wesleyan Methodist Church Cemetery, which were built circa 1861 and 1869.

The study area, like much of the surrounding lots and concessions, was predominantly agricultural in nature, and indeed continues to remain as such. The earliest extant homes in the study area are believed to be from the mid 1850's. While the 1859 Tremaine Map does not include structures on any of the properties, the 1875 Map does show some houses, outbuildings, and churches. A structure is now present in the northwestern corner of the study area on the lot belonging to Issac Kitchen and is likely the extant structure at the current address of 1341 Powerline Road West.

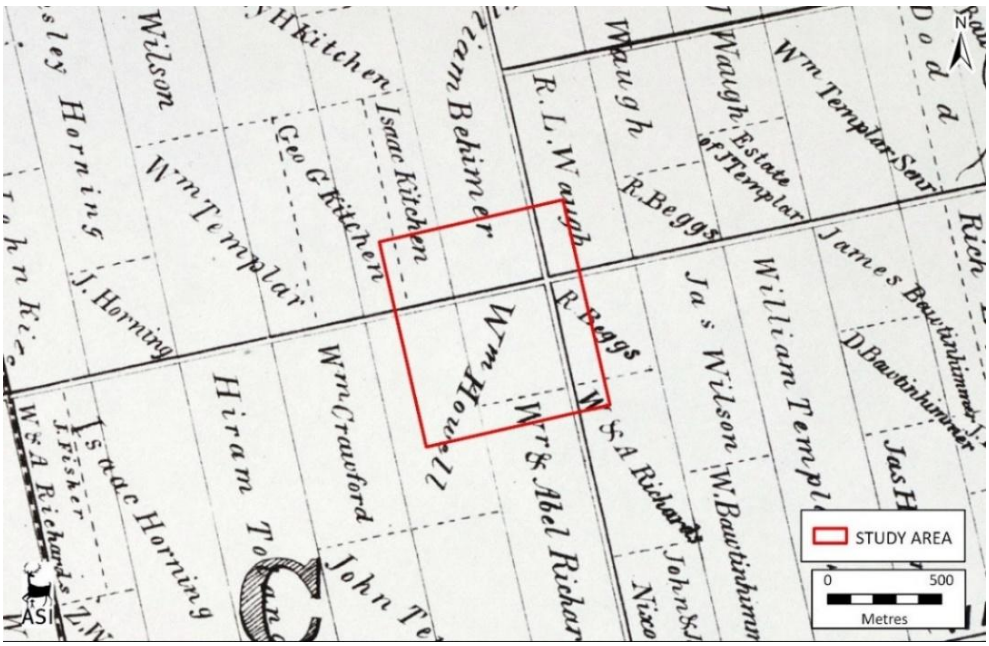


Figure 2: The study area overlaid on the 1859 Wentworth County map (Surtees, 1859).

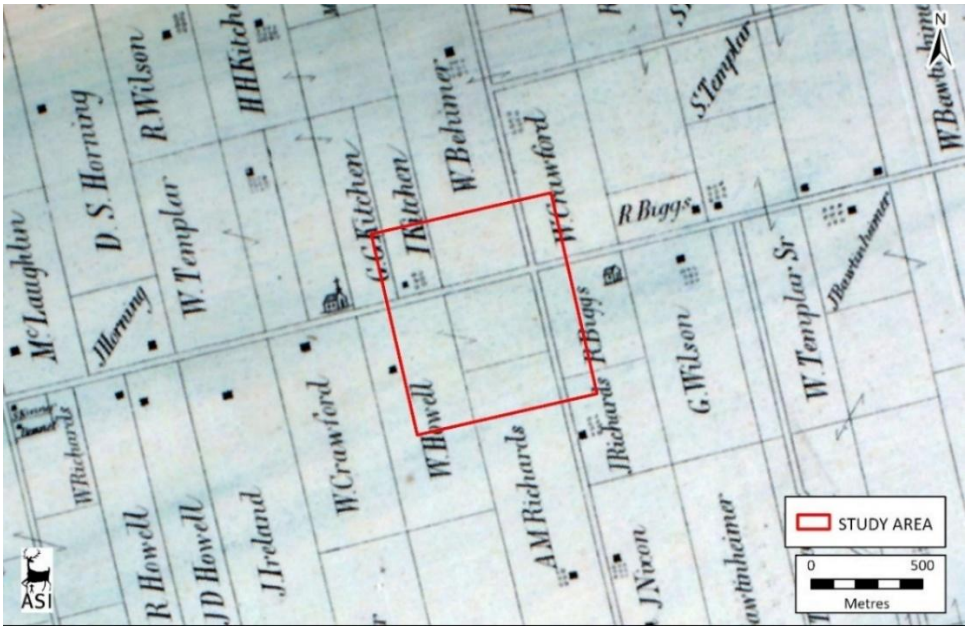


Figure 3: The study area overlaid on the 1875 Illustrated Historical Atlas of the County of Wentworth (Page & Smith, 1875).

Several notable changes occur between the nineteenth century Tremain maps and the 1916 orthographic map. Firstly, what initially appeared to be a straight road in the atlases is more clearly articulated as a winding road that curves around the Summit Muskeg Preserve, which itself was not detailed in the historical atlases.

An additional change between the atlases and topographic maps is the inclusion of the Toronto, Hamilton, and Buffalo Railway. Constructed in the 1890's, the T.H.&B. Rail cut across Powerline Road, whereupon it curved around the Summit Muskeg Preserve on its way to Waterdown and Hamilton. A powerline, in red, is also present in the 1916 and 1934 maps, and is presumed to be the source of the name for Powerline Road. It crosses over Highway 52 and passes just under the Summit Muskeg Preserve, whereupon it follows Powerline Road to the east.

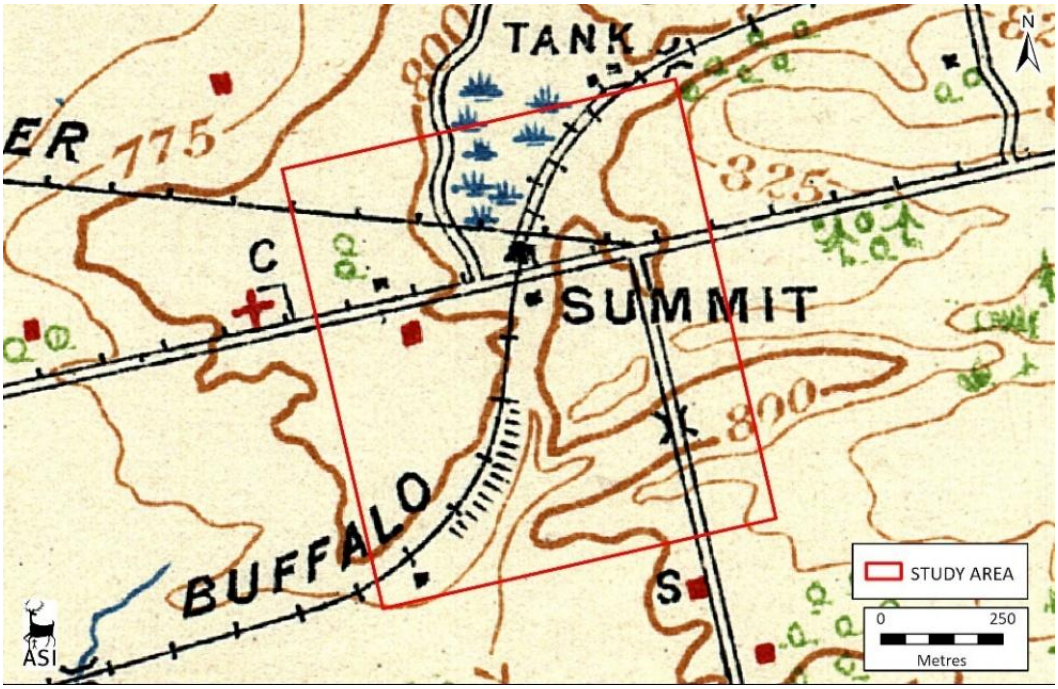


Figure 4: The study area overlaid on the 1916 topographic map, Brantford sheet (Department of Militia and Defence, 1916).

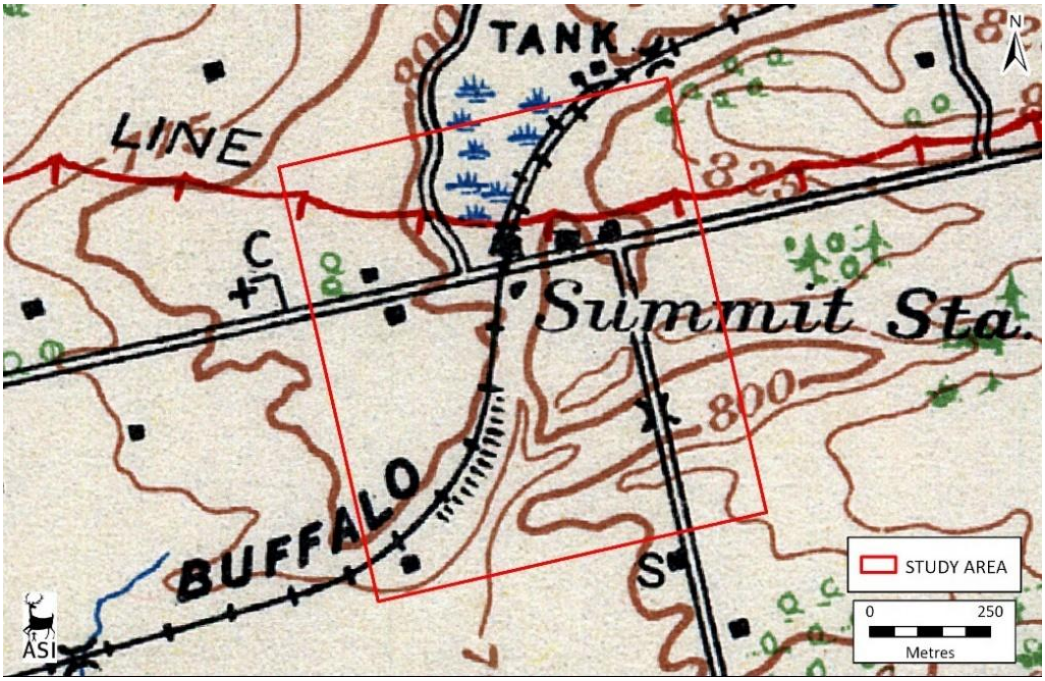


Figure 5: The study area overlaid on the 1934 topographic map, Brantford sheet (Department of Militia and Defence, 1934)

The advent of aerial photography and satellite imagery has proved vital in remediating the inaccuracies and inconsistencies that were earlier discussed and are a useful tool in encapsulating the contextual character of a given area. As preserved in the 1954 aerial photograph displayed below, the study area and its surroundings are made up of rural Southern Ontario's patchwork of agricultural fields and forested areas, interspersed by waterways (Figure 6). Between 1976 and 1994, Powerline Road is severed (Figure 7 and 8), with the northern and southern portions of Highway 52 extended to create a contiguous, unbroken road. This remains the current configuration, as visible in Figure 9. A portion of the road that once connected Powerline Road East and West is currently being used as a parking lot for the rail trail (Plate 9).

Figure 6: The study area overlaid on the 1954 aerial photograph (Hunting Survey Corporation Limited, 1954)

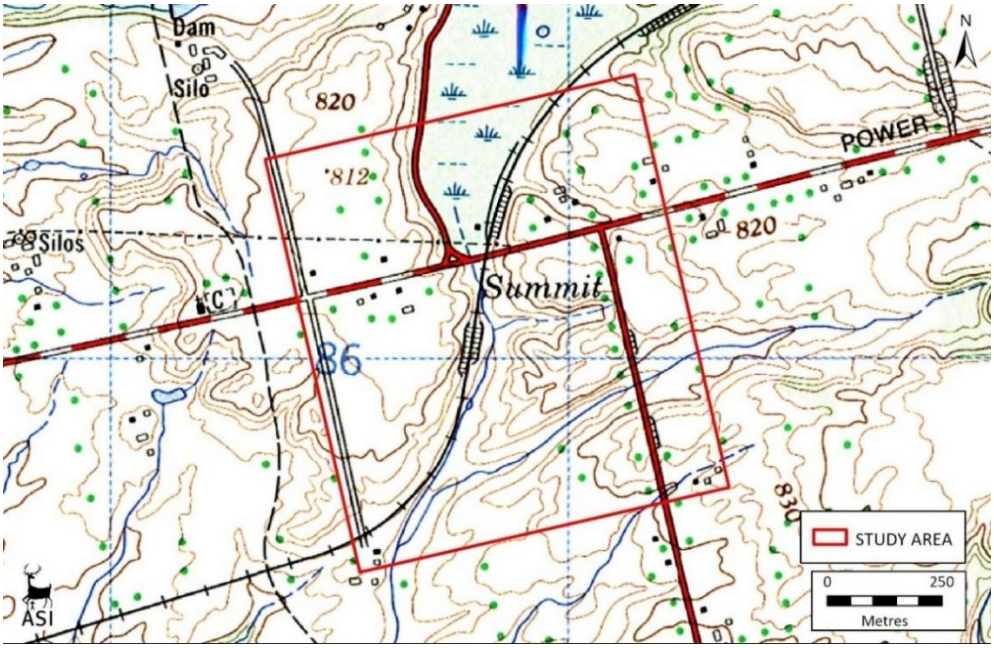


Figure 7: The study area overlaid on the 1976 topographic map, Jerseyville sheet (Department of Energy, Mines and Resources, 1976).

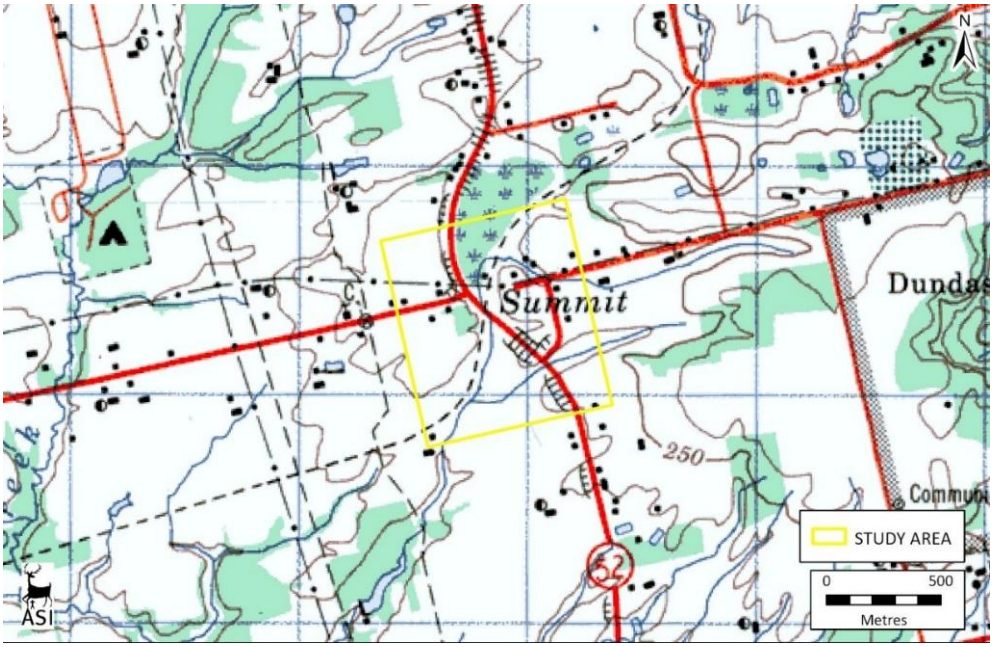


Figure 8: The study area overlaid on the 1994 topographic map, Brantford sheet (Natural Resources Canada, 1994).

Figure 9: The study area overlaid on a current aerial (Orthographic Map, 2025).

# 4.0 Existing Conditions

A field review of the study area was undertaken by Michael Wilcox and Robert Flewelling on the morning of July 22nd, 2025, during which photographs were taken, as documented in Plates 1-10.

## 4.1 Description of Field Review

The study area is heavily agricultural in nature, with Summit Station Dairy serving as a commercial hub. The traffic corridor is heavily travelled with a mix of passenger and commercial or industrial vehicles. Highway 52 is a two-lane municipal highway that runs north to south, with a slight S-curve as it passes through the study area. Powerline Road West intersects on the west side of Highway 52, while Powerline Road East meets Highway 52 further south, after taking a sharp curve around the former railroad, which cuts across Highway 52 and the study area on a slight northwesterly/southeasterly angle.

The residential, commercial, and infrastructure elements of the study area are counter-balanced by the presence of the Summit Muskeg Preserve, which is an ecologically significant area of regional and provincial import; it is Hamilton-Wentworth's only bog, and one of only a handful in Southwestern Ontario. The study area is an even mix of agricultural land use practices and heavily wooded areas, particularly around the Summit Muskeg Preserve and the property located at 278 Highway 52.

Plate 1: Powerline Road West, looking east (A.S.I., 2025).

Plate 2: Looking west along Powerline Road West towards the rail trail parking lot on Highway 52 (A.S.I., 2025).

Plate 3: Northwest corner of Highway 52 and Powerline Road West (A.S.I., 2025).

Plate 4: View of rail trail parking lot from intersection of Powerline Road West and Highway 52 (A.S.I., 2025).

Plate 5: Summit Station Dairy, looking southwest from Highway 52.(A.S.I., 2025).

Plate 6: Summit Muskeg Preserve looking southeast from Highway 52 (A.S.I., 2025).

Plate 7: Trail crossing over Highway 52, looking southwest (A.S.I., 2025).

Plate 8: Intersection of rail trail and private laneway at 1228 Powerline Road West, looking east (A.S.I., 2025).

Plate 9: Powerline Road East at hydro transmission lines, looking east at fork (A.S.I., 2025).

## 4.2 Identification of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes

Based on the results of the background research and field review, three built heritage resources (B.H.R.s) and five cultural heritage landscapes (C.H.L.s) were identified within the study area. A detailed inventory of known and potential B.H.R.s and C.H.L.s within the study area is presented below in Table 1. See Figure 18 and Figure 19 for mapping that details their location.

Table 1: Inventory of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes within the Study Area

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| C.H.L. 1 | Residential | 1384 Powerline Road West | Potential C.H.L. - Inventoried Property | Two storey, side gable residential unit with brick chimney on western side. Municipal inventory indicates 1850 as an estimated construction date, with the 1875 Tremaine (Figure 3) showing a structure present on the property (City of Hamilton, 2024a). The long laneway, mature trees, and surrounding agricultural fields are characteristic of an early agricultural farmstead in this area.<br><br>This property, along with 1334 Powerline Road West, is historically associated with the Howell family, who were early Loyalist settlers to the area. Several outbuildings are present behind the home, provenance unknown.<br><br>The potential heritage attributes of the property include the residence, driveway, and mature trees. The property has the potential to retain C.H.V.I. for its physical, contextual, and historic value as a nineteenth-century farmhouse associated with the pre-Confederation development of Ancaster Township. | <br>Figure 10: Photograph of residence at C.H.L.1, looking south (A.S.I. 2025). |

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| C.H.L. 2 | Residential and Agricultural | 1341 Powerline Road West | Known C.H.L. – Identified as a Registered non-designated property | This property is located on the north side of Powerline Road West, west of Highway 52. According to information provided by the City of Hamilton, the house on the property was built in 1854 (City of Hamilton, 2024a). The residence is a one-and-a-half storey structure featuring elements of the Classical architectural style. It may be an early log cabin that has been modified over time (City of Hamilton, 2024a).<br><br>The subject residence features a side gable roof, vinyl siding, a central entrance flanked by symmetrical fenestration, and matching windows on the east and west half-storey. An addition appears to have been built on the west side at an unknown date.<br><br>The potential heritage attributes of the property include the residence and agricultural landscape features. The property has the potential to retain C.H.V.I. for its physical, contextual, and historic value as a nineteenth-century farmhouse associated with the pre-Confederation development of Ancaster Township. | <br>Figure 11: Photograph of residence at C.H.L. 2, looking northwards (A.S.I. 2025). |

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| C.H.L. 3 | Municipal Recreation Trail | Hamilton - Brantford Rail Trail, Hamilton, ON | Potential C.H.L. - Identified during background research/field review | The current recreational trails were built on the former Toronto, Buffalo, and Hamilton Railway, which was constructed between 1892-1892. The railway continued to operate until a landslide in the 1980's closed the section between Brantford and Hamilton. After the closure, sections of the former railbed were purchased by the Hamilton and Brantford Conservation Authorities in the 1990s, whereupon they were converted into recreational trails (Adam Burns, 2022).<br><br>As per the Grand River Conservation Authority, "the trails linking Hamilton and Cambridge form Canada's first fully developed, multi-use interurban recreational trail system" (Grand River Conservation Authority, 2020). The only extant remains of the railway are the ruins of a water tower that took water from the bog for the trains. Plaques along the trail also indicate a strong potential for Indigenous history, and that the area surrounding the bog was also used as pasture by local farmers.<br><br>The property has the potential to retain C.H.V.I. for its physical, contextual, and historic value as a late nineteenth-century rail corridor in rural Southern Ontario. Potential heritage attributes include its original alignment in relation to the bog and neighbouring properties, the site of the former water tower, and any remaining physical components of either original rail infrastructure, such as railway ties or industrial slag ballast, or changes to the actual landscape itself through railway embankments and cuttings. | <br>Figure 12: Photograph of trail entrance, looking northeast (A.S.I. 2025). |

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| C.H.L. 4 | Nature Reserve | Summit Muskeg Preserve | Potential C.H.L. - Identified during background research/field review | The Summit Muskeg Preserve, otherwise known of as the Copetown Bog, is a provincially significant ecological feature that was likely formed over 10,000 years ago, and it is Hamilton-Wentworth's only know instance of a naturally forming bog.<br><br>The potential heritage attributes of the property include the presence of a rare and unique "Sphagnum moss, which floats on top of the peat, and unique vegetation assemblages that are rare in southern Ontario", as well as its contextual value to the surrounding area as pasture and as an important water source for the Toronto, Buffalo, and Hamilton Railway (Greenbelt Indigenous Botanical Survey, 2024). | <br>Figure 13: Photograph of Summit Muskeg Preserve, looking northwards (A.S.I. 2025). |

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| C.H.L. 5 | Farmstead | 278 Highway 52 North | Potential C.H.L. - Inventoried Property | Historical farmstead associated with the Richards family, which farmed on both this lot and the lot across Highway 52. Municipal inventory suggests an 1840 construction date, but further research would be needed to confirm (City of Hamilton, 2024a).<br>Existing conditions include a long, treelined, gravel driveway leading towards a home with a t-shaped plan. The structure is likely one-and-a-half storeys based on the roofline, and the farm itself has at least 5 outbuildings, including a silo. The large lot is dominated by agricultural fields, as is the case with neighbouring lots.<br><br>The potential heritage attributes of the property include the residence, agricultural outbuildings, and agricultural landscape features. The property has the potential to retain C.H.V.I. for its physical, contextual, and historic value as a nineteenth-century farmhouse associated with the pre-Confederation development of Ancaster Township. | <br>Figure 14: Photograph of farmscape at C.H.L. 5, looking westwards (A.S.I. 2025). |

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| B.H.R. 1 | Residential | 1350 Powerline Road West | Potential B.H.R. – Identified as an Inventoried Property | As per the municipal heritage inventory, this one-and-a-half storey side gabled structure was potentially first constructed in 1890 (City of Hamilton, 2024a). Twin dormers and a brick chimney are present on the roof, and while the façade is covered in white vinyl, the sides are cut stone blocks. Main entry bears mild Neo-Classical and Georgian features, mainly through slight colonnade-lintel combination and sidelights. Unknown as to whether this is an early feature or a later addition. A small garage is situated behind the house, construction date unknown.<br><br>The potential heritage attributes of the property include the residential structure, and the property has the potential to retain C.H.V.I. for its physical, contextual, and historic value as a late nineteenth-century structure. | <br>Figure 15: Photograph of B.H.R. 1, looking southwards (A.S.I. 2025). |

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| B.H.R. 2 | Residential | 1334 Powerline Road West | Potential B.H.R. – Identified as an Inventoried Property | Located to the west of the Highway 52 – Powerline Road West intersection, the late nineteenth century brick residence sits on a historical farmstead associated with the Howell family.<br><br>The structure retains original window openings, some of which contain early, if not original, window hardware. Most windows have wood sills, with either stone or carved and arched wooden lintels.<br><br>The main construction material is pressed red brick, with yellow-white bricks employed in the quoins, and the structure retains several brick chimneys, which are similarly composed of red and yellow pressed brick. A mix of sloping and steep pitched gables and arched windows support a late nineteenth century Gothic style, yet there exists both interior and exterior evidence that the brick structure was built on the footprint of a much older structure, likely from when the Howell's first settled on the lot in the early 1800's. A brick on the east façade is inscribed with the name T.T Miller and the year 1886, thus supporting a late nineteenth century build date.<br><br>The potential heritage attributes of the property include the residence and surrounding forest, which bears evidence of agricultural use in the form of a cow path, as was discussed with the property owner during a site visit.[2] | <br>Figure 16: Photograph of B.H.R. 2, looking southwards (A.S.I. 2025). |

[2] A Heritage Impact Assessment of 1334 Powerline Road West is being conducted by A.S.I. concurrently to this Cultural Heritage Report. A site visit was conducted on 5 August, 2025 with the owner, which provided valuable insight into the history of both 1334 Powerline Road West and the surrounding area.

| Feature I.D. | Type of Property | Address or Location | Heritage Status and Recognition | Description of Property and Known or Potential C.H.V.I. | Photographs/ Digital Image |
|---|---|---|---|---|---|
| | | | | The property has the potential to retain C.H.V.I. for its physical, contextual, and historic value as a nineteenth-century farmhouse associated with the development of Ancaster Township over time, in part to the early and continued habitation by the Howell family. | |
| B.H.R. 3 | Residential | 1223 Powerline Road East | Potential B.H.R. - Inventoried Property | This lot contains a 1 ½ story residence which, according to municipal inventory records, may have been first constructed in 1850 (City of Hamilton, 2024a). A flat-sloped dormer is present on the roof, and is similar in construction to the twin dormers at 1350 Powerline Road West, and the residence itself is t-shaped with a secondary rear extension. Three outbuildings are present behind the structure, provenance unknown. A large, open yard separates the home from Powerline Road East, and the lot itself backs onto the historical Toronto, Buffalo, and Hamilton railway corridor (Adam Burns, 2022).<br><br>The potential heritage attributes of the property include the residence, outbuildings, and mature trees. The property has the potential to retain C.H.V.I. for its physical, contextual, and historic value as a nineteenth-century farmhouse associated with the pre-Confederation development of Ancaster Township. | <br>Figure 17: Photograph of B.H.R. 3, looking northwards (A.S.I. 2025). |

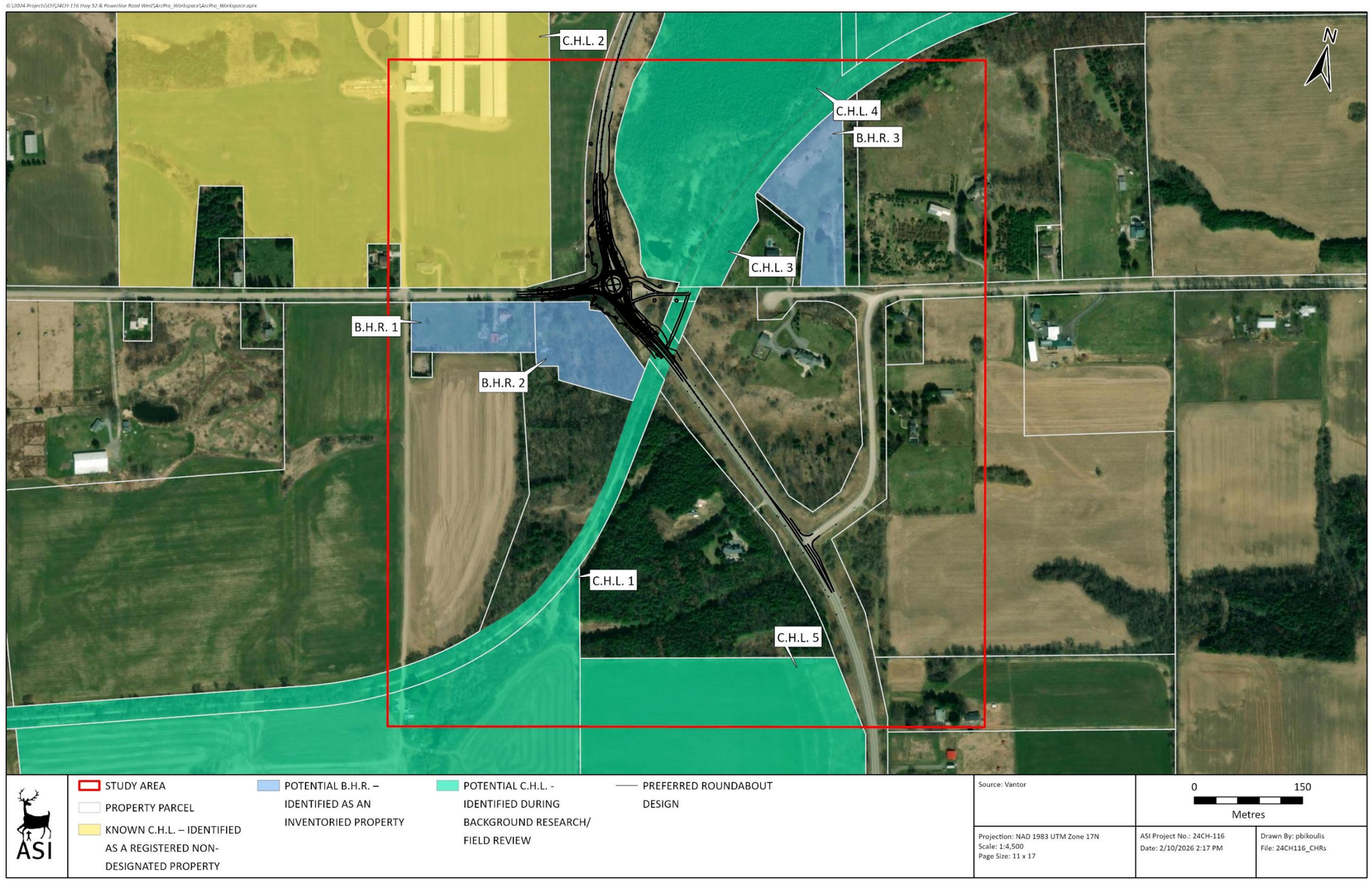


Figure 18: Location of Identified Built Heritage Resources (B.H.R.s) and Cultural Heritage Landscapes (C.H.L.s) in the Study Area (A.S.I. 2026).

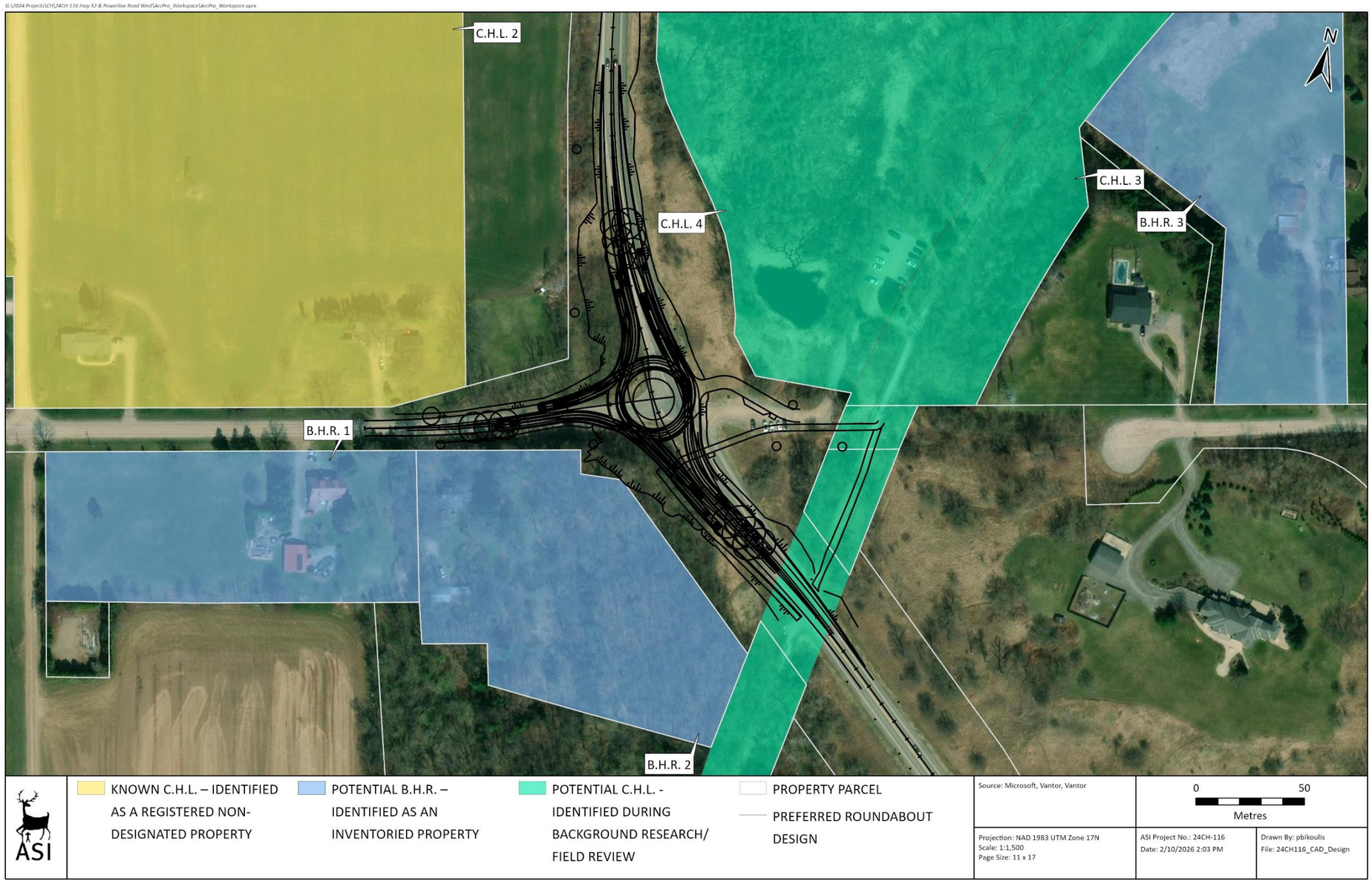


Figure 19: Close-up of preferred roundabout design in relation to Identified Built Heritage Resources (B.H.R.s) and Cultural Heritage Landscapes (C.H.L.s) in the Study Area (A.S.I. 2026).

# 5.0 Preliminary Impact Assessment

The following sections provide more detailed information regarding the proposed project undertaking and analysis of the potential impacts on identified built heritage resources (B.H.R.s) and the cultural heritage landscape (C.H.L.).

The following sections provide more detailed information regarding the proposed project undertaking and analysis of the potential impacts on identified built heritage resources and cultural heritage landscapes.

## 5.1 Description of Proposed Undertaking

The proposed construction activities occurring within the study area consists of the construction of a roundabout at the intersection of Highway 52 and Powerline Road West and the creation of a southbound, left-turning lane onto Powerline Road West from Highway 52. Both endeavours will require minor roadway variances, the relocation of public mailboxes, and temporary adjustments to trail access with proposed future implementation of enhanced trail accessibility.

Mapping showing details of the preferred alignment is provided in

Figure 18 and Figure 19, with the current preferred solution alternative plan included in Appendix A.

## 5.2 Analysis of Potential Impacts

Table 2 outlines the potential impacts on all identified built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s) within the study area.

Table 2: Preliminary Impact Assessment and Recommended Mitigation Measures

| Feature I.D. | Location/Name | Heritage Status and Recognition | Type and Description of Potential/Anticipated Impact | Mitigation Strategies |
|---|---|---|---|---|
| C.H.L. 1 | 1384 Powerline Road West | Potential C.H.L. -Inventoried Property | It is understood that the proposed works will not encroach upon, nor occur adjacent to, the property limits of C.H.L. 1. As such, there are no direct or indirect impacts anticipated. | The proposed design and construction activities related to this project should continue to avoid adverse impacts to identified heritage attributes. |
| C.H.L. 2 | 1341 Powerline Road West | Known C.H.L. – Identified as a Registered non-designated property | It is understood that the proposed works will not encroach upon, nor occur adjacent to, the property limits of C.H.L. 2. As such, there are no direct or indirect impacts anticipated. | The proposed design and construction activities related to this project should continue to avoid adverse impacts to identified heritage attributes. |
| C.H.L. 3 | Hamilton - Brantford Rail Trail, Hamilton, ON | Potential C.H.L. -Identified during background research/field review | It is understood that the proposed works will result in the closure of an approximately 75 metre segment of the current trail alignment as it exists on the north side of Highway 52, roughly 80 metres southeast of the proposed roundabout. Additionally, the proposed solution requires alterations to be made to the existing rail trail parking lot and public mailboxes located on the eastern side of the current intersection. As the proposed works are limited to a relatively small section of the overall C.H.L., and overall access to the rail trail C.H.L. remains open, the impacts to identified heritage attributes are not anticipated to be adverse.<br><br>No additional indirect impacts were identified. | The proposed design and construction activities related to this project should continue to avoid adverse impacts to identified heritage attributes. |

| Feature I.D. | Location/Name | Heritage Status and Recognition | Type and Description of Potential/Anticipated Impact | Mitigation Strategies |
|---|---|---|---|---|
| C.H.L. 4 | Summit Muskeg Preserve | Potential C.H.L. -Identified during background research/field review | It is understood that the proposed works, which include the construction of a roundabout at the intersection of Highway 52 and Powerline Road West and the creation of a southbound, left-turning lane onto Powerline Road West from Highway 52 will be confined to the existing right-of-way adjacent to C.H.L. 4. No direct adverse impacts are anticipated.<br><br>As noted in Table 1, C.H.L. 4 is a demonstrated area of ecological significance, thus potential indirect impacts could include disturbances to topography resulting in grade changes that alters soil composition or drainage patterns that have the potential to adversely affect the muskeg preserve.<br><br>No additional indirect impacts were identified | Construction and staging should be suitably planned to ensure that there are no impacts to C.H.L. 4.<br><br>To reduce or eliminate impacts to the ecological health of the muskeg preserve, suitable ecological mitigation measures should be established by qualified individuals and implemented during construction to ensure their continued ecological health.<br><br>To reduce the potential for indirect impacts, infrastructure and construction activities such as ground disturbance (including grading and excavation work) or the removal of trees/vegetation should be limited to the extent possible adjacent to C.H.L. 4.<br><br>Where vegetation and/or tree removals are required, post-construction rehabilitation should also include re-planting with sympathetic, native plant species. In this respect, consultation with a qualified arborist and with Indigenous groups should be completed to determine the most appropriate plant species. |
| C.H.L. 5 | 278 Highway 52 North | Potential C.H.L. -Inventoried Property | It is understood that the proposed works will not encroach upon, nor occur adjacent to, the property limits of C.H.L. 5. As such, there are no direct or indirect impacts anticipated. | The proposed design and construction activities related to this project should continue to avoid adverse impacts to identified heritage attributes. |
| B.H.R. 1 | 1350 Powerline Road West | Potential B.H.R. – Identified as an Inventoried Property | It is understood that the proposed works will not encroach upon, nor occur adjacent to, the property limits of B.H.R. 1. As such, there are no direct or indirect impacts anticipated. | The proposed design and construction activities related to this project should continue to avoid adverse impacts to identified heritage attributes. |

| Feature I.D. | Location/Name | Heritage Status and Recognition | Type and Description of Potential/Anticipated Impact | Mitigation Strategies |
|---|---|---|---|---|
| B.H.R. 2 | 1334 Powerline Road West | Potential B.H.R. – Identified as an Inventoried Property | It is understood that the proposed works will not encroach upon, nor occur adjacent to, the property limits of B.H.R. 2. As such, there are no direct or indirect impacts anticipated. | The proposed design and construction activities related to this project should continue to avoid adverse impacts to identified heritage attributes. |
| B.H.R. 3 | 1223 Powerline Road East | Potential B.H.R. -Inventoried Property | It is understood that the proposed works will not encroach upon, nor occur adjacent to, the property limits of B.H.R. 3. As such, there are no direct or indirect impacts anticipated. | The proposed design and construction activities related to this project should continue to avoid adverse impacts to identified heritage attributes. |

# 6.0 Results and Mitigation Recommendations

The following section provides a summary of identified cultural heritage landscapes (C.H.L.s) and built heritage resources (B.H.R.s), the results of the preliminary impact assessment, and recommended mitigation where required.

## 6.1 Key Findings

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with a rural land use history dating back to the late eighteenth century, and likely was the site of Indigenous land use stretching back before recorded memory. Based on a review of federal, provincial, and municipal registers, inventories, databases and field review, the following B.H.R.s and C.H.L.s were identified in the study area:

- one known C.H.L.;
- four potential C.H.L.s.; and
- three potential B.H.R.s

Identified B.H.R.s and C.H.L.s are historically, architecturally, and contextually associated with early settler-colonial land use patterns in the City of Hamilton, particularly with regards to the influx of Loyalist settlers to the area from former British colonies in America. Additionally, the presence of the railroad infrastructure is indicative of the areas continued importance during the mid-to-late nineteenth century.

## 6.2 Results of Preliminary Impact Assessment

The preferred design alternative is not anticipated to result in direct adverse impacts to any of the identified B.H.R.s or C.H.L.s., with only minor potential indirect impacts identified with respect to the ecological integrity of C.H.L. 4, as outlined in Table 2, above.

## 6.3 Recommendations

Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified B.H.R.s and the C.H.L. Avoidance measures may include, but are not limited to: erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified B.H.R.s, etc. should all be considered.

2. Where feasible, the proposed construction activities should be designed in a manner that limits potential indirect impacts to C.H.L. 4. The removal of trees and vegetation within the right-of-way should be limited where possible adjacent to the C.H.L. Where tree removals are required, post-construction rehabilitation with sympathetic plantings should be implemented.

3. Should future work require an expansion of the study area then a qualified heritage consultant with recent and relevant experience should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.

4. This report should be submitted by the proponent to heritage staff at the City of Hamilton and the Ministry of Citizenship and Multiculturalism for review and comment, along with any other local heritage stakeholders that may have an interest in this project.

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# Appendix A- Qualified Persons Involved in the Project

**Lindsay Graves, M.A., C.A.H.P.**
**Senior Cultural Heritage Specialist, Manager, Infrastructure - Cultural Heritage**

The Senior Project Manager for this Cultural Heritage Report is **Lindsay Graves** (M.A., Heritage Conservation), Senior Cultural Heritage Specialist and Manager of Infrastructure, Cultural Heritage Practice Area. She was responsible for: overall project scoping and approach; development and confirmation of technical findings and study recommendations; application of relevant standards, guidelines and regulations; and implementation of quality control procedures.

Lindsay is academically trained in the fields of heritage conservation, cultural anthropology, archaeology, and collections management and has over 15 years of experience in the field of cultural heritage resource management. This work has focused on the assessment, evaluation, and protection of built heritage resources and cultural heritage landscapes. Lindsay has extensive experience undertaking archival research, heritage survey work, heritage evaluation and heritage impact assessment. She has also contributed to cultural heritage landscape studies and heritage conservation plans, led heritage commemoration and interpretive programs, and worked collaboratively with multidisciplinary teams to sensitively plan interventions at historic sites/places. In addition, she is a leader in the completion of heritage studies required to fulfil Class Environmental Assessment processes and has served as Project Manager for over 100 heritage assessments during her time at Archaeological Services Inc. Lindsay is a member of the Canadian Association of Heritage Professionals.

**Robert Flewelling, M.A.**
**Technical Writer & Researcher | Indigenous Engagement Administrator - Cultural Heritage**

Serving as a Technical Writer and Researcher on this project is **Robert Flewelling**, with the primary responsibilities of conducting background research, contributing towards technical report writing, and engaging in field work. Robert received both

his B.A. and M.A. from the University of Guelph, where he specialized in the history of Crown-Indigenous Relations in Upper Canada and the Grand River Valley in the nineteenth century. Following his studies, Robert worked with both the Guelph Civic Museum and City of Guelph, Heritage Planning on a variety of projects spanning from Part IV Designations to museum exhibitions.

**Michael Wilcox, P.h.D.**
**Historian – Cultural Heritage**

An additional report writer for this project is **Michael Wilcox** (P.h.D., History), who is a historian within the Cultural Heritage Practice Area. He was responsible for preparing and contributing to background historical research, reviewing existing heritage inventories, and technical reporting for this project. His current responsibilities focus on identifying and researching historical documents as well as background research, assessment, and evaluation of built heritage resources and cultural heritage landscapes in Ontario. He has over a decade of combined academic and workplace experience in conducting historical research and crafting reports, presentations, articles, films, and lectures on a wide range of Canadian history topics.

# Appendix B: Plan and Profile for Preliminary Grading Limit of the Preferred Solution, Highway 52

HIGHWAY 52

POWERLINE ROAD W

HAMILTON BRANTFORD RAIL TRAIL

HIGHWAY 52

PROP. ROAD CL

EX. ROAD CL

-0.44%

-0.65%

0.73%

STA 12+408.16
ELEV 240.273

STA 12+463.32
ELEV 239.536

PVI STA = 12+715.54
PVI ELEV = 238.58
LOW POINT STA = 12+714.03
LOW POINT ELEV = 238.68
A1 = -1.38
A2 = 40.0
L=55.34m VC

BVCS: 12+687.871
BVCE: 238.741

EVCS: 12+743.212
EVCE: 238.782

STA 12+750.75
ELEV 238.831

248
246
244
242
240
238
236
234
232

12+380 12+390 12+400 12+410 12+420 12+430 12+440 12+450 12+460 12+470 12+480 12+490 12+500 12+510 12+520 12+530 12+540 12+550 12+560 12+570 12+580 12+590 12+600 12+610 12+620 12+630 12+640 12+650 12+660 12+670 12+680 12+690 12+700 12+710 12+720 12+730 12+740 12+750

R.J. Burnside & Associates Limited

web www.burnside.com

PLAN AND PROFILE
HIGHWAY 52

| | | | |
|---|---|---|---|
| DRAWN BY: | R.B. | SCALE: | H 1:500 V 1:100 |
| DESIGNED BY: | S.P. | PROJECT No. | 058803 |
| CHECKED BY: | S.P. | DRAWING No. | |
| DATE: | 2025-12-09 | SHEET No. | |

File: C:\0058\03\0058030\Autocadd\Plan Profile Drawings\PP-HWY52.dwg Plotted: 10:53 AM

# Cultural Heritage Impact Assessment

# 1334 Powerline Road West

# City of Hamilton, Ontario

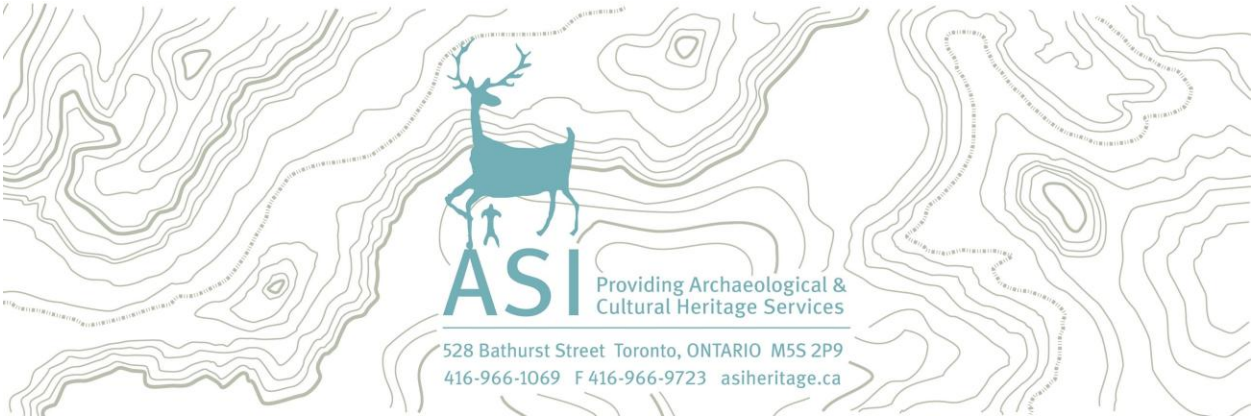
**Final Report**

Prepared for:

**R.J. Burnside & Associates Limited**
1465 Pickering Parkway, Suite 200
Pickering, ON L1V 7G7

Archaeological Services Inc. File: 24CH-116

September 2025 (Updated February and May 2026)



# Executive Summary

Archaeological Services Inc. was contracted by R.J. Burnside & Associates Limited to conduct a Cultural Heritage Impact Assessment (C.H.I.A.) for the property at 1334 Powerline Road West in the City of Hamilton, Ontario. The C.H.I.A. is being undertaken as part of the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment. The subject property, which is identified as an Inventoried Property by the City of Hamilton, consists of a wood-framed, brick-clad residence, outbuilding, gravel driveway, and wooded areas. As the proposed intersection improvements have the potential to impact the subject property, and as stated in the Request for Proposal, a C.H.I.A. is required to evaluate the cultural heritage value of the property. Should it meet the criteria outlined in Ontario Regulation 9/06 of the *Ontario Heritage Act*, the C.H.I.A. will provide an assessment of how the proposed intersection will impact the property's cultural heritage value. The C.H.I.A. follows the City of Hamilton's Cultural Heritage Impact Assessment Guidelines (City of Hamilton, 2018a).

This report includes an evaluation of the cultural heritage value of the property as determined by the criteria in Ontario Regulation 9/06 of the *Ontario Heritage Act*. This evaluation determined that the property does not have design and physical, historical and associative, or contextual value. As such, an impact assessment and mitigation recommendations are unnecessary.

The following recommendations are proposed:

1. This report should be submitted by the proponent to heritage staff at the City of Hamilton for their information.

# Report Accessibility Features

This report has been formatted to meet the Information and Communications Standards under the *Accessibility for Ontarians with Disabilities Act*, 2005 (A.O.D.A.). Features of this report which enhance accessibility include: headings, font size and colour, alternative text provided for images, and the use of periods within acronyms. Given this is a technical report, there may be instances where additional accommodation is required in order for readers to access the report's information. If additional accommodation is required, please contact Annie Veilleux, Manager of the Cultural Heritage Practice Area at Archaeological Services Inc., by email at aveilleux@asiheritage.ca or by phone 416-966-1069 ext. 255.

# Project Personnel

- **Senior Project Manager**: Lindsay Graves, M.A., C.A.H.P., Manager, Infrastructure, Senior Cultural Heritage Specialist - Cultural Heritage
- **Project Coordinator:** Jessica Bisson, B.F.A. (Hon.), Cultural Heritage Technician, Division Coordinator - Cultural Heritage
- **Project Manager**: Lindsay Graves
- **Field Review**: Michael Wilcox, P.h.D., Historian - Cultural Heritage and Robert Flewelling Cultural Heritage Technician, Technical Writer and Researcher - Cultural Heritage
- **Report Production**: Michael Wilcox
- **Graphics Production**: Michelle Nguyen, B.A., Archaeologist, G.I.S. Technician - Operations
- **Report Reviewer(s)**: Lindsay Graves and John Sleath, M.A., Cultural Heritage Specialist, Project Manager - Cultural Heritage

# Glossary

**Built Heritage Resource (B.H.R.)**
Definition: "…a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community" (Ministry of Municipal Affairs and Housing, 2024, p. 40).

**Cultural Heritage Landscape (C.H.L.)**
Definition: "…a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest 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).

**Significant**
Definition: With regard to cultural heritage and archaeology resources, significant means "resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the *Ontario Heritage Act*" (Ministry of Municipal Affairs and Housing, 2024, p. 52).

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# 1.0 Introduction

Archaeological Services Inc. (A.S.I.) was contracted by R.J. Burnside & Associates Limited to conduct a Cultural Heritage Impact Assessment (C.H.I.A.) for the property at 1334 Powerline Road West in the City of Hamilton, Ontario. The C.H.I.A. is being undertaken as part of the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment (M.C.E.A.). The subject property, which is identified as an Inventoried Property by the City of Hamilton, consists of a wood-framed, brick-clad residence, outbuilding, gravel driveway, and wooded areas. As the proposed intersection improvements have the potential to impact the subject property, and as stated in the Request for Proposal, a C.H.I.A. is required to evaluate the cultural heritage value of the property. Should it meet the criteria outlined in Ontario Regulation 9/06 of the *Ontario Heritage Act*, the C.H.I.A. will provide an assessment of how the proposed intersection will impact the property's cultural heritage value. The C.H.I.A. follows the City of Hamilton's Cultural Heritage Impact Assessment Guidelines (City of Hamilton, 2018a).

## 1.1 Project Overview

The Highway 52 and Powerline Road West Intersection Improvements project, being completed under Schedule C of the M.C.E.A. process, is an examination of the feasibility of implementing a roundabout at the intersection of Highway 52 and Powerline Road West, relative to other transportation improvement options.

The M.C.E.A.'s key goal is improved public safety for all road users, including drivers, pedestrians, and cyclists. As such, the study seeks to determine the best path forward "to alleviate operational issues at the intersection, maintain or improve community connectivity, including active transportation, and mitigate impacts to traffic and truck circulation and goods movement to address long-term transportation needs" (City of Hamilton, 2025b). In addition to the intersection realignment, new rumble strips, lighting, and signage are being

considered. Also under consideration for this project is a review of the intersection of Highway 52 and Powerline Road East, approximately 430 metres south of the above-named intersection, as well as the trail crossing associated with the Hamilton-Brantford Rail Trail, located south of the intersection (City of Hamilton, 2024b, 2025b).

The preferred alternative has been determined to be a three-legged roundabout that is located slightly west of the current intersection. This alternative has very good visibility to and from Powerline Road West as the north approach from Highway 52 has a long sight distance. Furthermore, this option, when taken collectively, presents the best approach to address natural and socio-cultural environmental concerns, as well as financial and technical factors (City of Hamilton, 2025b).

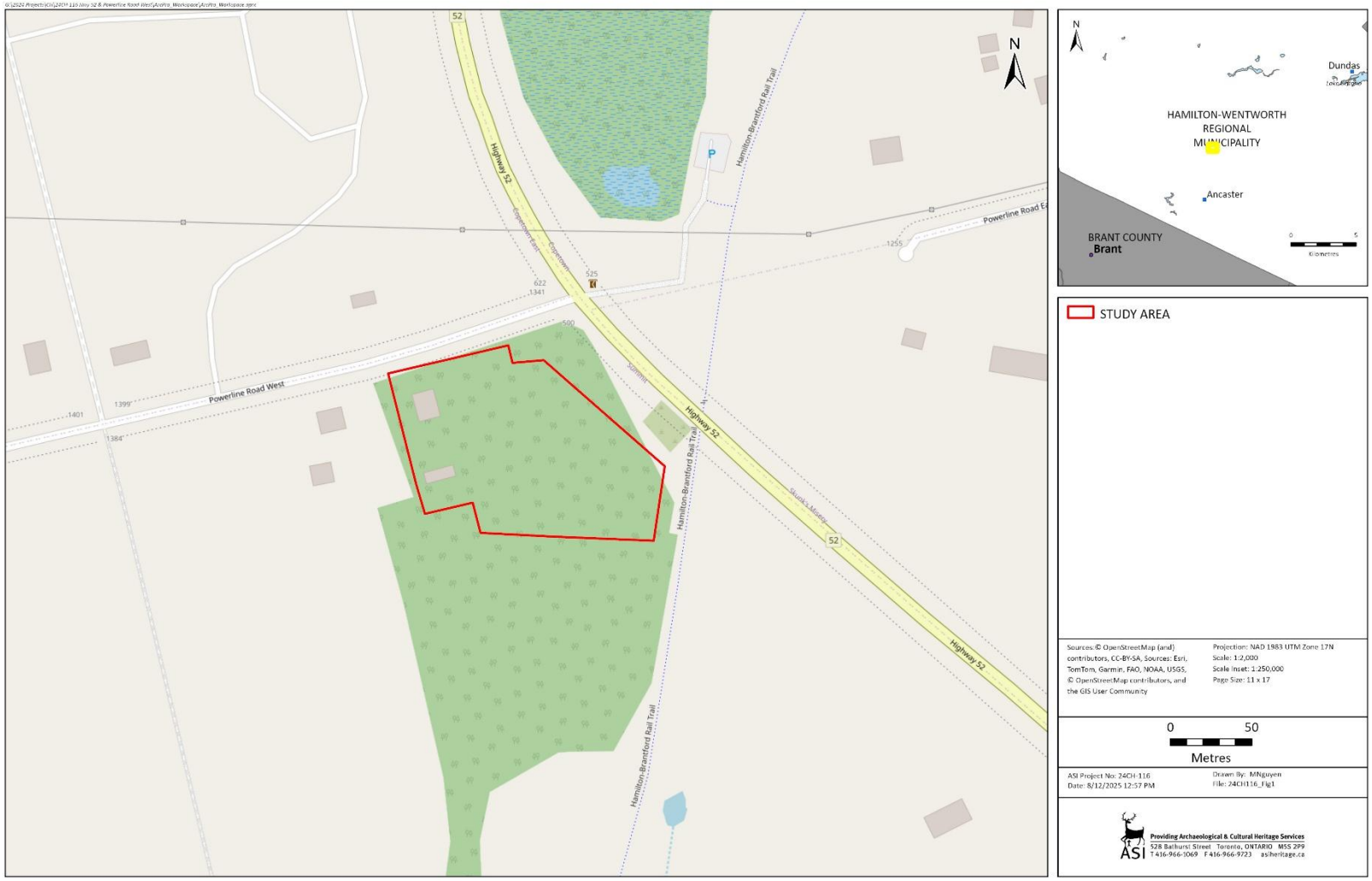


Figure 1: Location of the subject property at 1334 Powerline Road West. Source: (c) Open Street Map contributors, Creative Commons n.d.

## 1.2 Legislation and Policy Context

The C.H.I.A. for 1334 Powerline Road West is being conducted within the context of the following documents:

- *Ontario Heritage Act* (Ontario Heritage Act, R.S.O. c. O.18 [as Amended in 2024], 1990);
- *Ontario Heritage Tool Kit* (Ministry of Citizenship and Multiculturalism, 2025); and,
- *Planning Act* (Planning Act, R.S.O. 1990, c. P.13, 1990) and the 2024 *Provincial Planning Statement* (Ministry of Municipal Affairs and Housing, 2024).

## 1.3 Approach to Heritage Impact Assessment Reports

This C.H.I.A. is in accordance with the City of Hamilton's Rural Official Plan (City of Hamilton, 2018b) and its Cultural Heritage Impact Assessment Guidelines (City of Hamilton, 2018a). As such, it includes the following components:

- A general introduction, including the location and brief description of the subject property, project overview, legislation and policy context, and approach to C.H.I.A.s;
- A summary of engagement with relevant agencies and other stakeholders;
- A description of the property under evaluation in this report, as well as its heritage status;
- A discussion of the property's historical or associative value (including historical mapping), physical and design value, and contextual value, as well as representative photographs of the property and a comparative analysis;
- A cultural heritage resource evaluation guided by the *Ontario Heritage Act* criteria;
- A description of the proposed development;

- An impact assessment;
- Recommendations for mitigating impacts to the property and ensuring its conservation; and,
- A list of resources consulted for this report.

A C.H.I.A addresses impacts of a proposed development or site alteration on built heritage resources (B.H.R.s) or cultural heritage landscapes (C.H.L.s). C.H.I.A.s are used to determine the magnitude of these potential impacts and provide recommendations for their avoidance, wherever possible, or their mitigation. C.H.I.A.s are to be completed by qualified heritage professionals who will, through historical research and field work, identify the B.H.R. or C.H.L.'s cultural significance and heritage attributes and, where one is not already in existence, prepare a formal Statement of Significance. Following a thorough review of the proposed development or site alteration plan to measure its potential impacts to the B.H.R. or C.H.L., the C.H.I.A. will issue recommendations on how these impacts may be avoided, mitigated, and how the site may best be conserved. Strategies will then be suggested for their implementation and ongoing monitoring as the development or site alteration progresses.

# 2.0 Engagement

The following section outlines the community consultation that was undertaken to gather and review information about the subject property during preparation of this Cultural Heritage Impact Assessment (C.H.I.A.).

## 2.1 Relevant Agencies and/or Stakeholders Engaged

The following stakeholders were contacted with inquiries regarding the heritage status and for information concerning the subject property and any additional adjacent built heritage resources or cultural heritage landscapes:

- Cultural Heritage Staff, City of Hamilton (email communications 9 and 10 July and 12 and 13 August 2025). Email correspondence requested any documentation the City had related to the subject property's heritage status. A response indicated that the City of Hamilton does not have any

reports or assessments related to the subject property and noted that they do not have any further heritage concerns about this property or adjacent properties. A follow-up email requested recommendations for rural Gothic Revival farmhouses in Hamilton, and a list was provided.

- The Ministry of Citizenship and Multiculturalism (email communications 9 and 11 July 2025). Email correspondence confirmed that the subject property nor any adjacent properties have been designated by the Minister, and the Ministry does not have any records of a Provincial Heritage Property within or adjacent to the study area.
- The Ontario Heritage Trust (O.H.T.) (email communications 9 and 10 July 2025). A response indicated that the O.H.T. neither owns nor protects via conservation easement the subject property or any adjacent properties, and that the O.H.T. does not have any heritage plaques within or adjacent to the subject property.
- Saman Goudarzi, Cartographic Resources Librarian, Lloyd Reeds Map Collection, McMaster University Library (email communications 22 and 23 July 2025). A request was made for maps covering the subject property for the period between 1875 and 1916. A response indicated that none were available for review.
- Ancaster Township Historical Society (email communication 8 August 2025). A request was made for information related to the history of the subject property and in particular, information about the original owner (William Howell) and mason (T.T. Miller). No response was provided by the time of report submission.

## 2.2 Public Meetings/Public Consultation

Two Public Information Centres (P.I.C.s) related to the project have taken place. The first P.I.C. occurred on 8 April 2025 at the Copetown Community Centre and its purpose was to provide an overview of the Municipal Class Environmental Assessment process, provide information about the study area, present six alternative solutions and the preferred alternative, and obtain feedback about the preferred alternative (City of Hamilton, 2025a). The second P.I.C. occurred on 21 October 2025 and it outlined three alternative design options for the

preferred alternative and explained how the preferred alternative was selected (City of Hamilton, 2025b). When the Notice of Study Completion is finalized in the Winter of 2026, a 30-day public review period will begin allowing further public engagement about the project prior to construction.

## 2.3 Agency Review

The draft report was submitted to municipal heritage staff at the City of Hamilton in October 2025 and February 2026 for review and comment; no comments on the report were received following their review.

The draft report was submitted to the Ministry of Citizenship and Multiculturalism in April 2026 for review and comment; no comments on the report were received following their review.

This C.H.I.A. will be submitted to the City of Hamilton for their information.

## 2.4 Indigenous Community Engagement

The City of Hamilton is undertaking Indigenous community engagement for this project. The list of communities notified includes Six Nations of the Grand River, Mississaugas of the Credit First Nation, Huron Wendat First Nation at Wendake, Haudenosaunee Development Institute, and the Metis Nation of Ontario.

At the time of final report preparation (May 2026), no information regarding the subject property had been received.

# 3.0 Description of the Property

The following section provides a description of the subject property.

## 3.1 General Description of Property

The subject property is located at the southwest corner of the intersection of Highway 52 and Powerline Road West in Hamilton (Figure 2). The property consists of a one-and-a-half storey wood-framed, brick-clad residence in the

northwest corner, an outbuilding near the southwest corner, a gravel driveway along the western boundary, and wooded areas to the east of the buildings and driveway, extending all the way to the southern and eastern boundaries. The southeastern portion of the property abuts the Hamilton-Brantford Rail Trail along the former railway corridor of the Toronto, Hamilton and Buffalo Railway.

Figure 2: Aerial image of the subject property at 1334 Powerline Road West (Google Maps)

## 3.2 Heritage Recognitions

The subject property is identified as an Inventoried Property by the City of Hamilton (City of Hamilton, 2024a). There are no provincial or federal heritage recognitions.

## 3.3 Adjacent Lands

In the Rural Hamilton Official Plan, “adjacent” is defined as contiguous to or within 50 metres of a “protected heritage property” (City of Hamilton, 2018b).

As such, for the purposes of this C.H.I.A., there are two properties that are to be considered adjacent to the subject property, namely 1350 Powerline Road West, adjacent to the subject property's western border, which is identified as an Inventoried Property, and 1341 Powerline Road West, across the road from the subject property's northern border, which is identified as a Registered (Non-Designated) Property by the City of Hamilton (email communication with heritage planning staff, 10 July 2025).

# 4.0 Research

This section provides: the results of primary and secondary research; a discussion of historical or associative value; a discussion of physical and design value; a discussion of contextual value; and results of comparative analysis.

## 4.1 List of Key Sources and Site Visit Information

The following section describes the sources consulted and research activities undertaken for this report.

### 4.1.1 Key Sources

Background historical research, which includes consulting primary and secondary source documents, photos, and historic mapping, was undertaken to identify early settlement patterns and broad agents or themes of change in the study area. In addition, online historical research was undertaken through the websites of the following libraries and archives to build upon information gleaned from other primary and secondary materials:

- Library and Archives Canada;
- Hamilton Public Library; and,
- Lloyd Reeds Map Collection at Mills Memorial Library, McMaster University.

Available federal, provincial, and municipal heritage inventories and databases were also consulted to obtain information about the property. These included:

- The City of Hamilton's Cultural Heritage Resources mapping tool (City of Hamilton, 2024a);
- Hamilton's Heritage, Volume 1 (City of Hamilton, 2002);
- Hamilton's Heritage, Volume 5 (City of Hamilton, 2005);
- The *Ontario Heritage Act Register* (Ontario Heritage Trust, 2025);
- The *Places of Worship Inventory* (Ontario Heritage Trust, n.d.b);
- The inventory of Ontario Heritage Trust easements (Ontario Heritage Trust, n.d.a);
- The Ontario Heritage Trust's *An Inventory of Provincial Plaques Across Ontario*: a PDF of Ontario Heritage Trust Plaques and their locations (Ontario Heritage Trust, 2023);
- Parks Canada's *Directory of Federal Heritage Designations*, an on-line database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses (Parks Canada, n.d.b); and
- Parks Canada's *Historic Places* website, an on-line register that provides information on historic places recognized for their heritage value at all government levels (Parks Canada, n.d.a).

Previous consultant reports associated with potential above-ground cultural heritage resources and archaeological resources within and/or adjacent and/or in the vicinity of the subject property in the City of Hamilton, Ontario included the following:

- Ancaster Elevated Water Reservoir Municipal Class Environmental Assessment, City of Hamilton, Ontario (A.S.I., 2018);
- Stage 1 & 2 Archaeological Assessment of 104 Paddy Greene Road, Part of Lot 33, Concession 2, Geographic Township of Ancaster, Wentworth County, Now in the City of Hamilton (A.S.I., 2013); and,
- Stage 1 & 2 Archaeological Assessment – Corrosion Protection Program within the MLV 1301 Pipeline Section, Regional Municipality of Hamilton-Wentworth, Ontario (A.S.I., 2005).

A full list of references consulted can be found in Section 8.0 of this document.

### 4.1.2 Site Visit

A site visit to the subject property was conducted on 5 August 2025 by Michael Wilcox and Robert Flewelling, both of A.S.I. The site visit included photographic documentation of both the exterior and interior of the residence on the subject property as well as access to the entire property. Permission to Enter (P.T.E.) was granted by the homeowners, Edzard and Wendy Gruppe, to allow A.S.I. to access the property and residence.

## 4.2 Discussion of Historical or Associative Value

Historically, the property was located on parts of Lots 29 and 30, Concession 2 in the Township of Ancaster, County of Wentworth. It is now located at 1334 Powerline Road West in the City of Hamilton.

### 4.2.1 Summary of Early Indigenous History in Southern Ontario

Southern Ontario has been occupied by human populations since soon after the retreat of the Laurentide glacier more than 13,000 years before present (B.P.) Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 11,000 B.P., the environment had progressively warmed and populations now occupied less extensive territories (Ellis, 2013; Ellis & Deller, 1990; Ferris, 2013; Stewart, 2013).

Between approximately 12,000 and 6,000 B.P., the Great Lakes and Lake Simcoe experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 B.P.; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes

region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 B.P. and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Brown, 1995, p. 13; Ellis et al., 1990, 2009).

For millennia, Indigenous populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 B.P. and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 B.P., evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 B.P. there is evidence for maize in southern Ontario, and it is thought that initially maize only supplemented people's diet. There is earlier evidence for maize in central New York State by 2,300 B.P., and once further cooking residue analysis is conducted on contemporary ceramic vessels from Ontario, the same evidence may be found (Birch & Williamson, 2013, pp. 13–15). As is clearly evident in the detailed ethnographies of Anishinaabek populations, winter was a period during which some families would disperse from the larger group as it was easier to sustain smaller populations. It is generally understood that these populations were Algonquian speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 B.P., lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (C.E.), the communal site is replaced by the village focused on horticulture. Seasonal dispersal of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 C.E., this episodic community dispersal was no longer practised and populations now occupied sites throughout the year (Dodd et al., 1990, p. 343). From 1450-1649 C.E. this process continued with the coalescence of these small villages into larger communities (Birch & Williamson, 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed.

By 1600 C.E., Huron-Wendat communities within Simcoe County had formed the confederacy encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity between the Haudenosaunee and the Huron-Wendat (and their Algonquian allies such as the Nipissing and Odawa) led to their dispersal from southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. By the 1690s however, the Anishinaabeg were the only communities with a permanent presence in southern Ontario. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there was no interruption to Anishinaabeg control and use of southern Ontario.

## 4.3 Treaties and Traditional Territories

The following section provides a discussion of the Treaties and traditional territories within which the study area is situated.

### 4.3.1 1701 Deed from the Five Nations to the King, of their Beaver Hunting Ground

In the late seventeenth century, the Haudenosaunee of the Five Nations Confederacy residing in upstate New York and Southern Ontario were dealing with military engagements and encroachment from French forces as well as the movement of the Mississaugas and other Anishinaabeg peoples into the area, all of which contributed to fears among the Confederacy about the loss of their beaver hunting grounds (Williams & Nelson, 1995). To address their concerns, the Confederacy met with the Province of New York's acting colonial governor John Nanfan, as well as a British representative on behalf of the Indian Affairs Department, Robert Livingston, in July 1701. The Confederacy hoped to urge the English into action in their disputes with the French and their Indigenous allies. The British hoped that an alliance with the Haudenosaunee would continue to ensure a strong trading relationship, keep French efforts to control the fur trade in check, and assert British control deeper into North America (Brandao & Starna, 1996; Jamieson, 2013).

Ultimately, the Deed from the Five Nations to the King, sometimes referred to as the Treaty of Fort Albany, the Nanfan Treaty, the Albany Deed, or Livingston's Deed, was signed by representatives of the British Crown and the Haudenosaunee Confederacy in 1701 (Williams & Nelson, 1995). The Deed established the Beaver Hunting Grounds as a vast territory spanning much of the lands surrounding the lower Great Lakes, including in Southern Ontario, as well as into the Ohio River Valley (Jamieson, 2013).

There has been significant debate about the terms of the agreement. The Six Nations of the Grand River assert that it is a valid treaty that recognized the Confederacy's ownership of and access to the natural resources within the Beaver Hunting Grounds, while also receiving the Crown's support and protection (Six Nations of the Grand River, 2020). Others, though, note that while the Haudenosaunee fished and hunted in Southern Ontario in the late seventeenth century, these lands were not under their authority at the time and as such, they could not negotiate a formal treaty with the British Crown for this territory (Calverley, 2002; Jennings, 1984; Schmalz, 1984). Research indicates that the British did not formally recognize the agreement, and currently neither the Canadian government nor the British Crown recognize the 1701 Deed as a treaty.

### 4.3.2 Treaty 3 (Between the Lakes Purchase)

The subject property is located within the territory covered by Treaty #3, the Between the Lakes Purchase (1784/1792).

Following the American Revolutionary War (1775-1783), the British Crown needed to find lands on which to settle United Empire Loyalists, including approximately 2,000 members of the Six Nations confederacy who had fought alongside British troops. Led by Sir Frederick Haldimand who was the governor of Quebec at that time, the Crown was initially planning on providing lands for Loyalist settlers in Quebec and Southeastern Ontario, including providing land in the Bay of Quinte for Six Nations refugees. This was not suitable for many of the members of Six Nations and a contingent of approximately 1,800 community

members, led by Chief Joseph Brant, requested land north of Lake Erie along the Grand River. Brant felt that the location in the Bay of Quinte was too isolated and that his followers could be better served by being closer to the Six Nations communities that chose to remain in the United States in western New York (Surtees, 1984, p. 21).

Recognizing that, under the terms of the Royal Proclamation of 1763, the land needed to be purchased prior to settlement, Colonel John Butler was sent to negotiate with the Mississaugas of the Credit for lands east of Lake Ontario and north of Lake Erie. On May 22, 1784, the Mississaugas of the Credit agreed to cede approximately 3,000,000 acres (1,214,057 hectares) of land containing all or part of Brant, Elgin, Middlesex, Oxford, and Wellington Counties as well as the Regions of Haldimand-Norfolk, Halton, Hamilton-Wentworth, Niagara, and Waterloo. In exchange for these lands, the Mississaugas received £1180.74 worth of trade goods (Crown-Indigenous Relations and Northern Affairs, 2016; Surtees, 1984). Of the 3,000,000 acres (1,214,057 hectares), approximately 550,000 acres (222,577 hectares) was set aside for the settlement of Six Nations people.

However, due to uncertainties with the description of the lands in the original surrender, Treaty 3 was renegotiated on December 7, 1792, to clarify what was ceded. This largely revolved around the northern boundary of the Treaty area, and particularly the area set aside for Six Nations settlement along the Grand River. The signees on the side of the British included Lieutenant Governor John Graves Simcoe, John Butler, Robert Kerr, Peter Russell, John McGill, and Davie William Smith. The signees on the side of the Mississauga included Chiefs Wabakayne, Wabanip, Kautabus, Wabaniship and Mottotow (Crown-Indigenous Relations and Northern Affairs, 2016; Mississaugas of the Credit First Nation, 2017; Surtees, 1984).

The original text stipulated that the north-west boundary of the parcel was an imaginary line between Burlington Bay and the Thames River, which is inconsistent with the geography of the area. The boundaries of the parcel were corrected to create a polygon encompassing the Niagara peninsula up to

Burlington Bay and then up north to the present-day town of Arthur then south to the present-day town of Woodstock to finally meet Lake Erie at Port Bruce. Treaty 3 lands exclude a corridor along the Grand River set aside for Six Nations (Crown-Indigenous Relations and Northern Affairs, 2016; Native Land Digital, 2018).

## 4.4 Historical Euro-Canadian Township Survey and Settlement

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes continued the use of existing Indigenous trails that typically followed the highlands adjacent to various creeks and rivers (A.S.I., 2006). Early European settlements occupied similar locations as Indigenous settlements as they were generally accessible by trail or water routes and would have been in locations with good soil and suitable topography to ensure adequate drainage.

Throughout the period of initial European settlement, Indigenous groups continued to inhabit Southern Ontario, and continued to fish, gather, and hunt within their traditional and treaty territories, albeit often with legal and informal restrictions imposed by colonial authorities and settlers. In many cases, Indigenous peoples acted as guides and teachers, passing on their traditional knowledge to Euro-Canadian settlers, allowing them to sustain themselves in their new homes. Indigenous peoples entered into economic arrangements and partnerships, and often inter-married with settlers. However, pervasive and systemic oppression and marginalization of Indigenous peoples also characterized Euro-Canadian colonization, with thousands being displaced from their lands, denied access to traditional and treaty hunting, fishing, and collecting grounds, and forced to assimilate with Euro-Canadian culture through

mandatory attendance at Day and Residential Schools (Ray, 2005; Rogers & Smith, 1994).

### 4.4.1 Township of Ancaster

Historically, the property is located in the former Township of Ancaster, County of Wentworth, on parts of Lots 29 and 30, Concession 2.

The land within Ancaster Township was acquired by the British from the Mississaugas in 1784. The first township survey was undertaken in 1793, and the first Euro-Canadian settlers occupied their land holdings two years later. The township is said to have been named after a town in Lincolnshire, England. Ancaster was one of the largest townships at the Head-of-the-Lake and was quickly settled due to the vast expanse of good land suitable for farming. Ancaster was initially settled by disbanded soldiers, mainly Butler's Rangers, and other Loyalists following the end of the American Revolutionary War. In 1805, Boulton noted that this township contained both excellent and indifferent soils. By the 1840s, the township was noted for its fine farms (Armstrong, 1985; Boulton, 1805; Smith, 1846).

In the second half of the nineteenth century, the township was populated by several industries. By 1875, Ancaster Township was famous for mineral springs, the waters from which were considered therapeutic and medicinal. Ancaster remained a rural township until the mid-twentieth century, when housing subdivision construction began to take up farmland and increase the population (Mika & Mika, 1977). In 1974, the Township of Ancaster, and various hamlets therein, was absorbed by the Town of Ancaster and became part of the new Regional Municipality of Hamilton-Wentworth. Then, in 2001, the Town of Ancaster amalgamated with surrounding communities, including Dundas, Flamborough, Glanbrook, Hamilton, and Stoney Creek to form the new and expansive City of Hamilton.

### 4.4.2 Historical Chronology and Setting of the Subject Property

The following provides a brief overview of the historical chronology of the subject property. It includes a history of the people who lived on or owned the property, as provided in available sources, as well as a mapping review. It is based on a variety of primary and secondary source materials, including maps, newspapers, census data, and abstract indexes.

The subject property is located on part of the former northeast corner of Lot 29 and northwest corner of Lot 30 in the Second Concession of Ancaster Township, Wentworth County. The residence on the property is located on Lot 29, and as such, most of the historical chronology outlined below relates to that lot. The crown patent for 200 acres on Lot 29 was allotted to the Honourable Robert Hamilton in 1804 (O.L.R.A., n.d.). It appears that John Howell acquired the subject property prior to 1817 (O.L.R.A., n.d.). Members of the Howell family continued to own the subject property for decades thereafter. John Howell (1785-1849) was born in New Jersey in the United States and married Rachel (nee Kitchen), also born in New Jersey, in the early nineteenth century. It is unknown when they arrived in what was then Upper Canada, though it was likely prior to 1812, as all their known children were born in Ancaster between 1812 and 1833. No information about any land developments on the subject property from the 1820s to the 1850s was uncovered. However, it is known that John died in 1849 and Rachel in 1850 (Buschlen, 2006).

By 1851, it is probable that their son, William Howell (1821-1898), was the owner of the northern half (100 acres) of Lot 29 and the northern-most 50 acres of Lot 30 (O.L.R.A., n.d.). The 1851 census notes that William Howell was a 31-year-old farmer married to 27-year-old Mary (1825-1907) and the couple had three children and two servants living with them in a one-storey frame house in Ancaster Township (Library and Archives Canada, 1851). The 1859 map (Figure 4) shows Howell as the owner of the subject property, though it is unknown where exactly the one-storey frame house was located.

The 1861 census continues to identify William and Mary Howell as the owners of Lot 29. They occupied a one-and-a-half storey frame dwelling on the lot, along with their seven children and one 18-year-old woman named Hannah Robinson. William was identified as a 40-year-old farmer. Of the 210 acres he owned, 170 acres was under cultivation, with 157 acres under crops, 10 acres under pasture, and three acres under orchards or gardens. The other 40 acres were classified as being under wood or wild. The farm yielded wheat, barley, rye, peas, oats, buckwheat, corn, potatoes, turnips, as well as hay and cloverseed (Library and Archives Canada, 1861).

The 1871 census identifies William, aged 50, and Mary, aged 46, as the owners and occupants of 150 acres, with 100 acres on Lot 29 and 50 acres on Lot 30. They lived with their nine children between the ages of 1 and 26 as well as a 17-year-old girl named Anne Gordon. Schedule 3 notes that the Howells owned 415 total acres, three dwellings, one factory, 10 barns/stables, five carriages/sleighs, five cars/wagons/sleds, five ploughs/cultivators, one reaper/mower, one horse rake, and one fanning mill. The census does not distinguish how much of each of the above items was located on Lot 29 or on Lot 30. Schedule 4 notes that of their 150 acres, 120 acres was improved, 20 acres was in pasture, and three acres was in gardens or orchards. It is unknown what the status was of the other seven acres on their property, though it is assumed to have been wooded.[1] The family grew wheat, barley, oats, rye, corn, potatoes, turnips, and hay, and the orchard yielded 200 bushels of apples. The property also included nine horses over three years old, 28 milch cows, seven other horned cattle, 31 sheep, 20 pigs, and three hives of bees which yielded 50 pounds of honey. Schedule 6 notes that Howell owned a cheese factory at an unspecified location, though the Remarks section notes that it “Works in connection with farm”. The factory operated six months of the year, and employed an average of four people (Library and Archives Canada, 1871).

[1] This assumption is based on the fact that Howell’s property yielded 1,200 cubic feet of square pine and 20 cords of firewood in 1871.

The 1875 map (Figure 5) depicts Howell as the owner of the subject property. The house that he resided in with his family was on the west side of Lot 29 and set well back from what is now Powerline Road West. The 1883 *County of Wentworth Gazetteer and Directory* notes that William Howell was the occupant of Lot 29, Concession 2 while his son, Triller Howell, was the occupant of the adjacent Lot 30. Several other people with the surname Howell were located in the vicinity of the subject property (W.H. Irwin & Co., 1883).

The residence on the subject property was very likely built by a mason named T.T. Miller in 1886. This is based on an etching found in a brick on the east side of the residence, identified to A.S.I. staff by the current homeowner (Figure 3). Additional research into T.T. Miller did not yield any further information about his background or if he was a known professional in the area.

Figure 3: Etching with name and date located on the east wall of the house (Provided by Edzard Gruppe to A.S.I., 2025)

Given the inscription by the presumed mason, it can be assumed that the original brick portion of the residence was erected under William Howell's tenure as owner.

The 1891 census identifies William, aged 70, still married to Mary, aged 66. They resided with three children between the ages of 21 and 33, as well as with a 23-year-old farm labourer named Benjamin Mowat. Their residence was listed as a two-storey wood structure with nine rooms (Library and Archives Canada, 1891). It is not known why it is not listed as having brick cladding in line with the 1886 date above. The T.H. & B. Railway came through Lot 29 circa 1894, and William Howell and his wife sold a portion of his property to allow for a deed of right of way to the railway company (O.L.R.A., n.d.). The 1896-1898 *Gazetteer and Directory* notes that both William Howell and his son Charles L. Howell resided on Lot 29 (Vernon, 1898).

William Howell died in 1898, and it appears that the property fell under the ownership of his son William Tiller (W.T.) Howell (1852-1924). The 1899 Tax Assessment for Ancaster Township notes that W.T. Howell was a 46-year-old farmer who owned 67 acres split between Lots 29 and 30. He also owned eight cows, 19 pigs, and three horses (Ancaster Township, 1899). The 1901 census identifies Howell as a 48-year-old farmer, residing with his wife Elizabeth, four children, and a 21-year-old male boarder named Clark Kitchen.[2] Schedule 2 of the census notes that William was residing in a brick house with ten rooms on Lot 29, and that the property, which included parts of Lots 29 and 30, was 66 acres in size and also included two barns, stables, or outbuildings (Library and Archives Canada, 1901). Note that William's brother Charles also resided on the north half of Lot 29 at this time, but in a wood house.

Elizabeth and W.T. Howell sold their property, including the subject residence, to Melvin Ireland in 1910 (O.L.R.A., n.d.). Ireland (1856-1929) married Levina Billiald (1858-1939) in 1888. While they resided in the vicinity of the subject property in 1901, they are listed as residing in Burlington in the 1911 census (Library and Archives Canada, 1911). The 1916 topographic map (Figure 6) depicts a residence made of brick or brick cladding in the northwest corner of the subject property, west of Summit, which appears to include a railway station

[2] Clark Kitchen may have been related to Elizabeth, as that was her maiden name.

or flag stop near where the railway corridor crosses Powerline Road West. The Irelands sold the property to William H. Willson in 1920, but he sold it the following year to E.B. (Edward Bevan) Ratcliffe. Ratcliffe (c. 1883-1946) was born in Colchester England and was a building contractor for 45 years (County of Wentworth, 1946). It is unknown if he ever resided within the residence on the subject property, as he was residing in Hamilton in 1921 and in Bartonville in 1931 (Library and Archives Canada, 1921, 1931).

Edward B. Ratcliffe sold the property to Eric Ward (1895-1969) in 1928. The 1931 census identifies Ward as an immigrant from England who arrived in Canada in 1914. In 1931, he was residing with his wife Mary and son Howard in what was listed as a brick house with ten rooms, which is very likely the residence on the subject property. He was 38 years old at the time and was identified as a station agent for the railroad (Library and Archives Canada, 1931). The station agent role was likely connected with the nearby Summit Station, part of the T.H.&B. Railway, which is clearly depicted east of the subject property on the 1934 topographic map (Figure 7). The 1954 aerial photograph (Figure 8) depicts the property within a rural-agricultural landscape close to Summit Station along the T.H.&B. Railway. There does not appear to be a wooded area east of the house at this time.

The property appears to have been passed down to Howard L. Ward and his wife Mildred in the 1960s and it was then purchased by Harry R. Loewith in 1969. Soon thereafter, Harry's brother Carl J. Loewith, as well as their two wives, were all added to the property title, though they sold it to Edward and Sarah Glanville in 1971. The 1976 topographic map (Figure 9) depicts the residence with a structure to the rear, which may be the garage outbuilding that remains extant on the property today. The surrounding area remains in a rural-agricultural context. The Glanville's sold the property to the current owners, Edzard and Wendy Gruppe, in 1994 (O.L.R.A., n.d.). That year, a topographic map (Figure 10) depicts Highway 52's current alignment, as well as the intersections of Powerline Road West and East with Highway 52, for the first time in this mapping review. Furthermore, the former rail corridor is now depicted as a trail.

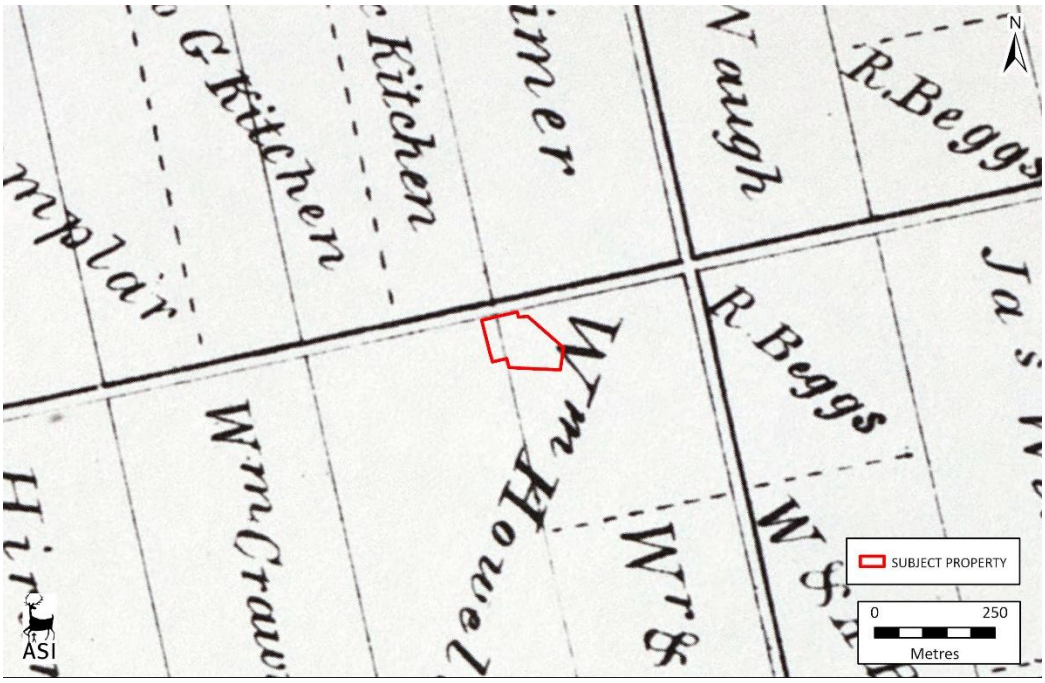


Figure 4: The location of the subject property overlaid on the 1859 *Map of the County of Wentworth, Canada West* (Surtees, 1859)

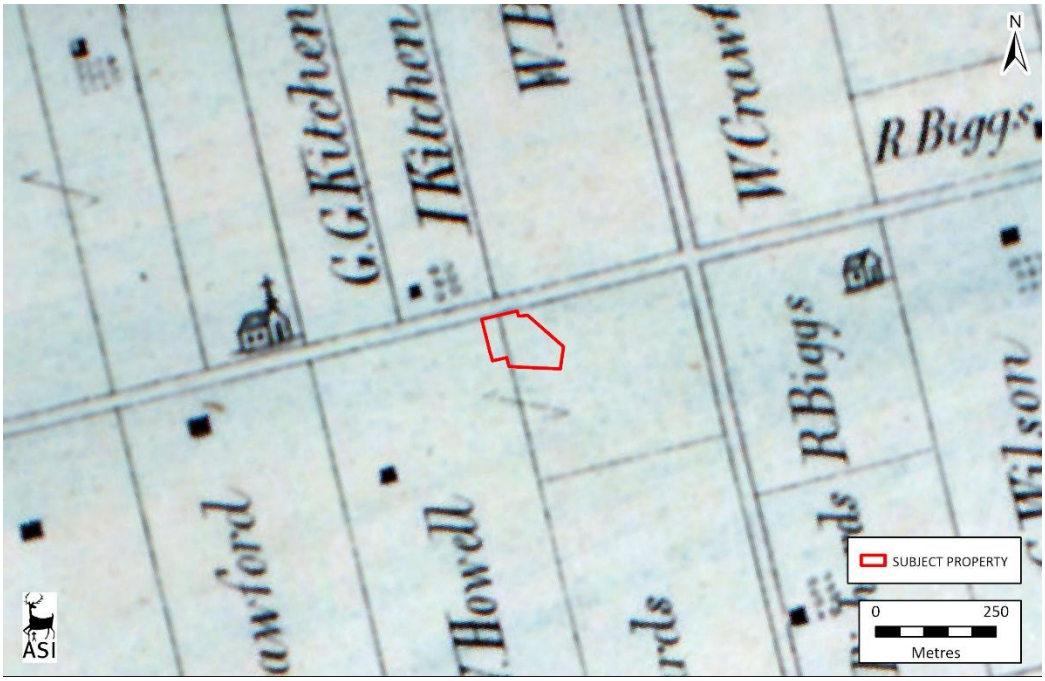


Figure 5: The location of the subject property overlaid on the 1875 *Illustrated Historical Atlas of the County of Wentworth* (Page & Smith, 1875)

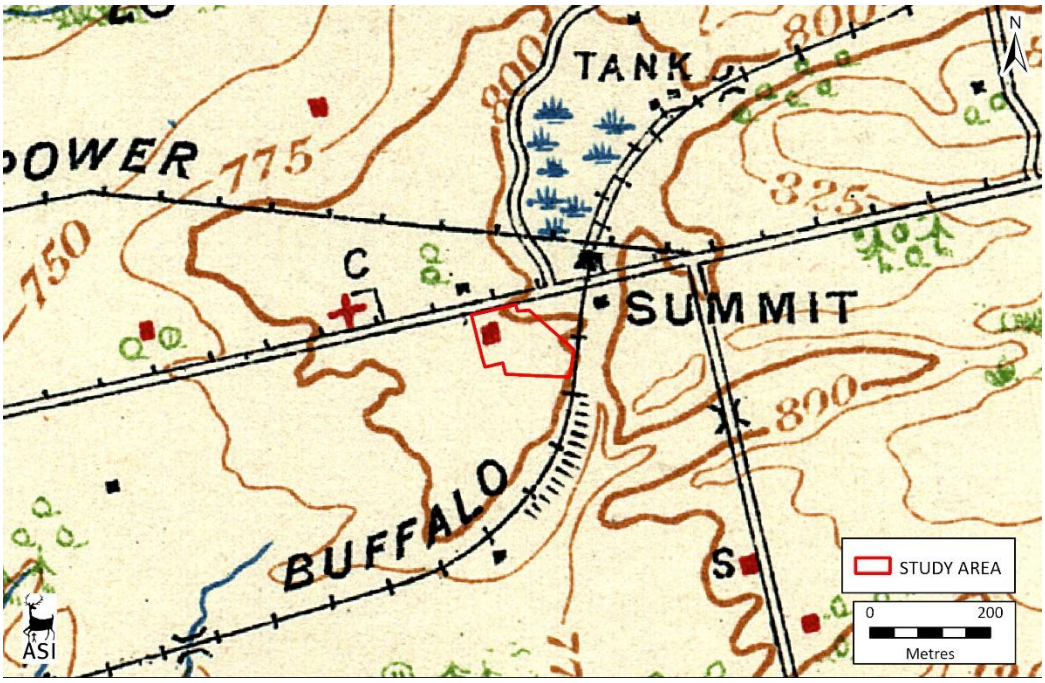


Figure 6: The location of the subject property overlaid on a 1916 topographic map, Brantford sheet (Department of Militia and Defence, 1916)

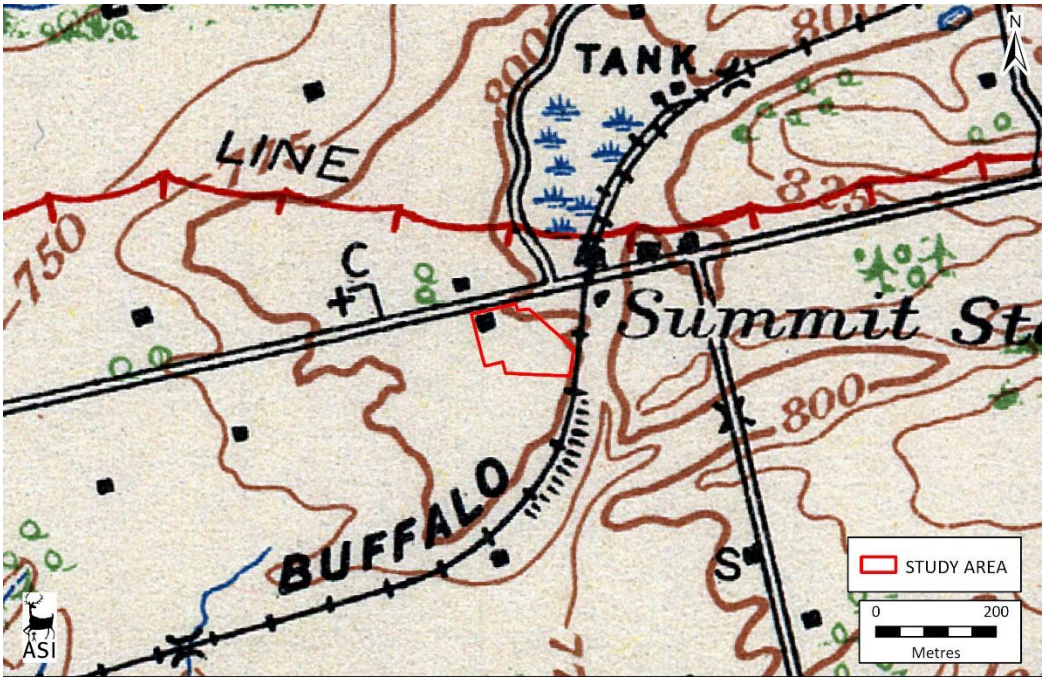


Figure 7: The location of the subject property overlaid on a 1934 topographic map, Brantford sheet (Department of Militia and Defence, 1934)

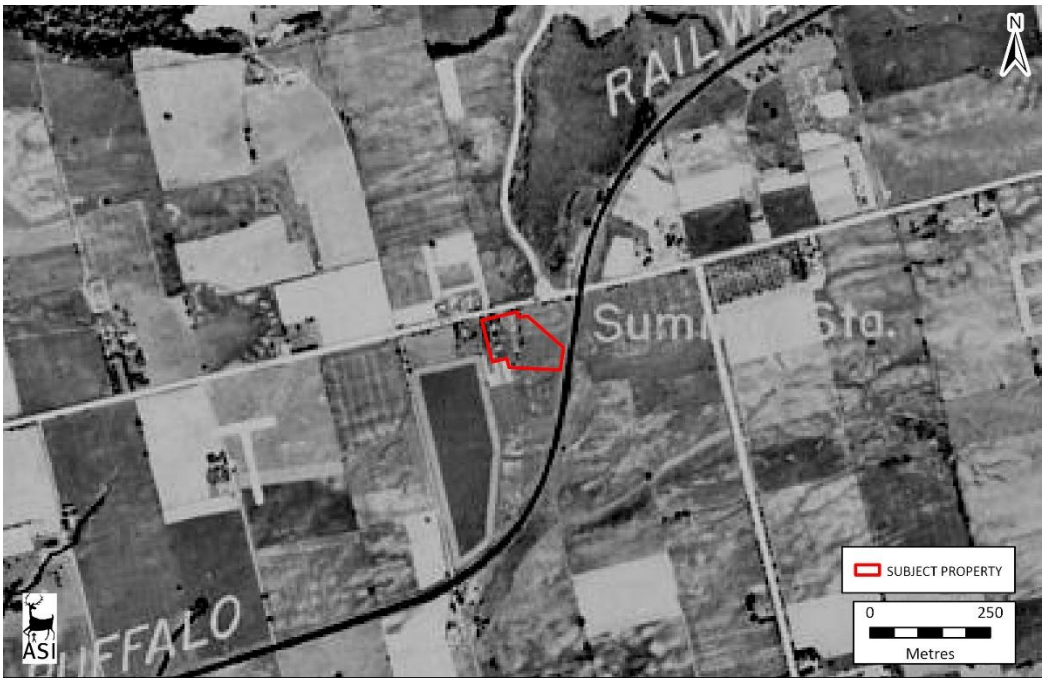


Figure 8: The location of the subject property overlaid on a 1954 aerial photograph (Hunting Survey Corporation Limited, 1954)

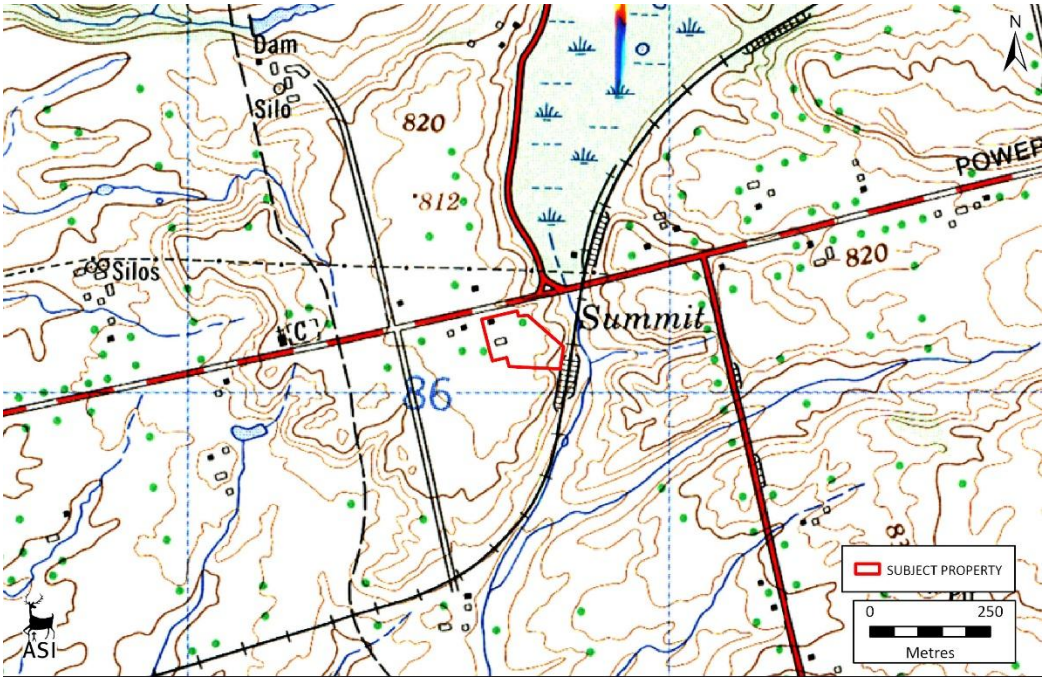


Figure 9: The location of the subject property overlaid on a 1976 topographic map, Jerseyville sheet (Department of Energy, Mines and Resources, 1976)

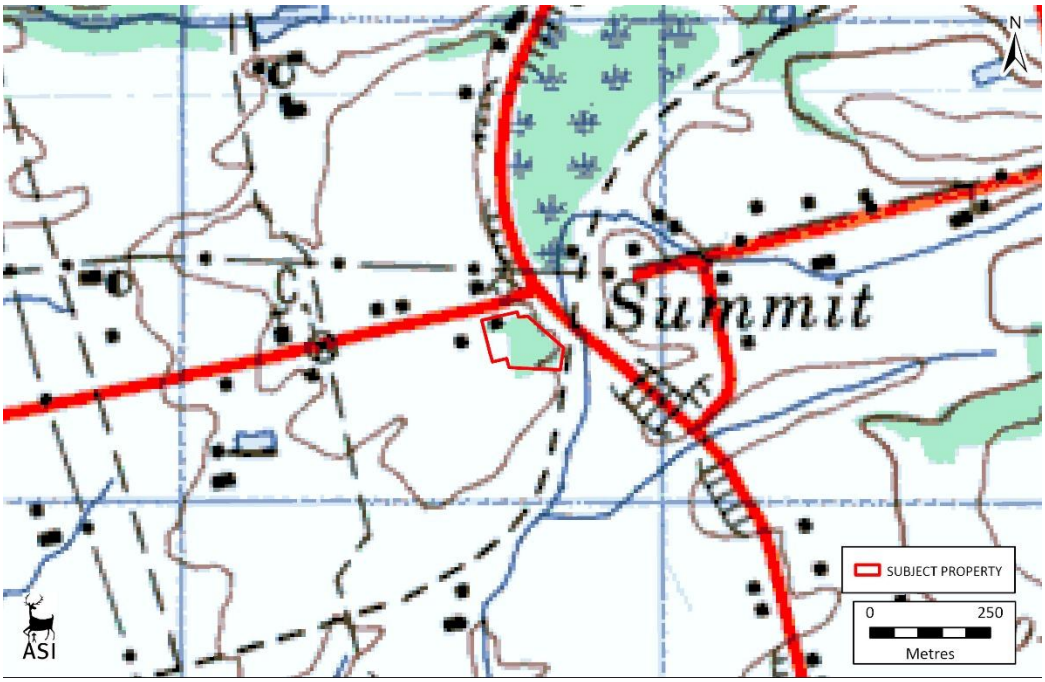


Figure 10: The location of the subject property overlaid on a 1994 topographic map, Brantford sheet (Natural Resources Canada, 1994)

## 4.5 Discussion of Physical and Design Value

The following discusses the physical and design value of the subject property.

### 4.5.1 Physical Characteristics

The subject property at 1334 Powerline Road West consists of a late nineteenth century wood-framed, brick-clad residence in the northwest corner, a concrete block outbuilding, a gravel driveway along the western boundary, open lawned areas, large trees, and vegetation. The southeastern portion of the property abuts the Hamilton-Brantford Rail Trail along the former railway corridor of the T.H.&B. Railway (Figure 11).

Figure 11: The location of the subject property with key features identified (Google Maps)

## Residence

The original portion of the residence on the subject property is a one-and-a-half storey structure built in a vernacular adaptation of the Gothic Revival architectural style. The residence features stone foundation walls with a four-course string of buff brick above the foundation to accentuate the base of the house. Among the key architectural features are a T-shaped plan with a pitched cross-gable roof, brick veneer exterior walls over a wood frame, three brick chimneys, shutters on the north (front) elevation, two curved windows below the pointed gables on the upper storey, and window openings that have either limestone or wood sills and brick voussoirs which have been painted white. Some of the windows on the front elevation may be original, though this could not be confirmed at the time of report submission. At one time, the house had a front verandah providing access to two entrances, though neither of these entrances appear to be in use. The roof material is asphalt shingle.

Some elements of the original house are typical of the Gothic Revival style, including a central pointed gable above the original front door, the use of red brick cladding for the exterior walls and buff brick accents in the quoining, the use of brick voussoirs over the windows, and symmetrical fenestration.

A rear addition, built circa 2008, extends south from the original house, and replaced a previous addition with a stone foundation at this location. The addition matches the roof angle of the original portion, and features gables and windows designed to emulate the original structure. The exterior cladding features blue wood siding.

A brief tour of the inside of the residence was granted by the homeowner. The stone foundation is visible in the basement. The main floor is divided between old and new sections, with the newer section including a large kitchen and living room and the older section featuring a parlour, laundry room, and a living room. The original location of the kitchen has been repurposed to the laundry room, and the former dining room is now used as a parlour. The main floor features some original wood flooring and baseboards, and possibly two original doors.

The upper floor is also divided between old and new sections, with both featuring bedrooms and a washroom. There may be two original bedroom doors in the older part of the upper floor (Figure 12 to Figure 24).

### Outbuilding

A large concrete-block outbuilding is located south of the residence on the property. This building, which appears to have been built at an unknown date prior to 1976 based on available mapping, is rectangular in shape and features a sliding door entrance as well as a regular door, a sheet metal roof, large window openings that have been closed off, and a small window on the south and east sides, as well as a small door opening on the wood-plank gabled end of the east side. Access to the interior was not permitted by the homeowner because of safety concerns (Figure 25 to Figure 26).

### Property

The property features densely wooded areas that include mature trees and mixed vegetation. In the wooded area to the south and east of the residence, there are both marked and unmarked trails, a former cow path extending from behind the concrete block outbuilding all the way to the former railway corridor, and a vegetative fence line. The property also features a gravel driveway, open lawned areas, and flower gardens. One of the open spaces east of the residence features a septic bed below the ground, and a pipeline is located along both the north and east property boundaries (Figure 27 to Figure 33).

## 4.5.2 Builder

The residence appears to have been built by T.T. Miller in July of 1886, as his name and the date is etched into a brick on the east elevation of the residence. No information was uncovered about him.

## 4.5.3 Building Evolution and Alterations

The residence, erected in 1886, was built in a vernacular adaptation of the Gothic Revival architectural style. When first built, there were at least two

entrances to the residence, both accessed via a front verandah, which was located on the north façade but was removed at an unknown date. There may have originally been a rear entrance that was removed by a later addition, but this could not be confirmed. A former window opening on the west elevation was bricked over at an unknown date and a new window opening was likely added slightly to the south of that original opening. An addition to the rear of the residence was carried out circa 2008 and is broadly complementary to the original structure in terms of the roofline and the Gothic style dormers.

### 4.5.4 Building Style

The residence on the subject property is a vernacular interpretation of the Gothic Revival architectural style. Gothic Revival residences are notable for their gables and use of Gothic detailing, including arched windows, vergeboards, and finials. This was one of the most common architectural styles in Ontario amongst European settlers, though often taking the form of a vernacular house. While architect-designed Gothic Revival buildings are found throughout Ontario, the prevalence of the Gothic Revival style is owed more to the availability of plans and forms set in pattern books that were popular with the middle class, farmers, and other rural settlers (Mikel, 2004). These Gothic vernacular residences were typically one-and-a-half storeys, would have a gable-end, symmetrically balanced with a central door flanked by a window on either side. The houses would be individualized with available details and finishes (Mikel, 2004). Another feature was the use of two tones of brick, usually a red brick with buff or yellow brick to highlight. This is known as dichromatic brickwork, which was a vernacular attempt at producing the polychromatic effect (Blumenson, 1990).

The residence on the subject property has some of the general elements of the Gothic Revival style, including its footprint, massing, dormer, dichromatic brickwork, and window placement.

### 4.5.5 Existing Conditions Photographs

Figure 12: Front (north) elevation of the residence, looking south (A.S.I., 2025)

Figure 13: East elevation of the residence, looking west (A.S.I., 2025)

Figure 14: South elevation of the residence, looking north (A.S.I., 2025)

Figure 15: West elevation of the residence, looking east (A.S.I., 2025)

Figure 16: Stone foundation, with four courses of buff brick above (A.S.I., 2025)

Figure 17: Representative window with shutters, wood lintels, and painted brick voussoir (A.S.I., 2025)

Figure 18: Former entrances on the front elevation, and former location of the front verandah (A.S.I., 2025)

Figure 19: Buff brick quoining and painted brick voussoir over the window on the east elevation (A.S.I., 2025)

Figure 20: Rear (south) addition to the residence (A.S.I., 2025)

Figure 21: Rubble stone and parging in basement (A.S.I., 2025)

Figure 22: Parlour room in the northeast corner of the residence, showing original flooring and baseboards (A.S.I., 2025)

Figure 23: Living room in the northwest corner of the residence (A.S.I., 2025)

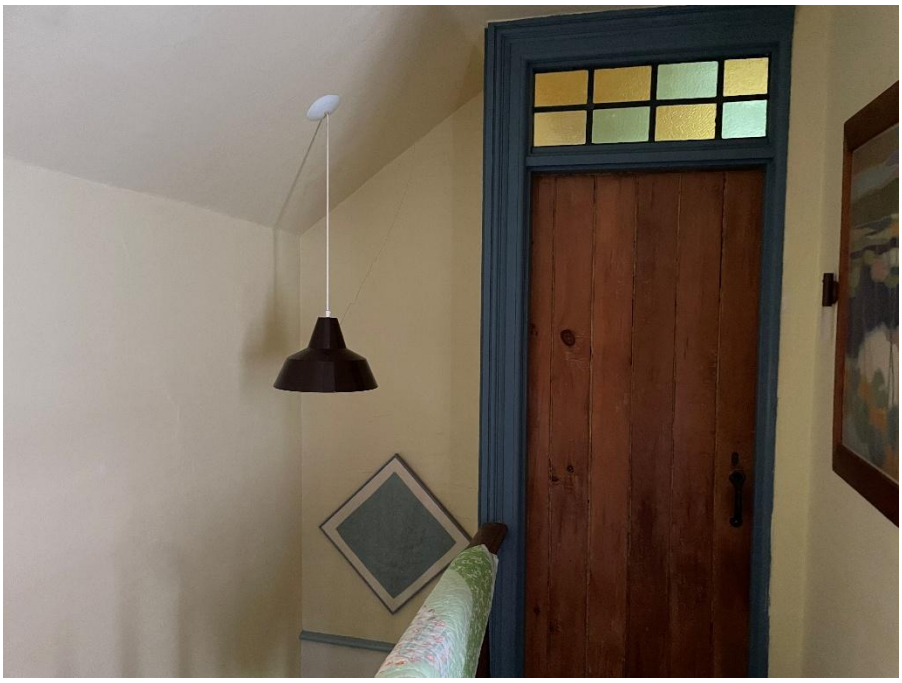

Figure 24: Upstairs bedroom door (A.S.I., 2025)

Figure 25: Concrete block outbuilding south of the residence, looking south (A.S.I., 2025)

Figure 26: Concrete block outbuilding south of the residence, looking west (A.S.I., 2025)

Figure 27: Wooded area west of Highway 52, looking north (A.S.I., 2025)

Figure 28: Location of the former cow path south of the outbuilding at the rear of the property, looking south (A.S.I., 2025)

Figure 29: Entrance driveway to the subject property, looking south from Powerline Road West (A.S.I., 2025)

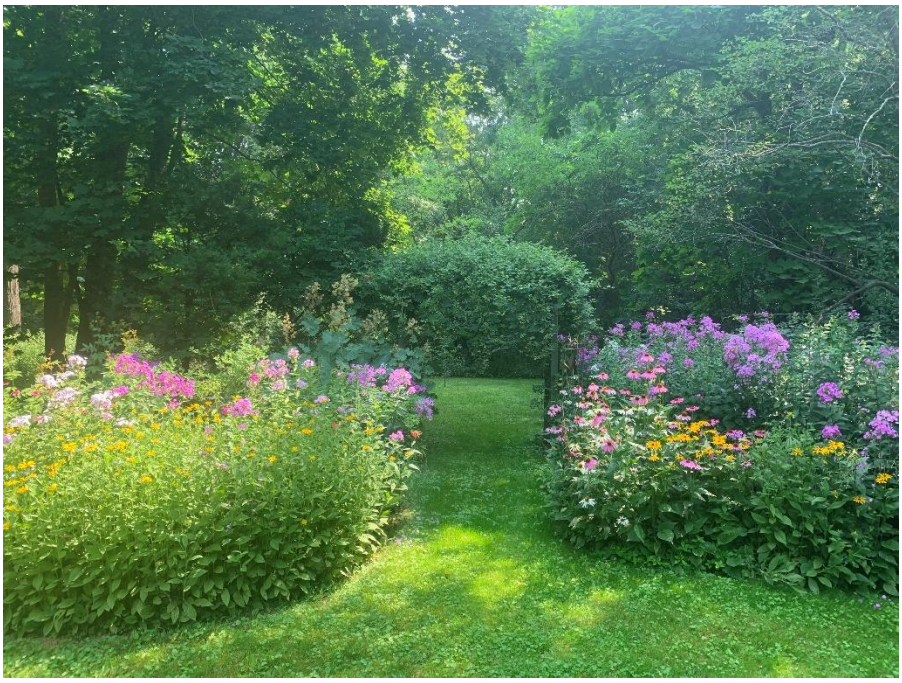

Figure 30: Manicured gardens and pathways southeast of the residence (A.S.I., 2025)

Figure 31: Small shed southeast of the residence (A.S.I., 2025)

Figure 32: Lawns and trees east of the residence, where the septic tank is located (A.S.I., 2025)

Figure 33: Location of a pipeline running across the front of the property, looking east from the driveway (A.S.I., 2025)

## 4.6 Discussion of Contextual Value

The following section discusses the contextual value of the subject property.

### 4.6.1 Setting and Character of the Property and Surroundings

The property is set within a rural-agricultural and rural-residential land use context and does not have a unifying or significant character. Powerline Road West is a two-lane paved east-west roadway with no shoulders or sidewalks. The road ends at its intersection with Highway 52, which is primarily a two-lane paved north-south roadway, albeit with a significant curve in its orientation east of the subject property. Rural-residential properties are located to the east, west, and south of the property while rural-agricultural properties are located to the north and southwest of the property. A large provincially significant wetland and Area of Natural and Scientific Interest called the Summit Muskeg Preserve is located to the northeast of the subject property. The Hamilton-Brantford Rail Trail has a northeast-southwest orientation east of the subject property; a gravel parking lot associated with access to the rail trail is located on the east side of Highway 52 at its intersection with Powerline Road West. Powerline Road East is located on the east side of the rail trail (Figure 34 to Figure 40).

Figure 34: Looking west along Powerline Road West from the driveway of the subject property (A.S.I., 2025)

Figure 35: Looking east along Powerline Road West from the driveway of the subject property (A.S.I., 2025)

Figure 36: Looking north along Highway 52 toward its intersection with Powerline Road West (A.S.I., 2025)

Figure 37: Looking east to gravel parking area at intersection of Highway 52 and Powerline Road West (A.S.I., 2025)

Figure 38: Looking west to the intersection of Powerline Road West and Highway 52 (A.S.I., 2025)

Figure 39: Summit Muskeg Reserve, looking east from Highway 52 (A.S.I., 2025)

Figure 40: Looking northeast along the Hamilton-Brantford Rail Trail (A.S.I., 2025)

### 4.6.2 Community Landmark

The subject property at 1334 Powerline Road West is not considered to be a landmark within the local context. While the property is located at the intersection of two well-travelled roads (Powerline Road West and Highway 52), the residence is screened by dense tree coverage and vegetation, making it largely unseeable to passing motorists and/or other road users.

## 4.7 Comparative Analysis

Heritage Planning staff with the City of Hamilton compiled a list of 12 properties with Gothic Revival houses within the general vicinity of the northwest part of Hamilton. In addition, an analysis of the City of Hamilton's Cultural Heritage Resources mapping tool (City of Hamilton, 2024a) was conducted to identify comparable buildings and properties for the purposes of establishing a comparative context for evaluating 1334 Powerline Road West. Ultimately, five Gothic Revival houses in the former Township of Ancaster have been chosen for comparative purposes.

### 4.7.1 428 Orkney Road

The residence at 428 Orkney Road, called the James Home, is a one-and-a-half storey Gothic Revival farmhouse built in 1860 (Figure 41). The property was originally designated by the Town of Flamborough in 1986, and it remains under a Part IV Designation by the City of Hamilton (By-law 86-88-H). It features red brick with buff brick quoins and voussoirs, rounded arched windows, decorative brackets on the eave, a bay window, and a verandah. The interior features a "fine stairway," two original marble fireplaces, and wide board flooring (Corporation of the Town of Flamborough, 1986). The property remains in a rural-agricultural setting.

Figure 41: 428 Orkney Road (Google Maps)

### 4.7.2 1719 Powerline Road West

The residence at 1719 Powerline Road West is a Gothic Revival farmhouse built in 1846 (Figure 42). The City of Hamilton recognizes it as an Inventoried Property (City of Hamilton, 2024a). It features a three-bay front façade with a central entranceway that includes a transom and sidelights, red brick with yellow brick quoins and voussoirs, decorative brickwork over the pointed window and below

the central gable, and a smaller side addition that closely matches the main residential structure. The property remains in a rural-agricultural setting.

Figure 42: 1719 Powerline Road West (Google Maps)

### 4.7.3 3513 Jerseyville Road West

The residence at 3513 Jerseyville Road West is a Gothic Revival house built circa 1850 (Figure 43). The property is identified as a Registered (Non-Designated) Property by the City of Hamilton but is a potential candidate for designation (City of Hamilton, 2024a). It features red brick with buff brick quoins and voussoirs, arched windows, and a verandah where the front entrance is located. The house is “a representative example of a T-Shaped Gothic Revival Farm House” and “displays a high degree of craftsmanship and design integrity.” Moreover, the property is thought to be associated with pre-Confederation development in Ancaster Township, is visually and historically linked to its surroundings, and is important in defining the area’s character (City of Hamilton, 2024a).

Figure 43: 3513 Jerseyville Road West (Google Maps)

### 4.7.4 2059 Powerline Road West

The residence at 2059 Powerline Road West is a Gothic Revival house built circa 1850 (Figure 44). The property is identified as a Registered (Non-Designated) Property by the City of Hamilton but is a potential candidate for designation (City of Hamilton, 2024a). It features a five-bay front façade, red brick with buff brick quoins and voussoirs, a rounded central window, symmetrical fenestration across the front façade, and a verandah where the front entrance is located. The house is “a representative example of a Gothic Revival Cottage” and “displays a high degree of craftsmanship and design integrity.” Moreover, the property is thought to be associated with pre-Confederation development in Ancaster Township and with a potentially significant person (with the surname Kitchen), is visually and historically linked to its surroundings, and is important in defining the area’s character (City of Hamilton, 2024a).

Figure 44: 2059 Powerline Road West (Google Maps)

### 4.7.5 1556 Mineral Springs Road

The residence at 1556 Mineral Springs Road is a Gothic Revival house built circa 1850 (Figure 45). The City of Hamilton recognizes it as an Inventoried Property (City of Hamilton, 2024a). It features a three-bay front façade, a central entranceway that includes a transom and sidelights, red brick with yellow brick quoins and voussoirs, and a central gable with arched window below.

Figure 45: 1556 Mineral Springs Road (For the Love of Old Houses Facebook Group, 2024)

### 4.7.6 Summary

The five comparative examples present the general context and development of Gothic Revival building practices in what is now the City of Hamilton during the mid-nineteenth century. While the residence at the subject property makes use of the Gothic Revival style, it is not a rare, unique, representative or early example of this style in Hamilton. It is not rare or unique, as there are many Gothic Revival style houses within the city of Hamilton; nor is the residence on the subject property an early example of its style, as all five examples in this comparative survey were erected decades earlier. Finally, it is not a fine representative example of the style. It lacks emblematic features such as vergeboards and has had openings modified and the verandah removed. Beyond the residence, the subject property does not express a complete and compelling story of the nineteenth-century farming patterns once extant on this lot. The property was owned and occupied by a series of farmers in the mid-to-late nineteenth century. But while the house remains extant, the connections that linked this property to its nineteenth-century origins have degraded over time. As such, the property as a whole is not a representative example of a nineteenth-century agricultural landscape and/or building complex.

# 5.0 Heritage Evaluation

The evaluation of the subject property at 1334 Powerline Road West using the criteria set out in Ontario Regulation 9/06 is presented in Section 5.1. The following evaluation has been prepared in consideration of data regarding the physical/design, historical/associative, and contextual values in the City of Hamilton.

## 5.1 Ontario Regulation 9/06

Evaluation of the subject property at 1334 Powerline Road West using Ontario Regulation 9/06 of the *Ontario Heritage Act.*

1. The property has design value or physical value because it is a rare, unique, representative or early example of a style, type, expression, material or construction method:
   - The subject property does not meet this criterion.
   - The residence on the subject property, constructed in 1886, is a late nineteenth-century vernacular adaptation of the Gothic Revival farmhouse in the City of Hamilton. Its general form, massing, and materials reflect characteristics of the Gothic Revival architectural style. However, the lack of decorative details of the residence which are exhibited in other examples in this general area of Hamilton, combined with the alterations and additions to the residence, mean it is not a finely executed representative example of the Gothic Revival style in the local context. In terms of the property more broadly, it is not representative of a nineteenth-century farm in Hamilton as there are no structures, agricultural lands, or circulation routes that would be expressive of an agricultural landscape. The sole outbuilding, which may have remnant agricultural usage, dates from the latter half of the twentieth century.

2. The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit:
   - The subject property does not meet this criterion.
   - The construction and detailing of the residence are typical of its period of construction.

3. The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement:
   - The subject property does not meet this criterion.
   - The residence on the subject property does not retain any elements or features that exhibit a high degree of technical or scientific achievement.

4. The property has historical value or associative value because it has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community:
   - The subject property does not meet this criterion.
   - The property at 1334 Powerline Road West has an association with John Howell, William Howell, and William T. Howell because all three owned the property and it was under William Howell's ownership that the residence was erected. However, their significance within the local context could not be substantively evidenced. While John Howell was an early settler and both William and William T. Howell appear to have been productive local farmers, this does not necessarily demonstrate that their contributions in these contexts were significant in a way that was atypical of the period. A later owner of the property, Eric Ward was a station agent for the railroad according to the 1931 census. It is very probable that this role related to the nearby Summit Station, which was part of the Toronto, Hamilton, and Buffalo (T.H.B.) Railway, and which was locally significant to the community. However, no further information about Ward's role was uncovered, including his

duration or responsibilities in that role. As such, the ability for which the subject property can reasonably express his significance is limited.

5. The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture:
   - The subject property is not known to meet this criterion at this time.

6. The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community:
   - The subject property does not meet this criterion.
   - The builder of the residence appears to have been T.T. Miller in July of 1886, as his name and the date is etched into a brick on the east elevation of the residence. No information was uncovered about him, so his significance to the local community remains unknown at this time.

7. The property has contextual value because it because it is important in defining, maintaining or supporting the character of an area:
   - The subject property does not meet this criterion.
   - The property is located at the southeast corner of Highway 52 and Powerline Road West in the City of Hamilton. While both are nineteenth-century thoroughfares, its rural-agricultural character associated with nineteenth-century settlement patterns is only evident to a limited extent. The property is located in a mixed rural-agricultural and rural-residential setting that does not have a unifying or significant character.

8. The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings:
   - The subject property does not meet this criterion.
   - The subject property is located in a mixed rural-agricultural and rural-residential setting. While the immediate surroundings of the property are rural in nature, the subject property itself does not contain significant elements that physically, functionally, visually, or historically link it to its surroundings. Though there are elements of the property that are typical of a large rural property, such as the residence, driveway, and trees, these elements alone do not significantly link the property to the surrounding area.

9. The property has contextual value because it is a landmark:
   - The subject property does not meet this criterion.
   - The subject property is not considered to be a landmark within the local context as the residence is screened by trees and vegetation, making it largely unseeable to passing motorists and/or other road users along Powerline Road West and/or Highway 52.

Based on available information, it has been determined that the subject property does not meet Ontario Regulation 9/06 criteria.

# 6.0 Proposed Development

This section presents a description of the proposed development, an assessment of impacts, mitigation recommendations, and a discussion of alternatives.

## 6.1 Description of Proposed Development

The Highway 52 and Powerline Road West Intersection Improvements project, being completed under Schedule C of the M.C.E.A. process, is an examination of

the feasibility of implementing a roundabout at the intersection of Highway 52 and Powerline Road West, relative to other transportation improvement options. The M.C.E.A.'s key goal is improved public safety for all road users, including drivers, pedestrians, and cyclists. As such, the study seeks to determine the best path forward "to alleviate operational issues at the intersection, maintain or improve community connectivity, including active transportation, and mitigate impacts to traffic and truck circulation and goods movement to address long-term transportation needs" (City of Hamilton, 2025b). In addition to the intersection realignment, new rumble strips, lighting, and signage are being considered. Also under consideration for this project is a review of the intersection of Highway 52 and Powerline Road East, approximately 430 metres south of the above-named intersection, as well as the trail crossing associated with the Hamilton-Brantford Rail Trail, located south of the intersection (City of Hamilton, 2024b, 2025b).

The preferred alternative has been determined to be a three-legged roundabout that is located slightly west of the current intersection. This alternative has very good visibility to and from Powerline Road West as the north approach from Highway 52 has a long sight distance. Furthermore, this option, when taken collectively, presents the best approach to address natural and socio-cultural environmental concerns, as well as financial and technical factors (City of Hamilton, 2025b).

Preliminary designs of the preferred alternative are provided in Appendix B.

As it has been determined that the subject property did not meet the Ontario Regulation 9/06 criteria, it does not have C.H.V.I., and as such, an impact assessment is not necessary to be completed.

## 6.2 Impact Assessment

As it has been determined that the subject property did not meet the Ontario Regulation 9/06 criteria, it does not have C.H.V.I., and as such, an impact assessment is not necessary to be completed.

## 6.3 Alternatives and Mitigation

Preliminary designs for the intersection are available in Appendix B. However, it has been determined that the subject property did not meet the Ontario Regulation 9/06 criteria, and as such, it does not have C.H.V.I. No mitigation recommendations are required.

# 7.0 Conclusions

This evaluation was prepared in consideration of data regarding the physical/design, historical/associative, and contextual values within the City of Hamilton. This evaluation determined that the property at 1334 Powerline Road West does not meet the criteria outlined in Ontario Regulation 9/06. Therefore, it does not retain cultural heritage value or interest (C.H.V.I.). As such, there will be no impacts to heritage attributes and therefore no mitigation measures are necessary.

The following recommendations are proposed:

1. This report should be submitted by the proponent to heritage staff at the City of Hamilton for their information.

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# Appendix A: Qualified Persons Involved in the Project

**Lindsay Graves, M.A., C.A.H.P.**
**Senior Cultural Heritage Specialist, Manager, Infrastructure - Cultural Heritage**

The Senior Project Manager for this Cultural Heritage Impact Assessment is **Lindsay Graves** (M.A., Heritage Conservation), Senior Cultural Heritage Specialist and Manager of Infrastructure, Cultural Heritage Practice Area. She was responsible for: overall project scoping and approach; development and confirmation of technical findings and study recommendations; application of relevant standards, guidelines and regulations; and implementation of quality control procedures. Lindsay is academically trained in the fields of heritage conservation, cultural anthropology, archaeology, and collections management and has over 15 years of experience in the field of cultural heritage resource management. This work has focused on the assessment, evaluation, and protection of above ground cultural heritage resources. Lindsay has extensive experience undertaking archival research, heritage survey work, heritage evaluation and heritage impact assessment. She has also contributed to cultural heritage landscape studies and heritage conservation plans, led heritage commemoration and interpretive programs, and worked collaboratively with multidisciplinary teams to sensitively plan interventions at historic sites/places. In addition, she is a leader in the completion of heritage studies required to fulfill Class Environmental Assessment processes and has served as Project Manager for over 100 heritage assessments during her time at A.S.I. Lindsay is a member of the Canadian Association of Heritage Professionals.

**Michael Wilcox, P.h.D.**
**Historian - Cultural Heritage**

The report writer for this Cultural Heritage Impact Assessment is **Michael Wilcox** (P.h.D., History), who is a historian within the Cultural Heritage Practice Area. He was responsible for preparing and contributing to background historical research, reviewing existing heritage inventories, and technical reporting for this

project. His current responsibilities focus on identifying and researching historical documents as well as background research, assessment, and evaluation of cultural heritage resources in Ontario. He has over a decade of combined academic and workplace experience in conducting historical research and crafting reports, presentations, articles, films, and lectures on a wide range of Canadian history topics.

# Appendix B: Plan and Profile – Highway 52 and Powerline Road West

HIGHWAY 52

POWERLINE ROAD W

HAMILTON BRANTFORD RAIL TRAIL

HIGHWAY 52

PROP. ROAD CL

EX. ROAD CL

-0.44%

-0.65%

0.73%

STA 12+408.16
ELEV 240.273

STA 12+463.32
ELEV 239.536

PVI STA = 12+715.54
PVI ELEV = 238.58
LOW POINT STA = 12+714.03
LOW POINT ELEV = 238.68
A1 = -1.38
A2 = 40.0
L=55.34m VC

BVCS: 12+687.871
BVCE: 238.741

EVCS: 12+743.212
EVCE: 238.782

STA 12+750.75
ELEV 238.831

248
246
244
242
240
238
236
234
232

12+380 12+390 12+400 12+410 12+420 12+430 12+440 12+450 12+460 12+470 12+480 12+490 12+500 12+510 12+520 12+530 12+540 12+550 12+560 12+570 12+580 12+590 12+600 12+610 12+620 12+630 12+640 12+650 12+660 12+670 12+680 12+690 12+700 12+710 12+720 12+730 12+740 12+750

R.J. Burnside & Associates Limited

web www.burnside.com

PLAN AND PROFILE
HIGHWAY 52

| | | | |
|---|---|---|---|
| DRAWN BY: | R.B. | SCALE: | H 1:500 V 1:100 |
| DESIGNED BY: | S.P. | PROJECT No. | 058803 |
| CHECKED BY: | S.P. | DRAWING No. | |
| DATE: | 2025-12-09 | SHEET No. | |

File: C:\0058\03\0058030\Autocadd\Plan Profile Drawings\PP-HWY52.dwg Plotted: 10:53 AM

# Stage 1 Archaeological Assessment: Highway 52 and Powerline Road West Intersection Improvements (Lots 29 and 30, Concessions 1 and 2, Geographical Township of Ancaster, County of Wentworth) City of Hamilton

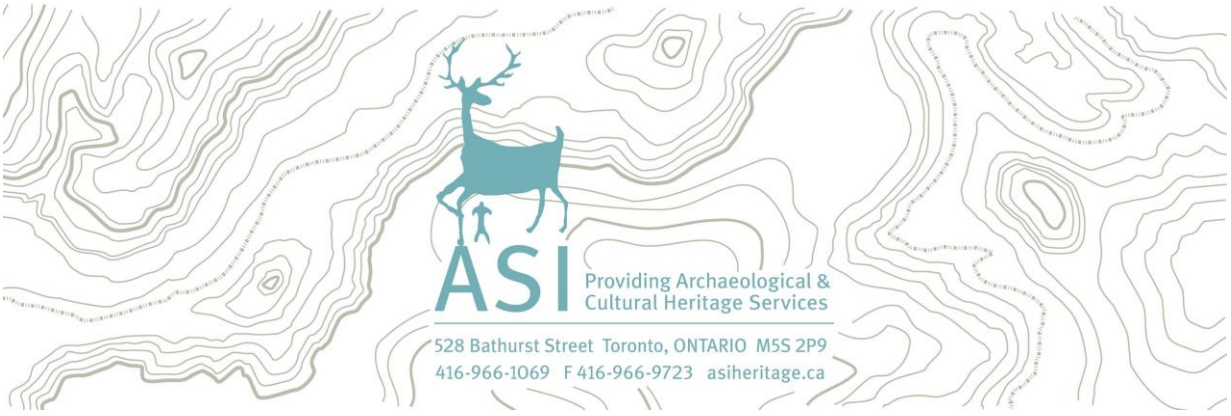
**Original Report**

Prepared for:

**R.J. Burnside & Associates Limited**
128 Wellington Street West, Suite 301
Barrie ON, L4N 8J6

Archaeological Licence: P383 (Williams)
PIF# P383-0493-2025
Archaeological Services Inc. File: 24EA-161

26 August 2025



# Executive Summary

Archaeological Services Inc. was contracted by R.J. Burnside & Associates Limited, on behalf of the City of Hamilton, to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Highway 52 and Powerline Road West Intersection Improvements project. This project involves the examination of the feasibility of implementing a roundabout at the intersection of Highway 52 and Powerline Road West, located rurally in the City of Hamilton. The Stage 1 Project Area consists of two non-adjacent polygons.

The Stage 1 background research determined that 15 previously registered archaeological sites are located within one kilometre of the Project Area, one of which (AhHa-153), located within 50 metres, has further CHVI and will require Stage 3 investigations if there will be changes in the project that will impact the site. The Stage 1 property inspection determined that parts of the Project Area preserve archaeological potential and Stage 2 assessment will be required. The following recommendations are made:

1) Parts of the Project Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit and pedestrian surveys at five-metre intervals, as appropriate. Stage 2 is required prior to any proposed construction activities on these lands;

2) The remainder of the Project Area does not retain archaeological potential on account of deep and extensive land disturbance, permanently wet conditions, or being previously assessed. These lands do not require further archaeological assessment; and

3) Should the proposed work extend beyond the current Project Area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

# Project Personnel

- **Principal**: Lisa Merritt, MSc. (P094) Principal, Infrastructure
- **Senior Project Manager**: Sarah Jagelewski, BA Hons (R405), Lead Archaeologist, Manager, Infrastructure
- **Division Coordinator**: Katrina Thach, BA Hons. (R1225), Associate Archaeologist, Assistant Manager, Infrastructure
- **Project Administrator**: Catherine Kitchen, BA, Archaeologist (R1364), Project Administrator, Infrastructure
- **Project Director**: Blake Williams, MLitt (P383), Lead Archaeologist, Project Manager, Infrastructure
- **Project Manager**: Jason Barrett, PhD, Lead Archaeologist, Project Manager, Infrastructure
- **Field Director**: Blake Williams (P383)
- **Assistant Field Director**: Ciprian Ardelean, PhD, Senior Associate, Technical Writer and Researcher, Infrastructure
- **Report Preparation**: Ciprian Ardelean
- **Graphics**: Peter Bikoulis, PhD, Archaeologist, GIS Technician, Operations; Michelle Nguyen, BA, Archaeologist, GIS Technician, Operations
- **Report Review**: Jason Barrett; Eliza Brandy, MA (R1109), Lead Archaeologist, Project Manager, Infrastructure; Sarah Jagelewski

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# 1.0 Project Context

Archaeological Services Inc. (ASI) was contracted by R.J. Burnside & Associates Limited, on behalf of the City of Hamilton, to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Highway 52 and Powerline Road West Intersection Improvements project. This project involves the examination of the feasibility of implementing a roundabout at the intersection of Highway 52 and Powerline Road West, located rurally in the City of Hamilton, east of the Copetown neighbourhood and approximately three kilometres north of the Provincial Highway 403 interchange.

The Stage 1 Project Area consists of two non-adjacent polygons located at the intersections of Highway 52 and Powerline Road East, and Highway 52 and Powerline Road West, as indicated by the client. The smaller (south) polygon is rectangle-shaped and measures approximately 225 metres by 148 metres. The larger (north) polygon is irregular in shape, located approximately 90 metres to the north-northwest of the smaller one, and measures approximately 478 metres by 395 metres (Figure 1).

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (R.S.O. c. O.18, 1990, as amended in 2025) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), currently administered by the Ministry of Citizenship and Multiculturalism (MCM, 2011).

## 1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act* (R.S.O. c. E.18, 1990, as amended in 2025) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the *Municipal Class Environmental Assessment* process (Municipal Engineers Association, 2023).

The *City of Hamilton Archaeology Management Plan 2016* (City of Hamilton, 2016) was also consulted.

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment and property inspection was granted by R.J. Burnside & Associates Limited on June 04, 2025.

### 1.1.1 Treaties and Traditional Territories

#### 1.1.1.1. 1701 Deed from the Five Nations to the King, of their Beaver Hunting

In the late seventeenth century, the Haudenosaunee of the Five Nations Confederacy residing in upstate New York and Southern Ontario were dealing with military engagements and encroachment from French forces as well as the movement of the Mississaugas and other Anishinaabeg peoples into the area, all of which contributed to fears among the Confederacy about the loss of their beaver hunting grounds (Williams & Nelson, 1995). To address their concerns, the Confederacy met with the Province of New York's acting colonial governor John Nanfan, as well as a British representative on behalf of the Indian Affairs Department, Robert Livingston, in July 1701. The Confederacy hoped to urge the English into action in their disputes with the French and their Indigenous allies. The British hoped that an alliance with the Haudenosaunee would continue to ensure a strong trading relationship, keep French efforts to control the fur trade in check, and assert British control deeper into North America (Brandao & Starna, 1996; Jamieson, 2013).

Ultimately, the Deed from the Five Nations to the King, sometimes referred to as the Treaty of Fort Albany, the Nanfan Treaty, the Albany Deed, or Livingston's Deed, was signed by representatives of the British Crown and the Haudenosaunee Confederacy in 1701 (Williams & Nelson, 1995). The Deed established the Beaver Hunting Grounds as a vast territory spanning much of the lands surrounding the lower Great Lakes, including in Southern Ontario, as well as into the Ohio River Valley (Jamieson, 2013).

There has been significant debate about the terms of the agreement. The Six Nations of the Grand River assert that it is a valid treaty that recognized the Confederacy's ownership of and access to the natural resources within the Beaver Hunting Grounds, while also receiving the Crown's support and

protection (Six Nations of the Grand River, 2020). Others, though, note that while the Haudenosaunee fished and hunted in Southern Ontario in the late seventeenth century, these lands were not under their authority at the time and as such, they could not negotiate a formal treaty with the British Crown for this territory (Calverley, 2002; Jennings, 1984; Schmalz, 1984). Research indicates that the British did not formally recognize the agreement, and currently neither the Canadian government nor the British Crown recognize the 1701 Deed as a treaty.

#### 1.1.1.2. Treaty 3, The Between the Lakes Purchase

Following the American Revolutionary War (1775-1783), the British Crown needed to find lands on which to settle United Empire Loyalists, including approximately 2,000 members of the Six Nations confederacy who had fought alongside British troops. Led by Sir Frederick Haldimand who was the governor of Quebec at that time, the Crown was initially planning on providing lands for Loyalist settlers in Quebec and Southeastern Ontario, including providing land in the Bay of Quinte for Six Nations refugees. This was not suitable for many of the members of Six Nations and a contingent of approximately 1,800 community members, led by Chief Joseph Brant, requested land north of Lake Erie along the Grand River. Brant felt that the location in the Bay of Quinte was too isolated and that his followers could be better served by being closer to the Six Nations communities that chose to remain in the United States in western New York (Surtees, 1984, p. 21).

Recognizing that, under the terms of the Royal Proclamation of 1763, the land needed to be purchased prior to settlement, Colonel John Butler was sent to negotiate with the Mississaugas of the Credit for lands east of Lake Ontario and north of Lake Erie. On May 22, 1784, the Mississaugas of the Credit agreed to cede approximately 3,000,000 acres (1,214,057 hectares) of land containing all or part of Brant, Elgin, Middlesex, Oxford, and Wellington Counties as well as the Regions of Haldimand-Norfolk, Halton, Hamilton-Wentworth, Niagara, and Waterloo. In exchange for these lands, the Mississaugas received £1180.74 worth of trade goods (Crown-Indigenous Relations and Northern Affairs, 2016; Surtees, 1984). Of the 3,000,000 acres (1,214,057 hectares), approximately

550,000 acres (222,577 hectares) was set aside for the settlement of Six Nations people.

However, due to uncertainties with the description of the lands in the original surrender, Treaty 3 was renegotiated on December 7, 1792, to clarify what was ceded. This largely revolved around the northern boundary of the Treaty area and in particular the area set aside for Six Nations settlement along the Grand River (see Haldimand Tract and Treaty 4). The signees on the side of the British included Lieutenant Governor John Graves Simcoe, John Butler, Robert Kerr, Peter Russell, John McGill, and Davie William Smith. The signees on the side of the Mississauga included Chiefs Wabakayne, Wabanip, Kautabus, Wabaniship and Mottotow (Crown-Indigenous Relations and Northern Affairs, 2016; Mississaugas of the Credit First Nation, 2017; Surtees, 1984).

The original text stipulated that the north-west boundary of the parcel was an imaginary line between Burlington Bay and the Thames River, which is inconsistent with the geography of the area. The boundaries of the parcel were corrected to create a polygon encompassing the Niagara peninsula up to Burlington Bay and then up north to the present-day town of Arthur then south to the present-day town of Woodstock to finally meet Lake Erie at Port Bruce. Treaty 3 lands exclude a corridor along the Grand River set aside for Six Nations (Crown-Indigenous Relations and Northern Affairs, 2016; Native Land Digital, 2018).

## 1.2 Historical Context

### 1.2.1 Indigenous Land Use and Settlement

Current archaeological evidence indicates humans were present in southern Ontario approximately 13,000 years before present (BP) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 BP, the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (Ellis & Deller, 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest archaeological evidence for cemeteries dates to approximately 4,500-3,000 BP and is interpreted by archaeologists to be indicative of increased social organization and the investment of labour into social infrastructure (Brown, 1995, p. 13; Ellis et al., 1990, 2009).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 BP and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 BP, evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 BP – it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers, 1962). It is generally understood that these populations were Algonquin-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 BP, lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (CE), larger settlement sites focused on horticulture begin to dominate the archaeological record. Seasonal

dispersal of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 CE, archaeological research focusing on these horticultural societies note that this episodic community dispersal was no longer practised and these populations now occupied sites throughout the year (Dodd et al., 1990, p. 343). By the mid-sixteenth century these small villages had coalesced into larger communities (Birch et al., 2021). Through this process, the socio-political organization of these First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. Other First Nation communities continued to practice residential mobility and to harvest available resources across landscapes they returned to seasonally/annually.

By 1600 CE, the Confederation of Nations were encountered by the first European explorers and missionaries in Simcoe County. Samuel de Champlain in 1615 reported that a group of Iroquoian-speaking people situated between the Haudenosaunee and the Wendat were at peace and remained "la nation neutre". Like the Wendat, Petun, and Haudenosaunee, the Neutral or Attawandaron people were settled village agriculturalists.

By the 1640s, devastating epidemics and the traditional enmity between the Haudenosaunee and the Attawandaron and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to their dispersal from southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. Peace was achieved between the Haudenosaunee and the Anishinaabe Nations in August of 1701 when representatives of more than twenty Anishinaabe Nations assembled in Montreal to participate in peace negotiations. Peace was confirmed again at council held at Lake Superior when the Haudenosaunee delivered a wampum belt to the Anishinaabe Nations. This agreement between the Haudenosaunee and Anishinaabe nations is referred to as the Dish with One Spoon.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century. The

Crown acknowledged the Mississaugas of the Credit as the owners of the lands between Georgian Bay and Lake Simcoe and entered into negotiations for additional tracts of land as the need arose to facilitate European settlement.

### 1.2.2 Post-Contact Settlement

Historically, the Project Area is located in the Geographical Township of Ancaster, County of Wentworth in Lots 29 and 30, Concessions 1 and 2.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the Ontario Heritage Act or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006). Early European settlements occupied similar locations as Indigenous settlements as they were generally accessible by trail or water routes and would have been

in locations with good soil and suitable topography to ensure adequate drainage.

Throughout the period of initial European settlement, Indigenous groups continued to fish, gather, and hunt within their traditional and treaty territories, albeit often with legal and informal restrictions imposed by colonial authorities and settlers. In many cases, Indigenous peoples acted as guides and teachers, passing on their traditional knowledge to settlers, allowing them to sustain themselves in their new homes. Indigenous peoples entered into economic arrangements and partnerships, and often inter-married with settlers. However, pervasive and systemic oppression and marginalization of Indigenous peoples also characterized Euro-Canadian colonization, with thousands being displaced from their lands, denied access to traditional and treaty hunting, fishing, and collecting grounds, and forced to assimilate with Euro-Canadian culture through mandatory attendance at Day and Residential Schools (Ray, 2005; Rogers & Smith, 1994).

#### 1.2.2.1. Township of Ancaster

The first township survey was undertaken in 1793, and the first settlers occupied their land holdings two years later. The township is said to have been named after a town in Lincolnshire, England. Ancaster was initially settled by disbanded soldiers, mainly Butler's Rangers, and other Loyalists following the end of the American Revolutionary War. In 1805, Boulton noted that this township contained both excellent and indifferent soils. By the 1840s, the township was noted for its fine farms (Armstrong, 1985; Boulton, 1805; Rayburn, 1997; Smith, 1846).

#### 1.2.2.2. Toronto, Hamilton and Buffalo Railway

The Toronto, Hamilton & Buffalo Railway existed from 1892 through 1987 as a separate railway serving the Hamilton, Ontario area. It joined the lines of its corporate parents, the Canadian Pacific Railway and the New York Central system. It was established largely as an alternate route for businesses in the Hamilton area to ship their products to Canadian customers in Toronto, Montreal, and the west and to American customers via the New York Central

and its subsidiaries. Operations commenced in 1892 with the acquisition of the Brantford, Waterloo and Lake Erie Railway. The Brantford, Waterloo and Lake Erie Railway operated a line between Brantford and Waterford and had been in the process of extending the line eastward from Brantford to Hamilton. The Toronto, Hamilton & Buffalo Railway completed the extension of the line from Brantford, through Cainsville, to Hamilton in 1895. The station at Cainsville (not extant) was located at 1052 Colborne Street East (County of Brant, n.d.). The connection from Hamilton to Toronto was established by the Grand Trunk Railway granting the Toronto, Hamilton & Buffalo Railway running rights to the Canadian Pacific Railway from Toronto and Hamilton in 1896 (Toronto, Hamilton & Buffalo Historical Society, 2016). The line to Brantford was abandoned by the Canadian Pacific Railway in 1965 (Andreae 1997). In 1996, a 32-kilometre section of the railway was converted to multi-use trail. The trail runs from the east end of Brantford to the west side of Hamilton (Grand River Conservation Authority, n.d.).

A portion of approximately 460 metres of the former railroad and the current multi-use trail is located within the northern polygon of the current Project Area and is intersected by Highway 52.

#### 1.2.2.3. Highway 52

Highway 52 crosses both polygons of the current Project Area.

The highway was first designated as King's Highway 52 in 1937-1938 and decommissioned in 1997. Historically, the route started as connector between Highway 2 in the south, west of Ancaster, then to Highway 8 at Peters Corners, continuing north through the Wentworth County to a disconnected spot at the limits with Wellington County, south of Guelph. During the early decades, Highway 52 was a narrow, graveled road. The portion south of Copetown was a mere earth-surfaced road until after World War II, becoming impassable in rainy seasons. The highway was finally paved for the first time during the interval 1953-1955 (Bevers, 2002).

### 1.2.3 Map Review

The 1859 *Historical Map of Wentworth County* (Gregory, 1859), 1875 *Illustrated Atlas of Wentworth County* (Page & Smith, 1875), 1916 topographic *Brantford Sheet* (Department of Militia and Defence, 1916), and the 1994 National Topographic System (NTS) *Brantford Sheet* (Natural Resources Canada, 1994) were examined to determine the presence of historic features within the Project Area during the nineteenth and twentieth centuries (Figure 2-Figure 5).

It should be noted that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

The 1859 historical map (Figure 2) shows both parts of the Project Area intersected by historical road allowances. The east-west historic road crossing the northern polygon corresponds to the trajectory of Powerline Road. The north-south road, adjacent to the east side of the southern polygon, corresponds to the current trajectory of Powerline Road East and part of the modern Highway 52. No landscape features or built structures are shown within the Project Area, but the landowner names are known for all lot subdivisions involved.

The 1875 Illustrated Atlas (Figure 3) shows a homestead with orchard mapped at the west limit of the northern polygon, within 50 metres of the limits of the Project Area, on the Lot 30 Concession 1 subdivision owned by J. Kitchen. No other features are contributed.

The 1916 topographic map (Figure 4) provides a variety of new data about the anthropic and natural features within the Project Area. The southern polygon contained a bridge at its south-eastern corner, probably at the same location currently occupied by a large culvert on Highway 52, immediately south of the intersection with Old Powerline Road. The north polygon reveals multiple changes in comparison with four decades before. A swamp or wetland is represented across the northern-northeastern sector of the north polygon. A railroad had been built in northeast-south-southwest direction across the eastern part of the north polygon, adjacent to the east side of swamp, where the railroad was embanked. It corresponds to the Hamilton-Brantford Railroad branch, part of Toronto, Hamilton and Buffalo Railway (see Section 1.2.2.2). The Summit train station is labeled just east of the Project Area, but unclear whether it refers to the small structure shown south of the east-west road outside the Project Area or the one shown north of the road, within the Project Area. The east-west road (Powerline Road) intersecting the north polygon of the Project Area is lined with a wood pole power line. Another power line crosses the Project Area north polygon in southeast-northwest direction, across the railroad, over the swamp, and intersecting another road laid out on a sinuous trajectory along the west side of the swamp, roughly along the modern trajectory of Highway 52. This is the same trajectory as the power line refurbished and assessed archaeologically in the early 1990s (see Section 1.3.3). Two built structures are depicted in the west sector of the north polygon, north and south of the road.

On the 1994 NTS map (Figure 5), Highway 52 is already built with multiple embanked and engineered slope locations alongside it. The old north-south historic road has been transformed partly into Highway 52 and partly into the Old Powerline Road that intersect each other inside the south polygon of the Project Area. The railroad has been disaffected and transformed into a trail, as it remains today, but the label "Summit" – referring to the old station and community – is still in place. There is one structure in the east sector of the north polygon, near the railroad-power line intersection, without modern correspondent. Three structures are shown in the west sector of the north polygon, likely corresponding to houses currently still in place.

### 1.2.4 Aerial and Orthoimagery Review

Historical aerial imagery from 1954 (City of Toronto Archives, 1954) (Figure 6) shows a layout of the roads similar to the 1916 topographic map (Figure 4). The railroad is visible and enhanced on the aerial photograph. The Summit station is also labeled, without clarity of where the station is located on the image. The south polygon has no visible structures within its limits, but there are multiple possible residences north and south of Powerline Road in the west sector of the north polygon. However, the resolution of the aerial imagery does not allow for a good appreciation of the structures.

A review of available Google satellite imagery between 2005 and 2025 shows no significant changes within the Project Area, with one exception: the extensive disturbance created by the construction of the Summit Station Dairy and Creamery store and parking lot in the northwest corner of the northern polygon in 2023 (Image 23 and Image 24).

## 1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Project Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MCM through "Ontario's Past Portal"; published and unpublished documentary sources; and the files of ASI.

### 1.3.1 Geography

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Project Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs,

marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 B.P. (Karrow & Warner, 1990, Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

#### 1.3.1.1. Physiography

The Project Area is located within the Kame Moraines of the Norfolk San Plain physiographic region of southern Ontario (Chapman & Putnam, 1984).

The Norfolk Sand Plain physiographic region is a wedge-shaped feature that extends from the Lake Erie shoreline and tapers northward to a point in Brantford on the Grand River (Chapman & Putnam, 1984). The region encompasses an area of 3,134 square kilometres and consists of sands and silts that were deposited as a delta in glacial Lakes Whittlesey and Warren. A massive

discharge of meltwater from the Grand River area entered the lakes between the ice front and the moraines to the northwest, building the delta from west to east as the glacier withdrew, thus covering most of the area west of the Galt Moraine with sand. In the vicinity of the subject property, glaciolactustrine deep water sediments belonging to mainly glacial Lake Warren and younger deposits and consisting of stratified to varved silt and clay, minor sand, are overlain by veneer of sand (Zone 10) (Cowan, 1972).

#### 1.3.1.2. Surficial Geology

The surficial geology mapping (Figure 7) shows that the Project Area is underlain mostly by coarse-textured glaciolacustrine deposits (sand, gravel, minor silt and clay) and partially by organic deposits.

#### 1.3.1.3. Soil Types and Drainage

The Project Area sits on the following soil units (Soil Research Institute, 1967) (Figure 8):

- Grimsby sandy loam, a gray-brown podzolic with good drainage;
- Springvale sandy loam, a gray-brown podzolic with good drainage;
- Vineland sandy loam, an imperfectly drained gray-brown podzolic; and
- Muck, poorly drained organic deposits in the swamp.

#### 1.3.1.4. Watershed, Water Sources

The Project Area is within the Big Creek sub-watershed of the Lower Grand River watershed. There is no watercourse within 300 metres of the Project Area, but there is a swamp and bog within the limits of the north polygon of the Project Area.

### 1.3.2 Previously Registered Archaeological Sites

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database maintained by the MCM. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and

longitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Project Area under review is located in Borden block *AhHa.*

According to the Ontario Archaeological Sites Database, 15 previously registered archaeological sites are located within one kilometre of the Project Area, one of which (AhHa-153) is within 50 metres and has further cultural heritage value or interest (CHVI) (MCM 2025).. A summary of the sites is provided below in Table 1. The site with further CHVI is indicated as bold. See *Supplementary Documentation (SD)* for detailed site locations.

**Table 1: Registered Sites within One Kilometre of the Project Area**

| Borden number | Site Name | Temporal/ Cultural Affiliation | Site type | Researcher |
|---|---|---|---|---|
| AhHa-35 | UG Kirkwall 17 | Pre-Contact | Artifact scatter | Mayer, Pihl, Poulton & Associates (MPPA), 1986; Timmins Martelle Heritage (TMH) |
| AhHa-36 | Union Gas Kirkwall 16 | Pre-Contact | Findspot | MPPA, 1986 |
| AhHa-47 | UK Kirkwall 17A | Pre-Contact | Campsite | MPPA, 1986; TMH, 2019 |
| AhHa-142 | Unnamed | Early Archaic | Campsite | TMH, 1991 |

| Borden number | Site Name | Temporal/ Cultural Affiliation | Site type | Researcher |
|---|---|---|---|---|
| AhHa-143 | Unnamed | Late Woodland | Campsite | TMH, 1991, 2019 |
| AhHa-144 | Unnamed | Pre-Contact | Campsite | TMH, 1991 |
| **AhHa-153** | **Unnamed** | **Pre-Contact** | **Campsite** | **ASI, 1991, 1992** |
| AhHa-324 | Unnamed | Middle Archaic, Late Woodland | Campsite | TMH, 2016, 2017 |
| AhHa-348 | Unnamed | Pre-Contact | Campsite | TMH, 2016 |
| AhHa-349 | Unnamed | Late Archaic | Campsite | TMH, 2016, 2018 |
| AhHa-369 | Unnamed | Pre-Contact | Artifact scatter | TMH, 2016 |
| AhHa-380 | Unnamed | Late Woodland | Artifact scatter | TMH, 2016 |
| AhHa-381 | Unnamed | Middle Woodland | Findspot | TMH, 2016 |
| AhHa-502 | Unnamed | Pre-Contact | Findspot, scatter, campsite | TMH, 2019 |

#### 1.3.2.1. Registered Sites with CHVI in 50 Metres

**AhHa-153** was first identified by ASI in 1991 as Locality 169-P1 during a Stage 2 survey along a hydro corridor (License 91-15). It was defined as a Pre-Contact site with two Onondaga chert lithic materials (one cortical flake and one flake fragment) and one fish bone. The site coordinates recorded in the MCM's PastPort website were found to be incorrect. Based on the fieldwork sketch map of the Stage 3 investigation and the reference points shown in Figure 3.5 at page 17 in the corresponding report (ASI, 1992), new coordinates have been calculated and the site was confirmed to be located within 50 metres of the Project Area. The corrected coordinates and site limits are provided in the accompanying *SD* file.

The site was considered to have further CHVI, and site-specific stage 3 investigations were recommended. Stage 3 was performed by ASI under the same license number 91-15. The Stage 3 for site AhHa-153 consisted in 74 test pits (not one-metre-square test units) excavated at 2.5 metres intervals over an area of 15 by 30 metres, including a narrow area outside the hydro ROW, towards Powerline Road. The AhHa-153 Stage 3 yielded a total of 10 lithic materials (one drill fragment and nine debitage items that include biface thinning flakes). The approximate limits of the site were defined as eight by 27 metres. The report found the site had further CHVI and recommended avoidance or Stage 4 mitigation.

The site AhHa-153 is technically compliant with the current S&Gs requirements for further CHVI triggering Stage 4 mitigation, as per Section 3.4.1 ("Site-specific criteria: Small or diffuse lithic scatters") Standard 1.a (one or more test units yielding 10 or more artifacts). However, the methods used in 1991 under the License 91-15 (see below) were not compliant with the S&Gs for a Stage 3 investigation, but rather an intensified Stage 2 survey, and a new Stage 3 assessment should be performed.

### 1.3.3 Previous Archaeological Assessments

ASI reviewed previous archaeological assessments that detail fieldwork within 50 metres of the Project Area. Only those specific archaeological assessments of direct relevance to the present undertaking have been included here:

- (ASI, 1991a) *Horning Mountain Junction x Brant TS 115 kV Refurbishment: Stage 2 Archaeological Resource Assessment*; License: #91-15
    - This project followed the recommendations of the previous Stage 1 (ASI, 1991b) performed under the same license number 91-15. The report states the Stage 1 project only performed windshield property inspection and provides no mapping of areas of potential.
    - This Stage 2 project performed test pit survey at five-metre intervals along the 20-metre-wide hydro corridor on areas of potential related to the construction of hydro towers as part of a refurbishment project. The test pit survey was conducted along the entire hydro ROW. 18 Pre-Contact and four Euro-Canadian sites were identified, one within the current Project Area and another within 50m.
    - 171-P1 (AhHa-B, not formally registered with a Borden number) is a single-lithic findspot and was recommended for Stage 3 investigations.
    - 169-P1, a Pre-Contact site registered as AhHa-153, consists of two Onondaga chert lithic materials and one fish bone. Based on the mapping the site is within 50 metres of the current Project Area. The site was considered to have further CHVI, and site-specific stage 3 investigations were recommended.
    - Despite the report pre-dating the S&Gs, the methods of this project were compliant.
- (ASI, 1992) *Horning Mountain Junction x Brant TS 115kV Refurbishment: Stage 3 Archaeological Resource Assessment*; License 91-15 (Part 2)
    - The Stage 3 investigations of site 171-P1 (AhHa-B) consisted of 47 test pits (not one-metre units) placed at 2.5 metre intervals. Five lithic artifacts were discovered in a nine-by-nine metre area, with no diagnostics. The location was cleared of further concerns. The

site does not have CHVI as per the S&Gs Section 2.2 and Section 3.4.1 Standard 1 Guideline 1; no further work is required.
    - The Stage 3 of site AhHa-153 consisted of 74 test pits (not one-square-metre units) excavated at 2.5 metres intervals over an area of approximately 15 by 30 metres. The AhHa-153 Stage 3 yielded a total of 10 lithic materials (one drill fragment and nine debitage items that include biface thinning flakes). The approximate limits of the site were defined at eight by 27 metres.
    - The report found the site had further CHVI and recommended avoidance or Stage 4 mitigation.
    - ASI review of this report concluded that the 1991 investigation is not compliant with the 2011 S&Gs and a Stage 3 Site Specific Assessment in accordance with Section 3.0 of the S&G should be completed ahead of any proposed work in this area in the future. (see the accompanying *SD* file).
- (Detritus Consulting Ltd, 2021) *Stage 1-2 Archaeological Assessment Proposed Loewith Farm Expansion, Part of Lots 29 and 30, Concession 1, Geographic Township of Ancaster, Historical County of Wentworth, City of Hamilton*; PIF# P017-0921-2021
    - This project overlapped with the current Project Area in the northwest sector of the northern polygon. Pedestrian survey at five-metre intervals was completed, no archaeological resources on the overlapping lands, and no further assessment was recommended.

# 2.0 Property Inspection

## 2.1 Field Methods

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and

watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted by Ciprian Ardelean under the field direction of Blake Williams (P383) on July 4, 2025, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Project Area. It was a systematic visual inspection from publicly accessible lands only and did not include excavation or collection of archaeological resources. Fieldwork was conducted when weather conditions were deemed clear with good visibility (sunny and hot, with seasonal temperatures of up to 28 degrees Celsius), per S & G Section 1.2., Standard 2. Field photography is presented in Section 7.1 (Image 1-Image 22), and field observations are overlaid onto the existing conditions of the Project Area in Section 8.0 (Figure 9).

## 2.2 Current Land Use and Field Conditions

The Project Area is divided into two separate, non-contiguous polygons. The Highway 52 ROW intersects both polygons, presenting deep stormwater ditches on both sides, embanked sections and steep engineered slope sections.

Inside the south polygon, the north side of the Highway 52 – Powerline Road East intersection is affected by a tall berm following a semi-circular trajectory along the southern side of a natural plateau. The area southeast of Powerline Road East and east of Highway 52 descends gently towards an old creek bed that now behaves as a seasonal stream. Part of the slope, closer to the highway,

is markedly steeper and heavily engineered. West of the highway, the land is covered by a woodlot.

A multi-use (hike and bike) trail crosses the northern polygon in north-south direction, following the narrow embankment of a historic railroad (see section 1.2.2.2 and Image 4, Image 13). The portion of the trail north and east of Highway 52 crosses through a conservation area that also has a graveled parking lot with a pay machine and an information gazebo (Image 8, Image 9). As part of the conservation area, a swamp and bog are contained in between the trail and Highway 52 (Image 5, Image 6). A dense woodlot extends east of the wetland area and across the trail route (Image 7). The west side of the Highway 52 ROW presents considerable berms and engineered slopes parallel to the route (Image 2). The terrain is considerably higher on areas both west and east of the highway, with natural plateaus partly covered by woodlots (Image 7, Image 10, Image 13, Image 17, Image 22). The western margins of the north polygon of the Project Area are occupied by ploughed fields. The northwest sector of the north polygon is occupied by the large building and parking lot of the Summit Station Dairy store, a recently built extension of the nearby Loewith Farms. The facilities include a dairy factory, a dairy and ice-cream store, as well as an outdoor terrace with restaurant tables with live music. A strip of land west of the store is still cultivated and regularly ploughed. There are several houses with front lawns and large backyards on both sides of Powerline Road West south of the farms, in the west of the northern polygon of the Project Area (Image 11, Image 12).

# 3.0 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Project Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites within 300 metres;
- Water sources within 300 metres: primary, secondary, or past water source (wetland: swamp, Copetown bog);
- Elevated topography within the Project Area (elevated terrain overlooking wetland);

- Well-drained soils within the Project Area (Grimsby sandy loam and Springvale sandy loam);
- Early settlements within 100 metres (historic Summit Railway Station);
- Early historic transportation routes within 100 metres (The Hamilton-Brantford Rail, part of the Toronto, Hamilton and Buffalo Railway).

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The City of Hamilton's Municipal Heritage Register was consulted and two adjacent properties within the Project Area are Listed (but Non-Designated) under the *Ontario Heritage Act*:

- 1300 Powerline Road West, dating to 1857, and
- 1341 Powerline Road West, dating to 1854.

The *City of Hamilton Archaeology Management Plan 2016* (City of Hamilton, 2016) was reviewed for background information and to help inform any indicators of archaeological potential not captured in other research. Archaeological management plans (AMPs) are high-level analyses of archaeological potential for non-specialists but cannot be considered a replacement for Stage 1 archaeological assessments. ASI's review of the above AMP indicates the Project Area is in an area of archaeological potential.

The property inspection determined that parts of the Project Area exhibit archaeological potential. These areas will require Stage 2 archaeological assessment prior to any construction activities or other proposed impacts. According to the S & G Section 2.1.1, pedestrian survey is required in actively or recently cultivated fields (Figure 9: areas highlighted in orange). According to the S & G Section 2.1.2, test pit survey is required on terrain where ploughing is not viable, such as wooded areas, properties where existing landscaping or infrastructure would be damaged, overgrown farmland with heavy brush or rocky pasture, and narrow linear corridors up to 10 metres wide (Image 4, Image 7, Image 10-Image 14, Image 17, Image 19, and Image 22; Figure 9: areas highlighted in green).

Part of the Project Area has been previously assessed (91-15; P017-0921-2021) and does not require further archaeological assessment (Figure 9: areas highlighted in red). A small portion at the east end of the previously assessed hydro corridor (91-15) requires further work, as it is within 50-metres of site AhHa-153 (Figure 9: area highlighted in dashed red).

A part of the Project Area is located within low lying wet areas, and according to the S & G Section 2.1 have low archaeological potential (Image 3, Image 5, and Image 6; Figure 9: areas highlighted in blue). These areas do not require further survey.

Part of the Project Area has been subjected to deep soil disturbance events due to the construction of highway, roads, ditches, culverts, berms, engineered slopes, driveways, houses, parking lot, and industrial-commercial facilities. According to the S & G Section 1.3.2 these areas do not retain archaeological potential (Image 1, Image 2, Image 4, Image 8-Image 10, Image 12, Image 13-Image 15, Image 16, Image 18, Image 20, and Image 21; Figure 9: areas highlighted in yellow) and do not require further survey.

## 3.1 Conclusions

The Stage 1 background research determined that 15 previously registered archaeological sites are located within one kilometre of the Project Area, one of which (AhHa-153), located within 50 metres, has further CHVI and requires Stage 3 assessment if there will be changes in the project that will impact the site. The Stage 1 property inspection determined that parts of the Project Area preserve archaeological potential and Stage 2 assessment will be required.

# 4.0 Recommendations

The following recommendations are made:

1) Parts of the Project Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit and pedestrian surveys at five-metre intervals, as appropriate (Figure 9). Stage 2 is required prior to any proposed construction activities on these lands;

2) The remainder of the Project Area does not retain archaeological potential on account of deep and extensive land disturbance, permanently wet conditions, or being previously assessed. These lands do not require further archaeological assessment; and

3) Should the proposed work extend beyond the current Project Area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

**NOTWITHSTANDING** the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. If archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Archaeology Programs Unit of the MCM should be immediately notified.

The above recommendations are subject to MCM approval, and it is an offence to alter any archaeological site without MCM concurrence. No grading or other activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of MCM approval has been received.

# 5.0 Advice on Compliance with Legislation

- This report is submitted to the Minister as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.
- The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Public and Business Services Delivery.
- Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

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# 7.0 Images

## 7.1 Field Photography

**Image 1: Project Area disturbed by roadside ditch, berms, extensive grading and construction (see Image 23) – no archaeological potential**

**Image 2: Project Area partly disturbed by road, ditch, berm, extensive grading, and farm extension constructions (see also Image 23) – no archaeological potential; woodlot in the background and part of the hill preserve archaeological potential – test pit survey required**

**Image 3: Permanently wet conditions east of Highway 52 ROW – low archaeological potential**

**Image 4: Built-up multi-use trail along former historic railroad; disturbed – no archaeological potential; adjacent areas hold potential – test pit survey required**

**Image 5: Permanently low and wet conditions in swamp – low archaeological potential**

**Image 6: Permanently wet conditions in Copetown (Summit) Bog – low archaeological potential**

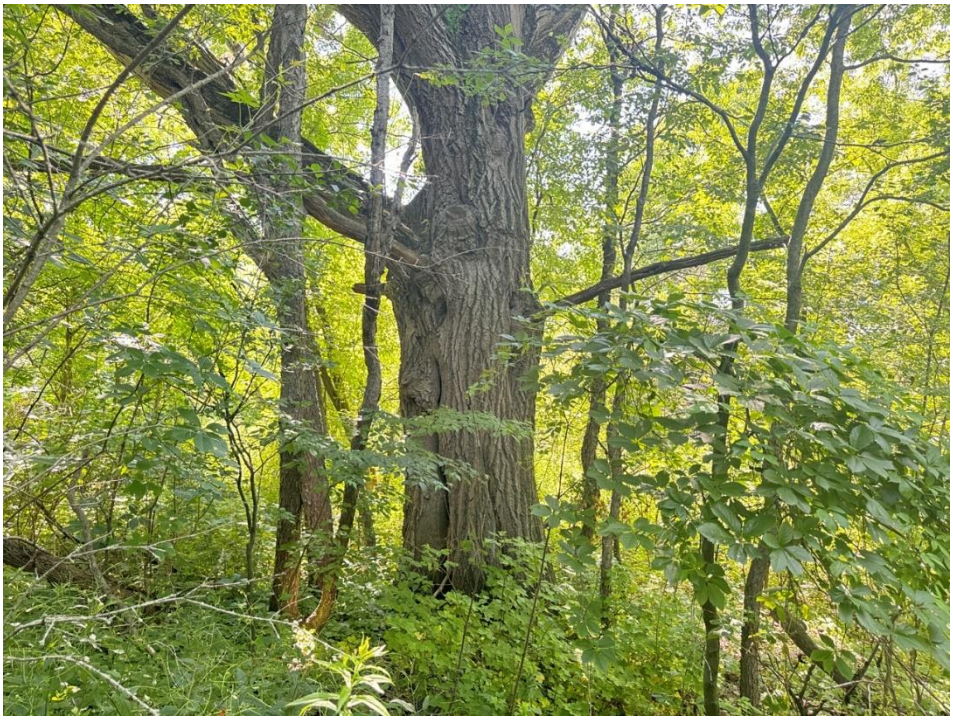

**Image 7: Dense woodlot between trail and swamp has archaeological potential – test pit survey required**

**Image 8: Project Area disturbed by grading and parking lot – no archaeological potential**

**Image 9: Part of Project Area disturbed by grading, parking meter, and information gazebo – no archaeological potential**

**Image 10: Parts of the Project Area disturbed by roads – no archaeological potential; woodlots ahead have potential – test pit survey required**

**Image 11: Residential lawned and treed areas have archaeological potential – test pit survey required**

**Image 12: Project Area partly disturbed by road, roadside ditch, culvert, and driveway – no archaeological potential; lawned areas have potential – test pit survey required**

**Image 13: Built-up trail on the trajectory of former railroad – no archaeological potential; adjacent areas have potential – test pit survey required**

**Image 14: Built-up trail on the trajectory of former railroad – no archaeological potential; adjacent areas have potential – test pit survey required**

**Image 15: Part of Project Area disturbed by natural gas pipeline – no archaeological potential**

**Image 16: Project Area disturbed by road construction and roadside ditch – no archaeological potential; adjacent areas have potential – test pit survey required**

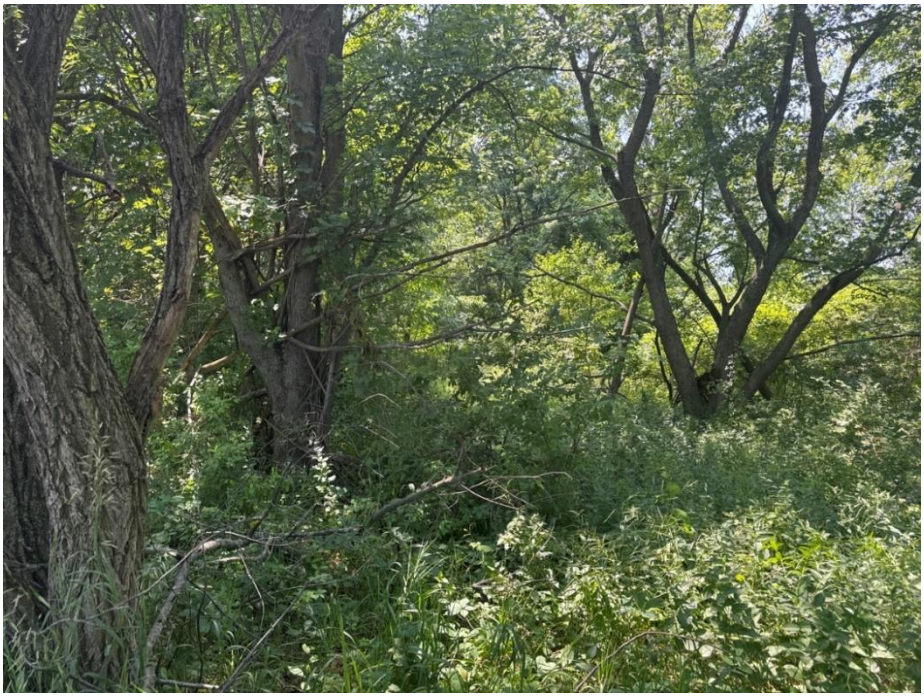

**Image 17: Woodlot preserves archaeological potential – test pit survey required**

**Image 18: Project Area disturbed by road, ditch, and engineered slope – no archaeological potential; higher terrain to the right has potential – test pit survey required**

**Image 19: Grassed and treed area south of Powerline Road East preserves archaeological potential – test pit survey required**

**Image 20: Project Area disturbed by Highway 52 and engineered slope – no archaeological potential**

**Image 21: Project Area disturbed by Highway 52 road cut and a stormwater ditch – no archaeological potential; woodlot to the left has potential – test pit survey required**

**Image 22: Woodlot west of Highway 52 has archaeological potential – test pit survey required**

## 7.2 Historical Imagery

**Image 23: Google Earth Street View from October 2023 shows extensive grading and disturbance within the Project Area related to the construction of the parking lot and building of Summit Station Dairy and Creamery store**

**Image 24: Google Earth view of the northern polygon of the Project Area from 2023 showing ongoing construction of Summit Station Dairy and Creamery**

# 8.0 Maps

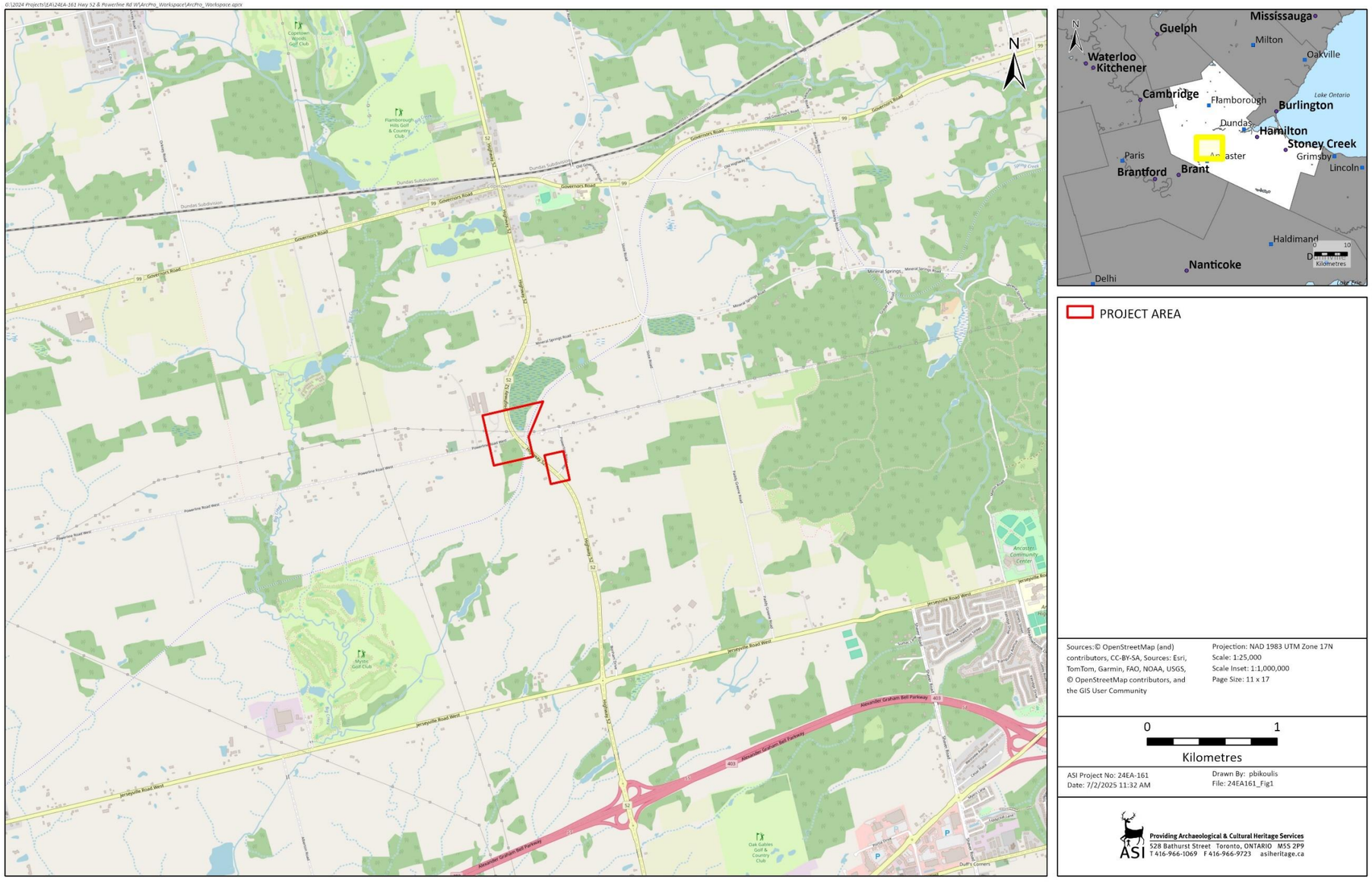


**Figure 1: Location of the Project Area**

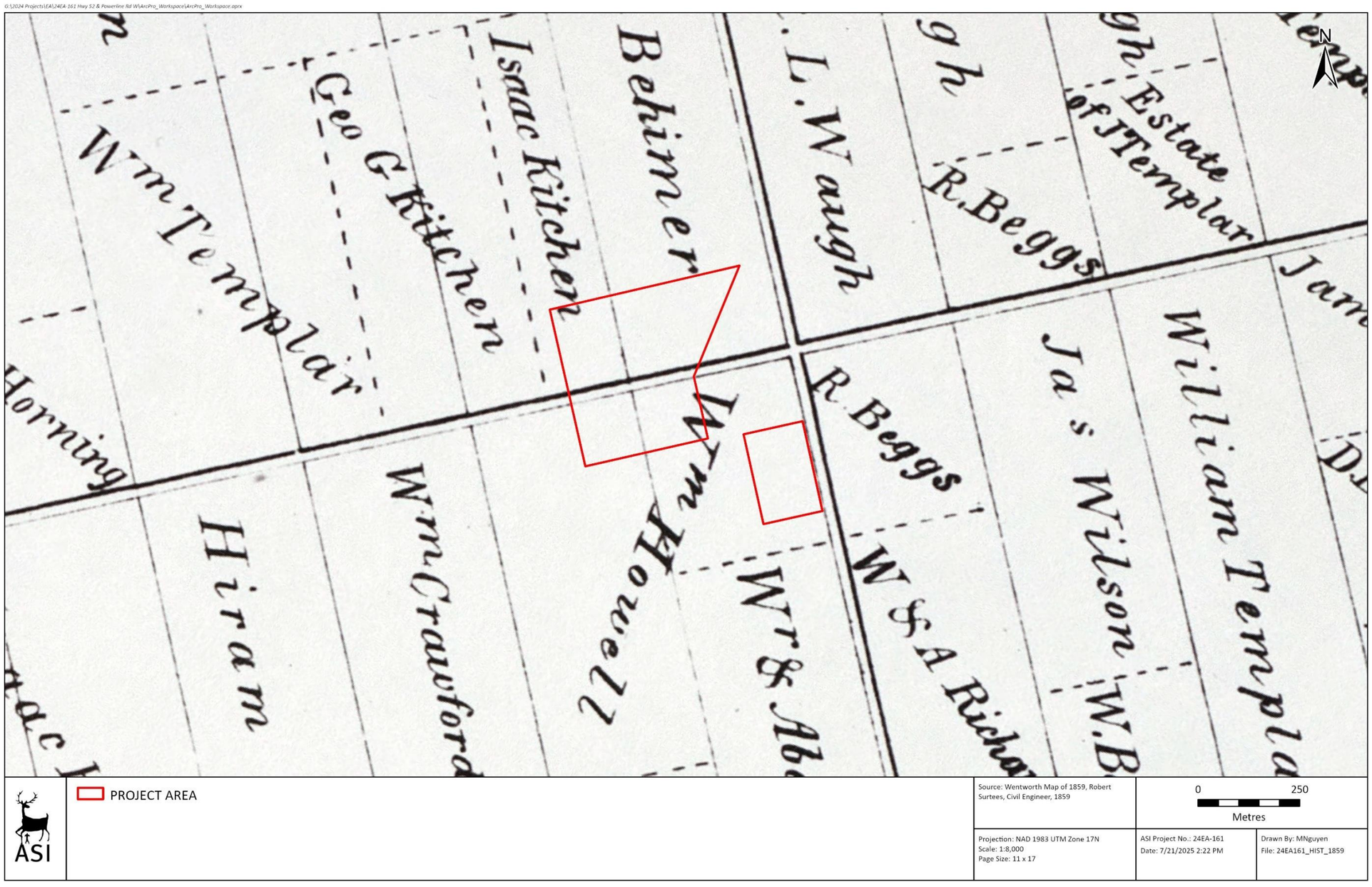


**Figure 2: Project Area (Approximate Location) Overlaid on the 1859 Historical Map of Wentworth County**

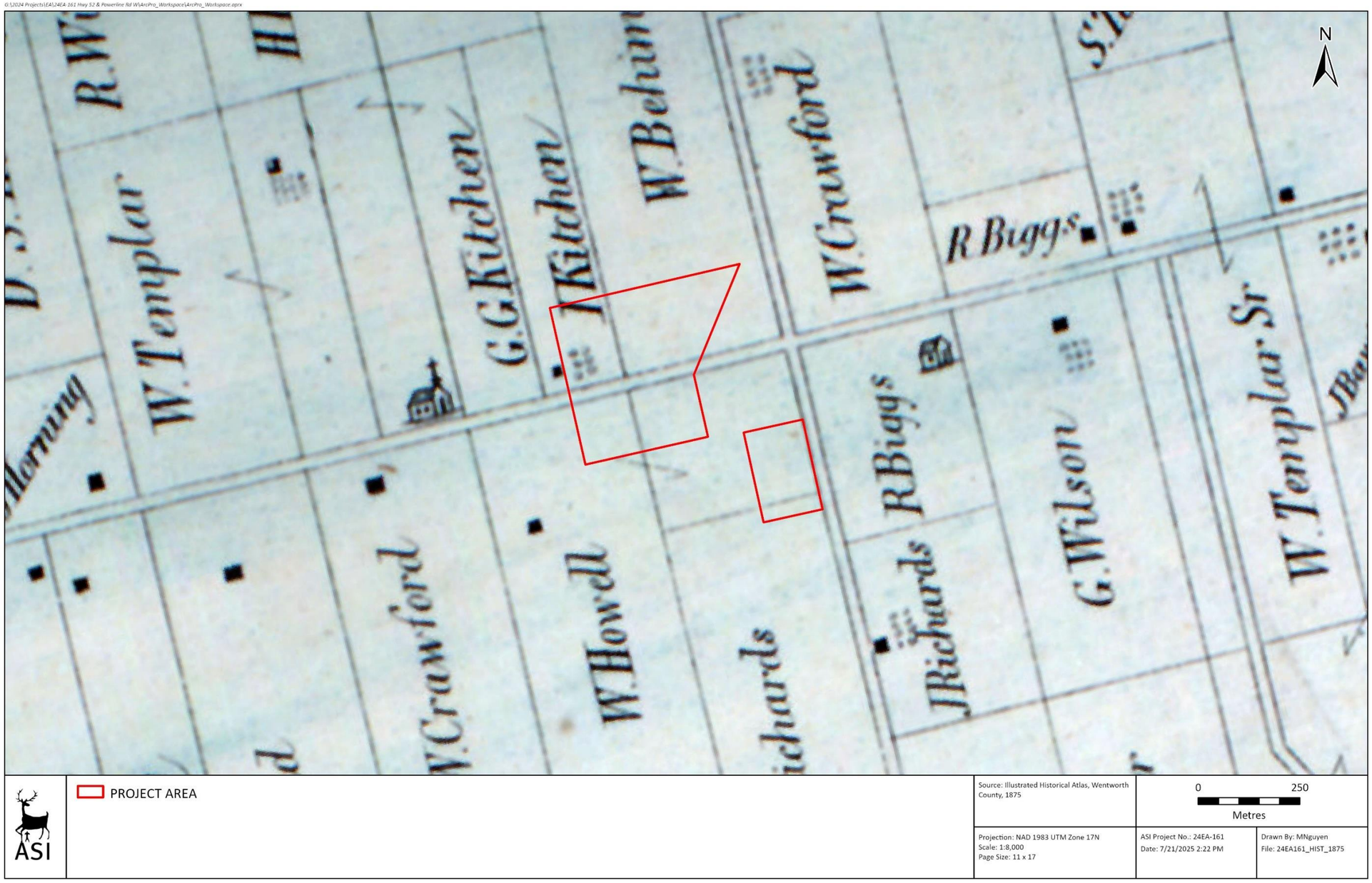


**Figure 3: Project Area (Approximate Location) Overlaid on the 1875 Illustrated Atlas of Wentworth County**

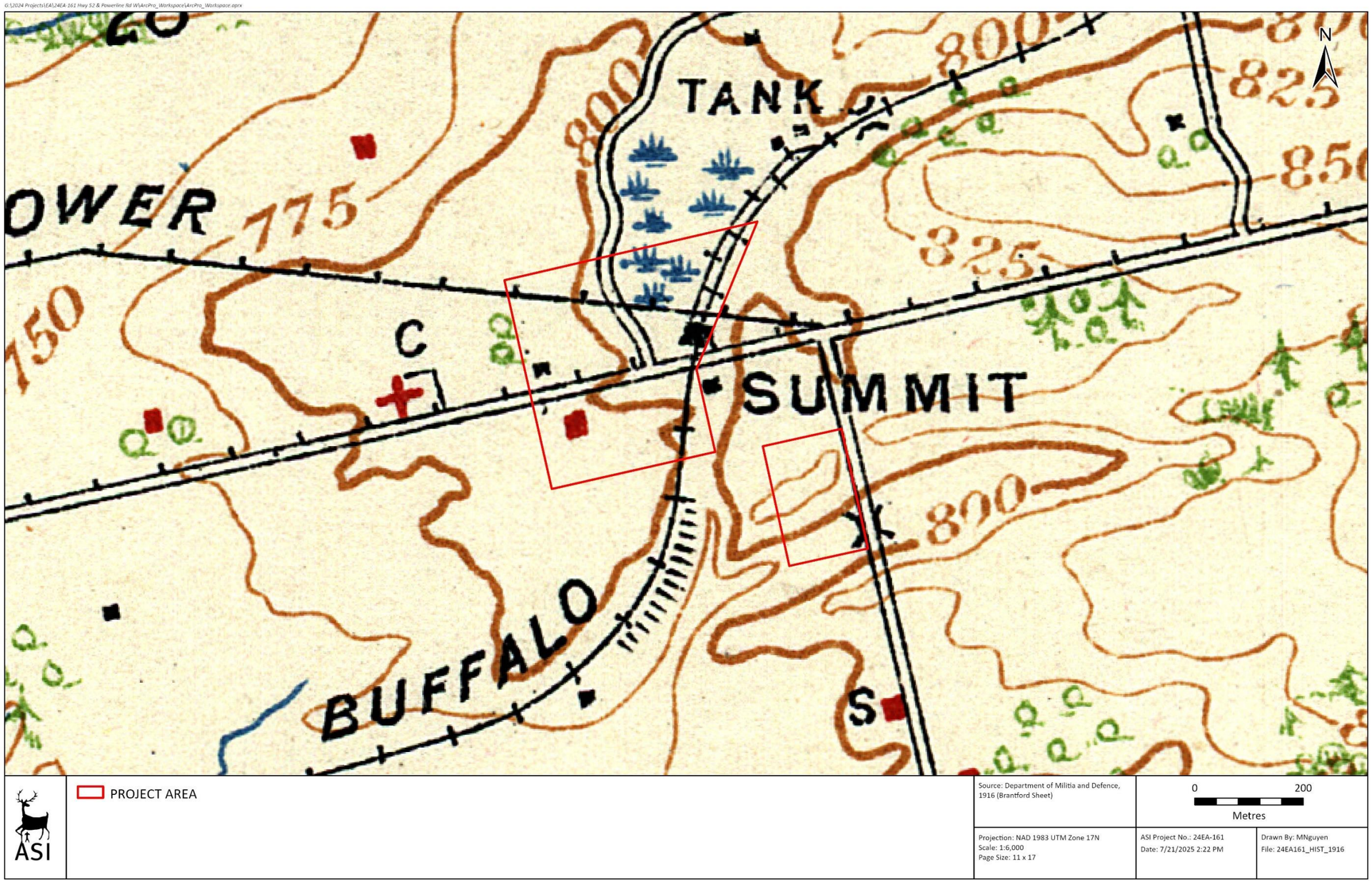


**Figure 4: Project Area (Approximate Location) Overlaid on the 1916 Topographic Brantford Sheet**

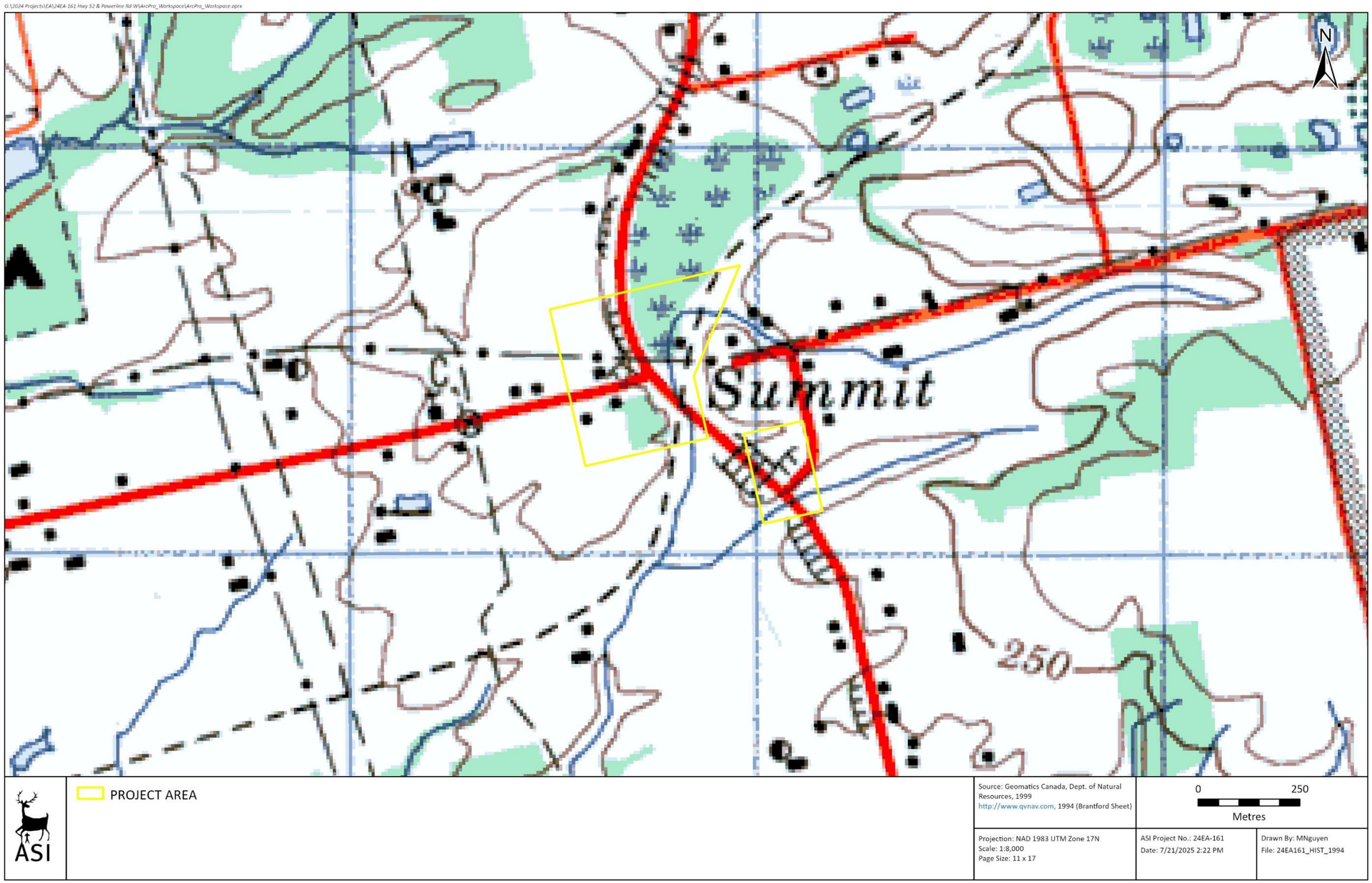


**Figure 5: Project Area (Approximate Location) Overlaid on the 1994 NTS Brantford Sheet**

**Figure 6: Project Area (Approximate Location) Overlaid on the 1954 Aerial Photograph**

**Figure 7: Project Area – Surficial Geology**

**Figure 8: Project Area – Soil Drainage**

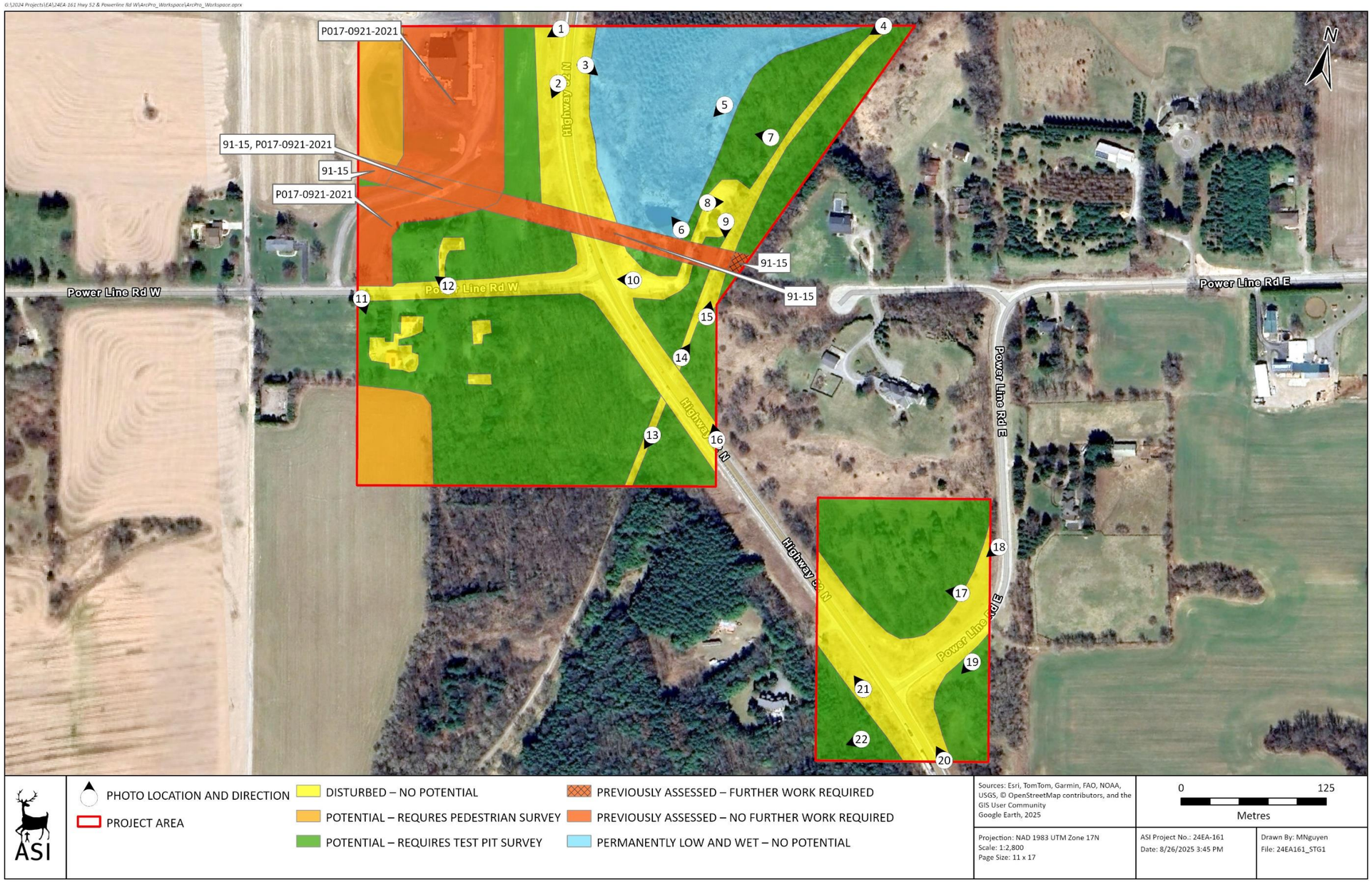


**Figure 9: Results of the Stage 1 Archaeological Assessment**

# Phase 3 Transportation Assessment
# Hamilton MCEA Highway 52 and Powerline Intersection

## City of Hamilton

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**April 2026**
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## Appendices

Appendix A Roundabout Traffic Operations Analysis Results
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## Disclaimer

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# 1.0 Introduction

## 1.1 Background

The City of Hamilton (City) retained R.J. Burnside & Associates Limited (Burnside) to complete a Municipal Class Environmental Assessment (MCEA) for Highway 52 and Powerline Road intersection improvements. The purpose of this MCEA is to assess and recommend a preferred solution and preliminary design for intersection improvements. The transportation assessment for Phase 1 and Phase 2 has been completed. This report advances Phase 3 by providing the transportation analysis required to evaluate the preliminary design concepts.

## 1.2 Description of Study Area

The study area includes two closely spaced three-legged intersections Highway 52 & Powerline Road West and Highway 52 & Powerline Road East located approximately 430 m apart. Both Powerline Road approaches operate with a single shared lane for left and right turns, while Highway 52 consists of one lane in each direction with dedicated right-turn lanes at both intersections. Access to a parking lot serving the Hamilton-Brantford Rail Trail is located on the east side of Highway 52 at Powerline Road West, with the trail crossing Highway 52 approximately 110 m south of this intersection.

## Figure 1: Study Area

## 2.0 Phase 1 and Phase 2 Summary

Under Phase 1 and Phase 2 of the traffic analysis, existing traffic operations, a five-year collision review, and an evaluation of all five alternative solutions was completed.

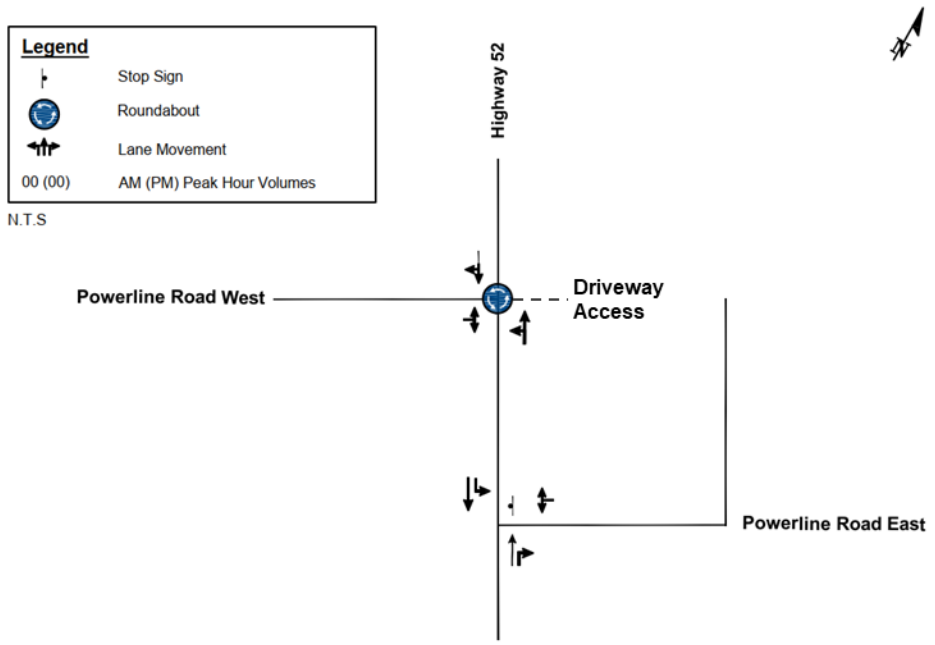
Collision data from January 2018 to December 2022 show no consistent or significant collision patterns at the study intersections; however, targeted countermeasures for slow-moving vehicle and rear-end collisions were identified as safety and operational needs. Pedestrian and cyclist activity was observed to be high during long weekends based on seven-day trail count data provided by the City. Highway 52 currently carries an Average Annual Daily Traffic (AADT) of approximately 16,000 vehicles (2024), and turning movement counts collected in May 2024 were used to support the operational analysis.

The existing conditions analysis identified significant delays on the westbound approach at Powerline Road East, with operations at Levels of Service (LOS) E and F, largely due to high Highway 52 through volumes. In contrast, north-south movements along Highway 52 currently operate at LOS A under free-flow conditions. Future condition analyses for 2031 and 2041 were completed with support from the City of Hamilton's demand forecasting model. The analyses indicated that under future conditions, the minor approaches at both intersections are expected to fail, confirming the need for intersection improvements.

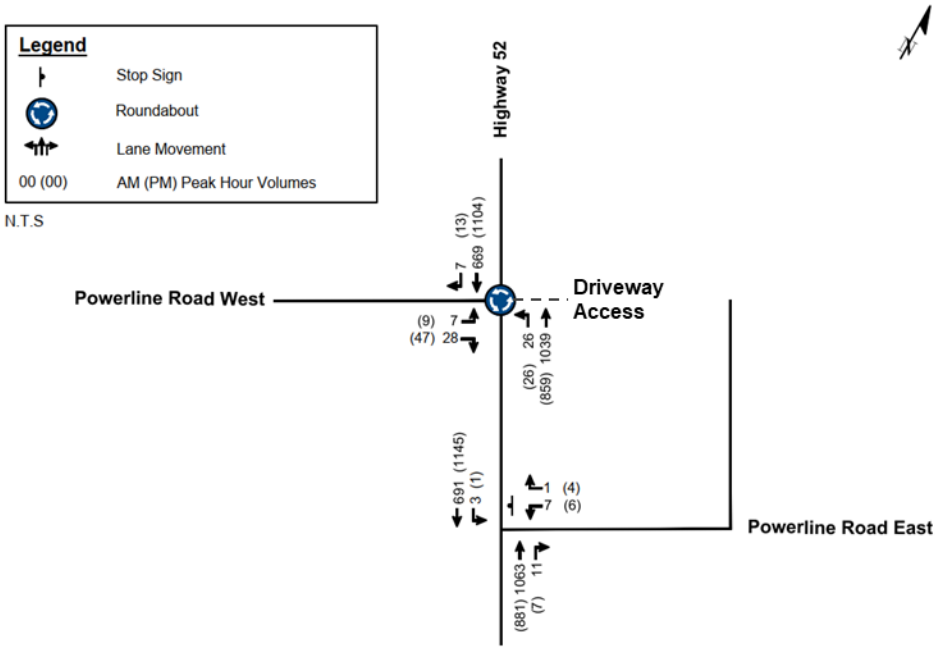
Five alternative solutions were evaluated. Alternative Solution 2 and Alternative Solution 3 were identified as the preferred solutions from a transportation perspective. Based on the overall evaluation from all categories of evaluation, including natural environment, social environment, cultural heritage, and economic environment, Alternative Solution 2 was chosen as the preferred solution.

Alternative Solution 2 consists of a roundabout at the intersection of Powerline Road West & Highway 52 and adding a southbound left-turning lane at Powerline Road East and Highway 52. The trail will be relocated northerly to the new roundabout. The lane configuration for Alternative Solution 2 is illustrated in Figure 2. The future traffic volumes are illustrated in Figure 3.

## Figure 2: Alternative Solution 2 – Lane Configuration




## Figure 3: Alternative Solution 2 – Traffic Volumes

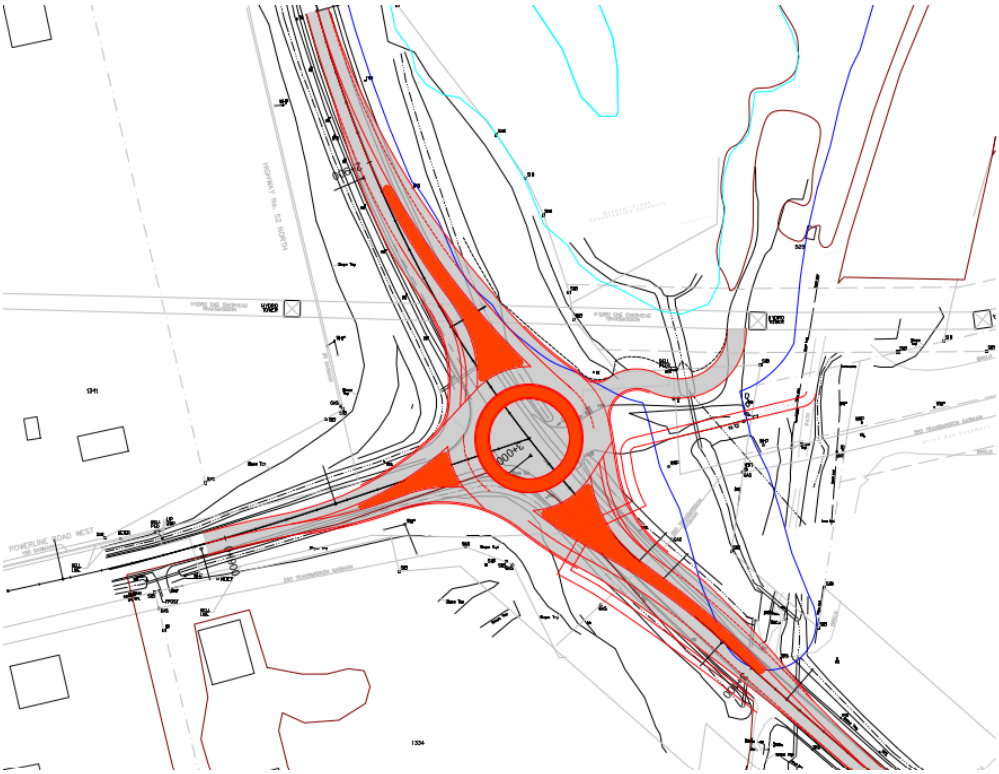


# 3.0 Preferred Design Concept

## 3.1 Overview of Design Concepts

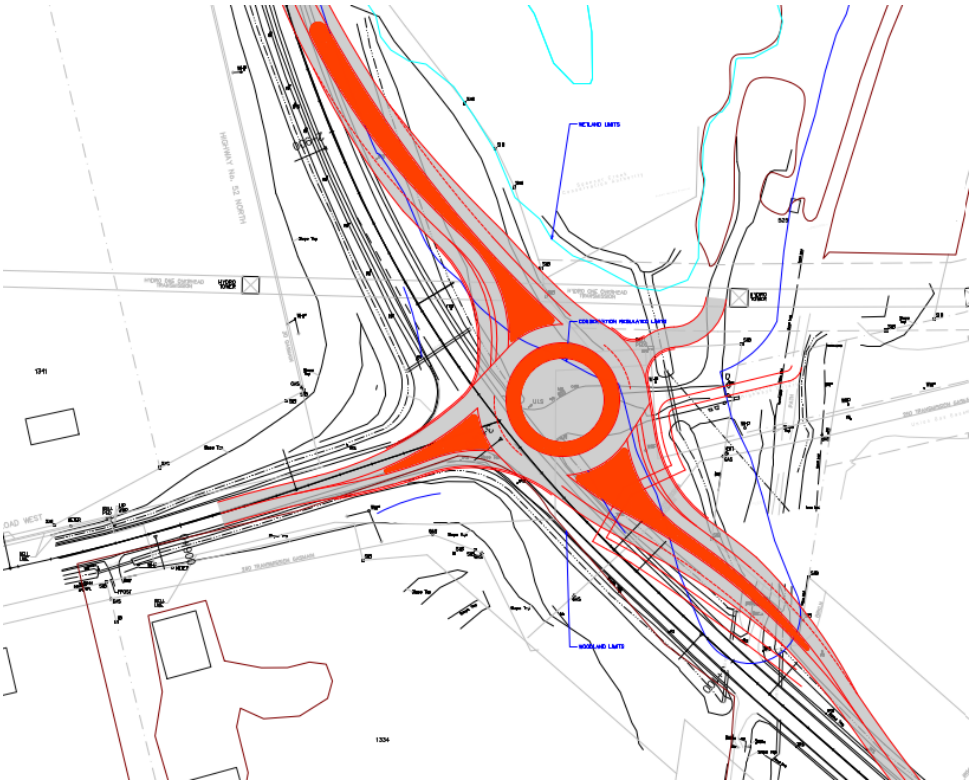
Three design concepts were developed for Alternative 2, as shown in Figure 4, Figure 5, and Figure 6. All concepts feature identical lane configurations, with the only variation being the placement of the roundabout. As a result, the traffic operational performance is expected to be the same across all three concepts.

**Figure 4: Design Concept 1**



## Figure 5: Design Concept 2

**Figure 6: Design Concept 3**



## 3.2 Future Traffic Operations Analysis

### 3.2.1 Highway 52 and Powerline Road West

During Phase 2 of the MCEA, future traffic operations analysis was conducted for a conceptual design developed for Alternative Solution 2. This analysis indicated that the southbound movement was operating at LOS F. As a result, adjustments were made to the roundabout geometry to develop the various design concepts. Traffic operations for the 2031 and 2041 horizon years were then re-evaluated for a single-lane roundabout. Key geometric features including entry width, inscribed circle diameter, and PHI angle were updated accordingly.

Table 1 and Table 2 present the traffic operations analysis results for the 2031 and 2041 horizon year, respectively.

**Table 1: 2031 Single Lane Roundabout Traffic Operations Analysis for Hwy 52 and Powerline Road West**

| Intersection & Movement | Existing Storage / Link Distance (m) | AM v/c | AM LOS | AM Delay (s) | AM 95th Queue (m) | PM v/c | PM LOS | PM Delay (s) | PM 95th Queue (m) |
|---|---|---|---|---|---|---|---|---|---|
| EBLR | 635 | 0.04 | A | 4 | 3 | 0.09 | A | 6 | 3 |
| NBLT | 435 | 0.79 | B | 12 | 102 | 0.66 | A | 7 | 18 |
| SBTR | 365 | 0.51 | A | 5 | 9 | **0.84** | C | 15 | **148** |

**Table 2: 2041 Single Lane Roundabout Traffic Operations Analysis for Hwy 52 and Powerline Road West**

| Intersection & Movement | Existing Storage / Link Distance (m) | AM v/c | AM LOS | AM Delay (s) | AM 95th Queue (m) | PM v/c | PM LOS | PM Delay (s) | PM 95th Queue (m) |
|---|---|---|---|---|---|---|---|---|---|
| EBLR | 635 | 0.04 | A | 4 | 3 | 0.10 | A | 7 | 3 |
| NBLT | 435 | **0.84** | C | 16 | **164** | 0.70 | A | 8 | 29 |
| SBTR | 365 | 0.54 | A | 6 | 9 | **0.89** | C | 23 | **236** |

As shown in Table 1, traffic operations for the 2031 horizon year indicated that the roundabout will operate within capacity, but the southbound PM Peak through movement was very close to the 0.85 volume-to-capacity ratio (v/c) threshold and queuing was observed at 148 m (over 20 passenger vehicle equivalents). However, as shown in Table 2, the longer term analysis indicated that the southbound PM Peak movement would operate with a v/c of 0.89 in 2041, indicating it would be nearing capacity in the future. In addition, the queue of 236 m for this movement would also be of concern. Further, the northbound movement during the AM Peak would be approaching the threshold v/c and would have long queues as well. Therefore, it was concluded that a two-lane roundabout configuration is the best option for this roundabout considering the 2041 horizon year.

Table 3 presents the traffic operation results for the two-lane roundabout configuration in 2041.

**Table 3: 2041 Two-Lane Roundabout Traffic Operations Analysis for Hwy 52 and Powerline Road West**

| Intersection & Movement | Existing Storage / Link Distance (m) | AM v/c | AM LOS | AM Delay (s) | AM 95th Queue (m) | PM v/c | PM LOS | PM Delay (s) | PM 95th Queue (m) |
|---|---|---|---|---|---|---|---|---|---|
| EBLR | 635 | 0.05 | A | 4 | 3 | 0.11 | A | 6 | 3 |
| NBLT | 435 | 0.73 | A | 8 | 31 | 0.60 | A | 5 | 12 |
| SBTR | 365 | 0.43 | A | 3 | 13 | 0.70 | A | 7 | 27 |

As shown in Table 3, the analysis indicated that traffic operations improved significantly with the two-lane roundabout configuration for the critical movements previously identified.

Appendix A shows the roundabout traffic operation analysis results.

### 3.2.2 Highway 52 and Powerline Road East

The intersection improvement involved adding a southbound left turn lane. The storage length was defined at 25 m given the anticipated left turn volumes by 2041. Table 4 shows the traffic operation analysis for Highway 52 and Powerline Road East for the 2041 horizon year.

**Table 4: 2041 Traffic Operations Result for Highway 52 and Powerline Road East**

| Intersection & Movement | Existing Storage / Link Distance (m) | AM v/c | AM LOS | AM Delay (s) | AM 95th Queue (m) | PM v/c | PM LOS | PM Delay (s) | PM 95th Queue (m) |
|---|---|---|---|---|---|---|---|---|---|
| WBLR | 300 | 0.15 | F | 68 | 1 | 0.13 | F | 52 | 0 |
| NBT/NBR | 360/65 | - | - | - | - | - | - | - | - |
| SBL | 25 | 0.01 | B | 13 | 0 | 0.02 | B | 11 | 0 |
| SBT | 435 | - | - | - | - | - | - | - | - |

As shown in Table 4, the analysis indicated that all the movements operated well with excess capacity. However, the westbound movement is anticipated to operate with a LOS F due to high waiting time (52 seconds) to make a

westbound left turn, as the north-south traffic is high. Given this performance is for a very low volume of traffic on the west leg, there is no recommended mitigative measures.

Appendix B shows the synchro traffic operation analysis results.

## 3.3 Link Capacity Analysis

The 2041 v/c ratios for the study corridors were calculated for the weekday AM and PM peak hours using the 2041 forecasted traffic volumes. For the link capacity analysis, only auto volumes and auto link capacities were considered in this analysis. The analysis indicated that the corridors operated within traffic capacity.

The results for Highway 52 are presented in Table 5 and Table 6.

**Table 5: Highway 52 Link Capacity Analysis (AM)**

| Highway 52 | SB # of Lanes | SB Total Capacity | SB Volume | SB v/c ratio | NB # of Lanes | NB Total Capacity | NB Volume | NB v/c ratio |
|---|---|---|---|---|---|---|---|---|
| North of Powerline Road West | 1 | 1400 | 721 | 0.52 | 1 | 1400 | 1117 | 0.80 |
| Between Powerline Road West and Powerline Road East | 1 | 1400 | 746 | 0.53 | 1 | 1400 | 1136 | 0.81 |
| South of Powerline Road East | 1 | 1400 | 746 | 0.53 | 1 | 1400 | 1147 | 0.82 |

**Table 6: Highway 52 Link Capacity Analysis (PM)**

| Highway 52 | SB # of Lanes | SB Total Capacity | SB Volume | SB v/c ratio | NB # of Lanes | NB Total Capacity | NB Volume | NB v/c ratio |
|---|---|---|---|---|---|---|---|---|
| North of Powerline Road West | 1 | 1400 | 1192 | 0.85 | 1 | 1400 | 927 | 0.66 |
| Between Powerline Road West and Powerline Road East | 1 | 1400 | 1223 | 0.87 | 1 | 1400 | 944 | 0.67 |
| South of Powerline Road East | 1 | 1400 | 1229 | 0.88 | 1 | 1400 | 947 | 0.68 |

**Table 7: Powerline Road East-West Link Capacity Analysis West of Hwy 52 (AM and PM)**

| Powerline Road West | EB # of Lanes | EB Total Capacity | EB Volume | EB v/c ratio | WB # of Lanes | WB Total Capacity | WB Volume | WB v/c ratio |
|---|---|---|---|---|---|---|---|---|
| West of Highway 52 (AM) | 1 | 700 | 40 | 0.06 | 1 | 700 | 34 | 0.05 |
| West of Highway 52 (PM) | 1 | 700 | 63 | 0.09 | 1 | 700 | 41 | 0.06 |

**Table 8: Powerline Road East-West Link Capacity Analysis East of Hwy 52 (AM and PM)**

| Powerline Road West | EB # of Lanes | EB Total Capacity | EB Volume | EB v/c ratio | WB # of Lanes | WB Total Capacity | WB Volume | WB v/c ratio |
|---|---|---|---|---|---|---|---|---|
| East of Highway 52 (AM) | 1 | 700 | 16 | 0.02 | 1 | 700 | 9 | 0.01 |
| East of Highway 52 (PM) | 1 | 700 | 8 | 0.01 | 1 | 700 | 11 | 0.02 |

## 3.4 Pedestrian Crossover (PXO) Warrants

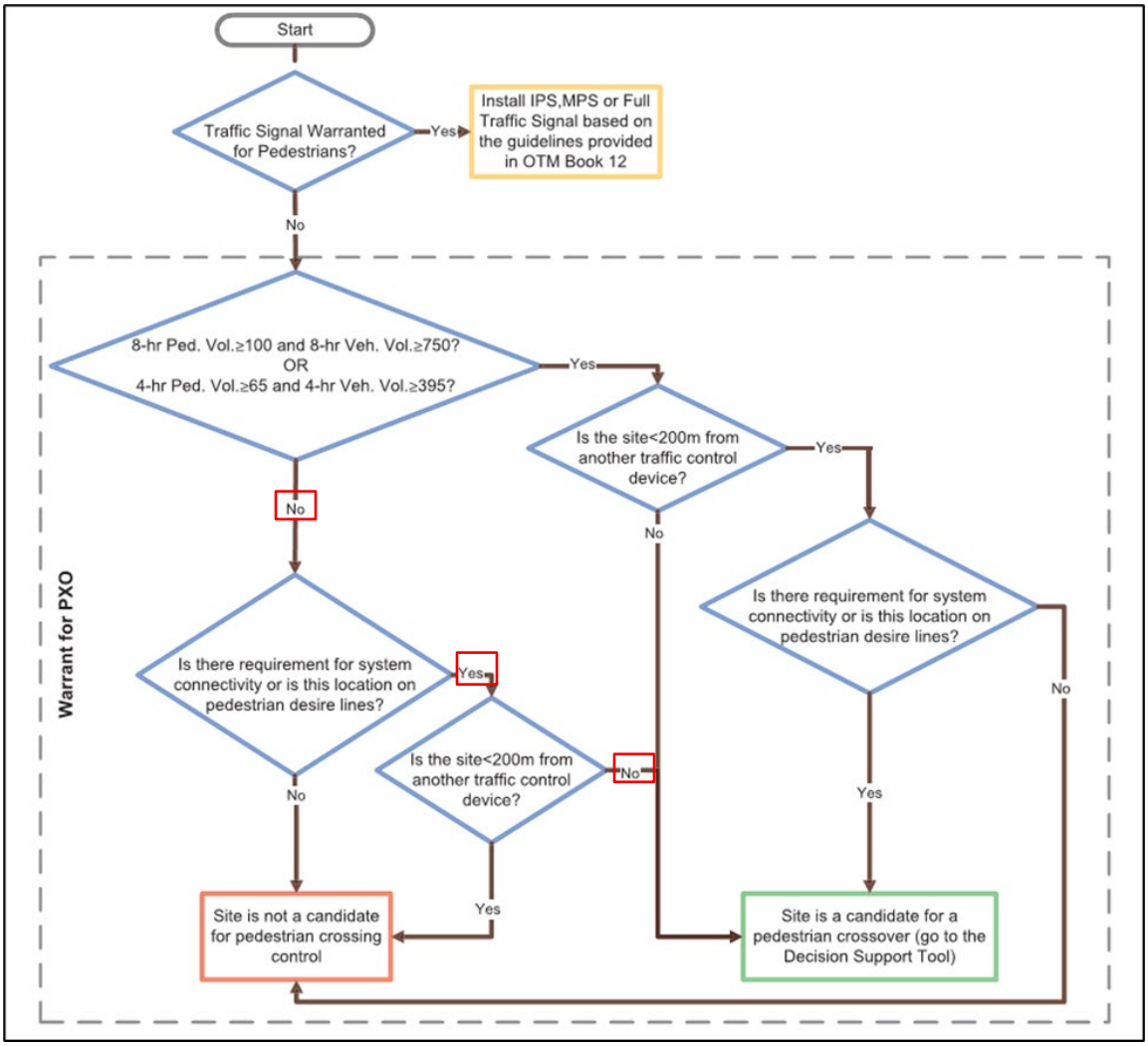
Ontario Traffic Manual (OTM) Book 15 (Pedestrian Crossing Treatments) provides practical guidance and application information on the planning, design, and operation of roadway pedestrian crossovers, to promote uniformity of approaches across Ontario, when a traffic signal or pedestrian signal is not applicable. The process for determining the warrant for a Pedestrian Crossover (PXO) is contained within the Decision Support Tool (DST). This tool is designed to assess pedestrian crossing needs and selecting the most appropriate crossing treatment for controlled crossings. The DST involves two components: (1) Preliminary Assessment and (2) Pedestrian Crossing Selection.

The purpose of the preliminary assessment is to determine whether traffic signals are warranted to address pedestrian delays caused by high vehicle volumes on the main road or a high number of crossing pedestrians.

The design concepts for this study include a two-lane roundabout. The purpose of the PXO is to support pedestrian crossings at this roundabout. Hence this assessment begins with the Pedestrian Crossing Selection.

Pedestrian Crossovers (PXOs) are intended for low to moderate volume, low speed roadways (60 km/h or less posted speed) and must not be used where the road volume exceeds 35,000 AADT. PXOs should not be installed at sites where there are heavy volumes of turning traffic, or where there are more than four lanes of two-way traffic. PXOs should not be within 200 m of other signal-protected pedestrian crossings. Parking and other sight obstructions should be prohibited within at least 30 m of the crossings. The Decision Support Tool (DST) provided in Book 15 is shown Figure 7.

## Figure 7: Pedestrian Crossover (PXO) Warrant Process




Source: Figure 2 from OTM Book 15- Pedestrian Crossing Treatment, June 2016

The Pedestrian Crossing Selection of the DST is the guidance for pedestrian crossing treatment selection to assist practitioners to identify which treatment system is applicable to the site based on traffic and geometric characteristics of the site.

The first step is to assess if the corridor volume passes the suggested pedestrian and two-way traffic volume thresholds. The 8-hour and 4-hour pedestrian and vehicular volume was assessed using the existing traffic data collected for the traffic operations analysis. Peak 8-hour and 4-hour pedestrian volumes crossing the main road do not meet the volume thresholds, as shown in Table 9.

**Table 9: PXO Warrant Volumes**

| | 8-Hour Volume Pedestrians | 8-Hour Volume Vehicles | 4-Hour Volume Pedestrians | 4-Hour Volume Vehicles |
|---|---|---|---|---|
| **South of Highway 52 and Powerline Road** | 7 | 10,803 | 0 | 6,118 |
| **Threshold** | 100 | 750 | 65 | 395 |
| **Threshold Met?** | **No** | **Yes** | **No** | **Yes** |

As a second step, the Pedestrian Crossing Selection notes that a pedestrian crossing is still warranted if this crossing plays a key role in enhancing pedestrian connectivity or aligns with natural pedestrian desire lines.

The Hamilton Brantford Rail Trail crossing is just 100 m south of the intersection featuring walking trails that attract a large number of visitors. This PXO would fulfill a missing gap for pedestrians and cyclists who would want to make that crossing, but wants to avoid vehicles travelling 60 km/h and 70 km/h. Pedestrian and cyclist counts were conducted over seven days across May and June 2021. Findings are outlined below:

- There was an average of 65 daily pedestrians travelling along Highway 52 passing the crossing.
- There was an average of 270 daily cyclists travelling along Highway 52 passing the crossing.

A PXO at this location can attract latent demand from these pedestrians and cyclists who may not feel comfortable crossing due to the lack of comfort and security under the existing conditions. Given these factors, implementing a PXO crossing at this location is a suitable option to improve pedestrian accessibility and connectivity.

The next step is to determine the type of pedestrian crossing using the pedestrian crossover selection matrix provided in Figure 8. The posted speed in this assessment was replaced with the anticipated operating speed approaching the roundabout. This anticipated operating speed is expected to be reduced to 50 km/h due the entry deflection naturally slowing down traffic.

## Figure 8: Pedestrian Crossover Selection Matrix

| Two-way Vehicular Volume | | | Posted Speed Limit (km/h | Total Number of Lanes for the Roadway Cross Section[1] | | | |
|---|---|---|---|---|---|---|---|
| Time Period | Lower Bound | Upper Bound | | 1 or 2 Lanes | 3 lanes | 4 lanes w/raised refuge | 4 lanes w/o raised refuge |
| 8 Hour | 750 | 2,250 | ≤50 | Level 2 Type D | Level 2 Type C[3] | Level 2 Type D[2] | Level 2 Type B |
| 4 Hour | 395 | 1,185 | | | | | |
| 8 Hour | 750 | 2,250 | 60 | Level 2 Type C | Level 2 Type B | Level 2 Type C[2] | Level 2 Type B |
| 4 Hour | 395 | 1,185 | | | | | |
| 8 Hour | 2,250 | 4,500 | ≤50 | Level 2 Type D | Level 2 Type B | Level 2 Type D[2] | Level 2 Type B |
| 4 Hour | 1,185 | 2,370 | | | | | |
| 8 Hour | 2,250 | 4,500 | 60 | Level 2 Type C | Level 2 Type B | Level 2 Type C[2] | Level 2 Type B |
| 4 Hour | 1,185 | 2,370 | | | | | |
| 8 Hour | 4,500 | 6,000 | ≤50 | Level 2 Type C | Level 2 Type B | Level 2 Type C[2] | Level 2 Type B |
| 4 Hour | 2,370 | 3,155 | | | | | |
| 8 Hour | 4,500 | 6,000 | 60 | Level 2 Type B | Level 2 Type B | Level 2 Type C[2] | Level 2 Type B |
| 4 Hour | 2,370 | 3,155 | | | | | |
| 8 Hour | 6,000 | 7,500 | ≤50 | Level 2 Type B | Level 2 Type B | Level 2 Type C[2] | Level 1 Type A |
| 4 Hour | 3,155 | 3,950 | | | | | |
| 8 Hour | 6,000 | 7,500 | 60 | Level 2 Type B | Level 2 Type B | | |
| 4 Hour | 3,155 | 3,950 | | | | | |
| 8 Hour | 7,500 | 17,500 | ≤50 | Level 2 Type B | Level 2 Type B | | |
| 4 Hour | 3,950 | 9,215 | | | | | |
| 8 Hour | 7,500 | 17,500 | 60 | Level 2 Type B | | | |
| 4 Hour | 3,950 | 9,215 | | | | | |

Type A Type B Type C Type D

Figure 8 shows the hatched cell which indicates that a PXO is not recommended for sites with these traffic and geometric conditions. Generally, a traffic signal is warranted for such conditions.

However, to support pedestrian and cyclist crossings, a pedestrian refuge island is available in the roundabout northbound approach island to allow the crossing to be completed in two stages. This two-stage crossing reduces the required vehicular gap needed for the pedestrians to cross safely. Additionally, pedestrian safety will be enhanced if a Level 2 Type B PXO is implemented as it provides the highest level of protective components among the available crossover types. Therefore, a Level 2 Type B pedestrian crossover with a pedestrian refuge island

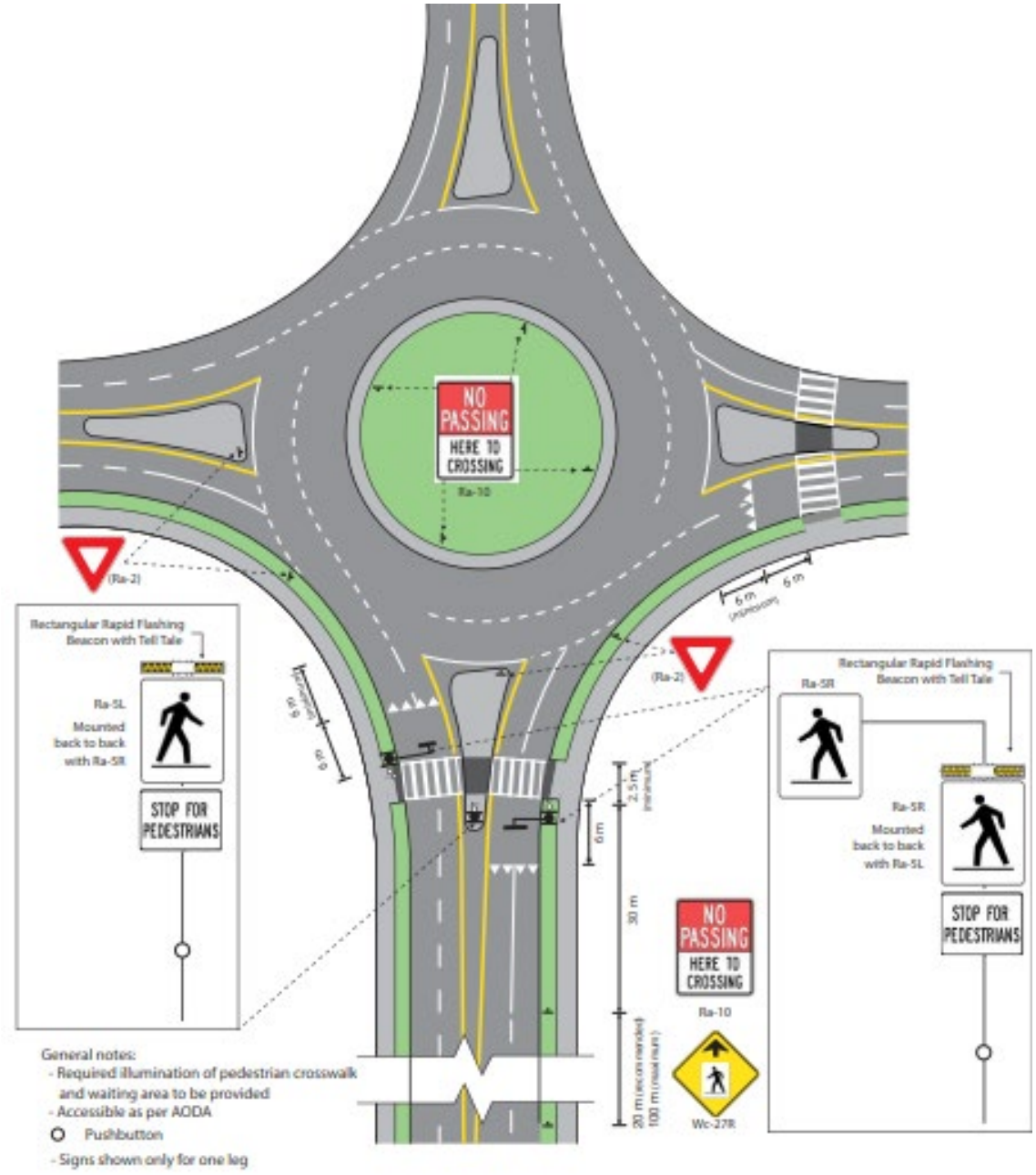
is recommended for the study intersection. Table 10 shows the components of Level 2 Type B pedestrian crossover and Figure 9 shows the Level 2 Type B pedestrian crossover for a double lane roundabout.

It is important to note that OTM Book 15 guidelines were followed for the implementation and selection of the pedestrian crossing type. Although some thresholds were not exactly met, OTM Book 15 stresses that these guidelines are meant to guide a broad range of traffic situations and the practitioner is expected to exercise engineering judgement for specific situations. Under this particular scenario, a Level 2 Type B pedestrian crossover fulfills a necessary gap in the trail network and reduced operating speeds at the entry deflection is anticipated to allow for safe operations.

**Table 10: Components of Level 2 Type B Pedestrian Crossing**

| Required Components | Optional Components |
|---|---|
| • Side-mounted pedestrian crossover signs, showing a symbol of a person crossing on a road (Ra-5R and Ra-5L), together with their Stop for Pedestrians (Ra-4t) tabs, on both sides of the road mounted back to back (For one-way applications, Stop for Pedestrians tab is required only for the direction of travel)<br>• One over-head mounted pedestrian crossover sign showing a symbol of a person crossing on a road to the right (Ra-5R), for each direction of travel<br>• Ladder Crosswalk Markings<br>• Yield to Pedestrians line markings at 6.0 m from crosswalk<br>• Actuated Double-sided Rectangle Rapid Flashing Beacon with Tell Tale and Pedestrian Pushbutton for pedestrians mounted above each set of side-mounted pedestrian crossover signs installed at the pedestrian crossover<br>• Advanced Pedestrian Crossover Ahead sign (Wc-27R/Wc-27L) at 50.0 m upstream of the crosswalk<br>• Passing restrictions on single lane approaches<br>• Stopping prohibition for a minimum of 15 m on each approach to the crossing, and 10 m following the crossing<br>• Lane change prohibition on multiple lane approaches using solid white lines (not applicable for exiting legs of roundabouts)<br>• No Passing Here to crossing sign (Ra-10) 30 m upstream of the crosswalk | • Textured Crosswalk Markings<br>• Raised Crosswalk<br>• Pedestrian Pushbutton (Ra-11) sign<br>• Safety elements including Barricades, Pedestrian Fencing, Gates, Walls, Bollards, and Barriers<br>• Actuated Double-sided Rectangle Rapid Flashing Beacon with Tell Tale mounted on Overhead Sign |

**Figure 9: Pedestrian Crossover Level 2 Type B – Double-Lane Roundabout**




## 3.5 Multi-Modal Level of Service

A Multi-Modal Level of Service (MMLOS) analysis was completed in accordance with the Ontario Traffic Manual (OTM) MMLOS Guidelines (20-3587). Highway 52 corridor was found to align most closely with the characteristics of a Rural Connector street type.

According to the MMLOS guidelines, a Rural Connector is a major mobility corridor that links rural areas to nearby urban centres. It carries high volumes of vehicles and trucks over moderate distances and typically prioritizes these modes. Rural Connectors are generally not served by conventional transit, provide limited accommodation for pedestrians and cyclists, and are surrounded by predominantly rural land uses such as agricultural, low-density residential, and commercial properties.

Based on this classification, the target LOS for a Rural Connector was compared against the existing LOS to determine whether each segment and intersection meets the recommended performance criteria. Figure 10 summarizes the target LOS thresholds for the various street types.

**Figure 10: Target Level of Service for Different Street Type**

| | LOS Target | | | | |
|---|---|---|---|---|---|
| | Peds | Bikes | Transit | Trucks | Cars |
| Downtown avenue | B | C | D | D | D |
| Urban main street | C | C | D | D | D |
| Urban boulevard | C | B | D | n/a | E |
| Neighbourhood connector | E | D | B | D | D |
| Neighbourhood main street | C | C | D | D | D |
| Neighbourhood boulevard | D | B | D | n/a | E |
| Industrial connector | E | D | D | B | D |
| Industrial boulevard | D | D | D | B | E |
| Rural connector | E | E | n/a[1] | D | D |
| Custom | X | X | X | X | X |

1 Rural roads typically do not serve as transit route corridors where buses stop, which is what the Transit LOS is based on

To evaluate the intersection level of service for pedestrians, several intersection features were assessed. These included the presence of enhanced pedestrian measures, signal cycle length, number of uncontrolled crossings, and average effective turning radius. Enhanced pedestrian measures include pedestrian refuge islands, pedestrian storage space, leading pedestrian intervals, and raised intersections. All study intersections are noted to have marked and protected pedestrian crossings.

To evaluate the level of service for cyclists, intersection features including enhanced bicycle measures, signal length, number of uncontrolled crossings, and average effective turning radius were assessed. Enhanced bicycle measures include cross-rides, green conflict markings, dedicated intersection features, protected intersection features, bicycle signal heads, leading bicycle phases, and protected phases. Out of the three study intersections, only Unity Drive / Unity Gate was equipped with bicycle signal heads.

The level of service is determined based on the average score for each mode. Table 11 summarizes the criteria used to determine the level of service for pedestrian and bike facilities at unsignalized intersection.

**Table 11: Criteria for Unsignalized Intersection Level of Service**

| Mode and Description | Pedestrian Average Crossing Distance (m) | Pedestrian Marked Controlled Crossings | Pedestrian Average Effective Turning Radius (m) | Bike Presence of Bicycle Facilities | Bike Requirement to Stop | Bike Average Effective Turning Radius (m) |
|---|---|---|---|---|---|---|
| **LOS A** | <7.0 | 100% of movements | <9.0 | Bike facility on all approaches | 0-15% | <9.0 |
| **LOS B** | 7.0-8.9 | n/a[1] | 9.0-10.9 | Bike facility on ¾ or ⅔ approaches | 16-30% | 9.0-10.9 |
| **LOS C** | n/a[1] | n/a[1] | 11.0-12.9 | n/a[1] | 31-50% | 11.0-12.9 |
| **LOS D** | 9.0-10.9 | n/a[1] | 13.0-14.9 | Bike facility on ½ or ⅓ approaches | 51-70% | 13.0-14.9 |
| **LOS E** | n/a[1] | 50% of movements | 15.0-17.9 | n/a[1] | 71-85% | 15.0-17.9 |
| **LOS F** | >11.0 | <50% of movements | ≥18 | No bike facility | >85% | ≥18 |

Note: [1]For some measures, a limited number of LOS scores are possible. The ones that cannot be obtained for that metric are marked as “n/a”

The following design checks were also considered. Facilities that fail to meet these checks are considered to have a LOS F.

### Intersection Checks

- Are marked pedestrian crossings provided to connect all approaching pedestrian facilities?
- Have Accessibility for Ontarians with Disabilities Act (AODA) and municipal accessibility standards (if applicable) been considered?
- Does the approaching bike facility continue at a consistent width up to the edge of the intersection (crosswalk or curb edge of intersecting roadway)?
- Is a continuous amount of space and accompanying pavement markings delineated for cyclists through the intersection?
- Does the intersection design provide features which facilitate all the intended turn movements for cyclists (e.g. bike boxes, queuing space, protected intersection, etc.)?

Table 12 summarizes the pedestrian and bicycle levels of service. While pedestrian and cyclist LOS meet the targets for Highway 52 and Powerline Road West, the targets are not met for Highway 52 and Powerline Road East. However, based on the traffic data collected for this study, there were zero pedestrians that crossed at this intersection highlighting the low pedestrian demand directly surrounding this area. Given the rural nature of this corridor, fulfilling the gap in the trail network via the pedestrian crossover at Highway 52 and Powerline Road West serves a more vital role in the overall active transportation network.

**Table 12: Intersection Multi-modal Level of Service Evaluation**

| Intersection | Control Type | Pedestrian LOS | Pedestrian Target LOS | Bicycle LOS | Bicycle Target LOS |
|---|---|---|---|---|---|
| Highway 52 and Powerline Road West | Roundabout | D | E | E | E |
| Highway 52 and Powerline Road East | Unsignalized | F | E | F | E |

## 4.0 Summary

This report presents the findings of a Municipal Class Environmental Assessment (MCEA) undertaken for the intersections of Highway 52 with Powerline Road West and Powerline Road East. The purpose of the study is to evaluate existing and future transportation conditions and identify recommended improvements to enhance intersection operations, safety, and overall connectivity. The study area consists of two closely spaced three-legged intersections located approximately 430 m apart. Both Powerline Road West and Powerline Road East currently operate with a single shared left- and right-turn lane, while Highway 52 provides one through lane in each direction with exclusive right-turn lanes at both intersections.

A range of criteria were considered in the evaluation of alternative solutions, including traffic operations, safety, connectivity, and other technical factors. Five alternatives were assessed, and Alternative 2 was identified as the preferred solution from a transportation perspective. This report therefore focuses on the operational evaluation of Alternative 2.

For the intersection of Highway 52 and Powerline Road West, a single-lane roundabout was evaluated for the 2031 and 2041 horizon years, along with a two-lane roundabout for the 2041 horizon year. The analysis indicated that while a single-lane roundabout operates acceptably in the near term, it would approach capacity under 2041 conditions. The analysis also indicated a double-lane roundabout operates acceptably under 2041 conditions. At the intersection of Highway 52 and Powerline Road East, the addition of a southbound left-turn lane was assessed for the 2041 horizon year. The results show that the intersection would operate with overall excess capacity; however, the westbound movement is projected to operate at Level of Service (LOS) F due to longer turning delays, despite the v/c ratio indicating sufficient available roadway capacity. However, due to low vehicular volumes and a delay of just 52 seconds, this operation was deemed acceptable.

An active transportation assessment was also conducted in accordance with OTM Book 15. A Level 2 Type B pedestrian crossover with a refuge island for the double-lane roundabout at Highway 52 and Power Line Road West is recommended.

The MMLOS analysis indicated that while pedestrian and cyclist LOS meet the targets for Highway 52 and Powerline Road West, the targets are not met for Highway 52 and Powerline Road East. However, based on the traffic data

collected for this study, there were zero pedestrians that crossed at this intersection highlighting the low pedestrian demand directly surrounding this area. Given the rural nature of this corridor, fulfilling the gap in the trail network via the pedestrian crossover at Highway 52 and Powerline Road West serves a more vital role in the overall active transportation network.

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Appendix A

## Roundabout Traffic Operations Analysis Results

# Junctions 10

## ARCADY 10 - Roundabout Module

Version: 10.1.2.2275
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**Filename:** Highway 52 and Powerliner Road Alternative 2-2031 Single Lane_19Nov25.j10
**Path:** \\PCK-RDC-P-01\Shared Work Areas\058409 - Creditview Implementation Strategy\058803 Highway 52 and Powerline Road\19Nov25
**Report generation date:** 11/19/2025 4:44:27 PM

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## »Highway 52 and Powerline Road West - 2031, AM
## »Highway 52 and Powerline Road West - 2031, PM

### Summary of intersection performance

| | AM | | | | | | PM | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (PCE) | 95% Queue (PCE) | Delay (s) | VIC Ratio | LOS | Set ID | Queue (PCE) | 95% Queue (PCE) | Delay (s) | VIC Ratio | LOS |
| | Highway 52 and Powerline Road West - 2031 | | | | | | | | | | | |
| Leg A | D1 | 1.1 | 1.6 | 5.38 | 0.51 | A | D2 | 5.0 | **25.8** | 15.31 | 0.84 | C |
| Leg B | | 0.0 | 0.5 | 3.92 | 0.04 | A | | 0.1 | 0.6 | 6.28 | 0.09 | A |
| Leg C | | 3.9 | 17.7 | 12.40 | 0.79 | B | | 2.0 | 3.1 | 7.38 | 0.66 | A |

***There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.***

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

### File summary

#### File Description

| | |
|---|---|
| Title | Highway 52 and Powerline ROad West Alt 2 |
| Location | |
| Site number | |
| Date | 4/24/2025 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Analyst | RJBURNSIDE\AJunctions |
| Description | |

### Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|---|---|---|---|---|---|---|---|
| m | kph | PCE | PCE | perHour | s | -Min | perMin |

### Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Show lane queues in feet / metres | Show all PICADY stream intercepts | Calculate residual capacity | V/C Ratio Threshold | Average Delay threshold (s) | Queue threshold (PCE) | Use simulation for HCM roundabouts | Use iterations for HCM roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|
| 5.75 | ✓ | | | | | 0.85 | 36.00 | 20.00 | | |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2031 | AM | ONE HOUR | 00:00 | 01:30 | 15 | ✓ |
| D2 | 2031 | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

## Analysis Set Details

| ID | Name | Description | Include in report | Network flow scaling factor(%) | Network capacity scaling factor(%) |
|---|---|---|---|---|---|
| A1 | Highway 52 and Powerline Road West | Alternative 2 three legged roundabout at poweline west | ✓ | 100.000 | 100.000 |

# Highway 52 and Powerline Road West - 2031, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Queue variations | Analysis Options | Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high. |

## Intersection Network

### Intersections

| Intersection | Name | Intersection type | Use circulating lanes | Leg order | Intersection Delay (s) | Intersection LOS |
|---|---|---|---|---|---|---|
| | untitled | Standard Roundabout | | A, B, C | 9.56 | A |

### Intersection Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Right | Normal/unknown | 9.56 | A |

## Legs

### Legs

| Leg | Name | Description | No yield line |
|---|---|---|---|
| A | Highway 52 (South Leg) | | |
| B | Powerline Road West | | |
| C | Highway 52 ( North Leg) | | |

### Roundabout Geometry

| Leg | V - Approach road half-width (m) | E • Entry width (m) | l' • Effective flare length (m) | R • Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Entry only | Exit only |
|---|---|---|---|---|---|---|---|---|
| A | 3.50 | 5.50 | 30.0 | 40.0 | 46.0 | 20.0 | | |
| B | 3.50 | 5.50 | 30.0 | 40.0 | 46.0 | 20.0 | | |
| C | 3.50 | 5.50 | 30.0 | 40.0 | 46.0 | 20.0 | | |

### Slope / Intercept / Capacity

#### Leg Intercept Adjustments

| Leg | Type | Reason | Percentage intercept adjustment (%) |
|---|---|---|---|
| A | Percentage | | 90.00 |
| B | Percentage | | 90.00 |
| C | Percentage | | 90.00 |

#### Roundabout Slope and Intercept used in model

| Leg | Final slope | Final intercept (PCE/hr) |
|---|---|---|
| A | 0.633 | 1487 |
| B | 0.633 | 1487 |
| C | 0.633 | 1487 |

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2031 | AM | ONE HOUR | 00:00 | 01:30 | 15 | ✓ |

### Demand overview (Traffic)

| Leg | Linked leg | Profile type | Use 0-D data | Average Demand (PCE/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 676 | 100.000 |
| B | | ONE HOUR | ✓ | 35 | 100.000 |
| C | | ONE HOUR | ✓ | 1065 | 100.000 |

## Origin-Destination Data

Demand (PCE/hr)

| J | To | | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 7 | 669 |
| | B | 7 | 0 | 28 |
| | C | 1039 | 26 | 0 |

## Vehicle Mix

| Truck data entry mode | PCE Factor for a Truck (PCE) |
|---|---|
| Truck Percentages | 2.00 |

Heavy Vehicle %

| J | To | | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 50 | 8 |
| | B | 0 | 0 | 9 |
| | C | 7 | 17 | 0 |

## Results

### Results Summary for whole modelled period

| Leg | Max V/C Ratio | Max Delay (s) | Max Queue (PCE) | Max 95th percentile Queue (PCE) | Max LOS | Average Demand (PCE/hr) | Total Intersection Arrivals (PCE) |
|---|---|---|---|---|---|---|---|
| A | 0.51 | 5.38 | 1.1 | 1.6 | A | 620 | 930 |
| B | 0.04 | 3.92 | 0.0 | 0.5 | A | 32 | 48 |
| C | 0.79 | 12.40 | 3.9 | 17.7 | B | 977 | 1466 |

### Main Results for each time segment

**00:00 • 00:15**

| Leg | Total Demand (PCE/hr) | Intersection **Arrivals** (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | **V/C Ratio** | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 509 | 127 | 19 | 1475 | 0.345 | 507 | 783 | 0.0 | 0.6 | 4.019 | A |
| B | 26 | 7 | 501 | 1170 | 0.023 | 26 | 25 | 0.0 | 0.0 | 3.370 | A |
| C | 802 | 200 | 5 | 1484 | 0.540 | 797 | 522 | 0.0 | 1.2 | 5.580 | A |

**00:15 - 00:30**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 608 | 152 | 23 | 1472 | 0.413 | 607 | 938 | 0.6 | 0.8 | 4.502 | A |
| B | 31 | 8 | 601 | 1107 | 0.028 | 31 | 30 | 0.0 | 0.0 | 3.582 | A |
| C | 957 | 239 | 6 | 1483 | 0.646 | 955 | 626 | 1.2 | 1.9 | 7.268 | A |

**00:30 - 00:45**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 744 | 186 | 28 | 1469 | 0.507 | 743 | 1144 | 0.8 | 1.1 | 5.360 | A |
| B | 39 | 10 | 735 | 1022 | 0.038 | 38 | 36 | 0.0 | 0.0 | 3.919 | A |
| C | 1173 | 293 | 8 | 1482 | 0.791 | 1165 | 766 | 1.9 | 3.8 | 11.884 | B |

**00:45 - 01:00**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 744 | 186 | 29 | 1469 | 0.507 | 744 | 1151 | 1.1 | 1.1 | 5.380 | A |
| B | 39 | 10 | 737 | 1021 | 0.038 | 39 | 36 | 0.0 | 0.0 | 3.922 | A |
| C | 1173 | 293 | 8 | 1482 | 0.791 | 1172 | 767 | 3.8 | 3.9 | 12.403 | B |

**01:00 - 01:15**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 608 | 152 | 24 | 1472 | 0.413 | 609 | 948 | 1.1 | 0.8 | 4.526 | A |
| B | 31 | 8 | 603 | 1106 | 0.028 | 32 | 30 | 0.0 | 0.0 | 3.590 | A |
| C | 957 | 239 | 6 | 1483 | 0.646 | 965 | 628 | 3.9 | 2.0 | 7.564 | A |

**01:15 - 01:30**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 509 | 127 | 20 | 1475 | 0.345 | 510 | 790 | 0.8 | 0.6 | 4.045 | A |
| B | 26 | 7 | 504 | 1168 | 0.023 | 26 | 25 | 0.0 | 0.0 | 3.378 | A |
| C | 802 | 200 | 5 | 1484 | 0.540 | 805 | 526 | 2.0 | 1.3 | 5.710 | A |

## Queue Variation Results for each time segment

**00:00 - 00:15**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.57 | 0.57 | 1.08 | 1.52 | 1.57 | | | N/A | N/A |
| B | 0.02 | 0.00 | 0.00 | 0.02 | 0.02 | | | N/A | N/A |
| C | 1.24 | 0.59 | 1.07 | 1.50 | 1.55 | | | N/A | NIA |

**00:15 - 00:30**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.76 | 0.12 | 0.94 | 1.49 | 1.56 | | | NIA | NIA |
| B | 0.03 | 0.03 | 0.27 | 0.48 | 0.51 | | | NIA | NIA |
| C | 1.91 | 0.06 | 0.77 | 4.85 | 7.30 | | | NIA | NIA |

**00:30 - 00:45**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.10 | 0.03 | 0.28 | 1.10 | 1.10 | | | NIA | NIA |
| B | 0.04 | 0.03 | 0.27 | 0.48 | 0.51 | | | NIA | NIA |
| C | 3.83 | 0.03 | 0.33 | 4.14 | 17.75 | | | NIA | NIA |

**00:45 - 01:00**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.11 | 0.03 | 0.29 | 1.11 | 1.31 | | | NIA | NIA |
| B | 0.04 | 0.00 | 0.00 | 0.04 | 0.04 | | | NIA | NIA |
| C | 3.94 | 0.03 | 0.30 | 3.94 | 8.37 | | | NIA | NIA |

01:00 - 01:15

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.77 | 0.38 | 1.04 | 1.51 | 1.57 | | | N/A | N/A |
| B | 0.03 | 0.00 | 0.00 | 0.03 | 0.03 | | | N/A | N/A |
| C | 2.00 | 0.06 | 0.74 | 5.14 | 7.85 | | | N/A | N/A |

**01:15 - 01:30**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.57 | 0.06 | 0.65 | 1.43 | 1.53 | | | N/A | N/A |
| B | 0.02 | 0.00 | 0.00 | 0.02 | 0.02 | | | N/A | N/A |
| C | 1.28 | 0.04 | 0.41 | 3.23 | 5.75 | | | N/A | N/A |

# Highway 52 and Powerline Road West - 2031, PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Queue variations | Analysis Options | Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high. |

## Intersection Network

### Intersections

| Intersection | Name | Intersection type | Use circulating lanes | Leg order | Intersection Delay (s) | Intersection LOS |
|---|---|---|---|---|---|---|
| | untitled | Standard Roundabout | | A, B, C | 11.66 | B |

### Intersection Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Right | Normal/unknown | 11.66 | B |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2031 | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

### Demand overview (Traffic)

| Leg | Linked leg | Profile type | Use O-D data | Average Demand (PCE/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 1117 | 100.000 |
| B | | ONE HOUR | ✓ | 56 | 100.000 |
| C | | ONE HOUR | ✓ | 885 | 100.000 |

## Origin-Destination Data

### Demand (PCE/hr)

| J | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 13 | 1104 |
| | B | 9 | 0 | 47 |
| | C | 859 | 26 | 0 |

## Vehicle Mix

| Truck data entry mode | PCE Factor for a Truck (PCE) |
|---|---|
| Truck Percentages | 2.00 |

### Heavy Vehicle %

| J | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 0 | 3 |
| | B | 0 | 0 | 18 |
| | C | 4 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Leg | Max V/C Ratio | Max Delay (s) | Max Queue (PCE) | Max 95th percentile Queue (PCE) | Max LOS | Average Demand (PCE/hr) | Total Intersection Arrivals (PCE) |
|---|---|---|---|---|---|---|---|
| A | 0.84 | 15.31 | 5.0 | 25.8 | C | 1025 | 1537 |
| B | 0.09 | 6.28 | 0.1 | 0.6 | A | 51 | 77 |
| C | 0.66 | 7.38 | 2.0 | 3.1 | A | 812 | 1218 |

## Main Results for each time segment

### 16:00 -16:15

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 841 | 210 | 19 | 1475 | 0.570 | 836 | 650 | 0.0 | 1.3 | 5.752 | A |
| B | 42 | 11 | 826 | 965 | 0.044 | 42 | 29 | 0.0 | 0.1 | 4.473 | A |
| C | 666 | 167 | 7 | 1483 | 0.449 | 663 | 861 | 0.0 | 0.8 | 4.544 | A |

### 16:15 -16:30

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1004 | 251 | 23 | 1472 | 0.682 | 1001 | 779 | 1.3 | 2.2 | 7.810 | A |
| B | 50 | 13 | 989 | 861 | 0.058 | 50 | 35 | 0.1 | 0.1 | 5.090 | A |
| C | 796 | 199 | 8 | 1482 | 0.537 | 794 | 1031 | 0.8 | 1.2 | 5.427 | A |

### 16:30 -16:45

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1230 | 307 | 29 | 1469 | 0.837 | 1219 | 953 | 2.2 | 4.8 | 14.248 | B |
| B | 62 | 15 | 1205 | 725 | 0.085 | 62 | 43 | 0.1 | 0.1 | 6.221 | A |
| C | 974 | 244 | 10 | 1481 | 0.658 | 971 | 1257 | 1.2 | 2.0 | 7.298 | A |

### 16:45 -17:00

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1230 | 307 | 29 | 1469 | 0.837 | 1229 | 956 | 4.8 | 5.0 | 15.311 | C |
| B | 62 | 15 | 1215 | 719 | 0.086 | 62 | 43 | 0.1 | 0.1 | 6.282 | A |
| C | 974 | 244 | 10 | 1481 | 0.658 | 974 | 1266 | 2.0 | 2.0 | 7.381 | A |

### 17:00 -17:15

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1004 | 251 | 23 | 1472 | 0.682 | 1015 | 783 | 5.0 | 2.3 | 8.301 | A |
| B | 50 | 13 | 1003 | 852 | 0.059 | 50 | 35 | 0.1 | 0.1 | 5.151 | A |
| C | 796 | 199 | 8 | 1482 | 0.537 | 799 | 1046 | 2.0 | 1.2 | 5.496 | A |

### 17:15 -17:30

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 841 | 210 | 20 | 1475 | 0.570 | 844 | 655 | 2.3 | 1.4 | 5.916 | A |
| B | 42 | 11 | 835 | 959 | 0.044 | 42 | 29 | 0.1 | 0.1 | 4.503 | A |
| C | 666 | 167 | 7 | 1483 | 0.449 | 668 | 870 | 1.2 | 0.9 | 4.598 | A |

## Queue Variation Results for each time segment

### 16:00 -16:15

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.35 | 0.58 | 1.15 | 1.53 | 1.79 | | | N/A | N/A |
| B | 0.05 | 0.00 | 0.00 | 0.05 | 0.05 | | | N/A | N/A |
| C | 0.84 | 0.57 | 1.04 | 1.45 | 1.51 | | | N/A | N/A |

### 16:15 -16:30

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 2.15 | 0.05 | 0.66 | 5.71 | 8.87 | | | N/A | N/A |
| B | 0.07 | 0.03 | 0.29 | 0.52 | 0.55 | | | N/A | N/A |
| C | 1.19 | 0.07 | 0.91 | 2.32 | 3.11 | | | N/A | N/A |

### 16:30 -16:45

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 4.84 | 0.03 | 0.35 | 9.16 | 25.83 | | | N/A | N/A |
| B | 0.11 | 0.03 | 0.30 | 0.54 | 0.57 | | | N/A | N/A |
| C | 1.95 | 0.03 | 0.28 | 1.95 | 1.95 | | | N/A | N/A |

### 16:45 -17:00

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 5.04 | 0.03 | 0.30 | 5.04 | 17.81 | | | N/A | N/A |
| B | 0.11 | 0.00 | 0.00 | 0.11 | 0.11 | | | N/A | N/A |
| C | 1.98 | 0.03 | 0.28 | 1.98 | 1.98 | | | N/A | N/A |

### 17:00 -17:15

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 2.27 | 0.05 | 0.50 | 6.15 | 10.00 | | | N/A | N/A |
| B | 0.07 | 0.00 | 0.00 | 0.07 | 0.07 | | | N/A | N/A |
| C | 1.22 | 0.11 | 1.08 | 1.99 | 2.66 | | | N/A | N/A |

### 17:15 -17:30

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.39 | 0.04 | 0.37 | 3.45 | 6.87 | | | N/A | N/A |
| B | 0.05 | 0.00 | 0.00 | 0.05 | 0.05 | | | N/A | N/A |
| C | 0.86 | 0.06 | 0.67 | 1.57 | 2.02 | | | N/A | N/A |

# Junctions 10

## ARCADY 10 - Roundabout Module

Version: 10.1.2.2275
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**Filename:** Highway 52 and Powerliner Road Alternative 2 - 2041 Single Lane 19Nov25.j 10
**Path:** \\PCK-RDC-P-01\Shared Work Areas\058409 - Creditview Implementation Strategy\058803 Highway 52 and Powerline Road\19Nov25
**Report generation date:** 11/19/2025 4:42:31 PM

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## »Highway 52 and Powerline Road West - 2041, AM
## »Highway 52 and Powerline Road West - 2041, PM

### Summary of intersection performance

| | AM | | | | | | PM | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (PCE) | 95% Queue (PCE) | Delay (s) | VIC Ratio | LOS | Set ID | Queue (PCE) | 95% Queue (PCE) | Delay (s) | VIC Ratio | LOS |
| | Highway 52 and Powerline Road West - 2041 | | | | | | | | | | | |
| Leg A | D1 | 1.3 | 1.6 | 5.78 | 0.54 | A | D2 | 7.8 | 41.1 | 22.64 | 0.89 | C |
| Leg B | | 0.0 | 0.5 | 4.07 | 0.04 | A | | 0.1 | 0.6 | 6.90 | 0.10 | A |
| Leg C | | 5.5 | 28.5 | 16.48 | 0.84 | C | | 2.4 | 5.1 | 8.48 | 0.70 | A |

***There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.***

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

### File summary

File Description

| | |
|---|---|
| Title | Highway 52 and Powerline ROad West Alt 2 |
| Location | |
| Site number | |
| Date | 4/24/2025 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Analyst | RJBURNSIDE\AJunctions |
| Description | |

### Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|---|---|---|---|---|---|---|---|
| m | kph | PCE | PCE | perHour | s | -Min | perMin |

### Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Show lane queues in feet / metres | Show all PICADY stream intercepts | Calculate residual capacity | V/C Ratio Threshold | Average Delay threshold (s) | Queue threshold (PCE) | Use simulation for HCM roundabouts | Use iterations for HCM roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|
| 5.75 | ✓ | | | | | 0.85 | 36.00 | 20.00 | | |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2041 | AM | ONE HOUR | 00:00 | 01:30 | 15 | ✓ |
| D2 | 2041 | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

## Analysis Set Details

| ID | Name | Description | Include in report | Network flow scaling factor(%) | Network capacity scaling factor(%) |
|---|---|---|---|---|---|
| A1 | Highway 52 and Powerline Road West | Alternative 2 three legged roundabout at poweline west | ✓ | 100.000 | 100.000 |

# Highway 52 and Powerline Road West - 2041, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Queue variations | Analysis Options | Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high. |

## Intersection Network

### Intersections

| Intersection | Name | Intersection type | Use circulating lanes | Leg order | Intersection Delay (s) | Intersection LOS |
|---|---|---|---|---|---|---|
| | untitled | Standard Roundabout | | A,B,C | 12.15 | B |

### Intersection Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Right | Normal/unknown | 12.15 | B |

## Legs

### Legs

| Leg | Name | Description | No yield line |
|---|---|---|---|
| A | Highway 52 (South Leg) | | |
| B | Powerline Road West | | |
| C | Highway 52 ( North Leg) | | |

### Roundabout Geometry

| Leg | V - Approach road half-width (m) | E • Entry width (m) | l' • Effective flare length (m) | R • Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Entry only | Exit only |
|---|---|---|---|---|---|---|---|---|
| A | 3.50 | 5.50 | 30.0 | 40.0 | 46.0 | 20.0 | | |
| B | 3.50 | 5.50 | 30.0 | 40.0 | 46.0 | 20.0 | | |
| C | 3.50 | 5.50 | 30.0 | 40.0 | 46.0 | 20.0 | | |

### Slope / Intercept / Capacity

#### Leg Intercept Adjustments

| Leg | Type | Reason | Percentage intercept adjustment (%) |
|---|---|---|---|
| A | Percentage | | 90.00 |
| B | Percentage | | 90.00 |
| C | Percentage | | 90.00 |

#### Roundabout Slope and Intercept used in model

| Leg | Final slope | Final intercept (PCE/hr) |
|---|---|---|
| A | 0.633 | 1487 |
| B | 0.633 | 1487 |
| C | 0.633 | 1487 |

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2041 | AM | ONE HOUR | 00:00 | 01:30 | 15 | ✓ |

### Demand overview (Traffic)

| Leg | Linked leg | Profile type | Use 0-D data | Average Demand (PCE/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 721 | 100.000 |
| B | | ONE HOUR | ✓ | 40 | 100.000 |
| C | | ONE HOUR | ✓ | 1136 | 100.000 |

## Origin-Destination Data

Demand (PCE/hr)

| J | To | | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 7 | 714 |
| | B | 8 | 0 | 32 |
| | C | 1109 | 27 | 0 |

## Vehicle Mix

| Truck data entry mode | PCE Factor for a Truck (PCE) |
|---|---|
| Truck Percentages | 2.00 |

Heavy Vehicle %

| J | To | | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 50 | 8 |
| | B | 0 | 0 | 9 |
| | C | 7 | 17 | 0 |

## Results

### Results Summary for whole modelled period

| Leg | Max V/C Ratio | Max Delay (s) | Max Queue (PCE) | Max 95th percentile Queue (PCE) | Max LOS | Average Demand (PCE/hr) | Total Intersection Arrivals (PCE) |
|---|---|---|---|---|---|---|---|
| A | 0.54 | 5.78 | 1.3 | 1.6 | A | 662 | 992 |
| B | 0.04 | 4.07 | 0.0 | 0.5 | A | 37 | 55 |
| C | 0.84 | 16.48 | 5.5 | **28.5** | C | 1042 | 1564 |

### Main Results for each time segment

**00:00 • 00:15**

| Leg | Total Demand (PCE/hr) | Intersection **Arrivals** (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | **V/C Ratio** | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 543 | 136 | 20 | 1474 | 0.368 | 540 | 835 | 0.0 | 0.6 | 4.164 | A |
| B | 30 | 8 | 535 | 1149 | 0.026 | 30 | 25 | 0.0 | 0.0 | 3.445 | A |
| C | 855 | 214 | 6 | 1483 | 0.577 | 849 | 559 | 0.0 | 1.4 | 6.037 | A |

**00:15 - 00:30**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 648 | 162 | 24 | 1472 | 0.440 | 647 | 1001 | 0.6 | 0.8 | 4.724 | A |
| B | 36 | 9 | 641 | 1082 | 0.033 | 36 | 30 | 0.0 | 0.0 | 3.685 | A |
| C | 1021 | 255 | 7 | 1482 | 0.689 | 1018 | 670 | 1.4 | 2.3 | 8.242 | A |

**00:30 - 00:45**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 794 | 198 | 29 | 1468 | 0.541 | 792 | 1218 | 0.8 | 1.3 | 5.751 | A |
| B | 44 | 11 | 784 | 991 | 0.044 | 44 | 37 | 0.0 | 0.0 | 4.071 | A |
| C | 1251 | 313 | 9 | 1481 | 0.844 | 1239 | 820 | 2.3 | 5.3 | 15.214 | C |

**00:45 - 01:00**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 794 | 198 | 30 | 1468 | 0.541 | 794 | 1229 | 1.3 | 1.3 | 5.780 | A |
| B | 44 | 11 | 786 | 990 | 0.045 | 44 | 37 | 0.0 | 0.0 | 4.075 | A |
| C | 1251 | 313 | 9 | 1481 | 0.844 | 1250 | 821 | 5.3 | 5.5 | 16.476 | C |

**01:00 - 01:15**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 648 | 162 | 25 | 1471 | 0.440 | 650 | 1016 | 1.3 | 0.9 | 4.755 | A |
| B | 36 | 9 | 643 | 1080 | 0.033 | 36 | 31 | 0.0 | 0.0 | 3.694 | A |
| C | 1021 | 255 | 7 | 1482 | 0.689 | 1033 | 672 | 5.5 | 2.4 | 8.819 | A |

**01:15 - 01:30**

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 543 | 136 | 20 | 1474 | 0.368 | 544 | 845 | 0.9 | 0.6 | 4.195 | A |
| B | 30 | 8 | 538 | 1146 | 0.026 | 30 | 26 | 0.0 | 0.0 | 3.452 | A |
| C | 855 | 214 | 6 | 1483 | 0.577 | 859 | 563 | 2.4 | 1.5 | 6.221 | A |

## Queue Variation Results for each time segment

**00:00 - 00:15**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.63 | 0.60 | 1.08 | 1.52 | 1.57 | | | N/A | N/A |
| B | 0.03 | 0.00 | 0.00 | 0.03 | 0.03 | | | N/A | N/A |
| C | 1.44 | 0.61 | 1.25 | 1.71 | 1.93 | | | N/A | NIA |

**00:15 - 00:30**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.84 | 0.11 | 0.94 | 1.54 | 1.62 | | | NIA | NIA |
| B | 0.04 | 0.03 | 0.27 | 0.48 | 0.51 | | | NIA | NIA |
| C | 2.31 | 0.06 | 0.74 | 6.12 | 9.46 | | | NIA | NIA |

**00:30 - 00:45**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.26 | 0.03 | 0.28 | 1.26 | 1.26 | | | NIA | NIA |
| B | 0.05 | 0.03 | 0.27 | 0.49 | 0.52 | | | NIA | NIA |
| C | 5.26 | 0.04 | 0.37 | 10.91 | 28.51 | | | NIA | NIA |

**00:45 - 01:00**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.27 | 0.03 | 0.29 | 1.27 | 1.49 | | | NIA | NIA |
| B | 0.05 | 0.00 | 0.00 | 0.05 | 0.05 | | | NIA | NIA |
| C | 5.51 | 0.03 | 0.32 | 5.51 | 21.37 | | | NIA | NIA |

01:00 - 01:15

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.86 | 0.29 | 1.03 | 1.51 | 1.57 | | | N/A | N/A |
| B | 0.04 | 0.00 | 0.00 | 0.04 | 0.04 | | | N/A | N/A |
| C | 2.44 | 0.05 | 0.51 | 6.67 | 10.95 | | | N/A | NIA |

**01:15 - 01:30**

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 0.64 | 0.07 | 0.75 | 1.45 | 1.54 | | | N/A | N/A |
| B | 0.03 | 0.00 | 0.00 | 0.03 | 0.03 | | | N/A | N/A |
| C | 1.48 | 0.04 | 0.38 | 3.65 | 7.44 | | | N/A | N/A |

# Highway 52 and Powerline Road West - 2041, PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Queue variations | Analysis Options | Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high. |

## Intersection Network

### Intersections

| Intersection | Name | Intersection type | Use circulating lanes | Leg order | Intersection Delay (s) | Intersection LOS |
|---|---|---|---|---|---|---|
| | untitled | Standard Roundabout | | A, B, C | 16.11 | C |

### Intersection Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|---|---|---|---|
| Right | Normal/unknown | 16.11 | C |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2041 | PM | ONE HOUR | 16:00 | 17:30 | 15 | ✓ |

### Demand overview (Traffic)

| Leg | Linked leg | Profile type | Use O-D data | Average Demand (PCE/hr) | Scaling Factor (%) |
|---|---|---|---|---|---|
| A | | ONE HOUR | ✓ | 1192 | 100.000 |
| B | | ONE HOUR | ✓ | 63 | 100.000 |
| C | | ONE HOUR | ✓ | 944 | 100.000 |

## Origin-Destination Data

**Demand (PCE/hr)**

| J | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 14 | 1178 |
| | B | 10 | 0 | 53 |
| | C | 917 | 27 | 0 |

## Vehicle Mix

| Truck data entry mode | PCE Factor for a Truck (PCE) |
|---|---|
| Truck Percentages | 2.00 |

Heavy Vehicle %

| J | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0 | 0 | 3 |
| | B | 0 | 0 | 18 |
| | C | 4 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Leg | Max V/C Ratio | Max Delay (s) | Max Queue (PCE) | Max 95th percentile Queue (PCE) | Max LOS | Average Demand (PCE/hr) | Total Intersection Arrivals (PCE) |
|---|---|---|---|---|---|---|---|
| A | 0.89 | 22.64 | 7.8 | 41.1 | C | 1094 | 1641 |
| B | 0.10 | 6.90 | 0.1 | 0.6 | A | 58 | 87 |
| C | 0.70 | 8.48 | 2.4 | 5.1 | A | 866 | 1299 |

## Main Results for each time segment

### 16:00 -16:15

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 897 | 224 | 20 | 1474 | 0.609 | 891 | 694 | 0.0 | 1.6 | 6.292 | A |
| B | 47 | 12 | 881 | 930 | 0.051 | 47 | 31 | 0.0 | 0.1 | 4.677 | A |
| C | 711 | 178 | 7 | 1482 | 0.479 | 707 | 920 | 0.0 | 0.9 | 4.801 | A |

### 16:15 -16:30

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1072 | 268 | 24 | 1472 | 0.728 | 1067 | 832 | 1.6 | 2.7 | 9.065 | A |
| B | 57 | 14 | 1055 | 820 | 0.069 | 57 | 37 | 0.1 | 0.1 | 5.410 | A |
| C | 849 | 212 | 9 | 1481 | 0.573 | 847 | 1102 | 0.9 | 1.4 | 5.880 | A |

### 16:30 -16:45

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1312 | 328 | 30 | 1468 | 0.894 | 1294 | 1017 | 2.7 | 7.2 | 19.511 | C |
| B | 69 | 17 | 1279 | 678 | 0.102 | 69 | 45 | 0.1 | 0.1 | 6.782 | A |
| C | 1039 | 260 | 11 | 1480 | 0.702 | 1035 | 1337 | 1.4 | 2.4 | 8.333 | A |

### 16:45 -17:00

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1312 | 328 | 30 | 1468 | 0.894 | 1310 | 1021 | 7.2 | 7.8 | 22.638 | C |
| B | 69 | 17 | 1295 | 668 | 0.104 | 69 | 45 | 0.1 | 0.1 | 6.896 | A |
| C | 1039 | 260 | 11 | 1480 | 0.702 | 1039 | 1353 | 2.4 | 2.4 | 8.476 | A |

### 17:00 -17:15

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 1072 | 268 | 24 | 1472 | 0.728 | 1091 | 837 | 7.8 | 2.9 | 10.220 | B |
| B | 57 | 14 | 1079 | 805 | 0.070 | 57 | 37 | 0.1 | 0.1 | 5.524 | A |
| C | 849 | 212 | 9 | 1481 | 0.573 | 853 | 1126 | 2.4 | 1.4 | 5.987 | A |

### 17:15 -17:30

| Leg | Total Demand (PCE/hr) | Intersection Arrivals (PCE) | Circulating flow (PCE/hr) | Capacity (PCE/hr) | V/C Ratio | Throughput (PCE/hr) | Throughput (exit side) (PCE/hr) | Start queue (PCE) | End queue (PCE) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 897 | 224 | 20 | 1474 | 0.609 | 902 | 700 | 2.9 | 1.6 | 6.536 | A |
| B | 47 | 12 | 892 | 923 | 0.051 | 48 | 31 | 0.1 | 0.1 | 4.717 | A |
| C | 711 | 178 | 8 | 1482 | 0.479 | 712 | 932 | 1.4 | 1.0 | 4.869 | A |

## Queue Variation Results for each time segment

### 16:00 -16:15

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.57 | 0.61 | 1.52 | 1.90 | 2.01 | | | N/A | N/A |
| B | 0.06 | 0.00 | 0.00 | 0.06 | 0.06 | | | N/A | N/A |
| C | 0.95 | 0.57 | 1.04 | 1.45 | 1.51 | | | N/A | N/A |

### 16:15 -16:30

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 2.66 | 0.05 | 0.71 | 7.22 | 11.41 | | | N/A | N/A |
| B | 0.08 | 0.03 | 0.29 | 0.53 | 0.56 | | | N/A | N/A |
| C | 1.37 | 0.06 | 0.86 | 3.01 | 4.28 | | | N/A | N/A |

### 16:30 -16:45

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 7.21 | 0.04 | 0.45 | 19.79 | 38.64 | | | N/A | N/A |
| B | 0.13 | 0.03 | 0.30 | 0.54 | 0.57 | | | N/A | N/A |
| C | 2.38 | 0.03 | 0.29 | 2.38 | 5.12 | | | N/A | N/A |

### 16:45 -17:00

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 7.81 | 0.03 | 0.35 | 13.63 | 41.12 | | | N/A | N/A |
| B | 0.13 | 0.00 | 0.00 | 0.13 | 0.13 | | | N/A | N/A |
| C | 2.41 | 0.03 | 0.28 | 2.41 | 2.41 | | | N/A | N/A |

### 17:00 -17:15

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 2.86 | 0.05 | 0.45 | 7.94 | 13.88 | | | N/A | N/A |
| B | 0.09 | 0.00 | 0.00 | 0.09 | 0.09 | | | N/A | N/A |
| C | 1.41 | 0.08 | 1.07 | 2.84 | 3.84 | | | N/A | N/A |

### 17:15 -17:30

| Leg | Mean (PCE) | Q05 (PCE) | Q50 (PCE) | Q90 (PCE) | Q95 (PCE) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| A | 1.63 | 0.03 | 0.34 | 3.51 | 8.49 | | | N/A | N/A |
| B | 0.06 | 0.00 | 0.00 | 0.06 | 0.06 | | | N/A | N/A |
| C | 0.97 | 0.05 | 0.51 | 2.02 | 3.00 | | | N/A | N/A |

# Junctions 10

## ARCADY 10 - Roundabout Module

Version: 10.1.2.2275
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**The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution**

**Filename:** Highway 52 Phase 3 Alternative solution 2- two lane 19Nov25.j10
**Path:** \\PCK-RDC-P-01\Shared Work Areas\058409 - Creditview Implementation Strategy\058803 Highway 52 and Powerline Road\19Nov25
**Report generation date:** 11/19/2025 4:47:15 PM

## »Highway 52 and Powerline Road - 2041, AM

## »Highway 52 and Powerline Road - 2041, PM

### Summary of intersection performance

| | AM | | | | | | | | | PM | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Set ID | Queue (Veh) | 95% Queue (Veh) | Delay (s) | VIC Ratio | LOS | Intersection Delay (s) | Intersection LOS | Network Residual Capacity | Set ID | Queue (Veh) | 95% Queue (Veh) | Delay (s) | VIC Ratio | LOS | Intersection Delay (s) | Intersection LOS | Network Residual Capacity |
| | Highway 52 and Powerline Road - 2041 | | | | | | | | | | | | | | | | | |
| Leg 1 | D1 | 0.7 | 2.3 | 3.36 | 0.43 | A | 5.93 | A | 31 % [Leg 3] | D2 | 2.4 | 4.7 | 6.53 | 0.70 | A | 5.99 | A | 36% [Leg 1] |
| Leg 2 | | 0.0 | 0.5 | 3.97 | 0.05 | A | | | | | 0.1 | 0.5 | 6.37 | 0.11 | A | | | |
| Leg 3 | | 2.6 | 5.4 | 7.63 | 0.73 | A | | | | | 1.5 | 2.1 | 5.28 | 0.60 | A | | | |

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.*

### File summary

#### File Description

| | |
|---|---|
| **Title** | Highway 52 and Powerline Road |
| **Location** | |
| **Site number** | |
| **Date** | *912412025* |
| **Version** | |
| **Status** | (new file) |
| **Identifier** | |
| **Client** | |
| **Jobnumber** | |
| **Analyst** | RJBURNSIDEIAJunctions |
| **Description** | Phase 3-Alternative Solution 2 |

### Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|---|---|---|---|---|---|---|---|
| m | kph | Veh | Veh | perHour | s | -Min | perMin |

### Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Show lane queues in feet / **metres** | Show all PICADY stream intercepts | Calculate residual capacity | Residual capacity criteria type | VIC Ratio Threshold | Average Delay threshold (s) | Queue threshold (PCE) | Use simulation for HCM roundabouts | Use iterations forHCM roundabouts |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.75 | ✓ | | | | ✓ | Delay | 0.85 | 36.00 | 20.00 | | |

### Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| **D1** | 2041 | AM | ONE HOUR | 07:15 | 08:45 | 15 | ✓ |
| **D2** | 2041 | PM | ONE HOUR | 16:30 | 18:00 | 15 | ✓ |

## Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor(%) | Network capacity scaling factor(%) |
|---|---|---|---|---|
| A1 | Highway 52 and Powerline Road | ✓ | 100.000 | 100.000 |

# Highway 52 and Powerline Road - 2041, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Vehicle Mix | | Truck% is zero for all movements / time segments. Vehicle **Mix** matrix should be completed whether working in PCUs or Vehs. If Truck% at the intersection is genuinely zero, please ignore this warning. |
| Warning | Queue variations | Analysis Options | Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high. |

## Intersection Network

### Intersections

| Intersection | Name | Intersection type | Use circulating lanes | Leg order | Intersection Delay (s) | Intersection LOS |
|---|---|---|---|---|---|---|
| | Highway 52 and Powerline Road | Standard Roundabout | | 1, 2, 3 | 5.93 | A |

### Intersection Network

| Driving side | Lighting | Network residual capacity (%) | First leg reaching threshold | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Right | Normal/unknown | 31 | Leg 3 | 5.93 | **A** |

## Legs

### Legs

| Leg | Name | Description | No yield line |
|---|---|---|---|
| 1 | Highway 52 (South Bound) | | |
| 2 | Powerline Road West | | |
| 3 | Highway 52 (North bound) | | |

### Roundabout Geometry

| Leg | V • Approach road half-width (m) | E • Entry width (m) | l' • Effective flare length (m) | R • Entry radius (m) | D - Inscribed circle diameter (m) | PHI • Conflict (entry) angle (deg) | Entry only | Exit only |
|---|---|---|---|---|---|---|---|---|
| 1 | 3.50 | 8.00 | 30.0 | 36.0 | 52.0 | 20.0 | | |
| 2 | 3.50 | 5.50 | 20.0 | 30.0 | 46.0 | 20.0 | | |
| 3 | 3.50 | 8.00 | 30.0 | 8.5 | 52.0 | 20.0 | | |

### Slope / Intercept / Capacity

#### Leg Intercept Adjustments

| Leg | Type | Reason | Percentage intercept adjustment (%) |
|---|---|---|---|
| 1 | Percentage | | 90.00 |
| 2 | Percentage | | 90.00 |
| 3 | Percentage | | 90.00 |

#### Roundabout Slope and Intercept used in model

| Leg | Final slope | Final intercept (PCE/hr) |
|---|---|---|
| 1 | 0.689 | 1884 |
| 2 | 0.619 | 1437 |
| 3 | 0.631 | 1727 |

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D1 | 2041 | AM | ONE HOUR | 07:15 | 08:45 | 15 | ✓ |

### Demand overview (Traffic)

| Leg | Linked leg | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor(%) |
|---|---|---|---|---|---|
| 1 | | ONE HOUR | ✓ | 721 | 100.000 |
| 2 | | ONE HOUR | ✓ | 40 | 100.000 |
| 3 | | ONE HOUR | ✓ | 1136 | 100.000 |

# Origin-Destination Data

Demand (Veh/hr)

| J | To | | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 7 | 714 |
| | 2 | 8 | 0 | 32 |
| | 3 | 1109 | 27 | 0 |

# Vehicle Mix

| Truck data entry mode | PCE Factor for a Truck (PCE) |
|---|---|
| Truck Percentages | 2.00 |

Heavy Vehicle %

| J | To | | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0 | 0 | 0 |
| | 2 | 0 | 0 | 0 |
| | 3 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Leg | Max V/C Ratio | Max Delay (s) | Max Queue (Veh) | Max 95th percentile Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Intersection Arrivals (Veh) |
|---|---|---|---|---|---|---|---|
| 1 | 0.43 | 3.36 | 0.7 | 2.3 | A | 662 | 992 |
| 2 | 0.05 | 3.97 | 0.0 | 0.5 | A | 37 | 55 |
| 3 | 0.73 | 7.63 | 2.6 | 5.4 | A | 1042 | 1564 |

## Main Results for each time segment

07:15 • 07:30

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 543 | 136 | 20 | 1870 | 0.290 | 541 | 837 | 0.0 | 0.4 | 2.704 | A |
| 2 | 30 | 8 | 536 | 1105 | 0.027 | 30 | 25 | 0.0 | 0.0 | 3.347 | A |
| 3 | 855 | 214 | 6 | 1724 | 0.496 | 851 | 560 | 0.0 | 1.0 | 4.109 | A |

**07:30 • 07:45**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput **(exit** side) (Veh/hr) | Start queue (Veh) | End queue **(Veh)** | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 648 | 162 | 24 | 1868 | 0.347 | 648 | 1002 | 0.4 | 0.5 | 2.949 | A |
| 2 | 36 | 9 | 641 | 1040 | 0.035 | 36 | 31 | 0.0 | 0.0 | 3.584 | A |
| 3 | 1021 | 255 | 7 | 1723 | 0.593 | 1019 | 670 | 1.0 | 1.4 | 5.103 | A |

07:45 • 08:00

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue **(Veh)** | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 794 | 198 | 30 | 1864 | 0.426 | 793 | 1225 | 0.5 | 0.7 | 3.357 | A |
| 2 | 44 | 11 | 785 | 951 | 0.046 | 44 | 37 | 0.0 | 0.0 | 3.969 | A |
| 3 | 1251 | 313 | 9 | 1722 | 0.726 | 1246 | 820 | 1.4 | 2.6 | 7.496 | A |

08:00 • 08:15

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 794 | 198 | 30 | 1864 | 0.426 | 794 | 1230 | 0.7 | 0.7 | 3.363 | A |
| 2 | 44 | 11 | 786 | 950 | 0.046 | 44 | 37 | 0.0 | 0.0 | 3.971 | A |
| 3 | 1251 | 313 | 9 | 1722 | 0.726 | 1251 | 821 | 2.6 | 2.6 | 7.630 | A |

**08:15 • 08:30**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 648 | 162 | 24 | 1867 | 0.347 | 649 | 1009 | 0.7 | 0.5 | 2.958 | A |
| 2 | 36 | 9 | 643 | 1039 | 0.035 | 36 | 31 | 0.0 | 0.0 | 3.587 | A |
| 3 | 1021 | 255 | 7 | 1723 | 0.593 | 1026 | 671 | 2.6 | 1.5 | 5.198 | A |

08:30 • 08:45

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 543 | 136 | 20 | 1870 | 0.290 | 543 | 843 | 0.5 | 0.4 | 2.715 | A |
| 2 | 30 | 8 | 538 | 1104 | 0.027 | 30 | 26 | 0.0 | 0.0 | 3.351 | A |
| 3 | 855 | 214 | 6 | 1724 | 0.496 | 857 | 562 | 1.5 | 1.0 | 4.165 | A |

## Queue Variation Results for each time segment

07:15 • 07:30

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 0.41 | 0.00 | 0.00 | 0.41 | 0.41 | | | N/A | N/A |
| 2 | 0.03 | 0.00 | 0.00 | 0.03 | 0.03 | | | N/A | N/A |
| 3 | 0.98 | 0.55 | 1.00 | 1.40 | 1.45 | | | N/A | N/A |

07:30 • 07:45

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile **message** | Marker **message** | Probability of reaching or exceeding **marker** | Probability of exactly reaching **marker** |
|---|---|---|---|---|---|---|---|---|---|
| | 0.53 | 0.53 | 1.00 | 1.40 | 1.45 | | | N/A | NIA |
| 2 | 0.04 | 0.03 | 0.25 | 0.45 | 0.48 | | | NIA | NIA |
| 3 | 1.44 | 0.05 | 0.64 | 3.49 | 5.18 | | | NIA | NIA |

07:45 • 08:00

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 0.74 | 0.03 | 0.25 | 0.74 | 0.74 | | | NIA | NIA |
| **2** | 0.05 | 0.03 | 0.25 | 0.46 | 0.48 | | | NIA | NIA |
| 3 | 2.58 | 0.03 | 0.28 | 2.58 | 5.42 | | | NIA | NIA |

08:00 • 08:15

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile **message** | Marker **message** | Probability of reaching or exceeding **marker** | Probability of exactly reaching **marker** |
|---|---|---|---|---|---|---|---|---|---|
| | 0.74 | 0.03 | 0.28 | 0.74 | 2.26 | | | NIA | NIA |
| 2 | 0.05 | 0.00 | 0.00 | 0.05 | 0.05 | | | NIA | NIA |
| 3 | 2.61 | 0.03 | 0.27 | 2.61 | 2.61 | | | NIA | NIA |

08:15 • 08:30

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 0.53 | 0.53 | 1.00 | 1.40 | 1.45 | | | NIA | NIA |
| 2 | 0.04 | 0.00 | 0.00 | 0.04 | 0.04 | | | NIA | NIA |
| 3 | 1.48 | 0.08 | 1.07 | 2.99 | 4.11 | | | NIA | NIA |

08:30 • 08:45

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile **message** | Marker **message** | Probability of reaching or exceeding **marker** | Probability of exactly reaching **marker** |
|---|---|---|---|---|---|---|---|---|---|
| | 0.41 | 0.00 | 0.00 | 0.41 | 0.41 | | | NIA | NIA |
| 2 | 0.03 | 0.00 | 0.00 | 0.03 | 0.03 | | | NIA | NIA |
| 3 | 0.99 | 0.05 | 0.49 | 2.20 | 3.30 | | | NIA | NIA |

# Highway 52 and Powerline Road - 2041, PM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Vehicle Mix | | Truck% is zero for all movements / time segments. Vehicle **Mix** matrix should be completed whether working in PCUs or Vehs. If Truck% at the intersection is genuinely zero, please ignore this warning. |
| Warning | Queue variations | Analysis Options | Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high. |

## Intersection Network

### Intersections

| Intersection | Name | Intersection type | Use circulating lanes | Leg order | Intersection Delay (s) | Intersection LOS |
|---|---|---|---|---|---|---|
| | Highway 52 and Powerline Road | Standard Roundabout | | 1, 2, 3 | 5.99 | A |

### Intersection Network

| Driving side | Lighting | Network residual capacity (%) | First leg reaching threshold | Network delay (s) | Network LOS |
|---|---|---|---|---|---|
| Right | Normal/unknown | 36 | Leg 1 | 5.99 | A |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|---|---|---|---|---|---|---|---|
| D2 | 2041 | PM | ONE HOUR | 16:30 | 18:00 | 15 | ✓ |

### Demand overview (Traffic)

| Leg | Linked leg | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor(%) |
|---|---|---|---|---|---|
| 1 | | ONE HOUR | ✓ | 1192 | 100.000 |
| 2 | | ONE HOUR | ✓ | 63 | 100.000 |
| 3 | | ONE HOUR | ✓ | 944 | 100.000 |

## Origin-Destination Data

Demand (Veh/hr)

| From \ To | 1 | 2 | 3 |
|---|---|---|---|
| 1 | 0 | 14 | 1178 |
| 2 | 10 | 0 | 53 |
| 3 | 917 | 27 | 0 |

## Vehicle Mix

| Truck data entry mode | PCE Factor for a Truck (PCE) |
|---|---|
| Truck Percentages | 2.00 |

Heavy Vehicle %

| From \ To | 1 | 2 | 3 |
|---|---|---|---|
| 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |

# Results

## Results Summary for whole modelled period

| Leg | Max V/C Ratio | Max Delay (s) | Max Queue (Veh) | Max 95th percentile Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Intersection Arrivals (Veh) |
|---|---|---|---|---|---|---|---|
| 1 | 0.70 | 6.53 | 2.4 | 4.7 | A | 1094 | 1641 |
| 2 | 0.11 | 6.37 | 0.1 | 0.5 | A | 58 | 87 |
| 3 | 0.60 | 5.28 | 1.5 | 2.1 | A | 866 | 1299 |

## Main Results for each time segment

16:30 • **16:45**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 897 | 224 | 20 | 1870 | 0.480 | 894 | 695 | 0.0 | 0.9 | 3.673 | A |
| 2 | 47 | 12 | 883 | 890 | 0.053 | 47 | 31 | 0.0 | 0.1 | 4.269 | A |
| 3 | 711 | 178 | 7 | 1723 | 0.413 | 708 | 923 | 0.0 | 0.7 | 3.539 | A |

**16:45 -17:00**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1072 | 268 | 24 | 1868 | 0.574 | 1070 | 832 | 0.9 | 1.3 | 4.504 | A |
| 2 | 57 | 14 | 1057 | 782 | 0.072 | 57 | 37 | 0.1 | 0.1 | 4.959 | A |
| 3 | 849 | 212 | 9 | 1722 | 0.493 | 848 | 1105 | 0.7 | 1.0 | 4.112 | A |

**17:00 -17:15**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1312 | 328 | 30 | 1864 | 0.704 | 1308 | 1019 | 1.3 | 2.3 | 6.436 | A |
| 2 | 69 | 17 | 1293 | 636 | 0.109 | 69 | 45 | 0.1 | 0.1 | 6.345 | A |
| 3 | 1039 | 260 | 11 | 1721 | 0.604 | 1037 | 1351 | 1.0 | 1.5 | 5.251 | A |

**17:15 -17:30**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1312 | 328 | 30 | 1864 | 0.704 | 1312 | 1021 | 2.3 | 2.4 | 6.525 | **A** |
| 2 | 69 | 17 | 1297 | 634 | 0.109 | 69 | 45 | 0.1 | 0.1 | 6.374 | A |
| 3 | 1039 | 260 | 11 | 1721 | 0.604 | 1039 | 1355 | 1.5 | 1.5 | 5.284 | **A** |

**17:30 -17:45**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1072 | 268 | 24 | 1868 | 0.574 | 1076 | 835 | 2.4 | 1.4 | 4.569 | A |
| 2 | 57 | 14 | 1063 | 779 | 0.073 | 57 | 37 | 0.1 | 0.1 | 4.985 | A |
| 3 | 849 | 212 | 9 | 1722 | 0.493 | 851 | 1111 | 1.5 | 1.0 | 4.142 | A |

**17:45 -18:00**

| Leg | Total Demand (Veh/hr) | Intersection Arrivals (Veh) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | V/C Ratio | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | Unsignalised level of service |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 897 | 224 | 20 | 1870 | 0.480 | 899 | 699 | 1.4 | 0.9 | 3.715 | A |
| 2 | 47 | 12 | 889 | 887 | 0.053 | 48 | 31 | 0.1 | 0.1 | 4.290 | A |
| 3 | 711 | 178 | 8 | 1723 | 0.413 | 712 | 929 | 1.0 | 0.7 | 3.566 | A |

## Queue Variation Results for each time segment

**16:30 • 16:45**

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 0.92 | 0.55 | 1.00 | 1.40 | 1.45 | | | N/A | N/A |
| 2 | 0.06 | 0.00 | 0.00 | 0.06 | 0.06 | | | N/A | N/A |
| 3 | 0.70 | 0.55 | 1.00 | 1.40 | 1.45 | | | N/A | N/A |

**16:45 -17:00**

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 1.33 | 0.05 | 0.63 | 3.13 | 4.69 | | | N/A | N/A |
| **2** | 0.08 | 0.03 | 0.26 | 0.47 | 0.50 | | | N/A | **N/A** |
| **3** | 0.96 | 0.07 | 0.84 | 1.69 | 2.13 | | | N/A | N/A |

**17:00 -17:15**

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 2.33 | 0.03 | 0.27 | 2.33 | 2.75 | | | N/A | N/A |
| **2** | 0.12 | 0.03 | 0.26 | 0.47 | 0.49 | | | N/A | N/A |
| **3** | 1.50 | 0.03 | 0.26 | 1.50 | 1.50 | | | N/A | N/A |

**17:15 -17:30**

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 2.35 | 0.03 | 0.26 | 2.35 | 2.35 | | | N/A | N/A |
| **2** | 0.12 | 0.00 | 0.00 | 0.12 | 0.12 | | | N/A | N/A |
| **3** | 1.51 | 0.03 | 0.26 | 1.51 | 1.51 | | | N/A | N/A |

**17:30 -17:45**

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 1.36 | 0.10 | 1.12 | 2.54 | 3.29 | | | N/A | N/A |
| **2** | 0.08 | 0.00 | 0.00 | 0.08 | 0.08 | | | N/A | N/A |
| **3** | 0.98 | 0.24 | 1.01 | 1.12 | 1.58 | | | N/A | N/A |

**17:45 -18:00**

| Leg | Mean (Veh) | Q05 (Veh) | Q50 (Veh) | Q90 (Veh) | Q95 (Veh) | Percentile message | Marker message | Probability of reaching or exceeding marker | Probability of exactly reaching marker |
|---|---|---|---|---|---|---|---|---|---|
| | 0.93 | 0.05 | 0.61 | 1.85 | 2.67 | | | N/A | N/A |
| **2** | 0.06 | 0.00 | 0.00 | 0.06 | 0.06 | | | N/A | N/A |
| **3** | 0.71 | 0.07 | 0.76 | 1.40 | 1.48 | | | N/A | N/A |

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Appendix B

# Synchro Traffic Operations Analysis Results

| | | | | | | |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 8 | 1 | 1135 | 12 | 4 | 738 |
| Future Volume (vph) | 8 | 1 | 1135 | 12 | 4 | 738 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| Grade (%) | 0% | | 0% | | | 0% |
| Storage Length (m) | 0.0 | 0.0 | | 65.0 | 25.0 | |
| Storage Lanes | 1 | 0 | | 1 | 1 | |
| Taper Length (m) | 7.6 | | | | 25.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.986 | | | 0.850 | | |
| Flt Protected | 0.957 | | | | 0.950 | |
| Satd. Flow (prot) | 1813 | 0 | 1921 | 1633 | 1372 | 1762 |
| Flt Permitted | 0.957 | | | | 0.950 | |
| Satd. Flow (perm) | 1813 | 0 | 1921 | 1633 | 1372 | 1762 |
| Link Speed (k/h) | 60 | | 48 | | | 70 |
| Link Distance (m) | 299.7 | | 358.7 | | | 431.5 |
| Travel Time (s) | 18.0 | | 26.9 | | | 22.2 |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 33% | 9% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | 0% | | | 0% |
| Adj. Flow (vph) | 9 | 1 | 1234 | 13 | 4 | 802 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 10 | 0 | 1234 | 13 | 4 | 802 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 69.7% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 1 | 1135 | 12 | 4 | 738 |
| Future Vol, veh/h | 8 | 1 | 1135 | 12 | 4 | 738 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 65 | 25 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 33 | 9 |
| Mvmt Flow | 9 | 1 | 1234 | 13 | 4 | 802 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2044 | 1234 | 0 | 0 | 1247 | 0 |
| Stage 1 | 1234 | - | - | - | - | - |
| Stage 2 | 810 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | - | - | 4.43 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.497 | - |
| Pot Cap-1 Maneuver | 63 | 218 | - | - | 464 | - |
| Stage 1 | 277 | - | - | - | - | - |
| Stage 2 | 441 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 62 | 218 | - | - | 464 | - |
| Mov Cap-2 Maneuver | 62 | - | - | - | - | - |
| Stage 1 | 277 | - | - | - | - | - |
| Stage 2 | 437 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 67.7 | 0 | 0.1 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 67 | 464 | - |
| HCM Lane V/C Ratio | - | - | 0.146 | 0.009 | - |
| HCM Ctrl Dly (s/v) | - | - | 67.7 | 12.8 | - |
| HCM Lane LOS | - | - | F | B | - |
| HCM 95th %tile Q (veh) | - | - | 0.5 | 0 | - |

| Lane Configurations | | | | | | |
|---|---|---|---|---|---|---|
| Traffic Volume (vph) | 4 | 7 | 940 | 7 | 1 | 1222 |
| Future Volume (vph) | 4 | 7 | 940 | 7 | 1 | 1222 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| Grade (%) | 0% | | 0% | | | 0% |
| Storage Length (m) | 0.0 | 0.0 | | 65.0 | 25.0 | |
| Storage Lanes | 1 | 0 | | 1 | 1 | |
| Taper Length (m) | 7.6 | | | | 25.0 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.910 | | | 0.850 | | |
| Flt Protected | 0.984 | | | | 0.950 | |
| Satd. Flow (prot) | 1720 | 0 | 1921 | 1633 | 1372 | 1762 |
| Flt Permitted | 0.984 | | | | 0.950 | |
| Satd. Flow (perm) | 1720 | 0 | 1921 | 1633 | 1372 | 1762 |
| Link Speed (k/h) | 60 | | 48 | | | 70 |
| Link Distance (m) | 299.7 | | 358.7 | | | 431.5 |
| Travel Time (s) | 18.0 | | 26.9 | | | 22.2 |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 33% | 9% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | 0% | | | 0% |
| Adj. Flow (vph) | 4 | 8 | 1022 | 8 | 1 | 1328 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 12 | 0 | 1022 | 8 | 1 | 1328 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 74.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 7 | 940 | 7 | 1 | 1222 |
| Future Vol, veh/h | 4 | 7 | 940 | 7 | 1 | 1222 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | 65 | 25 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 33 | 9 |
| Mvmt Flow | 4 | 8 | 1022 | 8 | 1 | 1328 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2352 | 1022 | 0 | 0 | 1030 | 0 |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 1330 | - | - | - | - | - |
| Critical Hdwy | 6.4 | 6.2 | - | - | 4.43 | - |
| Critical Hdwy Stg 1 | 5.4 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.4 | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 3.3 | - | - | 2.497 | - |
| Pot Cap-1 Maneuver | 40 | 289 | - | - | 568 | - |
| Stage 1 | 350 | - | - | - | - | - |
| Stage 2 | 249 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 40 | 289 | - | - | 568 | - |
| Mov Cap-2 Maneuver | 40 | - | - | - | - | - |
| Stage 1 | 350 | - | - | - | - | - |
| Stage 2 | 249 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 51.6 | 0 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 89 | 568 | - |
| HCM Lane V/C Ratio | - | - | 0.134 | 0.002 | - |
| HCM Ctrl Dly (s/v) | - | - | 51.6 | 11.4 | - |
| HCM Lane LOS | - | - | F | B | - |
| HCM 95th %tile Q (veh) | - | - | 0.4 | 0 | - |

# Hamilton MCEA Highway 52 and Powerline Road West Intersection Improvements

# Preliminary Stormwater Management Study

**City of Hamilton**
**71 Main Street West**
**Hamilton ON  L8P 4Y5**

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

**February 2026**
**300058803.0000**

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|---|---|---|
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**R.J. Burnside & Associates Limited**

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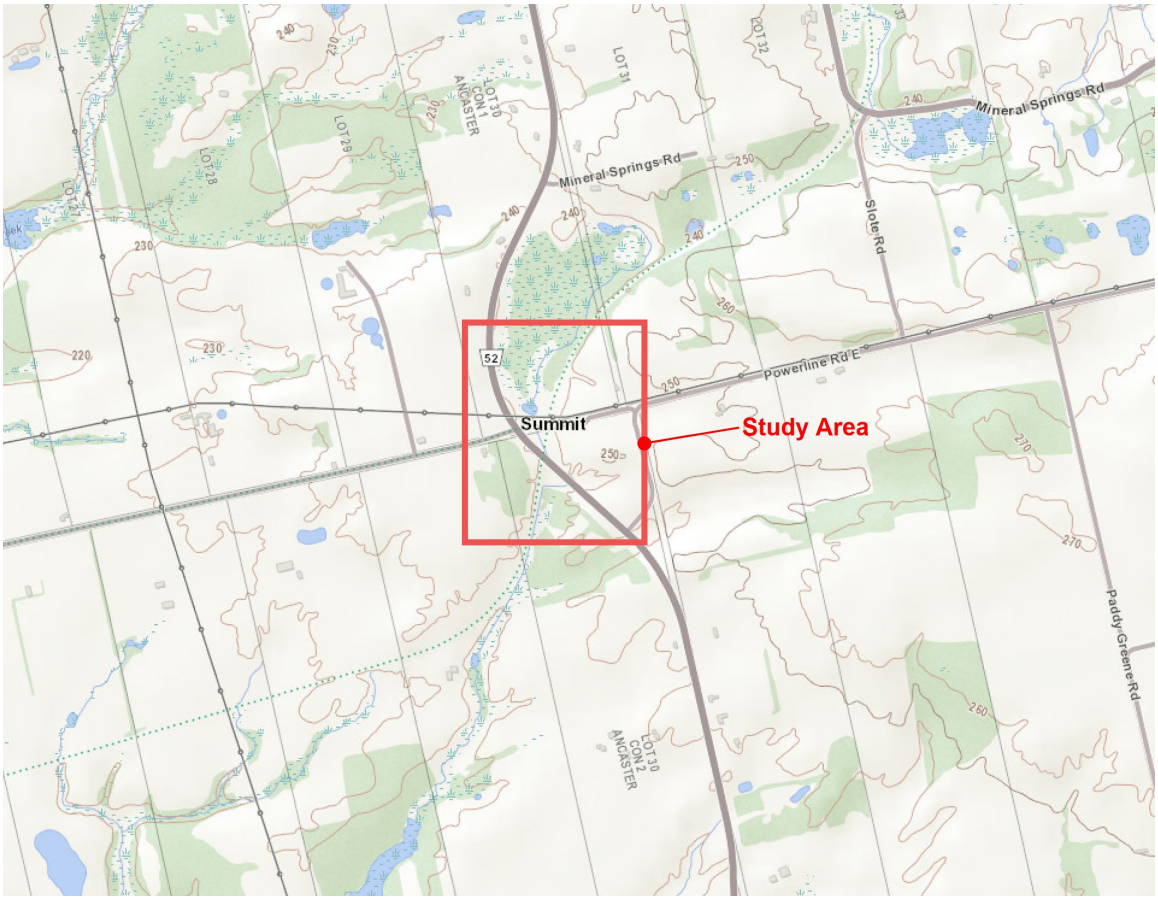
# 1.0 Introduction

## 1.1 Background

R.J. Burnside & Associates Limited (Burnside) has been retained by City of Hamilton (City) to undertake a Schedule C Municipal Class Environmental Assessment (MCEA) to review intersection improvement options at the intersections of Highway 52 and Powerline Road West, and Highway 52 and Powerline Road East.

The purpose of this report is to provide a review of existing drainage conditions, assess the proposed alternatives, and summarize the stormwater management requirements for the preferred alternative design. The study area is shown in Figure 1 below.

**Figure 1: Study Area Plan**



## 1.2 Site Context

Highway 52 runs in a northwest to southeast direction, and Powerline Road West in a west to east direction. Land use adjacent to the ROW varies including farmlands, conservation areas, and a dairy farm on the northwest side.

The existing Highway 52 and Powerline Road West have rural two-lane cross sections, with a designated right-turn lane on Highway 52 at the intersection. There are no pedestrian or cyclist facilities, and the right-of-way (ROW) width varies.

# 2.0 Design Criteria

The relevant stormwater management and drainage design criteria and guideline documents are listed below:

- Comprehensive Development Guidelines and Financial Policies Manual, City (2019)
- Storm Drainage Policy, City (2004)
- Stormwater Master Plan – Class Environmental Assessment Report (SWMMP), City (2007)
- Highway Drainage Design Standards (HDDS), Ontario Ministry of Transportation (MTO) (2024)
- Stormwater Management Planning and Design Manual, Ministry of Environment Conservation and Parks (MECP) (2003)

The design criteria are summarized in Table 1 below.

## Table 1: Design Criteria

| Document | Standard | Criteria |
|---|---|---|
| - | Road Classification | Existing: Rural Arterial Undivided |
| **Non-watercourse Culvert** | | |
| MTO | Design Flow (SD-1, 1.1) | Minor System: 10% Annual Exceedance Probability (AEP) (i.e., Ten-Year Return Period)<br>Major System: 1% AEP (i.e., 100-Year Return Period) |
| MTO | Flow Depth - Major System (SD-9, 2.2) | No roadway overtopping |
| MTO | Freeboard to Top of Subgrade - Minor System (WC-7, 3.3) | Minimum 0.3 m |
| **Watercourse Culvert** | | |
| MTO | Design Flow (WC-1) | Design Storm: 4% AEP (i.e., 25-Year Return Period) - span less than 6 m |
| MTO | Freeboard to Edge of Travelled Lane - Design Storm (WC-7, 3.2) | Minimum 1 m |
| MTO | Maximum Depth of Flow on Roadway - Regional Storm (WC-13, 3.2.1) | Maximum 0.3 m |
| MTO | Velocity x Depth on Roadway - Regional Storm (WC-13, 3.2.2) | Maximum 0.8 $m^2/s$ |
| **Stormwater Management** | | |
| City / MECP | Quantity Control | Post to Pre-Development Peak Flow Control |
| City | Quality Control | Level 2 – Normal |

Additionally, a permit may be required from the Grand River Conservation Authority (GRCA), and Niagara Escarpment Commission (NEC) if proposed improvements extend into the NECs Development Control Area.

Although the Copetown Bog is GRCA regulated, the Bog and Hamilton – Brantford Rail Trail within the study area are owned by the Hamilton Conservation Authority (HCA), therefore design of the preferred alternative is to be circulated to the HCA.

## 3.0 Existing Conditions

The study area is located within the headwaters of Big Creek within the Lower Middle Grand River Subwatershed. The area is within the jurisdiction of the Grand River Conservation Authority (GRCA) with GRCA regulated areas adjacent to the roadway. There is one watercourse crossing within the project limits. Two Provincially Significant Wetlands (PSW), the Copetown Bog and the Big Creek Headwaters Wetland Complex, are present within the study area.

Existing drainage is conveyed through roadside ditches and crossing and entrance culverts to a GRCA regulated watercourse which drains to the Big Creek Headwaters Wetland Complex.

### 3.1 Hydrologic Analysis

Contributing catchment areas were determined using LiDAR contours and the Ontario Watershed Information Tool (OWIT) from the Ministry of Natural Resources and Forestry. The catchment generally consists of overland flow and drainage within the road right-of-way. Refer to Appendix A for the drainage area plan.

The Soil Survey Complex, prepared by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), was used to determine soil types. Each soil type has been categorized into hydrological soil groups in accordance with the MTO soil classification system. Refer to Appendix B for soil groups breakdown.

The 24-hour SCS Type-II Storm rainfall distributions govern the two-year to 100-year storm peak flow calculations. The SCS storm distributions were based on the IDF curves found in the City's Development Guidelines. The study area is located within the GRCA jurisdiction; therefore, the Hurricane Hazel regional storm event has also been included in the analysis for watercourse culverts.

Time of concentration (Tc) was calculated with consideration of the catchment runoff coefficient (C). When C is less than 0.40 then the Airport Method was used, and the Bransby-Williams Formula was used when C is greater than or equal to 0.40. The overland flow lengths and slopes were determined through the topographic survey and OWIT. Peak flows were determined using the Unit Hydrograph method in Visual OTTHYMO 6.2 (VO).

The existing hydrology parameters for each catchment and peak flow rates for each culvert are summarized in Table 2 and Table 3, respectively. Detailed calculations and VO outputs can be found in Appendix B.

**Table 2: Existing Culvert Catchment Hydrologic Modelling Parameters**

| Catchment ID | Area (ha) | Runoff Coefficient | Curve Number (CNII / CNIII) | Initial Abstraction Ia (mm) | Time to Peak Tp (hr) |
|---|---|---|---|---|---|
| 100 | 10.16 | 0.30 | 70 / 84 | 6.40 | 0.50 |
| 101 | 1.64 | 0.23 | 54 / 73 | 8.68 | 0.31 |
| 102 | 30.54 | 0.22 | 60 / 78 | 8.44 | 0.80 |
| 103 | 2.44 | 0.30 | 66 / 82 | 6.17 | 0.19 |
| 104 | 63.64 | 0.26 | 66 / 82 | 7.53 | 1.08 |
| 105 | 40.46 | 0.17 | 73 / 86 | 5.55 | 0.79 |
| 106 | 3.71 | 0.29 | 69 / 84 | 7.03 | 0.25 |
| 107 | 22.53 | 0.25 | 62 / 79 | 8.10 | 1.45 |

**Table 3: Culvert Peak Flow Rates ($m^3/s$)**

| Design Storm | Return Period | Culvert 1 | Culvert 2 | Culvert 3 | Culvert 4 | Culvert 5 |
|---|---|---|---|---|---|---|
| 24-hour SCS Type II | 2-Year | 0.18 | 0.02 | 1.34 | 0.25 | 0.10 |
| 24-hour SCS Type II | 5-Year | 0.34 | 0.04 | 2.53 | 0.49 | 0.19 |
| 24-hour SCS Type II | 10-Year | 0.45 | 0.06 | 3.43 | 0.68 | 0.26 |
| 24-hour SCS Type II | 25-Year | 0.62 | 0.09 | 4.69 | 0.96 | 0.36 |
| 24-hour SCS Type II | 50-Year | 0.74 | 0.11 | 5.61 | 1.17 | 0.43 |
| 24-hour SCS Type II | 100-Year | 0.86 | 0.13 | 6.57 | 1.39 | 0.50 |
| Hurricane Hazel | Regional Storm | 1.23 | 0.19 | 13.74 | 3.10 | 0.50 |

The Lower Middle Grand River Subwatershed Natural Heritage Characterization Report by GRCA dated July 14, 2017, states that the ponds and wetlands within the Copetown Bog are generally hydrologically isolated from Big Creek, except for intermittent outflow via the southern culvert. The watercourse south of the

Copetown Bog within the study limits was found to be fairly dry during multiple field visits conducted throughout the year by Burnside staff. Runoff control / storage in the Copetown Bog has not been accounted for in the above flows. Flows are recommended to be refined during detailed design, including review of the Copetown Bog storage impacts.

## 3.2 Hydraulic Analysis

Only existing crossing culverts on Highway 52 have been assessed. Hamilton-Brantford Rail Trail, driveway, and entrance culverts and Culvert 5 are to be assessed during detailed design

The existing crossing culverts were assessed using CulvertMaster hydraulic software (CVM). Existing culvert and roadway parameters were obtained from the topographic survey provided by the City and Geotechnical Investigation (October 2025) completed by JLP Services Inc. (JLP).

In the existing condition, Culvert 1 outlets to a low spot within the roadside ditch that has no outlet. The ditch is anticipated to provide storage prior to runoff ultimately spilling over towards the Copetown Bog and east watercourse.

Based on OWIT, the watercourse alignment flows from the Copetown Bog to the Big Creek Headwaters Wetland Complex through Culvert 5. However, based on the topographic survey, there is a high point in the watercourse between Culverts 3 and 5, indicating that the watercourse may be conveyed through Culvert 3 instead. Therefore, Culvert 3 was assessed using watercourse criteria.

The existing culvert parameters and a summary of the hydraulic analysis are provided below in Table 4 and Table 5, respectively. Detailed analysis and CVM outputs can be found in Appendix C.

Based on the analysis, Culverts 2 and 4 meet all applicable standards. Culvert 1 has less than the required 0.30 m of freeboard to top of subgrade during the design storm. Although Culvert 3 does not meet the standards, as discussed in Section 3.1, no drainage issues or flooding were identified during multiple field visits throughout the year; therefore, the flows from the Copetown Bog (i.e. Catchment Areas 104, 105, and 107) are to be refined during detailed design.

## Table 4: Existing Culvert Parameters

| Culvert ID | Material | Dia. (mm) | Up stream Invert (m) | Down stream Invert (m) | Length (m) | Slope (%) | Edge of Shoulder (m) | Top of Subgrade (m) |
|---|---|---|---|---|---|---|---|---|
| 1 | CSP | 750 | 237.58 | 237.46 | 25.99 | 0.48 | 239.23 | 238.54 |
| 2 | CSP | 800 | 236.84 | 236.38 | 29.81 | 1.53 | 238.61 | 237.92 |
| 3 | CSP | 900 | 236.06 | 235.76 | 30.51 | 0.98 | 238.65 | 238.08 |
| 4 | CSP | 1000 | 236.49 | 236.30 | 44.71 | 0.42 | 243.57 | 242.88 |

## Table 5: Existing Hydraulic Analysis

| Culvert ID | Return Period | Headwater Elevation (m) | Freeboard (m) [1] | Velocity (m/s) |
|---|---|---|---|---|
| 1 | 10-Yr | 238.32 | 0.22 | 1.24 |
| 1 | 100-Yr | 238.91 | 0.32 | 2.34 |
| 2 | 10-Yr | 237.08 | 0.84 | 1.00 |
| 2 | 100-Yr | 237.19 | 1.42 | 1.25 |
| 3 | 25-Yr | 238.94 | -0.29 | 3.27 |
| 3 | 100-Yr | 239.06 | -0.41 | 3.23 |
| 3 | Regional | 239.43 | -0.78 | 1.49[2] |
| 4 | 10-Yr | 237.31 | 5.57 | 1.20 |
| 4 | 100-Yr | 237.93 | 5.64 | 2.43 |

[1] For the 10-year storm freeboard is measured from the top of subgrade, whereas for the remaining storms, freeboard is measured from the edge of the travelled lane.
[2] Velocity of flow on the roadway. Regional storm velocity x depth on roadway for Culvert 3, is greater than 0.8 $m^2/s$.

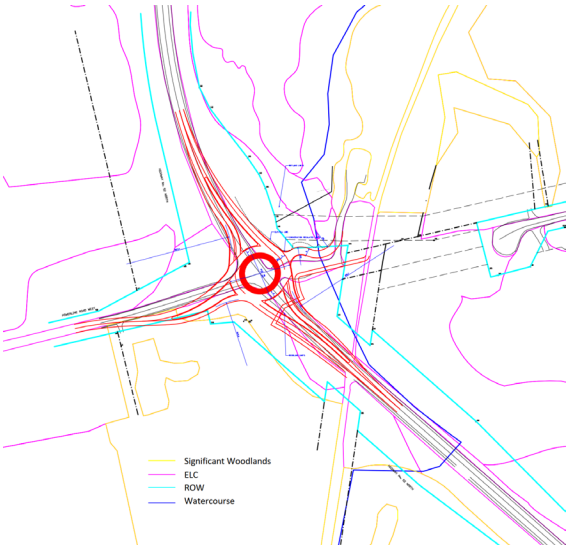
# 4.0 Alternatives Comparison

Three alternative designs for the preliminary preferred alternative solution were evaluated, involving a roundabout at the intersection and Hamilton-Brantford Rail Trail adjustments. The proposed roundabout may result in potential increases in the impervious area; however, increases are anticipated to be similar in all three alternatives.

## 4.1 Option 1

Option 1 involves a roundabout centered on the existing Highway 52 and Powerline Road intersection. Four culverts may be impacted and require extension or replacement, and ditch regrading will be required. However, as the roundabout will be centered in the existing intersection center, Option 1 is anticipated to have the least significant drainage impacts.

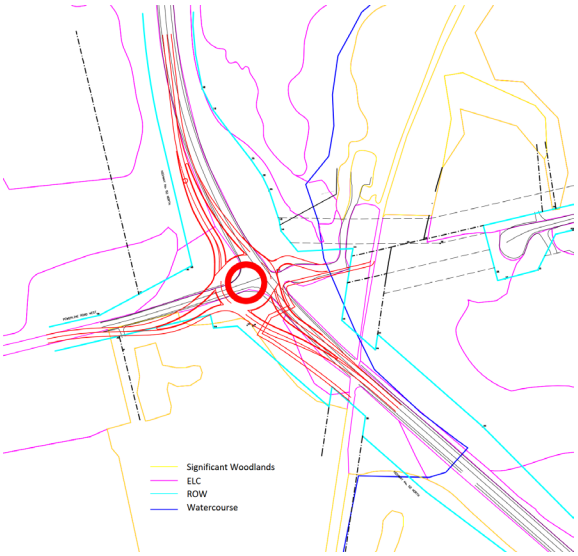
**Figure 2: Option 1**




## 4.2 Option 2

Option 2 involves a roundabout shifted west of the existing Highway 52 and Powerline Road intersection. Four culverts may be impacted and require extension or replacement, and as the roundabout center will be shifted compared to the existing intersection center, Option 2 is anticipated to require more additional ditch regrading than Option 1.

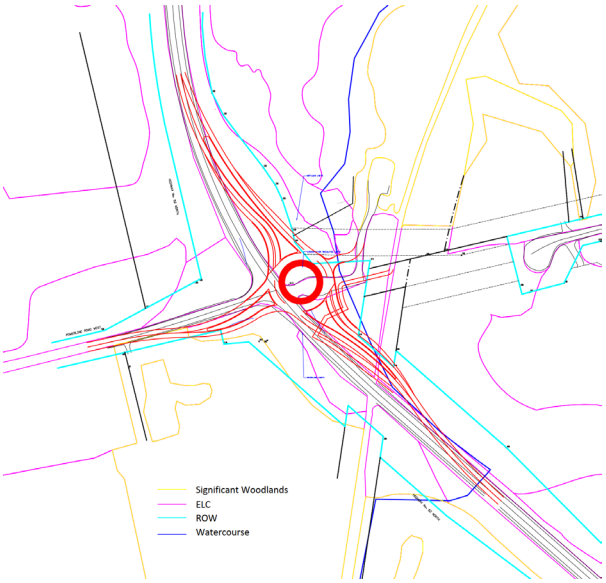
**Figure 3: Option 2**




## 4.3 Option 3

Option 3 involves a roundabout shifted east of the existing Highway 52 and Powerline Road intersection. Six culverts may be impacted and require extension or replacement, ditch regrading and watercourse realignment will be required, and the proposed grading may encroach into the Provincially Significant Wetland (PSW) Copetown Bog. Option 3 is anticipated to have the most significant drainage impacts.

**Figure 4: Option 3**



# 5.0 Preferred Alternative

Based on the overall evaluation, Option 2 was found to be the preferred alternative, due to the limited impact on the natural environment including the PSWs, significant woodlands, GRCA regulated lands, NEC protection area, and Hamilton environmentally sensitive area, no required property acquisition, moderate cost, greatest sight distance, and no impact to the potential cultural heritage landscape associated with the Hamilton-Branford Rail Trail. SWM was not the determining factor. Details regarding the SWM impacts of the preferred alternative are provided below.

## 5.1 Conveyance

The existing drainage patterns and outlet locations will generally be maintained in the proposed condition. Drainage will continue to be conveyed through roadside ditches and culverts to the regulated watercourse. Roundabout drainage is anticipated to be conveyed to roadside ditches by curb outlets or catch basin (CB) outlets, a preliminary layout has been included in the design drawings, however layout is to be refined pending detailed grading to be done during detailed design.

The improvements for the preferred alternative are anticipated to impact Culverts 1 to 3. The widening required to accommodate intersection improvements at Highway 52 and Powerline Road East is minor and not anticipated to impact Culvert 4. Culvert 5 is not anticipated to be impacted, however, only the upstream end of the culvert was identified in the topographic survey.

A functional design of Culverts 1 to 3 has been completed based on preliminary grading, however the need for culvert replacements or extensions, and design is to be confirmed at detailed design, based on culvert condition and detailed grading. As mentioned below in Section 5.2, impervious area and peak flows are not anticipated to significantly increase as a result of the proposed improvements, therefore existing flows were utilized to size the proposed culverts. Proposed culverts are of equal or larger diameter than existing to ensure existing conditions are not worsened. Road subgrade was assumed based on the proposed pavement structure identified for the interim left turn detailed design project for the same location (C15-27-26 (TR)).

Culvert 1 is proposed to be shifted north to accommodate the proposed roundabout. Preliminary ditch grading for Culvert 1 is provided in the 30% design drawings, however, alternatives such as retaining wall, slope stabilization, etc.

are to be investigated during detailed design. Culverts 2 and 3 are to remain in the same location, with lengthening on one or both sides as a result of the preliminary grading.

The proposed culvert parameters and a summary of the hydraulic analysis are provided below in Table 6 and Table 7, respectively. Detailed analysis and CVM outputs can be found in Appendix D.

## Table 6: Proposed Culvert Parameters

| Culvert ID | Material | Dia. (mm) | Upstream Invert (m) | Downstream Invert (m) | Length (m) | Slope (%) | Edge of Shoulder (m) | Top of Subgrade (m) |
|---|---|---|---|---|---|---|---|---|
| 1 | HDPE | 750 | 238.34 | 237.49 | 41.89 | 2.04 | 240.33 | 239.55 |
| 2 | HDPE | 900 | 236.82 | 236.51 | 36.26 | 0.84 | 238.83 | 238.05 |
| 3 | HDPE | 2x1350 | 236.06 | 235.89 | 34.11 | 0.50 | 238.78 | 238.01 |

## Table 7: Proposed Hydraulic Analysis

| Culvert ID | Return Period | Headwater Elevation (m) | Freeboard (m)[1] | Velocity (m/s) |
|---|---|---|---|---|
| 1 | 10-Yr | 238.96 | 0.59 | 1.00 |
| 1 | 100-Yr | 239.25 | 1.08 | 1.90 |
| 2 | 10-Yr | 237.01 | 1.04 | 1.30 |
| 2 | 100-Yr | 237.10 | 1.73 | 1.62 |
| 3 | 25-Yr | 237.28 | 1.50 | 2.38 |
| 3 | 100-Yr | 237.56 | 1.22 | 2.90 |
| 3 | Regional | 238.93 | -0.15 | 0.68 [2] |

[1] For the 10-year storm freeboard is measured from the top of subgrade, whereas for the remaining storms, freeboard is measured from the edge of the travelled lane.

[2] Velocity of flow on the roadway. Regional storm velocity x depth on roadway for Culvert 3, is less than 0.8 $m^2/s$.

Based on the analysis, all culverts meet the applicable standards. As discussed in Sections 3.1 and 3.2, flows draining to Culvert 3 from the Copetown Bog and culvert sizing are to be confirmed during detailed design. Provided culvert designs are preliminary and to be confirmed in detailed design based on detailed road design and grading. Preliminary ditches have been provided in the design for the proposed culverts, refinement to be addressed in detailed design based on detailed roadway grading.

The culvert under the parking access will need to be replaced or extended due to the proposed improvements. Design is to be completed during detailed design based on the grading of the new access and realigned rail trail.

As discussed in Section 3.2, existing ditch storage is present at the outlet of Culvert 1. Based on preliminary grading, the proposed improvements are anticipated to have a minor impact on the provided storage, and no impact to the Bog or watercourse. Further confirmation is to be provided during detailed design.

## 5.2 Stormwater Management

In the existing condition, there are no forms of quantity control and quality control is provided via roadside ditches.

As per the City's and MECP standards, on-site post-development to pre-development peak flow control is required for all storms. A breakdown of the existing and proposed ROW impervious area is shown in Table 8 below. Refer to the design drawings for details regarding the proposed design.

**Table 8: ROW Impervious Area**

| Scenario | Total Area (ha) | Impervious Area (ha) | Total Impervious Percentage | Increase in Impervious Area (ha) | % Increase in Impervious Area |
|---|---|---|---|---|---|
| Existing | 5.86 | 1.37 | 23.4% | - | - |
| Proposed | 5.86 | 1.53 | 26.1% | 0.16 | 12% |

The increase in impervious area is only anticipated to result in a ROW peak flow increase of approximately 5% based on rational method. Although the ROW flows are anticipated to increase by 5%, the ROW only accounts for a small portion of the total drainage area contributing to the outlet. As a result of the

large external catchments, the increased ROW impervious area is anticipated to have a negligible impact on peak flows at the outlets. Therefore, stormwater quantity control is not recommended for this project. Detailed calculations are provided in Appendix E.

Table 10.3 in the City's SWMMMP states that Level 2 – Normal quality control is required for the Big Creek watershed. However, as the project falls under a retrofit scenario with minor changes to impervious area, a best-efforts approach is recommended. Quality control is recommended to continue being provided through roadside ditches at a minimum. Additionally, CB treatment devices such as CB Shield or EnviroBasin can be utilized. These devices are verified through ETV Canada (Environmental Technology Verification) to provide up to 60% TSS removal.

Quantity and quality control can be supplemented through Low Impact Development measures (LIDs). Typically, LID features are infiltration based and include infiltration trenches, bioswales, vegetated swales, etc. These measures are to be implemented where it is determined they will be functional, will achieve the desired goal or protection, and will not conflict with utilities. Implementation of LID features is highly dependent on soil type and groundwater levels.

Five boreholes (BH) were drilled as part of the Geotechnical Investigation completed by JLP as part of the interim left turn detailed design project for the same location
(C15-27-26 (TR)). The BHs typically revealed a surface layer of topsoil or pavement structure, with silty sand to sandy silt below. Groundwater was not encountered in any of the BHs; however, it is important to note that seasonal fluctuation of groundwater level is expected.

Location specific percolation rates and seasonally high groundwater elevations should be determined to complete a more comprehensive design of proposed LID infiltration measures. This information will determine where functional infiltration-based LID measures are achievable. Feasibility and locations of LIDs are to be assessed as part of detailed design.

## 6.0 Conclusions and Recommendations

This report provides a review of existing drainage conditions and assesses the proposed intersection improvement options at the intersections of Highway 52 and Powerline Road West, and Highway 52 and Powerline Road East in the City

of Hamilton. The following findings and recommendations have been stated in the report:

- Existing drainage is conveyed via ditches and culverts. The existing drainage patterns and outlet locations will generally be maintained in the proposed condition.
- Refined peak flows from the Copetown Bog are to be determined in detailed design.
- Proposed intersection improvements are anticipated to impact ditches and culverts.
- Culverts 1 to 3 are anticipated to be replaced with pipes of equal or larger diameters.
- Proposed ditches are to be designed during detailed design.
- Impacts to the Copetown Bog and watercourse are not anticipated based on the preliminary grading, to be confirmed in detailed design.
- Stormwater quantity control is not recommended for the site.
- Stormwater quality control is recommended to be provided through a “Best Efforts” approach including maintaining roadside ditches and CB treatment devices.
- LID feasibility is to be assessed as part of detailed design to supplement stormwater quantity and quality control.

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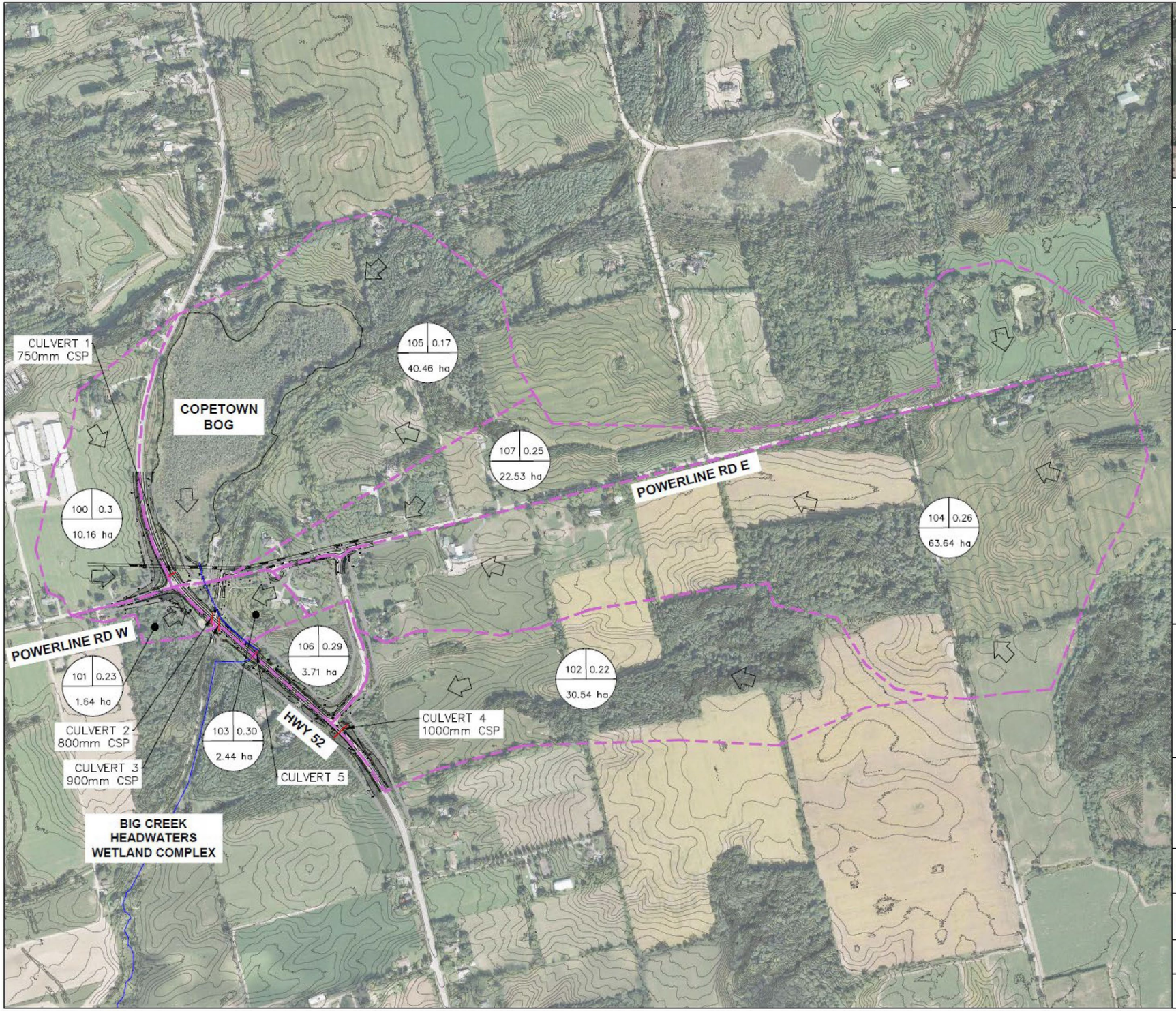
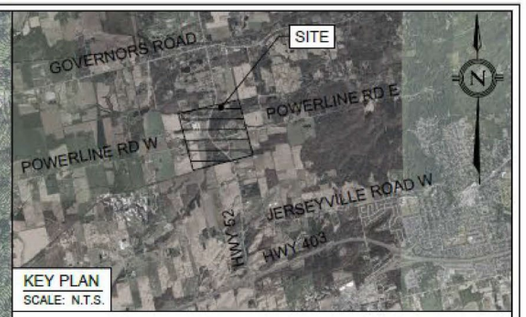
# Appendix A

# Drainage Area Plan




KEY PLAN
SCALE: N.T.S.

Notes

1. This drawing is the exclusive property of R. J. Burnside & Associates Limited. The reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.

## LEGEND:

- DRAINAGE BOUNDARY
- WATERCOURSE
- EXISTING CROSSING CULVERT
- OVERLAND FLOW ROUTE
- DRAINAGE AREA NUMBER
- RUNOFF COEFFICIENT
- DRAINAGE AREA (ha)

SITE1 | 0.90 | 0.68 ha

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Client
**CITY OF HAMILTON**
71 MAIN STREET WEST
HAMILTON, ON L8P 4Y5

Project Name
**HAMILTON MCEA HWY 52 & POWERLINE RD W INTERSECTION IMPROVEMENTS**

Drawing Title
DRAINAGE AREA PLAN

| Drawn | Checked | Date | Drawing No. |
|---|---|---|---|
| MRT/HB | HF | 25/11/27 | A1 |
| Scale | | Project No. | |
| 1:8000 | | 300058803.0000 | |

File Name: 058803 - DRAINAGE PLAN.dwg Date Plotted: November 27, 2025 - 6:05 PM

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# Appendix B

# Existing Hydrologic Analysis

**LEGEND**

- Grimsby Sandy Loam
- Springvale Sandy Loam
- Tuscola Silt Loam
- Ancaster Silt Loam
- Vineland Sandy Loam
- Alberton Silt Loam
- Muck
- Ravine
- Brantford Silt Loam

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# Appendix C

# Existing Hydraulic Analysis

**Project Name:** Highway 52 and Powerline Road West - Left Turn Detailed Design
**Project No.:** 59911
**Completed By:** MRT/HB
**Date:** 11/6/2025

**CulvertMaster - Hydraulic Output Summary**
Structure: Culvert 1 - 12+540 Existing Condition

**Culvert Data Summary**

| | | |
|---|---|---|
| Shape | Circular | |
| Material | CSP | |
| Size | 750 | mm |
| # of Barrels | 1 | |
| Manning's n | 0.024 | |
| Inlet Entrance | Projecting | |
| US Invert | 237.58 | m |
| DS Invert | 237.47 | m |
| Length | 22.77 | m |
| Slope | 0.48 | % |

**Tailwater Channel Data**

| | | |
|---|---|---|
| Method | Constant | |
| 100yr Critical Depth | 0.57 | m |
| Tailwater Elevation | 238.04 | m |

**Weir**

| | | |
|---|---|---|
| Method | Roadway (Constant Elevation) | |
| Roadway Type | Paved | |
| Length | 10 | m |
| US Shoulder Elevation | 239.23 | m |
| Roadway Width | 13.86 | m |
| Depth to Top of Subgrade | 0.695 | m |
| Top of Subgrade Elevation | 238.54 | m |

## Summary of Culvert Flows for Existing Condition

| Storm Return Period | Headwater Elevation (m) | Total Discharge (cms) | Culvert Discharge (cms) | Roadway Discharge (cms) | FB* (m) | Velocity (m/s) |
|---|---|---|---|---|---|---|
| 10 Year | 238.32 | 0.45 | 0.45 | 0 | 0.22 | 1.24 |
| 100 Year | 238.91 | 0.86 | 0.86 | 0 | 0.32 | 2.34 |

*For the design storm, freeboard is measured from top of subgrade elevation. For major, measured from edge of shoulder elevation

**Project Name:** Highway 52 and Powerline Road West - Left Turn Detailed Design
**Project No.:** 59911
**Completed By:** MRT/HB
**Date:** 11/6/2025

**CulvertMaster - Hydraulic Output Summary**
Structure: Culvert 2 - 12+668 Existing Condition

**Culvert Data Summary**

| | | |
|---|---|---|
| Shape | Circular | |
| Material | CSP | |
| Size | 800 | mm |
| # of Barrels | 1 | |
| Manning's n | 0.024 | |
| Inlet Entrance | Projecting | |
| US Invert | 236.84 | m |
| DS Invert | 236.42 | m |
| Length | 27.5 | m |
| Slope | 1.53 | % |

**Tailwater Channel Data**

| | | |
|---|---|---|
| Method | Triangular | |
| Channel Slope | 0.087 | m/m |
| Manning's n | 0.035 | |
| Left Side Slope | 2.4 | |
| Right Side Slope | 16.1 | |
| Bottom Width | 0 | m |
| Bottom Elevation | 236.42 | m |

**Weir**

| | | |
|---|---|---|
| Method | Roadway (Constant Elevation) | |
| Roadway Type | Paved | |
| Length | 10 | m |
| US Shoulder Elevation | 238.61 | m |
| Roadway Width | 15.20 | m |
| Depth to Top of Subgrade | 0.695 | m |
| Top of Subgrade Elevation | 237.92 | m |

**Summary of Culvert Flows for Existing Condition**

| Storm Return Period | Headwater Elevation (m) | Total Discharge (cms) | Culvert Discharge (cms) | Roadway Discharge (cms) | FB* (m) | Velocity (m/s) |
|---|---|---|---|---|---|---|
| 10 Year | 237.08 | 0.06 | 0.06 | 0 | 0.84 | 1.00 |
| 100 Year | 237.19 | 0.13 | 0.13 | 0 | 1.42 | 1.25 |

*For the design storm, freeboard is measured from top of subgrade elevation. For major, measured from edge of shoulder elevation

**Project Name:** Hamilton MCEA Hwy 52 & Powerline Intersection
**Project No.:** 58803
**Completed By:** MRT/HB
**Date:** 11/27/2025

**CulvertMaster - Hydraulic Output Summary**
Structure: Culvert 3 - 12+690 Existing Condition

**Culvert Data Summary**

| | | |
|---|---|---|
| Shape | Circular | |
| Material | CSP | |
| Size | 900 | mm |
| # of Barrels | 1 | |
| Manning's n | 0.024 | |
| Inlet Entrance | Projecting | |
| US Invert | 236.06 | m |
| DS Invert | 235.76 | m |
| Length | 30.51 | m |
| Slope | 0.98 | % |

**Tailwater Channel Data**

| | | |
|---|---|---|
| Method | Triangular | |
| Channel Slope | 0.010 | m/m |
| Manning's n | 0.035 | |
| Left Side Slope | 3.6 | |
| Right Side Slope | 4.2 | |
| Bottom Width | 0 | m |
| Bottom Elevation | 235.76 | m |

**Weir**

| | | |
|---|---|---|
| Method | Roadway (Constant Elevation) | |
| Roadway Type | Paved | |
| Length | 10 | m |
| US Shoulder Elevation | 238.65 | m |
| Roadway Width | 16.05 | m |

## Summary of Culvert Flows for Existing Condition

| Storm Return Period | Headwater Elevation (m) | Total Discharge (cms) | Culvert Discharge (cms) | Roadway Discharge (cms) | FB* (m) | Velocity (m/s) |
|---|---|---|---|---|---|---|
| 25 Year | 238.94 | 4.69 | 2.11 | 2.58 | -0.29 | 3.27 |
| 100 Year | 239.06 | 6.57 | 2.12 | 4.45 | -0.41 | 3.23 |
| Regional | 239.43 | 13.75 | 2.15 | 11.60 | -0.78 | 3.27 |

*Freeboard is measured from edge of roadway elevation

**Regional**

| Length of Roadway | Depth of Flow on Roadway (m) | Road Discharge ($m^3/s$) | Velocity of Flow on Roadway (m/s) | Velocity x Depth on Roadway ($m^2/s$) |
|---|---|---|---|---|
| 10 | 0.78 | 11.60 | 1.49 | 1.16 |

**Project Name:** Hamilton MCEA Hwy 52 & Powerline Intersection
**Project No.:** 58803
**Completed By:** MRT/HB
**Date:** 9/17/2025

**CulvertMaster - Hydraulic Output Summary**
Structure: Culvert 4 - 13+030 Existing Condition

| **Culvert Data Summary** | | |
|---|---|---|
| Shape | Circular | |
| Material | CSP | |
| Size | 1000 | mm |
| # of Barrels | 1 | |
| Manning's n | 0.024 | |
| Inlet Entrance | Projecting | |
| US Invert | 236.49 | m |
| DS Invert | 236.30 | m |
| Length | 44.71 | m |
| Slope | 0.42 | % |

| **Tailwater Channel Data** | | |
|---|---|---|
| Method | Constant | |
| 100yr Critical Depth | 0.680 | m |
| Tailwater Elevation | 236.983 | m |

| **Weir** | | |
|---|---|---|
| Method | Roadway (Constant Elevation) | |
| Roadway Type | Paved | |
| Length | 10 | m |
| US Shoulder Elevation | 243.57 | m |
| Roadway Width | 12.78 | m |
| Depth to Top of Subgrade | 0.695 | m |
| Top of Subgrade Elevation | 242.88 | m |

## Summary of Culvert Flows for Existing Condition

| Storm Return Period | Headwater Elevation (m) | Total Discharge (cms) | Culvert Discharge (cms) | Roadway Discharge (cms) | FB* (m) | Velocity (m/s) |
|---|---|---|---|---|---|---|
| 10 Year | 237.31 | 0.68 | 0.68 | 0 | 5.57 | 1.20 |
| 100 Year | 237.93 | 1.39 | 1.39 | 0 | 5.64 | 2.43 |

*For the design storm, freeboard is measured from top of subgrade elevation. For major, measured from edge of roadway elevation

# Culvert Designer/Analyzer Report
## Culvert 1 (750mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 0.4540 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.4540 m³/s | Check Discharge | 0.8630 m³/s |

| Tailwater Conditions: Constant Tailwater | |
|---|---|
| Tailwater Elevation | 238.04 m |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-750 mm Circular | 0.4541 m³/s | 238.32 m | 1.24 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 238.32 m | N/A |
| Total | ---------- | 0.4541 m³/s | 238.32 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 238.32 | m | Discharge | 0.4541 | m³/s |
| Inlet Control HW Elev. | 238.23 | m | Tailwater Elevation | 238.04 | m |
| Outlet Control HW Elev. | 238.32 | m | Control Type | Outlet Control | |
| Headwater Depth/Height | 0.97 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 237.58 | m | Downstream Invert | 237.47 | m |
| Length | 22.77 | m | Constructed Slope | 0.004831 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | M2 | | Depth, Downstream | 0.57 | m |
| Slope Type | Mild | | Normal Depth | 0.65 | m |
| Flow Regime | Subcritical | | Critical Depth | 0.41 | m |
| Velocity Downstream | 1.24 | m/s | Critical Slope | 0.016026 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 0.76 | m |
| Section Size | 750 mm | | Rise | 0.76 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 238.32 | m | Upstream Velocity Head | 0.07 | m |
| Ke | 0.90 | | Entrance Loss | 0.06 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 238.23 | m | Flow Control | Unsubmerged | |
| Inlet Type | Projecting | | Area Full | 0.5 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 238.32 | m |
| Roadway Width | 13.86 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 239.23 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 239.23 |
| 10.00 | 239.23 |

# Culvert Designer/Analyzer Report
## Culvert 1 (750mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Check | Discharge | 0.8630 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.4540 m³/s | Check Discharge | 0.8630 m³/s |

| Tailwater Conditions: Constant Tailwater | |
|---|---|
| Tailwater Elevation | 238.04 m |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-750 mm Circular | 0.8631 m³/s | 238.91 m | 2.34 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 238.91 m | N/A |
| Total | ---------- | 0.8631 m³/s | 238.91 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 238.91 | m | Discharge | 0.8631 | m³/s |
| Inlet Control HW Elev. | 238.65 | m | Tailwater Elevation | 238.04 | m |
| Outlet Control HW Elev. | 238.91 | m | Control Type | Outlet Control | |
| Headwater Depth/Height | 1.74 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 237.58 | m | Downstream Invert | 237.47 | m |
| Length | 22.77 | m | Constructed Slope | 0.004831 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeM2PressureProfile | | Depth, Downstream | 0.57 | m |
| Slope Type | Mild | | Normal Depth | N/A | m |
| Flow Regime | Subcritical | | Critical Depth | 0.57 | m |
| Velocity Downstream | 2.34 | m/s | Critical Slope | 0.022440 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 0.76 | m |
| Section Size | 750 mm | | Rise | 0.76 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 238.91 | m | Upstream Velocity Head | 0.18 | m |
| Ke | 0.90 | | Entrance Loss | 0.16 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 238.65 | m | Flow Control | Transition | |
| Inlet Type | Projecting | | Area Full | 0.5 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 238.91 | m |
| Roadway Width | 13.86 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 239.23 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 239.23 |
| 10.00 | 239.23 |

# Culvert Designer/Analyzer Report
## Culvert 2 (800mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 0.0600 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.0600 m³/s | Check Discharge | 0.1250 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Design Storm.

| | | | |
|---|---|---|---|
| Discharge | 0.0600 m³/s | Bottom Elevation | 236.42 m |
| Depth | 0.08 m | Velocity | 0.98 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-800 mm Circular | 0.0600 m³/s | 237.08 m | 1.00 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.08 m | N/A |
| Total | ---------- | 0.0600 m³/s | 237.08 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 2 (800mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 237.08 | m | Discharge | 0.0600 | m³/s |
| Inlet Control HW Elev. | 237.03 | m | Tailwater Elevation | 236.50 | m |
| Outlet Control HW Elev. | 237.08 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 0.30 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.84 | m | Downstream Invert | 236.42 | m |
| Length | 27.50 | m | Constructed Slope | 0.015273 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | S2 | | Depth, Downstream | 0.14 | m |
| Slope Type | Steep | | Normal Depth | 0.14 | m |
| Flow Regime | Supercritical | | Critical Depth | 0.14 | m |
| Velocity Downstream | 1.00 | m/s | Critical Slope | 0.014493 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 0.80 | m |
| Section Size | 800 mm | | Rise | 0.80 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.08 | m | Upstream Velocity Head | 0.05 | m |
| Ke | 0.90 | | Entrance Loss | 0.04 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.03 | m | Flow Control | Unsubmerged | |
| Inlet Type | Projecting | | Area Full | 0.5 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 2 (800mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.08 | m |
| Roadway Width | 15.20 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 238.61 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.61 |
| 10.00 | 238.61 |

# Culvert Designer/Analyzer Report
## Culvert 2 (800mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Check | Discharge | 0.1250 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.0600 m³/s | Check Discharge | 0.1250 m³/s |

Tailwater properties: Triangular Channel

| Tailwater conditions for Check Storm. | | | |
|---|---|---|---|
| Discharge | 0.1250 m³/s | Bottom Elevation | 236.42 m |
| Depth | 0.11 m | Velocity | 1.18 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-800 mm Circular | 0.1251 m³/s | 237.19 m | 1.25 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.19 m | N/A |
| Total | ---------- | 0.1251 m³/s | 237.19 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 2 (800mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 237.19 | m | Discharge | 0.1251 | m³/s |
| Inlet Control HW Elev. | 237.13 | m | Tailwater Elevation | 236.53 | m |
| Outlet Control HW Elev. | 237.19 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 0.44 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.84 | m | Downstream Invert | 236.42 | m |
| Length | 27.50 | m | Constructed Slope | 0.015273 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | S2 | | Depth, Downstream | 0.20 | m |
| Slope Type | Steep | | Normal Depth | 0.20 | m |
| Flow Regime | Supercritical | | Critical Depth | 0.21 | m |
| Velocity Downstream | 1.25 | m/s | Critical Slope | 0.013932 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 0.80 | m |
| Section Size | 800 mm | | Rise | 0.80 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.19 | m | Upstream Velocity Head | 0.07 | m |
| Ke | 0.90 | | Entrance Loss | 0.07 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.13 | m | Flow Control | N/A | |
| Inlet Type | Projecting | | Area Full | 0.5 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 2 (800mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.19 | m |
| Roadway Width | 15.20 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 238.61 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.61 |
| 10.00 | 238.61 |

# Culvert Designer/Analyzer Report
## Culvert 3 (900mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 4.6900 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 4.6900 m³/s | Check Discharge | 6.5700 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Design Storm.

| | | | |
|---|---|---|---|
| Discharge | 4.6900 m³/s | Bottom Elevation | 235.76 m |
| Depth | 0.87 m | Velocity | 1.60 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-900 mm Circular | 2.1076 m³/s | 238.94 m | 3.27 m/s |
| Weir | Roadway (Constant Elevation) | 2.5844 m³/s | 238.94 m | N/A |
| Total | ---------- | 4.6920 m³/s | 238.94 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 3 (900mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 238.94 | m | Discharge | 2.1076 | m³/s |
| Inlet Control HW Elev. | 238.42 | m | Tailwater Elevation | 236.63 | m |
| Outlet Control HW Elev. | 238.94 | m | Control Type | Outlet Control | |
| Headwater Depth/Height | 3.15 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.06 | m | Downstream Invert | 235.76 | m |
| Length | 30.51 | m | Constructed Slope | 0.009833 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeM2PressureProfile | | Depth, Downstream | 0.87 | m |
| Slope Type | Mild | | Normal Depth | N/A | m |
| Flow Regime | Subcritical | | Critical Depth | 0.83 | m |
| Velocity Downstream | 3.27 | m/s | Critical Slope | 0.037231 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 0.91 | m |
| Section Size | 900 mm | | Rise | 0.91 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 238.94 | m | Upstream Velocity Head | 0.53 | m |
| Ke | 0.90 | | Entrance Loss | 0.47 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 238.42 | m | Flow Control | Submerged | |
| Inlet Type | Projecting | | Area Full | 0.7 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 3 (900mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 2.5843 | m³/s | Allowable HW Elevation | 238.94 | m |
| Roadway Width | 16.05 | m | Overtopping Coefficient | 1.68 | SI |
| Length | 10.00 | m | Crest Elevation | 238.65 | m |
| Headwater Elevation | 238.94 | m | Discharge Coefficient (Cr) | 3.04 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.65 |
| 10.00 | 238.65 |

# Culvert Designer/Analyzer Report
## Culvert 3 (900mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Check | Discharge | 6.5700 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 4.6900 m³/s | Check Discharge | 6.5700 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Check Storm.

| | | | |
|---|---|---|---|
| Discharge | 6.5700 m³/s | Bottom Elevation | 235.76 m |
| Depth | 0.98 m | Velocity | 1.74 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-900 mm Circular | 2.1200 m³/s | 239.06 m | 3.23 m/s |
| Weir | Roadway (Constant Elevation) | 4.4525 m³/s | 239.06 m | N/A |
| Total | ---------- | 6.5725 m³/s | 239.06 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 3 (900mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 239.06 | m | Discharge | 2.1200 | m³/s |
| Inlet Control HW Elev. | 238.44 | m | Tailwater Elevation | 236.74 | m |
| Outlet Control HW Elev. | 239.06 | m | Control Type | Outlet Control | |
| Headwater Depth/Height | 3.28 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.06 | m | Downstream Invert | 235.76 | m |
| Length | 30.51 | m | Constructed Slope | 0.009833 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | PressureProfile | | Depth, Downstream | 0.98 | m |
| Slope Type | N/A | | Normal Depth | N/A | m |
| Flow Regime | N/A | | Critical Depth | 0.83 | m |
| Velocity Downstream | 3.23 | m/s | Critical Slope | 0.037618 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 0.91 | m |
| Section Size | 900 mm | | Rise | 0.91 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 239.06 | m | Upstream Velocity Head | 0.53 | m |
| Ke | 0.90 | | Entrance Loss | 0.48 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 238.44 | m | Flow Control | Submerged | |
| Inlet Type | Projecting | | Area Full | 0.7 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 3 (900mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 4.4525 | m³/s | Allowable HW Elevation | 239.06 | m |
| Roadway Width | 16.05 | m | Overtopping Coefficient | 1.68 | SI |
| Length | 10.00 | m | Crest Elevation | 238.65 | m |
| Headwater Elevation | 239.06 | m | Discharge Coefficient (Cr) | 3.04 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.65 |
| 10.00 | 238.65 |

# Culvert Designer/Analyzer Report
# Culvert 3 (900mm) - EX (Regional)

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 13.7400 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 13.7400 m³/s | Check Discharge | 0.0000 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Design Storm.

| | | | |
|---|---|---|---|
| Discharge | 13.7400 m³/s | Bottom Elevation | 235.76 m |
| Depth | 1.30 m | Velocity | 2.10 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-900 mm Circular | 2.1459 m³/s | 239.43 m | 3.27 m/s |
| Weir | Roadway (Constant Elevation) | 11.3005 m³/s | 239.43 m | N/A |
| Total | ---------- | 13.7464 m³/s | 239.43 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 3 (900mm) - EX (Regional)

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 239.43 | m | Discharge | 2.1459 | m³/s |
| Inlet Control HW Elev. | 238.49 | m | Tailwater Elevation | 237.06 | m |
| Outlet Control HW Elev. | 239.43 | m | Control Type | Outlet Control | |
| Headwater Depth/Height | 3.69 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.06 | m | Downstream Invert | 235.76 | m |
| Length | 30.51 | m | Constructed Slope | 0.009833 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | PressureProfile | | Depth, Downstream | 1.30 | m |
| Slope Type | N/A | | Normal Depth | N/A | m |
| Flow Regime | N/A | | Critical Depth | 0.83 | m |
| Velocity Downstream | 3.27 | m/s | Critical Slope | 0.038444 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 0.91 | m |
| Section Size | 900 mm | | Rise | 0.91 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 239.43 | m | Upstream Velocity Head | 0.54 | m |
| Ke | 0.90 | | Entrance Loss | 0.49 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 238.49 | m | Flow Control | Submerged | |
| Inlet Type | Projecting | | Area Full | 0.7 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 3 (900mm) - EX (Regional)

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 11.6005 | m³/s | Allowable HW Elevation | 239.43 | m |
| Roadway Width | 16.05 | m | Overtopping Coefficient | 1.67 | SI |
| Length | 10.00 | m | Crest Elevation | 238.65 | m |
| Headwater Elevation | 239.43 | m | Discharge Coefficient (Cr) | 3.03 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.65 |
| 10.00 | 238.65 |

# Culvert Designer/Analyzer Report
# Culvert 4 (1000mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 0.6830 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.6830 m³/s | Check Discharge | 1.3870 m³/s |

| Tailwater Conditions: Constant Tailwater | |
|---|---|
| Tailwater Elevation | 236.98 m |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-1000 mm Circular | 0.6832 m³/s | 237.31 m | 1.20 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.31 m | N/A |
| Total | ---------- | 0.6832 m³/s | 237.31 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 4 (1000mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 237.31 | m | Discharge | 0.6832 | m³/s |
| Inlet Control HW Elev. | 237.21 | m | Tailwater Elevation | 236.98 | m |
| Outlet Control HW Elev. | 237.31 | m | Control Type | Outlet Control | |
| Headwater Depth/Height | 0.82 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.49 | m | Downstream Invert | 236.30 | m |
| Length | 44.71 | m | Constructed Slope | 0.004250 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | M1 | | Depth, Downstream | 0.68 | m |
| Slope Type | Mild | | Normal Depth | 0.68 | m |
| Flow Regime | Subcritical | | Critical Depth | 0.47 | m |
| Velocity Downstream | 1.20 | m/s | Critical Slope | 0.013747 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 1.00 | m |
| Section Size | 1000 mm | | Rise | 1.00 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.31 | m | Upstream Velocity Head | 0.07 | m |
| Ke | 0.90 | | Entrance Loss | 0.07 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.21 | m | Flow Control | Unsubmerged | |
| Inlet Type | Projecting | | Area Full | 0.8 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 4 (1000mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.31 | m |
| Roadway Width | 12.78 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 243.57 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 243.57 |
| 10.00 | 243.57 |

# Culvert Designer/Analyzer Report
# Culvert 4 (1000mm) - EX

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Check | Discharge | 1.3870 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.6830 m³/s | Check Discharge | 1.3870 m³/s |

| Tailwater Conditions: Constant Tailwater | |
|---|---|
| Tailwater Elevation | 236.98 m |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-1000 mm Circular | 1.3869 m³/s | 237.93 m | 2.43 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.93 m | N/A |
| Total | ---------- | 1.3869 m³/s | 237.93 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 4 (1000mm) - EX

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Eleva | 237.93 | m | Discharge | 1.3869 | m³/s |
| Inlet Control HW Elev. | 237.67 | m | Tailwater Elevation | 236.98 | m |
| Outlet Control HW Elev. | 237.93 | m | Control Type | Outlet Control | |
| Headwater Depth/Height | 1.44 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.49 | m | Downstream Invert | 236.30 | m |
| Length | 44.71 | m | Constructed Slope | 0.004250 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeM2PressureProfile | | Depth, Downstream | 0.68 | m |
| Slope Type | Mild | | Normal Depth | N/A | m |
| Flow Regime | Subcritical | | Critical Depth | 0.68 | m |
| Velocity Downstream | 2.43 | m/s | Critical Slope | 0.017639 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.024 | |
| Section Material | CMP | | Span | 1.00 | m |
| Section Size | 1000 mm | | Rise | 1.00 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.93 | m | Upstream Velocity Head | 0.16 | m |
| Ke | 0.90 | | Entrance Loss | 0.14 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.67 | m | Flow Control | Unsubmerged | |
| Inlet Type | Projecting | | Area Full | 0.8 | m² |
| K | 0.03400 | | HDS 5 Chart | 2 | |
| M | 1.50000 | | HDS 5 Scale | 3 | |
| C | 0.05530 | | Equation Form | 1 | |
| Y | 0.54000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 4 (1000mm) - EX

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.93 | m |
| Roadway Width | 12.78 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 243.57 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 243.57 |
| 10.00 | 243.57 |

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Appendix D

# Proposed Hydraulic Analysis

**Project Name:** Hamilton MCEA Hwy 52 & Powerline Intersection
**Project No.:** 58803
**Completed By:** HB
**Date:** 2/6/2026

**CulvertMaster - Hydraulic Output Summary**
Structure: Culvert 1 - 12+535 Proposed Condition

**Culvert Data Summary**

| | | |
|---|---|---|
| Shape | Circular | |
| Material | HDPE | |
| Size | 750 | mm |
| # of Barrels | 1 | |
| Manning's n | 0.012 | |
| Inlet Entrance | Projecting | |
| US Invert | 238.34 | m |
| DS Invert | 237.49 | m |
| Length | 41.89 | m |
| Slope | 2.04 | % |

**Tailwater Channel Data**

| | | |
|---|---|---|
| Method | Constant | |
| Flow Regime | Supercritical | *Assume submerged |
| Tailwater Elevation | 238.24 | m |

**Weir**

| | | |
|---|---|---|
| Method | Roadway (Constant Elevation) | |
| Roadway Type | Paved | |
| Length | 10 | m |
| US Shoulder Elevation | 240.33 | m |
| Roadway Width | 30.207 | m |
| Depth to Top of Subgrade | 0.775 | m |
| Top of Subgrade Elevation | 239.55 | m |

**Summary of Culvert Flows for Proposed Condition**

| Storm Return Period | Headwater Elevation (m) | Total Discharge (cms) | Culvert Discharge (cms) | Roadway Discharge (cms) | FB* (m) | Velocity (m/s) |
|---|---|---|---|---|---|---|
| 10 Year | 238.96 | 0.45 | 0.45 | 0 | 0.59 | 1.00 |
| 100 Year | 239.25 | 0.86 | 0.86 | 0 | 1.08 | 1.90 |

*For the design storm, freeboard is measured from top of subgrade elevation. For major, measured from edge of shoulder elevation

**Project Name:** Hamilton MCEA Hwy 52 & Powerline Intersection
**Project No.:** 58803
**Completed By:** HB
**Date:** 2/11/2026

**CulvertMaster - Hydraulic Output Summary**
Structure: Culvert 2 - 12+668 Proposed Condition

**Culvert Data Summary**

| | | |
|---|---|---|
| Shape | Circular | |
| Material | HDPE | |
| Size | 900 | mm |
| # of Barrels | 1 | |
| Manning's n | 0.012 | |
| Inlet Entrance | Projecting | |
| US Invert | 236.818 | m |
| DS Invert | 236.512 | m |
| Length | 36.26 | m |
| Slope | 0.84 | % |

**Tailwater Channel Data**

| | | |
|---|---|---|
| Method | Triangular | |
| Channel Slope | 0.067 | m/m |
| Manning's n | 0.035 | |
| Left Side Slope | 11 | |
| Right Side Slope | 2.4 | |
| Bottom Width | 0 | m |
| Bottom Elevation | 236.51 | m |

**Weir**

| | | |
|---|---|---|
| Method | Roadway (Constant Elevation) | |
| Roadway Type | Paved | |
| Length | 10 | m |
| US Shoulder Elevation | 238.83 | m |
| Roadway Width | 18.54 | m |
| Depth to Top of Subgrade | 0.775 | m |
| Top of Subgrade Elevation | 238.05 | m |

**Summary of Culvert Flows for Proposed Condition**

| Storm Return Period | Headwater Elevation (m) | Total Discharge (cms) | Culvert Discharge (cms) | Roadway Discharge (cms) | FB* (m) | Velocity (m/s) |
|---|---|---|---|---|---|---|
| 10 Year | 237.01 | 0.06 | 0.06 | 0 | 1.04 | 1.30 |
| 100 Year | 237.10 | 0.13 | 0.13 | 0 | 1.73 | 1.62 |

*For the design storm, freeboard is measured from top of subgrade elevation. For major, measured from edge of shoulder elevation

**Project Name:** Hamilton MCEA Hwy 52 & Powerline Intersection
**Project No.:** 58803
**Completed By:** HB
**Date:** 2/6/2026

**CulvertMaster - Hydraulic Output Summary**
Structure: Culvert 3 - 12+690 Proposed Condition

**Culvert Data Summary**

| | | |
|---|---|---|
| Shape | Circular | |
| Material | HDPE | |
| Size | 1350 | mm |
| # of Barrels | 2 | |
| Manning's n | 0.012 | |
| Inlet Entrance | Projecting | |
| US Invert | 236.06 | m |
| DS Invert | 235.89 | m |
| Length | 34.11 | m |
| Slope | 0.50 | % |

**Tailwater Channel Data**

| | | |
|---|---|---|
| Method | Triangular | |
| Channel Slope | 0.010 | m/m |
| Manning's n | 0.035 | |
| Left Side Slope | 3.6 | |
| Right Side Slope | 4.2 | |
| Bottom Width | 0 | m |
| Bottom Elevation | 235.89 | m |

**Weir**

| | | |
|---|---|---|
| Method | Roadway (Constant Elevation) | |
| Roadway Type | Paved | |
| Length | 10 | m |
| US Shoulder Elevation | 238.78 | m |
| Roadway Width | 17.41 | m |

## Summary of Culvert Flows for Proposed Condition

| Storm Return Period | Headwater Elevation (m) | Total Discharge (cms) | Culvert Discharge (cms) | Roadway Discharge (cms) | FB* (m) | Velocity (m/s) |
|---|---|---|---|---|---|---|
| 25 Year | 237.28 | 4.69 | 4.69 | 0.00 | 1.50 | 2.38 |
| 100 Year | 237.56 | 6.57 | 6.57 | 0.00 | 1.22 | 2.90 |
| Regional | 238.93 | 13.75 | 12.73 | 1.01 | -0.15 | 4.40 |

*Freeboard is measured from edge of roadway elevation

**Regional**

| Length of Roadway | Depth of Flow on Roadway (m) | Road Discharge ($m^3/s$) | Velocity of Flow on Roadway (m/s) | Velocity x Depth on Roadway ($m^2/s$) |
|---|---|---|---|---|
| 10 | 0.15 | 1.01 | 0.68 | 0.10 |

# Culvert Designer/Analyzer Report
## Culvert 1 (750mm) - PROP

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 0.4540 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.4540 m³/s | Check Discharge | 0.8630 m³/s |

| Tailwater Conditions: Constant Tailwater | |
|---|---|
| Tailwater Elevation | 238.24 m |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-750 mm Circular | 0.4541 m³/s | 238.96 m | 1.00 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 238.96 m | N/A |
| Total | ---------- | 0.4541 m³/s | 238.96 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - PROP

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Elev | 238.96 | m | Discharge | 0.4541 | m³/s |
| Inlet Control HW Elev. | 238.93 | m | Tailwater Elevation | 238.24 | m |
| Outlet Control HW Elev. | 238.96 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 0.80 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 238.34 | m | Downstream Invert | 237.49 | m |
| Length | 41.89 | m | Constructed Slope | 0.020385 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeS1S2 | | Depth, Downstream | 0.75 | m |
| Slope Type | Steep | | Normal Depth | 0.26 | m |
| Flow Regime | N/A | | Critical Depth | 0.41 | m |
| Velocity Downstream | 1.00 | m/s | Critical Slope | 0.004006 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.012 | |
| Section Material | HDPE (Smooth Interior) | | Span | 0.76 | m |
| Section Size | 750 mm | | Rise | 0.76 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 238.96 | m | Upstream Velocity Head | 0.17 | m |
| Ke | 0.20 | | Entrance Loss | 0.03 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 238.93 | m | Flow Control | Unsubmerged | |
| Inlet Type | Groove end projecting | | Area Full | 0.5 | m² |
| K | 0.00450 | | HDS 5 Chart | 1 | |
| M | 2.00000 | | HDS 5 Scale | 3 | |
| C | 0.03170 | | Equation Form | 1 | |
| Y | 0.69000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - PROP

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 238.96 | m |
| Roadway Width | 30.21 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 240.33 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 240.33 |
| 10.00 | 240.33 |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - PROP

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Check | Discharge | 0.8630 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.4540 m³/s | Check Discharge | 0.8630 m³/s |

| Tailwater Conditions: Constant Tailwater | |
|---|---|
| Tailwater Elevation | 238.24 m |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-750 mm Circular | 0.8628 m³/s | 239.25 m | 1.90 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 239.25 m | N/A |
| Total | ---------- | 0.8628 m³/s | 239.25 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - PROP

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Elev | 239.25 | m | Discharge | 0.8628 | m³/s |
| Inlet Control HW Elev. | 239.24 | m | Tailwater Elevation | 238.24 | m |
| Outlet Control HW Elev. | 239.25 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 1.19 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 238.34 | m | Downstream Invert | 237.49 | m |
| Length | 41.89 | m | Constructed Slope | 0.020385 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeS1S2 | | Depth, Downstream | 0.75 | m |
| Slope Type | Steep | | Normal Depth | 0.37 | m |
| Flow Regime | N/A | | Critical Depth | 0.57 | m |
| Velocity Downstream | 1.90 | m/s | Critical Slope | 0.005609 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.012 | |
| Section Material | HDPE (Smooth Interior) | | Span | 0.76 | m |
| Section Size | 750 mm | | Rise | 0.76 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 239.25 | m | Upstream Velocity Head | 0.28 | m |
| Ke | 0.20 | | Entrance Loss | 0.06 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 239.24 | m | Flow Control | Transition | |
| Inlet Type | Groove end projecting | | Area Full | 0.5 | m² |
| K | 0.00450 | | HDS 5 Chart | 1 | |
| M | 2.00000 | | HDS 5 Scale | 3 | |
| C | 0.03170 | | Equation Form | 1 | |
| Y | 0.69000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 1 (750mm) - PROP

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 239.25 | m |
| Roadway Width | 30.21 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 240.33 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 240.33 |
| 10.00 | 240.33 |

# Culvert Designer/Analyzer Report
## Culvert 2 (900mm) - PROP

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 0.0600 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.0600 m³/s | Check Discharge | 0.1250 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Design Storm.

| | | | |
|---|---|---|---|
| Discharge | 0.0600 m³/s | Bottom Elevation | 236.51 m |
| Depth | 0.10 m | Velocity | 0.97 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-900 mm Circular | 0.0601 m³/s | 237.01 m | 1.30 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.01 m | N/A |
| Total | ---------- | 0.0601 m³/s | 237.01 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 2 (900mm) - PROP

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Elev | 237.01 | m | Discharge | 0.0601 | m³/s |
| Inlet Control HW Elev. | 237.00 | m | Tailwater Elevation | 236.61 | m |
| Outlet Control HW Elev. | 237.01 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 0.21 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.82 | m | Downstream Invert | 236.51 | m |
| Length | 36.26 | m | Constructed Slope | 0.008439 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | S2 | | Depth, Downstream | 0.11 | m |
| Slope Type | Steep | | Normal Depth | 0.11 | m |
| Flow Regime | Supercritical | | Critical Depth | 0.14 | m |
| Velocity Downstream | 1.30 | m/s | Critical Slope | 0.003573 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.012 | |
| Section Material | HDPE (Smooth Interior) | | Span | 0.91 | m |
| Section Size | 900 mm | | Rise | 0.91 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.01 | m | Upstream Velocity Head | 0.05 | m |
| Ke | 0.20 | | Entrance Loss | 0.01 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.00 | m | Flow Control | Unsubmerged | |
| Inlet Type | Groove end projecting | | Area Full | 0.7 | m² |
| K | 0.00450 | | HDS 5 Chart | 1 | |
| M | 2.00000 | | HDS 5 Scale | 3 | |
| C | 0.03170 | | Equation Form | 1 | |
| Y | 0.69000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 2 (900mm) - PROP

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.01 | m |
| Roadway Width | 18.54 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 238.83 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.83 |
| 10.00 | 238.83 |

# Culvert Designer/Analyzer Report
## Culvert 2 (900mm) - PROP

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Check | Discharge | 0.1250 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 0.0600 m³/s | Check Discharge | 0.1250 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Check Storm.

| | | | |
|---|---|---|---|
| Discharge | 0.1250 m³/s | Bottom Elevation | 236.51 m |
| Depth | 0.13 m | Velocity | 1.16 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 1-900 mm Circular | 0.1250 m³/s | 237.10 m | 1.62 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.10 m | N/A |
| Total | ---------- | 0.1250 m³/s | 237.10 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 2 (900mm) - PROP

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Elev | 237.10 | m | Discharge | 0.1250 | m³/s |
| Inlet Control HW Elev. | 237.09 | m | Tailwater Elevation | 236.64 | m |
| Outlet Control HW Elev. | 237.10 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 0.31 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.82 | m | Downstream Invert | 236.51 | m |
| Length | 36.26 | m | Constructed Slope | 0.008439 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | S2 | | Depth, Downstream | 0.16 | m |
| Slope Type | Steep | | Normal Depth | 0.16 | m |
| Flow Regime | Supercritical | | Critical Depth | 0.20 | m |
| Velocity Downstream | 1.62 | m/s | Critical Slope | 0.003379 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.012 | |
| Section Material | HDPE (Smooth Interior) | | Span | 0.91 | m |
| Section Size | 900 mm | | Rise | 0.91 | m |
| Number Sections | 1 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.10 | m | Upstream Velocity Head | 0.07 | m |
| Ke | 0.20 | | Entrance Loss | 0.01 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.09 | m | Flow Control | Unsubmerged | |
| Inlet Type | Groove end projecting | | Area Full | 0.7 | m² |
| K | 0.00450 | | HDS 5 Chart | 1 | |
| M | 2.00000 | | HDS 5 Scale | 3 | |
| C | 0.03170 | | Equation Form | 1 | |
| Y | 0.69000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 2 (900mm) - PROP

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.10 | m |
| Roadway Width | 18.54 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 238.83 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.83 |
| 10.00 | 238.83 |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 4.6900 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 4.6900 m³/s | Check Discharge | 6.5700 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Design Storm.

| | | | |
|---|---|---|---|
| Discharge | 4.6900 m³/s | Bottom Elevation | 235.89 m |
| Depth | 0.87 m | Velocity | 1.60 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 2-1350 mm Circular | 4.6896 m³/s | 237.28 m | 2.38 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.28 m | N/A |
| Total | ---------- | 4.6896 m³/s | 237.28 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Elev | 237.28 | m | Discharge | 4.6896 | m³/s |
| Inlet Control HW Elev. | 237.24 | m | Tailwater Elevation | 236.76 | m |
| Outlet Control HW Elev. | 237.28 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 0.89 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.06 | m | Downstream Invert | 235.89 | m |
| Length | 34.11 | m | Constructed Slope | 0.004984 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeS1S2 | | Depth, Downstream | 0.87 | m |
| Slope Type | Steep | | Normal Depth | 0.73 | m |
| Flow Regime | N/A | | Critical Depth | 0.81 | m |
| Velocity Downstream | 2.38 | m/s | Critical Slope | 0.003488 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.012 | |
| Section Material | HDPE (Smooth Interior) | | Span | 1.37 | m |
| Section Size | 1350 mm | | Rise | 1.37 | m |
| Number Sections | 2 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.28 | m | Upstream Velocity Head | 0.34 | m |
| Ke | 0.20 | | Entrance Loss | 0.07 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.24 | m | Flow Control | Unsubmerged | |
| Inlet Type | Groove end projecting | | Area Full | 3.0 | m² |
| K | 0.00450 | | HDS 5 Chart | 1 | |
| M | 2.00000 | | HDS 5 Scale | 3 | |
| C | 0.03170 | | Equation Form | 1 | |
| Y | 0.69000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.28 | m |
| Roadway Width | 17.41 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 238.78 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.78 |
| 10.00 | 238.78 |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Check | Discharge | 6.5700 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 4.6900 m³/s | Check Discharge | 6.5700 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Check Storm.

| | | | |
|---|---|---|---|
| Discharge | 6.5700 m³/s | Bottom Elevation | 235.89 m |
| Depth | 0.98 m | Velocity | 1.74 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 2-1350 mm Circular | 6.5700 m³/s | 237.56 m | 2.90 m/s |
| Weir | Roadway (Constant Elevation) | 0.0000 m³/s | 237.56 m | N/A |
| Total | ---------- | 6.5700 m³/s | 237.56 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Elev | 237.56 | m | Discharge | 6.5700 | m³/s |
| Inlet Control HW Elev. | 237.54 | m | Tailwater Elevation | 236.87 | m |
| Outlet Control HW Elev. | 237.56 | m | Control Type | Entrance Control | |
| Headwater Depth/Height | 1.09 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.06 | m | Downstream Invert | 235.89 | m |
| Length | 34.11 | m | Constructed Slope | 0.004984 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeS1S2 | | Depth, Downstream | 0.98 | m |
| Slope Type | Steep | | Normal Depth | 0.90 | m |
| Flow Regime | N/A | | Critical Depth | 0.97 | m |
| Velocity Downstream | 2.90 | m/s | Critical Slope | 0.004160 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.012 | |
| Section Material | HDPE (Smooth Interior) | | Span | 1.37 | m |
| Section Size | 1350 mm | | Rise | 1.37 | m |
| Number Sections | 2 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 237.56 | m | Upstream Velocity Head | 0.44 | m |
| Ke | 0.20 | | Entrance Loss | 0.09 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 237.54 | m | Flow Control | Unsubmerged | |
| Inlet Type | Groove end projecting | | Area Full | 3.0 | m² |
| K | 0.00450 | | HDS 5 Chart | 1 | |
| M | 2.00000 | | HDS 5 Scale | 3 | |
| C | 0.03170 | | Equation Form | 1 | |
| Y | 0.69000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 0.0000 | m³/s | Allowable HW Elevation | 237.56 | m |
| Roadway Width | 17.41 | m | Overtopping Coefficient | 1.60 | SI |
| Length | 10.00 | m | Crest Elevation | 238.78 | m |
| Headwater Elevation | N/A | m | Discharge Coefficient (Cr) | 2.90 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.78 |
| 10.00 | 238.78 |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP (Regional)

| Analysis Component | | | |
|---|---|---|---|
| Storm Event | Design | Discharge | 13.7400 m³/s |

| Peak Discharge Method: User-Specified | | | |
|---|---|---|---|
| Design Discharge | 13.7400 m³/s | Check Discharge | 0.0000 m³/s |

Tailwater properties: Triangular Channel

Tailwater conditions for Design Storm.

| | | | |
|---|---|---|---|
| Discharge | 13.7400 m³/s | Bottom Elevation | 235.89 m |
| Depth | 1.30 m | Velocity | 2.10 m/s |

| Name | Description | Discharge | HW Elev. | Velocity |
|---|---|---|---|---|
| Culvert-1 | 2-1350 mm Circular | 12.7344 m³/s | 238.93 m | 4.40 m/s |
| Weir | Roadway (Constant Elevation) | 1.0066 m³/s | 238.93 m | N/A |
| Total | ---------- | 13.7410 m³/s | 238.93 m | N/A |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP (Regional)

Component:Culvert-1

| Culvert Summary | | | | | |
|---|---|---|---|---|---|
| Computed Headwater Elev | 238.93 | m | Discharge | 12.7344 | m³/s |
| Inlet Control HW Elev. | 238.93 | m | Tailwater Elevation | 237.19 | m |
| Outlet Control HW Elev. | 238.74 | m | Control Type | Inlet Control | |
| Headwater Depth/Height | 2.10 | | | | |

| Grades | | | | | |
|---|---|---|---|---|---|
| Upstream Invert | 236.06 | m | Downstream Invert | 235.89 | m |
| Length | 34.11 | m | Constructed Slope | 0.004983 | m/m |

| Hydraulic Profile | | | | | |
|---|---|---|---|---|---|
| Profile | CompositeM2Pressure | Profile | Depth, Downstream | 1.30 | m |
| Slope Type | Mild | | Normal Depth | N/A | m |
| Flow Regime | Subcritical | | Critical Depth | 1.27 | m |
| Velocity Downstream | 4.40 | m/s | Critical Slope | 0.009642 | m/m |

| Section | | | | | |
|---|---|---|---|---|---|
| Section Shape | Circular | | Mannings Coefficient | 0.012 | |
| Section Material | Corrugated HDPE (Smooth Interior) | | Span | 1.37 | m |
| Section Size | 1350 mm | | Rise | 1.37 | m |
| Number Sections | 2 | | | | |

| Outlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Outlet Control HW Elev. | 238.74 | m | Upstream Velocity Head | 0.95 | m |
| Ke | 0.20 | | Entrance Loss | 0.19 | m |

| Inlet Control Properties | | | | | |
|---|---|---|---|---|---|
| Inlet Control HW Elev. | 238.93 | m | Flow Control | Submerged | |
| Inlet Type | Groove end projecting | | Area Full | 3.0 | m² |
| K | 0.00450 | | HDS 5 Chart | 1 | |
| M | 2.00000 | | HDS 5 Scale | 3 | |
| C | 0.03170 | | Equation Form | 1 | |
| Y | 0.69000 | | | | |

# Culvert Designer/Analyzer Report
# Culvert 3 (2x1350mm) - PROP (Regional)

Component:Weir

| Hydraulic Component(s): Roadway (Constant Elevation) | | | | | |
|---|---|---|---|---|---|
| Discharge | 1.0066 | m³/s | Allowable HW Elevation | 238.93 | m |
| Roadway Width | 17.41 | m | Overtopping Coefficient | 1.66 | SI |
| Length | 10.00 | m | Crest Elevation | 238.78 | m |
| Headwater Elevation | 238.93 | m | Discharge Coefficient (Cr) | 3.01 | |
| Submergence Factor (Kt) | 1.00 | | | | |

| Sta (m) | Elev. (m) |
|---|---|
| 0.00 | 238.78 |
| 10.00 | 238.78 |

BURNSIDE

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# Appendix E

# Stormwater Management

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**CALCULATION SHEET**

Project: Hamilton MCEA Highway 52 and Powerline Road West Intersection Improvements

***Existing ROW***

Prepared by: HB
Project No: 058803
Date: November 27, 2025

**Runoff Equation** Q = 2.78CIA (l/s)

where,
C = runoff coefficient
I = rainfall intensity (mm/hr) (based on City of Hamilton IDF Curve)
A = area (ha)
2.78= conversion factor

| C Adjustment Factor | |
|---|---|
| 25 year | 1.1 |
| 50 year | 1.2 |
| 100 year | 1.25 |

| | Return Period | | | | | |
|---|---|---|---|---|---|---|
| **Coefficient** | 2 | 5 | 10 | 25 | 50 | 100 |
| A | 646.0 | 1049.5 | 1343.7 | 1719.5 | 1954.8 | 2317.4 |
| B | 6 | 8 | 9 | 10 | 10 | 11 |
| C | 0.781 | 0.803 | 0.814 | 0.823 | 0.826 | 0.836 |

| **Existing Flows** | | | **C** | **% Imp** |
|---|---|---|---|---|
| Pervious | 44891 | $m^2$ | 0.20 | 0 |
| Impervious | 13682 | $m^2$ | 0.90 | 100 |
| **Total Area** | **58572** | **$m^2$** | 0.36 | 23 |

| **Return Period** | **T (min)** | **T (hour)** | **I** | | **Q** | |
|---|---|---|---|---|---|---|
| **2 year** | 10.0 | 0.17 | 74.10 | mm/hr | **438.3** | **L/s** |
| **5 year** | 10.0 | 0.17 | 103.04 | mm/hr | **609.5** | **L/s** |
| **10 year** | 10.0 | 0.17 | 122.29 | mm/hr | **723.3** | **L/s** |
| **25 year** | 10.0 | 0.17 | 146.10 | mm/hr | **950.6** | **L/s** |
| **50 year** | 10.0 | 0.17 | 164.61 | mm/hr | **1168.4** | **L/s** |
| **100 year** | 10.0 | 0.17 | 181.81 | mm/hr | **1344.2** | **L/s** |

BURNSIDE

**CALCULATION SHEET**

Project: Hamilton MCEA Highway 52 and Powerline Road West Intersection Improvements

***Proposed ROW***

Prepared by: HB
Project No: 058803
Date: November 27, 2025

**Runoff Equation** Q = 2.78CIA (l/s)

where,
C = runoff coefficient
I = rainfall intensity (mm/hr) (based on City of Hamilton IDF Curve)
A = area (ha)
2.78= conversion factor

| C Adjustment Factor | |
|---|---|
| 25 year | 1.1 |
| 50 year | 1.2 |
| 100 year | 1.25 |

| | Return Period | | | | | |
|---|---|---|---|---|---|---|
| **Coefficient** | 2 | 5 | 10 | 25 | 50 | 100 |
| A | 646.0 | 1049.5 | 1343.7 | 1719.5 | 1954.8 | 2317.4 |
| B | 6 | 8 | 9 | 10 | 10 | 11 |
| C | 0.781 | 0.803 | 0.814 | 0.823 | 0.826 | 0.836 |

| **Proposed Flows** | | | C | % Imp | | | Imp. Increase ha | Imp. Increase % |
|---|---|---|---|---|---|---|---|---|
| Pervious | 43313 | $m^2$ | 0.20 | 0 | | | 0.16 | **12%** |
| Impervious | 15260 | $m^2$ | 0.90 | 100 | | | | |
| **Total Area** | **58572** | **$m^2$** | 0.38 | 26 | | | | |

| **Return Period** | **T (min)** | **T (hour)** | **I** | | **Q** | | **Peak Flow Increase L/s** | **Peak Flow Increase %** |
|---|---|---|---|---|---|---|---|---|
| **2 year** | 10.0 | 0.17 | 74.10 | mm/hr | **461.0** | **L/s** | 22.7 | |
| **5 year** | 10.0 | 0.17 | 103.04 | mm/hr | **641.1** | **L/s** | 31.6 | |
| **10 year** | 10.0 | 0.17 | 122.29 | mm/hr | **760.9** | **L/s** | 37.5 | **5%** |
| **25 year** | 10.0 | 0.17 | 146.10 | mm/hr | **999.9** | **L/s** | 49.3 | |
| **50 year** | 10.0 | 0.17 | 164.61 | mm/hr | **1229.0** | **L/s** | 60.6 | |
| **100 year** | 10.0 | 0.17 | 181.81 | mm/hr | **1414.0** | **L/s** | 69.7 | |

# Hamilton MCEA Highway 52 and Powerline Intersection Natural Environment Report Revision 1

## City of Hamilton
## 71 Main Street West
## Hamilton ON  L8P 4Y5

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

**April 2026**
**300058803.0000**

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| Revision | Date | Description |
|---|---|---|
| 0 | September 19, 2025 | Initial Submission to City of Hamilton |
| 1 | April 30, 2026 | Revisions based on City comments |

### R.J. Burnside & Associates Limited

**Report Prepared By:**

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Senior Aquatic Ecologist

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# 1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) was retained by the City of Hamilton (the City) to undertake a Municipal Class Environmental Assessment (MCEA) to assess a recommended solution for intersection improvements at the intersection of Highway 52 (Hwy 52) and Powerline Road West, including the feasibility of implementing a roundabout among other improvement options such as traffic signals or stop control, and the possible relocation or extension of Powerline Road East. The Study Area Intersection improvement options within the study area (Figure 1) will be considered with respect to existing physical constraints, including profile changes and steep grades, a trail crossing, and parking lot entrance to access the rail trail. Several significant ecological features are present including Provincially Significant Wetland, Area of Natural and Scientific Interest, Significant Woodlands, and a watercourse and waterbody, and associated regulated areas of the Grand River Conservation Authority. The study area also includes lands designated under the Provincial Greenbelt Plan and the Niagara Escarpment Plan and contains areas of known and potential cultural heritage features.

The following report summarizes the findings of the desktop review and ecological field investigations to characterize natural heritage features within the study area that may be impacted by the proposed intersection improvements.

# 2.0 Background Information Review

The following sources of background information were reviewed to identify ecological features which may be impacted by the proposed works:

- Aerial photography (2024)
- Ministry of Natural Resources (MNR) Land Information Ontario (LIO) database
- MNR Natural Heritage Information Centre (NHIC) database for significant species and designated natural features within 120 m of the study area
- The Rural Hamilton Official Plan (2012) Schedules B, B-1, B-2, and B-4 to B-8.
- GRCA regulated features, mapping and information.
- MNR Aquatic Resources Area (ARA) mapping (2017).
- MNR Ontario Hydrologic Network (OHN) mapping (2020).
- MNR Aquatic Resources Area (ARA) mapping (2017).
- MNR Ontario Hydrologic Network (OHN) mapping (2020).
- Hamilton Natural Areas Inventory Project 3rd Edition.

- Hamilton Natural Heritage Database (overseen by Hamilton Conservation Authority).
- The Ontario Reptile and Amphibian Atlas (ORAA).
- The Ontario Breeding Bird Atlas (OBBA) (2001-2005).
- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), AgMaps mapping (2021).
- iNaturalist
- eBird

## 2.1 Rural Hamilton Official Plan (RHOP) (2021)

Based on Burnside's review of the Rural Hamilton Official Plan (RHOP), the following components of the City's Natural Heritage System (NHS) are present within the study area:

- Core Areas.
- Greenbelt Plan:
  - Greenbelt Protected Countryside.
  - Greenbelt Natural Heritage Systems.
- Niagara Escarpment Plan:
  - Niagara Escarpment Natural Area.
  - Escarpment Protection Area.
  - Escarpment Rural Area.
- Key Natural Heritage Feature – Significant Woodlands.
- Key Natural Heritage Feature Life Sciences Area of Natural Scientific Interest (ANSI).
- Key Natural Heritage and Key Hydrologic Feature – Wetlands.
- Local Natural Area – Environmentally Significant Area.
- Key Natural Heritage and Key Hydrologic Feature – Streams.

Core Areas include key natural heritage features, key hydrologic features, local natural areas and their associated vegetation protection zones. It is understood that not all Core Areas have been included within the natural heritage schedules of the RHOP. This includes significant wildlife habitat, significant habitat for threatened and endangered species, significant valleylands, and fish habitat.

A summary of the City of Hamilton NHS features present within the study area can be found on Figures 2a and 2b.

## 2.2 Lower-Middle Grand Natural Heritage Characterization Report (2017)

The study area is located within the headwaters of Big Creek within the Lower-Middle Grand Subwatershed. Big Creek is a warmwater system that supports a wide variety of sportfish including Largemouth Bass, Northern Pike, and White Crappie.

The Big Creek Headwaters Wetland Complex is characterized by deciduous swamp and marsh. The wetland complex functions as a habitat linkage between this Big Creek Headwaters Wetland and Copetown Woods and Southwest Summit Woods. Provincially significant species reported with the Big Creek Headwaters Wetland Complex include White Wood Aster (*Eurybia divaricata*; threatened), Monarch Butterfly (*Danaus plexippus*, special concern), and Golden-winged Warbler (*Vermivora chrysoptera*, special concern).

The Copetown Bog consists of a raised Tamarack-Leatherleaf Treed Kettle Bog (BOT2-1; S3), Buttonbush Organic Deciduous Thicket Swamp (SWT3-4; S3), and a Highbush Blueberry-Leatherleaf-Chokecherry Shrub Fen (FES1-8; S2S3). Per the OWES evaluation, the ponds and wetlands within the bog are generally hydrologically isolated from Big Creek. An intermittent outflow, which is present within the study area, is present at the southern extent of the wetland complex. The Copetown Bog is the only remaining bog within the city of Hamilton. Significant species known to be supported within the bog includes Yellow Wild Indigo (*Baptisia tinctoria*; S1S2) and Dion Skipper (*Euphyes dion*; S3).

The ponds and wetlands in the kettle depression are hydrologically isolated from the stream system except for intermittent outflow into the Big Creek system from the western kettle bog via a drainage culvert located at the southern end (GRCA, 2017).

## 2.3 Hamilton Natural Areas Inventory (NAI) Project 3rd Edition

Per the Hamilton Natural Areas Inventory (NAI) Project 3rd Edition, the Copetown Bog was identified within the study area. The Copetown Bog is an Environmentally Significant Area (ESA) and only one of two isolated kettle bogs within the city of Hamilton. The bog spans 11.0 ha and consists of a Leatherleaf Shrub Kettle Bog Type (BOS1-1; S3) and Tamarack – Leatherleaf Treed Kettle Bog Type (BOT2-1; S3). The bog is the largest kettle wetland in the Dundas Valley. It is also the only bog present along the southern section of the Niagara Escarment.  A number of regionally rare (H) and uncommon (h) species have been documented within the Copetown Bog including:

- Chain Fern (*Woodwardia virginica* - H).
- Black Spruce (*Picea mariana* - H).
- Three-seeded Sedge (*Carex trisperma var. trisperma* - H).
- Billing's Three-seeded Sedge (*Carex trisperma var. billingsii* – S2S3, H).
- Few-flowered Sedge (*Carex oligosperma* – H).
- Tawny Cotton-grass (*Eriophorum virginicum* - H).
- Bog Buckbean (*Menyanthes trifoliata* – H).
- Pitcher-plant (*Sarracenia purpurea* – H).
- Round-leaved Sundew (*Drosera rotundifolia* - H).
- Mountain-holly (*Nemopanthus mucronatus* - H).
- Bog-rosemary (*Andromeda polifolia ssp. glaucophylla* - H).
- Leatherleaf (*Chamaedaphne calyculata* - H).
- Labrador-tea (*Ledum groenlandicum* - H).
- Mustard White (*Pieris oleracea* – h).
- West Virginia White (*Pieris virginensis* - h).
- Bog Copper (*Lycaena epixanthe* – H).
- Aphrodite Fritillary (*Speyeria Aphrodite* – h).
- Silver-bordered Fritillary (*Boloria selene* – h).
- Milbert's Tortoiseshell (*Nymphalis milberti* – H).
- Jefferson Salamander (*Ambystoma jeffersonianum* – END, H).
- American Bittern (*Botaurus lentiginosus* – H).
- Virginia Rail (*Rallus limicola* – H).
- Sora (*Porzana Carolina* – H).
- Black-and-white Warbler (*Mniotilta varia* – h).

## 2.4 Hamilton Natural Heritage Database

HCA was contacted on March 11, 2026 to obtain relevant the Natural Heritage Database information as it relates to the study area. Ecological Land Classification and botanical information was provided for the Copetown Bog area specifically, on March 27, 2026. Burnside has completed detailed ELC and will compare results to the ELC communities provided by HCA. The botanical list included one rare species (S3), Field Thistle (*Cirsium discolor*). This species was looked for during the botanical inventory completed by Burnside.

## 2.5 Greenbelt Indigenous Botanical Survey (2024)

The Greenbelt Indigenous Botanical Survey and Field Guide was developed to create a digital atlas of ethnobotanical vegetative communities at a variety of locations along historic Indigenous trails within the Greenbelt. Phytosociological plant community surveys were conducted by graduate students from the

University of Guelph. Surveys were completed at the Summit Bog (Copetown Bog) as a part the project. The findings of these surveys were consistent with those identified within the Hamilton NAI Surveys and Lower-Middle Grand Natural Heritage Characterization Report (2017).

Of note, these surveys characterized the terrestrial communities surrounding Summit Bog. The southern portion of the forested lands at the southernmost point of the Summit Bog is dominated by Manitoba Maple (*Acer negundo*) and Black Walnut (*Juglans nigra*) within the canopy layer. The subcanopy later is dominated by European Buckthorn (*Rhamnus cathartica*) and Chokecherry (*Prunus virginiana*) while the groundcover layer is dominated by Garlic Mustard (*Alliaria petiolata*).

## 3.0 Methodology

Field investigations were conducted in 2025, according to the schedule listed in Table 1. The purpose of field investigations was to verify whether the features identified in the background data review are present and, if so, to confirm their boundaries. The purpose was also to identify any other natural features not previously documented.

For the purposes of field investigations, the study area is defined as the areas within 120 m of the greatest extent of all the potential alignment options.

**Table 1: Field Study Methodology**

| Field Study | Methodology | Staff Involved | Date(s) | Time of Day | Weather Conditions Precipitation / Cloud Cover | Weather Conditions Temperature (°C) | Weather Conditions Wind (Beaufort Wind Scale)[1] |
|---|---|---|---|---|---|---|---|
| Spring Botanical Inventory | Meandering survey throughout publicly accessible areas within 30 m of ON-52 and Powerline Road | Erica Mekli, Ecologist | June 12, 2025 | 1030 to 1410 | No precipitation<br>Clear | 16°C on arrival<br>24°C on departure | 4 |
| Summer Botanical Inventory | Meandering survey throughout publicly accessible areas within 30 m of ON-52 and Powerline Road | Sarah Yoshida, Ecologist | July 23, 2025 | 1110 to 1515 | No precipitation<br>Clear | 25°C on arrival<br>28°C on departure | 3 |
| Fall Botanical Inventory | Meandering survey throughout publicly accessible areas within 30 m of ON-52 and Powerline Road | Sarah Yoshida, Ecologist | September 3, 2025 | 1220 to 1604 | No precipitation<br>Clear | 24°C on arrival<br>26°C on departure | 1 |
| Ecological Land Classification | Ecological Land Classification for Southern Ontario (Lee et al.,1998) of entire property | Sarah Yoshida, Ecologist | July 23, 2025 | 1110 to 1515 | No precipitation<br>Clear | 25°C on arrival<br>28°C on departure | 3 |
| Breeding Bird Surveys | Ontario Breeding Bird Atlas point count protocol (Bird Studies Canada, March 2019). Conservation Authority Baseline Ecological Assessment Requirements for MECAs (Conservation Ontario, n.d.) | Sarah Yoshida, Ecologist | May 27, 2025 | 0750 to 1000 | No precipitation<br>Clear | 11°C on arrival<br>17°C on departure | 2 |
| Breeding Bird Surveys | Ontario Breeding Bird Atlas point count protocol (Bird Studies Canada, March 2019). Conservation Authority Baseline Ecological Assessment Requirements for MECAs (Conservation Ontario, n.d.) | Sarah Yoshida, Ecologist | June 23, 2025 | 0620 to 0830 | No precipitation<br>Clear | 23°C on arrival<br>26°C on departure | 0 |
| Amphibian Breeding Call Surveys | Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (BSC, 2009) | Sarah Yoshida, Ecologist | April 17, 2025 | 2100 to 2110 | No precipitation<br>Overcast | 9°C on arrival<br>8°C on departure | 1 |

| Field Study | Methodology | Staff Involved | Date(s) | Time of Day | Weather Conditions Precipitation / Cloud Cover | Weather Conditions Temperature (°C) | Weather Conditions Wind (Beaufort Wind Scale)[1] |
|---|---|---|---|---|---|---|---|
| Amphibian Breeding Call Surveys | Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (BSC, 2009) | Elly Hind-Smith, Ecologist | May 22, 2025 | 2147 to 2157 | Light rain<br>Overcast | 10°C on arrival<br>10°C on departure | 1 |
| Amphibian Breeding Call Surveys | Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (BSC, 2009) | Elly Hind-Smith, Ecologist | June 19, 2025 | 2154 to 2200 | No precipitation<br>Overcast | 18°C on arrival<br>18°C on departure | 1 |
| Wetland Boundary Delineation | Ontario Wetland Evaluation System | Sarah Yoshida, Ecologist | June 26, 2025 | 1220 to 1515 | Cloudy, light precipitation | 21°C on arrival<br>20°C on departure | 1 |
| Search for potential wildlife habitats | Survey throughout study areas to search for features that could provide habitat for wildlife or SAR habitat such as nests, reptile hibernacula, old barns, structures, uncapped chimneys, foundations, mature forest areas with cavities or other features suitable for bat roosting, turtle nesting or overwintering sites. | All staff | All site visits | | | | |
| Incidental flora and fauna observations | Visual observations of animals, tracks or scat and compilation of a plant inventory during all site visits | Sarah Yoshida, Ecologist | June 11, 2025 | 1000 to 1620 | No precipitation<br>Clear | 17°C on arrival<br>25°C on departure | 3 |
| Aquatic Habitat Assessment | Ontario Ministry of Transportation (MTO) Fisheries Protocol - Environmental Guide for Fish and Fish Habitat (June 2009) | Sarah Yoshida, Ecologist | June 26, 2025 | 1220 to 1515 | Light precipitation, cloudy | 21°C on arrival<br>20°C on departure | 1 |
| Headwater Drainage Feature Assessment | Headwater Drainage Feature Assessment and Management Guidelines (TRCA and CVC, 2014) | Sarah Yoshida, Ecologist<br><br>Mark Saunders, Aquatic Ecologist | March 19, 2025 | 1015 to 1355 | No precipitation<br>Clear | 13°C on arrival<br>19°C on departure | 3 |

[1] Beaufort Wind Scale: 0 = calm, smoke rises vertically (0 to 2 km/h); 1 = light air movement, smoke drifts (3 to 5); 3 = gentle breeze, wind felt on face; leaves rustle (6 to 11); 4 = moderate breeze, small branches moving, raises dust and loose paper (20 to 30); 5 = fresh breeze, small trees begin to sway (31 to 39); 6 = strong breeze, large branches in motion (40 to 50).

## 3.1 Vegetation Communities and Botanical Inventories

Burnside ecology staff conducted three-season site investigations to identify and map vegetation communities. All communities on-site and immediately adjacent to the property lands were reviewed to characterize their composition based on Lee et. al, 1998 and the Vegetation Type List of the Southern Ontario Ecological Land Classification (Lee, May 2008). The limits of these communities are shown on Figure 3. Vegetation surveys were conducted within 30 m of right-of-way (ROW) within publicly accessible lands that directly abutted the extent of the alignment options. Surveys were conducted from the ROW for any communities located on privately owned lands.

## 3.2 Wetland Boundary Delineation

Wetland boundary delineation in accordance with the Ontario Wetland Evaluation System (OWES) protocol with a GRCA ecologist, Tony Zammit, on June 26, 2025.

## 3.3 Breeding Bird Surveys

Standard breeding bird surveys were completed by Avian Biologists according to the Ontario Breeding Bird Atlas (OBBA) Guide for Participants (Bird Studies Canada, March 2019), tailored to the needs of the project.

- Two surveys were conducted at least one week apart between May 24 to July 10. Per the *Conservation Authority Baseline Ecological Assessment Requirements for Municipal Class Environmental Assessmen*t (Conservation Ontario, n.d.) outlined within the RFP, the second survey was completed between June 15 to July 10.
- Surveys were conducted during periods of no rain, no thick fog, and when winds were less than 19 km/h (i.e., <3 on the Beaufort Scale). Weather conditions were conducive for auditory and visual surveys for all visits.
- Standard breeding bird surveys were conducted at the designated point count locations within all vegetation communities present within the study area that may be indirectly impacted by the proposed project. Point count locations are shown on Figure 3.
- All birds observed and heard were recorded at each habitat unit location, including level of breeding evidence.
- Field data was collected using a mobile data collection application (Fulcrum) on an iOS device.

The dates, timing, and weather conditions of the three surveys can be found in Table 1.

## 3.4 Amphibian Call Count Surveys

A review of aerial photographs and mapping identified the presence of a shallow marsh and bog within the study area. A single survey location was chosen to provide information on potential amphibian breeding habitat within the shallow marsh community within the study area. The survey location for amphibian breeding surveys is shown on Figure 3.

Amphibian breeding call surveys were conducted in accordance with the protocols outlined in Environment Canada's Marsh Monitoring Program for Surveying Amphibians protocol (BSC, 2009). Three surveys were conducted between April and June 2025 to detect potential early-mid, and late-season amphibian breeding activity in Central Ontario. The dates, timing, and weather conditions of the three surveys can be found in Table 1.

Amphibian call surveys are utilized to verify species presence and specify abundance of calling anurans by assigning a call code and estimate of calling individuals. This information is then used to determine what species are present as well as the presence / absence of SWH.

## 3.5 Incidental Wildlife Sightings

Incidental wildlife sightings were limited to the study area and were documented during all field investigations in order to provide a general characterization of the habitat functions of the study area. Incidental observations were those recorded during targeted surveys for other aquatic or terrestrial investigations. Examples include tracks, carcasses, live sightings, etc.

## 3.6 Aquatic Habitat Characterization

Existing fish habitat conditions were observed on June 26, 2025. Fish habitat conditions with respect to form, function and fish habitat were recorded using a modified MTO Fisheries protocol. Weather conditions on the day of the survey are described above in Table 1 above. The location of aquatic habitat characterization is shown on Figure 4.

### 3.7 Headwater Drainage Feature Surveys

Field investigations were conducted based on procedures outlined in the Evaluation and Classification of Headwater Drainage Features Guideline (TRCA 2014) guidance, as well as the supporting Ontario Stream Assessment Protocol (OSAP) Section 4: Module 10 (S4:M10) and Section 4: Module 11 (OSAP, 2017). Limited accessibility to privately owned lands within the study area enabled a reach-based approach primarily utilizing S4:M10. A background review of existing hydro layer mapping, ArcHydro data and satellite imagery were utilized to identify potential HDF features based on desktop review. Each potential HDF location was investigated during the initial site visit during the spring freshet, with the subsequent monitoring visit completed at sites based on observations from previous visits. Only a single site visit during the spring freshet was completed as all features were determined to be dry during the initial site visit.

The evaluation methods outlined in the HDF Guideline utilize flow conditions, riparian vegetation, fish and fish habitat, and terrestrial assessments as components in the determination of HDF classification. The HDF Guideline implemented was primarily based on the “Standard Survey Type”. The results of calling amphibian surveys and vegetation inventories, as detailed in Sections 3.1 and 3.4 above were also utilized to assess the significance of the HDF features.

Since HDF’s can vary significantly on a seasonal basis, multiple site visits are typically needed to correctly assess their hydrology and riparian conditions. As the features were all found to be dry during the spring freshet, only one site visit was conducted.

Following field investigations, findings of the HDF evaluations were then translated into a classification of the HDF, with respect to the hydrology and the riparian vegetation conditions of the features.

## 4.0 Existing Conditions

The following sections document the terrestrial and aquatic natural heritage features and functions within the study area.

## 4.1 Environmental Land Classification and Vegetation Inventory

In total, 19 different ecological communities were identified within the study area. Of the identified communities, one is considered to be rare (S3) within Ontario in association with the Copetown Bog. A summary of ecological communities can be found in Table 2 below.

No provincially rare species were documented during the course of the Burnside's field investigations.

A detailed list of plants identified on the study area during the three-season botanical inventory can be found in Appendix B. The following summarizes the flora observed in the study area:

- 133 plant taxa were observed. Of those, 133 were identified to species, or subspecies level.
- Of those species, 74 (56%) were native and 59 (44%) were non-native to Ontario.
- All of the native species observed are considered 'apparently secure' (uncommon but not rare) (S4) or 'secure' (common, widespread and abundant) (S5) in Ontario.
- One species, Giant Ragweed (*Ambrosia trifida*) is considered to be uncommon and one species, Northern Watermeal (*Wolffia borealis*), is considered to be rare in Hamilton.
- Natural Heritage Database recorded Field Thistle (S3) within the Copetown Bog. This species was not recorded during Burnside field investigations.

**Table 2: Summary of ELC Communities Within the Study Area**

| ELC | ELC Description | Community Composition | Provincially Significant Wetlands / Other Wetlands | Significant Woodlands |
|---|---|---|---|---|
| MAM | Meadow Marsh | These communities are located west of ON-52 and the TAGM1a community and south of Powerline Road West. These communities were not characterized by Burnside as they are located well away from the proposed intersection improvements.<br><br>This community was identified through the MNRF wetland mapping.<br><br>Targeted wildlife inventories and vegetation inventories were not completed within this community. | PSW – Big Creek Headwaters Wetland Complex | No |
| MASM1-14 / SAF_1-3 | Reed Canary Grass Mineral Shallow Marsh Type / Duckweed Floating-leaved Shallow Aquatic Type | This community consists of an impoundment associated with the downstream extents of the lagg around the Copetown bog.<br><br>Standing water was present within this area year-round and is presumed to be less than 1.0 m deep.<br><br>This community consists of a shallow impoundment dominated by Common Duckweed (*Lemna minor*) and Northern Watermeal (*Wolffia borealis*). The impoundment area was surrounded by densely growing Reed Canary Grass with lesser associates of Spotted Jewelweed (*Impatiens capensis*), Redtop (*Agrostis gigantea*), and Fringed Sedge (*Carex crinita*). Red Osier Dogwood (*Cornus sericea*) occasionally occurs within this community but does not provide >20% cover. | PSW – Copetown Bog | No |
| MAS / SWT | Shallow Marsh / Thicket Swamp | These communities are located in association with the lagg of the Copetown Bog northwest of the existing parking lot. These communities were not characterized by Burnside as they are located well away from the proposed intersection improvements.<br><br>No species were specifically identified within this community the Hamilton NAI (3rd edition) or Greenbelt Indigenous Botanical Survey.<br><br>Per the *Lower Middle Grand Subwatershed Natural Heritage Characterization Report*, the open water marsh supports various emergent marsh vegetation species including Common Cattail, Rice Cut Grass, Water Arum, and Spotted Jewelweed[14].<br><br>This community was identified through the MNRF wetland mapping.<br><br>Targeted wildlife inventories and vegetation inventories were not completed within this community. | PSW – Copetown Bog | No |

| ELC | ELC Description | Community Composition | Provincially Significant Wetlands / Other Wetlands | Significant Woodlands |
|---|---|---|---|---|
| BOTC2-1 / BOSD1-1 | Tamarack – Leatherleaf Treed Kettle Bog Type / Leatherleaf Shrub Bog Type | This community represents an area of the Provincially Significant Copetown Bog. This feature is a kettle wetland, is the only known bog that occurs within the city of Hamilton and was characterized within the Hamilton NAI (3rd edition). This community was not assessed by Burnside staff.<br><br>The outer portion of this community consists of a band of Black Spruce (*Picea abies*) and Tamarack (*Larix laricema*) while the interior is dominated by ericaceous shrubs that form the Leatherleaf Shrub Bog Type (BOS1-1). Ericaceous shrubs occurring in association with this community include Bog-rosemary (*Andromeda polifolia*), Leatherleaf (*Chamaedaphne calyculata*), Bog Laurel (*Kalmia polifolia*) and Labrador Tea (*Ledum groenlandicum*). Groundcover species present include many species that are considered to be rare within the city of Hamilton including Pitcher Plant (*Sarracenia purpurea*), Round-leaved Sundew (*Drosera rotundifolia*), Bog Buckbean (*Menyanthes trifoliata*), Lesser Bladderwort (*Utricularia minor*), and various sedge species including the provincially-rare Biling's Three-seeded Sedge (*Carex trisperma var. billingsii*)[3].<br><br>Targeted wildlife inventories and vegetation inventories were not completed within this community. | PSW – Copetown Bog | No |
| MEGM3 | Dry - Fresh Graminoid Meadow Ecosite | This community represents the ROWs present along ON-52 and Powerline Road East and West.<br><br>This community consists of common meadow species and is dominated by Kentucky Bluegrass (*Poa pratensis*) with lesser associates of Smooth Brome (*Bromus inermis*), White Campion (*Silene latifolia*), and Goldenrod (*Solidago spp.*). Shrub species including Multiflora Rose (*Rosa multiflora*), Staghorn Sumac (*Rhus typhina*), European Buckthorn (*Rhamnus cathartica*), and Tatarian Honeysuckle (*Lonicera tatarica*) occur occasionally within the ROW but do not exceed 10% cover. | No | No |
| MEMM3 | Dry - Fresh Mixed Meadow Ecosite | This community is present east of the Hamilton-Brantford Rail Trail north of Powerline Road East.<br><br>This community consists of common meadow species and is dominated by Canada Goldenrod (*Solidago canadensis*), with lesser associates of Kentucky Bluegrass, Smooth Brome, and Queen Anne's Lace (*Daucas carota*). Regenerating Manitoba Maple (*Acer negundo*) as well as shrub species including Staghorn Sumac and European Buckthorn as well as Wild Grape (*Vitis riparia*) are present within the understory layer but do not exceed 20% cover. | No | No |
| MEFM1 / THDM4 | Dry - Fresh Forb Meadow Ecosite<br>Dry - Fresh Deciduous Regeneration Thicket Ecosite | This community represents the meadow / thicket community bordering the Copetown Bog and its associated impoundment. This community consists of open areas dominated by forbs interspersed by dense areas of shrub and tree regeneration. This community has been subject to dumping.<br><br>A distinct canopy and subcanopy are absent from this community with a few mid-aged to mature trees including White Spruce (*Picea glauca*), Manitoba Maple, and Black Walnut (*Juglans nigra*). The understory is patchy, consisting of dense patches of regenerating Manitoba Maple with lesser associates of Black Raspberry (*Rubus occidentalis*), Black Walnut regeneration, and Staghorn Sumac. The groundcover is dominated by Tall Goldenrod (*Solidago altissima*) with lesser associates of Kentucky Bluegrass, Hedge Bedstraw (*Galium mollugo*), and Dame's Rocket (*Hesperis matronalis*). | No | No |

| ELC | ELC Description | Community Composition | Provincially Significant Wetlands / Other Wetlands | Significant Woodlands |
|---|---|---|---|---|
| WODM4a | Dry - Fresh Deciduous Woodland Ecosite | This community occurs east of ON-52 north of Powerline Road East. This community is largely present on privately owned lands and was assessed from the ROW.<br><br>An established canopy is absent from this community. Canopy trees consist of a small number of Northern Catalpa (*Catalpa speciosa*) with lesser associates of mature Silver Maple (*Acer saccharinum*) and Black Cherry (*Prunus serotina*). The subcanopy provides approximately 50% cover and is dominated by Northern Catalpa with lesser associates of Manitoba Maple. The understory is moderately dense and consists of Tatarian Honeysuckle, Manitoba Maple regeneration, European Buckthorn, and Black Raspberry. The groundcover is consistent with the MEGM3 community. | No | No |
| WODM4b | Dry - Fresh Deciduous Woodland Ecosite | This community occurs west of ON-52 north of Powerline Road West. Invasive species dominate this community.<br><br>An established canopy is absent from this community. The subcanopy provides approximately 70% cover and is dominated by Black Locust with lesser associates of Black Walnut and Manitoba Maple. The understory provides 60% cover and consists of regenerating Black Locust (*Robinia pseudoacacia*), Black Walnut, Multiflora Rose, and Red Ash (*Fraxinus pennsylvanica*). The groundcover is dominated by Garlic Mustard (*Alliaria petiolata*), Dame's Rocket, Tall Goldenrod, and Yellow Avens (*Geum aleppicum*). | No | No |
| WODM4-4 | Dry - Fresh Black Walnut Deciduous Woodland Type | This community occurs east and west of ON-52 and is associated with the Hamilton-Brantford Rail Trail. This community occurs in association with the unnamed tributary. This community has moderately steep slopes, likely due to the construction of the rail trail. Invasive species are pervasive throughout this community.<br><br>The canopy layer provides approximately 20% cover and consists of Black Walnut, Trembling Aspen (*Populus tremuloides*), Eastern Cottonwood (*Populus deltoides*), and Balsam Poplar (*Populus balsamifera*). The subcanopy provides 60% cover and is dominated by Black Walnut with lesser associates of Manitoba Maple, Trembling Aspen, and Black Cherry. The understory is dense, providing 60-70% cover consisting of regenerating Manitoba Maple, European Buckthorn, Black Walnut, and Black Raspberry. The groundcover layer is well established, providing >60% cover and is dominated by Garlic Mustard with lesser associates of Dame's Rocket, Enchanter's Nightshade (*Circaea lutetiana*), and Yellow Avens. | No | No |
| WODM5-3 | Fresh - Moist Manitoba Maple Deciduous Woodland Type | This community occurs west of ON-52 and is associated with the Hamilton-Brantford Rail Trail. Standing Ash snags and deadfall logs are common within this community. This community has moderately steep slopes, likely due to the construction of the rail trail. Invasive species are pervasive throughout this community.<br><br>The canopy layer provides approximately 10% cover and consists of Manitoba Maple, Black Walnut, Eastern Cottonwood, and Norway Spruce (*Picea abies*). The subcanopy provides 40-50% cover and is dominated by Manitoba Maple with lesser associates of Black Walnut, Black Locust, and Green Ash. The understory is dense, providing >70% cover and consists of regenerating Manitoba Maple, European Buckthorn, Wild Grape (*Vitis riparia*), and Green Ash. The groundcover layer is well established, providing >60% cover and is dominated by Garlic Mustard with lesser associates of Thicket Creeper (*Parthenocissus vitacea*), Enchanter's Nightshade, and Purple Crown Vetch (*Securigera varia*). | No | No |

| ELC | ELC Description | Community Composition | Provincially Significant Wetlands / Other Wetlands | Significant Woodlands |
|---|---|---|---|---|
| FOM | Mixed Forest | This community is located immediately south of the TAGM1 community and west of ON-52. This community consists of both coniferous species such as White Pine (*Pinus strobus*) and deciduous species. This community was not characterized by Burnside. | No | Yes |
| FOD | Deciduous Forest | These communities are located east of ON-52 and north of Powerline Road East. These communities were not characterized by Burnside as they are located well away from the proposed intersection improvements.<br><br>Per the Greenbelt Indigenous Botanical Survey, the forested areas present at the southern extent of the Copetown Bog which fall within the study area are dominated by Black Walnut and Manitoba Maple while the understory is dominated by European Buckthorn (and Chokecherry (*Prunus virginiana*) while the groundcover was documented to be dominated by Garlic Mustard (Plenty Canada, 2024). Per the Lower Middle Grand Subwatershed Natural Heritage Characterization Report, the upland deciduous forests adjacent to the Copeland bog consists of most Red Oak Forest. | No | Yes |
| FODM5 | Dry - Fresh Sugar Maple Deciduous Forest Ecosite | This community is located west of ON-52, immediately south of Powerline Road West and is largely located on private property. This community consists of a young to mid-aged deciduous forest. Standing snags and deadfall logs rarely occur within this community. Road noise is still prevalent within this community. Invasives are also common in both the understory and groundcover layers.<br><br>The canopy layer provides >70% cover and is dominated by Sugar Maple (*Acer saccharum*) with lesser associates of Black Walnut, Red Oak (*Quercus rubra*), and Black Cherry. A distinct subcanopy has not become established, providing approximately 20-30% cover, and is dominated by Sugar Maple with lesser associates of Black Walnut, Black Cherry, and White Pine. The understory is relatively open, providing 20-30% cover consisting of European Buckthorn, Chokecherry, Red Currant (*Ribes rubrum*), and regenerating canopy species. The groundcover layer provides approximately 30% cover and is dominated by Garlic Mustard, Enchanter's Nightshade, Thicket Creeper, and Rough Avens (*Geum laciniatum*). | No | Yes |
| TAGM1a | Coniferous Plantation | This community is located west of ON-52 and south of Powerline Road West. This community consists of a mid-aged White Pine Plantation. An established understory is absent due to the density of the Pine plantings and consists of rarely occurring Staghorn Sumac, Black Walnut regeneration, Black Raspberry, and Manitoba Maple along the margins of this community. A groundcover layer is largely absent and consists of rarely occurring Poison Ivy (*Toxicodendron radicans*), Herb Robert (*Geranium robertianum*), Garlic Mustard, and Virginia Stickseed (*Hackelia virginiana*). | No | Yes |
| TAGM1b | Coniferous Plantation | This community is located east of the Hamilton-Brantford Rail Trail and north of Powerline Road East. This community is located on privately owned lands and was identified through air photo review. | No | No |
| IAG | Agricultural Infrastructure | This community consists of a dairy farm and creamery. | No | No |
| OAGM1 | Agricultural | This community consists of row crops. | No | No |
| CVR_4 | Residential | This community consists of rural residences and their associated outbuildings and structures. | No | No |

## 4.2 Breeding Bird Surveys

A total of 35 resident bird species, exhibiting some level of breeding evidence (possible, probable or confirmed) were observed on the study area during targeted breeding bird surveys in 2025 (see Appendix C). Five species were observed on the study area; however, no level of breeding evidence was observed: American Crow (*Corvus brachyrhynchos),* Blackpoll Warbler (*Setophaga striata*), Eastern Bluebird (*Sialia sialis*), Purple Martin (*Progne subis*), and Tennessee Warbler (*Leiothlypis peregrina*).

According to MNR's Significant Wildlife Habitat Technical Guide (2000), "area sensitive" species are defined as species that require large areas of suitable habitat for long term population survival. Fragmentation of essential habitats can result in overall declines in populations. Four "area sensitive" bird species, as defined by the MNR, were observed on the study area during the breeding bird surveys: American Redstart (*Setophaga ruticilla*), Red-breasted Nuthatch (*Sitta canadensis*), Savannah Sparrow (*Passerculus sandwichensis*), and White-breasted Nuthatch (*Setophaga petechia*).

One 'rare' species to the city of Hamilton, Carolina Wren, was documented during the course of breeding bird surveys at BBS02, BBS03, and BBS05.

One species listed as both provincially and federally significant, was observed on the study area during breeding bird surveys: Eastern Wood-pewee (*Contopus virens*) (Special Concern). Eastern Wood-pewee was recorded at BBS3 during both breeding bird surveys. Purple Martin (*Progne subis*, S3), which is considered "vulnerable" in Ontario, was also observed foraging overhead during breeding bird surveys. This species almost exclusively nest in human-provided housing in Ontario and forage within approximately 3 km of their colony. No nesting boxes were observed in the study area; therefore, it is assumed they are breeding well beyond the ROW within rural residential or agricultural communities.

SAR and SWH Screening Tables for the study area are included in Appendices D and E.

## 4.3 Amphibian Call Count Surveys

In total, three species of amphibians were recorded calling during targeted amphibian breeding surveys including: Spring Peeper (*Pseudacros crucifer*), Wood Frog (*Lithobates sylvaticus*), and Green Frog (*Lithobates clamitans*). All

three species are ranked as S5 (Secure) within Ontario and are considered common and widespread. A summary of species observed can be found in Table 3 below.

Spring Peeper was the most commonly recorded species and was documented in both the early and mid-season survey at a Call Code of 3. As two species were not reported to be calling at a Call Code 3, SWH Amphibian Breeding Habitat (Wetland) is confirmed absent.

**Table 3: Summary of Amphibian Breeding Surveys**

| Survey Date | Station ID | Species Observed | No. of Individuals | MMP Call Code[1] |
|---|---|---|---|---|
| April 17, 2025 | 001 | Spring Peeper | Full chorus | 3 |
| April 17, 2025 | 001 | Wood Frog | 4 | 1 |
| May 22, 2025 | 001 | Spring Peeper | Full chorus | 3 |
| May 22, 2025 | 001 | Green Frog | 1 | 1 |
| June 19, 2025 | 001 | N/A | N/A | 0 |

[1]Marsh Monitoring Protocol Call Codes
1: Calls not simultaneous, number of individual can be accurately counted.
2: Some calls simultaneous, number of individuals can be reliably estimated
3: Full chorus, calls continuous and overlapping, number of individuals cannot be reliably estimated

## 4.4 Incidental Wildlife

Incidental wildlife recorded in the study area are listed in Table 4 below. With the exception of Monarch, all species are ranked as S5 (apparently secure) within Ontario and are considered common and widespread throughout the province. Monarchs are designated as “Endangered” under COSEWIC and the *Federal Species at Risk Act* and “Special Concern” under the provincial ESA.

**Table 4: Incidental Wildlife Observations**

| Common Name | Scientific Name | S-Rank/ESA | Location | Comments |
|---|---|---|---|---|
| Red Squirrel | *Sciurus vulgaris* | S5 | WODM5 | |
| Gray Squirrel | *Sciurus carolinensis* | S5 | FODM5, WODM4-4 | |
| Autumn Meadowhawk | *Sympetrum vicinum* | S5 | MASM1-14 | |

| Common Name | Scientific Name | S-Rank/ESA | Location | Comments |
|---|---|---|---|---|
| Monarch | *Danaus plexippus* | S2N,S4B (SC) | WODM5, MEFM1 / THDM4, MEMM3 | Adult foraging. No Monarch larvae were incidentally observed. |
| Twelve-spotted Skimmer | *Libellula pulchella* | S5 | MASM1-14 | |
| Green Frog | *Rana clamitans* | S5 | MASM1-14 | |

## 4.5 Aquatic Habitat Characterization

An unnamed tributary of Big Creek is present within the study area and originates at the northern margin of the Summit Muskeg Preserve. This watercourse flows along the eastern margin of the bog through a thicket swamp before becoming an impoundment immediately west of the parking area for the Hamilton Brantford Rail Trail. The watercourse then flows southwards underneath the existing driveway for the Rail Trail Parking before flowing southwards underneath Hwy 52.

The unnamed tributary of Big Creek is classified as a warmwater thermal regime. Based on the MNRF's ARA mapping, seven species of fish have been reported within the tributary. The MNRF ARA Watercourse summary information is listed in Table 5 below. The OHN mapping also identifies this watercourse as intermittent. Based on the DFO SAR mapping, no aquatic species at risk occur within the watercourse.

**Table 5: Species Within the Unnamed Tributary of Big Creek**

| Common Name | Scientific Name | Thermal Regime |
|---|---|---|
| Brook Stickleback | *Culaea inconstans* | Cool |
| Central Mudminnow | *Umbra limi* | Cool |
| Common Carp | *Cyprinus carpio* | Warm |
| Common Shiner | *Luxilus cornutus* | Cool |
| Fathead Minnow | *Pimephales promelas* | Warm |
| Pumpkinseed | *Lepomis gibbosus* | Warm |
| White Sucker | *Catostomus commersoni* | Cool |

Burnside assessed three reaches of the unnamed tributary within the study area spanning from the impoundment outlet to the margin of the TAGM1 Community. Sections 4.5.1 to 4.5.3 summarizes the channel dimensions (i.e., information

pertaining to the morphology, wetted width / depth, substrate etc.) and conditions observed by Burnside's aquatic ecologist on June 26, 2025. Common sources of pollution that may apply to the site include the roadway (i.e., gravel road sources of fine sediments and salts) and agricultural lands (i.e. nutrient runoff, fine sediments). A photo page that references the observations in Sections 4.5.1 to 4.5.3 is provided in Appendix A.

Based on the *Lower-Middle Grand Natural Heritage Characterization Report* (GRCA, 2017), the ponds and wetlands in the kettle depression are hydrologically isolated from the unnamed tributary of Big Creek system except for intermittent outflow into the Big Creek system from the western kettle bog via a drainage culvert located at the southern end.

Based on Burnside's observations, the unnamed tributary of Big Creek, this watercourse should be considered a headwater drainage feature. The portions of the unnamed tributary occurring within the study area were found to be dry during each of Burnside's site visit, including during the March 2025 site visit. Standing water was observed south of the study area in association with marsh community the Big Creek Headwaters Wetland Complex well beyond the study area during the spring freshet. Upland vegetation species, including shrub and tree regeneration is present within all the assessed reaches of the watercourse. Although defined banks are present, no evidence of sediment sorting is present within all four reaches. No evidence of groundwater contribution is present within any of the assessed reaches.

### 4.5.1 Reach 1 (R1)

This reach originates at the outlet of the SAF_1-3/MAS impoundment. R1 flows north to south towards the parking lot access road where flows are then conveyed through a 1.0 m diameter CSP (CR1). This reach is classified as a vegetated swale. The northern portion of the swale is dominated by Reed Canary Grass and Spotted Jewelweed. The southernmost portion of the swale is vegetated with upland species including White Avens (*Geum canadense*), Yellow Avens, Ground Ivy, and Tall Goldenrod. The majority (>90%) of the channel is shaded by shrubs along the eastern bank.

The banks of this reach are well vegetated with herbaceous vegetation species on the west bank as well as shrubs along the eastern bank. No evidence of bank slumping or undercut banks are present.

### 4.5.2 Reach 2 (R2)

Downstream of CR1, the watercourse continues to consist of a well-vegetated swale, becoming increasing less defined downstream of Crossing CR1, flowing through the WODM5 community before flowing through a 1.0 m CSP (CR2). Immediately upstream of CR2, the watercourse is marginally defined. The adjacent valley walls of the WODM5 community are moderately steep.

Woody vegetation is pervasive within the channel consisting of European Buckthorn, American Black Currant (*Ribes americanum*), and Poison Ivy. Upland herbaceous species including Yellow and White Avens as well as garlic mustard are also present. The riparian areas consist of deciduous woodland with several mature Eastern Cottonwood and White Willows bordering Reach 2. The adjacent riparian trees provide >90% cover to the watercourse.

The banks of this reach are well vegetated with herbaceous vegetation species on the west bank as well as shrubs along the eastern bank. No evidence of bank slumping or undercut banks are present.

### 4.5.3 Reach 3 (R3)

The outlet of CR2 is embedded with the bed of the watercourse with abundant sediments visible from the outlet. This reach consists of a grassed swale running parallel to ON-52. This feature is well vegetated by upland meadow species (see the description for the MEGM3 Community) and likely functions as a stormwater conveyance for ON-52. No evidence of active erosion was present during the course of Burnside's field investigations.

### 4.5.4 Reach 4 (R4)

Downstream of CR3, the channel form of the watercourse becomes almost imperceivable as R4 flows through the WODM4-4 Community, eventually becoming undefined before flowing parallel to the Hamilton-Brantford Rail Trail adjacent to the TAGM1 Community. The CR3 outlet is damaged with minor amounts of sediment accumulation visible from the outlet. The adjacent valley walls of the TAGM1 Community are moderately steep. The portion of the mapped watercourse flowing adjacent to the TAGM1 Community were not able to be accessed safely, all observations were instead made from the trail.

Within the portion of the watercourse flowing through the ROW and WODM4-4 community, woody Vegetation is pervasive within the channel consisting of European Buckthorn, Black Raspberry, native tree regeneration,

and Poison Ivy. Upland herbaceous species including Cleavers, Enchanter's Nightshade, and Thicket Creeper are well established and provide extensive cover. The riparian areas consist of deciduous woodland with young Black Walnut and Manitoba Maple. The adjacent riparian trees provide >90% cover to the watercourse. The channel of the watercourse is undefined with no visible bed or banks. The mapped watercourse lacks defined bed and banks throughout this area.

Along the portion of the watercourse that flows along the rail trail adjacent to the TAGM1 community, the mapped watercourse is well vegetated with cool season grasses and Goldenrod sp. The banks bordering the rail trail, while steep, are stable and well vegetated. No evidence of bank slumping or undercut banks are present.

Where defined banks are present, the banks of this reach are well vegetated with herbaceous vegetation species on the west bank as well as shrubs along the eastern bank. No evidence of bank slumping or undercut banks are present.

A summary of the channel morphology and instream vegetation can be found in Table 6 and Table 7 below.

**Table 6: Unnamed Tributary of Big Creek Channel Morphology Summary**

| Reach | Percentage of Area | Mean Bankfull Width (m) | Mean Bankfull Depth (m) | Substrate |
|---|---|---|---|---|
| R1 | Vegetated swale: 100% | 3.75 | 0.87 | Topsoil (vegetated) |
| R2 | Vegetated swale: 100% | 3.2 | 0.6 | Topsoil (vegetated) |
| R3 | Vegetated swale: 100% | 3.3 | 0.6 | Topsoil (vegetated) |
| R4 | Vegetated swale: 100% | n/a | n/a | Topsoil (vegetated) |

**Table 7: In-stream Habitat Percent Cover Summary Within the Unnamed Tributary of Big Creek**

| Reach | Undercut Banks | Boulders | Cobble | Woody Debris | Organic Debris | Vascular Macrophytes (Instream) |
|---|---|---|---|---|---|---|
| R1 | 0% | 0% | 0% | 20% | 100% | 100% (terrestrial vegetation) |
| R2 | 0% | 0% | 0% | 10% (fallen logs) | 0% | 90% (terrestrial vegetation) |
| R3 | 0% | 0% | 0% | 0% | 0% | 100% (terrestrial vegetation) |
| R4 | 0% | 0% | 0% | 30% (fallen logs) | 0% | 90% (terrestrial vegetation) |

### 4.5.5 Fish Habitat

Based on Burnside's assessment of field conditions, the MASM1-14/SAF_1-3 Community associated with the Copetown Bog Lagg may support permanent fish habitat and may be considered fish habitat as defined under the federal *Fisheries Act*. The outfall at the impoundment represents a physical barrier to fish passage.

As the reaches immediately downstream of the impoundment were found to not contain any water and are hydrologically isolated from the lagg with the exception of intermittent flows. Due to the extent of vegetation growth and establishment of woody species within the channel, and lack of sediment sorting, it is unlikely that this portion of the unnamed tributary of Big Creek is subject to regular flows with water rarely being present. Furthermore, given the extent of vegetation growth and lack of connectivity to the downstream reaches of the watercourse south of the TAGM1 Community, the portions of the unnamed tributary of Big Creek downstream of the impoundment should be considered indirect fish habitat. The mapped watercourse may provide minor amounts of sediment transport and conveyance of overland flows to downstream areas.

## 4.6 Headwater Drainage Features (HDF)

HDFs within the study area varied in structure and permanence ranging from undefined channels to swales. Drainage features were assessed from constriction points (i.e., culverts) from the ROWs. A total of two features were identified within the study area.

A photographic summary of the reviewed HDFs can be found in Appendix A.

### Reach Based Classification

The classification of each HDF reach was assessed based on the hydrological classification, riparian characteristics, potential fish habitat, and capacity to provide terrestrial linkages. Of the reaches in each HDF feature, three are classified as ‘No Management Concern’ and four are classified as ’Maintain Terrestrial Linkage’. Management recommendations were based on the management decision matrix on Figure 2 of the Evaluation, Classification, and Management of Headwater Drainage Features Guidelines (CVC and TRCA, 2014). A summary of the reach-based classifications can be found below in Table 8 and Figure 4.

**Table 8: Headwater Drainage Feature Reach-Based Classification**

| Feature | Feature Condition | Feature Type | Hydrology | Riparian Classification | Fish and Habitat | Terrestrial Habitat | Management Recommendations |
|---|---|---|---|---|---|---|---|
| H1R1 (Powerline Road East) – Upstream 1 (0 to 5) | Dry | Undefined | Limited | Limited | Contributing | Limited | No Management Required |
| H1R2 (Powerline Road East) – Upstream 2 (5 to 20) | Dry | Undefined | Limited | Limited | Contributing | Limited | No Management Required |
| H1R3 (Powerline Road East) – Downstream | Dry | Undefined | Limited | Limited | Contributing | Limited | No Management Required |
| H1R4 (Hamilton-Brantford Rail Trail) – Upstream, Feature 1 | Dry | Swale | Limited | Important | Contributing | Contributing | Maintain / Replicate Terrestrial Linkage |
| H1R5 (Hamilton-Brantford Rail Trail) – Upstream, Feature 2 | Dry | Undefined | Limited | Important | Contributing | Contributing | Maintain / Replicate Terrestrial Linkage |
| H1R6 (Hamilton-Brantford Rail Trail) – Downstream | Dry | Swale | Limited | Important | Contributing | Contributing | Maintain / Replicate Terrestrial Linkage |
| H2R1 – Upstream | Dry | Swale | Limited | Important | Contributing | Contributing | Maintain / Replicate Terrestrial Linkage |
| H2R2 - Downstream | Standing Water | Undefined | Limited | Important | Contributing | Contributing | Maintain / Replicate Terrestrial Linkage |

## Feature H1

The H1 feature crosses two constriction points, once along the Powerline Road East and again across the Hamilton-Brantford Rail Trail.

Feature H1 originates within an agricultural field on privately owned lands and was identified using LiDAR data. The first constriction point occurs at a roadside culvert that receives flows from the agricultural field as well as roadside drainage from Powerline Road. The upstream section consists of an undefined feature lacking a defined bed and banks that passes through an agricultural field from 5 to 20 m upstream of the culvert (H1R1) and maintained lawn ROW from 0 to 5 m upstream of the culvert (H1R2). No standing water was present during the freshet. Minimal amounts of sediment were visible within the culvert. Downstream of the crossing structure, the feature flows through maintained turfgrass yards (H1R3) towards the forested areas associated within the rail trail. No sediment was observed within the dry feature.

The second constriction point along Feature H1 consists of two 700 mm corrugated steel culvert (CSP) and is located along the rail trail. The upstream reach consists of two features, the primary feature being a swale that flows east to west towards the culvert through a cultural woodland and cultural plantation (H1R4), and a secondary feature, a vegetated swale. A constructed wooden barrier is located approximately 7 m upstream of the culvert crossing of the primary feature, upstream of the barrier the feature becomes undefined. Woody vegetation and herbaceous was observed growing within the channel of the feature. The secondary feature (H1R5) is a vegetated swale that flows from south to north along the rail trail towards the culvert crossing through a cultural woodland. A wooden footbridge was observed approximately 10 m upstream of the crossing. Woody vegetation and herbaceous vegetation is growing within the channel. No evidence of active erosion or sediment deposition was observed within either the primary or secondary features. Both features were dry during the spring 2025 freshet. No sediment transport was visible from the adjacent lands. Based on Burnside's review of LiDAR imagery this feature appears to connect to the lagg of the summit bog.

The downstream end of the culverts of the second constriction point are compromised structurally and are partially buried (H1R6). Former rail ties are also blocking the channel approximately 4 m downstream of the culvert outlet that would impede flows.

### Feature H2

This feature (H2R1) is present south of the intersection of Powerline Road East and ON-52 and originates within the agricultural field before flowing westwards through a cultural woodland before crossing ON-52 before flowing through a White Pine plantation before eventually connecting to the Big Creek provincially significant wetland complex. The constriction point of this feature is a 1,000 mm CSP. Upstream of the culvert with moderately steep valley walls, only a single feature is present, a vegetated swale that passes through a cultural thicket. The swale possesses defined bed and banks, but shrubs and small trees have become established in the channel. Moderate amounts of sediment deposition was noted at the culvert inlet. The roadside drainage networks that direct stormwater flows towards the HDF feature have caused gully erosion to occur along the valley walls north of the feature, contributing sediments to the feature.

Downstream of the culvert crossing, the feature (H2R2) becomes undefined, flowing through a maintained grass area bordered by a White Pine plantation. Minor amounts of standing water spanning 1.5 m and <0.1 deep is present at the culvert outlet. No flows or standing water is present downstream of the pool. Rill erosion is visible on either side of the culvert outlet, contributing sediments to the feature.

**Table 9: Summary of HDF Characteristics**

| Feature | Bankfull Width (m) | Bankfull Depth (m) | Feature Vegetation | Riparian Vegetation |
|---|---|---|---|---|
| H1R1: (Powerline Road East) – Upstream 1 | n/a | n/a | Cropped | Cropped |
| H1R2: (Powerline Road East) – Upstream 2 | n/a | n/a | Lawn | Lawn |
| H1R3 (Powerline Road East) – Downstream | n/a | n/a | Cropped | Cropped |
| H1R4 (Hamilton-Brantford Rail Trail) – Upstream, Feature 1 | 4.50 | 1.14 | Woodland | Woodland, forest, thicket, lawn |
| H1R5 (Hamilton-Brantford Rail Trail) – Upstream, Feature 2 | 1.9 | 0.47 | Woodland | Woodland, forest, thicket, lawn |
| H1 (Hamilton-Brantford Rail Trail) – Downstream | 2.00 | 4.50 | Woodland | Woodland |
| H2 – Upstream | 1.40 | 2.00 | Thicket | Thicket |
| H2 – Downstream | n/a | n/a | Lawn | Lawn, Forest |

Overall, all the assessed reaches provide indirect fish habitat, as the feature provides sediment transport, overland flows, and allochthonous inputs (minerals and nutrients) to downstream fish habitat. Features H1 and H2 are impacted by agricultural activities and also heavily impacted by agricultural operations and off-site developments upstream of the feature. Both features also receive stormwater flows from roadside drainage features, likely contributing contaminants from the roads.

# 5.0 City of Hamilton Natural Heritage System

## 5.1 Niagara Escarpment Plan (2017)

The lands located east of Hwy 52 are located within the Niagara Escarpment Plan (NEP) Areas. NEP Natural Areas include the Summit Muskeg Preserve ANSI. The forested communities and cultural meadow communities located east of Hwy 52 and north of Powerline Road are designated as Escarpment Protection areas while rural residential and agricultural communities are designated as Escarpment Rural Areas.

## 5.2 Greenbelt Plan (2017)

The land located south of Powerline Road is located within the Greenbelt Plan Natural Heritage System. Within the study area, these lands border the Niagara Escarpment Plan Area east of Hwy 52 and south of Powerline Road. The lands west of Hwy 52 beyond the NEP Natural Areas and Greenbelt Plan Natural Heritage System are designated as Greenbelt Protected Countryside.

## 5.3 Provincially Significant Wetlands (PSW)

Two PSWs, the Copetown Bog and the Big Creek Headwaters Wetland Complex, are present in the study area.

The Copetown Bog is an isolated kettle bog located within the largest kame in the kettle topography within the Dundas Valley[1] and is located north of Powerline Road. The Big Creek Headwaters Wetland Complex occurs in association with the unnamed tributary of Big Creek and occurs south of Powerline Road.

## 5.4 Significant Woodlands

Significant Woodlands are defined by the RHOP as woodlands that are “ecologically important” with regards to the following:

1

a) *"Features such as species composition, age of trees, stand history;*

b) *Functionally important due to its contribution to the broader landscape because of its location, size, or due to the amount of forest cover in the planning area; and*

c) *Economically important due to site quality, species composition or past management history"*

For a woodland to be considered significant, it must meet two or more of the following criteria outlined in Table 10 below.

**Table 10: Criteria for Woodland Significance (RHOP, 2024) Relative To the Conditions Present Within the Study Area**

| Criterion | Description | Applicable to FOD, FOM, and TAGM1 Communities |
|---|---|---|
| Size | Forest Cover (by planning unit)<br><5% (Min. Patch Size for Significance, 1 ha)<br>5 to 10% (Min. Patch Size for Significance, 2 ha)<br>11 to 15% (Min. Patch Size for Significance, 4 ha)<br>16 to 20% (Min. Patch Size for Significance, 10 ha)<br>21 to 30% (Min. Patch Size for Significance, 15 ha) | The FOD, FODM5, FOM, TAGM1a, and TAGM1b communities south of Powerline Road and west of Hwy 52 are separated by a rail trail with a distance <20 m. Per the Natural Heritage Reference Manual (MNRF, 2005), "*A bisecting opening 20 metres or less in width between crown edges is not considered to divide a woodland into two separate woodlands*". When considering the area of all three communities minus the area of the developed opening and PSW features, the total area is >4 ha. |
| Interior Forest | Woodlands that contain interior forest habitat. Interior forest habitat is defined as 100 m from edge. | Absent. |
| Proximity / Connectivity | Woodlands that are located within 50 m of a significant natural area (defined as wetlands 0.5 ha or greater in size, ESAs, PSWs, and Life Science ANSIs). | Confirmed present.<br><br>The FOD community is located within 50 m of the Copetown Bog ANSI / PSW.<br><br>The FODM5, FOM, and TAGM1a communities are located within 50 m of the Big Creek Headwaters Complex PSW and unnamed tributary of Big Creek. |
| Proximity to Water | Woodlands where any portion is within 30 m of any hydrological feature, including all streams, headwater areas, wetlands, and lakes. | The FODM5, FOM, and TAGM1 communities located south of Powerline Road are located within 30 m of the Big Creek Headwaters Wetland Complex PSW and the unnamed tributary of Big Creek. |
| Age | Woodlands with ten or more native trees / hectare greater than 100-years old. | Unknown |
| Rare Species | Any woodland containing threatened, endangered, special concern, provincially, or locally rare species. | Confirmed present. Eastern Wood-pewee is present in association with the FODM5 Community. Carolina Wren, a locally rare species, also occurs in association with the FODM5 Community. No locally or provincially rare plant species occur within the FOD, FODM5, FOM, or TAGM1a, or TAGM1b communities.<br><br>There is high potential for SAR bats to be supported within all forest and plantation communities within the study area. |

Based on the criteria outlined within Table 10 above and Burnside's review of air photos and the RHOP Schedule B-2, it is likely that FODM5, FOD, FOM, TAGM1a, and TAGM1b Communities are considered to be significant within the city of Hamilton.

## 5.5 Significant Valleylands

Significant Valleylands are absent from within the study area.

## 5.6 Areas of Natural Scientific Interest (ANSI)

One Life Sciences provincial ANSI, the Summit Muskeg Preserve, is present within the study area. The Dundas Valley Earth Sciences provincial ANSI is also present within the study area. Only the Earth Sciences ANSI is present within the existing ROW.

## 5.7 Significant Habitat of Species at Risk

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 Burnside's desktop review of the on-site conditions, it is anticipated that the deciduous forest, thicket swamp, and bog communities may support terrestrial SAR species. The locations of END and THR species cam can be found in Table 11 below. A more detailed summary can be found in Appendix D.

The following END and THR species may be supported within the study area:

- Eastern Red Bat (*Lasiurus borealis*) – END.
- Hoary Bat (*Lasiurus cinereus*) – END.
- Northern Myotis (*Myotis septentrionalis*) – END.
- Little Brown Myotis (*Myotis lucifugus*) – END.
- Silver-haired Bat (*Lasionycteris noctivagans*) – END.
- Tri-colored Bat (*Perimyotis subflavus*) – END.
- Black Ash (*Fraxinus nigra*) – END.
- Butternut (*Juglans cinerea*) – END.

Of the above listed species, both Black Ash and Butternut are absent from the existing ROW. Black Ash and Butternut may occur in association with wetland and upland communities respectively communities well beyond the ROW identified through Burnside's desktop review that were not subject to field review. These unevaluated communities and any regulated Butternut / Black Ash regulated habitats are located well beyond the proposed limits of disturbance. As such, further consideration for both species will not be provided within this report.

Candidate habitat for SAR bats may be supported; however, targeted surveys have not been completed to confirm the presence / absence of this habitat feature.

**Table 11: Summary of Potential Locations of END and THR species**

| ELC | ELC Description | Endangered and Threatened Species |
|---|---|---|
| MAM | Meadow Marsh | Candidate:<br>• Black Ash (END) |
| MASM1-14 / SAF_1-3 | Reed Canary Grass Mineral Shallow Marsh Type / Duckweed Floating-leaved Shallow Aquatic Type | END and THR species are confirmed absent within this community. |
| MAS / SWT | Shallow Marsh / Thicket Swamp | None identified. |
| BOTC2-1 / BOSD1-1 | Tamarack – Leatherleaf Treed Kettle Bog Type / Leatherleaf Shrub Bog Type | Candidate:<br>• Hoary Bat (END)<br>• Silver-haired Bat (END) |
| MEGM3 | Dry – Fresh Graminoid Meadow Ecosite | END and THR species are confirmed absent within this community. |
| MEMM3 | Dry – Fresh Mixed Meadow Ecosite | END and THR species are confirmed absent within this community. |
| MEFM1 / THDM4 | Dry – Fresh Forb Meadow Ecosite<br>Dry – Fresh Deciduous Regeneration Thicket Ecosite | END and THR species are confirmed absent within this community. |
| WODM4a | Dry – Fresh Deciduous Woodland Ecosite | Candidate:<br>• Eastern Red Bat (END)<br>• Hoary Bat (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Silver-haired Bat (END)<br>• Tri-colored Bat (END) |
| WODM4b | Dry – Fresh Deciduous Woodland Ecosite | Candidate:<br>• Eastern Red Bat (END)<br>• Hoary Bat (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Silver-haired Bat (END)<br>• Tri-colored Bat (END) |

| ELC | ELC Description | Endangered and Threatened Species |
|---|---|---|
| WODM4-4 | Dry – Fresh Black Walnut Deciduous Woodland Type | Candidate:<br>• Eastern Red Bat (END)<br>• Hoary Bat (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Silver-haired Bat (END)<br>• Tri-colored Bat (END) |
| WODM5-3 | Fresh – Moist Manitoba Maple Deciduous Woodland Type | Candidate:<br>• Eastern Red Bat (END)<br>• Hoary Bat (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Silver-haired Bat (END)<br>• Tri-colored Bat (END) |
| FOM | Mixed Forest | Candidate:<br>• Eastern Red Bat (END)<br>• Hoary Bat (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Silver-haired Bat (END)<br>• Tri-colored Bat (END)<br>• Butternut (END) |
| FOD | Deciduous Forest | Candidate:<br>• Eastern Red Bat (END)<br>• Hoary Bat (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Silver-haired Bat (END)<br>• Tri-colored Bat (END)<br>• Butternut (END) |
| FODM5 | Dry – Fresh Sugar Maple Deciduous Forest Ecosite | Candidate:<br>• Eastern Red Bat (END)<br>• Hoary Bat (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Silver-haired Bat (END)<br>• Tri-colored Bat (END) |

| ELC | ELC Description | Endangered and Threatened Species |
|---|---|---|
| TAGM1a | Coniferous Plantation | Candidate:<br>• Hoary Bat (END) |
| TAGM1b | Coniferous Plantation | Candidate:<br>• Hoary Bat (END) |
| IAG | Agricultural Infrastructure | Candidate:<br>• Eastern Small-footed Myotis (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Tri-colored Bat (END) |
| OAGM1 | Agricultural | None identified. |
| CVR_4 | Residential | Candidate:<br>• Eastern Small-footed Myotis (END)<br>• Northern Myotis (END)<br>• Little Brown Myotis (END)<br>• Tri-colored Bat (END) |

## 5.8 Significant Wildlife Habitat (SWH)

The Natural Heritage Reference Manual (MNR, 2010), Significant Wildlife Habitat Technical Guide (MNR, 2000) and Ecoregion 7E Criteria Schedules list a number of different types of habitat that are considered significant. A screening of potential habitats in the study area relative to SWH criteria is provided in Appendix E. In summary the following Candidate or Confirmed habitats are present:

- Bat maternity colonies (Candidate).
- Turtle wintering areas (Confirmed).
- Deer Wintering Areas (Confirmed).
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat (Candidate).
- Other rare vegetation communities (Confirmed):
  - BOS1-1 and BOT2-1.
- Seeps and springs (Candidate).
- Amphibian Breeding Habitat – Woodland (Candidate)
- Marsh Breeding Bird Habitat (Candidate).
- Terrestrial Crayfish (Candidate).

- Special Concern and Rare Wildlife (Confirmed):
  - Monarch (SC).
  - Eastern Wood-pewee (SC).
  - Purple Martin (S3).
  - Billing's Three-seeded Sedge (S2S3).
- Special Concern and Rare Wildlife (Candidate):
  - Eastern Ribbonsnake (SC).
  - Snapping Turtle (SC).
  - Perfoliate Bellwort (S1S2).

The locations of all confirmed or candidate SWH features can be found in Table 12 below.

### Bat Maternity Colonies

All woodlands within Ontario have the potential to provide suitable habitat for bat maternity colonies for Ontario's eight bat species. Characteristics of forest lands that best support bat maternity colonies include mature to old-growth forest stands with >10 ha large diameter (>25 cm dbh) snag trees.

Within the study area, this feature may be supported within deciduous and mixed forest communities. It should be noted that one of the indicator species, Silver-haired Bat, has recently been uplisted under the *Endangered Species Act* (ESA) as 'Endangered'.

### Turtle Wintering Areas

Turtles overwinter in the mucky bottom of deep pools or slow-moving streams. The impoundment along the unnamed tributary of Big Creek immediately west of the Hamilton Brantford Rail Trail has been confirmed to provide overwintering habitat for Midland Painted Turtle. Based on iNaturalist research grade records from March 21, 2021, a minimum of five Midland Painted Turtles were reported within the MAS/SAF_1-3 Community. This species is ranked provincially as S4 "apparently secure" and is not listed under SARO.

### Deer Wintering Areas

Deer winter congregation areas considered significant are mapped by the MNR. White-tailed Deer Wintering Area (Stratum 2) areas are present in association with the TAGM1a, FOM, and MAM Communities south of Powerline Road West.

### Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat

Nests for Bald Eagle and Osprey are associated with lakes, ponds, rivers, and wetlands along forested shoreline. Given the proximity to the Copetown Bog and unnamed watercourse, there is potential for this SWH to be supported on-site within the FODM5, FOM, and TAGM1 Communities. It should be noted that Bald Eagle observations in the immediate proximity to the study area are limited to a single observation in March. No Osprey observations have been made in the area.

No stick nests were encountered by Burnside during the course of all field investigations. The forested communities may continue to function as foraging and perching habitat.

Alterations to vegetation within Bald Eagle and Osprey nesting, foraging and perching habitat through vegetation removal can influence prey availability.

### Other Rare Vegetation Communities

Both the BOS1-1 and BOT2-1 Communities associated with the Summit Bog ANSI are considered to be rare in Ontario and are ranked as S3.

### Seeps and Springs

Seeps and springs are areas where ground water comes to the surface and are typically found within headwater areas within forested habitats. As the study area is located within the headwaters of Big Creek, seeps and springs may be supported within the FODM5 or FOM Communities. No seeps or springs were documented by Burnside within the ROW but may be located on inaccessible privately owned lands.

Seeps and springs that are located in close proximity to roadways can reduce the use of the spring by wildlife, particularly if treed cover is removed. Roads are also known to act as a barrier to the movement of surface and shallow groundwater and can alter the discharge from seep / spring. Water quality can also be altered as surface water runoff from roadways often contain contaminants and excess nutrients. The construction of roadways may result in the reduction or redirection of flows away from the seep or spring (MNR, 2014).

### Amphibian Breeding Habitat (Woodland)

The Amphibian Breeding Habitat (Woodland) type of habitat is described as a wetland, pond, or woodland pool (including vernal pools) >500 $m^2$ within or adjacent (within 120 m) to a woodland (no minimum size). Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians. Woodlands with permanent water or those with hydroperiods extending into mid-July are most likely to be used by breeding amphibians.

Suitable breeding habitat may be supported in association with the SWT/MAS community. This community was not surveyed by Burnside for amphibians due to its distance from the proposed intersection improvements.

This type of habitat is vulnerable to changes in water levels and sedimentation from construction.

### Marsh Breeding Bird Habitat

All marsh habitats may be considered significant breeding habitat provided standing water and emergent aquatic vegetation are present. Although this feature was confirmed absent in association with the MASM1-14/SAF_1-3 community, the MAM community may meet the criteria for significance. This SWH feature is sensitive to road runoff and salt spray as well as alterations to water levels.

This community is located well away from the location of the proposed intersection improvements.

### Terrestrial Crayfish

Suitable habitats for terrestrial crayfish include meadow marsh, shallow marsh, or swamp. Terrestrial crayfish are confirmed absent in association with the MASM1-14 community. Suitable habitat may occur in association with the MAM and MAS/SWT communities that were not subject to Burnside's field review.

Burrowing crayfish can be vulnerable to increases in road runoff quantity or quality.

### Habitat for Special Concern and Rare Wildlife

Based on the conditions observed within the study area, it is anticipated that the forest, swamp, and open water communities may support species of special concern and rare wildlife. Results are presented in Appendix D. The locations of candidate and confirmed SWH features can be found in Table 12 below.

**Table 12: Locations of Candidate and Confirmed SWH Features within Study Area**

| ELC | ELC Description | Significant Wildlife Habitat |
|---|---|---|
| MAM | Meadow Marsh | Candidate:<br>• Amphibian breeding habitat (wetland)<br>• Marsh Breeding Bird Habitat<br>• Terrestrial Crayfish<br>• Eastern Ribbonsnake (SC)<br>Confirmed:<br>• Deer Winter Congregation Areas |

| ELC | ELC Description | Significant Wildlife Habitat |
|---|---|---|
| MASM1-14 / SAF_1-3 | Reed Canary Grass Mineral Shallow Marsh Type / Duckweed Floating-leaved Shallow Aquatic Type | Confirmed:<br>• Turtle Wintering Areas<br><br>Candidate:<br>• Snapping Turtle (SC)<br>• Eastern Ribbonsnake (SC) |
| MAS / SWT | Shallow Marsh / Thicket Swamp | Candidate:<br>• Turtle Wintering Areas<br>• Amphibian breeding habitat (woodland)<br>• Marsh Breeding Bird Habitat<br>• Terrestrial Crayfish<br>• Eastern Ribbonsnake (SC)<br>• Snapping Turtle (SC) |
| BOTC2-1 / BOSD1-1 | Tamarack – Leatherleaf Treed Kettle Bog Type / Leatherleaf Shrub Bog Type | Confirmed:<br>• Other Rare Vegetation Communities<br>• Billing's Three-seeded Sedge (S2S3)<br><br>Candidate:<br>• Eastern Ribbonsnake (SC) |
| MEGM3 | Dry – Fresh Graminoid Meadow Ecosite | Candidate:<br>• Monarch (SC) |
| MEMM3 | Dry – Fresh Mixed Meadow Ecosite | Confirmed:<br>• Monarch (SC) |
| MEFM1 / THDM4 | Dry – Fresh Forb Meadow Ecosite<br>Dry – Fresh Deciduous Regeneration Thicket Ecosite | Candidate:<br>• Monarch (SC) |
| WODM4a | Dry – Fresh Deciduous Woodland Ecosite | None identified. |
| WODM4b | Dry – Fresh Deciduous Woodland Ecosite | None identified. |
| WODM4-4 | Dry – Fresh Black Walnut Deciduous Woodland Type | None identified. |
| WODM5-3 | Fresh – Moist Manitoba Maple Deciduous Woodland Type | None identified. |

| ELC | ELC Description | Significant Wildlife Habitat |
|---|---|---|
| FOM | Mixed Forest | Candidate:<br>• Bat Maternity Colonies<br>• Bald Eagle and Osprey Nesting, Foraging and Perching Habitat<br>• Seeps and Springs<br>• Eastern Wood-pewee (SC)<br>• Tufted Titmouse (S3B)<br>• Wood Thrush (SC)<br>• Perfoliate Bellwort (S1S2)<br><br>Confirmed:<br>• Deer Winter Congregation Areas |
| FOD | Deciduous Forest | Candidate:<br>• Bat Maternity Colonies<br>• Bald Eagle and Osprey Nesting, Foraging and Perching Habitat<br>• Seeps and Springs<br>• Eastern Wood-pewee (SC)<br>• Tufted Titmouse (S3)<br>• Wood Thrush (SC)<br>• Perfoliate Bellwort (S1S2) |
| FODM5 | Dry – Fresh Sugar Maple Deciduous Forest Ecosite | Confirmed:<br>• Eastern Wood-pewee (SC)<br><br>Candidate:<br>• Bat Maternity Colonies<br>• Bald Eagle and Osprey Nesting, Foraging and Perching Habitat<br>• Seeps and Springs |
| TAGM1a | Coniferous Plantation | Confirmed:<br>• Deer Winter Congregation Areas |
| TAGM1b | Coniferous Plantation | None identified. |
| IAG | Agricultural Infrastructure | None identified. |
| OAGM1 | Agricultural | None identified. |
| CVR_4 | Residential | None identified. |

# 6.0 Impacts, Mitigation, and Monitoring Guidelines

The preferred alternative includes a three-legged roundabout is shifted to the west of the existing intersection (Option 2, see Appendix F for details). Overall, the preferred alternative will avoid impacts to wetlands, significant woodlands, and SWH. A watercourse realignment is not required. Anticipated impacts are limited to minor encroachment into meadow and woodland communities. Considerations for impacts to the Earth Sciences ANSI should be provided.

Impacts, mitigation measures, and monitoring must be considered when selecting the preferred alternative. Table 13 below provides a summary of impacts that are anticipated with intersection improvements, with guidelines for mitigation measures and monitoring.

**Table 13: Summary of Impacts, Mitigation, and Monitoring for Natural Features; Effects on Ecological Features and Functions**

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| Wildlife (General) | Temporary displacement and disturbance to wildlife and habitat during the construction phase.<br><br>May include SAR and Species of Special Concern. | The footprint of the proposed disturbed area shall be minimized as much as possible.<br><br>In the event an animal is encountered during construction and does not move from the construction zone, the Contract Administrator should be notified. If the construction activities are such that continuing construction in the area would result in harm to wildlife, construction activities in that location should temporarily stop and the MNR or MECP can be contacted for direction.<br><br>If temporary perimeter exclusion fencing is used at a location, it should 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.<br><br>The excluded area should be searched immediately following fencing installation for any wildlife (including SAR) that may have become trapped. Any wildlife should be safely relocated or permitted to escape, to a suitable habitat. All works should stop immediately and MECP should be contacted if SAR is encountered within the area to ensure compliance with the Endangered Species Act (ESA).<br><br>Avoid vegetation clearing during sensitive times of the year for local wildlife, such as spring and early summer (April 1 - September 30).<br><br>The new structure will allow for wildlife passage below the structure if feasible.<br><br>Fencing to delineate the work zone will prevent encroachment into adjacent habitat supporting SAR and Species of Special Concern. | The Contractor will conduct regular monitoring of the erosion and sediment control measures to ensure they are acting as intended and are containing the work area. |
| Migratory Breeding Birds | Disturbance or destruction of migratory breeding bird nests / habitat may occur during construction phase (vegetation clearing) | To reduce the risk of contravening the federal Migratory Bird Convention Act, 1994 (MBCA), timing constraints shall be applied to avoid any limited vegetation clearing (including grubbing) and/or structure works (construction) during the active window for breeding birds, broadly from April 1 to August 31 for most species.<br><br>Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the ESA, cannot be destroyed at any time of the year.<br><br>If a nesting migratory bird (or SAR protected under ESA) is identified within or adjacent to the construction site (or during operations and maintenance activities) and the activities are such that continuing works in that area would result in a contravention of the MBCA or ESA, all activities should stop and the Contract Administrator (with assistance from an Avian Biologist) should discuss mitigation measures with the City. If SAR are identified, all activities should stop and MECP should be contacted to ensure compliance with the ESA. The Contract Administrator can instruct the Contractor on how to proceed based on the mitigation measures established through discussions with the City, the MECP and/or Environment Canada. | None. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| SAR bat maternity roosting habitat. | Minor encroachment into the WODM4b and WODM4-4 communities may be required to accommodate the proposed intersection improvements. Although both the WODM4b and WODM4-4 communities may support SAR bats, these communities consist of young vigorous trees with few standing snags and are unlikely to provide high quality bat maternity roost habitat. | Trees that are identified as candidate bat maternal roosting habitat must be taken down outside the active bat window (active window is March 31 to October 1). | Further studies (i.e. bat maternity roost surveys) are required to confirm the extent of impacts and whether surveys are required to determine absence or presence of SAR bats during the detailed design phase. |
| Upland SWH (Bat Maternity colonies, Eastern Wood-pewee, Monarch) | Vegetation removals could impact wildlife | Trees that are identified as candidate bat maternal roosting habitat must be taken down outside the active bat window (active window is March 31 to October 1).<br><br>An edge management plan and restoration plan should be implemented to ensure the integrity and continued ecological functioning of any impacted Significant Woodlands.<br><br>Where feasible, seeding within impacted areas within the ROW should include Common Milkweed and other forage species that can support pollinators. | Further studies (i.e. bat maternity roost surveys) are required to confirm the extent of impacts to bat maternity roosting habitat during the detailed design phase. |
| Area-sensitive bird species | Vegetation removals could impact the suitability of the forested and upland communities that support area-sensitive species | Evidence of Savannah Sparrow breeding were encountered from privately owned lands beyond the ROW.<br>The limited clearing required is unlikely to impact the ability for area-sensitive forest birds including American Redstart, Red-breasted Nuthatch, and White-breasted Nuthatch to continue persisting within the study area. Impacts to forested habitats will be mitigated through restoration plantings and an edge management plan. Any clearing activities should also be minimized to the greatest extent possible. Any clearing must be completed outside of the core breeding bird window. | Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections. |
| Wetland SWH (Turtle Wintering Areas, Eastern Ribbonsnake) | Impacts of construction (noise, dust) on wildlife | As required, dust from the work area will be controlled using suppressants.<br><br>ESC measures will be instated to prevent the ingress of sediments into the wetland communities.<br><br>Environmental noise will be reduced through the standard operating practices and conformity with noise by-law requirements. | Dust levels shall be regularly monitored for the duration of construction by an environmental monitor. The Environmental Inspector will ensure that all operational plans and construction timing associated with noise reduction are being followed. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| Wetland SWH (Turtle Wintering Areas, Eastern Ribbonsnake) | Reptiles (snakes and turtles) may be drawn to cleared areas to bask, increasing the risk of mortality from collisions with construction equipment and vehicles. Due to the proximity of development activities to potential turtle habitat in the adjacent wetland, there is also potential for turtles to nest in exposed soils within the construction limits. | The proposed ESC fencing will double as wildlife exclusion fencing. Fencing should be designed appropriately to exclude Snapping Turtles and Eastern Ribbonsnake. Fencing shall be designed per the recommendations listed within the *Reptile and Amphibian Exclusion Fencing: Best Practices* (MNRF, 2020). Fencing in combination with inspections by an environmental inspector will mitigate the potential for turtles to nest within the development envelope. Inspections shall be carried out daily during the active season for turtles (April to October) while there is adjacent construction. | An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies. |
| Dundas Valley Earth Science ANSI | Grading activities may impact the form of the Earth Sciences ANSI | Grading activities to accommodate the proposed intersection improvements will not include significant chances to topography or major changes to the landscape. Significant changes to topography or major earth moving activities are not anticipated. | None. |
| Summit Muskeg Preserve Provincial Life Sciences ANSI | Indirect impacts from future proposed construction activities | Direct impacts to the Summit Muskeg Preserve Provincial Life Sciences ANSI are not proposed. The proposed alignment will include a roundabout shifted westwards with minor encroachments into the MEFM1 / THDM4 community. Indirect impacts (i.e. sedimentation, erosion, invasive species encroachment) can be readily mitigated through the implementation of standard mitigation measures such as ESC fencing and monitoring, as described below. | An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies. |
| Rare species | Rare species may be directly and indirect impacts from proposed construction activities | The MASM1-14 and SAF_1-3 communities which supports Northern Watermeal will not be directly impacted by the proposed intersection improvements. ESC fencing will prevent sedimentation to the feature which impact its suitability to support Northern Watermeal.<br><br>Grading will be required within the WODM4b and WODM4-4communities ‘possible’ evidence of breeding activity for Carolina Wren was observed. Impacts to these communities will be mitigated through restoration plantings and edge management activities, ensuring that habitats remain suitable to support Carolina Wren. The proposed mitigation measures described within this table including offsetting plantings, edge managements, timing of vegetation removals, ESC measures, and associated monitoring activities will mitigate indirect impacts to these communities.<br><br>Furthermore similar habitats capable of support Carolina Wren is supported within the WODM4-4 south the Brantford-Hamilton Rail Trail, the FODM5, and WODM5-3 communities | An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies.<br><br>Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| Trees | Loss of woody vegetation along the WODM4-4 and WODM4b boundaries and creation of new woodland edges causing new growing conditions such as sun exposure and weed invasion. | A tree inventory will be completed during the detailed design to characterize and confirm required removals.<br><br>Impacts will be minimized to remaining trees by implementing measures such as tree protection or ESC fencing to protect trees from grading impacts near adjacent construction.<br><br>ESC measures and other specified protection measures must be installed prior to commencement of any construction or vegetation disturbance. No access, storage or stockpile of materials or equipment should occur within the area protected by the ESC and other protection measures.<br><br>A replanting plan may be required to compensate for tree loss. | An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies.<br><br>Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections. |
| Vegetation | Temporary disturbance of meadow, thicket, and woodland vegetation may be required for access and construction. | Tree protection fence and ESC measures will delineate the areas of access and construction to reduce impacts extending unnecessarily into adjacent lands.<br><br>Seeding of native grasses and wildflowers may be required to revegetate the disturbed areas that will be illustrated in replanting plan. | An Environmental Inspector should be engaged during the construction phase to review ESC and other protection measures for deficiencies.<br><br>Monitoring of mitigation / compensation plantings will be associated with plant warranty inspections. |
| Groundwater | Potential for localized groundwater quality impacts as a result of spills.<br><br>Temporary dewatering in the work area. | Refueling of equipment and fuel storage shall be conducted in designated areas, at least 30 m away from the watercourses and any existing wells, with spill protection provided.<br><br>The work area shall be dewatered as per recognized provincial standards and pumped into acceptable dewatering traps. These dewatering traps will be placed away from the watercourse to allow for infiltration prior to discharging to the watercourse. | ESC monitoring throughout construction.<br><br>Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction. |

| Feature | Description of Potential Effects | Mitigation Measures | Monitoring Activities |
|---|---|---|---|
| Surface Water / Hydrology / Stormwater | Potential for sediments to enter the water course due to stockpiling, excavation, and construction.<br><br>Potential for localized water quality impacts in the case of spills.<br><br>Potential for invasive species to enter the environment | The footprint of the disturbed area shall be minimized as much as possible, for example, vegetated buffers / setbacks will remain untouched adjacent to the watercourse, wherever possible.<br><br>An ESC Plan shall be developed during the detailed design phase of the project, prior to construction. Implementation of the erosion and sediment control measures shall conform to recognized standard specifications, such as Ontario Provincial Standards Specification (OPSS), and the requirements of GRCA.<br><br>A permit from the GRCA under the Prohibited Activities, Exemptions and Permits Regulation (O. Reg. 41/24) will be required prior to conducting the proposed works as work is proposed within a flood regulated area.<br><br>Stockpiled material will be stored and stabilized a minimum of 30 m from the watercourse and wetlands. All materials and equipment used for the purpose of site preparation and project completion will be operated and stored in a manner that prevents any deleterious substance (e.g., petroleum products, silt, etc.) from entering the water.<br><br>ESC measures (silt fence, rock check dams, etc.) shall be installed and maintained during the work phase, until the site has been stabilized. ESC measures will be inspected daily to ensure they are functioning and maintained as required. If ESC measures are not functioning properly, no further work will occur until the problem is resolved.<br><br>Temporary mitigation measures shall be installed prior to the commencement of any clearing, grubbing, excavation, filling, or grading works and must be maintained on a regular basis, prior to, and after precipitation events.<br><br>Water quality impacts related to surface water runoff shall be mitigated to avoid downstream impacts by controlling surface water run off within the boundaries of the site. All disturbed areas of the work site shall be stabilized immediately and revegetated as soon as conditions allow.<br><br>All equipment fueling and maintenance shall be done at least 30 m from the watercourse to ensure that no deleterious substances enter the waterway. The Contractor shall be required to develop Spill Prevention and Contingency Plans for construction and operational phases of the project. Personnel will be trained in how to apply the Plans, and the Plans will be reviewed to strengthen their effectiveness and ensure continuous improvement. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit will be on site at all times during the work. Spills will be reported to the Ontario Spills Action Center at 1-800-268-6060.<br><br>All equipment and personal protective equipment must arrive on-site clean to prevent the potential transfer of invasive species (i.e., phragmites) to the local environment. | Monitoring of surface water quality will be completed along with regular ESC monitoring as outlined above.<br><br>Spill management plan to be created and measures to contain potential spills are to be on-site throughout construction. |
| Invasive Species | Natural heritage features could be impacted through the introduction of invasive species during the construction process. | An environmental monitor shall ensure that all equipment entering the construction limits shall be clean and washed free of dirt, mud, and plant material. Contractors shall follow the *Clean Equipment Protocol for Industry* (Halloran et al. 2013). | Monitoring of vehicles and equipment entering the worksite by the environmental monitor. |

## 7.0 Future Commitments

The following future commitments are recommended to be addressed following the selection of the preferred alternative, as detailed design is being carried out:

- A review of proposed grading areas of the site for SAR wildlife habitats such as bat roost trees should be completed.
- Agency permits, licenses and approvals should be determined that are required to carry out the work, including GRCA permit to do work in regulated areas.
- A tree inventory will be completed to determine and characterize required removals.
- If encroachment into woodlands are anticipated, an edge management plan and restoration plan should be prepared during the detailed design to ensure the ecological integrity and function of Significant Woodlands are maintained. The edge management plan should include techniques and principles outlined within the TRCA's *Forest Edge management Plan Guidelines* (2004) and the City of Hamilton *Tree Protection Guidelines*. The restoration plan will be informed by the extent of woodland/ tree removals. Site appropriate native plant species loss should be minimized where possible, and a re-vegetation plan using native species and seed mix should be created. Opportunities for invasive species management such as European Buckthorn removal along newly created woodland margins should be explored during the detailed design phase of the project.
- If any Provincial SAR are identified during the tree inventory and/or associated detailed design studies, potential impacts will be mitigated to the extent possible and the MECP will be consulted with as needed to determine next steps and permitting requirements.
- Although not anticipated, any culvert replacements requiring impacts to the riparian areas of the near-bank cover plantings along the unnamed watercourse shall be included in the re-planting landscaping plan where possible, while considering the required offset of plantings from structures.
- An Erosion and Sediment Control (ESC) Plan shall be developed during the detailed design phase of the project in consultation with GRCA and will conform to industry best management practices and recognized standard specifications such as Ontario Provincial Standards Specification (OPSS).

- Further investigations should be undertaken to ensure the proposed alternatives will not impact potential erosion hazards that may be present due to the presence of the unnamed watercourse banks riverine slopes and/or the meander belt of the watercourse. The requirement for engineering assessments such as geotechnical or fluvial geomorphology should be confirmed with GRCA at the detailed design stage.
- The geometry and alignment of structures should be reviewed during the detailed design stage.
- All SWM-related components of the project shall be designed with consideration for increased precipitation due to climate change.
- Where erosion protection, channel regrading / stabilization or earth retaining structures are determined to be required, the use of “softer” means of protection shall be preferred over the use of hard surfaces unless it is unfeasible to do so.
- The required ESC measures shall be determined during detailed design to limit sediment migration and protect receiving watercourses. All disturbed areas of the construction site shall be stabilized and re-vegetated as soon as conditions allow.

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# Figures

Study Area (120m)

Extent of Alignment Options

**Sources:**

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|---|---|
| Datum: North American 1983 CSRS | |
| Coord. System: NAD 1983 CSRS UTM Zone 17N | |
| Projection: Transverse Mercator | |
| Central Meridian: 81°0'0.00"W | |
| False Easting: 500,000m | False Northing: 0m |
| Page Orientation: 0° | Scale Factor: 0.99960 |

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Grid North

0 25 50 75 100 125 150

Metres

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Client

**CITY OF HAMILTON**

Figure Title

**HAMILTON MCEA HWY 52 & POWERLINE INTERSECTION**
**NATURAL ENVIRONMENT REPORT**

STUDY AREA

| Drawn | Checked | Date | Figure No. |
|---|---|---|---|
| HN | SY | 2025/08/20 | 1 |
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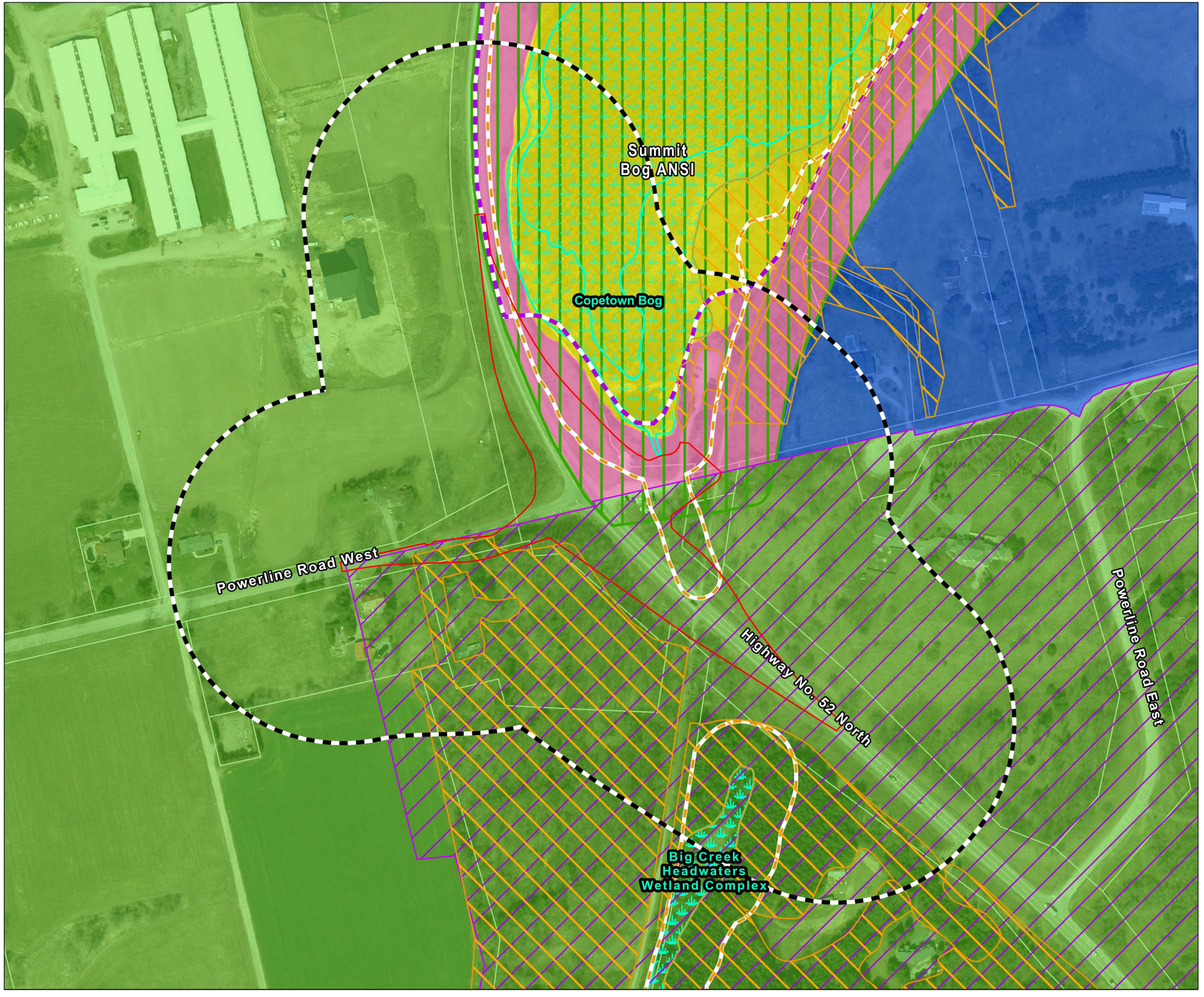


- Study Area (120m)
- Extent of Alignment Options
- Area of Natural and Scientific Interest - Life Science (MNRF)
- Greenbelt Protected Countryside
- Greenbelt Natural Heritage System
- Wetland
- Environmentally Significant Area (Rural Hamilton Official Plan)
- GRCA Regulated Area
- Significant Woodlands

Niagara Escarpment Plan Designation:

- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area

**Sources:**

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Client

**CITY OF HAMILTON**

Figure Title

**HAMILTON MCEA HWY 52 & POWERLINE INTERSECTION**
**NATURAL ENVIRONMENT REPORT**

POLICY CONSTRAINTS

| Drawn | Checked | Date | Figure No. |
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| HN | SY | 2025/08/21 | 2 |
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Study Area (120m)

Extent of Alignment Options

Ecological Land Classification

Breeding Bird Survey Station

Amphibian Survey Station

**ELC Descriptions**

BOTC2-1: Tamarack - Leatherleaf Treed Kettle Bog
CUM1: Mineral Cultural Meadow
CVR_4: Rural Property
FOD: Fresh - Moist Manitoba Maple Deciduous Woodland
FODM5: Dry - Fresh Sugar Maple Deciduous Forest
FOM: Mixed Forest
IAG: Agricultural Infrastructure
MAM: Meadow Marsh
MAS: Shallow Marsh
MASM1-14: Reed Canary Grass Mineral Shallow Marsh
MEFM1: Dry - Fresh Forb Meadow
MEGM3: Dry - Fresh Graminoid Meadow
MEMM3: Dry - Fresh Mixed Meadow
OAG: Open Agriculture
SAF_1-3: Duckweed Floating-leaved Shallow Aquatic
SWT: Thicket Swamp
TAGM1: Coniferous Plantation
THDM4: Dry - Fresh Deciduous Regeneration Thicket
WOD: Deciduous Woodland
WODM4: Dry - Fresh Deciduous Woodland
WODM4-4: Dry - Fresh Black Walnut Deciduous Woodland
WODM5-3: Fresh - Moist Manitoba Maple Deciduous Woodland

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| Projection: Transverse Mercator | |
| Central Meridian: 81°0'0.00"W | |
| False Easting: 500,000m | False Northing: 0m |
| Page Orientation: 0° | Scale Factor: 0.99960 |

N
Grid North

0 25 50 75 100 125 150
Metres

BURNSIDE

Client

**CITY OF HAMILTON**

Figure Title

**HAMILTON MCEA HWY 52 & POWERLINE INTERSECTION NATURAL HERITAGE NATURAL ENVIRONMENT REPORT**
ECOLOGICAL LAND CLASSIFICATION AND FIELD SURVEYS

| Drawn | Checked | Date | Figure No. |
|---|---|---|---|
| HN | SY | 2025/08/21 | 3 |
| Scale | | Project No. | |
| H 1:2,750 | | 300058803 | |

File Path: Z:\058803\000\08-GIS\058803 Powerline\058803 Powerline.aprx Print Date: 2025/08/21 Time: 04:30 PM

- Crossing
- Watercourse: Thermal Regime - Warm (MNRF and GRCA)
- Reach Break
- Constriction Point

## Headwater Drainage Feature Classification:

- Mitigation
- No Management Concern
- Extent of Alignment Options
- Study Area (120m)

**Sources:**

1. Ministry of Natural Resources, © Queen's Printer for Ontario
2. Natural Resources Canada © Her Majesty the Queen in Right of Canada.

**Disclaimer:**

R.J. Burnside & Associates Limited and the above mentioned sources and agencies are not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

| | |
|---|---|
| Datum: North American 1983 CSRS | |
| Coord. System: NAD 1983 CSRS UTM Zone 17N | |
| Projection: Transverse Mercator | |
| Central Meridian: 81°0'0.00"W | |
| False Easting: 500,000m | False Northing: 0m |
| Page Orientation: 0° | Scale Factor: 0.99960 |

N
Grid North

0 25 50 75 100 125 150
Metres

BURNSIDE

Client

**CITY OF HAMILTON**

Figure Title

**HAMILTON MCEA HWY 52 & POWERLINE INTERSECTION**
**NATURAL ENVIRONMENT REPORT**

AQUATICS

| Drawn | Checked | Date | Figure No. |
|---|---|---|---|
| HN | SY | 2025/09/18 | 4 |
| Scale | | Project No. | |
| H 1:3,750 | | 300058803 | |

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[THE DIFFERENCE IS OUR PEOPLE]

# Appendix A

# Photo Log

**Photo 1: Representative photo of the MEFM1 / THDM4 community**

**Photo 2: Representative photo of the MASM1-14 / SAF_1-3 communities**

**Photo 3: Representative photo of the MEMM3 community**

**Photo 4: Representative photo of the WODM5-3 community**

**Photo 5: Representative photo of the WODM5-3 community**

**Photo 6: Representative photo of the MEMM3 community**

**Photo 7: Representative photo the WODM4a community and MEGM3 community**

**Photo 8: Representative photo of the MEGM3 and TAGM1 communities**

**Photo 9: Representative photo of the TAGM1 community**

**Photo 10: Representative photo of the WODM4-4 community**

**Photo 11: Representative photo of the WODM4-4 community**

**Photo 12: Representative photo of the FODM5 community**

**Photo 13: Representative photo of the FODM4b community**

**Photo 14: The unnamed tributary of Big Creek during the March 19, 2025, site visit (spring freshet). Note the lack of standing water within the channel of R1**

**Photo 15: R1 of the unnamed tributary of Big Creek during the June 2025 site visit**

**Photo 16: Crossing CR1 (upstream). Note the extensive vegetation growth**

**Photo 17: Crossing CR1 (downstream). Note the extensive vegetation growth**

**Photo 18: Representative photo of reach R2. Note the extensive vegetation growth**

**Photo 19: Crossing CR2 inlet**

**Photo 20. Crossing CR2 outlet**

**Photo 21. Downstream of CR2.**

**Photo 22: Additional culvert outlet at the ON-52 and Hamilton-Brantford Rail Crossing (west side of ON-52)**

**Photo 23: CR3 inlet.**

**Photo 24: CR3 outlet.**

**Photo 25: Apparent location of the Reach R4 channel. The channel through this reach is largely undefined other than the culvert outlet**

**Photo 26: Location of Reach R4 channel**

**Photo 27: Upstream of constriction point 1 along Powerline Road East of feature H1**

**Photo 28: Downstream of constriction point 1 along Powerline Road East of feature H1**

**Photo 29: Ditchline that directs flows towards constriction point of feature H1 along Powerline Road East**

**Photo 30: Upstream conditions of constriction point 2 for feature H1 along the Hamilton-Brantford Rail Trail. This represents the primary feature of the two upstream features. Note the constructed wooden barrier**

**Photo 31: Upstream of constriction point 2 of feature H1 along the Hamilton-Brantford Rail Trail. This is the secondary feature upstream of constriction point 2**

**Photo 32: Conditions of feature H1 downstream of constriction point 2 along the Hamilton-Brantford Rail Trail**

**Photo 33: Rail ties within the channel of feature H1 downstream of constriction point 2 along the Hamilton-Brantford Rail Trail**

**Photo 34: Constriction point 2 of feature H1 along the Hamilton-Brantford Rail Trail**

**Photo 35: Conditions within feature H2 upstream of the constriction point 1 along ON-52 of feature H2**

**Photo 36: Conditions within feature H2 immediately upstream of the constriction point 1 along ON-52 of feature H2**

**Photo 37: The extensive vegetation growth within the upstream portion of feature H2**

**Photo 38: Constriction point 1 (crossing structure) of feature H2**

**Photo 39: Conditions of feature H2 downstream of constriction point along ON-52. Note the pool of standing water at the outlet**

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# Appendix B

# Plant List

**Botanical Inventory Plant List**

| *Scientific Name* | Common Name | ESA | COSEWIC | SARA | G-Rank | S-Rank | Native/ Introduced | Carolinian Zone - Hamilton (Oldham, 2017) | Hamilton-Brant-Wentworth-Oxford (Riley et al. 1989) | Hamilton NAI 3rd Ed. (Hamiton Field Naturalists Club 2014) |
|---|---|---|---|---|---|---|---|---|---|---|
| *Abutilon theophrasti* | Velvetleaf | - | - | - | GNR | SNA | I | IX | X | I |
| *Acer negundo* | Manitoba Maple | - | - | - | G5 | S5 | N | C | X | - |
| *Acer saccharinum* | Silver Maple | - | - | - | G5 | S5 | N | C | X | - |
| *Acer saccharum* | Sugar Maple | - | - | - | G5 | S5 | N | C | X | - |
| *Achillea millefolium* | Common Yarrow | - | - | - | G5 | SNA | I | IX | X | I |
| *Aegopodium podagraria* | Goutweed | - | - | - | GNR | SNA | I | IX | - | I |
| *Agrostis gigantea* | Redtop | - | - | - | G4G5 | SNA | I | IX | X | I |
| *Alliaria petiolata* | Garlic Mustard | - | - | - | GNR | SNA | I | IC | X | I |
| *Ambrosia artemisiifolia* | Common Ragweed | - | - | - | G5 | S5 | N | C | X | - |
| *Ambrosia trifida* | Great Ragweed | - | - | - | G5 | S5 | N | U | - | h |
| *Apocynum androsaemifolium* | Spreading Dogbane | - | - | - | G5 | S5 | N | C | X | - |
| *Arctium minus* | Common Burdock | - | - | - | GNR | SNA | I | IC | X | I |
| *Asarum canadense* | Canada Wild-ginger | - | - | - | G5 | S5 | N | C | X | - |
| *Asclepias syriaca* | Common Milkweed | - | - | - | G5 | S5 | N | C | X | - |
| *Bidens connata* | Purple-stemmed Beggarticks | - | - | - | G5 | S4? | N | - | - | - |
| *Bromus inermis* | Smooth Brome | - | - | - | G5T5 | SNA | I | IC | X | I |
| *Carex blanda* | Woodland Sedge | - | - | - | G5 | S5 | N | C | X | - |
| *Carex crinita* | Fringed Sedge | - | - | - | G5 | S5 | N | C | X | - |
| *Carex gracillima* | Graceful Sedge | - | - | - | G5 | S5 | N | C | X | - |
| *Carex rosea* | Rosy Sedge | - | - | - | G5 | S5 | N | C | X | - |
| *Catalpa speciosa* | Northern Catalpa | - | - | - | G4? | SNA | I | IR | - | I |
| *Centaurea stoebe* | Spotted Knapweed | - | - | - | GNR | SNA | I | IX | - | I |
| *Centaurea stoebe ssp. micranthos* | Spotted Knapweed | - | - | - | GNRTNR | SNA | I | - | X | I |
| *Cichorium intybus* | Wild Chicory | - | - | - | GNR | SNA | I | IC | X | I |
| *Circaea canadensis* | Broad-leaved Enchanter's Nightshade | - | - | - | G5 | S5 | N | C | X | - |
| *Cirsium arvense* | Canada Thistle | - | - | - | G5 | SNA | I | IC | X | I |
| *Cirsium vulgare* | Bull Thistle | - | - | - | GNR | SNA | I | IX | X | I |
| *Dactylis glomerata* | Orchard Grass | - | - | - | GNR | SNA | I | IC | X | I |
| *Daucus carota* | Wild Carrot | - | - | - | GNR | SNA | I | IC | X | I |
| *Dianthus deltoides* | Maiden Pink | - | - | - | GNR | SNA | I | - | - | - |
| *Dipsacus fullonum* | Common Teasel | - | - | - | GNR | SNA | I | IX | X | I |
| *Dryopteris carthusiana* | Spinulose Wood Fern | - | - | - | G5 | S5 | N | C | X | - |
| *Echinocystis lobata* | Wild Cucumber | - | - | - | G5 | S5 | N | C | X | - |
| *Elaeagnus umbellata* | Autumn Olive | - | - | - | GNR | SNA | I | IX | - | I |
| *Epilobium coloratum* | Purple-veined Willowherb | - | - | - | G5 | S5 | N | C | X | - |
| *Epipactis helleborine* | Broad-leaved Helleborine | - | - | - | GNR | SNA | I | IX | X | I |

| *Scientific Name* | Common Name | ESA | COSEWIC | SARA | G-Rank | S-Rank | Native/ Introduced | Carolinian Zone - Hamilton (Oldham, 2017) | Hamilton-Brant-Wentworth-Oxford (Riley et al. 1989) | Hamilton NAI 3rd Ed. (Hamiton Field Naturalists Club 2014) |
|---|---|---|---|---|---|---|---|---|---|---|
| *Equisetum arvense* | Field Horsetail | - | - | - | G5 | S5 | N | C | X | - |
| *Erigeron canadensis* | Canada Horseweed | - | - | - | G5 | S5 | N | C | X | - |
| *Erigeron philadelphicus* | Philadelphia Fleabane | - | - | - | G5 | S5 | N | C | X | - |
| *Euphorbia esula* | Leafy Spurge | - | - | - | GNR | SNA | I | - | - | I |
| *Eurybia macrophylla* | Large-leaved Aster | - | - | - | G5 | S5 | N | C | X | - |
| *Euthamia graminifolia* | Grass-leaved Goldenrod | - | - | - | G5 | S5 | N | C | X | - |
| *Fallopia dumetorum* | Hedge Bindweed | - | - | - | GU | SNA | I | - | - | I |
| *Fraxinus americana* | White Ash | - | - | - | G4 | S4 | N | C | X | - |
| *Fraxinus pennsylvanica* | Red Ash | - | - | - | G4 | S4 | N | C | - | - |
| *Galium mollugo* | Smooth Bedstraw | - | - | - | GNR | SNA | I | IX | X | I |
| *Geranium robertianum* | Herb-Robert | - | - | - | G5 | S5 | N | C | X | I |
| *Geum aleppicum* | Yellow Avens | - | - | - | G5 | S5 | N | C | X | - |
| *Geum canadense* | Canada Avens | - | - | - | G5 | S5 | N | C | X | - |
| *Geum laciniatum* | Rough Avens | - | - | - | G5 | S4 | N | C | X | - |
| *Geum macrophyllum* | Large-leaved Avens | - | - | - | G5 | S5 | N | - | - | - |
| *Geum macrophyllum var. perincisum* | Large-leaved Avens | - | - | - | G5T5 | S5 | N | - | - | - |
| *Glechoma hederacea* | Ground-ivy | - | - | - | GNR | SNA | I | IC | X | I |
| *Hackelia virginiana* | Virginia Stickseed | - | - | - | G5 | S5 | N | C | X | - |
| *Helenium autumnale* | Common Sneezeweed | - | - | - | G5 | S4 | N | - | - | - |
| *Hemerocallis fulva* | Orange Daylily | - | - | - | GNA | SNA | I | IX | X | I |
| *Hesperis matronalis* | Dame's Rocket | - | - | - | G4G5 | SNA | I | IC | X | I |
| *Hypericum perforatum* | Common St. John's-wort | - | - | - | GNR | SNA | I | IC | X | I |
| *Impatiens capensis* | Spotted Jewelweed | - | - | - | G5 | S5 | N | C | X | - |
| *Juglans nigra* | Black Walnut | - | - | - | G5 | S4? | N | C | X | - |
| *Lactuca canadensis* | Canada Lettuce | - | - | - | G5 | S5 | N | C | X | - |
| *Larix laricina* | Tamarack | - | - | - | G5 | S5 | N | C | X | - |
| *Leersia oryzoides* | Rice Cutgrass | - | - | - | G5 | S5 | N | C | X | - |
| *Leonurus cardiaca* | Common Motherwort | - | - | - | GNR | SNA | I | IC | X | I |
| *Leucanthemum vulgare* | Oxeye Daisy | - | - | - | GNR | SNA | I | IX | X | I |
| *Linaria vulgaris* | Butter-and-eggs | - | - | - | GNR | SNA | I | IC | X | I |
| *Lolium perenne* | Perennial Ryegrass | - | - | - | GNR | SNA | I | IC | X | I |
| *Lonicera tatarica* | Tatarian Honeysuckle | - | - | - | GNR | SNA | I | IX | X | I |
| *Lotus corniculatus* | Garden Bird's-foot Trefoil | - | - | - | GNR | SNA | I | IC | - | I |
| *Monarda fistulosa* | Wild Bergamot | - | - | - | G5 | S5 | N | C | X | - |
| *Morus alba* | White Mulberry | - | - | - | GNR | SNA | I | IC | X | I |
| *Oenothera biennis* | Common Evening-primrose | - | - | - | G5 | S5 | N | C | X | - |
| *Onoclea sensibilis* | Sensitive Fern | - | - | - | G5 | S5 | N | C | X | - |

| *Scientific Name* | Common Name | ESA | COSEWIC | SARA | G-Rank | S-Rank | Native/ Introduced | Carolinian Zone - Hamilton (Oldham, 2017) | Hamilton-Brant-Wentworth-Oxford (Riley et al. 1989) | Hamilton NAI 3rd Ed. (Hamiton Field Naturalists Club 2014) |
|---|---|---|---|---|---|---|---|---|---|---|
| *Oxalis stricta* | Upright Yellow Wood-sorrel | - | - | - | G5 | SNA | I | C | X | - |
| *Parthenocissus quinquefolia* | Virginia Creeper | - | - | - | G5 | S4? | N | C | P. inserta = X | - |
| *Parthenocissus vitacea* | Thicket Creeper | - | - | - | G5 | S5 | N | C | X | - |
| *Persicaria sagittate* | Arrow-leaved Smartweed | - | - | - | G5 | S4S5 | N | C | X | - |
| *Phalaris arundinacea* | Reed Canarygrass | - | - | - | G5 | S5 | N | C | X | - |
| *Phleum pratense* | Common Timothy | - | - | - | GNR | SNA | I | IC | X | I |
| *Picea abies* | Norway Spruce | - | - | - | G5 | SNA | I | IR | - | I |
| *Picea glauca* | White Spruce | - | - | - | G5 | S5 | N | C | - | I/N |
| *Pinus strobus* | Eastern White Pine | - | - | - | G5 | S5 | N | C | X | - |
| *Plantago lanceolata* | English Plantain | - | - | - | G5 | SNA | I | IC | X | I |
| *Poa pratensis* | Kentucky Bluegrass | - | - | - | G5 | S5 | N | IC | X | I |
| *Populus balsamifera* | Balsam Poplar | - | - | - | G5 | S5 | N | C | X | - |
| *Populus deltoides* | Eastern Cottonwood | - | - | - | G5 | S5 | N | C | X | - |
| *Populus grandidentata* | Large-toothed Aspen | - | - | - | G5 | S5 | N | C | X | - |
| *Populus tremuloides* | Trembling Aspen | - | - | - | G5 | S5 | N | C | X | - |
| *Prunus serotina* | Black Cherry | - | - | - | G5 | S5 | N | C | X | - |
| *Prunus virginiana* | Chokecherry | - | - | - | G5 | S5 | N | C | X | - |
| *Quercus rubra* | Northern Red Oak | - | - | - | G5 | S5 | N | C | X | - |
| *Ranunculus recurvatus* | Hooked Buttercup | - | - | - | G5 | S5 | N | C | X | - |
| *Reynoutria japonica* | Japanese Knotweed | - | - | - | GNR | SNA | I | IX | - | - |
| *Rhamnus cathartica* | European Buckthorn | - | - | - | GNR | SNA | I | IC | X | I |
| *Rhus typhina* | Staghorn Sumac | - | - | - | G5 | S5 | N | C | X | - |
| *Ribes americanum* | American Black Currant | - | - | - | G5 | S5 | N | C | X | - |
| *Ribes oxyacanthoides* | Canada Gooseberry | - | - | - | G5 | S5 | N | - | - | - |
| *Ribes rubrum* | European Red Currant | - | - | - | G4G5 | SNA | I | IX | X | I |
| *Robinia pseudoacacia* | Black Locust | - | - | - | G5 | SNA | I | IC | - | - |
| *Rosa multiflora* | Multiflora Rose | - | - | - | GNR | SNA | I | IC | X | I |
| *Rubus occidentalis* | Black Raspberry | - | - | - | G5 | S5 | N | C | X | - |
| *Rumex crispus* | Curled Dock | - | - | - | GNR | SNA | I | IX | X | I |
| *Salix alba* | White Willow | - | - | - | G5 | SNA | I | IX | X | I |
| *Schoenoplectus tabernaemontani* | Soft-stemmed Bulrush | - | - | - | G5 | S5 | I | C | X | - |
| *Securigera varia* | Purple Crown-vetch | - | - | - | GNR | SNA | N | IC | - | - |
| *Silene latifolia* | White Campion | - | - | - | GNR | SNA | N | IX | X | I |
| *Silene vulgaris* | Bladder Campion | - | - | - | GNR | SNA | N | IC | X | I |
| *Solidago altissima* | Tall Goldenrod | - | - | - | G5 | S5 | I | - | - | - |
| *Solidago canadensis* | Canada Goldenrod | - | - | - | G5 | S5 | I | C | X | - |
| *Solidago canadensis var. canadensis* | Canada Goldenrod | - | - | - | G5T5 | S5 | I | C | X | - |

| *Scientific Name* | Common Name | ESA | COSEWIC | SARA | G-Rank | S-Rank | Native/ Introduced | Carolinian Zone - Hamilton (Oldham, 2017) | Hamilton-Brant-Wentworth-Oxford (Riley et al. 1989) | Hamilton NAI 3rd Ed. (Hamiton Field Naturalists Club 2014) |
|---|---|---|---|---|---|---|---|---|---|---|
| *Sonchus arvensis* | Field Sow-thistle | - | - | - | GNR | SNA | I | IX | - | I |
| *Stellaria media* | Common Chickweed | - | - | - | GNRTNR | SNA | N | IC | X | I |
| *Symphyotrichum ericoides* | White Heath Aster | - | - | - | G5 | S5 | N | C | - | - |
| *Symphyotrichum lanceolatum* | Panicled Aster | - | - | - | G5 | S5 | N | C | - | - |
| *Symphyotrichum lateriflorum* | Calico Aster | - | - | - | G5 | S5 | I | C | - | - |
| *Symphyotrichum novae-angliae* | New England Aster | - | - | - | G5 | S5 | N | C | X | - |
| *Symphyotrichum ontarionis* | Ontario Aster | - | - | - | G5 | S5 | N | R | - | - |
| *Syringa vulgaris* | Common Lilac | - | - | - | GNR | SNA | N | IR | X | I |
| *Taraxacum officinale* | Common Dandelion | - | - | - | G5 | SNA | N | IC | X | I |
| *Thalictrum pubescens* | Tall Meadow-rue | - | - | - | G5 | S5 | I | C | X | - |
| *Torilis japonica* | Erect Hedge-parsley | - | - | - | GNR | SNA | N | IX | X | I |
| *Toxicodendron radicans* | Poison Ivy | - | - | - | G5 | S5 | N | - | X | - |
| *Tragopogon dubius* | Yellow Goatsbeard | - | - | - | GNR | SNA | N | IX | X | I |
| *Trifolium pratense* | Red Clover | - | - | - | GNR | SNA | N | IC | X | I |
| *Typha latifolia* | Broad-leaved Cattail | - | - | - | G5 | S5 | I | C | X | - |
| *Verbascum thapsus* | Common Mullein | - | - | - | GNR | SNA | I | IC | X | I |
| *Verbena urticifolia* | White Vervain | - | - | - | G5 | S5 | I | C | X | - |
| *Viburnum opulus* | Cranberry Viburnum | - | - | - | G5 | S5 | I | - | - | I |
| *Vicia cracca* | Tufted Vetch | - | - | - | GNR | SNA | N | IC | X | I |
| *Vinca minor* | Lesser Periwinkle | - | - | - | GNR | SNA | I | IX | X | I |
| *Vincetoxicum rossicum* | European Swallowwort | - | - | - | GNR | SNA | I | IX | X | I |
| *Vitis riparia* | Riverbank Grape | - | - | - | G5 | S5 | I | C | X | - |
| *Wolffia borealis cf* | Northern Watermeal | - | - | - | G5 | S5 | I | R | X | H |

Natural Heritage Information Centre. 2023. Vascular Plant Species List (September 20, 2023). Downloaded on September 20, 2023.

Varga, S., Leadbeater, D., Webber, J., Kaiser, J., Crins, B., Kamstra, J., Banville, D., Ashley, E., Miller, G., Kingsley, C., Jacobsen, C., Mewa, K., Tebby, L., Mosley, E., and E. Zajc. 2000. Distribution and Status of the Vascular Plants of the Greater Toronto Area. Ontario Ministry of Natural Resources Aurora District. 103 pp.

**ESA Status**
Species at Risk in Ontario list: The list of species that are classified as species at risk under the Endangered Species Act (2007).
EXT: Extinct – A species that no longer exists anywhere
EXP: Extirpated – A species that no longer exists in the wild in Ontario but still occurs elsewhere
END: Endangered – A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act (ESA)
THR: Threatened – A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed
SC: Special Concern (formerly Vulnerable) – A species with characteristics that make it sensitive to human activities or natural events
NAR: Not at Risk – A species that has been evaluated and found to be not at risk
DD: Data Deficient (formerly Indeterminate) – A species for which there is insufficient information for a provincial status recommendation

**COSEWIC Status**
Committee on the Status of Endangered Wildlife in Canada status: Species has been assessed by COSEWIC as having status, but status is not necessarily adopted on the official Schedule 1 to SARA.
EXT: Extinct – A species that no longer exists
EXP: Extirpated – A species no longer existing in the wild in Canada but occurring elsewhere
END: Endangered – A species facing imminent extirpation or extinction
THR: Threatened – A species likely to become endangered if limiting factors are not reversed
SC: Special Concern (formerly Vulnerable) – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats
NAR: Not at Risk – A species that has been evaluated and found to be not at risk of extinction given the current circumstances
DD: Data Deficient (formerly Indeterminate) – Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction

**SARA Schedule 1 Status**
Species at Risk Act Schedule 1 Status: Schedule 1 is the official list of species that are classified as extirpated, endangered, threatened, and of special concern. The Act establishes Schedule 1, as the official list of species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed species are implemented.
EXT: Extinct – A species that no longer exists
EXP: Extirpated – A species that no longer exists in the wild in Canada but exists elsewhere in the wild
END: Endangered – A species that is facing imminent extirpation or extinction
THR: Threatened – A species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction
SC: Special Concern – A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats

**Global Rank**
GX: Presumed Extinct (species)/Eliminated (ecological communities and systems) — Species not located despite intensive searches and virtually no likelihood of rediscovery. Ecological community or system eliminated throughout its range, with no restoration potential
GH: Possibly Extinct (species)/ Eliminated (ecological communities and systems) — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty
G1: Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2: Imperiled—At high risk of extinction or elimination due to very restricted range, very few populations, steep declines, or other factors.
G3: Vulnerable—At moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors.
G4: Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5: Secure—Common; widespread and abundant

**Variant Ranks**
G#G#: Range Rank – A numeric range rank (e.g., G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4)
GU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible (when the range of uncertainty is three consecutive ranks or less), a range rank (e.g., G2G3) should be used to delineate the limits (range) of uncertainty
GNR: Unranked – Global rank not yet assessed
GNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities

**Rank Qualifiers**
?: Inexact Numeric Rank – Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH
Q: Questionable taxonomy that may reduce conservation priority – Distinctiveness of this entity as a taxon or ecosystem type at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower priority (numerically higher) conservation status rank. The "Q" modifier is only used at a global level and not at a national or subnational level
C: Captive or Cultivated Only – Taxon or ecosystem at present is presumed or possibly extinct or eliminated in the wild across their entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside their native range, or as a reintroduced population or ecosystem restoration, not yet established. The "C" modifier is only used at a global level and not at a national or subnational level. Possible ranks are GXC or GHC. This is equivalent to "Extinct" in the Wild (EW) in IUCN's Red List terminology (IUCN 2001)

**Subnational Rank**

S-Rank: Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks but consider only those factors within the political boundaries of Ontario.

S1: Critically Imperiled – Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province

S2: Imperiled – Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province

S3: Vulnerable – Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation

S4: Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors

S5: Secure – Common, widespread, and abundant in the nation or state/province

S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4)

SX: Presumed Extirpated – Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered

SH: Possibly Extirpated (Historical) – Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences

SE: Species is considered exotic in Ontario

SNR: Unranked – Nation of state/province conservation status not yet assessed

SU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends

SNA: Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities

**Native?**

N: Native to Ontario. Species do not have exotic status under NHIC database

I: Introduced to Ontario. Species has exotic status rank under NHIC database

**Nature Counts 2 Project (2014)**

Nature Counts 2 Project. 2014. Hamilton Natural Areas Inventory, 3rd Edition. Hamilton Field Naturalists.

The Hamilton status was updated on the basis of new information obtained during field work from 2011-2013 and other observations recorded since 2003. The significance listed in this table is for Rare and Uncommon in the City of Hamilton.

**Codes are defined as follows:**

h: Uncommon (found in 11-25 survey stations)

H: Rare (found in 1-10 survey stations)

i: Introduced

**The Distribution and Status of the Vascular Plants of Central Region (Riley et. al.1989).**

Riley, J. et al. 1989. The Distribution and Status of the Vascular Plants of Central Region. Ontario Ministry of Natural Resources, Central Region, Richmond Hill, ON.

**Codes are defined as follows:**

E: Endangered – Cucumber Tree (*Magnolia acuminata*)

N: Nationally Rare – Rare in every province in which it occurs. A rare species is one that because of biological characteristics, occurs at edge of range, exists in low numbers, or in very restricted areas in the region under consideration

P: Provincially Rare – A species S-ranked (S1-SX) from the National Museum's "Atlas of Rare Vascular Plants of Ontario" (Argus et.al. 1982-88)

R: Regionally Rare – Native species are considered regionally rare if the species in considered rare wherever it occurs in Central Region especially in areas where recent local determinations of rarity have been made and/or if it is considered provincially rare in the portions in which species' status is insufficiently documented. Only naturally occurring populations are considered

X:

+ or I: Introduced species

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# Appendix C

# Breeding Bird Summary Table

**Breeding Bird Survey Summary Table**

| Common Name | Scientific Name | Provincial S-Rank[1] | City of Hamilton NAI, 3rd Ed.[7] | Provincial SARO (Endangered Species Act, 2007)[2] | Federal COSEWIC[3] | Federal SARA (Species at Risk Act)[3] | Federal SARA Schedule[4] | Provincial MNR Area Sensitive Species[5] | Highest Number Recorded (All Habitat Units Combined) | Highest Recorded Breeding Evidence[6] | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| American Crow | *Corvus brachyrhynchos* | S5 | Common | - | - | - | - | - | 1 | Observed, X | Flyover. |
| American Goldfinch | *Spinus tristis* | S5 | Abundant | - | - | - | - | - | 10 | Probable, T | - |
| American Redstart | *Setophaga ruticilla* | S5B | Uncommon | - | - | - | - | Yes | 10 | Probable, T | - |
| American Robin | *Turdus migratorius* | S5 | Abundant | - | - | - | - | - | 7 | Probable, T | - |
| Baltimore Oriole | *Icterus galbula* | S4B | Common | - | - | - | - | - | 6 | Possible, S/H | - |
| Black-capped Chickadee | *Poecile atricapillus* | S5 | Abundant | - | - | - | - | - | 5 | Probable, T | - |
| Blackpoll Warbler | *Setophaga striata* | S5B | | - | - | - | - | - | 1 | Observed, X | Late migrant, overheard from bog near parking lot during BBS 1 |
| Blue Jay | *Cyanocitta cristata* | S5 | Abundant | - | - | - | - | - | 3 | Possible, S | - |
| Brown-headed Cowbird | *Molothrus ater* | S5 | Abundant | - | - | - | - | - | 4 | Possible, S | - |
| Carolina Wren | *Thryothorus ludovicianus* | S4 | Rare | - | - | - | - | - | 3 | Possible, S | - |
| Cedar Waxwing | *Bombycilla cedrorum* | S5 | Common | - | - | - | - | - | 10 | Possible, S/H | - |
| Chestnut-sided Warbler | *Setophaga pensylvanica* | S5B | Uncommon | - | - | - | - | - | 2 | Possible, S | - |
| Chipping Sparrow | *Spizella passerina* | S5B, S3N | Abundant | - | - | - | - | - | 2 | Probable, T | - |
| Common Yellowthroat | *Geothlypis trichas* | S5B, S3N | Common | - | - | - | - | - | 5 | Probable, T | - |
| Cuckoo spp. | *Coccyzus spp.* | | | - | - | - | - | - | 1 | Possible, H | Observed flying overhead of wetland feature and during wetland boundary delineation, no calls overheard. The individual bird was not able to identified to species level. |
| Downy Woodpecker | *Dryobates pubescens* | S5 | Common | - | - | - | - | - | 1 | Possible, S | - |
| Eastern Bluebird | *Sialia sialis* | S5B,S4N | Uncommon | - | - | - | - | - | 1 | Observed, X | Encountered foraging near wetlands within the Study Area during watercourse characterization (June 26, 2025). |
| Eastern Kingbird | *Tyrannus tyrannus* | S4B | Abundant | - | - | - | - | - | 2 | Probable, T | - |
| Eastern Phoebe | *Sayornis phoebe* | S5B | Uncommon | - | - | - | - | - | 2 | Possible, S | - |
| Eastern Wood-pewee | *Contopus virens* | S4B | Common | SC | SC | SC | 1 | - | 3 | Probable, T | - |

| Common Name | Scientific Name | Provincial S-Rank[1] | City of Hamilton NAI, 3rd Ed.[7] | Provincial SARO (Endangered Species Act, 2007)[2] | Federal COSEWIC[3] | Federal SARA (Species at Risk Act)[3] | Federal SARA Schedule[4] | Provincial MNR Area Sensitive Species[5] | Highest Number Recorded (All Habitat Units Combined) | Highest Recorded Breeding Evidence[6] | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Field Sparrow | *Spizella pusilla* | S4B, S3N | Common | - | - | - | - | - | 3 | Possible, S | - |
| Gray Catbird | *Dumetella carolinensis* | S5B, S3N | Abundant | - | - | - | - | - | 7 | Probable, T | - |
| Great Crested Flycatcher | *Myiarchus crinitus* | S5B | Common | - | - | - | - | - | 1 | Probable, T | - |
| House Sparrow | *Passer domesticus* | SNA | Abundant | - | - | - | - | - | 1 | Possible, S | - |
| House Wren | *Troglodytes aedon* | S5B | Common | - | - | - | - | - | 5 | Possible, S | - |
| Indigo Bunting | *Passerina cyanea* | S5B | Common | - | - | - | - | - | 10 | Probable, T | - |
| Mourning Dove | *Zenaida macroura* | S5 | Abundant | - | - | - | - | - | 2 | Possible, S | - |
| Northern Cardinal | *Cardinalis cardinalis* | S5 | Abundant | - | - | - | - | - | 5 | Probable, T | - |
| Purple Martin | *Progne subis* | S3B | Uncommon | - | - | - | - | - | 1 | Observed, X | Flyover, observed foraging over lawns / agricultural field. Nesting boxes may be present in association with rural residential and farm properties. |
| Red-breasted Nuthatch | *Sitta canadensis* | S5 | Uncommon | - | - | - | - | Yes | 1 | Possible, S | - |
| Red-eyed Vireo | *Vireo olivaceus* | S5B | Common | - | - | - | - | - | 8 | Probable, T | - |
| Red-winged Blackbird | *Agelaius phoeniceus* | S5 | Abundant | - | - | - | - | - | 13 | Probable, T/A | - |
| Rose-breasted Grosbeak | *Pheucticus ludovicianus* | S5B | Common | - | - | - | - | - | 1 | Possible, S | - |
| Savannah Sparrow | *Passerculus sandwichensis* | S5B, S3N | Abundant | - | - | - | - | Yes | 3 | Probable, T | - |
| Song Sparrow | *Melospiza melodia* | S5 | Abundant | - | - | - | - | - | 10 | Probable, T | - |
| Swamp Sparrow | *Melospiza georgiana* | S5B, S4N | Common | - | - | - | - | - | 1 | Probable, T | - |
| Tennessee Warbler | *Leiothlypis peregrina* | S5B | | - | - | - | - | - | 1 | Observed, X | Late migrant, observed incidentally near parking lot after BBS 1 |
| Warbling Vireo | *Vireo gilvus* | S5B | Common | - | - | - | - | - | 1 | Possible, S | - |
| White-breasted Nuthatch | *Sitta carolinensis* | S5 | Common | - | - | - | - | Yes | 1 | Possible, S | - |
| Yellow Warbler | *Setophaga petechia* | S5B | Abundant | - | - | - | - | - | 10 | Probable, T | - |
| **TOTAL SPECIES** | **40** | | | | | | | | | | |

**[1]S-Ranks (provincial)**
Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario (Please refer to: Conservation Status Categories | NatureServe Explorer)

**SX — Presumed Extirpated** - Species or community is believed to be extirpated from the province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
**SH — Possibly Extirpated (Historical)** - Species or community occurred historically in the province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20–40 years. A species or community could become SH without such a 20–40-year delay if the only known occurrences in a province were destroyed or if it had been extensively and unsuccessfully looked for. The SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.
**S1 — Critically Imperiled** - Critically imperiled in the province or state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the province.
**S2 — Imperiled** - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the province.
**S3 — Vulnerable** - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
**S4 — Apparently Secure** - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
**S5 — Secure** - Common, widespread, and abundant in the province.
**SNR — Unranked** - Province conservation status not yet assessed.
**SU — Unrankable** - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
**SNA — Not Applicable** - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
**S#S# — Range Rank** - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
**S#? – Inexact or Uncertain** - Denotes inexact or uncertain numeric rank.

**Breeding Status Qualifiers**
B – Breeding Conservation status refers to the breeding population of the species in the nation or state/province.
N – Nonbreeding Conservation status refers to the non-breeding population of the species in the province.
M – Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the province.

**[2]SARO *Endangered Species Act, 2007***
(provincial status from http://www.ontario.ca/environment-and-energy/how-species-risk-are-listed#section-3)
The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).

**Extinct -** A species that no longer exists anywhere.
**Extirpated (EXT) -** Lives somewhere in the world, and at one time lived in the wild in Ontario but no longer lives in the wild in Ontario.
**Endangered (END)** - Lives in the wild in Ontario but is facing imminent extinction or extirpation.
**Threatened (THR)** - Lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.
**Special concern (SC)** - Lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.
**Not at Risk (NAR)** - A species that has been evaluated and found to be not at risk.
**Data Deficient (DD)** - A species for which there is insufficient information for a provincial status recommendation.

**[3]SARA (Federal *Species at Risk Act*) Status and Schedule (includes COSEWIC Status)**
The Act establishes Schedule 1, as the official list of wildlife species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

**Extinct** - A wildlife species that no longer exists.
**Extirpated (EXT)** - A wildlife species that no longer exists in the wild in Canada but exists elsewhere.
**Endangered (END)** - A wildlife species facing imminent extirpation or extinction.
**Threatened (THR)** - A wildlife species that is likely to become an endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
**Special Concern (SC)** - A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
**Data Deficient (DD)** - A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.
**Not At Risk (NAR)** - A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

**[4]SARA Schedule**
**Schedule 1:** is the official list of species that are classified as extirpated, endangered, threatened, and of special concern.
**Schedule 2:** species listed in Schedule 2 are species that had been designated as endangered or threatened and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
**Schedule 3:** species listed in Schedule 3 are species that had been designated as special concern and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of wildlife species at risk. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

[5]Source: Ontario Ministry of Natural Resources. 2000. *Significant Wildlife Habitat Technical Guide* & Appendices.

[7]Nature Counts 2 Project. 2014. Hamilton Natural Areas Inventory, 3rd Edition. Hamilton Field Naturalists.

Appendix C - Breeding Bird Survey Summary Table
300058803 – Hamilton MCEA Hwy 52 & Powerline Intersection

**[6]Ontario Breeding Bird Atlas - Breeding Evidence Codes**

| Observed | |
|---|---|
| X | Species observed during its breeding season, but NOT in suitable nesting habitat (no breeding evidence found). Note that this code is rarely used as birds tend to occupy nesting habitat during the breeding season. Do not use for species known to be migrants. |

| Possible | |
|---|---|
| H | Species observed in suitable nesting Habitat during its breeding season. |
| S | Singing male or adult producing other sounds associated with breeding (e.g., calls or drumming) in suitable nesting habitat during the species' breeding season. |

| Probable | |
|---|---|
| M | Multiple singing/calling/drumming individuals (7 or more) heard during one visit to a single square and in suitable nesting habitat during the species' breeding season. Use with caution to avoid counting migrants. |
| P | Pair observed in suitable nesting habitat during the species' breeding season. |
| T | Presumed Territory based on the presence of an adult bird (usually singing, but not necessarily so), in the same suitable nesting habitat patch on at least two visits, one week or more apart, during the species' breeding season. Use discretion when using this code. "T" is not to be used for colonial birds, or species that might forage or loaf a long distance from their nesting site (e.g., Turkey Vulture, and male waterfowl). |
| D | Courtship or displays involving a male and female (e.g., courtship feeding, copulation) or antagonistic behavior between two or more individuals (e.g., territorial disputes or chases), in suitable nesting habitat during the species' breeding season. |
| V | Bird Visiting a probable nest site in suitable nesting habitat during the species' breeding season. |
| A | Agitated behavior or alarm calls of an adult in suitable nesting habitat during the species' breeding season. |
| B | Brood patch or cloacal protuberance on an adult in suitable nesting habitat during the species' breeding season. |
| N | Nest-building by wrens or nest hole excavation by woodpeckers (both may build dummy or roosting nests, so nest-building alone is not enough to confirm breeding). |

| Confirmed | |
|---|---|
| NB | Nest building, including the carrying of nesting material, by all species except wrens and woodpeckers. |
| DD | Distraction Display, injury-feigning, or other displays attempting to draw attention away from a nest or young. |
| NU | Empty Nest Used or identifiable eggshells from earlier in the same nesting season. |
| FY | Recently Fledged Young (nidicolous species – whose young are raised in a nest) or downy young (nidifugous species – whose young leave the nest soon after hatching) incapable of sustained flight. |
| AE | Adult Entering, occupying, or leaving a nest site (visible or not) or whose behavior suggests the presence of an occupied nest. |
| FS | Adult carrying a Faecal Sac. |
| CF | Adult carrying food for young. |
| NE | Nest containing eggs. |
| NY | Nest with young (seen or heard). |

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# Appendix D

# SAR Screening Table

**Background Review of Potential Species at Risk and Species of Conservation Concern on the Subject Lands and/or Adjacent Lands**

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| **Birds** | | | | | | | | | |
| Acadian Flycatcher (Source: OBBA) | *Empidonax virescens* | S1B | END | END | END | Schedule 1 | Generally requires large areas of mature, undisturbed forest; avoids the forest edge; often found in well wooded swamps and ravines.[7] | No potential. Forested areas are unlikely to be sufficiently large. Configuration of the forested / swamp area may support interior forest birds but is well beyond the Study Area. No records for this species. | Confirmed absent. |
| Bank Swallow (Source: OBBA) | *Riparia riparia* | S4B | THR | THR | THR | Schedule 1 | Prefers open habitats including, farmland, lake/river shorelines, grasslands, and wetlands. Nests in exposed earthen banks along shorelines and in artificial sites such as gravel pits.[7] | No potential. Suitable habitat is absent from the Study Area. | Confirmed absent. |
| Barn Swallow (Source: OBBA) | *Hirundo rustica* | S4B | SC | SC | THR | Schedule 1 | Prefers farmland, lake/river shorelines, wooded clearings, urban populated areas, rocky cliffs, and wetlands. Nests inside or on exterior of buildings; under bridges and in road culverts; on rock faces, and in caves, etc.[8] | No potential. Suitable habitat to support this species is absent from the Study Area. | Confirmed absent. |
| Bobolink (Source: OBBA, NHIC) | *Dolichonyx oryzivorus* | S4B | THR | SC | THR | Schedule 1 | Generally prefers open grasslands and hay fields for nesting, typically featuring relatively tall vegetation. Sometimes uses large fields of winter wheat and rye in southwestern Ontario. Sensitive to vegetation structure and composition. Positively associated with high grass-to-forb ratios; moderate litter depth; tolerate wetter portions of fields compared to Eastern Meadowlark (EAME) and more likely to nest closer to field centres rather than field margins. Lower tolerance to presence of patches of bare ground. Appear to prefer larger fields than EAME.[9] | No potential. Suitable habitat to support this species is absent from the Study Area. | Confirmed absent. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Caspian Tern (Source: eBird, July 2022) | *Hydroprogne caspia* | S3B,S5M | - | - | - | - | Nest along large lakes and coastal areas.[7] | No. Suitable habitat to support this species is absent from the Study Area. Previous observations are from outside the core breeding bird window. | Confirmed absent. |
| Cerulean Warbler (Source: OBBA) | *Setophaga cerulea* | S2B | THR | END | END | Schedule 1 | Generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.[7] | No potential. Forested areas are unlikely to be sufficiently large. The configuration of the forested / swamp area may support interior forest birds but interior habitats are located well beyond the Study Area. | Confirmed absent. |
| Chimney Swift (Source: OBBA) | *Chaetura pelagica* | S3B | THR | THR | THR | Schedule 1 | Historically nested in large hollow trees, other tree cavities and cracks in cliffs. Currently, most are found in developed areas in large, uncapped chimneys. Proximity to lakes is also a preferred habitat feature as they will forage for flying insects close to water.[7] | No potential. Suitable habitat to support this species is absent from the Study Area. | Confirmed absent. |
| Eastern Meadowlark (Source: OBBA) | *Sturnella magna* | S4B, S3N | THR | THR | THR | Schedule 1 | Generally prefers grassy pastures, meadows and hay fields. Prefers moderately tall grass with abundant litter cover, a high proportion of grass cover, moderate forb density, low proportions of shrub and woody vegetation cover, and low percent of bare ground. Prefers to nest in drier sites and frequently nests around field margins.[9] | No potential. Suitable habitat to support this species is absent from the Study Area. | Confirmed absent. |
| Eastern Wood-pewee (Source: OBBA, eBird) | *Contopus virens* | S4B | SC | SC | SC | Schedule 1 | Prefers open space near the nest in the form of forest edges, clearings, roadways, and water. Does not require large areas of woods but occurs less frequently in woodlots surrounded by development than in those without.[7] | High potential. Suitable habitat present that may support this species. eBird records for this species indicate possible breeding based on 2024 observations completed within the appropriate breeding bird window. | Confirmed present within the FODM5 community. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Golden-winged Warbler (Source: OBBA) | *Vermivora chrysoptera* | S3B | SC | THR | THR | Schedule 1 | Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility rights-of-way, or recently logged areas.[7] | Low potential. Suitable habitat may occur along the margins of the Copetown Bog within the SWT community. No eBird or NHIC records for this species occur within the Study Limits. | Confirmed absent. |
| Great Egret (source: eBird, April 1993) | *Ardea alba* | S2B,S3M | - | - | - | - | Treed and shrubs of wetlands.[7] | No potential. The most recent report for this species is from 1993.<br><br>No known Great Egret breeding locations associated with the Summit Muskeg Preserve per the OBBA Atlas 2. Great Egrets were also not reported within the City of Hamilton NAI (3rd Edition) | Confirmed absent. |
| Olive-sided Flycatcher (Source: OBBA) | *Contopus cooperi* | S4B | SC | SC | THR | Schedule 1 | Generally prefers natural forest edges and openings. The breeding habitat usually consists of mixed forest adjacent to rivers or wetlands. This species commonly nests in conifers such as White and Black Spruce, Jack Pine and Balsam Fir.[10] | Moderate potential. May be supported within FOD, SWT and BOT2-1 communities. Records present for this species are from 2009. | Confirmed absent within the ROW. |
| Prothonotary Warbler (Source: OBBA) | *Protonotaria citrea* | S1B | END | END | END | Schedule 1 | Generally found in the dead trees of flooded woodlands or deciduous swamp forests of the Carolinian Zone.[7] | No potential. Suitable habitat to support this species is absent from the Study Area. | Confirmed absent. |
| Purple Martin (Source: OBBA) | *Progne subis* | S3 | - | - | - | - | In Ontario, typically nest within nesting boxes.[7] | Moderate potential. Nesting habitat may be supported beyond the ROW on privately owned residential areas. | Observed foraging within the Study Area. Suitable breeding habitat is not supported within the ROW. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Tufted Titmouse (Source: OBBA, NHIC | *Baeolophus bicolor* | S3 | - | - | - | - | Woodlands with large diameter trees and mast-producing species.[7] | Moderate potential. Suitable habitat may occur in association within all forested communities. | Confirmed absent. In association with the FODM5, WODM4a, WODM4b, and WODM4-4 communities.<br><br>May be supported within the FOD and FOM communities that were not subject to targeted breeding bird surveys. |
| Upland Sandpiper (Source: NHIC) | *Bartramia longicauda* | S2B | - | - | - | - | Nests within unused pastures, old fields with scattered tall shrubs, hayfields, and airports. Habitats must span >30 ha.[7] | No potential. The upland communities present within the Study Area are insufficiently large to support this species. | - |
| Wood Thrush (Source: OBBA) | *Hylocichla mustelina* | S4B | SC | THR | THR | Schedule 1 | Inhabits and breeds in woodlands ranging from small (3 ha) and isolated to large and contiguous. The presence of tall trees and a thick understorey are usually prerequisites for site occupancy.[7] | Moderate potential. Suitable habitat may occur in association with the FOD and FOM communities. | Confirmed absent. In association with the FODM5, WODM4a, WODM4b, and WODM4-4 communities.<br><br>May be supported within the FOD and FOM communities that were not subject to targeted breeding bird surveys. |
| Yellow-breasted Chat (Source: OBBA) | *Icteria virens* | SNA | - | END | END | Schedule 1 | Prefers scrubby, early successional habitats. In Ontario, the Yellow-breasted Chat uses regenerating old fields, forest edges, railway and hydro rights-of-way, young coniferous reforestations and occasionally wet willow-ash-elm thickets bordering wetlands. Tangles of grape and raspberry are also a habitat feature of most breeding sites.[7] | Unlikely to be supported. Suitable habitat is limited to the margins of the swamp communities. No recent records of this species. | Confirmed absent. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| **Insects** | | | | | | | | | |
| Monarch Butterfly (Source: NAI) | *Danaus plexippus* | S2N,S4B | SC | END | SC | Schedule 1 | Throughout their life cycle, Monarchs use three different types of habitat. Only the caterpillars (larvae) feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Monarchs spend the winter in Oyamel Fir forests found in central Mexico. The largest threat to Ontario Monarchs is habitat loss and fragmentation at overwintering sites in central Mexico where forests are being logged and converted into agricultural fields and pastures. Widespread pesticide and herbicide use throughout the Monarch's range may also limit recovery.[10] | Moderate potential. Sightings of the species have been observed within the Copetown Bog. | Confirmed present. Adult monarchs observed foraging within the CUT1 and MAM communities. |
| **Mammals** | | | | | | | | | |
| Eastern Small-footed Myotis (Source: RJB) | *Myotis leibii* | S2 | END | END | END | Schedule 1 | Overwintering habitat: Caves and abandoned mines. According to the Recovery Strategy for the Eastern Small-footed Myotis in Ontario, summer / roosting habitats used by the species in Ontario are poorly understood, but elsewhere in its range it primarily roosts in open, sunny rocky habitats, and, occasionally, in buildings. Summer roosts for this species are believed to be located in close proximity to their hibernacula (i.e., less than 100 m). The species' preference for rocky habitats in summer may limit an individual's home range to those rocky areas which also contain hibernacula (i.e., karst areas and Canadian Shield areas containing abandoned mines with adits).[16] | No potential. Rockpiles or naturally occurring features that may support Eastern Small-footed Myotis are absent within the ROW<br><br>Outbuildings associated with rural residential properties may support this species. | Not observed. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Eastern Red Bat (Source: RJB) | *Lasiurus borealis* | S4 | END | END | 0 | 0 | Roost within the foliage of trees and shrubs in both deciduous and coniferous trees in forests of any age class. Eastern Red bats are known to avoid roosting within conifer species if deciduous trees are present. Typical roost trees are large in diameter and are as tall or taller than the surrounding canopy. Roost sites tend to be along southern aspects and are sheltered from the wind, with Eastern Red Bats being known to be select locations are that unlikely to experience temperature extremes. This species is known to utilize a number of roost trees during the season with average roosting areas spanning < 1 ha during the summer months. [26] | Moderate potential. May be supported within deciduous woodlands, deciduous forests, and mixed forest communities. | Not observed. |
| Hoary Bat (Source: RJB) | *Lasiurus cinereus* | S4 | END | END | 0 | 0 | Roost within the foliage of trees and shrubs in both deciduous and coniferous trees in forests of any age class. Typical roost trees are large in diameter and are as tall or taller than the surrounding canopy. Roost sites tend to be along southern aspects and are sheltered from the wind.[26] | Moderate potential. May be supported within deciduous woodlands, deciduous forests, mixed forest, TAGM1, and BOT2-1 / BOTC2-1 communities. | Not observed. |
| Little Brown Myotis (Source: RJB) | *Myotis lucifugus* | S3 | END | END | END | Schedule 1 | Overwintering habitat: Caves and mines that remain above 0 degrees Celsius.<br>Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).[15] | Moderate potential. May be supported within deciduous woodlands, deciduous forests, mixed forest, TAGM1, and BOT2-1 / BOTC2-1 communities . | Not observed. |
| Northern Myotis (Source: RJB) | *Myotis septentrionalis* | S3 | END | END | END | Schedule 1 | Overwintering habitat: Caves and mines that remain above 0<br>Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.).[15] | Moderate potential. May be supported within deciduous forests, mixed forest, TAGM1, and BOT2-1 / BOTC2-1 communities. | Not observed. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Silver-haired Bat (Source: RJB) | *Lasionycteris noctivagans* | S4 | END | END | 0 | 0 | Primarily roost under large sheets of exfoliating bark and within tree cavities. This species will typically roost within a variety of large diameter coniferous and deciduous roost trees. High-quality roost trees include trees with heart-rot infections at the site of limb breakages that have resulted in the creation of well-protected inner chambers. Members of this species, including lactating females, are well documented to roost switch. Silver-haired bats are also known to occasionally roost on or within buildings but only when treed habitats are scarce. [26] | Moderate potential. May be supported within deciduous woodlands, deciduous forests, mixed forest, TAGM1, and BOT2-1 / BOTC2-1 communities. | Not observed. |
| Tri-colored Bat (Source: RJB) | *Perimyotis subflavus* | S3? | END | END | END | Schedule 1 | Overwintering habitat: Deepest parts of caves and mines where temperature is the least variable. Maternal Roosts: Less is known about roosts of Tri-colored Bats. Most roost sites found within forested habitats. May roost in clumps of dead foliage and lichens. In more anthropogenically modified landscapes, maternity roosts may be barns or similar human-made structures.[15] | Moderate potential. May be supported within deciduous woodlands, deciduous forests, and mixed forest communities. | Not observed. |
| **Plants** | | | | | | | | | |
| American Chestnut (Source: NHIC) | *Castanea dentata* | S1S2 | END | END | END | Schedule 1 | Found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.[20] | Low potential. Suitable habitat may occur in association with upland forest communities. | Confirmed absent within the ROW. |
| American Columbo (Source: Oldham and Brinker, 2009) | *Frasera caroliniensis* | S2 | END | END | END | Schedule 1 | Occurs on dry mesic to mesic clay and clay-loam as well as mesic silty clay soils in open deciduous woodlands, forests, dense thickets, and meadows.[25] | No potential. Suitable soils to support this species are absent. | Confirmed absent within the ROW. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| American Ginseng (Source: Oldham and Brinker, 2009) | *Panax quinquefolius* | S2 | END | END | END | Schedule 1 | Grows in rich, moist, undisturbed and relatively mature deciduous woods in areas of neutral soil (such as over limestone or marble bedrock).[20] | No potential. Suitable habitat to support this species is absent. | Confirmed absent within the ROW. |
| Bashful Clubrush (Source: Oldham and Brinker, 2009) | *Trichophorum planifolium* | S1 | END | END | END | Schedule 1 | Open forests with open understory. Typically associated with tallgrass prairies. Common associates include White Oak (Quercus alba), Black Oak (Quercus velutina), and White Pine (Pinus strobus).[24] | No potential. Suitable habitat to support this species is absent. | Confirmed absent within the ROW. |
| Black Ash (Source: RJB) | *Fraxinus nigra* | S4 | END | END | - | 0 | Commonly occurs within wetlands including swamps, floodplains and fens.[13] | Moderate potential. Suitable habitat may occur in association with the MAM community. | Confirmed absent within the ROW. |
| Billing's Three-seeded Sedge | *Carex trisperma var. billingsii* | S2S3 | - | - | - | - | Occurs within bogs and conifer swamps. [24] | Known to occur within the Copetown Bog. | Assumed present. Vegetation surveys were not carried out within the Copetown Bog. |
| Butternut (Source: Oldham and Brinker, 2009) | *Juglans cinerea* | S2? | END | END | END | Schedule 1 | Butternut grows best in rich, moist and well-drained soils or limestone gravel sites. They are less commonly found in dry, rocky and sterile soils. They generally grow alone or in small groups in deciduous forests that are commonly comprised of Basswood, Black Cherry, Beed, Black Walnut, Elm, Hemlock, Hickory, Oak, Red Maple, Sugar Maple, Poplar, White Ash and Yellow Birch.6 In Ontario, they can be found throughout the southern Ontario, south of the Canadian Shield.[10] | Moderate potential. May be supported within deciduous forest and woodlands | Confirmed absent within the ROW. |
| Downy yellow false foxglove (Source: Oldham and Brinker, 2009) | *Aureolaria virginica* | S1 | END | END | 0 | 0 | Well drained soils in dry, open to semi-open, upland oak forests, woodlands and savanna. Known to grow on sand dunes, sand plains, clay ridges, slopes, stony loams on moraines, and shallow soils over carbonate bedrock.[25] | No potential. Suitable habitat is absent from the Study Area. | Confirmed absent within the ROW. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Eastern Flowering Dogwood (Source: Oldham and Brinker, 2009) | *Cornus florida* | S2? | END | END | END | Schedule 1 | Generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around forest edges and hedgerows.[20] | Low potential. May be supported within deciduous forests. | Confirmed absent within the ROW. |
| Eastern Prairie Fringed Orchid (Source: Oldham and Brinker, 2009) | *Platanthera leucophaea* | S2 | END | END | END | Schedule 1 | Occurs within wet prairies and fens. Also known to occur within Tamarack Swamps along the Bruce Peninsula and Ottawa area.[22] | No potential. Suitable habitat is absent. | Confirmed absent within the ROW. |
| Fern-leaved Yellow False Foxglove (Source: Oldham and Brinker, 2009) | *Aureolaria pedicularia* | S3? | THR | THR | 0 | 0 | Occurs on dry sandy soils of open woodlands and savannahs, particularly Black Oak savannahs. Common associates include Hickory and Pine.[25] | No potential. Suitable habitat is absent. | Confirmed absent within the ROW. |
| Green Dragon (Source: Oldham and Brinker, 2009) | *Arisaema dracontium* | S3 | SC | SC | SC | 0 | Floodplain forests, swamps. and along watercourses.[25] | Unlikely to be supported. | Confirmed absent within the ROW. |
| Hoary mountain-mint (Source: Oldham and Brinker, 2009) | *Pycnanthemum incanum* | S1 | END | END | END | Schedule 1 | Open, dry, sandy-clay soils in open woodlands, often along slopes.[25] | No potential. Suitable habitat is absent. | Confirmed absent within the ROW. |
| Perfoliate Bellwort (Source: NHIC) | *Uvularia perfoliata* | S1S2 | - | - | - | - | Occurs within rich woods and thickets.[24] | Moderate potential/ May be supported within the forested communities. | Confirmed absent within the publicly accessible portions of the FODM5, WODM4a, WODM4b, and WODM4-4 communities.<br><br>May be supported within the FOM and FOD communities that within the Study Area beyond the ROW that were not included within RJB's field program. |
| Red Mulberry (Source: Oldham and Brinker, 2009) | *Morus rubra* | S2 | END | END | END | Schedule 1 | Generally grows in moist forest habitats. In Ontario, these include slopes and ravines of the Niagara Escarpment, and sand spits and bottom lands; Can grow in open areas such as hydro corridors.[20] | No potential. This species is known to occur along the Escarpment within the City of Hamilton. | Confirmed absent within the ROW. |
| Smooth Yellow False Foxglove (Source: Oldham and Brinker, 2009) | *Aureolaria flava* | S2? | THR | THR | THR | 1 | Dry, open to semi-open upland oak forests and oak woodlands with well-drained soils, hemi-parasitic with White Oak.[25] | No potential. Suitable habitat is absent. | Confirmed absent within the ROW. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| White Wood Aster (Source: Oldham and Brinker, 2009) | *Eurybia divaricata* | S3 | THR | THR | THR | Schedule 1 | Generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.[20] | No potential. Extirpated from the Hamilton area. | Confirmed absent within the ROW. |
| **Reptiles and Amphibians** | | | | | | | | | |
| Midland Painted Turtle (Source: ORAA, iNaturalist) | *Chrysemys picta marginata* | S4 | No Status | SC | SC | 1 | Generally, prefers waterbodies such as ponds, marshes, lakes and slow-moving creeks that have a soft bottom and provide abundant basking sites and aquatic vegetation.[10] | Confirmed present. Several scientific grade observations made within the SAS/MAS community of the Copetown Bog. | Confirmed absent within the ROW. |
| Eastern Hog-nosed Snake (Source: ORAA) | *Heterodon platirhinos* | S3 | THR | THR | THR | Schedule 1 | The Eastern Hog-nosed Snake specializes in hunting and eating toads, and usually only occurs where toads can be found. Eastern Hog-nosed Snakes prefer sandy, well-drained habitats such as beaches and dry forests where they can lay their eggs and hibernate. They use their up-turned snout to dig burrows below the frost line in the sand where eggs are deposited.[10] | No potential. No NHIC or iNaturalist records within the vicinity of the project limits. Records for this species are historical. Per the Hamilton NAI (3rd edition), this species is not known to occur within the City of Hamilton. | Confirmed absent within the ROW. |
| Eastern Milksnake (Source: ORAA) | *Lampropeltis triangulum* | S4 | No status | SC | SC | 1 | Habitat generalist. Found in wide variety of habitats, from open woodlands, bogs, swamps, woodland edges, marshes, lakeshores, old fields, pastures, farmyards, parks, gardens. Often in or near farm outbuildings, barns, and sheds, and are attracted to piles of rocks, logs, firewood, or building materials, or any place that offers shelter to snakes and their prey (rodents).[10] | Moderate potential. May occur in all upland communities. Eastern Milksnake was not incidentally encountered throughout the course of field investigations. | Confirmed absent within the ROW. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Eastern Ribbonsnake (Source: ORAA) | *Thamnophis sauritus* | S4 | SC | SC | SC | Schedule 1 | Generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.[20] | Moderate potential. Suitable habitat occurs in association with the MASM1-14 / SAF_1-3, MAM, MAS, and SWT communities. | Not observed.<br><br>Although this species was not incidentally encountered within the MASM1-14 / SAF_1-3 community, targeted reptile surveys were not included within the scope of field investigations. This species may be supported within the MASM1-14 / SAF_1-3, MAM, MAS, and SWT communities. |
| Jefferson salamander (Source: ORAA) | *Ambystoma jeffersonianum* | S2 | END | END | END | Schedule 1 | Inhabits deciduous and mixed deciduous forests with suitable breeding areas which generally consist of ephemeral (temporary) bodies of water that are fed by spring runoff, groundwater, or springs.[14] | Unlikely to be supported. Suitable habitats are absent within the Study Area. | Confirmed absent within the ROW. |
| Unisexual Ambystoma | *Ambystoma laterale - (2) jeffersonianum* | 0 | - | END | END | Schedule 1 | Live in leaf litter, under logs and in underground cavities in deciduous and mixed forests, typically within close proximity to breeding habitats. Adults breed in vernal pools or fish-free permanent wetlands. Juveniles will leave the pond after transforming from the larval stage and head into the surrounding forest. These salamanders overwinter underground where they can get below the frost line and avoid freezing temperatures such as in mammal burrows, rock crevices or other underground cavities.[10] | Unlikely to be supported. Suitable habitats are absent within the Study Area. | Confirmed absent within the ROW. |
| Midland Painted Turtle (Source: ORAA, iNaturalist) | *Chrysemys picta marginata* | S4 | No Status | SC | SC | 1 | Generally, prefers waterbodies such as ponds, marshes, lakes and slow-moving creeks that have a soft bottom and provide abundant basking sites and aquatic vegetation.[10] | Confirmed present. Several scientific grade observations made within the SAS/MAS community of the Copetown Bog. | Confirmed absent within the ROW. |

| COMMON NAME **(Source) | SCIENTIFIC NAME | Provincial S-RANK[1] | Provincial SARO Status[2] | COSEWIC[3] | Federal SARA Status[3] | Federal SARA Schedule[4] | Habitat Description[5] | Habitat Present on the Subject Lands and/or Adjacent Lands? | Species observed? |
|---|---|---|---|---|---|---|---|---|---|
| Snapping Turtle (Source: ORAA) | *Chelydra serpentina* | S4 | SC | SC | SC | 1 | Generally, inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.[9] | Moderate potential. Suitable habitat occurs in association with the MASM1-14 / SAF_1-3, MAS / SWT communities. | Not observed.<br><br>Although this species was not incidentally encountered within the MASM1-14 / SAF_1-3 community, targeted reptile surveys were not included within the scope of field investigations. This species may be supported within the MASM1-14 / SAF_1-3, MAM, MAS, and SWT communities. |
| Western Chorus Frog (Source: ORAA) | *Pseudacris maculata* | S4 | No status | THR (Great Lakes - St Lawrence population in Canada) | THR (Great Lakes - St Lawrence population in Canada) | *1* | The Western Chorus Frog is primarily a lowland terrestrial species. In marshes or wooded wetland areas, it is found on the ground or in low shrubs and grass. Like all other frogs, the Western Chorus Frog requires both terrestrial and aquatic habitats in close proximity. For breeding and tadpole development, it requires seasonally dry temporary ponds devoid of predators, particularly fish. It is very rarely found in permanent ponds. In southern Ontario, its range is bounded by the United States border in the south, Georgian Bay in the northwest, and south of Algonquin Park and up the Ottawa River valley to the vicinity of Eganville in the east. [7, 8, 10] | Moderate potential. Suitable habitat occurs in association with the unnamed tributary, SAS, MAS, and SWT communities. | Confirmed absent within the MASM1-14 / SAF_1-3 communities.<br><br>May be supported within the MAS / SWT communities as well as the MAM communities that were not subject to RJB review. |

**Sources: Natural Heritage Information Centre (NHIC) database of records searched on February 7, 2025 (4- 1x1 km2 Squares: 17NH7685, 17NH7686, 17NH7785, 17NH7786); Ontario Breeding Bird Atlas (2001-2005) searched on February 7, 2025 (Squares 17NH78); Ontario Reptile and Amphibian Atlas (ORAA) searched on February 7, 2025 (Squares 17NH78); Nature Counts 2 Project. Hamilton Natural Areas Inventory, 3rd Edition (, R.J. Burnside & Associates (Burnside) observations during ecological field surveys in 2025.

**[1]S-Ranks (provincial)**
Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario (Please refer to: http://explorer.natureserve.org/nsranks.htm)

**SX — Presumed Extirpated** - Species or community is believed to be extirpated from the province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
**SH — Possibly Extirpated (Historical)** - Species or community occurred historically in the province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20–40 years. A species or community could become SH without such a 20-40 year delay if the only known occurrences in a province were destroyed or if it had been extensively and unsuccessfully looked for. The SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.
**S1 — Critically Imperiled** - Critically imperiled in the province or state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the province.

**S2 — Imperiled** - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the province.
**S3 — Vulnerable** - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
**S4 — Apparently Secure** - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
**S5 — Secure** - Common, widespread, and abundant in the province.
**SNR — Unranked** - Province conservation status not yet assessed.
**SU — Unrankable** - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
**SNA — Not Applicable** - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
**S#S# — Range Rank** - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
**S#? – Inexact or Uncertain** - Denotes inexact or uncertain numeric rank.

**Breeding Status Qualifiers**
B – Breeding Conservation status refers to the breeding population of the species in the nation or state/province.
N – Nonbreeding Conservation status refers to the non-breeding population of the species in the province.
M – Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the province.

[2]**SARO *Endangered Species Act, 2007***
(provincial status from http://www.ontario.ca/environment-and-energy/how-species-risk-are-listed#section-3)
The provincial review process is implemented by the MNRF's Committee on the Status of Species at Risk in Ontario (COSSARO).

**Extinct -** A species that no longer exists anywhere.
**Extirpated (EXT) -** Lives somewhere in the world, and at one time lived in the wild in Ontario but no longer lives in the wild in Ontario.
**Endangered (END)** - Lives in the wild in Ontario but is facing imminent extinction or extirpation.
**Threatened (THR)** - Lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.
**Special concern (SC)** - Lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.
**Not at Risk (NAR)** - A species that has been evaluated and found to be not at risk.
**Data Deficient (DD) -** A species for which there is insufficient information for a provincial status recommendation.

[3]**SARA (Federal *Species at Risk Act*) Status and Schedule (includes COSEWIC Status)**
The Act establishes Schedule 1, as the official list of wildlife species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented.

**Extinct** - A wildlife species that no longer exists.
**Extirpated (EXT)** - A wildlife species that no longer exists in the wild in Canada but exists elsewhere.
**Endangered (END)** - A wildlife species facing imminent extirpation or extinction.
**Threatened (THR)** - A wildlife species that is likely to become an endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
**Special Concern (SC)** - A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
**Data Deficient (DD)** - A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.
**Not At Risk (NAR)** - A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

[4]**SARA Schedule**
**Schedule 1:** is the official list of species that are classified as extirpated, endangered, threatened, and of special concern.
**Schedule 2:** species listed in Schedule 2 are species that had been designated as endangered or threatened and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
**Schedule 3:** species listed in Schedule 3 are species that had been designated as special concern and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of wildlife species at risk. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of SARA. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Wildlife Species at Risk.

[5]**Sources:**
[7] Cadman, M.D., et al. (eds). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp
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BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Appendix E

## Significant Wildlife Habitat Screening Table

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Table 1.1: Seasonal Concentration Areas of Animals** | | | | | | |
| **Waterfowl Stopover & Staging Areas (Terrestrial)**<br><br>**<u>Rationale:</u>**<br>Habitat important to migrating waterfowl. | CUM1<br>CUT1 - Plus evidence of annual spring flooding from melt water or run-off within these ecosites.<br>Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lake St. Clair, Grand Bend and Point Pelee areas may be important to Tundra Swans. | Fields with sheet water during Spring (mid-March to May).<br>• Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.<br>• Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. | No potential<br>• Suitably large CUT1 and CUM1 communities to support large aggregations of waterfowl are absent. | American Black Duck<br>Northern Pintail<br>Gadwall<br>Blue-winged Teal<br>Green-winged Teal<br>American Wigeon<br>Northern Shoveler<br>Tundra Swan | Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects.<br>• Any mixed species aggregations of 100 or more individuals required.<br>• The flooded field ecosite habitat plus a 100300 m radius area, dependent on local site conditions and adjacent land use is the SWH.<br>• Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates).<br>• **SWHMiST Index #7** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Waterfowl Stopover & Staging Areas (Aquatic)**<br><br>**<u>Rationale:</u>**<br>Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district. | MAS1<br>MAS2<br>MAS3<br>SAS1<br>SAM1<br>SAF1<br>SWD1<br>SWD2<br>SWD3<br>SWD4<br>SWD5<br>SWD6<br>SWD7 | • Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and SWM ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify.<br>• These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). | No potential<br>• SWD communities are limited to the margins of a SWC community. MAS communities are present but are unlikely to be sufficiently large to support aggregations of waterfowl. | Canada Goose<br>Cackling Goose<br>Snow Goose<br>American Black Duck<br>Northern Pintail<br>Northern Shoveler<br>American Wigeon<br>Gadwall<br>Green-winged Teal<br>Blue-winged Teal<br>Hooded Merganser<br>Common Merganser<br>Lesser Scaup<br>Greater Scaup<br>Long-tailed Duck<br>Surf Scoter<br>White-winged Scoter<br>Black Scoter<br>Ring-necked duck<br>Common Goldeneye<br>Bufflehead<br>Redhead<br>Ruddy Duck<br>Red-breasted Merganser<br>Brant<br>Canvasback<br>Ruddy Duck | **Studies carried out & verified presence of:**<br><br>• Aggregations of 100 or more of listed species for 7 days, results in >700 waterfowl use days.<br>• Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH.<br>• The combined area of the Ecological Land Classification (ELC) ecosites and a 100 m radius area is the SWH.<br>• Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are SWH.<br>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.<br>• Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded).<br>• **SWHMiST Index #7** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent.<br><br>• This area is a frequently trafficked trail with numerous eBird records and has been subject to numerous reviews as a part of the Hamilton NAI. This area is not documented as a known Waterfowl Stopover & Staging Areas. |

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|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Shorebird Migratory Stopover Area**<br><br>**<u>Rationale:</u>**<br>High quality shorebird stopover habitat is extremely rare and typically has a long history of use. | BBO1<br>BBO2<br>BBS1<br>BBS2<br>BBT1<br>BBT2<br>SDO1<br>SDS2<br>SDT1<br>MAM1<br>MAM2<br>MAM3<br>MAM4<br>MAM5 | • Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and unvegetated shoreline habitats.<br>• Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October.<br>• Sewage treatment ponds and storm water ponds do not qualify as a SWH. | No potential<br>• Suitably large communities to support this feature are absent. | Greater Yellowlegs<br>Lesser Yellowlegs<br>Marbled Godwit<br>Hudsonian Godwit<br>Black-bellied Plover<br>American Golden-Plover<br>Semipalmated Plover<br>Solitary Sandpiper<br>Spotted Sandpiper<br>Semipalmated Sandpiper<br>Pectoral Sandpiper<br>White-rumped Sandpiper<br>Baird's Sandpiper<br>Least Sandpiper<br>Purple Sandpiper<br>Stilt Sandpiper<br>Short-billed Dowitcher<br>Red-necked Phalarope<br>Whimbrel<br>RuddyTurnstone<br>Sanderling<br>Dunlin | **Studies confirming:**<br><br>• Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period).<br>• Whimbrel stop briefly (<24 hrs.) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant.<br>• The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100 m radius area.<br>• Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".<br>• **SWHMiST Index #8** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Raptor Wintering Area**<br><br>**Rationale:**<br>Sites used by multiple species, a high number of individuals and used annually are most significant. | Hawks/Owls:<br>Combination of ELC Community Series; need to have present one Community Series from each land class<br><br>Forest:<br>FOD<br>FOM<br>FOC<br><br>Upland:<br>CUM<br>CUT<br>CUS<br>CUW<br><br>Bald Eagle:<br>Forest community Series:<br>FOD<br>FOM<br>FOC<br>SWD<br>SWM<br>SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area). | • The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.<br>• Raptor wintering sites (hawk/owl) need to be **>** 20 ha, with a combination of forest and upland.<br>• Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands.<br>• Field area of the habitat is to be wind swept with limited snow depth or accumulation.<br>• Eagle sites have open water, large trees and snags available for roosting. | No potential Confirmed absent<br>• Suitably large forest communities are present; however, suitably large meadow communities are absent. | Rough-legged Hawk<br>Red-tailed Hawk<br>Northern Harrier<br>American Kestrel<br>Snowy Owl<br><br>**Special Concern:**<br>Short-eared Owl<br>Bald Eagle | **Studies confirm the use of these habitats by:**<br><br>• One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species.<br>• To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds.<br>• The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area.<br>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects.”<br>• **SWHMiST Index #10 and #11** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent. Raptors are know to occur within the winter months within the general area. |
| **Bat Hibernacula**<br><br>**Rationale:**<br>Bat hibernacula are rare habitats in all Ontario landscapes. | **Bat Hibernacula may be found in these ecosites:**<br><br>CCR1<br>CCR2<br>CCA1<br>CCA2<br><br>(Note: buildings are not considered to be SWH) | • Hibernacula may be found in caves, mine shafts, underground foundations and Karsts.<br>• Active mine sites should not be considered as SWH.<br>• The locations of bat hibernacula are relatively poorly known. | No potential<br>• Suitable communities to support this feature are absent. | Big Brown Bat<br>Tri-coloured Bat | • All sites with confirmed hibernating bats are SWH.<br>• The habitat area includes a 200 m radius around the entrance of the hibernaculum for most development types and 1000 m for wind farms.<br>• Studies are to be conducted during the peak swarming period (August to September). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”.<br>• **SWHMiST Index #1** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Bat Maternity Colonies**<br><br>**<u>Rationale:</u>**<br>Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes. | Maternity colonies considered SWH are found in forested ecosites.<br><br>**All ELC ecosites in ELC Community Series:**<br><br>FOD<br>FOM<br>SWD<br>SWM | • Maternity colonies can be found in tree cavities, vegetation and often in buildings are not considered to be SWH).<br>• Maternity roosts are not found in caves and mines in Ontario.<br>• Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25 cm dbh) wildlife trees.<br>• Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.<br>• Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred. | Moderate potential.<br>• May be supported in association with deciduous forest and mixed forest communities | Big Brown Bat<br>Silver-haired Bat | • Maternity Colonies with confirmed use by:<br>– >10 Big Brown Bats<br>– >5 Adult Female Silver- haired Bats<br>• The area of the habitat includes the entire woodland, or a forest stand ELC ecosite or an ecoelement containing the maternity colonies.<br>• Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects".<br>• **SWHMiST Index #12** provides development effects and mitigation measures. | Candidate SWH. Detailed surveys to confirm the presence of this feature were not included in the scope of field investigations. |

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|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Turtle Wintering Areas**<br><br>**Rationale:**<br>Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant. | Snapping and Midland Painted Turtles.<br><br>**ELC Community Classes:**<br><br>SW<br>MA<br>OA and<br>SA<br><br>**ELC Community Series:**<br><br>FEO and BOO<br><br>For Northern Map Turtle: Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat. | • For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates.<br>• Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen.<br>• Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. | Moderate potential<br>• May be supported in association with the watercourse impoundment | Midland Painted Turtle<br><br>**Special Concern:**<br>Northern Map Turtle<br>Snapping Turtle | • Presence of 5 over-wintering Midland Painted Turtles is significant.<br>• One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant.<br>• The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH.<br>• Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (September–October) or spring (March–May).<br>• Congregation of turtles is more common where wintering areas are limited and therefore significant.<br>• **SWHMiST Index #28** provides development effects and mitigation measures for turtle wintering habitat. | Confirmed present.<br><br>Based on iNaturalist research grade records from March 21, 2021, a minimum of 5 Midland Painted Turtles were reported within the SAS community. |

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|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Reptile Hibernaculum**<br><br>**<u>Rationale;</u>**<br>Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant. | For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.<br><br>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. | • For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.<br>• Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line.<br>• Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock groundcover. | Low potential<br>• No hibernacula features were observed within the publically accessible areas of the Study Area. May be supported on private property. | **<u>Snakes:</u>**<br>Eastern Gartersnake<br>Northern Watersnake<br>Northern Red-bellied Snake<br>Northern Brownsnake<br>Smooth Green Snake<br>Northern Ring-necked Snake<br><br>**<u>Special Concern:</u>**<br>Milksnake<br>Eastern Ribbonsnake | **Studies confirming:**<br><br>• Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp.<br>• Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g., foundation or rocky slope) on sunny warm days in Spring (April/May) and Fall (September/October).<br>• **Note:** If there are Special Concern Species present, then site is SWH.<br>• **Note:** Sites for hibernation possess specific habitat parameters (e.g., temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e., strong hibernation site fidelity). Other critical life processes (e.g., mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH.<br>• **SWHMiST Index #13** provides development effects and mitigation measures for snake hibernacula. | Confirmed absent. Discrete hibernaulca structures are absent within the ROW. Large aggregations of snakes were not encountered by RJB during the course of early spring field invetsigations.<br><br>Hibernacula features may be supported beyond the ROW but will not be impacted by the proposed development. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Colonially - Nesting Bird Breeding Habitat (Bank & Cliff)**<br><br>**<u>Rationale:</u>**<br>Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario. | Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.<br><br>**Habitat found in the following ecosites:**<br><br>CUM1<br>CUT1<br>CUS1<br>BLO1<br>BLS1<br>BLT1<br>CLO1<br>CLS1<br>CLT1 | • Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.<br>• Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.<br>• Does not include a licensed/permitted Mineral Aggregate Operation. | No potential<br>• Suitable communities to support this feature are absent. | Cliff Swallow<br>Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies) | **Studies confirming:**<br><br>• Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season.<br>• A colony identified as SWH will include a 50 m radius habitat area from the peripheral nests.<br>• Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.<br>• **SWHMiST Index #4** provides development effects and mitigation measures. | Confirmed absent.<br><br>Bank Swallows and Cliff Swallows were not documented duringthe course of breeding bird invetsigations. |
| **Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)**<br><br>**<u>Rationale:</u>**<br>Large colonies are important to local bird population, typically sites are only known colony in area and are used annually. | SWM2<br>SWM3<br>SWM5<br>SWM6<br>SWD1<br>SWD2<br>SWD3<br>SWD4<br>SWD5<br>SWD6<br>SWD7<br>FET1 | • Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.<br>• Most nests in trees are 11 to 15 m from ground, near the top of the tree. | No potential.<br>• Suitable habitat may be support this community is absent. | Great Blue Heron<br>Black-crowned Nigh-Heron<br>Great Egret<br>Green Heron | **Studies confirming:**<br><br>• Presence of 2 or more active nests of Great Blue Heron or other listed species.<br>• The habitat extends from the edge of the colony and a minimum 300 m radius or extent of the Forest ecosite containing the colony or any island <15.0 ha with a colony is the SWH.<br>• Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells.<br>• **SWHMiST Index #5** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent.<br><br>• This area is a frequently trafficked trail with numerous eBird records and has been subject to numerous reviews as a part of the Hamilton NAI.<br><br>No evidence of breeding by the listed indicators species were documented by Burnside during the course of fbreeding bird surveys. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Colonially - Nesting Bird Breeding Habitat (Ground)**<br><br>**<u>Rationale;</u>**<br>Colonies are important to local bird population, typically sites are only known colony in area and are used annually. | Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map).<br><br>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird).<br><br>MAM1 – 6<br>MAS1 – 3<br>CUM<br>CUT<br>CUS | • Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.<br>• Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands. | No potential<br>• Suitable communities to support this feature are absent. | Herring Gull<br>Great Black-backed Gull<br>Little Gull<br>Ring-billed Gull<br>Common Tern<br>Caspian Tern<br>Brewer's Blackbird | **Studies confirming:**<br><br>• Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern.<br>• Presence of 5 or more pairs for Brewer's Blackbird.<br>• Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant.<br>• The edge of the colony and a minimum 150 m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0 ha with a colony is the SWH.<br>• Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".<br>• **SWHMiST Index #6** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent.<br><br>• No evidence of breeding by the listed indicators species were documented by Burnside during the course of field investigations. |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Migratory Butterfly Stopover Areas**<br><br>**<u>Rationale:</u>**<br>Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter. | Combination of ELC Community Series; need to have present one Community Series from each land class.<br><br><u>Field</u>:<br>CUM<br>CUT<br>CUS<br><br><u>Forest</u>:<br>FOC<br>FOD<br>FOM<br>CUP<br><br>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed. | • A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present and will be located within 5 km of Lake Erie or Ontario.<br>• The habitat is typically a combination of field and forest and provides the butterflies with a location to rest prior to their long migration south.<br>• The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat.<br>• Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes. | No potential<br>• The Study Area is not located within 5km of Lake Ontario | Painted Lady<br>Red Admiral<br><br><u>Special Concern</u><br>Monarch | **Studies confirm:**<br><br>• The presence of Monarch Use Days (MUD) during fall migration (August/October). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur.<br>• Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD.<br>• MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.<br>• **SWHMiST Index #16** provides development effects and mitigation measures. | No potential. The Study Area is not located within 5km of Lake Ontario. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Landbird Migratory Stopover Areas**<br><br>**<u>Rationale:</u>**<br>Sites with a high diversity of species as well as high numbers are most significant. | **All ecosites associated with these ELC Community Series:**<br><br>FOC<br>FOM<br>FOD<br>SWC<br>SWM<br>SWD | • Woodlots >5 ha in size and within 5 km of Lake Erie and Ontario.<br>• If woodlands are rare in an area of shoreline, woodland fragments 2-5 ha can be considered for this habitat.<br>• If multiple woodlands are located along the shoreline those Woodlands <2 km from Lake Ontario are more significant.<br>• Sites have a variety of habitats; forest, grassland and wetland complexes.<br>• The largest sites are more significant.<br>• Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5 km of Lake Erie and Ontario are Candidate SWH. | No potential.<br>• The Study Area is not located within 5km of Lake Ontario. | All migratory songbirds.<br><br>Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/default.asp?lang=En&n=421B7A9D-1<br><br>All migrant raptors species:<br><br>*Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997.* Schedule 7: Specially Protected Birds (Raptors) | **Studies confirm:**<br><br>• Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant.<br>• Studies should be completed during spring (April/May) and fall (August/October) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".<br>• **SWHMiST Index #9** provides development effects and mitigation measures. | No potential. The Study Area is not located within 5km of Lake Ontario. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Deer Winter Congregation Areas**<br><br>**<u>Rationale:</u>**<br>Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions. | **All Forested ecosites with these ELC Community Series:**<br><br>FOC<br>FOM<br>FOD<br>SWC<br>SWM<br>SWD<br><br>Conifer plantations much smaller than 50 ha may also be used. | • Woodlots >100 ha in size or if large woodlots are rare in planning area woodlots >50 ha.<br>• Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands.<br>• Large woodlots > 100 ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha.<br>• Woodlots with high densities of deer due to artificial feeding are not significant. | Confirmed present.<br>• White-tailed Deer Wintering Area (Stratum 2) are present South of Powerline Rd W. | White-tailed Deer | **Studies confirm:**<br><br>• Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF.<br>• Use of the woodlot by white- tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF.<br>• Studies should be completed during winter (January/February) when >20 cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey.<br>• **SWHMiST Index #2** provides development effects and mitigation measures. | Confirmed SWH.<br><br>The TAGM1a, FOM, and MAM communities have been identified by the MNR as White-tailed Deer Wintering Area (Stratum 2). |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Table 1.2.1: Rare Vegetation Communities** | | | | | | |
| **Cliffs and Talus Slopes**<br><br>**Rationale:**<br>Cliffs and Talus Slopes are extremely rare habitats in Ontario. | **Any ELC ecosite within Community Series:**<br><br>TAO<br>CLO<br>TAS<br>CLS<br>TAT<br>CLT | • Most cliff and talus slopes occur along the Niagara Escarpment.<br>• A Cliff is vertical to near vertical bedrock >3 m in height.<br>• A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris. | No potential<br>• Suitable communities to support this feature are absent. | - | • Confirm any ELC Vegetation Type for Cliffs or Talus Slopes.<br>• **SWHMiST Index #21** provides development effects and mitigation measures. | Confirmed absent. |
| **Sand Barren**<br><br>**Rationale;**<br>Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry. | **ELC ecosites:**<br><br>SBO1<br>SBS1<br>SBT1<br><br>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%. | A sand barren area >0.5 ha in size.<br>• Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%. | No potential<br>• Suitable communities to support this feature are absent. | - | • Confirm any ELC Vegetation Type for Sand Barrens<br>• Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).<br>• **SWHMiST Index #20** provides development effects and mitigation measures. | Confirmed absent. |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Alvar**<br><br>**<u>Rationale;</u>**<br>Alvars are extremely rare habitats in Ecoregion 7E. | ALO1<br>ALS1<br>ALT1<br>FOC1<br>FOC2<br>CUM2<br>CUS2<br>CUT2-1<br>CUW2<br><br>**Five Alvar Indicator Species:**<br><br>*Carex crawei*<br>*Panicum philadelphicum*<br>*Eleocharis compressa*<br>*Scutellaria parvula*<br>*Trichostema brachiatum*<br><br>These indicator species are very specific to Alvars within Ecoregion 7E. | • An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.<br>• An Alvar site > 0.5 ha in size.<br>• Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie. | No potential<br>• Suitable communities to support this feature are absent. | - | **Field studies that identify:**<br><br>• Four of the five Alvar Indicator Species at a Candidate Alvar site is Significant.<br>• Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).<br>• The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.<br>• **SWHMiST Index #17** provides development effects and mitigation measures. | Confirmed absent. |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Old Growth Forest**<br><br>**<u>Rationale;</u>**<br>Due to historic logging practices and land clearance for agriculture, old growth forest is rare in the Ecoregion 7E. | **Forest Community Series:**<br><br>FOD<br>FOC<br>FOM<br>SWD<br>SWC<br>SWM | • Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. | No potential<br>• Suitable communities to support this feature are absent. | - | **Field Studies will determine:**<br><br>• If dominant trees species of the are >140 years old, then the area containing these trees is SWH.<br>• The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present).<br>• The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH.<br>• Determine ELC vegetation types for the forest forest area containing the old growth characteristics.<br>• **SWHMiST Index #23** provides development effects and mitigation measures. | Confirmed absent. |
| **Savannah**<br><br>**<u>Rationale:</u>**<br>Savannahs are extremely rare habitats in Ontario. | TPS1<br>TPS2<br>TPW1<br>TPW2<br>CUS2 | • No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.<br>• A Savannah is a tallgrass prairie habitat that has tree cover between 25–60%.<br>• In Ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in Toronto area (north of Lake Ontario). | No potential<br>• Suitable communities to support this feature are absent. | - | **Field studies confirm:**<br><br>• one or more of the Savannah indicator species listed in Appendix N should be present. **Note**: Savannah plant spp. list from Ecoregion 7E should be used.<br>• Area of the ELC ecosite is the SWH.<br>• Site must not be dominated by exotic or introduced species (<50% vegetative cover is exotic sp.).<br>• **SWHMiST Index #18** provides development effects and mitigation measures. | Confirmed absent. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Tallgrass Prairie**<br><br>**<u>Rationale:</u>**<br>Tallgrass Prairies are extremely rare habitats in Ontario. | TPO1<br>TPO2 | • No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway Right of Ways (ROW) are not considered to be SWH.<br>• A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.<br>• In Ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in Toronto area (north of Lake Ontario). | No potential<br>• Suitable communities to support this feature are absent. | - | **Field studies confirm:**<br><br>• One or more of the Prairie indicator species listed in Appendix N should be present. **Note:** Prairie plant spp. list from Ecoregion 7E should be used.<br>• Area of the ELC ecosite is the SWH.<br>• Site must not be dominated by exotic or introduced species (<50% vegetative cover is exotic sp.).<br>• **SWHMiST Index #19** provides development effects and mitigation measures. | Confirmed absent. |
| **Other Rare Vegetation Communities**<br><br>**<u>Rationale:</u>**<br>Plant communities that often contain rare species which depend on the habitat for survival. | • Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG.<br>• Any ELC ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH. | • ELC ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M.<br>• The MNRF/Natural Heritage Information Centre (NHIC) will have up to date listing for rare vegetation communities.<br>• Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps. | Confirmed present.<br>• The BOS1-1 and BOT2-1 communities within the Study Area are ranked as S3 within Ontario.<br>• All other ecological communities are considered common in southern Ontario. | - | **Field studies should confirm:**<br><br>• If an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG.<br>• Area of the ELC Vegetation Type polygon is the SWH.<br>• **SWHMiST Index #37** provides development effects and mitigation measures. | Confirmed present. |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Table 1.2.2: Specialized Habitat for Wildlife considered Significant Wildlife Habitat** | | | | | | |
| **Waterfowl Nesting Area**<br><br>**Rationale;**<br>Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant. | **All upland habitats located adjacent to these wetland ELC ecosites are Candidate SWH:**<br><br>MAS1 MAS2<br>MAS3 SAS1<br>SAM1 SAF1<br>MAM1 MAM2<br>MAM3 MAM4<br>MAM5 MAM6<br>SWT1 SWT2<br>SWD1 SWD2<br>SWD3 SWD4<br><br>Note: includes adjacency to Provincially Significant Wetlands (PSW). | • A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120 m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur.<br>• Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.<br>• Wood Ducks and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites. | No potential<br>• Although suitable wetland communities are present, upland communities are not sufficiently large to meet the defining criteria to support significant waterfowl nesting areas. | American Black Duck<br>Northern Pintail<br>Northern Shoveler<br>Gadwall<br>Blue-winged Teal<br>Green-winged Teal<br>Wood Duck<br>Hooded Merganser<br>Mallard | **Studies confirmed:**<br><br>• Presence of 3 or more nesting pairs for listed species excluding Mallards.<br>• Presence of 10 or more nesting pairs for listed species including Mallards.<br>• Any active nesting site of an American Black Duck is considered significant.<br>• Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.<br>• A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.<br>• **SWHMiST Index #25** provides development effects and mitigation measures. | Confirmed absent.<br><br>No evidence of breeding by the listed indicators species were documented by Burnside during the course of breeding bird surveys. |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Bald Eagle & Osprey Nesting, Foraging & Perching Habitat**<br><br>**<u>Rationale;</u>**<br>Nest sites are fairly uncommon in Eco-region 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat. | **ELC Forest Community Series:**<br><br>FOD<br>FOM<br>FOC<br>SWD<br>SWM and<br>SWC (directly adjacent to riparian areas – rivers, lakes, ponds and wetlands. | • Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.<br>• Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy.<br>• Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms). | Low potential<br>• An FOD community is located adjacent to a watercourse.<br>• No stick nests or individuals birds observed during the course of Burnside's field investigations. | Osprey<br><br>**Special Concern**<br>Bald Eagle | **Studies confirm the use of these nests by:**<br><br>• One or more active Osprey or Bald Eagle nests in an area.<br>• Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH.<br>• For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important.<br>• For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400800 m is dependent on-site lines from the nest to the development and inclusion of perching and foraging habitat.<br>• To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not significant.<br>• Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid-March to mid-August.<br>• Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".<br>• **SWHMiST Index #26** provides development effects and mitigation measures. | Candidate SWH<br>• No bald Eagle or Osprey nests or individuals were documented by Burnside during the course of all on-site surveys<br>• Previous Bald Eagle eBird observations are present in the area |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Woodland Raptor Nesting Habitat**<br><br>**<u>Rationale:</u>**<br>Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species. | May be found in all forested ELC ecosites.<br><br>**May also be found in:**<br>SWC<br>SWM<br>SWD and<br>CUP3 | • All natural or conifer plantation woodland/forest stands >30 ha with >4ha of interior habitat. Interior habitat determined with a 200 m buffer.<br>• Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands.<br>• In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. | No potential<br>• SWC / SWD communities within the Study Area do not span >30 ha | Northern Goshawk<br>Cooper's Hawk<br>Sharp-shinned Hawk<br>Red-shouldered Hawk<br>Barred Owl<br>Broad-winged Hawk | **Studies confirm:**<br><br>• Presence of 1 or more active nests from species list is considered significant.<br>• Red-shouldered Hawk and Northern Goshawk – A 400 m radius around the nest or 28 ha area of habitat is the SWH (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest).<br>• Barred Owl – A 200 m radius around the nest is the SWH.<br>• Broad-winged Hawk and Coopers Hawk– A 100 m radius around the nest is the SWH.<br>• Sharp-Shinned Hawk – A 50 m radius around the nest is the SWH.<br>• Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.<br>• **SWHMiST Index #27** provides development effects and mitigation measures. | No potential.<br><br>Forested communities are not sufficiently large to support interior forest breeding habitat. |

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| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Turtle Nesting Areas**<br><br>**<u>Rationale;</u>**<br>These habitats are rare and when identified will often be the only breeding site for local populations of turtles. | **Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC ecosites:**<br><br>MAS1<br>MAS2<br>MAS3<br>SAS1<br>SAM1<br>SAF1<br>BOO1<br>FEO1 | • Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.<br>• For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.<br>• Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. | No potential<br>• Areas of bare soils are absent within 100m of a suitable MAS community. The sole suitable substrates present are associated with a gravel parking lot and roadsides which do no constitute SWH. | Midland Painted Turtle<br><br><u>Special Concern Species:</u><br>Northern Map Turtle<br>Snapping Turtle | **Studies confirm:**<br><br>• Presence of 5 or more nesting Midland Painted Turtles.<br>• One or more Northern Map Turtle or Snapping Turtle nesting is a SWH.<br>• The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100 m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH.<br>• Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100 m area of habitat.<br>• Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.<br>• **SWHMiST Index #28** provides development effects and mitigation measures for turtle nesting habitat. | No potential.<br><br>Suitable nesting habitat, excluding gravel shoulders and the rail trail, are absent from the Study Area. |
| **Seeps and Springs**<br><br>**<u>Rationale</u>:**<br>Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams. | Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested ecosite within the headwater areas of a stream could have seeps/springs. | • Any forested area (with <25% meadow/field/ pasture) within the headwaters of a stream or river system.<br>• Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. | Moderate potential<br>• May be supported within FOM and FOD communities | Wild Turkey<br>Ruffed Grouse<br>Spruce Grouse<br>White-tailed Deer<br>Salamander spp. | **Field Studies confirm:**<br><br>• Presence of a site with 2 or more seeps/springs should be considered SWH.<br>• The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.<br>• **SWHMiST Index #30** provides development effects and mitigation measures. | Candidate SWH.<br><br>No seeps or springs observed during the course of Burnside's field investigations. It should be noted that surveys were only constrained to ROWs.<br><br>Seeps and springs may be supported within the FOM and FOD communities beyond the Study Area. Natural springs are known to occur in the general area. The Study Area is also located within the Big Creek headwaters area. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Amphibian Breeding Habitat (Woodland)**<br><br>**Rationale:**<br>These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations. | All ecosites associated with these ELC Community Series:<br><br>FOC<br>FOM<br>FOD<br>SWC<br>SWM<br>SWD<br><br>Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians. | • Presence of a wetland, pond or woodland pool (including vernal pools) >500 $m^2$ (about 25 m diameter) within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians.<br>• Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. | Moderate potential<br>• The MAS1-14/SAF_1-3 and MAS / SWT occurring adjacent to the FOD community may support this SWH feature. | Eastern Newt<br>Blue-spotted Salamander<br>Spotted Salamander<br>Gray Treefrog<br>Spring Peeper<br>Western Chorus Frog<br>Wood Frog | **Studies confirm:**<br><br>• Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3.<br>• A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands.<br>• The habitat is the wetland area plus a 230 m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.<br>• **SWHMiST Index #14** provides development effects and mitigation measures. | Candidate SWH in association with the MAS / SWT community. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Amphibian Breeding Habitat (Wetlands)**<br><br>**<u>Rationale;</u>**<br>Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes. | **ELC Community Classes:**<br><br>SW<br>MA<br>FE<br>BO<br>OA and<br>SA.<br><br>Typically, these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g., Bull Frog) may be adjacent to woodlands. | • Wetlands >500 m2 (about 25 m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats.<br>• Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators.<br>• Bullfrogs require permanent water bodies with abundant emergent vegetation. | Moderate potentail<br>• Amphibian breeding habitat may occur in association with the MAS / SWT community | Eastern Newt<br>American Toad<br>Spotted Salamander<br>Four-toed Salamander<br>Blue-spotted Salamander<br>Gray Treefrog<br>Western Chorus Frog<br>Northern Leopard Frog<br>Pickerel Frog<br>Green Frog<br>Mink Frog<br>Bullfrog | **Studies confirm:**<br><br>• Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3 or; Wetland with confirmed breeding Bullfrogs are significant.<br>• The ELC ecosite wetland area and the shoreline are the SWH.<br>• A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.<br>• If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.<br>• **SWHMiST Index #15** provides development effects and mitigation measures. | Confirmed absent within the MAS / SAF_1-3 communities. |
| **Woodland Area-Sensitive Bird Breeding Habitat**<br><br>**<u>Rationale</u>:**<br>Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds. | **All ecosites associated with these ELC Community Series:**<br><br>FOC<br>FOM<br>FOD<br>SWC<br>SWM<br>SWD | • Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs. old) forest stands or woodlots >30 ha.<br>• Interior forest habitat is at least 200 m from forest edge habitat. | No potential<br>• FOD and SWC communities do not span >30 ha. | Yellow-bellied Sapsucker<br>Red-breasted Nuthatch<br>Veery<br>Blue-headed Vireo<br>Northern Parula<br>Black-throated Green Warbler<br>Blackburnian Warbler<br>Black-throated Blue Warbler<br>Ovenbird Scarlet Tanager<br>Winter Wren<br>Pileated Woodpecker<br><br>**Special Concern:**<br>Cerulean Warbler<br>Canada Warbler | **Studies confirm:**<br><br>• Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.<br>• **Note:** any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.<br>• Conduct field investigations in spring and early summer when birds are singing and defending their territories.<br>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.<br>• **SWHMiST Index #34** provides development effects and mitigation measures. | Confirmed absent.<br><br>No evidence of breeding by the listed indicators species were documented by Burnside during the course of breeding bird surveys. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Table 1.3: Habitat for Species of Conservation Concern considered Significant Wildlife Habitat** | | | | | | |
| **Marsh Breeding Bird Habitat**<br><br>**<u>Rationale;</u>**<br>Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes. | MAM1<br>MAM2<br>MAM3<br>MAM4<br>MAM5<br>MAM6<br>SAS1<br>SAM1<br>SAF1<br>FEO1<br>BOO1<br><br>**For Green Heron:**<br><br>All SW<br>MA and<br>CUM1 sites | • Nesting occurs in wetlands.<br>• All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present.<br>• For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. | Low potential<br>• May occur in association with the SAF/MAS and MAM communities. | American Bittern<br>Virginia Rail<br>Sora<br>Common Moorhen<br>American Coot<br>Pied-billed Grebe<br>Marsh Wren<br>Sedge Wren<br>Common Loon<br>Green Heron<br>Trumpeter Swan<br><br>**Special Concern:**<br>Black Tern<br>Yellow Rail | **Studies confirm:**<br><br>• Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species.<br>• **Note**: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH.<br>• Area of the ELC ecosite is the SWH.<br>• Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats.<br>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.<br>• **SWHMiST Index #35** provides development effects and mitigation measures. | Confirmed absent from the MASM1-14 / SAF_1-3 communities.<br><br>Candidate habitat in association with the MAM and community. Breeindg Bird Surveys were not completed in the vicinity of this feature. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Open Country Bird Breeding Habitat**<br><br>**<u>Rationale;</u>**<br>This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records. | CUM1<br>CUM2 | • Large grassland areas (includes natural and cultural fields and meadows) >30 ha.<br>• Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years).<br>• Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.<br>• The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. | No potential<br>• Suitable communities to support this feature are absent. | Upland Sandpiper<br>Grasshopper Sparrow<br>Vesper Sparrow<br>Northern Harrier<br>Savannah Sparrow<br><br>**Special Concern**<br>Short-eared Owl | **Field Studies confirm:**<br><br>• Presence of nesting or breeding of 2 or more of the listed species.<br>• A field with 1 or more breeding Short-eared Owls is to be considered SWH.<br>• The area of SWH is the contiguous ELC ecosite field areas.<br>• Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.<br>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.<br>• **SWHMiST Index #32** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Shrub/Early Successional Bird Breeding Habitat**<br><br>**<u>Rationale;</u>**<br>This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records. | CUT1<br>CUT2<br>CUS1<br>CUS2<br>CUW1<br>CUW2<br><br>Patches of shrub ecosites can be complexed into a larger habitat for some bird species. | • Large field areas succeeding to shrub and thicket habitats >10 ha in size.<br>• Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, haying or live-stock pasturing in the last 5 years).<br>• Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species.<br>• Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. | No potential<br>• Suitably large communities to support this feature are absent. | **Indicator Spp:**<br>Brown Thrasher<br>Clay-coloured Sparrow<br><br>**Common Spp.**<br>Field Sparrow<br>Black-billed Cuckoo<br>Eastern Towhee<br>Willow Flycatcher<br><br>**Special Concern:**<br>Yellow-breasted Chat<br>Golden-winged Warbler | **Field Studies confirm:**<br><br>• Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species.<br>• A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as SWH.<br>• The area of the SWH is the contiguous ELC ecosite field/thicket area.<br>• Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.<br>• Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.<br>• **SWHMiST cxlix Index #33** provides development effects and mitigation measures. | No potential. Suitable communities to support this feature are absent. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Terrestrial Crayfish**<br><br>**<u>Rationale:</u>**<br>Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare. | MAM1<br>MAM2<br>MAM3<br>MAM4<br>MAM5<br>MAM6<br>MAS1<br>MAS2<br>MAS3<br>SWD<br>SWT<br>SWM<br><br>CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish. | • Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for Terrestrial Crayfish.<br>• Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water.<br>• Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. | Moderate potential<br>• May occur in association with the SWT and MAS communities | Chimney or Digger Crayfish (*Fallicambarus fodiens*)<br><br>Devil Crayfish or Meadow Crayfish (*Cambarus Diogenes*) | **Studies Confirm:**<br><br>• Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites.<br>• Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.<br>• Surveys should be done April to August in temporary or permanent water. **Note** the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult.<br>• **SWHMiST Index #36** provides development effects and mitigation measures. | Confirmed absent in association with the MASM1-14 community.<br><br>Candidate SWH feature in association with the MAM and MAS / SWT communities located beyond the RJB survey limits. |
| **Special Concern and Rare Wildlife Species**<br><br>**<u>Rationale:</u>**<br>These species are quite rare or have experienced significant population declines in Ontario. | All plant and animal Element Occurrences (EO) within a 1 or 10 km grid.<br><br>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy. | When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC ecosites. | Candidate habitat to support the following Special Concern and Rare Wildlife Species<br>• Monarch (SC)<br>• Eastern Wood-pewee (SC)<br>• Golden-winged Warbler (SC)<br>• Olive-sided Flycatcher (SC)<br>• Purple Martin (S3)<br>• Tufted Titmouse (S3)<br>• Wood Thrush (SC)<br>• Eastern Ribbonsnake (SC)<br>• Snapping Turtle (SC)<br>• Billing's Three-seeded Sedge (S2S3)<br>• Green Dragon (SC)<br>• Perfoliate Bellwort (S1S2) | All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the NHIC. | **Studies Confirm:**<br><br>• Assessment/inventory of the site for the identified Special Concern or rare species needs to be completed during the time of year when the species is present or easily identifiable.<br>• The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g., specific nesting habitat or foraging habitat.<br>• **SWHMiST Index #37** provides development effects and mitigation measures. | Confirmed present for the following species:<br>• Monarch (SC)<br>• Eastern Wood-pewee (SC)<br>• Purple Martin (S3)<br>• Billing's Three-seeded Sedge (S2S3)<br><br>Candidate habitat for the following species:<br>• Eastern Ribbonsnake (SC)<br>• Snapping Turtle (SC)<br>• Perfoliate Bellwort (S1S2)<br><br>Confirmed absent for the remaining species within the ROW. |

| Habitat | CANDIDATE - Significant Wildlife Habitat | | | CONFIRMED - Significant Wildlife Habitat | | |
|---|---|---|---|---|---|---|
| | **Ecological Land Classification Ecosite Codes** | **Habitat Criteria** | **Presence of Candidate Habitat in the Study Area (within 120 m of the Project)** | **Wildlife Species** | **Defining Criteria** | **Presence of Confirmed Significant Wildlife Habitat in the Study Area (within 120 m of the Project)** |
| **Table 1.4.1: Animal Movement Corridors** | | | | | | |
| **Amphibian Movement Corridors**<br><br>**<u>Rationale;</u>**<br>Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations. | Corridors may be found in all ecosites associated with water.<br><br>Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1. | • Movement corridors between breeding habitat and summer habitat.<br>• Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat–Wetland) of this Schedule. | Moderate potential<br>• May occur in association with the unnamed watercourse | Eastern Newt<br>American Toad<br>Spotted Salamander<br>Four-toed Salamander<br>Blue-spotted Salamander<br>Gray Treefrog<br>Western Chorus Frog<br>Northern Leopard Frog<br>Pickerel Frog<br>Green Frog<br>Mink Frog<br>Bullfrog | • Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites.<br>• Corridors should consist of native vegetation, with several layers of vegetation.<br>• Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant.<br>• Corridors should have at least 15 m of vegetation on both sides of waterway or be up to 200 m wide of woodland habitat and with gaps <20 m.<br>• Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat.<br>• **SWHMiST Index #40** provides development effects and mitigation measures. | Confirmed absent. Amphibian Breeding Habitat (wetland) is confirmed absent within the Study Area. |
| **Table 1.5.1: Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 7E** | | | | | | |
| **7E-2 - Bat Migratory Stopover Area**<br><br>**Rationale:**<br>Stopover areas for long distance migrant bats are important during fall migration. | No specific ELC types | • Long distance migratory bags typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas.<br>• This is the only known bat migratory stopover habitats based on current information. | No potential<br>• The Study Area is not located at Long Point. | Hoary Bat<br>Eastern Red Bat<br>Silver-haird Bat | • Long Point ($42^0$35'N, $80^0$ 30'E, to $42^0$33'N, $80^0$03'E) has been identified as a significant stop-over habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration.<br>• The confirmantion criteria and habitat areas for this SWH are still being determined.<br>• **SWH MIST Index #38** provides development effects and mitigation measures. | No potential. The Study Area is not located at Long Point. |

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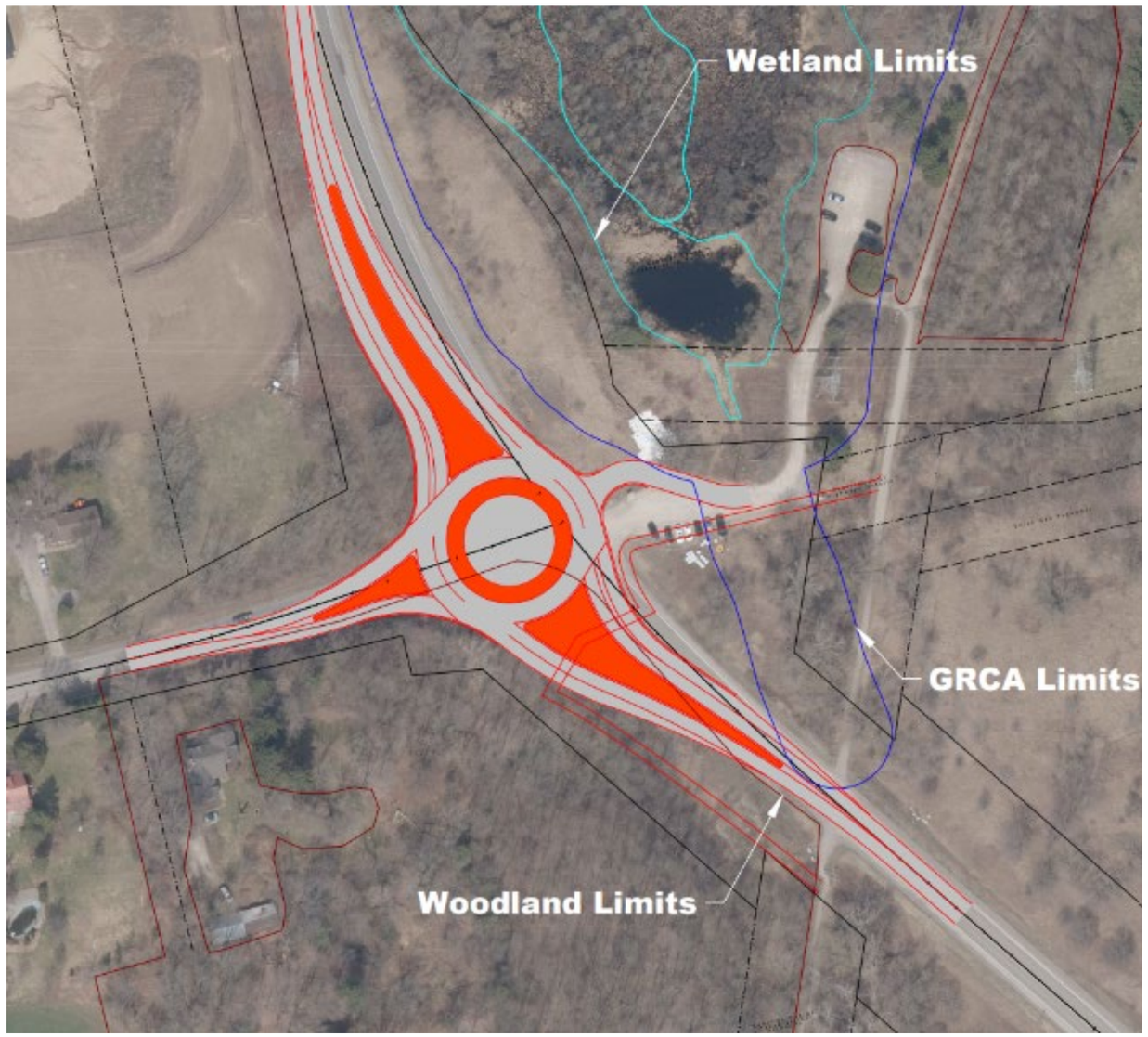
# Appendix F

# Proposed Alternatives

# Option 1 – Centred Roundabout
# Alternative Designs

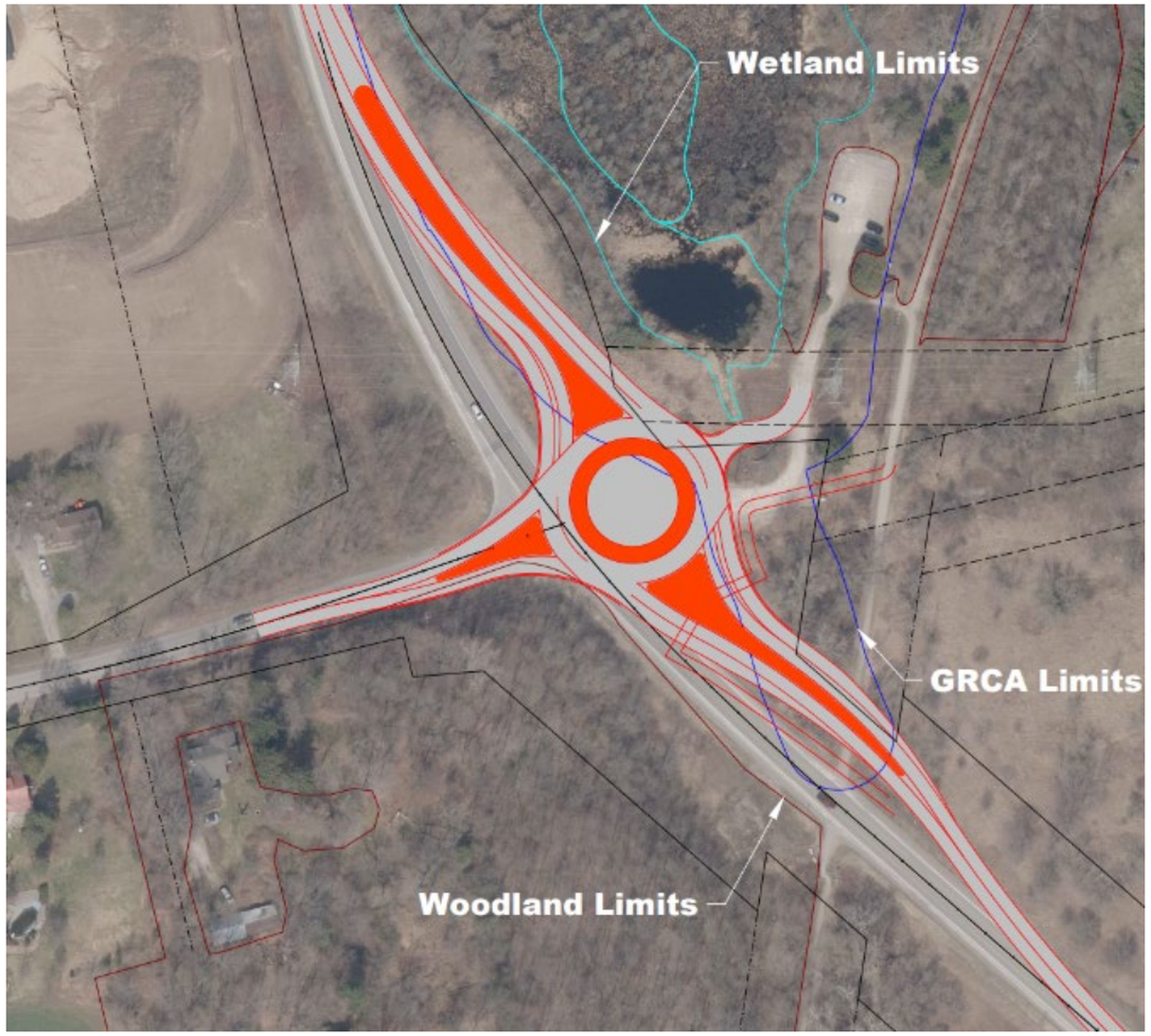
In this option, the three-legged roundabout is centred at the current Highway 52 and Powerline Road intersection and has good visibility for drivers as the north approach has a moderate sight distance. The Super Mailbox will be relocated in the same general area.

# Option 2 – Roundabout Shifted West




In this option, the three-legged roundabout is shifted to the west and has very good visibility to/from Powerline Road W as the north approach has a long sight distance. The Super Mailbox will be relocated in the same general area.

# Option 3 – Roundabout Shifted East




In this option, the three-legged roundabout is shifted to the east and has low visibility for drivers as the north approach has a short sight distance. The Super Mailbox will be relocated in the same general area. Some property acquisition is required to accommodate the shift for this option.

# Southbound Left Turn Lane at Highway 52 and Powerline Road East

Intersection improvements at Highway 52 and Powerline Road East consist of the installation of a new southbound left turn lane and inclusion of a painted median on the south leg to offset the left turn lane from northbound through-traffic.  Minor shift of the roadway to the east is required within the existing right-of-way.

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# Appendix B

# Evaluation of Alternatives

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **A – Natural Environment** | **Potential Impact to Vegetation, Trees** | No impact over existing conditions | New turning lanes and signals would have a minimal impact to vegetation and trees as improvements are located within the existing right-of-way. | New turning lane and roundabout would have some impact to vegetation; the roundabout could be placed to avoid/minimize impacts to significant woodland. | Roundabout would have some impact to vegetation; the roundabout could be placed to avoid/minimize impacts to significant woodland. The extension of Powerline Road East would impact a vegetation and trees through the ravine lands | New roundabouts would have some impact to vegetation; the roundabout could be placed to avoid/minimize impacts to significant woodland. The support piers of a bridge to extend Powerline Road East would have some impact to vegetation | New roundabouts would have some impact to vegetation; the roundabout could be placed to avoid/minimize impacts to significant woodland. |
| **1** | ***Rating*** | ● | ◕ | ◕ | ◔ | ◕ | ◕ |
| | **Potential Impact to Designated Natural Features** | No impact over existing conditions | No anticipated impact to Significant Woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated. This alternative has minimal impact within Escarpment Protection Area, Hamilton Official Plan Environmentally Sensitive Area, and GRCA regulated area. | No anticipated impact to Significant Woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated. This alternative has minimal impact within Escarpment Protection Area, Hamilton Official Plan Environmentally Sensitive Area, and GRCA regulated area. | The extension of Powerline Road would impact lands adjacent to the Copetown Bog and significant woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated. Impact within Escarpment Protection Area, Greenbelt Natural Heritage System, Hamilton Official Plan Environmentally Sensitive Area, and GRCA regulated area. | The extension of Powerline Road would impact lands adjacent to the Copetown Bog and significant woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated. Potential impact within Hamilton Official Plan Environmentally Sensitive Area. Significant impact within the Escarpment Protection Area, Greenbelt Natural Heritage System, and GRCA regulated are not anticipated. | No anticipated impact to Significant Woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated. This alternative has minimal impact within Escarpment Protection Area, Hamilton Official Plan Environmentally Sensitive Area, and GRCA regulated area. |
| **2** | ***Rating*** | ● | ◕ | ● | ◔ | ◕ | ● |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **A – Natural Environment Cont'd** | **Potential Impact to Wildlife Habitat and Habitat of Species at Risk** | No impact over existing conditions | New signals and turning lanes would have a minimal impact to wildlife habitat. | New turning lane and roundabout anticipated to have a minor impact to wildlife habitat | The extension of Powerline Road would impact on the environmentally significant area, watercourse, and associated wildlife habitat | The bridge extension of Powerline Road would have minor impact to environmentally significant area, potential indirect impact to watercourse and associated wildlife habitat | New turning lane and roundabout anticipated to have a minor impact to wildlife habitat |
| **3** | ***Rating*** | ● | ◕ | ◕ | ◔ | ◕ | ◕ |
| | **Potential Impact to Water Resources and Drainage** | No impact over existing conditions | New turning lanes are not anticipated to impact water resources. New overland drainage/ditches would be required. | New roundabout and new turning lanes are not anticipated to impact water resources. New overland drainage/ditches are required. | The extension of Powerline Road would impact watercourse and existing drainage. New overland drainage/ditches would be required. | New roundabouts and bridge extension is not anticipated to directly impact water resources. New overland drainage/ditches are required. | New roundabouts are not anticipated to impact water resources. New overland drainage/ditches are required. |
| **4** | ***Rating*** | ● | ◕ | ◕ | ◔ | ◕ | ◕ |
| | **Potential Climate Change Impact and Resilience - Emission of Greenhouse Gases, Impact on Carbon Removal, Carbon Storage/ Sink (Trees and Vegetation). Resilience and Climate Change Impact on the Undertaking** | No impact over existing conditions. No impact to carbon sink. No opportunity to improve active transportation connection. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. |
| **5** | ***Rating*** | ◑ | ◕ | ◕ | ◕ | ◕ | ◕ |
| | **Summary Natural Environment** | ◕ | ◕ | ◕ | ◔ | ◕ | ◕ |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **B – Socio-cultural** | **Potential Impact to Heritage Resources Such as Archaeology and Cultural Heritage** | No impact over existing conditions | Low potential to impact cultural and archaeological resources as footprint of signals and turning lanes located within disturbed area of ROW | Low potential to impact cultural and archaeological resources as footprint of roundabout and turning lanes are located within disturbed area of ROW | Impact to trail (cultural heritage landscape) and potential archaeological resources in undisturbed areas through ravine lands | Low potential to impact cultural and archaeological resources in disturbed areas within the right of way. Footprint of bridge is anticipated to be located in previously disturbed area with low potential to impact trail (cultural heritage landscape) and potential archaeological resources | Low potential to impact cultural and archaeological resources as footprint of roundabouts are located within disturbed area of ROW |
| **1** | ***Rating*** | ● | ◕ | ◕ | ◑ | ◕ | ◕ |
| | **Nuisance Impacts Such as Noise, Visual, and Construction Impacts** | No impact over existing conditions | Temporary nuisance impacts anticipated during construction | Temporary nuisance impacts anticipated during construction | Temporary nuisance impacts anticipated during construction | Temporary nuisance impacts anticipated during construction | Temporary nuisance impacts anticipated during construction |
| **2** | ***Rating*** | ● | ◕ | ◕ | ◕ | ◕ | ◕ |
| | **Land Acquisition Needs, Impacts to Driveway Access** | No land acquisition or driveway access changes | Minimal impact to adjacent properties | Minimal impact to adjacent properties | Land acquisition needed | Land acquisition needed | Potential property acquisition needed for south roundabout |
| **3** | ***Rating*** | ◕ | ◕ | ◕ | ◑ | ◑ | ◑ |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **B – Socio-cultural Cont'd** | **Conformity to Municipal and Provincial Agency Policy** | No change over existing conditions. Improvements to safety would align with Vision Zero policies from the Transportation Master Plan | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative anticipated to have minor impact to regulated conservation lands and the Niagara Escarpment Protection Area | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative anticipated to have minor impact to regulated conservation lands and the Niagara Escarpment Protection Area | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative is anticipated to impact regulated conservation lands and the Niagara Escarpment Protection Area. | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative anticipated to have minor impact to regulated conservation lands and the Niagara Escarpment Protection Area | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative anticipated to have minor impact to regulated conservation lands and the Niagara Escarpment Protection Area |
| **4** | ***Rating*** | ◔ | ● | ● | ◕ | ● | ● |
| | **Levels of Service for Local Residents and Business, Impact to Municipal Services** | No changes to existing condition. Traffic delays on the westbound approach to the Hwy 52 and Powerline Road West intersection | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services |
| **5** | ***Rating*** | ◔ | ● | ● | ● | ● | ● |
| | **Multi-modal Transportation Connectivity and Safety** | "No changes to existing infrastructure<br><br>No changes to vehicular connectivity | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist |
| **6** | ***Rating*** | ◕ | ● | ● | ● | ● | ● |
| | **Summary Socio-cultural Environment** | ◑ | ◕ | ◕ | ◕ | ◕ | ◕ |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **C – Financial Factors** | **Estimated Capital Costs** | No capital costs associated | Low capital cost associated with new turning lane / signal | Moderate capital cost associated with new roundabout and turning lane | Moderate to high capital cost associated with new roundabout and road extension | High capital cost associated with two new roundabouts and new bridge | Moderate to high capital cost associated with two new roundabouts |
| **1** | ***Rating*** | ● | ● | ◕ | ◑ | O | ◑ |
| | **Estimated Operation and Maintenance Costs** | No change to operation and maintenance costs | Moderate maintenance cost associated with new turning lane / signal | Moderate maintenance cost associated with new roundabout and turning lane | Moderate to high maintenance cost associated with new roundabout and road extension | High maintenance cost associated with two new roundabouts and new bridge | Moderate to high maintenance cost associated with two new roundabouts |
| **2** | ***Rating*** | ◕ | ◕ | ◕ | ◑ | O | ◑ |
| | **Property Acquisition Costs** | No property acquisition costs | No property acquisition costs anticipated to accommodate new turning lane / signal | Property acquisition costs not anticipated to accommodate new roundabout | High property acquisition costs required to accommodate new roundabout and road extension | High property acquisition costs required to accommodate roundabouts and bridge | Moderate property acquisition costs required to accommodate roundabouts |
| **3** | ***Rating*** | ● | ● | ● | ◑ | ◑ | ◕ |
| | **Summary Financial Factors** | ◕ | ◕ | ◕ | ◑ | O | ◑ |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **D – Technical Factors** | **Operational / Traffic Congestion** | 'No improvement to traffic operation. The existing conditions analysis revealed significant delays, particularly on the westbound approach of Powerline Road East, operating at LOS E and F due to high volumes on Highway 52. | Signalizing the north intersection improves the traffic operation.<br>All movements operate with LOS C or better at the intersection of Power Line Road West and Highway 52 under signalized conditions. Whereas at the intersection of Highway 52 & Powerline Road East, the westbound left-right movement operate with LOS F. This may be due to heavy traffic on Highway 52. All north-south approaches on Highway 52 operate with LOS B or better, as they are uncontrolled and allow free-flow movement. | Roundabout at the north intersection improves the traffic operation.<br>The intersection of Powerline Road West and Highway 52 northbound left-through movement operates with LOS E and a v/c ratio of 0.94 during AM peak hour, and the southbound through-right operates with LOS F and a v/c ratio of 1.0.<br>At the intersection of Powerline Road East and Highway 52, the westbound left-right movement operates with LOS F under both AM and PM peak hours, with delays of around one minute. | The roundabout at the north intersection improves the traffic operation.<br>The intersection of Powerline Road West and Highway 52, the eastbound left-through-right movement operates with LOS E and a v/c ratio of 0.95 during AM peak hour, and the southbound left-through-right movement operates with LOS F and a v/c ratio of 1.00 during PM peak hour. At the intersection of Powerline Road East and Highway 52, operates with LOS A under both peak hours. | The two roundabouts improve the traffic operation.<br>Intersection of Powerline Road West and Highway 52, all movements operate at Level of Service (LOS) A. The intersection of Powerline Road East and Highway 52, the northbound through-right movement operates at LOS F with a volume-to-capacity (v/c) ratio of 0.97 during the AM peak hour. Similarly, the southbound left-through movement also operates at LOS F, with a v/c ratio of 1.05 and an average delay of approximately 2 minutes. | The two roundabouts improve the traffic operation.<br>At the intersection of Powerline Road West and Highway 52, the northbound left-turn movement operates at Level of Service (LOS) E with a volume to capacity (v/c) ratio of 0.94 during the AM peak hour. During the PM peak hour, the southbound through-right movement operates at LOS F with a v/c ratio of 1.01 and experiences delays exceeding one minute.<br>At the intersection of Powerline Road East and Highway 52, the northbound through right movement operates at LOS E with a v/c ratio of 0.95 during the AM peak hour, while the southbound left-through movement operates at LOS F with a v/c ratio of 1.01 and also experiences delays greater than one minute. |
| **1** | ***Rating*** | O | ◕ | ● | ● | ◑ | ● |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **D – Technical Factors Cont'd** | **Operational Safety / Roadside Safety** | No improvements greater than existing conditions | Due to high north-south traffic volumes, a signal is somewhat safer than a stop control. | Roundabouts are moderately safer than signal / stop control intersections, generally recognized due to their reduced number of conflict points for both vehicles and pedestrians. The lower operating speeds within roundabouts make it easier for drivers to yield, requiring less stopping distance and enhancing pedestrian safety. Additionally, the circular geometry minimizes the risk of high-severity collisions, such as angle (T-bone) and Head-on crashes and reduces the impact of rear-end and sideswipe crashes. | Roundabouts are moderately safer than signal / stop control intersections, generally recognized due to their reduced number of conflict points for both vehicles and pedestrians. The lower operating speeds within roundabouts make it easier for drivers to yield, requiring less stopping distance and enhancing pedestrian safety. Additionally, the circular geometry minimizes the risk of high-severity collisions, such as angle (T-bone) and Head-on crashes and reduces the impact of rear-end and sideswipe crashes. Road extension through ravine may reduce operational safety due to steep slope | Roundabouts are moderately safer than signal / stop control intersections, generally recognized due to their reduced number of conflict points for both vehicles and pedestrians. The lower operating speeds within roundabouts make it easier for drivers to yield, requiring less stopping distance and enhancing pedestrian safety. Additionally, the circular geometry minimizes the risk of high-severity collisions, such as angle (T-bone) and Head-on crashes and reduces the impact of rear-end and sideswipe crashes. | Roundabouts are moderately safer than signal / stop control intersections, generally recognized due to their reduced number of conflict points for both vehicles and pedestrians. The lower operating speeds within roundabouts make it easier for drivers to yield, requiring less stopping distance and enhancing pedestrian safety. Additionally, the circular geometry minimizes the risk of high-severity collisions, such as angle (T-bone) and Head-on crashes and reduces the impact of rear-end and sideswipe crashes. |
| **2** | ***Rating*** | O | ◕ | ● | ◔ | ● | ● |
| | **Design Constraints** | No improvements greater than existing conditions | Not anticipated to have significant design constraints | roundabout in an area with steep slope with potential need for cut and fill | Significant design constraints with extension of Powerline Road through ravine | Design constraints associated with new bridge. | No significant design constraints. |
| **3** | ***Rating*** | O | ● | ● | O | ◕ | ● |
| | **Summary Technical Factors** | O | ◕ | ● | ◔ | ◕ | ● |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Type of Environment | Criteria for Evaluating Alternatives | **Do Nothing**<br>The road corridor and intersections would remain in their existing configuration, continuing to function as a 2-lane, 2-way roadway with stop control on the minor approaches. Routine maintenance would be performed as required to ensure the road remains in a serviceable condition | **Alternative Solution 1: New Turning Lanes and Signals**<br>New signals and left-turning lane for northbound movement at the Powerline Road West & Hwy 52 intersection and a southbound left-turning lane at the Powerline Road East & Hwy 52 intersection | **Alternative Solution 2: North Roundabout and South Left Turning Lane**<br>Roundabout at the intersection of Powerline Road West & Hwy 52. Adding a new southbound left-turning lane at Powerline Road East & Hwy 52 | **Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine**<br>Roundabout at Powerline Road West & Hwy 52 intersection and extend Powerline Road East westerly across the ravine lands to a new roundabout at the existing Powerline Road East. Southern intersection of Powerline Road East would be closed, trail crossing relocated near the new Powerline Road West roundabout | **Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52**<br>Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Road West Across Hwy 52 | **Alternative Solution 5: North and South Roundabouts on Hwy 52**<br>One roundabout at Hwy 52 & Powerline Road West and one roundabout at Hwy 52 & Powerline Road East |
|---|---|---|---|---|---|---|---|
| **E – Problem Statement** | **Address Problem Statement** | No | Yes | Yes | Yes | Yes | Yes |
| **1** | **Summary Problem Statement** | Meets POS | Meets POS | Meets POS | Meets POS | Meets POS | Meets POS |

# Municipal Class Environmental Assessment – Hwy 52 & Powerline Road West Intersection Improvement (C11 60 24)
## Evaluation of Alternatives

| Criteria for Evaluating Alternatives | Do Nothing | Alternative Solution 1: New Turning Lanes and Signals | Alternative Solution 2: North Roundabout and South Left Turning Lane | Alternative Solution 3: North Roundabout and extend Powerline Road East Across the Existing Ravine | Alternative Solution 4: Two Roundabouts and New bridge to Carry Powerline Rd West Across Hwy 52 | Alternative Solution 5: North and South Roundabouts on Hwy 52 |
|---|---|---|---|---|---|---|
| **Scoring System** | **Less Preferred** | **More Preferred** | **Most Preferred** | **Least Preferred** | **Somewhat Preferred** | **More Preferred** |
| **Most Preferred** | ● | | | | | |
| **More Preferred** | ◕ | | | | | |
| **Somewhat Preferred** | ◑ | | | | | |
| **Less Preferred** | ◔ | | | | | |
| **Least Preferred** | O | | | | | |
| **Overall Summary** | | | | | | |
| **Natural Environment** | ◕ | ◕ | ◕ | ◔ | ◕ | ◕ |
| **Socio-Cultural Environment** | ◑ | ◕ | ◕ | ◕ | ◕ | ◕ |
| **Financial Factors** | ◕ | ◕ | ◕ | ◑ | O | ◑ |
| **Technical Factors** | O | ◕ | ● | ◔ | ◕ | ● |
| **Problem Statement** | **Meets POS** | **Meets POS** | **Meets POS** | **Meets POS** | **Meets POS** | **Meets POS** |
| **Overall Summary** | **Less Preferred** | **More Preferred** | **Most Preferred** | **Least Preferred** | **Somewhat Preferred** | **More Preferred** |

| | Criteria for Evaluating Alternatives | Indicators | **Alternative Design Concept 1: Roundabout maintaining current approach**<br><br>This alternative would involve the development of a roundabout with the approach centred along the current roadway. | **Alternative Design Concept 2: Roundabout with approach shifted west**<br><br>This alternative would involve the development of a roundabout with the approaching lane shifted towards the west | **Alternative Design Concept 3: Roundabout with approach shifted east**<br><br>This alternative would involve the development of a roundabout with the approaching lane shifted towards the east |
|---|---|---|---|---|---|
| **A** | **Natural Environment** | | | | |
| **1** | **Impact to vegetation, trees** | Removal of existing trees and vegetation. | No anticipated impact to the Dry - Fresh Sugar Maple Deciduous Forest (FODM5) on the west end of the intersection. Minor impacts to the ecological communities are anticipated on north end due to maintained approach. | This alternative would be anticipated to have a very minor impact to the Dry - Fresh Sugar Maple Deciduous Forest (FODM5) on the west end of the intersection. | No anticipated impact to the Dry - Fresh Sugar Maple Deciduous Forest (FODM5) on the west end of the intersection.<br><br>May have indirect impacts to the Reed Canary Grass Mineral Shallow Marsh (MASM1-14) at the east end of the corridor.<br><br>Anticipated impact to the Dry - Fresh Forb Meadow (MEFM1) on the north and east of the intersection and impact to the Moist Manitoba Maple Deciduous Woodland (WODM53) and Dry - Fresh Mixed Meadow (MEMM3) on the south end of the intersection. |
| | ***Rating*** | | ◕ | ◕ | ◔ |
| **2** | **Impact designated natural features** | Disturbance to significant woodlands and wetlands.<br><br>Disturbance to Key Natural Heritage Features, ANSI, PSW, Greenbelt Natural Heritage System, NEP Protection Area. | No anticipated impact to Significant Woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated. This alternative has the least impact within Escarpment Protection Area, Hamilton Official Plan Environmentally Sensitive Area ,and GRCA regulated area. | This alternative would be anticipated to have a very minor impact to Significant Woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated. This alternative has moderate impact within Escarpment Protection Area, Hamilton Official Plan Environmentally Sensitive Area, and GRCA regulated area. | No anticipated impact to Significant Woodlands. No direct impact to the Provincially Significant Wetlands within the study area are anticipated; however, there may be indirect impacts due to the close proximity. This alternative has the greatest impact within Escarpment Protection Area, Hamilton Official Plan Environmentally Sensitive Area, and GRCA regulated area. |
| | ***Rating*** | | ◕ | ◑ | ◔ |
| **3** | **Impact to wildlife habitat and habitat of species at risk** | Direct or Indirect effect on wildlife, Species of Special Concern<br><br>Impact or change to habitat, Significant Wildlife Habitat<br><br>Changes to habitat connectivity. | This alternative would be anticipated to have no impact to the Dry - Fresh Sugar Maple Deciduous Forest (FODM5) on the west end of the intersection which is confirmed habitat for Eastern Wood-pewee and candidate habitat for Bat Maternity Colonies, Bald Eagle & Osprey Nesting, Foraging & Perching Habitat, and Perfoliate Bellswort.<br><br>Minor impacts to the ecological communities are anticipated on north end due to maintained approach. | This alternative would be anticipated to have a minor impact to the Dry - Fresh Sugar Maple Deciduous Forest (FODM5) on the west end of the intersection which is confirmed habitat for Eastern Wood-pewee and candidate habitat for Bat Maternity Colonies, Bald Eagle & Osprey Nesting, Foraging & Perching Habitat, and Perfoliate Bellswort. | This alternative has no anticipated impact to the Dry - Fresh Sugar Maple Deciduous Forest (FODM5) on the west end of the intersection which is confirmed habitat for Eastern Wood-pewee and candidate habitat for Bat Maternity Colonies, Bald Eagle & Osprey Nesting, Foraging & Perching Habitat, and Perfoliate Bellswort.<br><br>Anticipated impact to the candidate Monarch habitat within the Dry - Fresh Forb Meadow (MEFM1) on the north end of the intersection and confirmed Monarch habitat within the Dry - Fresh Mixed Meadow (MEMM3) on the south end of the intersection. |
| | ***Rating*** | | ◕ | ◕ | ◕ |
| **4** | **Impact to water resources and drainage** | Change or impact to surface water, disruption or changes to drainage, impact to groundwater resources, source water protection. | This alternative is within close proximity to the Provincially Significant Wetland (Copetown Bog) and may have potential impacts to the associated water resources. | This alternative is furthest in proximity from the Provincially Significant Wetland (Copetown Bog) and is unlikely to impact the associated water resources. | This alternative is closest in proximity to the Provincially Significant Wetland (Copetown Bog) and may have potential impacts to the associated water resources. |
| | ***Rating*** | | ◑ | ● | ◔ |

| | Criteria for Evaluating Alternatives | Indicators | Alternative Design Concept 1: Roundabout maintaining current approach<br><br>This alternative would involve the development of a roundabout with the approach centred along the current roadway. | Alternative Design Concept 2: Roundabout with approach shifted west<br><br>This alternative would involve the development of a roundabout with the approaching lane shifted towards the west | Alternative Design Concept 3: Roundabout with approach shifted east<br><br>This alternative would involve the development of a roundabout with the approaching lane shifted towards the east |
|---|---|---|---|---|---|
| **5** | **Potential climate change impact and resilience – emission of greenhouse gases, impact on carbon removal, carbon storage / sink (trees and vegetation). Resilience and climate change impact on the undertaking** | Impact to carbon sinks (impact to wetland / vegetation removal).<br><br>Potential for greenhouse gas emissions.<br><br>Resilience or vulnerability.<br><br>Change in air quality. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. | Minor impact to carbon sink through tree removal. However, the increased accessibility for active transportation may mitigate some impact to the carbon sink. |
| | ***Rating*** | | ◕ | ◕ | ◕ |
| | **Summary Natural Environment** | **Summary** | ◑ | ◕ | ◔ |

| | Criteria for Evaluating Alternatives | Indicators | Alternative Design Concept 1: Roundabout maintaining current approach | Alternative Design Concept 2: Roundabout with approach shifted west | Alternative Design Concept 3: Roundabout with approach shifted east |
|---|---|---|---|---|---|
| **B** | **Socio-Cultural Environment** | | | | |
| **1** | **Impact to cultural heritage resources such as archaeology and cultural heritage** | Potential impact to build heritage and cultural heritage landscapes.<br><br>Potential to impact archaeology resources. | No anticipated impact to potential cultural heritage resources (BHR2) or to potential cultural heritage (CHL3). No anticipated impact to archaeological resources pending confirmation through reporting. None of the alternatives have an anticipated impact to known registered non-designated property within study area. | No anticipated impact to potential cultural heritage resources (BHR2) or to potential cultural heritage (CHL3). No anticipated impact to archaeological resources pending confirmation through reporting. None of the alternatives have an anticipated impact to known registered non-designated property within study area. | No anticipated impact to potential cultural heritage resources (BHR2). No anticipated impact to potential cultural heritage (CHL3). Minor anticipated impact to archaeological resources pending confirmation through reporting. None of the alternatives have an anticipated impact to known registered non-designated property within study area. |
| | ***Rating*** | | ◕ | ◕ | ◕ |
| **2** | **Nuisance impacts such as noise, visual, and construction impacts** | Perceivable changes to existing noise levels.<br><br>Visual impacts / aesthetics.<br><br>Temporary disruption to residents during construction. | Temporary construction nuisance impacts may be present. Temporary nuisance impacts as a result of construction / temporary road closures for road improvements. | Temporary construction nuisance impacts may be present. Temporary nuisance impacts as a result of construction / temporary road closures for road improvements. | Temporary construction nuisance impacts may be present. Temporary nuisance impacts as a result of construction / temporary road closures for road improvements. |
| | ***Rating*** | | ◕ | ◕ | ◕ |
| **3** | **Land acquisition needs, impacts to driveway access** | Financial and social effects of property acquisition.<br><br>Change in use or layout.<br><br>Temporary changes to driveway access during construction. | No land acquisition anticipated. Impacts to driveway access to be confirmed. | No land acquisition anticipated. Impacts to driveway access to be confirmed. | Anticipated land acquisition in addition to property within conservation lands. Impacts to driveway access to be confirmed. |
| | ***Rating*** | | ◕ | ◕ | ◔ |

| | Criteria for Evaluating Alternatives | Indicators | Alternative Design Concept 1: Roundabout maintaining current approach | Alternative Design Concept 2: Roundabout with approach shifted west | Alternative Design Concept 3: Roundabout with approach shifted east |
|---|---|---|---|---|---|
| **4** | **Conformity to municipal and provincial agency policy** | Conforms to federal, provincial and local agency policy e.g. Conservation Authority, NEP, Greenbelt permitted uses. | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative has a minor to moderate anticipated impact to regulated conservation lands. Alternative 1 has a minor anticipated impact within the Niagara Escarpment Protection Area. | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative has a minor anticipated impact to regulated conservation lands and natural features. Alternative 2 has the least anticipated impact within the Niagara Escarpment Protection Area and Greenbelt Protected Countryside. | Improvements to safety align with Vision Zero policies from the Transportation Master Plan. This alternative has a moderate anticipated impact to regulated conservation lands and natural features. Alternative 3 has the greatest anticipated impact within the Niagara Escarpment Protection Area. |
| | ***Rating*** | | ◕ | ● | ◑ |
| **5** | **Levels of service for local residents and business, impact to municipal services** | Disruption to municipal services (accommodates winter maintenance and snow removal / storage, waste pick up).<br><br>Accommodates emergency vehicles.<br><br>Access to community mailbox. | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services. | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services. | Improves levels of service for local residents and businesses and does not have a negative impact to municipal services. |
| | ***Rating*** | | ● | ● | ● |
| 6 | **Multi-modal transportation connectivity and safety** | Pedestrian / Cyclist Safety<br><br>Facilitates connectivity of active transportation (e.g. Trail). | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist, and equestrian needs | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist, and equestrian needs.<br><br>Greatest improvement to safety through improvement of sightlines. | Opportunity for improvement of multi-modal transportation connectivity and safety including pedestrian, cyclist, and equestrian needs. |
| | ***Rating*** | | ◕ | ● | ◕ |
| | **Summary Socio-Cultural Environment** | **Summary** | ◕ | ◕ | ◑ |

| | Criteria for Evaluating Alternatives | Indicators | Alternative Design Concept 1: Roundabout maintaining current approach | Alternative Design Concept 2: Roundabout with approach shifted west | Alternative Design Concept 3: Roundabout with approach shifted east |
|---|---|---|---|---|---|
| **C** | **Financial Factors** | | | | |
| **1** | **Estimated Capital Costs** | Estimated Capital Costs. | Moderate estimated capital cost. | Moderate estimated capital cost. | Highest estimated capital cost. |
| | ***Rating*** | | ◔ | ◔ | ○ |
| **2** | **Estimated Operation and Maintenance Costs** | Estimated Operation and Maintenance Costs. | Moderate estimated operation and maintenance costs. | Moderate estimated operation and maintenance costs. | Moderate estimated operation and maintenance costs. |
| | ***Rating*** | | ◕ | ◕ | ◕ |
| **3** | **Property Acquisition Costs** | Property Acquisition Costs. | No property acquisition costs anticipated with maintenance of existing road platform. | No property acquisition costs anticipated. | Greatest quantity of property acquisition anticipated. |
| | ***Rating*** | | ● | ● | ◔ |
| | **Summary Financial Factors** | **Summary** | ◑ | ◑ | ◔ |

| | Criteria for Evaluating Alternatives | Indicators | Alternative Design Concept 1: Roundabout maintaining current approach | Alternative Design Concept 2: Roundabout with approach shifted west | Alternative Design Concept 3: Roundabout with approach shifted east |
|---|---|---|---|---|---|
| **D** | **Technical Factors** | | | | |
| **1** | **Operational and Roadside Safety** | Effects on layout / operation of intersection and roadway.<br><br>Improved sightlines.<br><br>Ability to address roadside safety requirements.<br><br>Ability to improve cyclist and pedestrian safety. | The roundabout improves the traffic operation moderately. Roundabouts are generally recognized as safer than traditional signalized or stop-controlled intersections due to their reduced number of conflict points for both vehicles and pedestrians. The lower operating speeds within roundabouts make it easier for drivers to yield, requiring less stopping distance and enhancing pedestrian safety.<br><br>The centred approach has moderate visibility in comparison to the shifted alternatives.<br><br>The circular geometry of a roundabout minimizes the risk of high-severity collisions, such as angle (T-bone) and head-on crashes; the geometry also reduces the impact of rear-end and sideswipe crashes. | The roundabout improves the traffic operation moderately. Roundabouts are generally recognized as safer than traditional signalized or stop-controlled intersections due to their reduced number of conflict points for both vehicles and pedestrians. The lower operating speeds within roundabouts make it easier for drivers to yield, requiring less stopping distance and enhancing pedestrian safety.<br><br>The west shifted approach has the best visibility between alternatives.<br><br>The circular geometry of a roundabout minimizes the risk of high-severity collisions, such as angle (T-bone) and head-on crashes; the geometry also reduces the impact of rear-end and sideswipe crashes. | The roundabout improves the traffic operation moderately. Roundabouts are generally recognized as safer than traditional signalized or stop-controlled intersections due to their reduced number of conflict points for both vehicles and pedestrians. The lower operating speeds within roundabouts make it easier for drivers to yield, requiring less stopping distance and enhancing pedestrian safety.<br><br>The east shifted approach reduces visibility from Alternative 1 (centred roundabout).<br><br>The circular geometry of a roundabout minimizes the risk of high-severity collisions, such as angle (T-bone) and head-on crashes; the geometry also reduces the impact of rear-end and sideswipe crashes. |
| | ***Rating*** | | ◕ | ● | ◑ |
| **2** | **Design Constraints / Geometry** | Professional opinion on the design limitations and restrictions.eg. Need for cut / fill / retaining walls.<br><br>Conformance to City policy and Design Elements (e.g. Median design, boulevards, lane widths, landscaping).<br><br>Ease and efficiency of construction, including ease of construction staging and relative construction traffic management. | This alternative proposes the roundabout in an area with steep slope requiring cut and fill. | This alternative is not anticipated to have significant design constraints. | This Alternative's close proximity to the wetland may pose a design constraint. This alternative proposes the roundabout in an area with steep slope requiring cut and fill. |
| | ***Rating*** | | ◑ | ● | ◔ |
| **3** | **Utility Impacts** | Effects on utilities (e.g. relocations). | Alternatives will have equivalent impact to utilities within the corridor (Bell, Enbridge, Hydro One). This will have a minor impact. | 'Alternatives will have equivalent impact to utilities within the corridor (Bell, Enbridge, Hydro One). This will have a minor impact. | 'Alternatives will have equivalent impact to utilities within the corridor (Bell, Enbridge, Hydro One). This will have a minor impact. |
| | ***Rating*** | | ◑ | ◑ | ◑ |
| **4** | **Goods Movement** | Facilitates Goods Movement<br><br>Roadway alignment implications on positive guidance. | City of Hamilton's 2022 Truck Route Master Plan designates Highway 52 as a fulltime truck route, with no truck restrictions on Powerline Road. Peak-hour turning movement data indicates significant truck traffic at the intersection of Highway 52 and Powerline Road. A roundabout will benefit goods movement in the corridor and will be a moderate improvement. | City of Hamilton's 2022 Truck Route Master Plan designates Highway 52 as a fulltime truck route, with no truck restrictions on Powerline Road. Peak-hour turning movement data indicates significant truck traffic at the intersection of Highway 52 and Powerline Road. A roundabout will benefit goods movement in the corridor and will be a moderate improvement. | City of Hamilton's 2022 Truck Route Master Plan designates Highway 52 as a fulltime truck route, with no truck restrictions on Powerline Road. Peak-hour turning movement data indicates significant truck traffic at the intersection of Highway 52 and Powerline Road. A roundabout will benefit goods movement in the corridor and will be a moderate improvement. |
| | ***Rating*** | | ● | ● | ● |
| | **Summary Technical Factors** | **Summary** | ◑ | ◕ | ◑ |

| | Criteria for Evaluating Alternatives | Indicators | Alternative Design Concept 1: Roundabout maintaining current approach | Alternative Design Concept 2: Roundabout with approach shifted west | Alternative Design Concept 3: Roundabout with approach shifted east |
|---|---|---|---|---|---|
| **E** | **Problem Statement** | | | | |
| **1** | **Addresses problem Statement** | Addresses problem statement | Yes | Yes | Yes |
| | **Summary Problem Statement** | **Summary** | **Meets POS** | **Meets POS** | **Meets POS** |

| Criteria for Evaluating Alternatives | Alternative Design Concept 1: Roundabout maintaining current approach | Alternative Design Concept 2: Roundabout with approach shifted west | Alternative Design Concept 3: Roundabout with approach shifted east |
|---|---|---|---|
| **Overall Summary** | **Somewhat Preferred** | **Most Preferred** | **Least Preferred** |

**Order of Preference**

| | |
|---|---|
| Most Preferred | ● |
| More Preferred | ◕ |
| Somewhat Preferred | ◑ |
| Less Preferred | ◔ |
| Least Preferred | ○ |

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Appendix C

# Consultation and Engagement

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| **EXTERNAL CIRCULATION (Email)** | - | - | - | - | - | - | - | - | - | - |
| **Conservation Authority** | - | - | - | - | - | - | - | - | - | - |
| - | - | - | Grand River Conservation Authority | P.O. Box 729 400 Clyde Road | Cambridge, ON | N1R 5W6 | 519-621-2761 ext. 2229 Fax: 519-621-4844 | grca@grandriver.ca | - | 250326_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Wang | Angela | Resource Planner | Grand River Conservation Authority | P.O. Box 729 400 Clyde Road | Cambridge, ON | N1R 5W6 | 519-621-2763 ext. 2270 | awang@grandriver.ca | 250327_Email and Letter. The Study Area contains portions of the Big Creek Headwaters Provincially Significant Wetland Complex and the Copetown Bog Provincially Significant Wetland Complex, as well as a watercourse and online pond. GRCA recommends contacting the office early in the process to determine permitting requirements under Ontario Regulation 41/24 for work proposed within the regulated area. | 250326_Email. Circulated NOCm and PIC 1 251001_Email. Circulated Notice of PIC2 |
| Costie | Gord | | Hamilton Conservation Authority | 838 Mineral Springs Road, Box 81067 | Ancaster, ON | L9G 4X1 | 905-525-2181 ext. 130 Fax: 905-648-4622 | Gord.Costie@conservationhamilton.ca | 250408_PIC1. Requested to be added to Project Contact List. | - |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Peck | Scott | DCAO/Director, Watershed Planning & Engineering | Hamilton Conservation Authority | 838 Mineral Springs Road, Box 81067 | Ancaster, ON | L9G 4X1 | 905-525-2181 ext. 130<br>Fax: 905-648-4622 | scott.peck@conservationhamilton.ca | 250414_Email in response to PIC1. The subject lands lie outside the HCA watershed, but adjacent to HCA-owned Copetown Bog ESA Lands, the TH&B Rail Trail, and its parking lot. HCA supports the Preliminary Preferred Alternative, but requested confirmation that the roundabout design maintains safe access to their parking lot and includes appropriate signage. They asked for measures to prevent unintended parking at the community mailbox area and for confirmation that the project will not encroach on Copetown Bog or impact groundwater / surface water recommending a landscape / planting buffer.<br>HCA also requested early coordination on trail crossing options, preferably a signalized crossing.<br>250520_Email. Thanked City for responses to their comments on NOCm and PIC1.<br>251027_Email. Noted attendance at PIC2. HCA remains supportive, noting benefits such as shifting the roundabout away from the ESA, maintaining access to HCA parking, and providing a safe trail reroute. For detailed design, HCA requested:<br>1. Controls to prevent trail users from parking at the community mailbox area instead of the HCA lot.<br>2. Removal and naturalization of the existing trail segment once the reroute is built, ensuring users only cross at the new roundabout location.<br>3. Signage to prevent vehicles from stacking or blocking the trail crossing at the roundabout. | 250319_Email. Circulated NOCm and PIC1<br>250516_City Email. GRCA has been notified of the study and is interested in determining permitting requirements. It is acknowledged that HCA has no natural hazard role related to the project and a permit will not be required from HCA, but the City appreciates HCA's interest related to their ownership of the Copetown Bog ESA Lands, TH & B Rail Trail, and associated parking lot. The City asked HCA to confirm if they or GRCA would be the appropriate authority to establish the wetland boundary adjacent to the Study Area. The preliminary preferred alternative contemplates HCA parking access from a new easterly leg off the roundabout, though its feasibility is being examined, and further details will be discussed. Appropriate signage for parking access will be included in the MCEA documentation and considered in detailed design. Parking is not anticipated along the new eastern leg. The City has contacted Canada Post regarding the existing community mailbox and may need to discuss mailbox and parking access with both Canada Post, and HCA. Environmental study work, including wetland boundary staking, and a preliminary Stormwater Management Study are being completed to confirm no encroachment towards the ESA, maintained groundwater / surface water, and no negative impacts on the Copetown Bog ESA. These points will be confirmed once the studies are completed. The City acknowledged a landscape and planting buffer plan is required between the roundabout and the ESA, and will be noted in the MCEA for detailed design. The Study Team will arrange a meeting with HCA staff to review trail crossing options once developed in the next phase.<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Henderson | Brandon | To: Development Approvals Section | Niagara Escarpment Commission | 232 Guelph Street | Georgetown, ON | L7G 4B1 | - | nec@ontario.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| **Provincial Authorities** | - | - | - | - | - | - | - | - | - | - |
| Barboza | Karla | Team Lead - Heritage | Ministry of Citizenship and Multiculturalism | 1700 - 401 Bay Street | Toronto, ON | M7A 0A7 | | karla.barboza@ontario.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Kaufman | Jackson | Heritage Planner | Ministry of Citizenship and Multiculturalism | 1700 - 401 Bay Street | Toronto, ON | M7A 0A7 | - | jackson.kaufman@ontario.ca | 250417_Email. Requested the Project Information Form (PIF) numbers associated with the archaeological assessments. Recommended a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment be undertaken for the entire study area during the planning phase and for it to be summarized in the ESR. Requested any technical cultural heritage studies to be provided to MCM prior to the issuance of the Notice of Completion (or commencing work on site).<br>260317_Email. Acknowledged receipt of CHR and HIA and noted they will review and provide comments by mid April.<br>260421_Email. Provided supporting letter with comments for CHR and HIA. Noted CHR and HIA met requirements; inquired why HIA was conducted. | 250319_Email. Circulated NOCm / PIC1<br>260312_Email. Burnside provided the Cultural Heritage Report and Heritage Impact Assessment for review. |
| Chown | Jennifer | Environmental Facilities Coordinator | Ontario Provincial Police | 2 - 777 Memorial Avenue | Orillia, ON | L3V 7V3 | - | Jennifer.Chown@opp.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Wootton | Gregory | Chief Administrative Officer | Ministry of Agriculture, Food and Agribusiness | 1 Stone Road West, 2nd Floor | Guelph, ON | N1G 4Y2 | - | gregory.wootton@ontario.ca | - | 250319_Email. Circulated NOCm and PIC1 |
| - | - | - | Ministry of Agriculture, Food and Agribusiness | - | - | - | - | omafra.eanotices@ontario.ca | - | 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Infrastructure Ontario | 4 - 1 Stone Road West | Guelph, ON | N1G 4Y2 | - | NoticeReview@infrastructureontario.ca | - | 250319_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Ministry of the Environment, Conservation and Parks - Region Technical Support Section | - | - | - | - | eanotification.wcregion@ontario.ca | - | 250304_Email. Circulated NOCm and PIC1 and PIF 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Ministry of the Environment, Conservation and Parks - Environmental Assessment and Permissions Branch | - | - | - | - | MEA.NOTICES.EAAB@ontario.ca | - | 251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Del Villar Cuicas | Joan | Environmental Assessment & Planning Coordinator | Ministry of the Environment, Conservation & Parks | 119 King Street West, 12th Floor | Hamilton, ON | L8P 4Y7 | 905-521-7864 Fax: 905-521-7806 | Joan.DelVillarCuicas@ontario.ca | 250304_ Email. Provided "Areas of Interest" document providing guidance regarding the Ministry's interests with respect to the Class EA Process. Ministry would like to address all areas of interest in the EA document at an appropriate level for the EA study. MECP has delegated the procedural aspects of rights-based consultation to the City. The following two communities were identified to be consulted with - Mississaugas of the Credit First Nation, and Six Nations of the Grand River. Requested to review ESR for 30 days prior to the Notice of Completion. Also sent A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with Aboriginal Communities, and Client's Guide to preliminary Screening for Species at Risk documents.<br>260525_Email. Acknowledged circulation of the Draft ESR and provided the following comments: No major concerns for surface water due to minimal changes in runoff, but noted this is conditional on detailed design confirming no negative impacts. Dewatering over 50,000 L/day is regulated and may require registration under Environmental Activity and Sector Registry (EASR). Detailed, separate consultation records must be maintained for each Indigenous Nation, including a clear tracking log of all communications; and the final ESR must include all consultation records, along with the Notice of Completion and related correspondence. | 250303_Email. Circulated NOCm and PIC1<br>250304_Email. Circulated NOCm and PIC1 with updated dates 250319_Email. Circulated NOCm and PIC1<br>250915_Email. Circulated Notice of PIC2<br>251001_Email. Circulated Notice of PIC2<br>260408_Email. Circulated Draft ESR |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Irish | Dawn | Manager, Environmental Policy Office | Ministry of Transportation | 2 - 301 St. Paul Street | St. Catherines ON | L2R 7R4 | | dawn.irish@ontario.ca | - | 250319_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Van Roon | Pauline | Manager, Construction Management Centre | Ministry of Transportation, Transportation Infrastructure Management Division | 1201 Wilson Avenue, Bldg. D. 4th Floor | Downsview, ON | M4V 1L5 | P: 416-585-6062 | pauline.vanroon@ontario.ca | - | 250319_Email. Circulated NOCm and PIC1 251001 Email. Circulated Notice of PIC2 |
| Thornton | Ian | District Supervisor | Ministry of Natural Resources | 1 Stone Road West | Guelph, ON | N1G 4Y2 | 226-820-5050 Fax: 519-826-4929 | ian.thornton@ontario.ca | - | 250319_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Lafrance | Crystal | District Manager | Ministry of Natural Resources, Aylmer-Guelph District | 1 Stone Road West | Guelph, ON | N1G 4Y2 | 519-859-6376 | crystal.lafrance@ontario.ca | - | 251001_Email. Circulated Notice of PIC2 |
| Merchant | Tanzeel | Regional Director (Acting) of the | Ministry of Municipal Affairs & Housing | 2304 - 777 Bay Street | Toronto, ON | M5G 2E5 | | Tanzeel.Merchant@ontario.ca | - | 251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| **Federal Authorities** | - | - | - | - | - | - | - | - | - | - |
| - | - | Canada Post Customer Service | Canada Post | PO BOX 90022 2701 Riverside Drive | OTTAWA ON | K1V 1J8 | - | CPCSPCDSOLondon@canadapost.postescanada. ca | 250320_Email. Provided correct email address.<br>251001_Email. Noted that the email would be forwarded to Tom Dell. | 250317_Letter direct mail. Circulated NOCm and PIC1 250319_Email. Circulated NOCm and PIC1 250326_Email. Circulated NOCm and PIC1 (2nd Email) 251001_Email. Circulated Notice of PIC2 |
| Dell | Tom | - | Canada Post | PO BOX 90022 2701 Riverside Drive | OTTAWA ON | K1V 1J8 | - | Thomas.Dell@canadapost.postescanada.ca | 250326_Email. Neil Mazey copied Tom Dell on the email as Hamilton is his territory.<br><br>250404_Email. Noted that Tom Dell is to be copied on email as the study area is within his territory.<br><br>250711_Email. The mailbox can be relocated if in the way of work that needs to be completed. Inquiring about the preferred location for the relocation of the community mailbox, whether it wil be staying in the general area, or if it will be required to be moved well outside of the current location.<br><br>250716_Email. If modules are in the way they can be moved. The hope is that this area will continue to be a suitable location for the community mailbox to stay following work being completed. Noted that upgrading the equipment that is currently in place with a newer style equipment is possible. | 250508_Email. Circulated NOCm and PIC1. City inquiring about what is required from Canada Post to facilitate the relocation of the community mailbox to be moved further back from the edge of the Highway 52 pavement to accommodate immediate interim road improvements.<br><br>250522_Email. City following up regarding previous email.<br><br>250714_Email. Confirmed that relocation of community mailbox is not required for interim works. However, upon completion of the MCEA process, the entire site would be reconstructed - accommodating the community mailbox in the same general area, but setback further easterly from Highway 52. Inquired about any standards to help inform the development of the preliminary concept plan.<br><br>250728_Email. Confirmed that the community mailbox can be accommodated and that the new configuration of the intersection will be an improvement over what exists for both through traffic and those needing to access the mailbox. Inquired about how much time Canada Post needs to review the plan.<br><br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| **Utilities** | - | - | - | - | - | - | - | - | - | - |
| Philips | Adrian | Manager of Environment | Alectra Utilities Corporation | 161 Cityview Boulevard | Woodbridge, ON | L4H 0A9 | Direct line 905-798-2415 905-417-6900 905-284-4080 | adrian.phillips@alectrautilities.com | - | 251001_Email. Circulated Notice of PIC2 |
| Lachapelle | John | Planner & Manager, ROW Control Centre | Bell Canada, Municipal Operations Centre | 100 Borough Drive | Scarborough, ON | M1P 5B8 | - | rowcentre@bell.ca | - | 251001_Email. Circulated Notice of PIC2 |
| Leppert | Randy | Planning Lead Hand Niagara/Hamilton | Cogeco Cable Inc | 7170 McLeod Road | Niagara Falls, ON | L2G 3H5 | Phone: 289-296-6228 Cell: 905-351-3771 | randy.leppert@cogeco.com | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Padmanabhan | Anuradha | Permit Coordinator | Rogers Communications | 3573 Wolfedale Road | Mississauga, ON | L5C 3T6 | - | gtaw.newarea@rci.rogers.com | - | 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Enbridge Pipelines Inc. (Construction and Growth Group). | 918 South Service Road | Hamilton, ON | L8E 5M4 | - | notifications@enbridge.com | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Heavens | Derek | Advisor, Construction and Project Management | Enbridge Pipelines Inc. (Construction and Growth Group). | 918 South Service Road | Hamilton, ON | L8E 5M4 | - | Derek.Heavens@enbridge.com | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Bradley | Maria | Sr. Analyst, Lands & ROW | Enbridge Pipelines Inc. | - | Sarnia, ON | N7S 6L2 | 519-333-6785 | est.reg.crossing@enbridge.com | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| - | - | - | Enbridge Pipelines Inc. | - | - | - | - | mark-ups@enbridge.com | - | 251001_Email. Circulated Notice of PIC2 |
| Borsuk | Ian | Executive Director | Environment Hamilton | 51 Stuart Street | Hamilton, ON | L8L 1B5 | 905-549-0900 | iborsuk@environmenthamilton.org | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| - | - | - | Environment Hamilton | 51 Stuart Street | Hamilton, ON | L8L 1B5 | - | contactus@environmenthamilton.org | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Crown | Michael | Director of Energy | HCE Energy Inc. | HCE Operations 79 Bay Street North | Hamilton, ON | L8R 3P8 | - | Michael.Crown@hcetechnologies.com | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Fung | Yuen Man (Tiffany) | Hydro One Real Estate Management | Hydro One | 185 Clegg Road PO Box 4300 | Markham, ON | L3R 5Z5 | SECONDARY LAND USE Department - | Tiffany.Fung@HydroOne.com Department.SecondaryLandUse@hydroone.com | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| SUN Hongxia | Susan | - | Hydro One Networks Inc. | - | - | - | - | CentralFBCPlanning@HydroOne.com SecondaryLandUse@HydroOne.com; Susan.SUN@HydroOne.com | - | 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Sun Canadian Pipeline | - | - | - | - | info@sun-canadian.com Attention: Manager of EHS Attention: Manager of Engineering | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Bergen | Dawn | Land Analyst, Urban Development | TransCanada Pipelines | 450-1st Street S.W. | Calgary, AB | T2P 5H1 | 403-920-2000; 1-866-920-0007 Fax: 403-920-2329 | Dawn_bergen@transcanada.com | - | 250326_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Ardelli | Terri | Land Analyst, Urban Development | TransCanada Pipelines | 450-1st Street S.W. | Calgary, AB | T2P 5H1 | 403-920-2000; 1-866-920-0007 Fax: 403-920-2329 | terr_ardelli@transcanada.com | - | 250326_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Greco | Enzo | Construction Project Manager | Enbridge Gas | 918 South Service Road | Stoney Creek, ON | L8E 5M4 | Phone: (289) 649-2061 Cell: (905) 741-8395 | Enzo.Greco@enbridge.com | - | 250319_Email. Circulated NOCm<br>and PIC1 250326_Email. Circulated<br>NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| MHBC Planning, Urban Design & Landscape | - | - | - | - | - | - | - | TCEnergy@mhbcplan.com | - | 251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| **Schools** | | | | | | | | | | |
| Anderson | Dave | Senior Manager, Facilities Management | Hamilton-Wentworth District School Board | 100 King Street West - P.O. Box 2558 | Hamilton, ON | L8N 3L1 | 905-527-5092 ext. 2202 | daanders@hwdsb.on.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| - | - | - | Hamilton-Wentworth Catholic District School Board | - | - | - | - | communications@hwcdsb.ca | - | 251001_Email. Circulated Notice of PIC2 |
| Sullivan | Terry | Director, Security and Parking Services | McMaster University | 1280 Main Street West - CUC-102 | Hamilton, ON | L8S 4K1 | 905-525-9140 ext. 23372 | sullivan@mcmaster.ca | - | 250319_Email. Circulated NOCm and PIC1 |
| **Transportation** | - | - | - | - | - | - | - | - | - | - |
| Little Brown | Abbie Paul | Co-Chairs | Cycle Hamilton | - | - | - | - | chair@cyclehamont.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Nopper | Evan | City Liaison for Hamilton Cycling Committee | Hamilton Cycling Committee | - | - | - | - | Evan.Nopper@hamilton.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Topalovic | Peter | Manager of Sustainable Mobility | Smart Commute Hamilton | - | - | - | - | smartcommute@hamilton.ca | - | 250319_Email. Circulated NOCm and PIC1 |
| **Other** | - | - | - | - | - | - | - | - | - | - |
| **Henderson** | Crystal | Manager of Communications and External Relations | REALTORS Association of Hamilton-Burlington | 505 York Boulevard | Hamilton, ON | L8R 3K4 | 905-529-8101 ext. 295 Fax: 905-529-4349 | crystal.henderson@cornerstone.inc | - | 250319_Email. Circulated NOCm and PIC1 |
| - | - | Executive Committee Chair | Hamilton Chamber of Commerce | 120 King Street West Suite 507, Plaza Level | Hamilton, ON | L8P 4V2 | 905-522-1151 | hcc@hamiltonchamber.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| - | - | President | Hamilton-Halton Home Builders Association | 1112 Rymal Road East | Hamilton, ON | L8W 3N7 | 905-575-3344 | chair@ohba.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| - | - | - | Hamilton Paramedic | - | - | - | - | hamiltonparamedicservice@hamilton.ca | - | 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Hamilton Police | - | - | - | - | info@hamiltonpolice.on.ca | - | 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Hamilton Fire Department | - | - | - | - | HFDGeneral@hamilton.ca | - | 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Bruce Trail | - | - | - | - | abrylowski@brucetrail.org | - | 251001_Email. Circulated Notice of PIC2 |
| - | - | - | Hamilton Bike Share | - | - | - | - | help@hamiltonbikeshare.ca | - | 251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| **EXTERNAL CIRCULATION (Mail)** | - | - | - | - | - | - | - | - | - | - |
| **Provincial Authorities** | - | - | - | - | - | - | - | - | - | - |
| - | - | E/A Project Coordination Section | Ministry of the Environment, Conservation & Parks | 2 St. Clair Ave. W. 14th Floor | Toronto, ON | M4V 1L5 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| - | - | - | Ministry of Agriculture, Food and Agribusiness | - | - | - | - | - | - | 250929_Letter direct mail. Circulated Notice of PIC2 |
| **Federal Authorities** | - | - | - | - | - | - | - | - | - | - |
| - | - | Canada Post Customer Service | Canada Post | PO BOX 90022 2701 Riverside Drive | Ottawa, ON | K1V 1J8 | - | CPCSPCDSOLondon@canadapost.postescanada.ca | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Dobos | Rob | EA Section | Environment Canada | 867 Lakeshore Blvd. | Burlington, ON | L7R 4A6 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Shaw | Mike | Environmental Assessment Projects Officer | Environment Canada | 867 Lakeshore Blvd. | Burlington, ON | L7R 4A6 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| - | - | - | National Heritage Information Centre | 300 Water Street | Peterborough, ON | K9J 8M4 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| **Utilities** | - | - | - | - | - | - | - | - | - | - |
| Jakubowski | Mark | Supervisor, Design, Customer Capital | Alectra Utilities Corporation | 55 John St. N., 6th Floor | Hamilton, ON | L8R 3M8 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Gill | Chris | Engineering Project Manager | Bell Canada | 20 Hunter St. W. | Hamilton, ON | L8N 3H2 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Mitchell | Colleen | Land Agent - Eastern Pipeline Operations | Imperial Oil Products & Chemical Division | 100 - 5th Concession Rd. E. | Waterdown, ON | L0R 2H1 | 1-888-242-6660 x242 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Wong | Tammy | Environmental Specialist, Corporate Programs | Ontario Power Generation | 700 University Avenue | Toronto, ON | M5G 1X6 | 416-592-2555 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| **Hospitals** | - | - | - | - | - | - | - | - | - | - |
| - | - | President of Hamilton Health Sciences | Hamilton Health Sciences | 100 King Street West | Hamilton, ON | L8P 1A2 | 905-521-2100, Ex 74712 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| **Schools** | - | - | - | - | - | - | - | - | - | - |
| Beaudin | Albert | - | French Catholic School Board | 110 Drewry Avenue | North York, ON | M2M 1c8 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Cupido | Anthony | Adjunct Associate Professor, Civil Engineering | McMaster University | 1280 Main Street West Campus Services Building, Room 109 | Hamilton, ON | L8S 4M3 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Daly | Patrick J. | President of the Ontario Catholic School Trustees' Association (OCSTA) | Hamilton-Wentworth Catholic District School Board | P.O. Box 2012 90 Mulberry Street | Hamilton, ON | L8N 3R9 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Ferrie | P. | Senior Manager, Facility Management Services | Hamilton-Wentworth Catholic District School Board | 90 Mulberry Street, P.O. Box 2012 | Hamilton, ON | L8N 3R9 | 905-525-2930 | - | - | 250929_Letter direct mail. Circulated Notice of PIC2 |
| Danko | Dawn | Chair | Hamilton-Wentworth District School Board | 20 Education Court Mailing address PO Box 2558 L8N 3L1 | Hamilton, ON | L9A 0B9 | 289-237-1644 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Ladouceur | Miguel | Director of Planning | French Public School Board | 116 Cornelius Parkway | Toronto, ON | M6L 2K5 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Mckerlie | Ron | President | Mohawk College | 135 Fennell Avenue West | Hamilton, ON | L8N 3T2 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| Armstrong | Paul | - | Mohawk College | 135 Fennell Avenue West | Hamilton, ON | L8N 3T2 | - | - | - | 250929_Letter direct mail. Circulated Notice of PIC2 |
| Pace-Gubekjian | Paola | Associate Director of Corporate Services | Hamilton-Wentworth Catholic District School Board | P.O. Box 2012 90 Mulberry Street | Hamilton, ON | L8N 3R9 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| Transportation | - | - | - | - | - | - | - | - | - | - |
| - | - | - | Canada Coach | P.O. Box 4017 2015 Fisher Drive, Unit 101 | Peterborough, ON | K9J 7B1 | 705-748-6411 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |
| - | - | - | Community CarShare (Communauto Hamilton) | 175 Longwood Road South, Suite 304A | Hamilton, ON | L8P 0A1 | 1-855-742-7399 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Chahal | Jagtar Singh | Chairman & CEO | Hamilton Cab | 1051 Main Street East | Hamilton, ON | L8M 1N5 | 905-522-0748 ext. 235 | jagtar@hamiltoncab.com | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Rizzuto | Anthony | - | Blue Line Transportation | 160 John Street South | Hamilton, ON | L8N 2C4 | 905-525-0000 | info@525blue.com | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Bylsma | Mark | Chairman | Ontario Trucking Association | 555 Dixon Road | Toronto, ON | M9W 1H8 | 416-249-7401 | - | - | 250929_Letter direct mail. Circulated Notice of PIC2 |
| Seymour | Mark | Chairman | Ontario Trucking Association | 555 Dixon Road | Toronto, ON | M9W 1H8 | 416-249-7401 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| Wasik | Gene | Executive Director | Social Bicycle (SoBi) | 126 Catherine Street North | Hamilton, ON | L8R 1J4 | 289-768-2453 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Best | John | Executive Director | Southern Ontario Gateway Council | 140 King Street East, Suite 14 | Hamilton, ON | L8N 1B2 | 905-667-0317 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Adams | Angelo | President | Zipcar | 129 Spadina Avenue | Toronto, ON | M5V 2L3 | 416-977-0953 | - | - | 250929_Letter direct mail. Circulated Notice of PIC2 |
| Ceille | Kaye | President | Zipcar | 129 Spadina Avenue | Toronto, ON | M5V 2L3 | 416-977-9008 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| Winkley | John | Regional Director - Marketing | Southern Ontario Railway | 241 Stuart St. W. | Hamilton, ON | L8N 3P9 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Other | - | - | - | - | - | - | - | - | - | - |
| - | - | - | United Church of Canada | Zion Hill Cemetery c/o K A Forster RR 2 | Lynden, ON | L0R 1T0 | - | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br><br>250929_Letter direct mail. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| **INDIGENOUS NATIONS** | - | - | - | - | - | - | - | - | - | - |
| Hill-Montour | Tanya | Archaeology Coordinator | Six Nations Land and Resources Department, Land Use Unit for the Six Nations of the Grand River Elected Council (SNEC) | 2498 Chiefswood Road PO Box 5000 | Ohsweken, ON | N0A 1M0 | 1-519-753-0665 | Tanyahill-Montour@sixnations.ca<br>lonnybomberry@sixnations.ca<br>dlaforme@sixnations.ca | 250407_Email. Requested information for project area<br>251002_Email. Advised City they will follow-up later today | 250905_Email. Circulated Draft Stage 1 Archaeological Assessment (AA) for information and / or review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA |
| LaForme | Abby | Consultation Coordinator | Mississaugas of the Credit First Nation | 2789 Mississauga Road - RR #6 | Hagersville, ON | N0A 1H0 | 1-905-768-4260 | abby.laforme@mncfn.ca<br>mark.laforme@mncfn.ca | - | 250312_Email. Circulated Project Introduction<br>250312_Letter direct mail. Circulated Project Introduction<br>250317_Email. Circulated NOCm and PIC1<br>250317_Letter direct mail. Circulated NOCm and PIC1<br>250905_Email. CC'd on circulated Stage 1 AA for comments / review<br>250908_Email. CC'd on circulated Supplementary Documentation Report to Stage 1 AA<br>251001_Email. Circulated Notice of PIC2<br>251002_Email. Follow-up email to previous circulation, asking if they will be providing comments on Stage 1 AA |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| LaForme | Adam | | Mississaugas of the Credit First Nation | 2789 Mississauga Road - RR #6 | Hagersville, ON | N0A 1H0 | 1-905-768-4260 | adam.laforme@mncfn.ca | 251003_Email. Confirmed no concerns with Stage 1 AA and advising they would like to be involved if any Stage 2 AA work is done<br>251008_Email. Confirmed no questions, comments, or concerns regarding Supplementary Documentation Report to Stage 1 AA | 250905_Email. Circulated Stage 1 AA for comments / review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA<br>250929_Letter direct mail. Circulated Notice of PIC2<br>251001_Email. Circulated Notice of PIC2<br>251002_Email. Follow-up email to previous circulation, asking if they will be providing comments on Stage 1 AA |
| Blake | Adrian | - | Mississaugas of the Credit First Nation | - | - | - | - | adrian.blake@mncfn.ca | 251008_Email. Provided a letter advising they had no concerns with the Stage 1 AA | - |
| Ste-Marie | Dominic | - | Wendat Nation | 255 Place Chef Michel-Laveau | Wendake, QC | G0A 4V0 | 1-877-712-3767 | Dominic.Ste-Marie@wendake.ca<br>Mario.GrosLouis@wendake.ca<br>Lori-Jeanne.Bolduc@wendake.ca<br>Thiefaine.Terrier@wendake.ca | - | 250312_Email. Circulated Project Introduction<br>250312_Letter direct mail. Circulated Project Introduction<br>250317_Email. Circulated NOCm and PIC1<br>250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Labbe | Benjamin | Consultation Email | Wendat Nation | 255 Place Chef Michel-Laveau | Wendake, QC | G0A 4V0 | - | consultations@wendake.ca | 250320_Email. Requested to review the Stage 1 AA upon completion. Noted that Wendat Nation would be interested in participating in fieldwork for a Stage 2 AA. Noted that their process for consultation has changed. Any new consultation or project notice must be sent to consultations@wendake.ca. Requested any other emails to be removed.<br>250910_Email. Advised they would not be reviewing or providing comments on Stage 1 AA, but to continue sharing future reports for their consideration | 250414_Email. City thanked Benjamin for his response and interest and noted that the Stage 1 AA will be shared as soon as it is available<br>250905_Email. Circulated Stage 1 AA for comments / review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA<br>251001_Email. Circulated Notice of PIC2 |
| General | Tracey | Consultation Coordinator | Haudenosaunee Development Institute (HDI) | 44 6th Line - Satellite office for Purolator deliveries<br>MAILING ADDRESS<br>16 Sunrise Court, Suite 600, PO Box 714<br>Ohsweken,<br>Ontario N0A 1M0 | Caledonia, ON | L3W 1Y9 | 1- 519-445-4222 | info@hdi.land | - | 250312_Email. Circulated Project Introduction<br>250312_Letter direct mail. Circulated Project Introduction<br>250317_Email. Circulated NOCm and PIC1<br>250317_Letter direct mail. Circulated NOCm and PIC1<br>250905_Email. Circulated Stage 1 AA for comments / review<br>250908_Email. Circulated Supplementary Documentation Report to Stage 1 AA<br>250929_Letter direct mail. |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Circulated Notice of PIC2 251001_Email. Circulated Notice of PIC2 |
| Turner | Matt | - | Haudenosaune e Development Institute (HDI) | - | - | - | - | environmental@hdi.land | 250922_Email. Requested the City not proceed with Stage 2 AA without engaging HDI and that HDI has not been meaningfully engaged in the process; provided a copy of HDI Standard Monitoring Agreement for Stage 2 AA fieldwork | - |
| Shay Press | Cassidy | Metis Consultation Unit | Metis Nation of Ontario | 500 Old St. Patrick Street, Unit #3 | Ottawa, ON | K1N 9G4 | - | consultations@metisnation.org | - | 250312_Email. Circulated Project Introduction 250312_Letter direct mail. Circulated Project Introduction 250317_Email. Circulated NOCm and PIC1 250317_Letter direct mail. Circulated NOCm and PIC1 250929_Letter direct mail. Circulated Notice of PIC2 251001_Email. Circulated Notice of PIC2 |

| FIRST NAME | LAST NAME | E-MAIL | Comments Received | Response Given |
|---|---|---|---|---|
| **CITY / COUNCIL** | - | - | - | - |
| **CITY** | - | - | - | - |
| Lisa | Abbott | lisa.abbott@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Carlo | Ammendolia | carlo.ammendolia@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Mark | Bainbridge | mark.bainbridge@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Maryssa | Barras | maryssa.barras@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Emily | Bent | emily.bent@hamilton.ca | - | 251001_Email. Circulated Notice of PIC2 |
| Frank | Bergen | fbergen@hamiltonpolice.on.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Carrie | Brooks-Joiner | carrie.brooks-joiner@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| James | Buffett | james.buffett@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |

| FIRST NAME | LAST NAME | E-MAIL | Comments Received | Response Given |
|---|---|---|---|---|
| Jennifer | Catarino | jennifer.catarino@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Nicholas | Chaloux | nicholas.chaloux@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Lisa | Christie | lisa.christie@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Mike | Christie | mike.christie@hamilton.ca | - | 251001_Email. Circulated Notice of PIC2 |
| Marnie | Cluckie | marnie.cluckie@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Ken | Coit | ken.coit@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Darlene | Cole | darlene.cole@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Tricia | Collingwood | tricia.collingwood@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |

| FIRST NAME | LAST NAME | E-MAIL | Comments Received | Response Given |
|---|---|---|---|---|
| Rob | Conley | rob.conley@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Maureen | Cosyn Heath | maureen.cosynheath@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 |
| Ana | Cruceru | ana.cruceru@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Dave | Cunliffe | david.cunliffe@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Don | Curry | don.curry@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Rino | Dal Bello | rino.dalbello@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Hanna | Daniels | hanna.daniels@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Tanya | Detmar | tanya.detmar@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |

| FIRST NAME | LAST NAME | E-MAIL | Comments Received | Response Given |
|---|---|---|---|---|
| Amber | Dewar | amber.dewar@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Jennifer | DiDomenico | jennifer.didomenico@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Beth | Dockstator | beth.dockstator@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Udo | Ehrenberg | udo.ehrenberg@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Anita | Fabac | anita.fabac@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Margaret | Fazio | margaret.fazio@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Mike | Field | mike.field@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Tiffany | Gardner | tiffany.gardner@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |

| FIRST NAME | LAST NAME | E-MAIL | Comments Received | Response Given |
|---|---|---|---|---|
| Cristina | Geissler | cristina.geissler@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Alissa | Golden | alissa.golden@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Cynthia | Graham | cynthia.graham@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
| Ashraf | Hanna | ashraf.hanna@hamilton.ca | - | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |
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| Melanie | Pham | melanie.pham@hamilton.ca | 250326_Supporting Attachment. The study area is subject to several provincial and local planning frameworks, including the Niagara Escarpment Plan (NEP), the Greenbelt Plan, and the Rural Hamilton Official Plan. These lands are designated for various uses such as Agriculture, Open Space and Natural Areas, and contain significant natural heritage and hydrologic features. Additionally, the area is identified as having archaeological potential, requiring the protection or mitigation of sites with archaeological value. The supporting attachment details specific infrastructure and design policies that must be followed during the project. Highway 52 is classified as an Arterial Road, while Powerline Road includes both Collector and Local road segments. Improvements must prioritize barrier-free design, the preservation of existing woodland resources, and the integration of active transportation networks, where feasible. Furthermore, City policy identifies roundabouts as the preferred method for intersection traffic control over all- way stops or signals. The project also falls within the jurisdiction of the GRCA. | 250317_Email. Circulated NOCm and PIC1 251001_Email. Circulated Notice of PIC2 |

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| Consultation and Accommodation Unit | - | - | Indigenous and Northern Affairs Canada | 300 Sparks Street, Room 205 | Ottawa, ON | K1A 0H4 | - | UCA-CAU@aadncaandc.gc.ca<br>http://sidait-atris.aadnc-aandc.gc.ca/atris_online/ | - | 250326_Email. Circulated NOCm and PIC1 (2nd Email) |

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| - | - | Environmental Coordinator | Transport Canada | 4900 Yonge Street, 4th Floor (PHE) | North York, ON | M2N 6A5 | 416-952-1018 | EnviroOnt@tc.gc.ca | 250327_Email. Response to have proponents self-assess whether their project will interact with a federal property and / or waterway, or if the project will require approval and / or authorization under any Acts administered by Transport Canada | 250319_Email. Circulated NOCm and PIC1 |
| - | - | - | Department of Fisheries & Oceans | 3027 Harvester Road, Suite 304 PO Box 85060 | Burlington, ON | L7R 4K3 | 1-855-852-8320 | fisheriesprotection@dfo-mpo.gc.ca | - | 250319_Email. Circulated NOCm and PIC1 |
| - | - | - | Canadian Transportation Agency | 15 Eddy Street | Gatineau, QC | K1A 0N9 | 1-888-222-2592<br>Fax: 819-953-8353 | secretariat@otc-cta.gc.ca | - | 250319_Email. Circulated NOCm and PIC1 |

| Last Name | First Name | Position | Organization | Address | City | Postal Code | Telephone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Speller | Rachel | Environment Officer-Environment Unit, Ontario Region | Lands and Trusts Services Env. Unit INAC | 25 St. Clair Ave. E. 8th floor | Toronto, ON | M4T 1M2 | 416-973-5899<br>Fax 416-954-4328 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| - | - | - | Canada Post | - | - | - | gtadeliveryplanning@canadapost.postescanada.ca | - | - | 250319_Email. Circulated NOCm and PIC1 |
| - | - | - | Indigenous Services Canada | - | - | - | infopubs@sac-isc.gc.ca | - | - | 251001_Email. Circulated Notice of PIC2 |
| **Utilities** | - | - | - | - | - | - | - | - | - | - |
| Mitchell | Colleen | Land Agent - Eastern Pipeline Operations | Imperial Oil Products & Chemical Division | 100 - 5th Concession Rd. E. | Waterdown, ON | L0R 2H1 | 1-888-242-6660 x242 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Wong | Tammy | Environmental Specialist, Corporate Programs | Ontario Power Generation | 700 University Avenue | Toronto, ON | M5G 1X6 | 416-592-2555 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1<br>250929_Letter direct mail. Circulated Notice of PIC2 |
| Milano | Bruno | Planner/Designer | Source Cable | 1090 Upper Wellington St | Hamilton, ON | L9A 3S6 | Work # 905-318-4663<br>Cell # 905-971-2762 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| **Transportation** | - | - | - | - | - | - | - | - | - | - |
| Vallens | Michael | Manager, Public Works | CN Rail | 1 Administration Road | Concord, ON | L4K 1B9 | - | michael.vallins@cn.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Organization | Address | City | Postal Code | Telephone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Carello | Jack | Manager, Utilities East Engineering Projects | Canadian Pacific Railway | 1290 Central Parkway West, Suite 700 | Mississauga, ON | L5C 4R3 | Phone: 905-803-3417 | Jack_Carello@cpr.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Linder | Stefan | Senior Manager | CN Rail | 1 Administration Road | Concord, ON | L4K 1B9 | - | stefan.linder@cn.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Puckering | Cathie | President & CEO | John C. Munro Hamilton International Airport | 9300 Airport Road, #2206 | Mount Hope, ON | L0R 1W0 | - | cpuckering@flyhamilton.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Foster | Pam | Director, Environmental Programs and Assessment | Metrolinx | 10 Bay Street | Toronto, ON | M5J 2W3 | - | jason.ryan@metrolinx.com | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| Cox | Chelsea | Executive Director | Bike Share | 103-91 James St. N. | Hamilton, ON | L8R 2K6 | 289-768-2453 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| Leach | Dave | President & Chief Executive Officer | Greyhound | 36 Hunter Street East | Hamilton, ON | L8N 3W8 | 905-521-3088 | - | - | 250317_Letter direct mail. Circulated NOCm and PIC1 |
| **Other** | - | - | - | - | - | - | - | - | - | - |
| Rowland | Nancy | Chief Executive Officer | Royal Botanical Gardens | 680 Plains Road West | Burlington, ON | L7T 4H4 | 905-527-1158 | nrowland@rbg.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Organization | Address | City | Postal Code | Telephone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| Theysmeyer | Tys | Head of Natural Areas | Royal Botanical Gardens | 680 Plains Road West | Burlington, ON | L7T 4H4 | 905-527-1158 (1-800-694-4769), ext.#251 | ttheysmeyer@rbg.ca | - | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| **Other Related Community Groups** | | | | | | | | | | |
| [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | | 250319_Email. Circulated NOCm and PIC1<br>251001_Email. Circulated Notice of PIC2 |
| **Local Residents** | | | | | | | | | | |
| [redacted] | [redacted] | Resident 1 | | | | | | [redacted] | 250409_Email. CC'd representatives with NCCH (National Cycling Centre Hamilton) and P2A (Paris to Ancaster Race) who were both supportive of initiatives that improve cycling safety in the study area.<br>251020_Email. The one option we have previously discussed, I strongly believe that during the design process, the left turn lane for Powerline Rd.<br>E. should start at the exit of the roundabout as a designated lane. This would appear to be three lanes for approximately 1,200 ft. With mountable curbing, it would provide additional traffic calming in both directions.<br>Supportive of the choice to move the roundabout west, improving the sightlines to the north. Noted one downside will be shortening the flat approach to the intersection coming down the hill from Summit Station. Inquired about possibly massaging the slope without compromising the first driveway entrance.<br>Questioned the possibility of elevating the roundabout and converting the rail trail crossing to a tunnel. | 250409_Email. No response<br>251001_Email. Circulated Notice of PIC2<br>251020_Email. No response |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | [redacted] | Resident 2 | | | | | | [redacted] | 250410_Email. Opposed to roundabout. Noted flashing crosswalk signals or maybe a stoplight at Powerline Rd. could fix the unsafe trail crossing of the Rail Trail. Disagrees with building new infrastructure when existing infrastructure needs repairs.<br>260220_Email. Noted that among the five options presented at the PIC, a stoplight is the safest and most practical solution - especially for the heavily used and hazardous rail trail crossing - whereas roundabouts, particularly those with flashing pedestrian-activated signals, create unsafe situations for cyclists and motorists. Questioned the traffic volume on Powerline Road East.<br>Supports roundabouts in appropriate locations, but feels the City cannot afford to invest in one at this intersection, and should instead prioritize repairing essential infrastructure.<br>260225_Email. Thanked Sherri, but disagreed with City priorities. | 250410_Email. No response<br>251001_Email. Circulated Notice of PIC2<br>260225_Email (Sherri Brown). Copied the City PM (Stephen Oguegbu) to the response and requested his assistance to respond to Resident's email (260220).<br>260304_Email. The City thanked [redacted] for sharing his concerns about the Highway 52 and Powerline Road intersection and acknowledged his attendance at both PICs. The City noted that project materials remain available on the City's website for public reference.<br>The City explained that the project is being carried out under the MCEA process. Based on the assessment, the Consultant, City staff, and the majority of participating residents support the roundabout, along with a dedicated southbound left-turn lane. |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | [redacted] | Resident 3 | | | | | | [redacted] | 250415_Email. Suggested to widen the existing T intersection to allow left turns. Unsupportive of roundabout.<br>250421_Email. Noted that there appears to be room for a centre turn lane along with a merge lane for southbound traffic exiting Powerline Rd. There is an ideal spot for a pedestrian tunnel a couple hundred feet to the | 250415_Email. No response<br>250421_Email. No response<br>251001_Email. Circulated Notice of PIC2 |
| [redacted] | [redacted] | Resident 4 | | [redacted] | [redacted] | | [redacted] | [redacted] | 250421_Email. Suggested to utilize traffic signals to create breaks in traffic, reduce the speed limit on Hwy 52 between Wilson St. and Copetown to 60 km/h, install traffic lights just north of Powerline Rd. W. and south of the Rail Trail crossing on Hwy 52, and redirect farm vehicles to utilize non-peak times | 250421_Email. No response<br>251001_Email. Circulated Notice of PIC2 |
| [redacted] | [redacted] | Resident 5 | | [redacted] | [redacted] | | [redacted] | [redacted] | 250421_Email. The lack of consideration for the left turn onto Hwy 52 from Powerline Rd E, compounded by the spacing of traffic due to roundabouts, poses significant challenges for safe and efficient access, suggesting the need for either an additional roundabout or a stop light with pedestrian crossings to better manage traffic flow and ensure safety for pedestrians and cyclists | 250421_Email. No response<br>251001_Email. Circulated Notice of PIC2 |

| Last Name | First Name | Position | Company | Address | City | Postal | Phone | Email | Comments Received | Response Given |
|---|---|---|---|---|---|---|---|---|---|---|
| [redacted] | [redacted] | Resident 6 | | | | | [redacted] | [redacted] | 251003_Email. I reviewed the presentation on the City's website and am pleased that safety issues at the intersection - and eventually the nearby rail trail crossing - are being addressed. As a frequent cyclist, the current Highway 52 rail trail crossing is extremely dangerous due to high-speed traffic and poor sightlines. Requested that the project include a dedicated pedestrian and cyclist crossing, noting that users may choose to access the improved intersection even without formal active transportation provisions because it may feel safer than the existing trail crossing. Noted they were hoping to attend PIC2, but were not certain. | 251003_Email (City). The City noted that the October 21, 2025 PIC would be a drop-in event, not a formal presentation. Display panels will provide project details, and staff will be available for one-on-one questions. Improvements to the Highway 52 pedestrian / cyclist crossing are included in the current project phase, with more information available on the panels. The City noted the panels will be posted online on October 20, 2025 and public comments will be accepted through the website until November 4, 2025. |
| [redacted] | [redacted] | Resident 7 | | | | | | [redacted] | 260413_Email. The road should be expanded to four lanes from two to address population growth and reduce vehicle congestion. Consideration should be given towards putting an off-ramp off the 403 by Jerseyville Road. More north-south highways are needed versus east-west. | 260414_Email (City). The City thanked [redacted] for her comments and noted that the study area includes the intersections of Highway 52 with Powerline Road West and Powerline Road East and noted that the project does not encompass the entire stretch of Highway 52. |

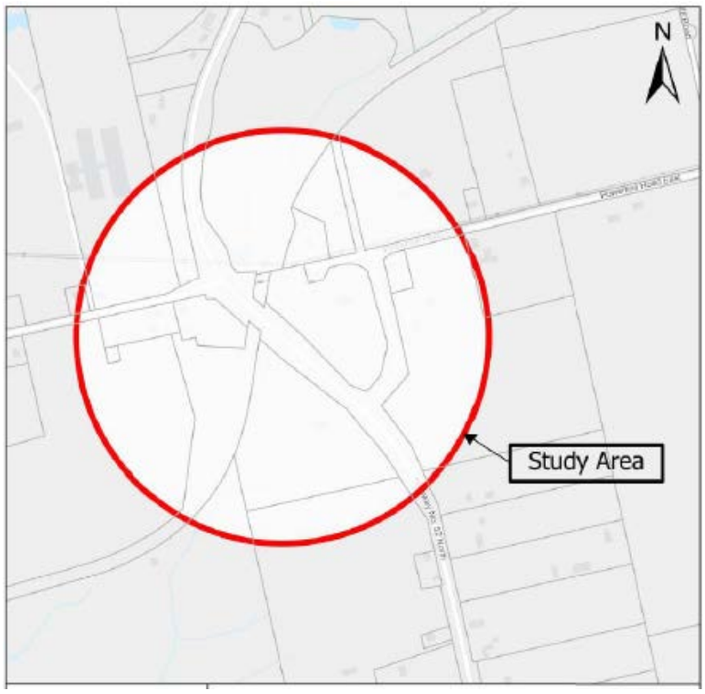
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

### You are Invited to Participate

The City of Hamilton is hosting the first of two Public Information Centres (PICs) for this study. The purpose of the first PIC will be to gather input and feedback from the local community at the onset of the project. A second PIC will be held at a later date to review the Study's alternative solutions and the associated evaluation process.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

**From:** Kukalis, John
**Sent:** Friday, September 5, 2025 2:09 PM
**To:** info@hdi.land
**Subject:** Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

To Whom It May Concern:

At this time, the city's Archaeology Consultant has issued the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment. A copy of this draft is attached above for your information.

If you are interested in providing review comments on the Draft - Stage I Archaeological Assessment, I would request you to email me at this time, to confirm your current review fee and other related payment information. This information is needed to prepare the required purchase order for approval. Unfortunately, invoicing will not be processed by the finance section, without a valid purchase order.

We would ideally like to provide the Archaeology Consultant with comments by the first week of October however, if you think you will require more time, please let me know.

In closing, if you have any questions or would like to discuss the above, please don't hesitate to contact me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Kukalis, John
**To:** info@hdi.land
**Subject:** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology
**Date:** Monday, September 8, 2025 2:23:00 PM
**Attachments:** SDR_Confidential_P383-0493-2025_Stage1-2_26AUG2025_SD.pdf
image001.png

---

To Whom It May Concern:

Further to my email below, attached above please find a Supplementary Documentation Report (SDR) which is related to the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements previously forwarded.

Please note that the contents of the SDR are confidential and should not be released in part or whole, to the public.

I apologize for any inconvenience not including this with my previous email may have caused.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Environmental Dept
**To:** Kukalis, John
**Cc:** Raechelle Williams; Archaeology Department; Todd Williams
**Subject:** Re: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology
**Date:** Monday, September 22, 2025 2:20:04 PM
**Attachments:** Copy of HDI Standard Monitoring Agreement.pdf

---

Hello John,

Please see attached HDI Standard Monitoring Agreement

Nya:weh,

Matt

On Mon, Sep 22, 2025 at 1:35 PM Environmental Dept <environmental@hdi.land> wrote:

> Sago/Hello John,
>
> Thank you for your email regarding this project. In response to the request of the current review fee and payment information for the Stage 1 Archeological Assessment, we would like to be involved in all aspects of the project including but not limited to monitoring for archeological and environmental field work. In the Stage 1 AA provided by ASI it states that stage 2 is required for parts of this project (Executive Summary, page1) We formally request that stage 2 work not commence until an agreement is in place with the city of Hamilton. This project is proceeding under a Municipal Class Environmental Assessment (MCEA) and HDI has not been meaningfully engaged to date despite the requirements of the MCEA Schedule C process.
>
> Nya:weh.Thank you,
>
> Matt

--
Matt Turner
Assistant Supervisor of the HDI Environmental Department
Haudenosaunee Development Institute
P.O. Box 714
Ohsweken, ON
N0A 1M0
Ph: 519-445-4222
Ph: 226-387-7364 (Direct)

**From:** Kukalis, John
**Sent:** Friday, September 5, 2025 2:08 PM
**To:** consultations@wendake.ca
**Subject:** Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

To Whom It May Concern:

At this time, the city's Archaeology Consultant has issued the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment. A copy of this draft is attached above for your information.

If you are interested in providing review comments on the Draft - Stage I Archaeological Assessment, I would request you to email me at this time, to confirm your current review fee and other related payment information. This information is needed to prepare the required purchase order for approval. Unfortunately, invoicing will not be processed by the finance section, without a valid purchase order.

We would ideally like to provide the Archaeology Consultant with comments by the first week of October however, if you think you will require more time, please let me know.

In closing, if you have any questions or would like to discuss the above, please don't hesitate to contact me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**De :** Kukalis, John <John.Kukalis@hamilton.ca>
**Envoyé :** 8 septembre 2025 14:23
**À :** consultations <consultations@wendake.ca>
**Objet :** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

To Whom It May Concern:

Further to my email below, attached above please find a Supplementary Documentation Report (SDR) which is related to the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements previously forwarded.

Please note that the contents of the SDR are confidential and should not be released in part or whole, to the public.

I apologize for any inconvenience not including this with my previous email may have caused.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Marie-Sophie Gendron
**To:** Kukalis, John
**Subject:** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology
**Date:** Wednesday, September 10, 2025 9:15:59 AM
**Attachments:** image002.png
image004.png
image005.png
image001.png

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Kwe John,
Tiawenhk inenh for your email. We won't be reviewing and providing comments for this report. Please continue to share reports once they are ready and we will confirm if we comment them or not.
Entïio'!
Marie-Sophie

**NATION WENDAT**
ONYIONHWENTSÏIO'

**Marie-Sophie Gendron**
Analyste archéologue

255, place Chef Michel Laveau
Wendake (QC) G0A 4V0
T : 418 843-3767
@ : marie-sophie.gendron@wendake.ca

**WENDAKE.CA**

**From:** Kukalis, John
**Sent:** Friday, September 5, 2025 2:08 PM
**To:** Adam LaForme <adam.laforme@mncfn.ca>
**Cc:** Mark LaForme <mark.laforme@mncfn.ca>
**Subject:** Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi Adam:

At this time, the city's Archaeology Consultant has issued the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment. A copy of this draft is attached above for your information.

If you are interested in providing review comments on the Draft - Stage I Archaeological Assessment I would request you to email me at this time, to confirm your current review fee and other related payment information. This information is needed to prepare the required purchase order for approval. Unfortunately, invoicing will not be processed by the finance section, without a valid purchase order.

We would ideally like to provide the Archaeology Consultant with comments by the first week of October however, if you think you will require more time, please let me know.

In closing, if you have any questions or would like to discuss the above, please don't hesitate to contact me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Kukalis, John
**Sent:** Monday, September 8, 2025 2:24 PM
**To:** 'Adam LaForme' <adam.laforme@mncfn.ca>
**Cc:** 'Mark LaForme' <mark.laforme@mncfn.ca>
**Subject:** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi Adam:

Further to my email below, attached above please find a Supplementary Documentation Report (SDR) which is related to the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements previously forwarded.

Please note that the contents of the SDR are confidential and should not be released in part or whole, to the public.

I apologize for any inconvenience not including this with my previous email may have caused.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** Thursday, October 2, 2025 9:06 AM
**To:** Adam LaForme <Adam.LaForme@mncfn.ca>
**Cc:** Mark LaForme <Mark.LaForme@mncfn.ca>
**Subject:** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi Adam:

I am just following up on my email to you from last month.

I would appreciate if you could please advise if you require additional time to provide comments on the Stage 1 Archaeology Report for this project.

If you have any questions regarding the project, please do not hesitate to contact me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

| | |
|---|---|
| **From:** | Adam LaForme |
| **To:** | Kukalis, John |
| **Cc:** | Mark LaForme |
| **Subject:** | Re: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology |
| **Date:** | Friday, October 3, 2025 8:33:24 AM |
| **Attachments:** | image001.png<br>Outlook-fj0ditsa.png |

---

Good Morning John,

Thank you for sharing the Stage 1 Archaeological Assessment report and supplementary documentation for the Highway 52 and Powerline Road West Intersection Improvements.

I have reviewed the report and have no questions or concerns with its contents or the recommendations provided.

Please note that, should you proceed with a Stage 2 Archaeological Assessment, it is MCFN's expectation that Field Liaison Representatives be present on site.

Kind regards,

**Adam LaForme (he/him)**
**Manager of Archaeology**
**Department of Consultation and Accommodation**

**Mississaugas of the Credit First Nation**
**Mailing:** 2789 Mississauga Road, Hagersville, ON, N0A1H0
**Physical:** 4065 Hwy. #6, Hagersville, ON, N0A1H0
**Web:** www.mncfn.ca
**Facebook:** Mississaugas of the Credit First Nation
**Ph: 905-768-4260 Ext: 1608**
**Cell:289-527-2763**

[redacted]

**From:** Adrian Blake
**To:** Kukalis, John
**Cc:** Adam LaForme
**Subject:** Re: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology
**Date:** Wednesday, October 8, 2025 3:43:29 PM
**Attachments:** image.png
Outlook-fvasxt2d.png

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Good afternoon John,

Thank you for circulating this report and the SD with us for the road improvements at Highway 52 and Powerline Rd West.
I have now had time to review this report and do not have any questions, concerns or comments for you regarding this Stage 1 report.

Best,

**Adrian Blake, MSc. (He/Him)**
**Archaeologist**

**Mississaugas of the Credit First Nation**
**Mailing: 2789 Mississauga Road, Hagersville, ON, N0A1H0**
**Physical: 4065 Hwy. #6, Hagersville, ON, N0A1H0**
**Web: www.mncfn.ca**
**Facebook: Mississaugas of the Credit First Nation**
**Ph: 905-768-4260 Ext: 1609**
**Cell: 905-979-3862**

**From:** Kukalis, John
**Sent:** Friday, September 5, 2025 2:10 PM
**To:** Tanya Hill-Montour <tanyahill-montour@sixnations.ca>
**Cc:** Tierra Henhawk <acmaa@sixnations.ca>; Dawn LaForme <dlaforme@sixnations.ca>
**Subject:** Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi Tanya:

At this time, the city's Archaeology Consultant has issued the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment. A copy of this draft is attached above for your information.

If you are interested in providing review comments on the Draft - Stage I Archaeological Assessment, I would request you to email me at this time, to confirm your current review fee and other related payment information. This information is needed to prepare the required purchase order for approval. Unfortunately, invoicing will not be processed by the finance section, without a valid purchase order.

We would ideally like to provide the Archaeology Consultant with comments by the first week of October however, if you think you will require more time, please let me know.

In closing, if you have any questions or would like to discuss the above, please don't hesitate to contact me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Kukalis, John
**Sent:** Monday, September 8, 2025 2:23 PM
**To:** Tanya Hill-Montour <tanyahill-montour@sixnations.ca>
**Cc:** Tierra Henhawk <acmaa@sixnations.ca>; Dawn LaForme <dlaforme@sixnations.ca>
**Subject:** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi Tanya:

Further to my email below, attached above please find a Supplementary Documentation Report (SDR) which is related to the Draft - Stage I Archaeological Assessment for the Highway 52 and Powerline Road West Intersection Improvements previously forwarded.

Please note that the contents of the SDR are confidential and should not be released in part or whole, to the public.

I apologize for any inconvenience not including this with my previous email may have caused.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** Thursday, October 2, 2025 9:05:46 AM
**To:** Tanya Hill-Montour <tanyahill-montour@sixnations.ca>
**Cc:** Tierra Henhawk <acmaa@sixnations.ca>; Dawn LaForme <dlaforme@sixnations.ca>
**Subject:** [External] RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi Tanya:

I am just following up on my email to you from last month.

I would appreciate if you could please advise if you require additional time to provide comments on the Stage 1 Archaeology Report for this project.

If you have any questions regarding the project, please do not hesitate to contact me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Tanya Hill-Montour <tanyahill-montour@sixnations.ca>
**Sent:** Thursday, October 2, 2025 9:16 AM
**To:** Kukalis, John <John.Kukalis@hamilton.ca>
**Cc:** Tierra Henhawk <acmaa@sixnations.ca>; Dawn LaForme <dlaforme@sixnations.ca>
**Subject:** Re: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi John

Thanks for following up review was conducted I'm out in field today. I get back to you later this afternoon

Tanya Hill-Montour
SNGR Archaeological Supervisor
226.388.0665

**From:** Kukalis, John
**Sent:** Friday, October 10, 2025 3:14 PM
**To:** 'Tanya Hill-Montour' <tanyahill-montour@sixnations.ca>
**Cc:** Tierra Henhawk <acmaa@sixnations.ca>; Dawn LaForme <dlaforme@sixnations.ca>
**Subject:** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology

Hi Tanya:

I don't know if this fell through the cracks so to speak, but I didn't see anything further from you. Its also possible I deleted by accident in one of my Inbox cleanouts….been known to happen…lol.

I know its Friday afternoon before a long weekend, so if you can advise next week that would be very much appreciated.

In any case, I hope you enjoy a nice weekend.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

**From:** Kukalis, John
**To:** Tanya Hill-Montour
**Subject:** RE: Highway 52 and Powerline Rd West Intersection Improvements, City of Hamilton - Stage 1 Archaeology
**Date:** Wednesday, November 19, 2025 7:54:00 AM
**Attachments:** image001.png

---

Hi Tanya:

To date, I have been anticipating comment from you, so I have instructed the consultant not to finalize or submit the Stage 1 Report to MCM for this project.

I know you are very busy and if you still intend to comment, I would be very pleased to continue deferring to provide you the time you require.

However, I am trying to finalize the project schedule, so it would be very much appreciated if you send me a brief email advising if/when I can look to receive comments.

Respectfully,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

[redacted]

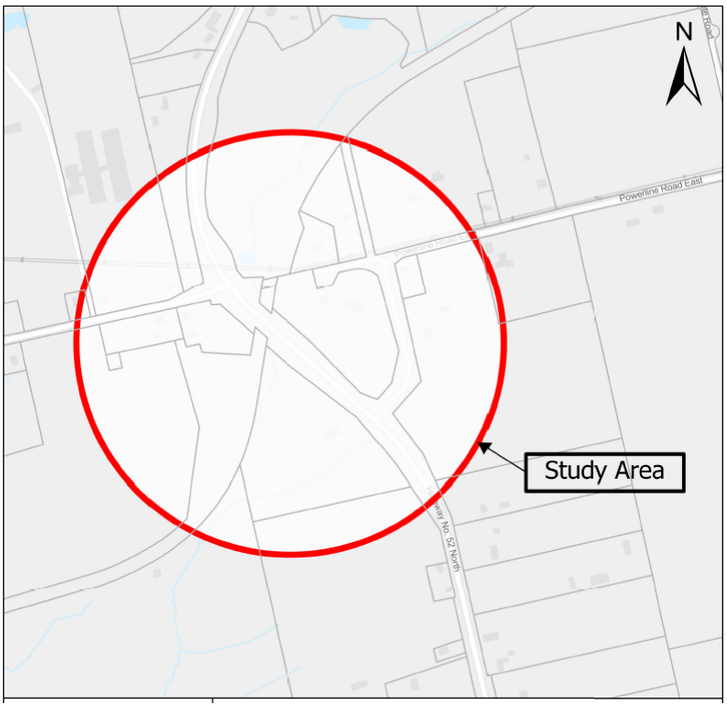
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, last amended 2024).

### You are Invited to Participate

The City of Hamilton is hosting the second and final Public Information Centre (PIC) for this study. The purpose of this second PIC is to present the alternative designs and the associated evaluation process.

Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

# Public Information Centre #1 Summary Report - Highway 52 and Powerline Road

**City of Hamilton**
**71 Main Street West**
**Hamilton ON  L8P 4Y5**

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

**July 2025**
**300058803.0000**

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## Record of Revisions

| Revision | Date | Description |
|---|---|---|
| 0 | July 11, 2025 | Initial Submission to City of Hamilton |
| 1 | July 24, 2025 | Final Submission to City of Hamilton |

### R.J. Burnside & Associates Limited

**Report Prepared By:**

Mishaal Rizwan
Environmental Planner
MR/DDF:af

**Report Reviewed By:**

Deanna De Forest
Senior Environmental Planner

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### Appendices

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Appendix B PIC Boards
Appendix C Redacted Comments

## Disclaimer

Other than by the addressee, copying or distribution of this document, in whole or in part, is not permitted without the express written consent of R.J. Burnside & Associates Limited.

## 1.0 Introduction

The City of Hamilton (City) is undertaking a Municipal Class Environmental Assessment (MCEA) for improvements to the intersection of Highway 52 and Powerline Road West to alleviate operational and safety issues at the intersection and related concerns raised by residents. This study will also examine opportunities to maintain or improve community connectivity, including active transportation, assess stormwater in the study area, and mitigate impacts to traffic and truck circulation and goods movement to address long-term transportation needs in accordance with complete street principles.

## 2.0 Method of Notification

Details of the date, time, and purpose of the PIC were published on the City's project webpage (https://www.hamilton.ca/environmental-assessments/highway-52-powerline-road-west-intersection-improvements) as well as on the notice as posted in the Hamilton Spectator, emailed and mailed to project interest holders including agencies, Indigenous Nations, and local residents. A copy of the Notice is provided in Appendix A.

## 3.0 Public Meeting Format

The PIC was held on April 8, 2025, from 6:00 pm to 8:00 pm at the Copetown Community Centre. The PIC was held as a drop-in style open house with project information displayed around the room, and representatives from the Study Team present to answer questions as well as discuss the project with interested members of the public. An overview presentation including the history and background information was held at 6:30 pm. The PIC information 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 April 8 to April 22, 2025. A copy of the PIC information materials is provided in Appendix B.

Opportunity for public feedback was 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 Project Team with written comments by email.

The comments received during the PIC comment period are included in this Summary Report.

## 4.0 Participation Levels and Summary of Comments Received

Based on the sign-in sheet, 52 attendees signed in at the PIC. Written comments were received from ten members of the public and emails were received from five members of the public during the comment period.

Participant comments are reviewed to provide a better understanding of public opinions which are used to inform the evaluation and identify the preferred alternative. A summary of comments and Study Team responses is provided in Table 4.1. Copies of individual comments are provided in Appendix C.

Comments fell largely into three broad themes, which were:

- Active transportation
- Alternative Solutions
- Next Steps and Future Consultation

**Table 4.1: Summary of Comments Received and Study Team Responses**

| Comment | Study Team Response |
|---|---|
| **Active Transportation** | **Active Transportation** |
| Resident cycles from the Summit parking area and due to the closure of the west side parking lot they have reduced using the lot due to traffic along Hwy 52. Resident finds the intersection dangerous for cyclists going to the rail trail and now uses the 19 km site for parking. They are interested in a tunnel. | Thank you for your comment. Active transportation requirements for both pedestrians and cyclists will be examined in detail in the next phase of the study. |
| Resident noted they avoid cycling the rail trail as they find the area unsafe. They are interested in the addition of illumination to the corridor. They recommend addition of a second parking lot on the other side of the road for active transportation users. | Thank you for your comment. Improving safety is one of the key objectives of this study. This includes safety of active transportation platforms. The study will include a Lighting Needs and Impact Assessment to assess illumination requirements in the corridor. |

| Comment | Study Team Response |
|---|---|
| Resident noted they believe a single roundabout will make it difficult for hikers and cyclists to cross Hwy 52 safely, resident believes two roundabouts would be a better approach. | Thank you for your comment. Active transportation requirements for both pedestrians and cyclists will be examined in detail in the next phase of the study. |
| **Alternative Solutions** | **Alternative Solutions** |
| Five residents noted preference for Alternative 2. One resident further noted they believe this will contribute to speed reduction and improve safety. | Thank you for your comment. |
| Resident has preference for Alternative 1 noting they are not interested in signalization. | Thank you for your comment. |
| Two residents noted interest in a left-hand turning lane only. | Thank you for your comment. |
| Resident expressed in two emails that they do not experience any visibility issues in the study area and note they believe the speed limits are too low. Resident also noted interest in accommodating pedestrians with a tunnel. | Thank you for your comment. Traffic data for the corridor will be analyzed as part of the study as a key input into the study. An active transportation connection for pedestrians will be considered in the next phase of the study. |
| **Next Steps and Future Consultation** | **Next Steps and Future Consultation** |
| Resident would like local business owners to be consulted to determine the impacts of road closures during construction. | Thank you for your comment. Consultation with local businesses will be investigated to consider impacts of road closures. The study team encourages local business owners to join the Project Contact List to continue to stay updated on the project and for ease of communication. |

| Comment | Study Team Response |
|---|---|
| Resident noted they see the need for intersection improvements as related to peak hours but that traffic is constant. They feel making left turns is dangerous regardless of the direction of travel.<br><br>Resident suggests creating more breaks in traffic by reducing the speed on Hwy 52 from Wilson Street to Copetown to 60 km/hr; installing traffic lights just north of Powerline Road West, and south of the Rail trail crossing on Hwy 52; restricting farm equipment traffic to non-rush hour times. | Thank you for your comment. Traffic data for the corridor will be analyzed as part of the study as a key input into the evaluation of alternatives. The study will consider both current and long term traffic volumes for the area for trucks, cars, pedestrians, and cyclists. |
| Resident expressed concern for the timing and costs to address concerns at the intersection. | Thank you for your comment. Please note design for interim improvements are underway to ensure a temporary solution is provided while the Municipal Class Environmental Assessment (MCEA) process is completed. The MCEA process is being completed in line with provincial requirements. |

## 5.0 Next Steps

The Study Team will complete additional analysis of natural, social, technical, and other data including the input received from PIC #1 and confirm the Preferred Alternative Solution.

The next step is to develop the Preferred Design Concepts based on the Preferred Alternative Solution. A second PIC will be held in the Fall to provide an overview of the Preferred Design Concepts.

At the conclusion of the MCEA process, the decision-making and planning process will be outlined in an Environmental Study Report, prepared for public review and comment for a period of 30-day following the Notice of Study Completion.

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# Appendix A

## Notice of Commencement and PIC 1

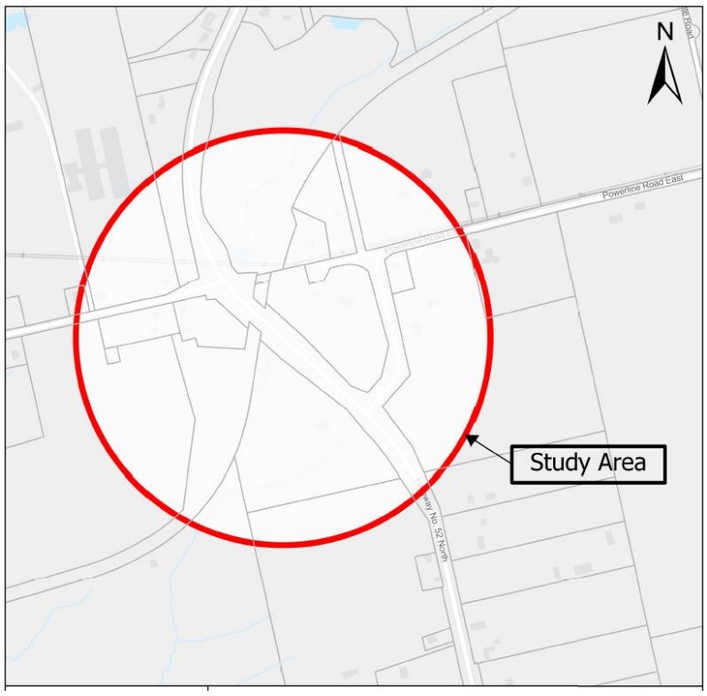
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

### You are Invited to Participate

The City of Hamilton is hosting the first of two Public Information Centres (PICs) for this study. The purpose of the first PIC will be to gather input and feedback from the local community at the onset of the project. A second PIC will be held at a later date to review the Study's alternative solutions and the associated evaluation process.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

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# Appendix B

# PIC Boards

# Municipal Class Environmental Assessment
# Highway 52 and Powerline Road West
# Intersection Improvements

## Public Information Centre #1
## Copetown Community Centre
## April 8, 2025

# Welcome to Public Information Centre #1

## Highway 52 and Powerline Road West Intersection Improvements

Please sign in at the first table and provide your email if you would like to be notified about the project.

Review display materials

All slides will be posted to project webpage

Meet with Study Team Members

Please fill out a comment sheet and return it to the comment box or email your comments by April 22, 2025.

# Land Acknowledgement

The City of Hamilton is situated upon the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee and Mississaugas. This land is covered by the Dish With One Spoon Wampum Belt Covenant, which was an agreement between the Haudenosaunee and Anishinaabek to share and care for the resources around the Great Lakes. We further acknowledge that this land is covered by the Between the Lakes Purchase, 1792, between the Crown and the Mississaugas of the Credit First Nation.

Today, the City of Hamilton is home to many Indigenous people from across Turtle Island (North America) and we recognize that we must do more to learn about the rich history of this land so that we can better understand our roles as residents, neighbours, partners and caretakers.

# Study Purpose

A Municipal Class Environmental Assessment (MCEA) is being completed to assess a recommended solution for intersection improvements at the intersection of Highway 52 and Powerline Road West.

The primary objective of the study is to **Improve Public Safety for All Road Users including Pedestrians & Cyclists.**

To this end, the goals of this study are to alleviate operational issues at the intersection, maintain or improve community connectivity, including active transportation, and mitigate impacts to traffic and truck circulation and goods movement to address long-term transportation needs

# Historical Context

- **1996-1999:** Province of Ontario transferred ownership of numerous Provincial Highways to local municipalities. Hwy 52 was one of several transferred to the City.

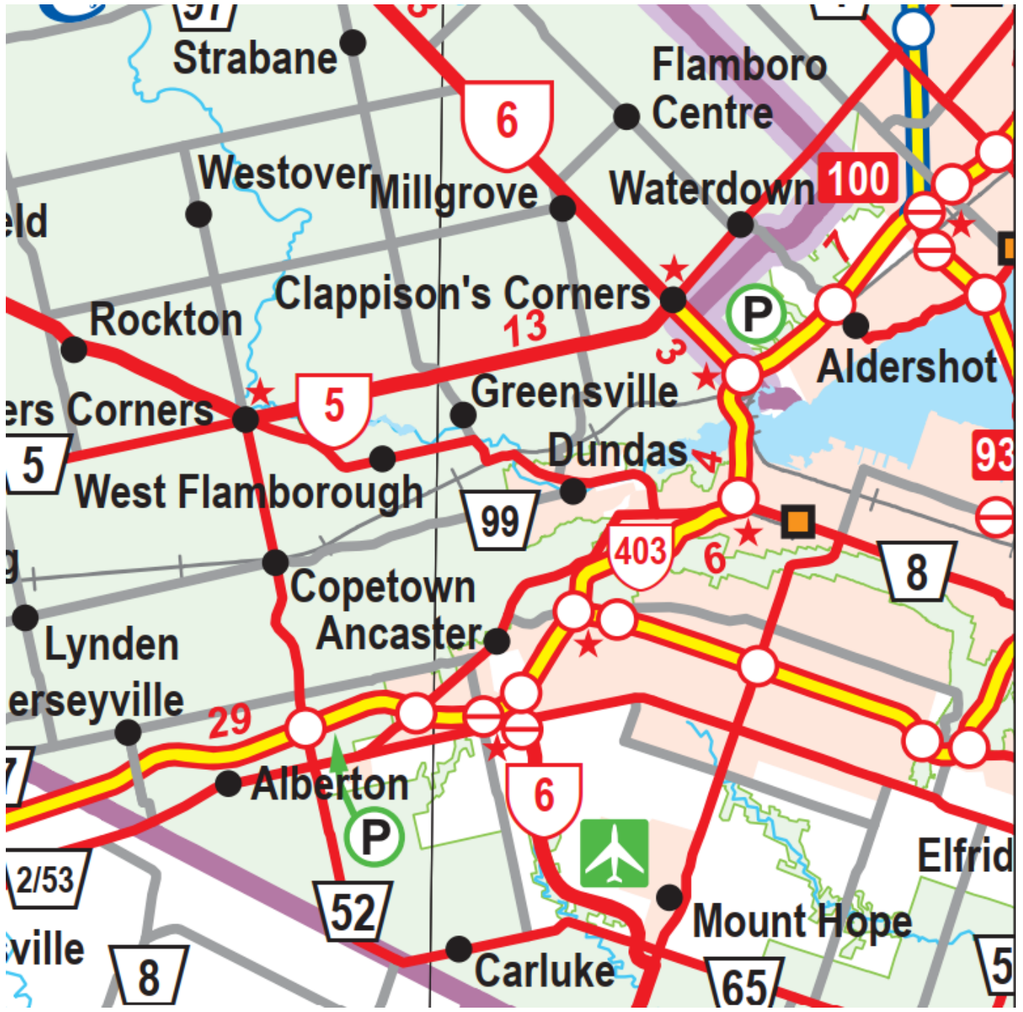
- **Early 2000's**: A local group advocated for a decrease in speed limits on Hwy 52. A roundabout was subsequently raised as an alternate option for consideration to improve safety.

- **2008:** The City undertook a Municipal Class Environmental Assessment (MCEA) that made recommendations for implementing a roundabout at Highway 52 and Jerseyville Road.

- **2011:** The City completed construction of the roundabout at Hwy 52 and Jerseyville Road as per the 2008 MCEA.

- **2022:** Staff report (PW22056) advised that before a roundabout could be implemented at Hwy 52 and Powerline Road West, an MCEA was required.

- **2023-2024**: Funds allocated in 2023 to conduct an MCEA. The necessary technical specifications, contract documents and procurement process were completed in late 2024.



# Recent Work

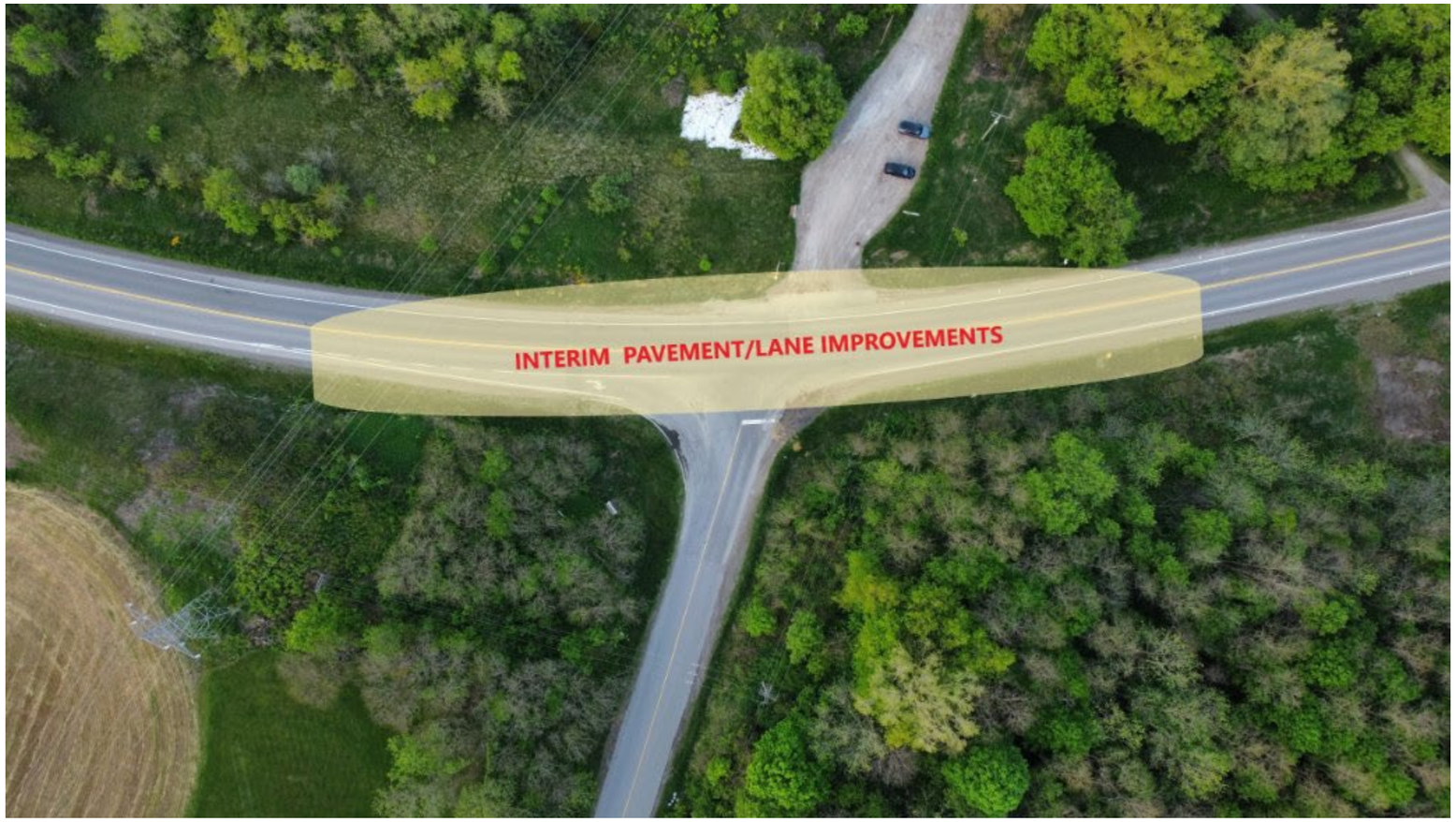
**2024 Operational Improvements:**

- New curve warning signage on Hwy 52
- New tiger tails on Powerline Road West at the stop sign
- New post-edge line delineators on Hwy 52 curve
- New checkerboard sign on Hwy 52 at Powerline Rd. East
- New stop ahead sign on Powerline Road West
- New (2) dynamic speed signs on Hwy 52
- New community safety zone signs on Hwy 52
- New transverse pavement markings on Hwy 52
- Refreshed pavement markings on Hwy 52
- Removed roadside vegetation to improve visibility

**2024 Technical/Engineering Tasks:**

- Traffic/turning movement counts completed
- Speed Study completed
- Traffic Safety Review completed
- Municipal Class Environmental Assessment awarded

# Upcoming Work




**2025**

- Construct **Interim** Left Turning Lanes (Spring - Fall)
  Pavement subbase on Highway 52 will be compatible with requirements for future Roundabout
- Complete detailed field work and technical sub-studies for the Municipal Class Environmental Assessment

**2026**

- Final Environmental Study Report (Winter)
- Initiate Detailed Design Work for **Ultimate** Solution as per MCEA

# Problem Opportunity Statement:

The City of Hamilton has identified a need for improvements to the intersection of Highway 52 and Powerline Road West to address concerns for the operation of the intersection. Improvements are to accommodate active transportation and consider opportunities to realign Powerline Road East.

# Purpose of this PIC is to:

- Present the Problem Opportunity Statement
- Provide an overview of the Municipal Class Environmental Assessment process
- Provide information on the existing Study Area
- Present Alternative Solutions, evaluation and preliminary preferred Alternative Solution
- Obtain input on the preliminary preferred Alternative Solution
- Identify next steps

# Municipal Class Environmental Assessment (MCEA) Process

This project is being completed as a Schedule C Project (Phases 1 to 4), as defined in the Municipal Engineers Association Class EA (2024) document.

**Phase 1**

- **Confirm Problem / Opportunity Statement**
- **Notice of Study Commencement**

**Phase 2**

- **Identify Alternative Solutions**
- **Inventory natural and socioeconomic environment**
- **Consult review agencies, Indigenous Nations and Public**
- **Evaluate Alternative Solutions and select Preferred Alternative**

**Phase 3**

- **Identify Alternative Design Concepts**
- **Detailed inventory of natural and socioeconomic environment**
- **Consult review agencies Indigenous Nations and Public**

**Phase 4**

- **Notice of Study Completion**
- **Environmental Study Report completed, 30-day public review period**

# Supporting Studies

The following studies are planned to characterize the environment of the study area, develop criteria for the evaluation of the options for the intersection improvements and identify possible impacts and mitigation measures.

**Spring 2025**

- Natural Heritage Assessment
- Stage 1 Archaeological Assessment
- Multi-Modal Transportation Analysis
- Preliminary Stormwater Management Study

**Summer/Fall 2025**

- Stage 2 Archaeological Assessment
- Heritage Impact Assessment
- Geotechnical Study
- Hydrogeology Report
- Tree Inventory

# Existing Conditions – Natural Heritage

Existing conditions include

- Provincially Significant Wetlands Copetown Bog and the Big Creek Headwaters Wetland Complex
- GRCA Regulated Area
- Watercourse and ravine slope
- Area of Natural and Scientific Interest (ANSI) - Summit Muskeg Preserve
- Significant Woodlands
- Potential for Species at Risk
- (e.g. bats and trees)
- Provincial Greenbelt Plan and associated Natural Heritage System
- Niagara Escarpment Plan

Field studies will be initiated in the Spring 2025 to characterize the study area. These are anticipated to include some, or all, of the following:

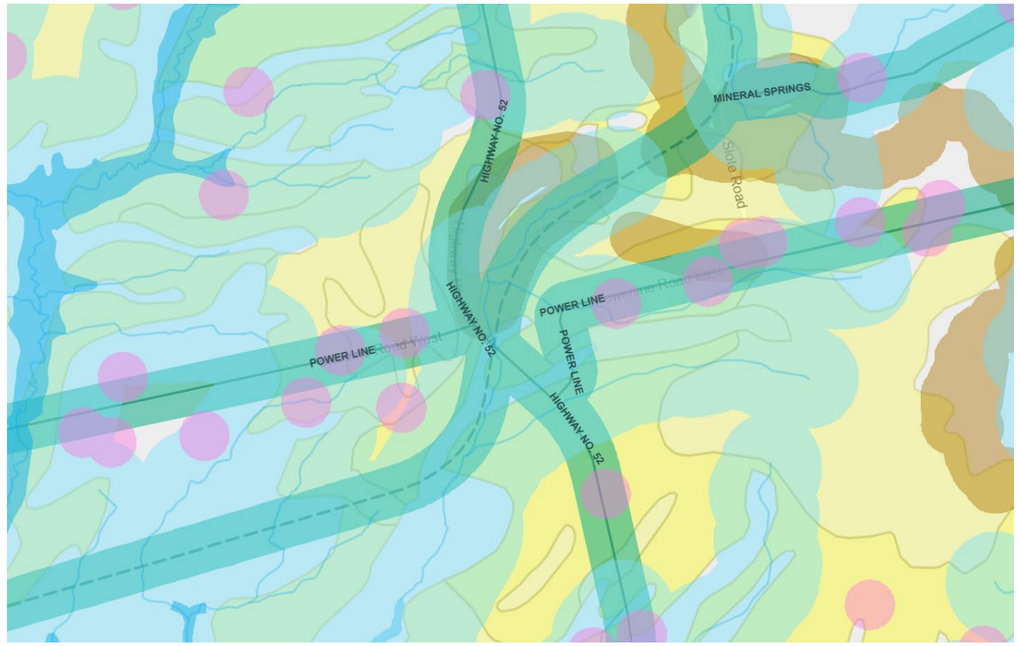
- Botanical survey and Ecological Land Classification delineation of features
- Wetland boundary staking
- Breeding bird surveys with an additional grassland bird survey
- Amphibian call surveys

# Existing Conditions – Cultural Heritage

The study area has been identified as having archaeological potential. Stage 1 and Stage 2 Archaeological Assessment is required.

The map shows layers of archaeological information:

- Water Catchment and Water features
- Historic Transportation Routes
- Areas of Historic Euro-Canadian Settlement
- Unusual Landforms
- Sandy Soil




Two (2) inventoried heritage properties with mid-1800 buildings are present in the study areas. A Cultural Heritage Resource Assessment is being completed.

- Registered Non-Designated properties
- Inventoried properties

# Existing Conditions – Technical Environment

- Concerns with traffic at this intersection date back to the early 2000's.
- In 2011, a roundabout was recommended for this location. However, budget limitations precluded implementation.
- Roadway safety/Collision history at intersection is a concern of area residents.
- Burnside's traffic analysis of collisions between 2018-2022 of the 28 collisions found:
  - Rear end collisions were the most common, with 11 occurrences (39%), followed by single motor vehicle collisions, with 10 occurrences (36%)
  - Three of the 10 single motor vehicle collisions involved an animal
  - Approaching, angle, and sideswept had three (11%), two (7%), and two (7%) occurrences, respectively
- Short- and medium-term improvements are being implemented at the intersection of Powerline Road West and Highway 52. The Municipal Class Environmental Assessment will focus on the long term or major improvements.

*Updated per public input from PIC #1 (April 8, 2025)*

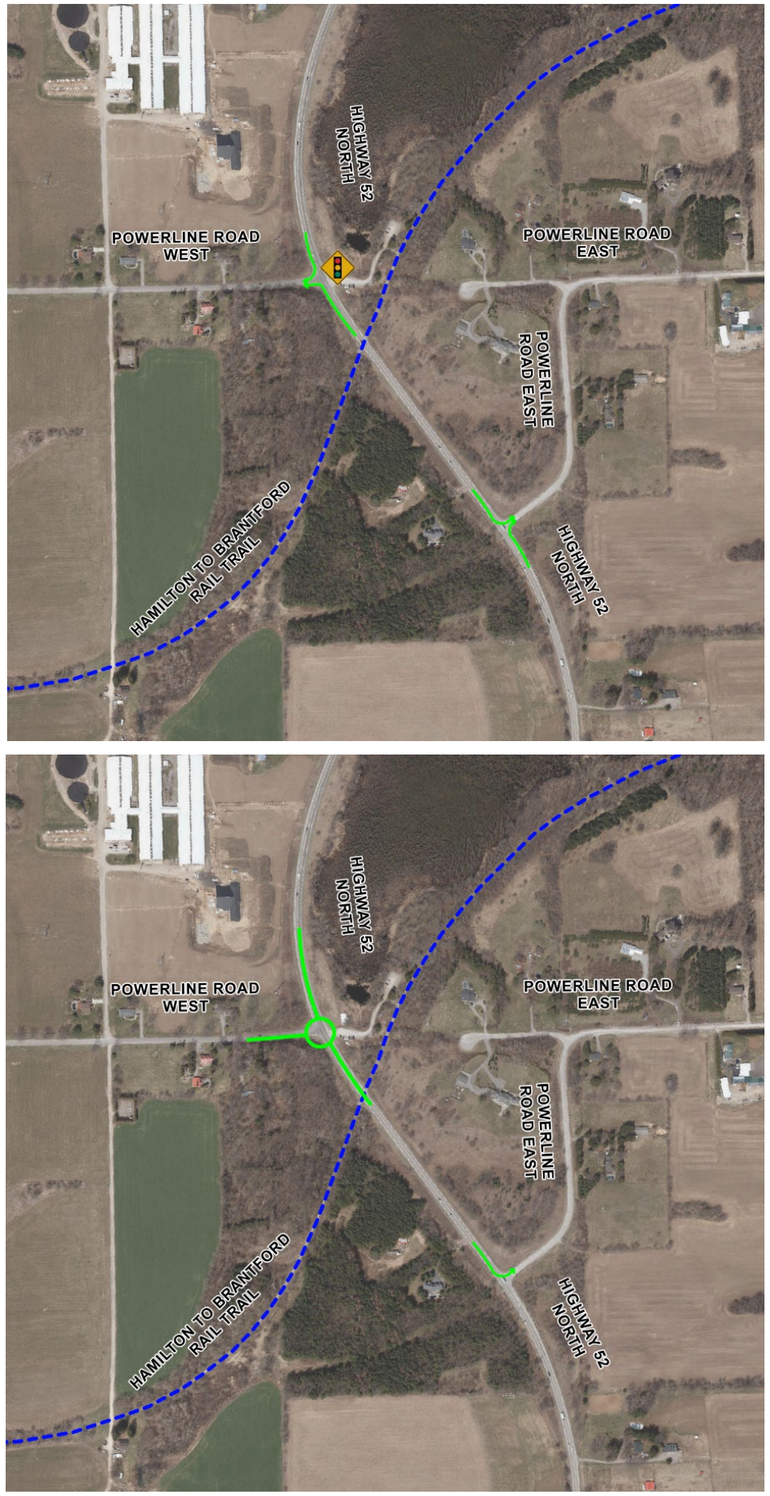
# Existing Conditions – Technical Environment

Existing conditions include:

- Main Utility Lines – Hydro and Gas
- Rail Trail Crossing of Hwy 52
- Super Mailbox
- Parking Lot for Trail and Super Mailbox
- Deep Roadside Ditches
- Horizontal Sightlines
- Vertical Approach Grades
- Right-of-Way and property limits

Existing drainage is conveyed through roadside ditches, and crossing and entrance culverts to a GRCA regulated watercourse which drains to the Big Creek Headwaters Wetland Complex

# Alternative Solutions 1 and 2



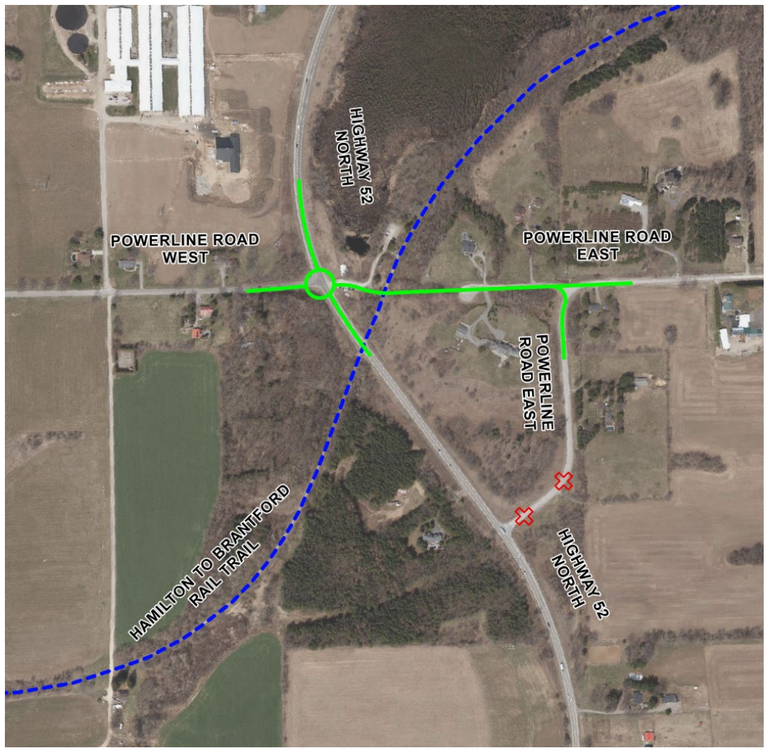

## Alternative 1: New Turning Lanes / Signal:

- New signals at intersection of Hwy. 52 and Powerline Road West
- Add new left turn lanes at Powerline Road West and East
- Improve existing right turning lanes at Powerline Road West and East
- Accommodate Active Transportation users

## Alternative 2: North Roundabout and South Left Turning Lane

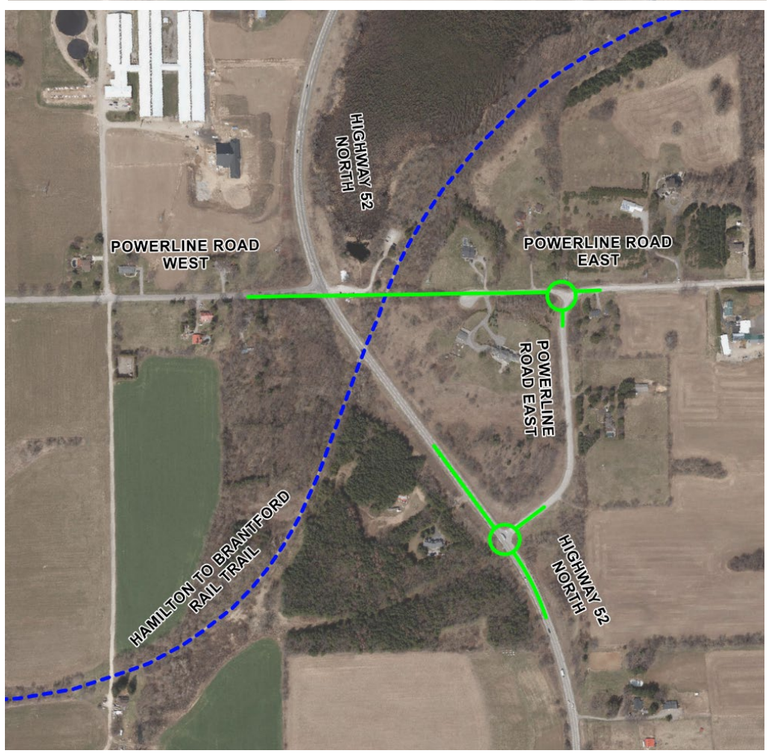
- Construct Roundabout at Hwy. 52 and Powerline Road West
- Add New Left Turning Lane at Powerline Road East
- Improve existing right turning lanes at Powerline Road East
- Accommodate Active Transportation users

# Alternative Solutions 3 and 4




## Alternative 3: North Roundabout and extend Powerline Rd East across the existing ravine lands

- New Roundabout at Hwy. 52 and Powerline Road West
- Extend Powerline Road East westerly across the ravine lands to coincide with the new roundabout
- Close south intersection




## Alternative 4: Two Roundabouts and New Bridge to Carry Powerline Rd West Across Hwy. 52

- Two (2) New Roundabouts:
  - One at Hwy. 52 and Powerline Rd East
  - Second at end of Powerline Rd West extension
- Provide an overpass of Powerline at Highway 52

# Alternative Solutions 5 and 6

## Alternative 5: North and South Roundabouts on Hwy. 52

- Two (2) New Roundabouts:
  - One at Hwy. 52 and Powerline Rd West, and
  - At Powerline Rd East

## Alternative 6: Do Nothing

- Do Nothing is a Mandatory requirement for consideration in the Municipal Class Environmental Assessment process.
- The road corridor and intersections would remain the same and operate as a two-lane, two-way road with stop-control on the minor approaches to the intersections.
- Regular maintenance would be performed as required
- **This alternative does not address the problem/opportunity statement and is not carried forward.**

*Updated per public input from PIC #1 (April 8, 2025)*

# Evaluation Criteria

**Natural Environment**

Potential to impact vegetation

Potential impact to wildlife habitat and habitat of species at risk

Potential impact to water resources and drainage

Potential climate change impact and resilience

**Socio-Cultural Environment**

Potential to impact heritage resources such as archaeology and cultural heritage

Nuisance impacts such as noise, visual impact, construction impacts

Land acquisition needs, impacts to driveway access

Conformity to municipal and agency policy

Level of service for local residents and business, impact to municipal services

Multi-Modal Transportation connectivity and safety

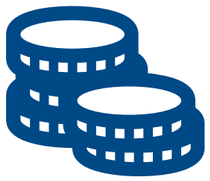
Pedestrian and cyclist needs

**Technical Environment**

Level of service/ traffic congestion

Operational safety, roadside safety

Design constraints, utility impacts, goods movement requirements



**Financial Environment**

Estimated capital costs

Estimate operation and maintenance costs

Property acquisition costs

# Evaluation of Alternative Solutions

| Alternative Solution | Natural Environment | Socio-Cultural Environment | Technical Environment (including Transportation) | Financial Environment | Rank |
|---|---|---|---|---|---|
| 1. New Turning Lanes / Signals | ◔ | ◔ | ◔ | ◔ | 3 |
| 2. North Roundabout and South Left Turning Lane | ◔ | ◔ | ○ | ◔ | 1 |
| 3. North Roundabout and extend Powerline Rd. East Across the Existing Ravines | ◕ | ◕ | ◕ | ◑ | 5 |
| 4. Two Roundabouts and New Bridge to Carry Powerline Rd West Across Hwy. 52 | ◔ | ◔ | ◔ | ● | 4 |
| 5. North and South Roundabouts on Hwy. 52 | ◔ | ◔ | ○ | ◑ | 2 |

Most Preferred ○ More Preferred ◔ Somewhat Preferred ◑ Less Preferred ◕ Least Preferred ●

*Updated per public input from PIC #1 (April 8, 2025)*

# Preliminary Preferred Alternative

## Solution 2 – North Roundabout and South Left Turning Lane

### Summary of Key Features:

Natural Environment:

- Minimizes impact to natural features, including wetland and watercourse, wooded area

Socio-Cultural Environment:

- Maintains status-quo on impact to existing residences east of the trail where culturally sensitive areas exist
- Better access to trail parking

Technical Environment

- Under these conditions a roundabout is a more efficient intersection control for current and future intersection traffic
- Provides better operational safety for all road users (auto, pedestrians, cyclists) compared to Alternative Solution 1 and 3

Financial Environment:

- Moderate costs for improvements
- Builds on interim improvements planned for 2025/2026 reducing throw away costs

# Next Steps in the MCEA Process

**Spring 2025**

- Review and Consider Feedback following PIC#1 (14-days)
- Public Information Centre #1 Summary Report
- Complete Supporting Studies
- Identify Preferred Alternative

**Summer 2025**

- Develop and Evaluate Alternative Designs Options
- Public Information Centre #2
- Review and Consider Feedback following PIC#2 (14-days)
- Complete Additional Supporting Studies as needed
- Identify Preferred Design Concept

**Winter 2025/2026**

- Complete Environmental Study Report for public review and comment
- Notice of Study Completion and 30-day public review period

**Implementation**

2025/2026

- Interim Intersection Improvements

Beyond 2026

- Detailed Design of MCEA Preferred Solution
- Property acquisition, as needed
- Construction and Utility Relocation

# We want to hear from you!

You are invited to provide comments by completing a comment sheet and submitting it to the comment box today or emailing one of the Project Team members below by **April 22, 2025**.


**John Kukalis, C.E.T.**
**Project Manager, Capital Infrastructure Planning**
City of Hamilton
71 Main Street West
Hamilton ON  L8P 4Y5
Tel: 905-546-2424, Ext.6134
**John.Kukalis@hamilton.ca**

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


**Visit the project webpage for more details: www.hamilton.ca/environmental-assessments/highway-52-powerline-road-west-intersection-improvements**

**Display boards are available on the project webpage.**

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Appendix C

# Redacted Comments

[redacted]

**From:** Mishaal Rizwan
**Sent:** Wednesday, April 09, 2025 2:24 PM
**To:** Cole Roddick
**Subject:** FW: Hwy 52 & Powerline Roundabout

---

**From:** [redacted]
**Sent:** Wednesday, April 9, 2025 9:32 AM
**To:** [redacted] Pimentel, Danny <Danny.Pimentel@hamilton.ca>; Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>
**Cc:** info@parisancaster.com; Recreation Director <recreation@ncch.ca>
**Subject:** Re: Hwy 52 & Powerline Roundabout

**External Email:** Use caution with links and attachments

Good morning all

Kudos for a successful information information meeting last night.
I met Danny Pimentel briefly last night and realized this morning that we were in touch a few years ago when I was trying to involve the City cycling advisory committee. At the time, I was also in touch with representatives from the NCCH (National Cycling Centre Hamilton) and the Paris to Ancaster race (P2A) who were both supportive of any initiative that improves cycling safety in this area. They are cc'd on this email if they are interested in providing input. I used a previous email that acknowledges this intersection is the most problematic when planning their annual race.

To the P2A and NCCH... I have attached a link Engage Hamilton to circulate and provide input. I have also attached the PowerPoint presentation that was provided last night.

https://engage.hamilton.ca/hwy52ea?fbclid=IwY2xjawJhKHtleHRuA2FlbQIxMAABHvkHMU4a2n0Anoh0iFnjCnkN5mlrQPcyPVO0eXHylt3zckHi9EbENyLYcC37_aem_tUHMhuK69tpGn5MCUo2yAw

Thanks

[redacted]

On Thu, Apr 28, 2022, 10:43 [redacted] wrote:

> [redacted]
>
> Yes we agree - that is now the most difficult road crossing on the course.
>
> Not quite sure what the best solution would be - a pedestrian bridge would also work for the rail trail and has been used in various other trails - QEW crossing, 403 crossing.
>
> Regardless count us as supporters.

John

-----Original Message-----
From: info@parisancaster.com <info@parisancaster.com>
Sent: Monday, April 25, 2022 11:32 AM
To: [redacted]
Subject: Fwd: Hwy 52 & Powerline Roundabout

FYI

Natalie

-------- Original Message --------
Subject: Hwy 52 & Powerline Roundabout
Date: 2022-04-25 08:58
From: [redacted]
To: info@parisancaster.com

Good morning
I hope you will allow my post on your FB page. I am currently trying to solicit support in an effort to get a roundabout installed at the intersection of Hwy 52 & Powerline Rd. The city has agreed to install a left hand turn, but if they chose to collaborate with the Hamilton Conservation Authority, they could create a roundabout and create a much safer crossing for rail trail users. Anyone who uses the Rail Trail would agree that the Hwy 52 crossing is one of the most dangerous in the
80 km system.
I am interested in finding any substantial cycling groups who would be interested in advocating for such a change.

I appreciate any information that you might be able to provide.
I have attached a Youtube link that will provide more information. Our presentation starts at the 2:34:00 mark.

Anyone interested in more information can join our FB group... Turn ON Powerline

Thanks

[redacted]

https://youtu.be/GmfDkq-C7qs

## Cole Roddick

**From:** Alvaro L. Almuina
**Sent:** Tuesday, April 22, 2025 7:18 AM
**To:** 058803 Hamilton MCEA Hwy 52 & Powerline Intersection; Mishaal Rizwan; Cole Roddick; Deanna De Forest
**Subject:** FW: Highway 52 and Powerline Rd West Intersection Improvements

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

-----Original Message-----
From: [redacted]
Sent: April 21, 2025 11:29 PM
To: jkukalis@hamiton.ca; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
Cc: ward12@hamilton.ca
Subject: Highway 52 and Powerline Rd West Intersection Improvements

Comments re: Public Information Centre-Tuesday April 8, 2025

(I am using my wife's computer-following the format of the sheet provided at the session-therefore her email address appears)

[redacted]

Comments:

The need for Intersection Improvements at Hwy 52 and Powerline Road is time related, ie, morning and evening rush hours.
Traffic flow can be continuous with no break in the flow, making left turns almost impossible and dangerous at times, regardless of direction being travelled.

My suggestions to effect quick solutions are as follows, in order of ease of implementation:

1). Create more breaks in traffic by having traffic halted more often at the Copetown and Wilson Street traffic lights by reprogramming the lights for more frequent light changes

2) Reduce the speed limit on Hwy 52 between Wilson Street and Copetown to 60 km/hour

3) Install traffic lights just north of Powerline Road West, and south of the Railtrail crossing on Hwy 52.
Ideally these lights would only be operational during rush hour, but if this is deemed impractical, have some type of sensing signal
embedded in the east bound lane at the bottom of the hill on Powerline Rd West, which could sense the presence of a car, and after a certain duration of no movement,
the light for Hwy 52 traffic would turn red, allowing the east bound traffic to safely enter Hwy 52. The lights would change again after no cars were detected on Powerline Road.
Rail trail users should also have the ability to activate the lights via push buttons on the trail to allow them to safely cross the highway.
A warning light similar to the one on Highway 5 east of Waterdown approaching Brant St. could warn Hwy 52 traffic of "red lights ahead when flashing."

Changes to the lights in Copetown and at Wilson Street could create more gaps in the traffic during rush hour, even

though the traffic surge coming off the 403 can not be stopped, but along with the already planned turning lanes to be added at both Powerline Road East and West, will make turning drivers feel a bit more secure when coming off Highway 52.

4) Farm tractors could be rescheduled to non-rush hour times.

These suggestions would make it easier for those of us who need to be on Highway 52 during rush hour, and would be much less expensive and faster to implement, than a round-about.

Though round-abouts can be a boon for traffic flow, traffic on Highway 52 is not constant, but if the round-about at Jerseyville Road and Highway 52 is an indication of what is planned for Powerline Road, 14 light standards is a given. Our house is close enough to the corner that we would be affected by these lights. At the moment we live with one dim light at the corner and it has been ever such. We don't see the need for anything much brighter. The lights would need tax tax dollars to install, and need tax dollars to stay lit, and that would be a constant.

Yours truly,
[redacted]

## Cole Roddick

**From:** Alvaro L. Almuina
**Sent:** Thursday, April 10, 2025 12:12 PM
**To:** 058803 Hamilton MCEA Hwy 52 & Powerline Intersection
**Cc:** Cole Roddick; Mishaal Rizwan; Deanna De Forest
**Subject:** FW: Powerline Rd., Highway 52 municipal class environmental assessment...

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

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**From:** [redacted]
**Sent:** April 10, 2025 11:27 AM
**To:** jkukalis@hamilton.ca; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>; Ward 13 <ward13@hamilton.ca>; Ward 12 Office <ward12@hamilton.ca>; ward14@hamilton.ca; mayor@hamilton.ca
**Subject:** Powerline Rd., Highway 52 municipal class environmental assessment...

Powerline Rd., Highway 52 municipal class environmental assessment

The City Of Hamilton is fiscally in bad shape.
Last year, the taxes should've gone up 14.4% instead taxes went up 7% yet nothing was cut causing the city to have to borrow from reserve accounts.
City Council determined that a municipal class assessment would be required to address problems at 52 and Powerline Road and $400,000 was allocated for this undertaking, that's a lot of money just to figure out what to do.
The initial suggestion was that a traffic circle had to go in, which of course is a major undertaking and thus making it necessary to do a MCEA covering a very large area. I'm sure staff could have come up with some suggestions for a simple solution that would not require such an extensive study. On the other hand a little common sense on the part of councillors could have informed them on a more cost effective solution.
This whole process is going to take years before anything is done.
Powerline Road is not going to get any busier because no development is allowed as it's in the green belt Highway 52 on the other hand likely will get busier due to the fact that commuters come from Cambridge and beyond driving through the Greenbelt to get to Highway 403.
Powerline Rd., West basically services about 20 properties anyone coming from West or Field Road has the option of accessing 52 via Field Road and Jerseyville Road or Highway 99. There is no need for this traffic to use Powerline Road to get where they need to go.
The biggest issue I see here is the crossing of the rail trail between Brantford and Hamilton This crossing is the least safe on the trail.
Flashing crosswalk signals or maybe even a stoplight at Powerline Road could remedy this problem very quickly and should not require a municipal class assessment. There is no simple way to make a traffic circle and pedestrian crossing at the same area safe and efficient at a reasonable cost.

BTW using the double fatality aaccident last March as something that needs to be considered when assessing the problem at this intersection is a red herring. The issue was icy roads and a car spinning out on a curve south of the intersection.

Building new infrastructure when the existing is in deplorable state makes no sense. There are other intersections in Hamilton that are far trickier to navigate than Powerline and 52. I realize that many of these are provincial roads intersecting with municipal roads but the same tax payer pays for it. Highway 5 east of Brock Rd is an example of this.
Invoking MCEA for every project to determine what to do is unaffordable. Council needs use discretion when deciding to deal with an issue. MCEA's take way too long and just boot the problem down the road. At times it's determined to leave things as they are because there is no money after spending hundreds of thousand dollars.
Environmental Assessments started back in the eighties for major projects. Twenty five years ago MCEA legislation was put in place by the provincial government. Since then it's grown to include everything but the kitchen sink. Engineering companies were quick to jump on the bandwagon wagon to develop more regulations thus employing more people and bureaucratic empires to grow this into an industry employing thousands at a big cost.
I use Highway 52 regularly and no concerns as to the road's safety.

An other associated issue.

On the other hand driving down Concession Rd 6 West daily, dodging pot holes, is way more frustrating. This winter was particularly bad thus more potholes. Motorist now frequently use the 6th because Safari Rd (the main access road for commuters going east west) has been closed for some years and it appears will be closed for some time. This is due to an MCEA being required even though a simple solution like elevating the road over a few hundred metres would solve the problem until "drainage Act" legal problems could be resolved to restore natural flow. The cost of the MCEA and cost of the detour maintenance and lost time and associated vehicle expenses for motorists, would likely be less than the $500,000 MCEA cost , to complete this "emergency repair" work.
Yesterday evening driving to Guelph I used Campbellville Rd. This major commuter route is in bad condition until one passes into Halton where the road is perfect. Continuing North on First Line again a great road with no pot holes. All surrounding rural counties have way better roads than rural Hamilton roads. Why?

Sent from my iPhone

rtl. Outlook

# FW: Hwy 52.

From Alvaro L.Almuina<Alvaro.Almuina@rjburnside.com>
Date Tue 4/15/2025 10:58 AM
To 058803 Hamilton MCEA Hwy 52 & Powerline Intersection <058803HamiltonMCEAHwy52PowerlineIntersection@rjburnside.com>

**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** Tuesday, April 15, 2025 10:56 AM
**To:** Alvaro L.Almuina<Alvaro.Almuina@rjburnside.com>
**Cc:** Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>
**Subject: FW: Hwy 52.**

Feedback

**John Kukalis,** C.E.T. *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

[redacted]

**Sent:** Tuesday, April 15, 2025 9:53 AM
**To:** Kukalis, John <John.Kukalis@hamilton.ca>; Office of the Mayor <Officeofthe.MayQL@.hamilton.ca>
**Subject:** Hwy 52.

**External Email:** Use caution with links and attachments

Re A simple T intersection:
I have been following news items on the Powerline Rd/Hwy 52 intersection.
Preposterous.
It is a "T" intersection.
Widen it to allow Left Turns. Done.

It is an outrage to put a Traffic Circle at every crash site.
Driver Error. Nothing more, Nothing Unique. There are already 2 on this simple Rd.

The website I was prompted to go to to add comments does not work for me.

**Please add my comments to the list.**

Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

[redacted]

**Name:**
**Address:**
**Email:**
**Phone:**

**Comments:** From Summit Bog parking area and have for 20 years. During the last few years (since the closure of the west side parking lot) I have almost stopped using the lot due to the traffic loads on 52. It is a dangerous intersection for cyclists on the rail trail going either way. I now go to the 19 Km sight for parking even though I own a conservation pass. I would vote for a tunnel (even a one way tunnel with a light).

[redacted]

Comments and information regarding this study are being collected to assist the City of Hamilton in meeting the requirements of the *Environmental Assessment Act*. They will be maintained on file for use during the study and may be included in study documentation. With the exception of personal information, all comments will become part of the public record.

Please drop these comments in the box provided or forward them by **Tuesday, April 22, 2025** to either:


**John Kukalis, C.E.T.**
Project Manager
City of Hamilton
Phone: 905-546-2424 ext. 6134
Email: jkukalis@hamilton.ca

**Alvaro L. Almuina, P.Eng.**
R.J. Burnside & Associates Ltd.
Consultant Project Manager
Phone: 1+800-265-9662
Email: alvaro.almuina@rjburnside.com

Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

[redacted]

**Name:**
**Addre**
**Email:**
**Phone**

**Comments:**

1) We prefer Alternative #2 w/ a roundabout at Hwy 52 and Powerline Rd west and a left turning lane on Hwy 52 And Powerline Rd east / Southbound

2) Consult local business owners to determine impact of road closure during construction (ie MacGregor Farms)

[redacted]

Comments and information reg [redacted] of Hamilton in meeting the requirements of the *Enviro* [redacted] file for use during the study and may be included in study documentation. With the exception of personal information, all comments will become part of the public record.

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Project Manager
City of Hamilton
Phone: 905-546-2424 ext. 6134
Email: jkukalis@hamilton.ca

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Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

[redacted]

**Comments:**

Cycling with my husband and it is very unsafe. We avoid the rail trail at this place because of the risk. I highly recommend a light. Another alternative for active folks (cyclists, runners, walkers) is to add back in a parking lot on the other side of the road.

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Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

**Name:** [redacted]

**Addre**

**Email:**

**Phone**

**Comments:** My first choice is your #1
A round-a-bout is safer then a stop light.
Please do not consider a stop light. Too Dangerous

The City of Hamilton collects information under authority of Section 227 of the Municipal Act, 2001. Any personal information collected for the Highway 52 and Powerline Road West Intersection Improvement – Municipal Class Environmental Assessment (MCEA) will be used to inform and fulfil the requirements of the MCEA study for Highway 52 and Powerline Road West Intersection Improvement. By providing your email address, you are consenting to receiving emails from the City of Hamilton and/or their agents/contractors for purposes related to the Highway 52 and Powerline Road West Intersection Improvement MCEA Study. Information collected for this initiative may be stored on servers located in Canada and the United States may be subject to Canadian laws and/or American laws.

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Project Manager
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Phone: 905-546-2424 ext. 6134
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Hamilton
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**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

**Name:** [redacted]
**Addres**
**Email:**
**Phone:**

**Comments:** LEFT HAND TURNING LANE ONLY

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Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

[redacted]

**Name:**
**Addres**
**Email:**
**Phone:**

**Comments:**

LIKE OPTION 2!

I CURRENTLY WILL NOT TURN LEFT OFF POWERLINE RD ONTO 52 HEADING NORTH UNSAFE DUE TO SPEEDING CARS!!

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Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

**Name:** [redacted]
**Address**
**Email:**
**Phone:**

**Comments:** My concern with preferred roundabout at Powerline W.
- There is a left turning lane going 52 S onto Powerline E.
- When I exit Powerline E onto 52 S. ~~Here~~
  - it is difficult and dangerous to get out.

If a middle ~~turning~~ 2 way left turning lane was included in the plan it would make turning 52S from Powerline E safer.

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Project Manager
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**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

**Name:** [redacted]
**Address:**
**Email:**
**Phone:**

**Comments:**

#1 preferred option as presented would be my preference as well. (NORTH ROUNDABOUT / SOUTH LEFT TURN LANE) Hopefully this will proceed on plan without another serious collision / fatality.
Evidenced by pre-existing roundabouts @ 52 HWY / JERSEYVILLE the traffic calming / speed reduction effects have been significant.
The addition of two recently completed roundabouts @ 52 HWY / 403 HWY. will add to speed reduction + ensuing benefits.

Thank you.

[redacted]

Comments and information regarding this study are being collected to assist the City of Hamilton in meeting the requirements of the *Environmental Assessment Act*. They will be maintained on file for use during the study and may be included in study documentation. With the exception of personal information, all comments will become part of the public record.

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Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

[redacted]

**Name:**
**Address:**
**Email:**
**Phone:**

**Comments:** Solution #2 that is preffered is. This is what I had invisioned. You dont have to take anyones land and you will be able to join the rail trail into the roundabout. I will feel more comfortable in bring my kids through that trail.

I do also like the idea of a tunnel or a bridge. That way there are no concers. of a person being hit crossing that main thuy.

The City of Hamilton collects information under authority of Section 227 of the Municipal Act, 2001. Any personal information collected for the Highway 52 and Powerline Road West Intersection Improvement – Municipal Class Environmental Assessment (MCEA) will be used to inform and fulfil the requirements of the MCEA study for Highway 52 and Powerline Road West Intersection Improvement. By providing your email address, you are consenting to receiving emails from the City of Hamilton and/or their agents/contractors for purposes related to the Highway 52 and Powerline Road West Intersection Improvement MCEA Study. Information collected for this initiative may be stored on servers located in Canada and the United States may be subject to Canadian laws and/or American laws.

Please drop these comments in the box provided or forward them by **Tuesday, April 22, 2025** to either:

**John Kukalis, C.E.T.**
Project Manager
City of Hamilton
Phone: 905-546-2424 ext. 6134
Email: jkukalis@hamilton.ca

**Alvaro L. Almuina, P.Eng.**
R.J. Burnside & Associates Ltd.
Consultant Project Manager
Phone: 1+800-265-9662
Email: alvaro.almuina@rjburnside.com

Hamilton
Public Works

**Highway 52 and Powerline Road West Intersection Improvements**
**Schedule 'C'- Municipal Class Environmental Assessment**

**Public Information Centre – Tuesday April 8, 2025**

**Name:** [redacted]

**Address:**

**Email:**

**Phone:**

**Comments:**

APPRECIATE THE COMPREHENSIVE INFORMATION PROVIDED. WE STRONGLY SUPPORT PREFERRED ALTERNATIVE #2. THANK YOU.

Comments and information regarding this study are being collected to assist the City of Hamilton in meeting the requirements of the *Environmental Assessment Act*. They will be maintained on file for use during the study and may be included in study documentation. With the exception of personal information, all comments will become part of the public record.

Please drop these comments in the box provided or forward them by **Tuesday, April 22, 2025** to either:


**John Kukalis, C.E.T.**
Project Manager
City of Hamilton
Phone: 905-546-2424 ext. 6134
Email: jkukalis@hamilton.ca

**Alvaro L. Almuina, P.Eng.**
R.J. Burnside & Associates Ltd.
Consultant Project Manager
Phone: 1+800-265-9662
Email: alvaro.almuina@rjburnside.com

# Public Information Centre #2 Summary Report – Highway 52 and Powerline Road

**City of Hamilton**
**71 Main Street West**
**Hamilton ON  L8P 4Y5**

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

**January 2026**
**300058803.0000**

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|---|---|---|---|
| 0 | Yes | Yes | City of Hamilton |

## Record of Revisions

| Revision | Date | Description |
|---|---|---|
| 0 | December 10, 2025 | Initial Submission to City of Hamilton |
| 1 | January 26, 2026 | Final Submission to City of Hamilton |

**R.J. Burnside & Associates Limited**

**Report Prepared By:**

Mishaal Rizwan
Environmental Planner
MR:js

**Report Reviewed By:**

Deanna De Forest
Senior Environmental Planner

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**3.0 Public Meeting Format ..... 1**
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## Tables

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## Appendices

Appendix A Notice of PIC 2
Appendix B PIC 2 Boards
Appendix C Redacted Comments

## Disclaimer

Other than by the addressee, copying or distribution of this document, in whole or in part, is not permitted without the express written consent of R.J. Burnside & Associates Limited.

# 1.0 Introduction

The City of Hamilton (City) is undertaking a Municipal Class Environmental Assessment (MCEA) for improvements to the intersection of Highway 52 and Powerline Road West to alleviate operational issues at the intersection and improve public safety for road users including pedestrians and cyclist. This study will also examine opportunities to maintain or improve community connectivity, including active transportation, assess stormwater in the study area, and mitigate impacts to traffic and truck circulation and goods movement to address long-term transportation needs in accordance with complete street principles.

# 2.0 Method of Notification

Details of the date, time, and purpose of the PIC 2 were published on the City's project webpage (https://www.hamilton.ca/environmental-assessments/highway-52-powerline-road-west-intersection-improvements) as well as on the notice as posted in the Hamilton Spectator, emailed and mailed to project interest holders including agencies, Indigenous Nations, and local residents. A copy of the Notice is provided in Appendix A.

# 3.0 Public Meeting Format

PIC 2 was held on October 21, 2025, from 6:00 pm to 8:00 pm at the Rotary Community Centre. The PIC was held as a drop-in style open house with project information displayed around the room, and representatives from the Study Team available to answer questions as well as discuss the project with interested members of the public. The PIC 2 information 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 October 21 to November 14, 2025. A copy of the PIC 2 information materials is provided in Appendix B.

Opportunity for public feedback was 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 Project Team with written comments by email.

The comments received during the PIC comment period are included in this Summary Report.

# 4.0 Participation Levels and Summary of Comments Received

Based on the sign-in sheet, 19 attendees signed in at PIC 2. Written comments were received from two members of the public and emails were received from one member of the public through the website during the comment period.

Participant comments are reviewed to provide a better understanding of public opinions which are used to inform the evaluation and identify the preferred alternative design concept. A summary of comments and Study Team responses is provided in Table 4.1. Copies of individual comments are provided in Appendix C.

**Table 4.1: Summary of Comments Received and Study Team Responses**

| Active Transportation Comment | Active Transportation Study Team Response |
|---|---|
| It would be nice to have a mounting block for equestrians to dismount, lead their horse across, and remount. | Thank you for your comment. Active transportation provisions such as a mounting block can be considered through the detailed design process. |
| I support the proposed cycling trail realignment concept. I feel that this is an essential aspect of the roundabout construction. It would provide a much safer way for pedestrians and cyclists to cross Highway 52. | Thank you for your comment and support for the proposed trail realignment as part of the proposed design concept. |
| **Parking Impacts Comment** | **Parking Impacts Study Team Response** |
| What happens to existing parking and mail parking until 2029. | Thank you for your comment. The formal trail parking area is not anticipated to be impacted. The study team has continued to circulate Canada Post on project notices for coordination. Canada Post will be relocating the Super Mailbox in the same general area to ensure residents continue to have access. |
| **Alternative Solutions and Design Concepts Comment** | **Alternative Solutions and Design Concepts Study Team Response** |
| Support for roundabout, experienced an accident when turning left on Powerline Road several years ago. We now use the roundabout at Jerseyville. | Thank you for your comment and support for the roundabout option. |

## 5.0 Next Steps

The Study Team will complete additional analysis of natural, social, technical, and other data including the input received from PIC #2 and confirm the Preferred Alternative Design Concept.

At the conclusion of the MCEA process, the decision-making and planning process will be outlined in an Environmental Study Report, prepared for public review and comment for a period of 30-day following the Notice of Study Completion.

BURNSIDE

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# Appendix A

# Notice of PIC 2

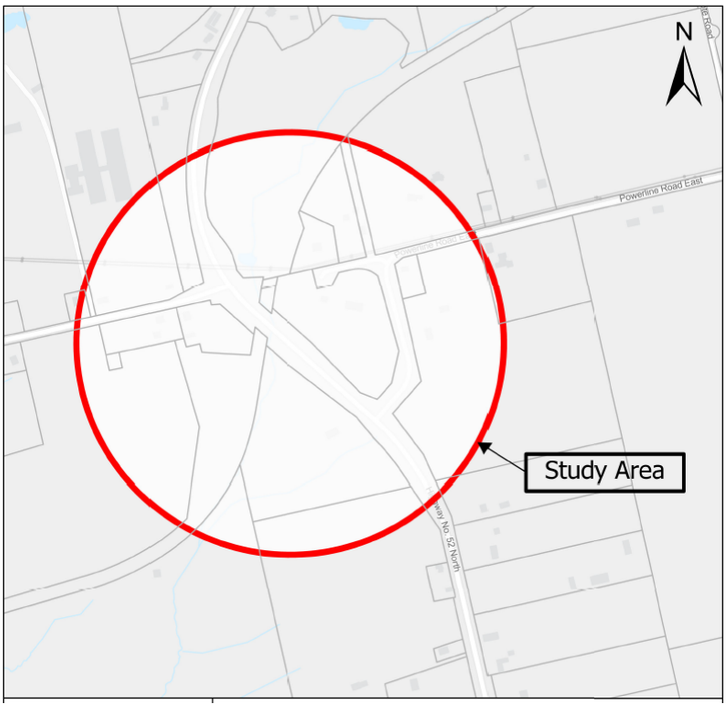
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, last amended 2024).

### You are Invited to Participate

The City of Hamilton is hosting the second and final Public Information Centre (PIC) for this study. The purpose of this second PIC is to present the alternative designs and the associated evaluation process.

Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

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# Appendix B

# PIC 2 Boards

# Municipal Class Environmental Assessment
# Highway 52 and Powerline Road West
# Intersection Improvements

## Public Information Centre #2

Rotary Community Centre

October 21, 2025

# Welcome to Public Information Centre #2
# Highway 52 and Powerline Road West Intersection Improvements

Please sign in at the first table and provide your email if you would like to be notified about the project.

Review display materials

All slides will be posted to project webpage

Meet with Study Team Members

Please fill out a comment sheet and return it to the comment box or email your comments by November 7, 2025.

# Land Acknowledgement

The City of Hamilton is situated upon the traditional territories of the Erie, Neutral, Huron-Wendat, Haudenosaunee and Mississaugas. This land is covered by the Dish With One Spoon Wampum Belt Covenant, which was an agreement between the Haudenosaunee and Anishinaabek to share and care for the resources around the Great Lakes. We further acknowledge that this land is covered by the Between the Lakes Purchase, 1792, between the Crown and the Mississaugas of the Credit First Nation.

Today, the City of Hamilton is home to many Indigenous people from across Turtle Island (North America) and we recognize that we must do more to learn about the rich history of this land so that we can better understand our roles as residents, neighbours, partners and caretakers.

# Study Purpose

A Municipal Class Environmental Assessment (MCEA) is being completed to assess a recommended solution for intersection improvements at the intersection of Highway 52 and Powerline Road West.

The primary objective of the study is to **Improve Public Safety for All Road Users including Pedestrians & Cyclists.**

To this end, the goals of this study are to alleviate operational issues at the intersection, maintain or improve community connectivity, including active transportation, and mitigate impacts to traffic and truck circulation and goods movement to address long-term transportation needs

# Preliminary Preferred Alternative Solution (As Presented in PIC 1)

## Solution 2 – North Roundabout and South Left Turning Lane

### Summary of Key Features:

#### Natural Environment

- Minimizes impact to natural features, including wetland and watercourse, wooded area

#### Socio-Cultural Environment

- Maintains status-quo on impact to existing residences east of the trail where culturally sensitive areas exist
- Better access to trail parking

#### Technical Environment

- Under these conditions a roundabout is a more efficient intersection control for current and future intersection traffic
- Provides better operational safety for all road users (auto, pedestrians, cyclists) compared to Alternative Solution 1 and 3

#### Financial Environment

- Moderate costs for improvements
- Builds on interim improvements planned for 2025/2026 reducing throw away costs

# Alternative Design Option 1

## Centred Roundabout

In this option, the three-legged roundabout is centred at the current Highway 52 and Powerline Road intersection and has good visibility for drivers as the north approach has a moderate sight distance. The Super Mailbox will be relocated in the same general area.

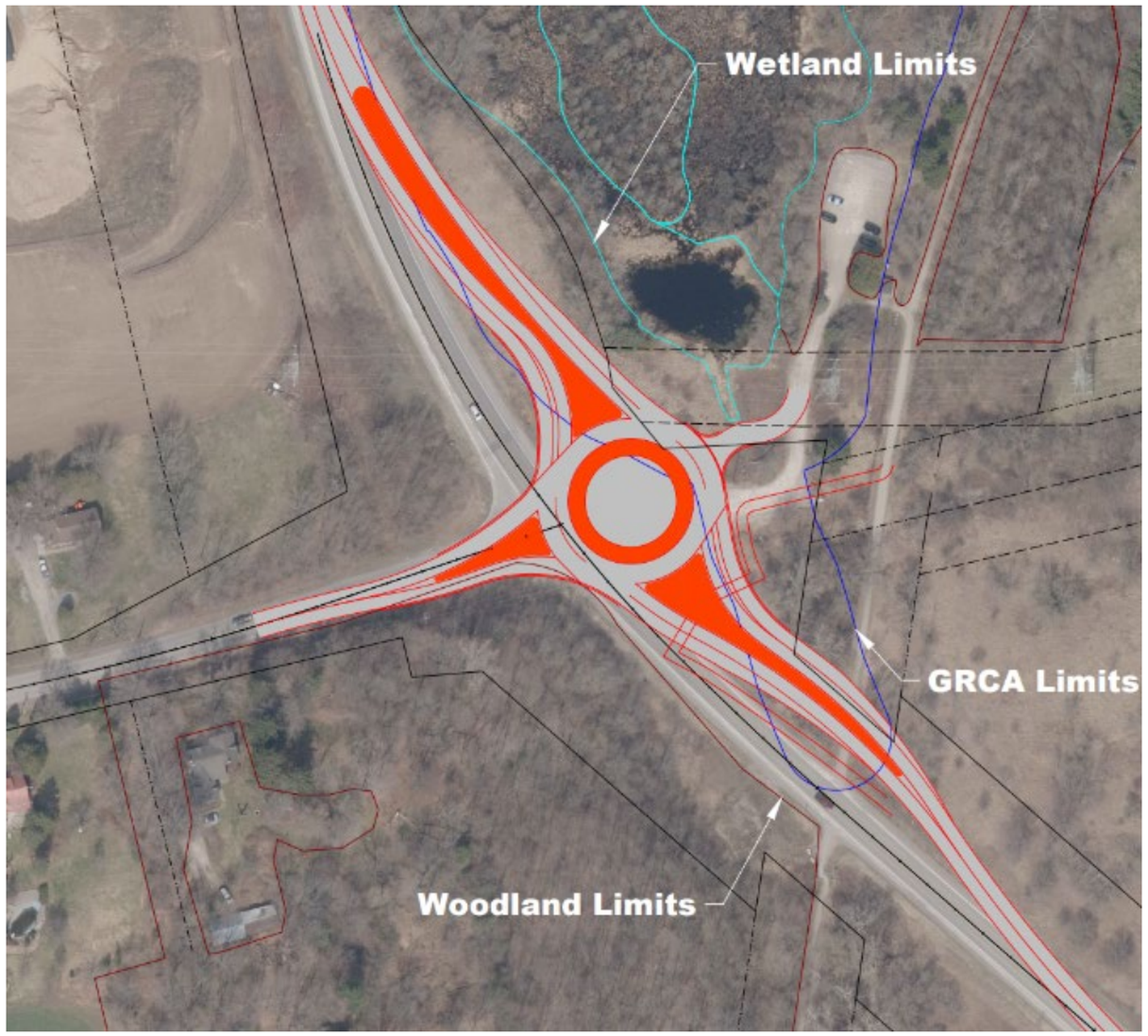
# Alternative Design Option 2

## Roundabout Shifted West

In this option, the three-legged roundabout is shifted to the west and has very good visibility to/from Powerline Road W as the north approach has a long sight distance. The Super Mailbox will be relocated in the same general area.

# Alternative Design Option 3

## Roundabout Shifted East




In this option, the three-legged roundabout is shifted to the east and has low visibility for drivers as the north approach has a short sight distance. The Super Mailbox will be relocated in the same general area. Some property acquisition is required to accommodate the shift for this option.

# Alternative Designs

## Southbound Left Turn Lane at Highway 52 and Powerline Road East

Intersection improvements at Highway 52 and Powerline Road East consist of the installation of a new southbound left turn lane and inclusion of a painted median on the south leg to offset the left turn lane from northbound through-traffic.  Minor shift of the roadway to the east is required within the existing right-of-way.

# Supporting Studies

| | |
|---|---|
| Transportation Connectivity | • Transportation Assessment |
| Natural Environment | • Natural Heritage Assessment |
| Social Environment | • Consultation with residents and interest holders<br>• Policy Review |
| Cultural Heritage | • Cultural Heritage Evaluation report<br>• Heritage Impact Assessment<br>• Stage 1 Archaeological Assessment |
| Economic Environment | • Capital Cost Estimation<br>• Operation and Maintenance Cost Estimation<br>• Property Acquisition Cost Estimation |

# Evaluation of Alternative Designs- Criteria

**Natural Environment**

Impact trees and vegetation

Impact to wildlife habitat and habitat of species at risk

Impact to water resources and drainage

Potential climate change impact and resilience

**Socio-Cultural Environment**

Impact to heritage resources such as archaeology and cultural heritage

Nuisance impacts such as noise, visual impact, construction impacts

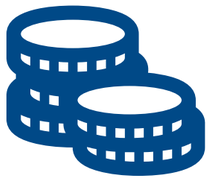
Land acquisition needs, impacts to driveway access

Conformity to municipal and agency policy

Level of service for local residents and business, impact to municipal services

Multi-Modal Transportation connectivity and safety

Pedestrian and cyclist needs



**Financial Environment**

Estimated capital costs

Estimate operation and maintenance costs

Property acquisition costs

**Technical Environment**

Level of service/ traffic congestion

Operational safety, roadside safety for vehicles

Operational safety, roadside safety for active transportation

Design constraints, utility impacts, goods movement requirements

# Evaluation of Alternative Designs

| Criteria | Alternative Design 1 (Centred) | Alternative Design 2 (Shifted West) | Alternative Design 3 (Shifted East) |
|---|---|---|---|
| Natural Environment | ◑ | ◕ | ◔ |
| Socio-Cultural Environment | ◕ | ◕ | ◑ |
| Financial Factors | ◕ | ◕ | ◑ |
| Technical Factors | ◑ | ◕ | ◑ |

**Preliminary Preferred**

| Order of Preference | Most Preferred | More Preferred | Somewhat Preferred | Less Preferred | Least Preferred |
|---|---|---|---|---|---|
| | ● | ◕ | ◑ | ◔ | ○ |

# Preliminary Preferred Concept

## Option 2 - Roundabout Shifted West

### Key Feature

### Natural Environment

- No impacts to the Provincially Significant Wetland. Very minor anticipated impacts to Significant Woodlands.
- Minor impact to Grand River Conservation Authority Regulated lands, Escarpment Protection Area, and Hamilton Environmentally Sensitive Area.

### Socio-Cultural Environment

- Not anticipated to impact the potential Cultural Heritage Landscape associated with Hamilton-Brantford Rail Trail.

### Technical Environment

- Has the greatest sight distance from the north approach, providing the best visibility for drivers.
- Not anticipated to have significant design constraints.

### Financial Environment

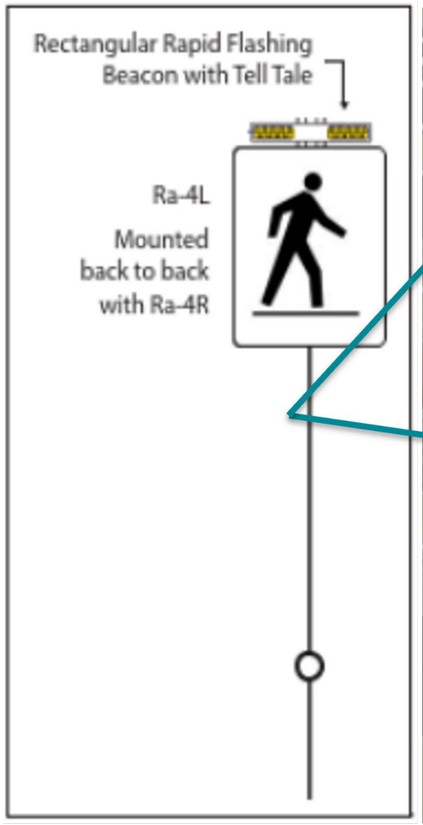
- No property acquisition requirements.
- Moderate capital, operational and maintenance costs anticipated.

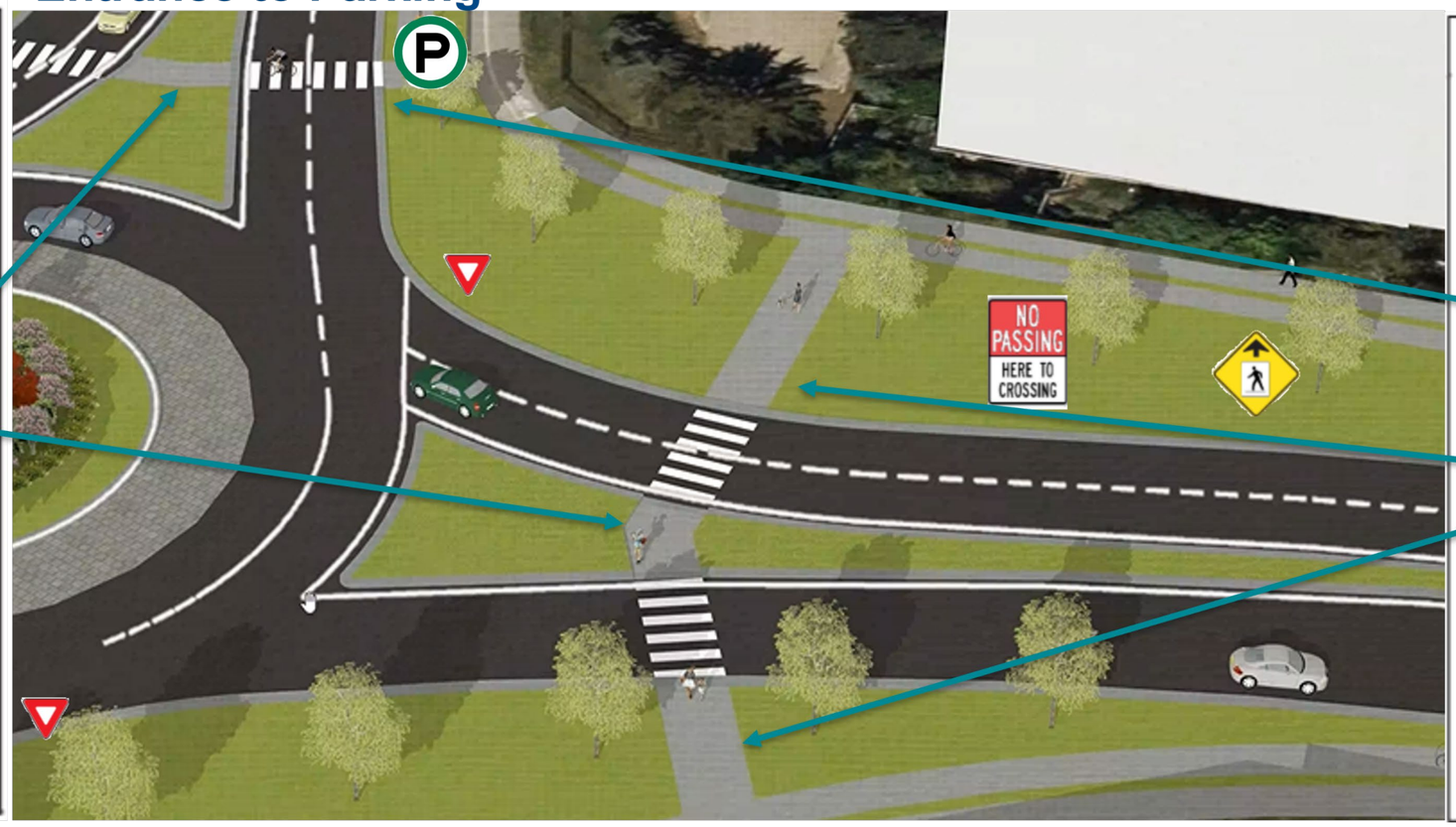
# Trail Crossing of Highway 52

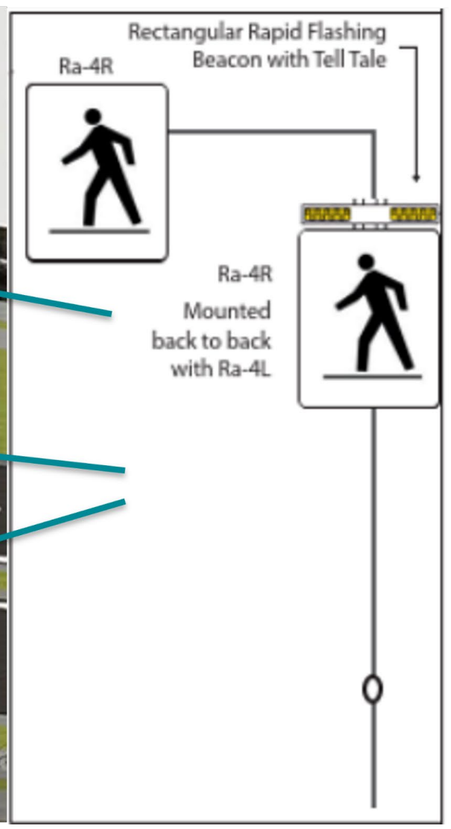
- Trail crossing options were also considered within the scope of the MCEA
- The option that accommodates pedestrians and cyclist users of the trail is a facility within the roundabout limits
- Users can cross Highway 52 via the south leg of the recommended Alternative Design

**Proposed trail realignment concept**

## Entrance to Parking



# Next Steps

**October 2025**

- Public Information Centre #2 – October 21, 2025 (Today)

**November 2025**

- Public Comment Review Period (November 7, 2025)

**December 2025**

- Draft Environmental Study Report circulation to agencies (December 2025)

**Winter 2026**

- Complete Environmental Study Report for public review and comment
- Issue Notice of Study Completion and 30-day public review period

**Implementation**

**Q2 2026** – Detailed Design of Roundabout at Powerline Road West and Southbound Turning Lane at Powerline Road East

**2027** – Agency, Landowner, and Utility Relocate Approvals

**2028** – Construction

# We want to hear from you!

You are invited to provide comments by completing a comment sheet and submitting it to the comment box today or emailing one of the Project Team members below by **November 7, 2025**.


**John Kukalis, C.E.T.**
**Project Manager, Capital Infrastructure Planning**
City of Hamilton
71 Main Street West
Hamilton ON  L8P 4Y5
Tel: 905-546-2424, Ext.6134
**John.Kukalis@hamilton.ca**

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


**Please note that all display boards are available on the project webpage!**

**Visit the project webpage for more details by using your camera to scan the QR code:**

**Or use the below website URL:**

**hamilton.ca/environmental-assessments/highway-52-powerline-road-west-intersection-improvements**

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# Appendix C

# Redacted Comments

## Survey Tool:

| Tool Status | Published |
|---|---|
| Visitors | 6 |
| Contributors | 1 |
| Registered | 0 |
| Unverified | 0 |
| Anonymous | 1 |
| Admin | 0 |
| **SUBMISSIONS** | **1** |

## PIC #2 Comments

| Date of Contribution | Contributor Details | | Survey Response |
|---|---|---|---|
| | Login (Screen name) | Contributor Summary (Signup form Qs - Detailed breakup on the right) | Do you have comments about the information presented for PIC #2? |
| Nov 04 25 07:30:56 pm | Anonymous | | I support the proposed cycling trail realignment concept. I feel that this is an essential aspect of the roundabout construction. It would provide a much safer way for pedestrians and cyclists to cross Highway 52. |

Survey Responses Graph

***special characters like '&'  will be removed from options**

DEMOGRAPHIC ANALYSIS of Contributors - Based on Sign-up form responses

***special characters like '&'  will be removed from options**

Hamilton **Comment Sheet** BURNSIDE

## Highway 52 and Powerline Road West – Schedule C Municipal Class Environmental Assessment

**Public Information Centre #2**

October 21, 2025

**Name:** [redacted]

**Address:** [redacted]

**Phone:** [redacted]

**Email:** [redacted]

**Comments/Questions/Suggestions (additional space on second page):**

1) What Happens to existing parking

2) What is being done for mail pickup until 2029?

Comments and information regarding this study are being collected to assist the City of Hamilton in meeting the requirements of the Environmental Assessment Act. They will be maintained on file for use during the study and may be included in documentation. With the exception of personal information, all comments will become part of the public record.

Hamilton **Comment Sheet** BURNSIDE

**Highway 52 and Powerline Road West – Schedule C Municipal Class Environmental Assessment**

**Public Information Centre #2**

October 21, 2025

**Name:** [redacted]

**Address:**

**Phone:**

**Email:**

**Comments/Questions/Suggestions (additi**

It would be nice to have a mounting block for equestrians ~~who~~ to dismount, lead horse across & and remount.

Love roundabout, live on Powerline and hit when turning left on Powerline several years ago.

Now I use roundabout at Jerseyville → Field → Powerline

Comments and information regarding this study are being collected to assist the City of Hamilton in meeting the requirements of the Environmental Assessment Act. They will be maintained on file for use during the study and may be included in documentation. With the exception of personal information, all comments will become part of the public record.

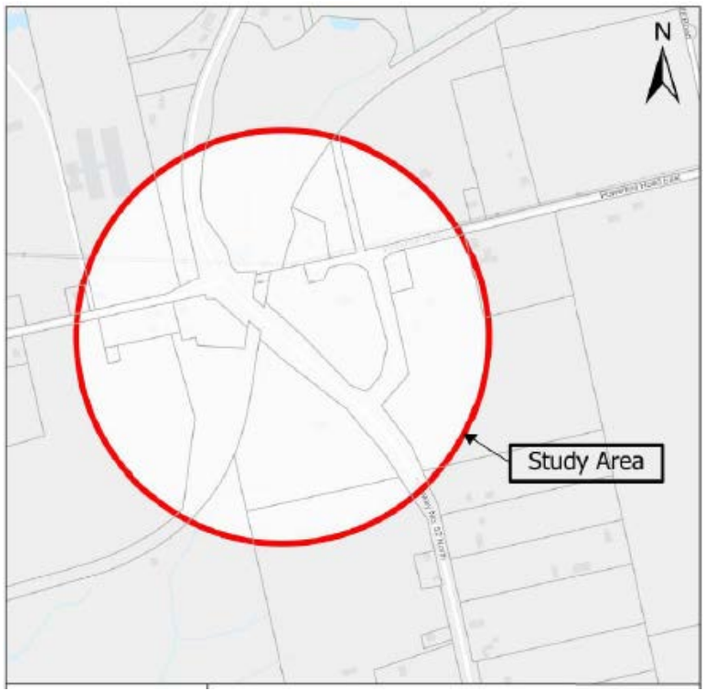
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

### You are Invited to Participate

The City of Hamilton is hosting the first of two Public Information Centres (PICs) for this study. The purpose of the first PIC will be to gather input and feedback from the local community at the onset of the project. A second PIC will be held at a later date to review the Study's alternative solutions and the associated evaluation process.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

## Cole Roddick

**From:** Kukalis, John
**Sent:** Monday, March 3, 2025 1:37 PM
**To:** 'eanotification.wcregion@ontario.ca' <eanotification.wcregion@ontario.ca>
**Cc:** 'Joan.DelVillarCuicas@ontario.ca' <Joan.DelVillarCuicas@ontario.ca>
**Subject:** City of Hamilton, MEA Class EA, Highway 52 and Powerline Road West

Good Morning,

Please find attached the project information form and the Notice of Commencement and PIC #1 for the Highway 52 and Powerline Road West Intersection Improvements
Municipal Class Environmental Assessment.

Please let me know if you require any additional information.

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

**From:** Joshi, Simeon (MECP) <Simeon.Joshi@ontario.ca>
**Sent:** Tuesday, March 04, 2025 13:55
**To:** jkukalis@hamilton.ca
**Cc:** Mazzuca, Marco (MECP) <Marco.Mazzuca@ontario.ca>; Del Villar Cuicas, Joan (MECP) <Joan.DelVillarCuicas@ontario.ca>; Burt, Stephen (MECP) <Stephen.Burt@ontario.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Subject:** NOC Acknowledgment Highway 52 and Powerline Road West Intersection Improvements (City of Hamilton)

Good afternoon, John,

Please find the attached letter of acknowledgement and supporting attachments in response to the Notice of Commencement (NOC) of the Highway 52 and Powerline Road West Intersection Improvements being undertaken by the City of Hamilton in accordance with the Municipal Class Environmental Assessment (Schedule C).

This message is sent on behalf of Joan Del Villar Cuicas, Regional Environmental Planner, Project Review Unit, MECP.

Sincerely,

**Simeon Joshi** (He/Him)
Assistant Project Officer
Environmental Assessment Services | Environmental Assessment and Permissions Division
Ontario Ministry of the Environment, Conservation and Parks
Simeon.Joshi@ontario.ca

**Ministry of the Environment, Conservation and Parks**

Environmental Assessment Branch

7th Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
**Tel.**: 416 314-8001
**Fax.**: 416 314-8452

**Ministère de l'Environnement, de la Protection de la nature et des Parcs**

Direction des évaluations environnementales

7ème étage
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

March 4, 2025

John Kukalis
Project Manager
City of Hamilton
jkukalis@hamilton.ca

BY EMAIL ONLY

Re: **Highway 52 and Powerline Road West Intersection Improvements**
**City of Hamilton**
**Municipal Class Environmental Assessment, Schedule C**
**Acknowledgement of Notice of Commencement**

Dear John Kukalis,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the City of Hamilton (proponent) has indicated that the study is following the approved environmental planning process for a Schedule C project under the Municipal Class Environmental Assessment (Class EA).

The updated attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. Information is provided at the end of the Areas of Interest document relating to the Notice of Completion**.**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the

Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project**, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information provided to date and the Crown`s preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- **Mississaugas of the Credit First Nation**
- **Six Nations of the Grand River (both elected and traditional/HCCC)**

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

**Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.**

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances after initial discussions with the communities identified by the MECP:

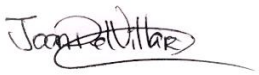
- Aboriginal or treaty rights impacts are identified to you by the communities;
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right;
- Consultation with Indigenous communities or other stakeholders has reached an impasse; or
- A Section 16 Order request is expected based on impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

**You may send a draft copy of the report directly to me, allowing 30 days for technical review. Please ensure the Notice of Completion and final report are sent to the ministry's West Central Region EA notification email account (eanotification.wcregion@ontario.ca).**

Should you or any members of your project team have any questions regarding the material above, please contact me at joan.delvillarcuicas@ontario.ca.

Sincerely,



Joan Del Villar Cuicas
Regional Environmental Planner – West Central Region
Project Review Unit, Environmental Assessment Branch

Cc: Marco Mazzuca, Supervisor, Project Review Unit, MECP
Joan Del Villar Cuicas, Regional Environmental Planner, Project Review Unit, MECP
Stephen Burt, Manager, Hamilton District Office, MECP
Alvaro L. Almuina, Consultant Project Manager, R.J. Burnside & Associates Ltd.

Enclosed: Areas of Interest

Attached: Client's Guide to Preliminary Screening for Species at Risk

A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with Aboriginal Communities

**AREAS OF INTEREST**

*It is suggested that you check off each section after you have considered / addressed it.*

**Planning and Policy**

- The **Provincial Planning Statement** (PPS) **(2024)** contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies. **The PPS 2024 replaces the Provincial Policy Statement (PPS) (2020) and A place to Grow: Growth Plan for the Greater Golden Horseshoe (APTG) (2019)**.
- Applicable plans and policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.
    - Projects located in MECP Central or Eastern Region may be subject to the **Oak Ridges Moraine Conservation Plan (2017)** or the **Lake Simcoe Protection Plan (2014)**.
    - Projects located in MECP Central, Southwest or West Central Region may be subject to the **Niagara Escarpment Plan (2017)**.
    - Projects located in MECP Central, Eastern, Southwest or West Central Region may be subject to the **Greenbelt Plan (2017)**. Due to Amendment 4 to the Greenbelt Plan, areas within the Greenbelt are still subject to applicable policies in the PPS **(2020)** and APTG **(2019)**.
    - Projects located in MECP Northern Region may be subject to the **Growth Plan for Northern Ontario (2011).**
- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

**Source Water Protection**

The *Clean Water Act*, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include

activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.**

    - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

    - If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.

- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.

- In order to determine if this project is occurring within a vulnerable area, proponents can use Source Protection Information Atlas, which is an online mapping tool available to the public. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario's website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as approved by the MECP.

**Climate Change**

The document "Considering Climate Change in the Environmental Assessment Process" (Guide) is part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

- **The MECP expects proponents of Class EA projects to:**

    1. Consider during the assessment of alternative solutions and alternative designs, the following:
        a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
        b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
    2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

**Air Quality, Dust and Noise**

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.**

- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:

    - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
    - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
    - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
    - A discussion of potential mitigation measures.

- As a common practice, "air quality" should be used an evaluation criterion for all road projects.

- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.

- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities* report prepared for Environment Canada. March 2005.

- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

**Ecosystem Protection and Restoration**

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.

- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
    - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
    - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
    - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, for projects located in Central Region you may consider the provisions of the Rouge Park Management Plan if applicable.

**Species at Risk**

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at https://www.ontario.ca/page/species-risk.

- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.

- For any questions related to subsequent permit requirements, please contact SAROntario@ontario.ca.

**Surface Water**

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.

- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's Stormwater Management Planning and Design Manual (2003) should be referenced in the report and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:

    - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
    - Watershed information, drainage conditions, and other relevant background information
    - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
    - Information on maintenance and monitoring commitments.

- Ontario Regulation 60/08 under the *Ontario Water Resources Act* (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If a proposed sewage treatment plant is listed in Table 1 of the regulation, the report should describe how the proposed project and its mitigation measures are consistent with the requirements of this regulation and the OWRA.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information. Additionally, an

Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

**Groundwater**

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.

- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.

- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.

- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.

- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

**Excess Materials Management**

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don't go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by

this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit https://www.ontario.ca/page/handling-excess-soil.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).

- All waste generated during construction must be disposed of in accordance with ministry requirements.

**Contaminated Sites**

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the MECP's D-4 guideline for land use considerations near landfills and dumps.
    - Resources available may include regional/local municipal official plans and data; provincial data on large landfill sites and small landfill sites; Environmental Compliance Approval information for waste disposal sites on Access Environment.

- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's website).

- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

**Servicing, Utilities and Facilities**

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.

- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's environmental land use planning guides to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

**Mitigation and Monitoring**

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.

- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

**Consultation**

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout

the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Class EA to include full documentation).

- Please include the full stakeholder distribution/consultation list in the documentation.

**Class EA Process**

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. **The Master Plan should clearly indicate the selected approach for conducting the plan**, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Section 16 Order Requests under the Environmental Assessment Act, although the plan itself would not be. **Please include a description of the approach being undertaken (use Appendix 4 as a reference).**

- If this project is a Master Plan: Any identified projects should also include information on the MCEA schedule associated with the project.

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.

- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at http://www.ontario.ca/environment-and-energy/environment-and-energy. We encourage you to review all the available guides and to reference any relevant information in the report.

**Notice of Completion**
Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address.

The public can request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister 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 Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Ontario

# A PROPONENT'S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES

**DEFINITIONS**

The following definitions are specific to this document and may not apply in other contexts:

**Aboriginal communities** – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

**Consultation** – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

**Crown** – the Ontario Crown, acting through a particular ministry or ministries.

**Procedural aspects of consultation** – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

**Proponent** – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

## I. PURPOSE

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

## II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers

issuing a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

## III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

## IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

### a) What might a proponent be required to do in carrying out the procedural aspects of consultation?

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;

- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

**b) What documentation and reporting does the Crown need from the proponent?**

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;

- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

**c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?**

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

## V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;

- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigates any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

## VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

# *Client's Guide to Preliminary Screening for Species at Risk*

***Ministry of the Environment, Conservation and Parks***

***Species at Risk Branch, Permissions and Compliance***

***DRAFT - May 2019***

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## 1.0 Purpose, Scope, Background and Context

### 1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
  outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act* (ESA).

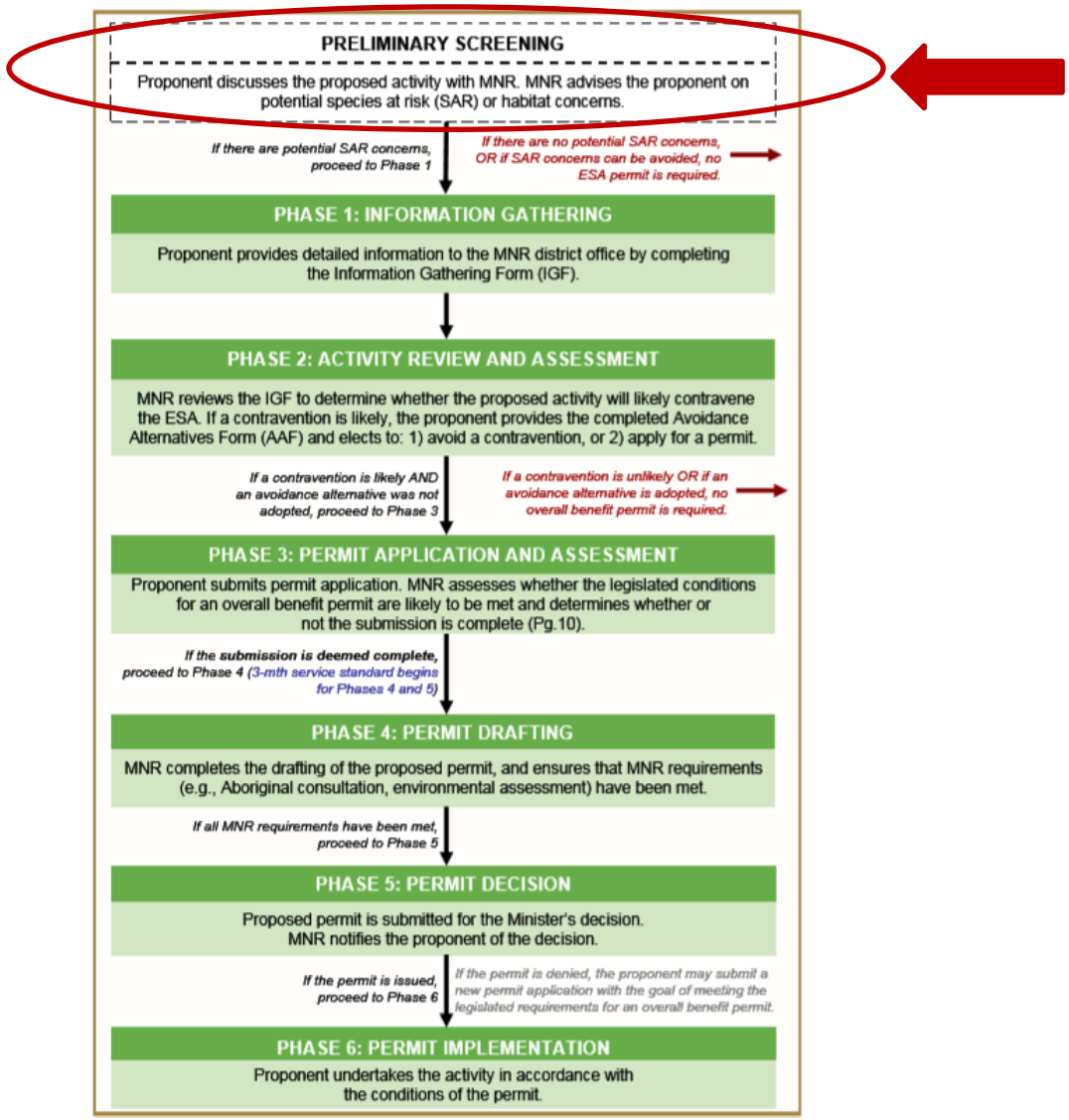
**To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.**

### 1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

## 1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at SAROntario@ontario.ca to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the "Preliminary Screening" stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at https://www.ontario.ca/page/species-risk-overall-benefit-permits



## 2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

**Step 1:** Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

**Step 2:** Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

**Step 3:** Client gathers information identified in the checklist in section 4 of this guide.

**Step 4:** Client contacts the ministry at SAROntario@ontario.ca to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

**Step 5:** Ministry staff will provide advice on next steps.

**Option A:** Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

**Option B:** Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

## 3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

## 3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at https://www.ontario.ca/page/land-information-ontario.

## 3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

## 3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at https://ebird.org/home
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

  Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery

## 3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act and https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act
- A list of species at risk in Ontario is available online at https://www.ontario.ca/page/species-risk-ontario. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

## 4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted:_____

  _____
- ✓ List local naturalist groups you contacted:_____

  _____
- ✓ List local Indigenous communities you contacted:_____

  _____
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted:_____

  _____
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: _____

  _____
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk):_____

  _____

**From:** Kukalis, John
**Sent:** Tuesday, March 04, 2025 3:44 PM
**To:** 'eanotification.wcregion@ontario.ca'
**Cc:** Joan.DelVillarCuicas@ontario.ca
**Subject:** RE: City of Hamilton, MEA Class EA, Highway 52 and Powerline Road West
**Attachments:** RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf; MECP Project Information Form - Hwy 52 & PL Rd E MCEA.xlsx

Hi:

Further to my email from yesterday. Attached please find a revised Notice of Commencement and PIC #1 for the Highway 52 and Powerline Road West Intersection Improvements.

The only change in information is that the future/upcoming dates that this Notice will appear in the local newspaper has been revised (last line on bottom of Notice).

This change was made before the Notice was sent out or posted on our website.

Please let me know if you require any additional information.

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

**From:** Kukalis, John
**Sent:** Thursday, March 20, 2025 9:20 AM
**To:** Simeon.Joshi@ontario.ca
**Cc:** Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Subject:** Highway 52 and Powerline Road West Intersection Improvements (City of Hamilton) MCEA

Hi Simeon:

I received a copy of the NOC Acknowledgement from our project Consultant but, we didn't receive one at the City. In reviewing your email below, I noticed there is an error in my email address.
My correct contact is john.kukalis@hamilton.ca

I am just drawing it to your attention for any future contact that may be required.

Thanks and have a great day!

**John Kukalis, C.E.T.** *(he/him)*
*Project Manager - Capital Infrastructure Planning*
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton

Hamilton

| | |
|---|---|
| **From:** | Larsen, Alannah |
| **To:** | Salvucci, Megan; Kukalis, John; Alvaro L. Almuina |
| **Bcc:** | cta.comment@cta-toc.gc.ca; fisheriesprotection@dfo-mpo.gc.ca; EnviroOnt@tc.gc.ca; gtadeliveryplanning@canadapost.postescanada.ca; susan.waters@aandc.gc.ca; ec.cosepac-cosewic.ec@canada.ca; sandro.leonardelli@canada.ca; anjala.puvananathan@canada.ca; "Transport Canada Civil Aviation Regional Office"; karla.barboza@ontario.ca; Jennifer.Chown@opp.ca; gregory.wootton@ontario.ca; david.marriott@ontario.ca; ainsley.davidson@infrastructureontario.ca; NoticeReview@infrastructureontario.ca; Joan.DelVillarCuicas@ontario.ca; barbara.slattery@ontario.ca; dawn.irish@ontario.ca; pauline.vanroon@ontario.ca; ian.thornton@ontario.ca; NRISC@ontario.ca; Carlene.Whittingham@ontario.ca; fnatolochny@grandriver.ca; Scott Peck; mstone@conservationhamilton.ca; nec@ontario.ca; ddeluce@npca.ca |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies |
| **Date:** | Wednesday, March 19, 2025 1:44:00 PM |
| **Attachments:** | RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule “C” Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**Alannah Larsen**
Infrastructure Programming Technologist
Public Works
Engineering Services, City of Hamilton
Alannah.Larsen@hamilton.ca

Outlook

**RE: Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies**

**From** MONTELEONE, Michael <Michael.Monteleone@canadapost.postescanada.ca>
on behalf of
GTA DELIVERY PLANNING <gtadeliveryplanning@canadapost.postescanada.ca>

**Date** Thu 3/20/2025 10:05 AM

**To** Larsen, Alannah <Alannah.Larsen@hamilton.ca>

**Cc** Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Kukalis, John <John.Kukalis@hamilton.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>

Apologies. Correct email address is CPCSPCDSOLondon@canadapost.postescanada.ca

Regards,

Michael Monteleone
Delivery Services Officer - GTA
Canada Post Corporation
Mezzanine – Gateway
4657 Dixie Rd
Mississauga ON L4W 1S2
Cell: 647-212-0563
Canada Post Customer Service: 1-866-607-6301

Outlook

# RE: Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies

**From** MAZEY, Neil <neil.mazey@canadapost.postescanada.ca>

**Date** Wed 3/26/2025 2:59 PM

**To** Larsen, Alannah <Alannah.Larsen@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Kukalis, John <John.Kukalis@hamilton.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>; DELL, Thomas <Thomas.Dell@canadapost.postescanada.ca>

Hi Alannah,

I'm copying Tom Dell on this. He looks after Hamilton for the Canada Post side of things.

NEIL MAZEY |DELIVERY SERVICES OFFICER I DELIVERY PLANNING | CANADA POST | 955 HIGHBURY AVE N, LONDON ON N5Y 1A3 | 519-281-2253

**From:** SUMLER, Ryan <ryan.sumler@canadapost.postescanada.ca>
**Sent:** Friday, April 4, 2025 1:32 PM
**To:** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Larsen, Alannah <Alannah.Larsen@hamilton.ca>
**Cc:** DELL, Thomas <Thomas.Dell@canadapost.postescanada.ca>
**Subject:** RE: Supplemental List - Rymal Road (Upper James Street to Dartnall Road) - NOTICE OF STUDY COMPLETION AND PUBLIC REVIEW PERIOD

Good afternoon,

For anything related to Hamilton and Canada Post Delivery Planning, please reach out to Tom Dell (Cc'd).

He is the delivery services officer for that area and will assist you.

Thank you,

RYAN SUMLER
Delivery Services Officer | Delivery Planning CANADA POST
955 Highbury Ave N
London ON, N5Y 1A3
519-319-6865

Outlook

## FW: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation

**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** Thursday, May 08, 2025 11:17
**To:** Thomas.Dell@canadapost.postescanada.ca
**Cc:** Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>
**Subject:** Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation

Hi Thomas:

The City of Hamilton has initiated a Municipal Class Environmental Assessment (MCEA) process to develop and assess alternative solutions to address traffic safety and related concerns both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. A copy of the formal Notice of Study Commencement was previously sent to Canada Post and is attached above.

At this time, natural and cultural heritage assessments are underway and, a significant portion of the transportation engineering analysis has been completed. In parallel, the city has also completed a Traffic Safety Assessment and has determined that interim works are required to be completed later this year, in advance of the completion of the MCEA.

With reference to attachment 2 & 3 above, there is currently a Community Mailbox located on the northeast corner of the intersection. In this regard, the short-listed alternatives to improve traffic safety, require relocation of the Community Mailbox. Relocation may also be required to institute the interim improvements later this year.

At this time, we expect the MCEA will confirm that the Community Mailbox can ultimately remain at the intersection and integrated into the final design alternative however, it will need to be relocated further back from the edge of the Highway 52 pavement.
It may also need to be moved further back to accommodate our immediate interim road improvements.

Can you please advise what is required from Canada Post to facilitate this.

The interim works in particular, are very time sensitive so if you would like more information on the safety history, traffic improvement options, etc. please do not hesitate to let me know and I will set up a Teams meeting with our Engineering experts.

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

**From:** Kukalis, John
**Sent:** Thursday, May 22, 2025 2:42 PM
**To:** Thomas.Dell@canadapost.postescanada.ca
**Cc:** Alvaro L. Almuina <alvaro.almuina@rjburnside.com>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>
**Subject:** RE: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation

Hi Thomas:

I am just following up on my email from two weeks ago.

As noted below, progress on the preferred option(s) needs to be informed by Canada Post requirements.

Thanks

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** July-11-25 1:42 PM
**To:** SUMLER, Ryan <ryan.sumler@canadapost.postescanada.ca>
**Cc:** DELL, Thomas <Thomas.Dell@canadapost.postescanada.ca>; Alvaro L. Almuina <alvaro.almuina@rjburnside.com> **Subject:** FW: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation

Hi Ryan:

As per you email of April 4, 2025, we have tried to follow up on this matter with the contact provided.
To date, we have not received any response back.

Any assistance or direction as to how we can move this matter forward, would be very much appreciated.

Thanks,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section

**From:** DELL, Thomas <Thomas.Dell@canadapost.postescanada.ca>
**Sent:** July 11, 2025 5:11 PM
**To:** Kukalis, John <John.Kukalis@hamilton.ca>
**Cc:** Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Subject:** RE: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation

Hello John

I believe that you are referencing this community mailbox site located in this parking lot at the end of powerline rd.

I can definitely have the site moved if it is in the way of work that needs to be completed.

Would you have any ideas on where you would like to site moved to, is there any chance of staying in the general area or will you require it to be moved well outside of the current location>

Thomas Dell
Delivery Services Officer
955 Highbury Ave N
London, Ontario
N5Y 1A3
Cell : 519-495-7224
Thomas.Dell@canadapost.postescanada.ca

Outlook

**FW: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation**

**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** Monday, July 14, 2025 1:48 PM
**To:** DELL, Thomas <Thomas.Dell@canadapost.postescanada.ca>
**Cc:** Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Subject:** RE: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation

Hi Thomas:

Thank you for responding.

Fortunately, we do not think that we will need to temporarily move/relocate the community mailbox for interim works that are planned later this year, as we had originally thought.

However, ultimately upon completion of the current Municipal Class Environmental (MCEA) process, we will be looking at reconstructing the entire intersection. The intersection would include new roundabout for the existing north-south and western approach roads. In addition, a new and more geometrically sound eastern leg would be constructed to facilitate access to the existing parking lot. Unless you have another location in mind, we would also look to accommodate the community mailbox in the same general area as it currently is, albeit further easterly/set back from Highway 52.

We hope to complete the MCEA early in 2026 and Detailed Design later in the year, with a view to construction in 2027. To this end, we would want to involve you/your agency in the preparation/review of the plans. I expect that we will have a preliminary concept plan available next month, but before we prepare that, it would be helpful if you could let us know if there are any standards to inform our plan preparation.

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

Outlook

**FW: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation**

**From:** DELL, Thomas <Thomas.Dell@canadapost.postescanada.ca>
**Sent:** July 16, 2025 10:59 PM
**To:** Kukalis, John <John.Kukalis@hamilton.ca>
**Cc:** Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Subject:** RE: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation

Hi John

That's good news. If anything changes along the way and its found that the modules are in the way I can get them moved for you. I would hope that this area will continue to be a suitable location for the community mailboxes to stay following the work being completed.

I can also look into upgrading the equipment that is currently in place and replacing it with our newer style equipment.

Thomas Dell
Delivery Services Officer
955 Highbury Ave N
London, Ontario
N5Y 1A3
Cell : 519-495-7224
Thomas.Dell@canadapost.postescanada.ca

Outlook

**RE: Highway 52 and Powerline Road West Intersection Improvements - Community Mailbox Relocation**

**From** Kukalis, John <John.Kukalis@hamilton.ca>
**Date** Mon 7/28/2025 8:03 AM
**To** DELL, Thomas <Thomas.Dell@canadapost.postescanada.ca>
**Cc** Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>

Thanks Thomas:

Yes, our thought is that we can accommodate it and the new configuration will be an improvement over what exists for both through traffic and those needing to access the super mailbox.

We'll circulate you a plan for review prior to our Public Information Center in early October as I'm sure folks will be interested, so I'd like to be able to advise Canada Post is good with the layout.

How much lead time do you need to review ?

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

**From:** Scott Peck <Scott.Peck@conservationhamilton.ca>
**Sent:** Monday, April 14, 2025 2:16 PM
**To:** Kukalis, John <John.Kukalis@hamilton.ca>
**Cc:** GCostie <Gord.Costie@conservationhamilton.ca>; Brandon Good <bgood@conservationhamilton.ca>
**Subject:** Highway 52 & Powerline Road West Intersection Improvements - MECA

John, thank you for the Open House on the above issue held April 8, 2025.

We have reviewed the information Boards and note our support for the Preliminary Preferred Alternative.

We offer the following for consideration as the project moves forward.

- The subject lands are located outside of our watershed and within the Grand River CA jurisdiction.
- Given this, the HCA has no natural hazard role related to the project and a permit pursuant to Secon` 28 of CA Act or O. Reg 41/24 will not be required from HCA
- HCA interest in the project relates to our ownership of the adjacent Copetown Bog ESA lands, the TH&B Rail Trail and the associated parking lot off of Highway 52.
- As noted, we support the Preliminary Preferred Alternave and would request clarificaon on the à following points.
    - The Preliminary Preferred Alternave appears to maintain` a safe access point via the roundabout to the HCA parking lot. Please confirm this is proposed.
    - If the parking access is proposed from the roundabout, appropriate signage would be required to note access. Please confirm.
    - The city unintentional parking that has developed at the public mailbox area is in direct conflict with the official HCA paid parking lot. Please confirm laneway restricons and unauthorized No Parking posting in this area.
    - There appears to be no encroachment of the roundabout towards the Copetown Bog or HCA lands. Please confirm. We would also request that it be confirmed through the environmental study work completed that both groundwater and surface water characteristics are maintained with the proposed roundabout and that no negave` impacts on the Copetown Bog ESA are expected as a result of the project.
    - A landscape and planng buffer plan should be development for the area between the` roundabout and the Copetown Bog ESA.
    - The Preliminary Preferred Alternative notes that "Options for trail crossing will be considered in the next phase". While we understand that the preferred alternave needs to be fully vetted through the process, we would request that options for the trail crossing be considered and conveyed to HCA staff as soon as possible and be included in the preferred option. Given the preferred alternave, perhaps a signalized trail crossing may be considered.

Thank you John, please let me know if you have any questions,

***T. Scott Peck***, B.A., DPA, MCIP, RPP, CMMIII
***Deputy Chief Administrative Officer/***
***Director, Watershed Management Services***
Hamilton Conservation Authority
Phone: 905-525-2181, Ext. 130

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**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** May 16, 2025 4:09 PM
**To:** Scott Peck <Scott.Peck@conservationhamilton.ca>
**Cc:** Gord Costie <gcostie@conservationhamilton.ca>; Brandon Good <bgood@conservationhamilton.ca>; Larsen, Alannah <Alannah.Larsen@hamilton.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>; Deanna.DeForest@rjburnside.com; Mishaal Rizwan <Mishaal.Rizwan@rjburnside.com>; Cole.Roddick@rjburnside.com
**Subject:** FW: Highway 52 & Powerline Road West Intersection Improvements -HCA response

Hi Scott,

Thank you for your comments on the Highway 52/Powerline Road MCEA. Your comments will become part of the public record for the study.

I have responded to your comments and questions in italics below. Please do not hesitate to contact me if you have any concerns or wish to discuss further.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
(905) 546-2424, Ext.6134
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

John, thank you for the Open House on the above issue held April 8, 2025.

We have reviewed the information Boards and note our support for the Preliminary Preferred Alternative.

We offer the following for consideration as the project moves forward.

- The subject lands are located outside of our watershed and within the Grand River CA jurisdiction.

*Understood, we have notified the GRCA of the study and received comments indicating their interest in the study and determining permit requirements.*

- Given this, the HCA has no natural hazard role related to the project and a permit pursuant to Section 28 of CA Act or O. Reg 41/24 will not be required from HCA

*Acknowledged*

- HCA interest in the project relates to our ownership of the adjacent Copetown Bog ESA lands, the TH&B Rail Trail and the associated parking lot off of Highway 52.

*Acknowledged. Can you please confirm if HCA or GRCA would be the appropriate authority to establish the wetland boundary adjacent to the study area.*

- As noted, we support the Preliminary Preferred Alternative and would request clarification on the following points.
    - The Preliminary Preferred Alternative appears to maintain a safe access point via the roundabout to the HCA parking lot. Please confirm this is proposed.

*The preliminary preferred alternative contemplates that access to the HCA parking would be facilitated from a new easterly leg, extending from a new roundabout at the intersection of Highway 52 and Powerline Road West.*
*However, the feasibility and configuration of this eastern leg is currently being examined by the Consultant. When further details are available, we will reach out to you to discuss.*

    - If the parking access is proposed from the roundabout, appropriate signage would be required to note access. Please confirm.

*Noted, the need for appropriate signage will be included in the MCEA documentation and considered during the detailed design phase of the project.*

    - The city unintentional parking that has developed at the public mailbox area is in direct conflict with the official HCA paid parking lot. Please confirm laneway restrictions and unauthorized No Parking posting in this area.

*Given the future proximity to the roundabout intersection, its anticipated that parking will not be feasible along the new eastern leg adjacent to the roundabout. In this regard, the city has reached out to Canada Post to enquire what is needed to remove/relocate the existing community mailbox. To date, we have not received a response. Depending on the response from Canada Post, we may need to have discussions with both Canada Post and HCA as to how to best accommodate the mailbox as well as, parking lot access. When further details are available, we will reach out to you to discuss.*

- There appears to be no encroachment of the roundabout towards the Copetown Bog or HCA lands. Please confirm. We would also request that it be confirmed through the environmental study work completed that both groundwater and surface water characteristics are maintained with the proposed roundabout and that no negative impacts on the Copetown Bog ESA are expected as a result of the project.

*Our consultant, RJ Burnside and Associates is completing environmental study work, including a wetland boundary staking to confirm the wetland limit to be considered for the proposed intersection improvements works. A preliminary Stormwater Management Study, including a hydraulic and hydrologic assessment is also being completed to characterize the study area. Once these are completed, we can confirm the points noted.*

- A landscape and planting buffer plan should be development for the area between the roundabout and the Copetown Bog ESA.

*Acknowledged. The Municipal Class Environmental Assessment will note the requirement for a landscape and planting buffer plan to be developed during detailed design in coordination with the development of grading limits of construction.*

- The Preliminary Preferred Alternative notes that "Options for trail crossing will be considered in the next phase". While we understand that the preferred alternative needs to be fully vetted through the process, we would request that options for the trail crossing to be considered and conveyed to HCA staff as soon as possible and be included in the preferred option. Given the preferred alternative, perhaps a signalized trail crossing may be considered.

*The study team will arrange meeting with HCA staff to review and provide feedback on the options for the trail crossing, once the options are developed during the next phase of the study.*

Thank you John, please let me know if you have any questions,

***T. Scott Peck***, A., DPA, MCIP, RPP, CMMIII
***Deputy Chief Administrative Officer/***
***Director, Watershed Management Services***
Hamilton Conservation Authority
Phone: 905-525-2181, Ext. 130

Hamilton Conservation Authority
A Healthy Watershed for Everyone

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**From:** Scott Peck <Scott.Peck@conservationhamilton.ca>
**Sent:** Tuesday, May 20, 2025 1:22 PM
**To:** Kukalis, John
**Cc:** Gord Costie; Brandon Good; Larsen, Alannah; Alvaro L. Almuina; Deanna De Forest; Mishaal Rizwan; Cole Roddick
**Subject:** RE: Highway 52 & Powerline Road West Intersection Improvements -HCA response

Thank you John,

***T. Scott Peck***, B.A., DPA, MCIP, RPP, CMMIII
***Deputy Chief Administrative Officer/***
***Director, Watershed Planning & Engineering***
Hamilton Conservation Authority
Phone: 905-525-2181, Ext. 130

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**From:** Kaufman, Jackson (MCM) <Jackson.Kaufman@ontario.ca>
**Sent:** April 17, 2025 3:50 PM
**To:** Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Cc:** Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>; John.Kukalis@hamilton.ca; Megan.Salvucci@hamilton.ca; Alannah.Larsen@hamilton.ca
**Subject:** MCM Response - Hamilton, Highway 52 and Powerline Road West Intersection Improvements [MCM File 002309]

Good afternoon, Alvaro Almuina,

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Study Commencement for the above referenced project.

MCM's initial letter on this project is attached. Please do not hesitate to contact us if you have any questions or require additional information.

Best regards,

**Jackson Kaufman**
Heritage Planner | Heritage Operations Branch/ Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
613-242-3743 | jackson.kaufman@ontario.ca

Ontario

*Taking pride in strengthening Ontario, its places and its people*

**Ministry of Citizenship and Multiculturalism**

Heritage Planning Unit
Heritage Operations Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Toronto, ON M5G 1S7
Tel.: 613-242-3743

**Ministère des Affaires civiques et du Multiculturalisme**

Planification relative au patrimoine
Opérations relatives au patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
5e étage, 400, av. University
Toronto, ON M5G 1S7
Tél.: 613-242-3743

April 17, 2025

EMAIL ONLY

Alvaro L. Almuina
Consultant Project Manager
R.J. Burnside & Associates Ltd.
1266 S Service Rd Suite C2-1
Stoney Creek, ON L8E 5R9
alvaro.almuina@rjburnside.com

| | | |
|---|---|---|
| **MCM File** | **:** | **0023291** |
| **Proponent** | **:** | **City of Hamilton** |
| **Subject** | **:** | **Municipal Class Environmental Assessment – Schedule C – Notice of Study Commencement and Public Information Centre #1** |
| **Project** | **:** | **Highway 52 and Powerline Road West Intersection Improvements** |
| **Location** | **:** | **Highway 52 and Powerline Road West, City of Hamilton.** |

---

Dear Alvaro L. Almuina:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Study Commencement and Public Information Centre for the above-referenced project.

MCM's interest in this project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources, including land and marine;
- built heritage resources, including bridges and monuments; and
- cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.

**Project Summary**
The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

**Identifying Cultural Heritage Resources**
While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation.

**Archaeological Resources**

Presentation materials from the municipality's Public Information Centre #1 on April 8, 2025 indicate that a Stage 1 and 2 archaeological assessment will be completed for this project. Please send us with the Project Information Form (PIF) numbers associated with the archaeological assessments.

We recommend that the licensed archaeologist submit the report to MCM prior to the issuance of the notice of completion.

Please note that archaeological concerns have not been fully addressed until reports have been entered into the Ontario Public Register of Archaeological Reports ('the Register') where those reports recommend that:

1. the archaeological assessment of the project area is complete and
2. all archaeological sites identified by the assessment are either of no further cultural heritage value or interest (as per Section 48(3) of the Ontario Heritage Act) or that mitigation of impacts has been accomplished through excavation or an avoidance and protection strategy.

Approval authorities and/or proponents should wait to receive the MCM's written confirmation that the archaeological assessment report(s) has been entered into the Register before issuing a decision or proceeding with any ground disturbing activities. The letter will also indicate either that there are no further concerns for impacts to archaeological resources or articulate next steps to mitigate any concerns.

Proponents must follow the recommendations of the archaeological assessment report(s). MCM recommends that further stages of archaeological assessment (if recommended) be undertaken as early as possible during detailed design and prior to any ground disturbing activities.

**Built Heritage Resources and Cultural Heritage Landscapes**
The PIC materials also indicate that a Cultural Heritage Resource Assessment is being completed and there is potential for built heritage resources and/or cultural heritage landscapes within the project area. MCM recommends that a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment be undertaken for the entire study area during the planning phase and will be summarized in the EA Report. This study will:

1. Describe the existing baseline cultural heritage conditions within the study area by identifying all known or potential built heritage resources and cultural heritage landscapes, including a historical summary of the study area. The Ministry has developed a screening checklist that may assist with this exercise: *Criteria for Evaluating for Potential Built Heritage Resources and Cultural Heritage Landscapes.*

2. Identify preliminary potential project-specific impacts on the known and potential built heritage resources and cultural heritage landscapes that have been identified. The report should include a description of the anticipated impact to each known or potential built heritage resource or cultural heritage landscape that has been identified.

3. Recommend measures to avoid or mitigate potential negative impacts to known or potential built heritage resources and cultural heritage landscapes. The proposed mitigation measures are to inform the next steps of project planning and design.

Given that this project covers a large study area, MCM recommends that the Cultural Heritage Report is carried out so that step 1 described above is undertaken early in the planning process. Then, steps 2 and 3 can be undertaken once the preferred alternatives have been selected.

Cultural Heritage Reports will be undertaken by a qualified person who has expertise, recent experience, and knowledge relevant to the type of cultural heritage resources being considered and the nature of the activity being proposed.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

**Environmental Assessment Reporting**
All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MCM whether any technical cultural heritage studies will be completed for this EA project, and provide them to MCM before issuing a Notice of Completion or commencing any work on the site. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Please note that the responsibility for administration of the *Ontario Heritage Act* and matters related to cultural heritage have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Individual staff roles and contact information remain unchanged. Please continue to send any notices, report and/or documentation **via email only** to both Karla Barboza and myself.

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | karla.barboza@ontario.ca
- Jackson Kaufman, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 613-242-3743 | jackson.kaufman@ontario.ca

Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Jackson Kaufman
Heritage Planner
jackson.kaufman@ontario.ca

Copied to: Karla Barboza, Team Lead, Heritage Planning Unit, MCM
John Kukalis, Project Manager, Capital Infrastructure Planning, City of Hamilton
Alannah Larsen, City of Hamilton
Megan Salvucci, City of Hamilton

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. The Ministry of Citizenship and Multiculturalism (MCM) makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MCM be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. 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 *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers provisions of that Act related to burial sites. 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*.

**From:** Gordon, Alison (MNR) <Alison.Gordon@ontario.ca>
**Sent:** Thursday, March 20, 2025 11:08
**To:** Alannah.Larsen@hamilton.ca
**Cc:** Megan.Salvucci@hamilton.ca; John.Kukalis@hamilton.ca; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Subject:** RE: Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies

Good morning Alannah,

The Ministry of Natural Resources (MNR) received the Notice of commencement for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment on March 20, 2025. Thank you for circulating this to our office.

MNR has prepared the attached **MNR Southern Region Information Package – For External Proponent Environmental Assessments** (Package) to help project proponents understand MNR's role as a commenting agency and interests related to environmental assessment within the Ministry's mandate. The Package also provides information on the Ministry's regulatory authority to issue authorizations, permits, licenses and/or approvals. The information provided is subject to change from time to time and it is the proponent's responsibility to ensure the information used to support project planning and compliance with *Environmental Assessment Act* requirements is current and accurate. It is the proponent's responsibility to be aware of, and comply with, all relevant federal or provincial legislation, municipal by-laws and/or other agency approvals.

Please note the ministry has not completed a screening of natural heritage or other resource values at this time. If no MNR interests are identified based on the information contained in this Package, there is no need to further circulate MNR as a commenting agency when undertaking consultation and review under the applicable EA process. If you have identified any MNR interests in your project planning and require additional technical information, or if you have questions about the content of this Package, please feel free to contact me, or
SR.planning@ontario.ca.

Best Regards,
**Alison Gordon** (She/Her)
Regional Planner | Land Use Planning and Strategic Issues Section
Ministry of Natural Resources | Ontario Public Service
Ontario alison.gordon@ontario.ca

*Taking pride in strengthening Ontario, its places and its people*

As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

# MNR SOUTHERN REGION INFORMATION PACKAGE – FOR EXTERNAL PROPONENT ENVIRONMENTAL ASSESSMENTS

MNR – SOUTHERN REGION – LUPSI

October 2024

# How to Use This Information Package

Environmental Assessment (EA) is a planning and decision-making process used to promote environmentally responsible decision-making. In Ontario, this process is defined and is required pursuant to the *Environmental Assessment Act (EAA)*. The Ministry of Environment, Conservation and Parks (MECP) administers the *EAA*.

The Ministry of Natural Resources (MNR) may be asked by a proponent of a project subject to an EA or Class EA to participate as a commenting agency to ensure provincial interests within MNR's mandate are considered by the proponent in the project planning process.

Use of this Information Package "Package" is intended to help project proponents understand MNR's:

- role as a commenting agency and interests related to environmental assessment within the Ministry's mandate (refer Sections 1 through 8 of this document)
- regulatory authority to issue authorizations, permits, licenses and/or approvals (refer Appendix A – MNR Regulatory Role)

The information provided by MNR and the sources listed in this Package should not be considered exhaustive nor a substitute for consultation with other agencies, site visits and appropriate field studies. The information provided is subject to change from time to time and it is the proponent's responsibility to ensure the information used to support project planning and compliance with *EAA* requirements is current and accurate.

If no MNR interests are identified based on the information contained in this Package there is no need to further circulate MNR as a commenting agency when undertaking consultation and review under the applicable EA process. MNR Southern Region (via sr.planning@ontario.ca) may be contacted if there are any questions about the content of this Package or if specific technical information is required.

This Package is intended for use within MNR's Southern Region (SR) regional boundary only. To view the MNR SR regional boundary please see Ministry of Natural Resources and Forestry work centres | ontario.ca.

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# 1. MNR Mandate

MNR has a mandate to protect Ontario's biodiversity while promoting economic opportunities in the resource sector and supporting outdoor recreation opportunities by:

- Sustainably managing Ontario's fish and wildlife resources.
- Leading the management of Ontario's public (also referred to as Crown) lands, including the beds of navigable waters, oil, gas, salt and aggregate resources, and access to Crown land for renewable energy projects.
- Ensuring the sustainable management of Ontario's Crown forests.
- Protecting people, property and communities from forest fires, floods, and droughts.
- Developing and applying geographic information to help manage the province's natural resources.

MNR's regulatory role is triggered when a project proponent seeks an approval under legislation administered by the Ministry. Information on the Ministry's regulatory role under applicable legislation can be found in Appendix A.

# 2. MNR Role as Commenting Agency

MNR's role as a commenting agency on projects subject to *EAA* requirements is to:

- Assist and enable project proponents to access relevant technical and scientific information within the scope of MNR's mandate.
- Provide legislative / regulatory / policy information and direction regarding interests within MNR's mandate.
- Support the identification and consideration of the potential effects of a project on matters within MNR's mandate.
- Identify where the project proponent may need to seek MNR approvals regarding the project.

# 3. Provincial Planning Policies

Provincial plans together with the *Provincial Policy Statement, 2024* (PPS) issued under section 3(1) of the *Planning Act,* provide policy direction on matters of provincial interest related to land use planning and development in Ontario. The PPS and provincial plans contain policies specific to infrastructure projects.

A summary of matters related to MNR's mandate within specific infrastructure-related provincial planning policies can be found below. Please note, this is not an exhaustive list of provincial policies that may apply to a project and other MNR mandated interests may be applicable. It is the project proponent's responsibility to review the provincial plans and PPS,

which may be amended from time to time, to determine policies applicable to the proposed project.

**Provincial Plan Mapping**

Mapping of provincial plan boundaries and natural heritage areas as defined in individual provincial plans is available to view or download through Make A Map: Natural Heritage Areas or Ontario GeoHub (GeoHub) - Natural Heritage System Area.

## Greenbelt Plan, 2017

Section 4.2.1.2 of the Greenbelt Plan contains policies which are designed to direct infrastructure away from, or where not possible, to minimize the impacts on the Natural Heritage and Water Resource Systems. It requires that new or expanding infrastructure "shall avoid *key natural heritage features, key hydrologic features or key hydrologic areas* unless need has been demonstrated and it has been established that there is no other reasonable alternative."

## Niagara Escarpment Plan (NEP), 2017

The NEP is administered by the Niagara Escarpment Commission, the government agency mandated to develop, interpret, and apply NEP policies that maintain and enhance the Niagara Escarpment's unique environmental and landscape features. In addition to Make A Map: Natural Heritage Areas, mapping of NEP Escarpment Natural Areas and Escarpment Protection Areas may be obtained from your local municipality or the Niagara Escarpment Commission.

## Oak Ridges Moraine Conservation Plan (ORMCP), 2017

Section 41 of the ORMCP contains policies specific to the development of new or the upgrading/extension of existing infrastructure. This policy direction includes where development shall not be permitted unless specified criteria have been satisfied (including where applicable that there is no other reasonable alternative) and establishes required documentation to support infrastructure projects. Specific conditions apply to proposed infrastructure development within a natural core area and infrastructure crossings of key natural heritage features.

## Lake Simcoe Protection Plan (LSPP), 2009

Policy 6.23-DP of the LSPP directs that development or site alteration in relation to infrastructure shall not be permitted within a key natural heritage feature, a key hydrologic feature or within a related vegetation protection zone unless the need for the project has been demonstrated through an Environmental Assessment or other similar environmental approval and it has been demonstrated there is no reasonable alternative. Some exceptions may apply.

# 4. Fish, Wildlife and Natural Heritage

MNR's natural heritage and natural resources geospatial data layers can be accessed through the ministry's GeoHub and Natural Resources Data Access Requests | Ontario GeoHub. Please note, these Geospatial Ontario (formerly known as Land Information Ontario) GIS data layers available from MNR and the sources listed and linked on this webpage should not be considered as a substitute for site visits and appropriate field surveys. Generally, information available from MNR can be regarded as a starting point from which to conduct further field studies, if needed. While this data represents MNR's best available current information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. There are many areas where MNR does not currently have information. On-site assessments can better verify site conditions, identify natural features and values and confirm presence of species at risk and/or their habitats.

The information below provides an overview of MNR's mandated interests in natural heritage to consider within the project study area. A detailed list of provincial technical guidance material used to identify significant natural heritage features in different landscapes can be found in Appendix B.

### Fisheries

All permanent and intermittent watercourses and waterbodies have potential to contain fish habitat or contribute to fisheries resources. MNR is responsible for administering and enforcing the Ontario Fishery Regulations under the *Fisheries Act*.

When agency approvals are required for a proposed project, it is the responsibility of the authorizing regulatory agency to set any in-water work timing windows in their authorizations. These timing windows may be based on the MNR's In-water Work Timing Window Guidelines.

### Areas of Natural and Scientific Interest

The study area should be screened for the presence of Areas of Natural and Scientific Interest (ANSI). ANSIs are lands and waters containing features that are important for natural heritage protection, scientific study, and education. ANSIs are identified and confirmed by MNR based on their representation of Ontario's significant geological and natural heritage features and are categorized as either Earth Science or Life Science.

### Wetlands

Study areas that contain unevaluated or unmapped wet features should be investigated for the presence of wetlands. Wetlands are lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to the surface. Wetlands may

vary in their significance, and the four major types of wetlands are swamps, marshes, bogs, and fens.

As of January 1, 2023, MNR no longer reviews and confirms wetland evaluations. MNR's role with respect to wetland evaluation includes providing the provincial framework under which wetlands in Ontario are evaluated for significance (OWES), and uploading digital wetland boundary mapping and wetland status into the Geospatial Ontario database.

### Significant Wildlife Habitat

Study areas which may contain significant wildlife habitat should be investigated for its presence or absence. Significant wildlife habitat may include features such as: seasonal concentration areas for wildlife species (e.g., snake hibernaculum), rare vegetation communities (e.g., tallgrass prairie), specialized habitats of wildlife (e.g., turtle nesting and over-wintering areas), habitats of species of conservation concern (e.g., Special Concern species as identified on the Species at Risk in Ontario list) and animal movement corridors (e.g., amphibian movement corridors). Provincially tracked species data (generalized to Natural Heritage Information Centre 1 km screening grid) can be viewed in Natural Heritage Make a Map. Detailed geospatial data may be obtained through GeoHub via a data sharing agreement.

Please note, relying on online mapping tools only may not accurately reflect the presence or absence of significant wildlife habitat within the project study area. Surveys or additional site level assessment are often required to confirm presence or absence of natural heritage features and values.

### Significant Woodlands

Project study areas that contain wooded areas should be investigated for the presence of significant woodlands. Significant woodlands are areas that are ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to their contribution to the broader landscape; or economically important. Local planning authorities are responsible for identifying significant woodlands in accordance with criteria established by MNR.

### Significant Valleylands

Project study areas that occur in a valley or other landform depression that has water for some period of the year should be investigated for the presence of significant valleylands. The identification of valleyland significance is the responsibility of the local planning authority. MNR recommends criteria for determination of valleyland significance.

# 5. Natural Hazards

In Ontario, development is generally directed away from areas impacted by natural hazards to prevent risks from inappropriate development on and around these lands and to ensure that the risks to public health and safety are minimized. Keeping people and property out of harm's way is a cost-effective, socially responsible, and proactive approach to addressing natural hazards. Various policies and programs direct people and development outside of natural hazard areas.

Responsibility for natural hazard management and implementation of programs and policies for most natural hazards has been delegated to municipalities and Conservation Authorities (CA) where they exist. MNR supports implementation of natural hazard policies by local municipalities and CAs by providing a series of natural hazard technical guidelines (see Appendix B).

### Hazardous Lands (flooding, erosion and dynamic beach hazards)

The project location should be reviewed for the presence of hazardous lands. These may include lands subject to flooding and/or erosion and dynamic beaches. These lands become hazardous when people and property locate in these areas. The local municipality and CA should be contacted for further guidance where required.

### Special Policy Areas

Some localized areas of the province may be subject to an approved Special Policy Area (SPA), as defined by the PPS. If the study area is located within or adjacent to a SPA, special consideration for any impacts to the flood plain and site-specific SPA policies may be necessary. Any proposed change or modification to the official plan policies, land use designations or boundaries applying to SPA lands, requires joint approval by the Ministers of the Ministry of Municipal Affairs and Housing (MMAH) and MNR.

Local official plans may be reviewed to identify the presence of SPAs within the study area. MNR may have additional information regarding SPAs which can be made available upon request.

Where applicable, information should be identified at the EA stage regarding any expected changes to the floodplain or potential modifications to the SPA subject to provincial approval.

### Hazardous Sites (unstable soils and bedrock)

The project location should be reviewed for the presence of hazardous sites. These may include unstable soils (sensitive marine clays [leda], organic soils) or unstable bedrock (karst topography). General information and mapping tools available to assist in identifying the

potential presence of hazardous sites (e.g., karst and organic soils) include, but are not limited to:

- GeologyOntario (gov.on.ca) is maintained by the Ministry of Mines and provides access to all Ontario Geological Survey maps, reports and digital datasets.
- Wetland mapping
- Soil information and mapping maintained by the Ministry of Agriculture, Food and Rural Affairs is available at Soil Survey Complex (GeoON) or AgMaps

**Hazardous Forest Types for Wildland Fire**

Project study areas containing wooded areas should be screened for the presence of hazardous forest types for wildland fire. Data to identify potential areas that meet this definition can be found in GeoHub - Potential Hazardous Forest Types for Wildland Fire. Note that this data layer is based on forest type data at a coarse scale. Complete assessment of risk and determination of appropriate mitigation measures can only be done with confidence on a site-specific basis.

# 6. Oil, Gas and Salt Resources

Oil, gas or salt wells are regulated under the *Oil, Gas and Salt Resources Act*, and the supporting regulations and operating standards.

To help determine the presence of petroleum wells within the proposed project area, basic mapping information can be found through the GeoHub portal or the Ontario Oil, Gas and Salt Resources Library (www.ogsrlibrary.com). The 'Definitions and Terminology Guide' listed in the publications section on the library website may provide a better understanding of the well and resource information available.

The Ontario Petroleum Institute (OPI) is an industry association that can assist with retaining the services of a consultant who can provide information about the potential resources located below the property.

If any unanticipated petroleum wells or associated works are encountered during a project, the proponent should cease work immediately and contact MNR's Petroleum Operations Section (POS) to further understand the proponent's obligations under the *Oil, Gas and Salt Resources Act*. The POS may be contacted at POSRecords@ontario.ca or 519-873-4634. In the event of a spill, the project proponent should report it to the Spills Action Centre at 416-325-3000, 1-800-268-6060 (toll free), or 1-855-889-5775 (TTY).

# 7. Mineral Aggregate Resources

Mineral aggregate resources are usually sand, gravel, clay, earth and bedrock. They are used to make roads, subway tunnels, homes and other structures. Mineral aggregate resources are a non-renewable resource that exist in fixed locations.

MNR has an interest in protecting mineral aggregate resources from incompatible development so they may continue to be available for future extraction. Data to map known deposits of mineral aggregate resources is available from Geology Ontario at GeologyOntario (gov.on.ca).

Project proponents should consider mineral aggregate resources by screening for existing aggregate operations at Find Pits and Quarries | ontario.ca, and consider any potential to preclude or hinder operations and the use of aggregate resource deposits through incompatible development.

# 8. Crown Lands, Lakes, Rivers and Forests

MNR manages public lands including the beds of most lakes and rivers. Some activities on shore lands (both public and private) are also managed by the MNR.

Public land boundaries (mapping is representative only) and applicable Crown land use policies can be viewed at Crown Land Use Policy Atlas | ontario.ca. Provincial parks and conservation reserves are managed by MECP under the *Provincial Parks and Conservation Reserves Act*.

MNR manages the health of Crown forests so they may continue to provide ecological, economic, and social benefits. Most of Ontario's Crown forests are managed by forest companies under 20-year Sustainable Forest Licences. These companies are responsible for working with government and others to prepare and implement a forest management plan for their licence area, monitoring compliance with the plan and renewing the forest after harvesting trees.

# 9. Conclusion

The list of interests within MNR's mandate described in this document is not exhaustive. For additional information on legislation and programs the ministry administers see Ministry of Natural Resources | ontario.ca.

**If you have identified any MNR interests in your project planning and require additional information, please direct your specific questions to the designated Regional Planner for the project, or to SR.planning@ontario.ca.**

# Appendix A – MNR Regulatory Role

MNR's regulatory role is triggered when a project proponent seeks an approval under legislation administered by the Ministry. This Appendix provides information about some of the more commonly applicable approvals issued by MNR. Please note, MNR may not be able to confirm the requirement for an approval until a detailed project and site plan have been provided to the Ministry.

A proposal for an MNR approval may engage the ministry's duty to consult Indigenous peoples.

Where MNR is considering an application, the ministry must also ensure its own obligations under the *EAA* are satisfied prior to a final decision. Where an approval would dispose of rights to Crown Resources for a project that has already completed *EAA* requirements under another process, MNR will require written documentation from the applicant setting out how *EAA* requirements for the project have been met prior to MNR issuing any requested approval.

### *Fish and Wildlife Conservation Act*

The *Fish and Wildlife Conservation Act, 1997* regulates the relocation of fish and wildlife. Accordingly, should a project require:

- The relocation of fish outside of the work area, a Licence to Collect Fish for Scientific Purposes will be required.
- The relocation of wildlife outside of the work area (including amphibians, reptiles, and small mammals), will require a Wildlife Collector's Authorization.
- The destruction, taking or possession of any nests or eggs of species not protected by the *Migratory Birds Convention Act (*MBCA*)* or excluded under section 7(2) of the FWCA may also require a Wildlife Collector's Authorization.

To learn more about the management of Fish and Wildlife in Ontario, or to apply for permits or licenses, please visit the Natural Resources Information Portal.

### *Aggregate Resources Act*

The *Aggregate Resources Act* (ARA) is the primary legislative framework for regulating aggregate resource extraction in Ontario. The MNR administers the *ARA* and issues licenses, permits and approves amendments to existing approvals. Information on existing pits and quarries and when an aggregate permit or license may be required can be accessed from MNR's Aggregates Section or GeoHub – Additional Resources

### *Lakes and Rivers Improvement Act*

The *Lakes and Rivers Improvement Act* (LRIA) provides the MNR with regulatory authority over the design, construction, operation, maintenance and safety of dams in Ontario. For

information regarding when a MNR approval may be required and how the LRIA is administered by the Ministry visit Lakes and Rivers Improvement Act administrative guide | ontario.ca

### *Public Lands Act*

The use of public land and shore lands are regulated under the *Public Lands Act*. A work permit must be obtained from MNR to undertake certain activities on public land and shore lands. To occupy public lands in Ontario, you must receive prior approval from MNR unless the use is permitted by regulation. Visit Natural Resources Information Portal for information on when a permit or approval is required and how to submit an application.

### *Crown Forest Sustainability Act*

Any activities that involve a proposal to cut Crown forest resources (e.g., trees on Crown land) may require approval under the *Crown Forest Sustainability Act, 1994.*

Outlook

## RE: [External/Externe]: Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies

**From** ONT Environment / Environnement ONT <EnviroOnt@tc.gc.ca>
**Date** Thu 3/27/2025 10:52 AM
**To** Larsen, Alannah <Alannah.Larsen@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Kukalis, John <John.Kukalis@hamilton.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>

Greetings,

Thank you for your correspondence.

Please note Transport Canada does not require receipt of all Individual or Class EA related notifications. We request that project proponents self-assess whether their project:

1. Will interact with a federal property and/or waterway by reviewing the Directory of Federal Real Property, available at at www.tbs-sct.gc.ca/dfrp-rbif/; **and**
2. Will require approval and/or authorization under any Acts administered by Transport Canada* available at http://www.tc.gc.ca/eng/acts-regulations/menu.htm.

Proposed projects that will occur on federal property (including reserve lands or lands owned by federal departments other than Transport Canada) will be subject to an Impact Assessment per Section 82 of the *Impact Assessment Act, 2019* prior to exercising a federal power (including full or partial funding), and/or performing a function or duty (e.g. regulatory approval or issuance of a lease) in relation to that project.

If the criteria above do not apply, Transport Canada's Environmental Assessment program should not be included in any further correspondence, and future notifications will not receive a response. If there is a role under the program, correspondence should be forwarded to: EnviroOnt@tc.gc.ca with a **brief description of Transport Canada's expected role**.

*Below is a summary of the most common Acts that apply to projects in an Environmental Assessment context:

- ***Canadian Navigable Waters Act (CNWA)*** – the Act applies primarily to works constructed or placed in, on, over, under, through, or across navigable waters set out under the Act. The Navigation Protection Program administers the CNWA through the review and authorization of works affecting navigable waters. Information about the Program, CNWA and approval process is available at: http://www.tc.gc.ca/eng/programs-621.html. Inquiries can be directed to NPPONT-PPNONT@tc.gc.ca or by calling (519) 383-1863.

- ***Railway Safety Act (RSA)*** – the Act provides the regulatory framework for railway safety, security, and some of the environmental impacts of railway operations in Canada. The Rail Safety Program develops and enforces regulations, rules, standards and procedures governing safe railway operations. Additional information about the Program is available at: https://www.tc.gc.ca/eng/railsafety/menu.htm. Inquiries can be directed to RailSafety@tc.gc.ca or by calling (613) 998-2985.

- ***Transportation of Dangerous Goods Act (TDGA)*** – the transportation of dangerous goods by air, marine, rail and road is regulated under the TDGA. Transport Canada, based on risks, develops safety standards and regulations, provides oversight and gives expert advice on dangerous goods to promote public safety.

Additional information about the transportation of dangerous goods is available at: https://www.tc.gc.ca/eng/tdg/safety-menu.htm. Inquiries can be directed to TDG-TMDOntario@tc.gc.ca or by calling (416) 973-1868.

- ***Aeronautics Act*** – this Act and the associated Canadian Aviation Regulations (CARs) govern civil aviation in Canada. Transport Canada should be notified of projects involving aerodromes and associated structures, or activities that could affect aviation safety. Elevated structures, such as wind turbines and communication towers, are examples of projects that must be assessed for lighting and marking requirements in accordance with the CARs. Transport Canada also has an interest in projects that have the potential to cause interference between wildlife and aviation activities. One example would be waste facilities, which may attract birds into commercial and recreational flight paths. Additional guidance can be found in the *Land Use In The Vicinity of Aerodromes* publication, available at: https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-menu-1418.htm. Information about Transport Canada's Civil Aviation program can be found at: https://tc.canada.ca/en/aviation. Inquires can be directed to aviation.ont@tc.gc.ca or by calling 1 (800) 305-2059 / (416) 952-0230.

Please advise if additional information is needed.

Thank you,

**Environmental Assessment Program**, Ontario Region
Transport Canada / Government of Canada / 4900 Yonge St., Toronto, ON M2N 6A5
EnviroOnt@tc.gc.ca

**Programme d'évaluation environnementale**, Région de l'Ontario
Transports Canada / Gouvernement du Canada / 4900, rue Yonge, Toronto, ON, M2N 6A5
EnviroOnt@tc.gc.ca

| | |
|---|---|
| **From:** | Larsen, Alannah |
| **To:** | Salvucci, Megan; Kukalis, John; Alvaro L. Almuina |
| **Bcc:** | daanders@hwdsb.on.ca; sullivan@mcmaster.ca; crystal.henderson@cornerstone.inc; nrowland@rbg.ca; ttheysmeyer@rbg.ca; hcc@hamiltonchamber.ca; chair@ohba.ca; contactus@environmenthamilton.org; abrylowski@brucetrail.org |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT - Schools and Other Agencies |
| **Date:** | Wednesday, March 19, 2025 1:44:00 PM |
| **Attachments:** | RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**Alannah Larsen**
Infrastructure Programming Technologist
Public Works
Engineering Services, City of Hamilton
Alannah.Larsen@hamilton.ca

| | |
|---|---|
| **From:** | Larsen, Alannah |
| **To:** | Salvucci, Megan; Kukalis, John; Alvaro L. Almuina |
| **Bcc:** | michael.vallins@cn.ca; Jack_Carello@cpr.ca; chair@cyclehamont.ca; Nopper, Evan; stefan.linder@cn.ca; cpuckering@flyhamilton.ca; jason.ryan@metrolinx.com; Smart Commute |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT - Transportation |
| **Date:** | Wednesday, March 19, 2025 1:45:00 PM |
| **Attachments:** | RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**Alannah Larsen**
Infrastructure Programming Technologist
Public Works
Engineering Services, City of Hamilton
Alannah.Larsen@hamilton.ca

| | |
|---|---|
| **From:** | Larsen, Alannah |
| **To:** | Salvucci, Megan; Kukalis, John; Alvaro L. Almuina |
| **Bcc:** | Enzo.Greco@enbridge.com; Derek.Heavens@enbridge.com; randy.leppert@cogeco.com; notifications@enbridge.com; est.reg.crossing@enbridge.com; iborsuk@environmenthamilton.org; Michael.Crown@hcetechnologies.com; Tiffany.Fung@HydroOne.com; Department.SecondaryLandUse@hydroone.com; info@sun-canadian.com |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT - Utilities |
| **Date:** | Wednesday, March 19, 2025 1:44:00 PM |
| **Attachments:** | RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**Alannah Larsen**
Infrastructure Programming Technologist
Public Works
Engineering Services, City of Hamilton
Alannah.Larsen@hamilton.ca

| | |
|---|---|
| **From:** | Larsen, Alannah |
| **To:** | Salvucci, Megan; Kukalis, John; Alvaro L. Almuina |
| **Bcc:** | terr_ardelli@transcanada.com; Dawn_bergen@transcanada.com; Enzo.Greco@enbridge.com; Derek.Heavens@enbridge.com |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT - Utilities |
| **Date:** | Wednesday, March 26, 2025 2:53:00 PM |
| **Attachments:** | RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**Alannah Larsen**
Infrastructure Programming Technologist
Public Works
Engineering Services, City of Hamilton
Alannah.Larsen@hamilton.ca

| | |
|---|---|
| **From:** | Larsen, Alannah |
| **To:** | Salvucci, Megan; Kukalis, John; Alvaro L. Almuina |
| **Bcc:** | grca@grandriver.ca; CPCSPCDSOLondon@canadapost.postescanada.ca; UCA-CAU@aadncaandc.gc.ca; secretariat@otc-cta.gc.ca |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies |
| **Date:** | Wednesday, March 26, 2025 2:53:00 PM |
| **Attachments:** | RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**Alannah Larsen**
Infrastructure Programming Technologist
Public Works
Engineering Services, City of Hamilton
Alannah.Larsen@hamilton.ca

Outlook

**RE: [Externe/External]:Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies**

**From** secretariat <Secretariat.Secretariat@otc-cta.gc.ca>
**Date** Wed 3/26/2025 3:03 PM
**To** Larsen, Alannah <Alannah.Larsen@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Kukalis, John <John.Kukalis@hamilton.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>

The Agency acknowledges receipt of your submission.

Kind regards,

**Secrétariat**
Office des transports du Canada / Gouvernement du Canada
secretariat@otc-cta.gc.ca / Tél. : 819-997-7047 / Télécopieur 819-953-5253 / ATS : 1-800-669-5575

Outlook

# RE: Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - Government and Agencies

**From** Angela Wang <awang@grandriver.ca>
**Date** Thu 3/27/2025 11:19 AM
**To** Alannah.Larsen@hamilton.ca <Alannah.Larsen@hamilton.ca>
**Cc** Megan.Salvucci@hamilton.ca <Megan.Salvucci@hamilton.ca>; John.Kukalis@hamilton.ca <John.Kukalis@hamilton.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>

1 attachment (1 MB)
(NOC, PIC 1) Hwy 52 & Powerline Rd W Intersection Improvements MCEA - GRCA Comments - 2025-03-27.pdf;

Hi Alannah,

Please see our preliminary comments attached. The GRCA is interested in being involved in this project – please forward any materials as they become available.

Thanks,

**Angela Wang**
Resource Planner
Grand River Conservation Authority

400 Clyde Rd
Cambridge, ON N1R 5W6
Office: 519-621-2763 ext. 2270
Email: awang@grandriver.ca
www.grandriver.ca Connect with us on social media

Administration Centre: 400 Clyde Road, P.O. Box 729 Cambridge, ON N1R 5W6

Phone: 519-621-2761 Toll free: 1-866-900-4722 Fax: 519-621-4844 www.grandriver.ca

March 27, 2025

Via email

John Kukalis
Project Manager
City of Hamilton
71 Main Street West
Hamilton, ON, L8P 4Y5
jkukalis@hamilton.ca

Alvaro L. Almuina
Consultant Project Manager
R.J. Burnside & Associates Ltd.
1266 South Service Road, Suite C2-1
Stoney Creek, ON, L8E 5R9
alvaro.almuina@rjburnside.com

**Re: Highway 52 and Powerline Road West Intersection Improvements – Municipal Class Environmental Assessment**

Dear Mr. Kukalis and Mr. Almuina,

The Grand River Conservation Authority (GRCA) has received and reviewed the Notice of Study Commencement and Public Information Centre 1 information for the above-noted Municipal Class Environmental Assessment (EA). We understand that the project intends to examine options to improve roadway safety for all users at the Highway 52 and Powerline Road West intersection, including but not limited to new turning lanes, intersection realignment, rumble strips, and lighting/signage.

Information currently available at our office indicates that the study area contains portions of the Big Creek Headwaters Provincially Significant Wetland Complex and the Copetown Bog Provincially Significant Wetland Complex, as well as a watercourse and online pond. As such, we would appreciate the opportunity to provide input into the EA. We recommend that you contact our office early in the process to determine permitting requirements under Ontario Regulation 41/24 for work proposed within the regulated area. A copy of our resource mapping is attached for your reference.

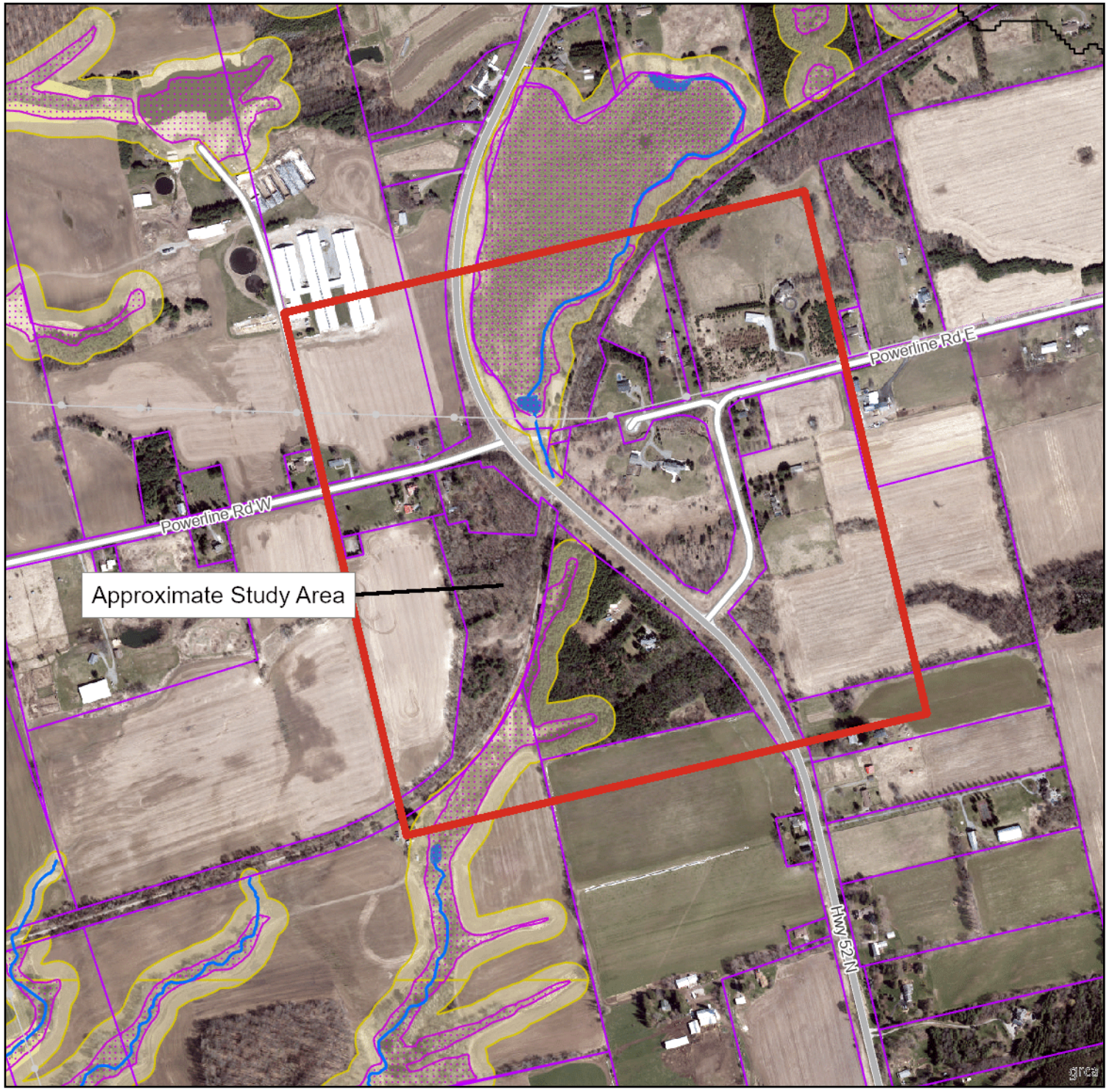
We trust this information is of assistance. If you have any questions or require additional information, please contact the undersigned at 519-621-2761 ext. 2270 or awang@grandriver.ca.

Sincerely,

**Angela Wang**
Resource Planner
Grand River Conservation Authority

Enclosed: GRCA Mapping

Copy: Megan Salvucci, City of Hamilton (via email)
Alannah Larsen, City of Hamilton (via email)




Grand River Conservation Authority

Date: Mar 27, 2025
Author: AW

# Hwy 52 & Powerline Rd W Intersection Improvements MCEA, Hamilton

Legend

- Regulation Limit (GRCA)
- Floodplain (GRCA)
  - Engineered
  - Estimated
  - Approximate
- Floodplain - Special Policy Area (GRCA)
- Slope Erosion (GRCA)
  - Steep
  - Oversteep
  - Toe
- Slope Valley (GRCA)
  - Steep
  - Oversteep
- Regulated Watercourse (GRCA)
- Regulated Waterbody (GRCA)
- Wetland (GRCA)
- Lake Erie Flood (GRCA)
- Lake Erie Shoreline Reach (GRCA)
- Lake Erie Dynamic Beach (GRCA)
- Lake Erie Erosion (GRCA)
- Parcel - Assessment (MPAC/MNRF)
- Conservation Area Boundary (GRCA)

Copyright Grand River Conservation Authority, 2025.

Disclaimer: This map is for illustrative purposes only. Information contained herein is not a substitute for professional review or a site survey and is subject to change without notice. The Grand River Conservation Authority takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user.
The source for each data layer is shown in parentheses in the map legend. See Sources and Citations for details.

Scale 1:9,000

NAD83 UTM zone 17 (EPSG:26917)

Map Centre (X,Y): 576815.36, 4786267.35 | Map Link

This map is not to be used for navigation | 2020 Ortho (ON)

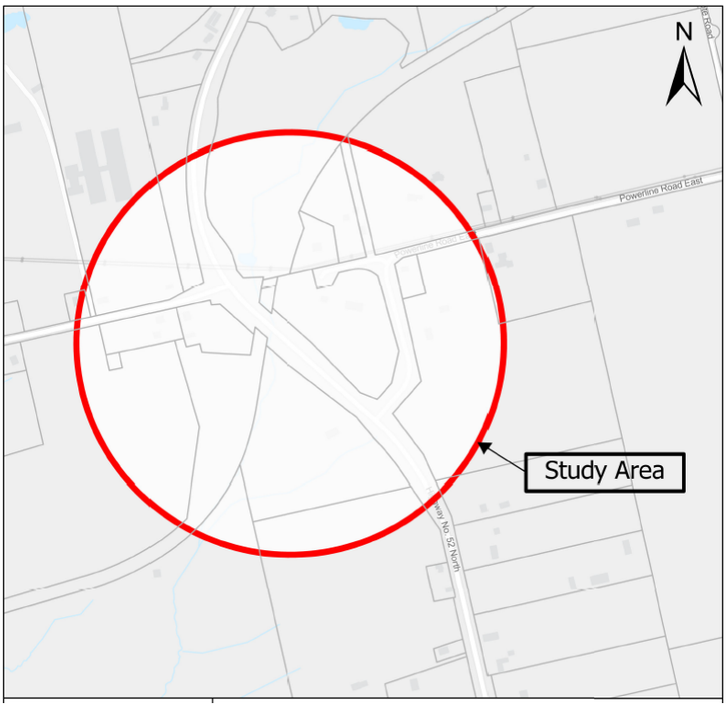
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, last amended 2024).

### You are Invited to Participate

The City of Hamilton is hosting the second and final Public Information Centre (PIC) for this study. The purpose of this second PIC is to present the alternative designs and the associated evaluation process.

Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

## Cole Roddick

**From:** Kukalis, John
**Sent:** Monday, September 15, 2025 2:59 PM
**To:** Del Villar Cuicas, Joan (MECP); 'Simeon.Joshi@ontario.ca'
**Cc:** 'Stephen.Burt@ontario.ca'; Mazzuca, Marco (MECP); 'Mishaal Rizwan'; 'Alvaro L. Almuina'; Salvucci, Megan
**Subject:** RE: Highway 52 and Powerline Road West Intersection Improvements (City of Hamilton) - MCEA
**Attachments:** Notice of PIC#2 - Hwy 52 & PL RD W.pdf

Good afternoon:

Attached for your information, please find the Notice of Public Information Centre #2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Please let know if you require any additional information.

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

**Cole Roddick**

---

**From:** Cole Roddick
**Sent:** Wednesday, April 08, 2026 4:11 PM
**To:** Del Villar Cuicas, Joan (MECP)
**Cc:** 'simeon.joshi@ontario.ca'; Deanna De Forest; Alvaro L. Almuina; Oguegbu, Stephen
**Subject:** City of Hamilton Highway 52 & Powerline Road Municipal Class Environmental Assessment (Schedule C)

Good afternoon Joan,

The MCEA for Highway 52 & Powerline Road is nearing completion. On behalf of the City of Hamilton, and as requested in your letter of acknowledgement dated March 4, 2025, please find below a link to the draft copy of the Environmental Study Report for Highway 52 & Powerline Road Intersection Improvements.

MECP Submission

We would appreciate any feedback you may have by April 30, if possible, as the Notice of Completion is anticipated to be published at the beginning of May to meet the project schedule.

Please feel free to contact me if you have any questions.

Thank you,

Cole Roddick

## Cole Roddick

**From:** Del Villar Cuicas, Joan (MECP) <Joan.DelVillarCuicas@ontario.ca>
**Sent:** Monday, May 25, 2026 10:38 AM
**To:** Cole Roddick
**Cc:** Joshi, Simeon (MAG); Deanna De Forest; Alvaro L. Almuina; Oguegbu, Stephen; Mazzuca, Marco (MECP)
**Subject:** RE: City of Hamilton Highway 52 & Powerline Road Municipal Class Environmental Assessment (Schedule C)

Good morning,

Thank you for circulating the draft ESR for the City of Hamilton Highway 52 & Powerline Rd MCEA for our review. Please find our comments for your consideration:

- **Surface Water**
  MECP has no concerns with regards to surface water at this stage based on the limited increase in impervious area and peak flows, with runoff continuing to use the existing discharge pathways to the Big Creek headwaters. This conclusion is contingent on confirmation at the detailed design stage that quantity and quality assumptions are verified; that culvert and drainage works do not adversely alter flow regimes (including downstream flooding or erosion impacts); that water quality objectives are achieved to the maximum extent feasible (e.g. through a treatment train approach and consideration of LID measures to support water balance where feasible); and that standard erosion and sediment control (ESC) measures are implemented during construction.

- **Construction Dewatering / EASR:**
  Please note that construction dewatering activities exceeding 50,000 L/day are regulated under the Environmental Activity and Sector Registry (EASR) for Water Taking (O.Reg. 63/16). Proponents are encouraged to consult the regulation and associated Water Taking EASR guidance materials for more information. Where the taking consists solely of storm water over 50,000 L/day, registration in the EASR is not required, however, please note that dewatering for the purpose of maintaining one or more dewatered work areas within a construction site remains a prescribed activity under O.Reg. 63/16. In such cases, a Qualified Person (QP) must prepare a discharge report prior to commencement of water taking and the proponent must implement the measures set out in that report.

- **Consultation Records:**
  Under the EA process, the proponent is required to maintain separate detailed consultation records for each Indigenous community. While a brief summary is provided in Section 10.3 (Indigenous Nations), a tracking log (referenced as Table 3) should also be included for each community, listing all correspondence (emails, phone calls, meetings, etc.) in chronological order. Appendix C appears to consolidate all consultation records (stakeholders, Indigenous Nations, public, ministries, etc.). As noted, detailed records should be maintained and presented separately for each community.

- **Notice of Completion:**
  Please ensure that all consultation records are included in the ESR. The Notice of Completion should be included in the final ESR, along with all associated correspondence.

  Please let us know if you have any questions or require further clarification.

  Regards,

**Joan Del Villar Cuicas** (she/her)
Regional Environmental Planner
Project Review Unit | Environmental Assessment Branch
Ontario Ministry of the Environment, Conservation and Parks
Joan.delvillarcuicas@ontario.ca|Phone: 365-889-1180

Outlook

# Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment - Agency

**From** Lins, Julia <Julia.Lins2@hamilton.ca>

**Date** Wed 10/1/2025 9:05 AM

**To** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>

**Bcc** grca@grandriver.ca <grca@grandriver.ca>; awang@grandriver.ca <awang@grandriver.ca>; Scott Peck <Scott.Peck@conservationhamilton.ca>; nec@ontario.ca <nec@ontario.ca>; karla.barboza@ontario.ca <karla.barboza@ontario.ca>; Jennifer.Chown@opp.ca <Jennifer.Chown@opp.ca>; omafra.eanotices@ontario.ca <omafra.eanotices@ontario.ca>; NoticeReview@infrastructureontario.ca <NoticeReview@infrastructureontario.ca>; eanotification.wcregion@ontario.ca <eanotification.wcregion@ontario.ca>; MEA.NOTICES.EAAB@ontario.ca <MEA.NOTICES.EAAB@ontario.ca>; Joan.DelVillarCuicas@ontario.ca <Joan.DelVillarCuicas@ontario.ca>; dawn.irish@ontario.ca <dawn.irish@ontario.ca>; pauline.vanroon@ontario.ca <pauline.vanroon@ontario.ca>; ian.thornton@ontario.ca <ian.thornton@ontario.ca>; crystal.lafrance@ontario.ca <crystal.lafrance@ontario.ca>; ian.thornton@ontario.ca <ian.thornton@ontario.ca>; Tanzeel.Merchant@ontario.ca <Tanzeel.Merchant@ontario.ca>; CPCSPCDSOLondon@canadapost.postescanada.ca <CPCSPCDSOLondon@canadapost.postescanada.ca>; Thomas.Dell@canadapost.postescanada.ca <Thomas.Dell@canadapost.postescanada.ca>; infopubs@sac-isc.gc.ca <infopubs@sac-isc.gc.ca>; adrian.phillips@alectrautilities.com <adrian.phillips@alectrautilities.com>; rowcentre@bell.ca <rowcentre@bell.ca>; randy.leppert@cogeco.com <randy.leppert@cogeco.com>; gtaw.newarea@rci.rogers.com <gtaw.newarea@rci.rogers.com>; notifications@enbridge.com <notifications@enbridge.com>; Derek.Heavens@enbridge.com <Derek.Heavens@enbridge.com>; est.reg.crossing@enbridge.com <est.reg.crossing@enbridge.com>; mark-ups@enbridge.com <mark-ups@enbridge.com>; iborsuk@environmenthamilton.org <iborsuk@environmenthamilton.org>; Michael.Crown@hcetechnologies.com <Michael.Crown@hcetechnologies.com>; Tiffany.Fung@HydroOne.com <Department.SecondaryLandUse@hydroone.com>; CentralFBCPlanning@HydroOne.com <CentralFBCPlanning@HydroOne.com>; SecondaryLandUse@HydroOne.com <SecondaryLandUse@HydroOne.com>; Susan.SUN@HydroOne.com <Susan.SUN@HydroOne.com>; Manager of Engineering" < Manager of Engineering">; Dawn_bergen@transcanada.com <Dawn_bergen@transcanada.com>; terr_ardelli@transcanada.com <terr_ardelli@transcanada.com>; Enzo.Greco@enbridge.com <Enzo.Greco@enbridge.com>; TCEnergy@mhbcplan.com <TCEnergy@mhbcplan.com>; daanders@hwdsb.on.ca <daanders@hwdsb.on.ca>; communications@hwcdsb.ca <communications@hwcdsb.ca>; sullivan@mcmaster.ca <sullivan@mcmaster.ca>; michael.vallins@cn.ca <michael.vallins@cn.ca>; Jack_Carello@cpr.ca <Jack_Carello@cpr.ca>; chair@cyclehamont.ca <chair@cyclehamont.ca>; Nopper, Evan <Evan.Nopper@hamilton.ca>; stefan.linder@cn.ca <stefan.linder@cn.ca>; cpuckering@flyhamilton.ca <cpuckering@flyhamilton.ca>; jason.ryan@metrolinx.com <jason.ryan@metrolinx.com>; Smart Commute <smartcommute@hamilton.ca>; crystal.henderson@cornerstone.inc <crystal.henderson@cornerstone.inc>; nrowland@rbg.ca <nrowland@rbg.ca>; ttheysmeyer@rbg.ca <ttheysmeyer@rbg.ca>; hcc@hamiltonchamber.ca <hcc@hamiltonchamber.ca>; chair@ohba.ca <chair@ohba.ca>; Hamilton Paramedic Service <hamparamedic@hamilton.ca>; info@hamiltonpolice.on.ca <info@hamiltonpolice.on.ca>; HFD General Inquiries <HFDGeneral@hamilton.ca>; contactus@environmenthamilton.org <contactus@environmenthamilton.org>; abrylowski@brucetrail.org <abrylowski@brucetrail.org>; help@hamiltonbikeshare.ca <help@hamiltonbikeshare.ca>

1 attachment (298 KB)

Notice of PIC#2 - Hwy 52 & PL RD W.pdf;

To whom it may concern,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule “C” Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

## Cole Roddick

**From:** APARICIO, Frances <Frances.Aparicio@canadapost.postescanada.ca>
**Sent:** Wednesday, October 01, 2025 8:57 PM
**To:** Lins, Julia; Kukalis, John; Salvucci, Megan
**Cc:** DELL, Thomas
**Subject:** RE: Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment - Agency
**Attachments:** Notice of PIC#2 - Hwy 52 & PL RD W.pdf

Hello John,

I am forwarding this email to my colleague Tom Dell, as this is his territory. He will be able to assist with any matters in the future.

Thank you,

Frances Aparicio | Delivery Planning Officer | Canada Post|955 Highbury Ave., London ON N5Y 1A3|

226-921-0578|

**Cole Roddick**

---

**From:** Scott Peck <Scott.Peck@conservationhamilton.ca>
**Sent:** Monday, October 27, 2025 12:19 PM
**To:** Kukalis, John
**Cc:** GCostie; Matt Hall; Lisa Burnside
**Subject:** Highway 52 & Powerline Road West Intersection Improvements

Good afternoon John,

Both Gord Costie and I attended the PIC on October 21, 2025.

After reviewing the presentation material, please be advised that HCA staff are supportive of the preliminary preferred concept. We note that this option pushes the new roundabout away from the Environmentally Significant Area Copetown Bog which the HCA owns. We also note that access to the HCA parking area for the TH&B Rail Trail is maintained with the preferred concept and that a trail reroute is proposed to accommodate a safe crossing at the roundabout for trail uses. As noted, we are supportive of the preferred concept.

As this project moves to detailed design, we would request that the following be addressed.

1. The proposed community super mailbox location and parking for that in front of the HCA parking lot is an operational concern for the HCA. Vehicles regularly park near the super mailbox effectively bypassing the pay station for Summit (Copetown) Bog (current pay station is offline and scheduled for reinstall 2026). We would request that the parking area for the super mailbox be limited to discouraged people parking here for trail use thereby encouraging trail users to the HCA parking lot.
2. With the trail reroute to the roundabout, the existing trail between the beginning of the reroute to Highway 52 will need to be removed and restored to a natural state to prevent trail uses from continuing to use the trail and crossing at the existing trail crossing. This will need to be done to ensure all trail users travelling in both directions utilize the new trail crossing at the roundabout.
3. Car stacking at the roundabout to the trail crossing is a concern as we would want to ensure that traffic does not impede or block the new trail crossing. We understand that this is largely related to driver behavior, but appropriate signage should be in place to ensure the trail crossing is not blocked.

Thank you and we would request we be included as the design for work is prepared to ensure HCA concerns are addressed.

Thank you, John.

***T. Scott Peck***, B.A., DPA, MCIP, RPP, CMMIII
***Deputy Chief Administrative Officer/***
***Director, Watershed Management Services***

Hamilton Conservation Authority
Phone: 905-525-2181, Ext. 130

**Cole Roddick**

---

**From:** Cole Roddick
**Sent:** Thursday, March 12, 2026 1:00 PM
**To:** 'jackson.kaufman@ontario.ca'
**Cc:** Deanna De Forest; Alvaro L. Almuina
**Subject:** 058803 - Hamilton, Hwy 52 & Powerline Road West Intersection Improvements
**Attachments:** 24CH-116 CH Report_IA_Draft.pdf; 24CH-116 Heritage Impact Assessment_Draft2.pdf

Good morning Jackson,

The Cultural Heritage Report and Heritage Impact Assessment have been completed for the Highway 52 and Powerline Road West Improvements MCEA and has been attached as per your request in your letter on April 4, 2025.

Please let me know if you have any further comments.

Thank you,

Cole Roddick

## Cole Roddick

**From:** Kaufman, Jackson (MCM) <Jackson.Kaufman@ontario.ca>
**Sent:** Tuesday, March 17, 2026 12:09 PM
**To:** Cole Roddick
**Cc:** Deanna De Forest; Alvaro L. Almuina
**Subject:** MCM - 0023291 / 058803 - Hamilton, Hwy 52 & Powerline Road West Intersection Improvements

Good afternoon Cole

I hope you are well.

Thank you for providing the Cultural Heritage Report and Cultural Heritage Impact Assessment below. MCM will review and provide comment by mid April.

Please do not hesitate to reach out if you have any concerns or questions.

Thank you,

Jack

**Jackson Kaufman**
Heritage Planner | Heritage Operations Branch / Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
613-242-3743 | jackson.kaufman@ontario.ca

Ontario

**From:** Kaufman, Jackson (MCM) <Jackson.Kaufman@ontario.ca>
**Sent:** Tuesday, April 21, 2026 12:02 PM
**To:** Cole Roddick
**Cc:** Deanna De Forest; Alvaro L. Almuina; Barboza, Karla (She/Her) (MCM)
**Subject:** MCM Response - Hamilton, Hwy 52 & Powerline Road West Intersection Improvements - Cultural Heritage Reports - 058803 - MCM File 0023291
**Attachments:** 2026-04-21_Hamilton_Hwy52 _PowerlineRdW_CulturalHeritageReport_HIA_MCM_Comments.pdf

Hello Cole,

Thank you for providing MCM with the Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment and the Cultural Heritage Impact Assessment. We have finalized our review and I have attached our comments here.

Please let me know if you have any questions.

Thank you,

Jack

**Jackson Kaufman**
Heritage Planner | Heritage Operations Branch / Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
613-242-3743 | jackson.kaufman@ontario.ca

Ontario

**Ministry of Citizenship and Multiculturalism**

Heritage Planning Unit
Heritage Operations Branch
Citizenship, Inclusion and Heritage Division
16th Flr, 56 Wellesley St W
Toronto, ON M5S 2S3
Tel.: 613-242-3743

**Ministère des Affaires civiques et du Multiculturalisme**

Planification relative au patrimoine
Opérations relatives au patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
16e étage, 56 rue Wellesley Ouest
Toronto, ON M5S 2S3
Tél.: 613-242-3743

Ontario

April 21, 2026 EMAIL ONLY

Cole Roddick
Environmental Planner
R.J. Burnside & Associates Limited
35 Perry Street
Woodstock, ON, N4S 3C4
cole.roddick@rjburnside.com

| | | |
|---|---|---|
| **MCM File** | **:** | **0023291** |
| **Proponent** | **:** | **City of Hamilton** |
| **Subject** | **:** | **Municipal Class Environmental Assessment – Schedule C - Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment & Cultural Heritage Impact Assessment** |
| **Project Location** | **:** | **Highway 52 and Powerline Road West Intersection Improvements City of Hamilton** |

---

Dear Cole Roddick:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment* [Cultural Heritage Report, dated August 2025 (updated February 2026), prepared by ASI] and the *Cultural Heritage Impact Assessment 1334 Powerline Road West City of Hamilton, Ontario* [ dated September 2025 (updated February 2026), prepared by ASI] for review and comment.

MCM's interest in this project relates to its mandate of conserving Ontario's cultural heritage, including archaeological resources, built heritage resources and cultural heritage landscapes.

**Project Summary**
The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

**Comments**

The purpose of the Cultural Heritage Report is to present an inventory of known and potential built heritage resources (BHRs) and cultural heritage landscapes (CHLs), identify existing conditions of the study area, provide a preliminary impact assessment, and propose appropriate mitigation measures for minimizing and avoiding negative impacts.

The Cultural Heritage Report identifies one (1) known CHL, four (4) potential CHLs, and three (3) potential BHRs within the study area. The report has also identified potential impacts to CHL 4 ( Summit Muskeg Preserve) and proposed recommendations to mitigate that potential impact.

A Cultural Heritage Impact Assessment for 1334 Powerline Road West (BHR 2) was also undertaken. Its purpose was to provide research and analysis to help determine the cultural heritage value or interest of the property, and, where deemed necessary, identify impacts and recommend mitigation measures. The Cultural Heritage Impact Assessment found that the property did not meet any of the criterion in Ontario Regulation 9/06 and therefore the property is not to be of cultural heritage value or interest.

MCM finds the Cultural Heritage Report and Cultural Heritage Impact Assessment to be consistent with the requirements, guidance, and standards of the MCEA and with best practice guidance prepared by MCM.

We note that Table 2 – *Preliminary Impact Assessment and Recommended Mitigation Measures* (p.59) of the Cultural Heritage Report did not identify any potential impacts to BHR 2 and we would appreciate if you could clarify why the Cultural Heritage Impact Assessment was undertaken.

All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please send us the final report once it has been reviewed and finalized.

Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you should have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Jackson Kaufman
Heritage Planner
jackson.kaufman@ontario.ca

Copied to: Deanna De Forest, Senior Environmental Coordinator, R.J. Burnside & Associates Limited
Alvaro L. Almuina, Consultant Project Manager, R.J. Burnside & Associates Limited
Karla Barboza, Team Lead, Heritage Planning Unit, MCM

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. The Ministry of Citizenship and Multiculturalism (MCM) makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MCM be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. 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 *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers provisions of that Act related to burial sites. 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*.

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Haudenosaunee Development Institute (HDI)

**Infrastructure Renewal**
**Engineering Services Division, Public Works**
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2
Phone: 905-546-2424 ext. 1752
Email: ahmad.sarwar@hamilton.ca

March 12,2025

Tracey General
Haudenosaunee Confederacy of Chiefs Council
c/o Haudenosaunee Development Institute
16 Sunrise Court, Suite 600, PO Box 714
Oshweken, ON N0A 1M0

**Re: Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment (MCEA)**

Dear Tracey,

We are writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment (MCEA) Study is being initiated for Highway 52 and Powerline Road West Intersection Improvements, in the City of Hamilton.

The purpose of this MCEA is to identify and recommend a preferred solution based on an evaluation of alternatives. The preferred solution will seek to address traffic safety and other related concerns raised by the local community in the vicinity of and adjacent to the intersection of Highway 52 and Powerline Road West. A memo providing additional details on the project is enclosed with this letter.

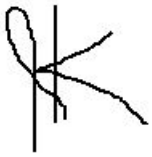
As part of this project, a Stage 1 Archaeological Assessment will be undertaken, and a draft copy of the report will be circulated to you for review and comments prior to submission to the Ministry of Heritage, Sport, Tourism and Culture Industries. It is anticipated that the draft report will be available in the later half of 2025.

A natural heritage assessment will also be completed as part of this project. We are still in the process of scoping the natural heritage requirements, but any fieldwork would be initiated in Spring 2025. We can provide updates on the status of this study and as well further details once the scope and timing have been confirmed.

We will also be following the Municipal Class EA process to contact you at key stages of the planning process: during the development and evaluation of alternative solutions and upon completion of the final report.

Should you be interested in discussing this project in further details or have any questions throughout the study, please do not hesitate to contact us. I would like to thank you in advance for your interest in the study and look forward to hearing from you.

Best Regards,



John Kukalis
Project Manager – Capital Planning
City of Hamilton, Public Works
John.Kukalis@Hamilton.ca
(905)546-2424 Ext. 6134

CC. info@hdi.land

**Enclosure:** Highway 52 and Powerline Road West Intersection Improvements MCEA – Project Summary

**From:** Kukalis, John
**Sent:** Wednesday, March 12, 2025 4:13 PM
**To:** info@hdi.land
**Subject:** Highway 52 & Powerline Rd. W Intersection Improvements MCEA - Project Introduction

Hi Tracey:

I am writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment is planned to be initiated for Highway 52 & Powerline Rd. W Intersection Improvements, in the City of Hamilton.
Attached for your information please find our introduction letter and background memo.

The formal Notice of Study Commencement and Public Information Centre 1 will be sent out to you shortly.

Should you have any questions or would like to discuss anything, please do not hesitate to contact me.

Best Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

| | |
|---|---|
| **From:** | Kukalis, John |
| **To:** | info@hdi.land |
| **Bcc:** | Salvucci, Megan; Larsen, Alannah; Alvaro L. Almuina |
| **Subject:** | RE: Highway 52 & Powerline Rd. W Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT & PIC #1 |
| **Date:** | Monday, March 17, 2025 12:40:00 PM |
| **Attachments:** | image001.png<br>RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Hi Tracey:

Further to my email below, attached above please find the formal Notice of Study Commencement and Public Information Centre 1 for the Highway 52 & Powerline Rd. W Intersection Improvements MCEA.

You will also receive a hardcopy notice in the mail as that is a requirement of the province.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

If you have any questions, please reach out to me and I'll be pleased to discuss.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

Hamilton

Tracey General
Haudenosaunee Confederacy of Chiefs Council
c/o Haudenosaunee Development Institute
16 Sunrise Court, Suite 600, PO Box 714
Oshweken, ON N0A 1M0

Date: March 17, 2025

Dear Tracey General,

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule C Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Please find enclosed the Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

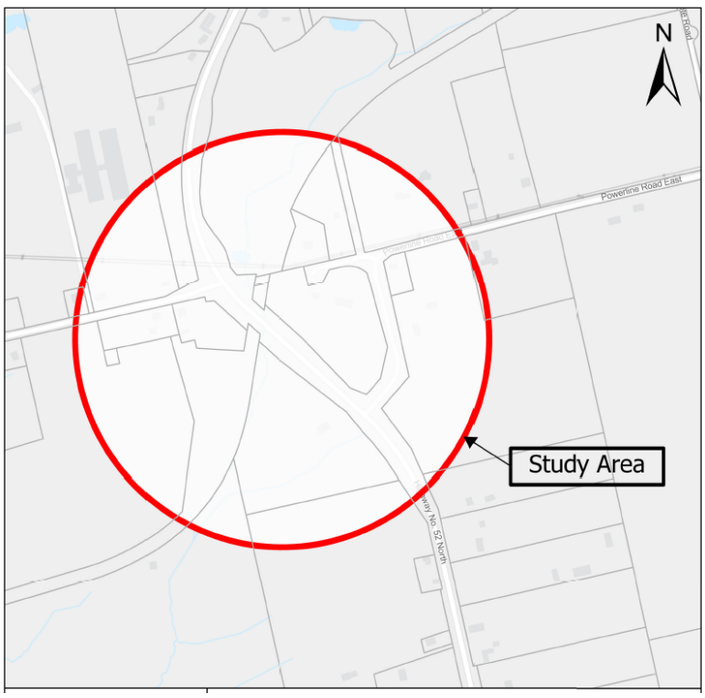
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

### You are Invited to Participate

The City of Hamilton is hosting the first of two Public Information Centres (PICs) for this study. The purpose of the first PIC will be to gather input and feedback from the local community at the onset of the project. A second PIC will be held at a later date to review the Study's alternative solutions and the associated evaluation process.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Haudenosaunee Development Institute (HDI) for the Haudenosaunee Confederacy of Chiefs Council (HCCC)
16 Sunrise Court, Suite 600, P.O. Box 714
Ohsweken, Ontario N0A 1M0

September 29, 2025

Dear Sir or Madam,

**NOTICE OF PUBLIC INFORMATION CENTRE #2**
**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule “C” Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Kind regards,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

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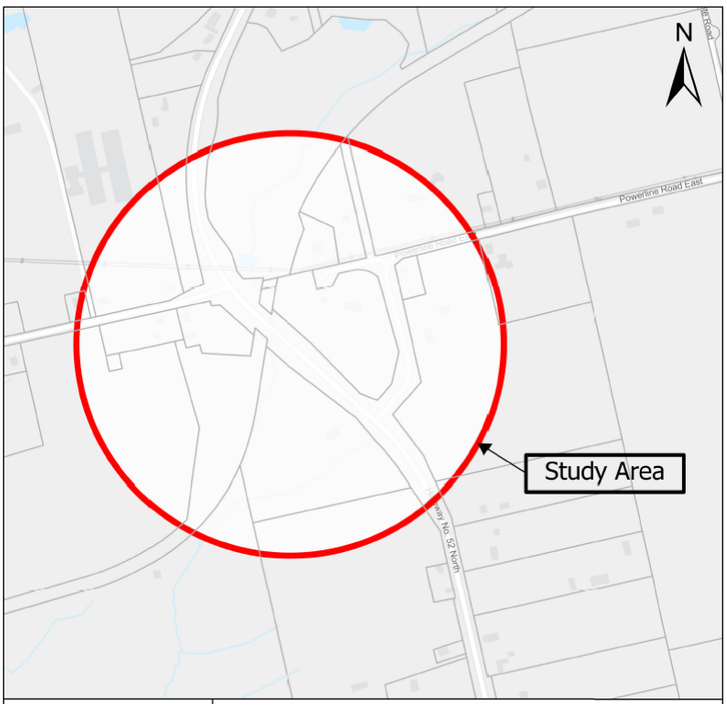


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### You are Invited to Participate

The City of Hamilton is hosting the second and final Public Information Centre (PIC) for this study. The purpose of this second PIC is to present the alternative designs and the associated evaluation process.

Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

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For more information, to provide comments, or to be added to our mailing list, please contact:


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|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

Outlook

**Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment**

**From** Lins, Julia <Julia.Lins2@hamilton.ca>
**Date** Wed 10/1/2025 9:00 **AM**
**To** info@hdi.land <info@hdi.land>
**Cc** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>

1 attachment (298 KB)
Notice of PIC#2 - Hwy 52 & PL RD W.pdf;

To whom it may concern:

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

You will ·also receive a hardcopy of the notice in the mail, as that is a requirement of the province

If you have any questions, please do not hesitate to reach out to me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Wendat Nation

**Infrastructure Renewal**
**Engineering Services Division, Public Works**
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2
Phone: 905-546-2424 ext. 1752
Email: ahmad.sarwar@hamilton.ca

March 12,2025

Dominic Ste-Marie
Huron Wendat First Nation at Wendake
225 Place Chef Michel-Laveau, Wendake,
QC G0A 4V0

**Re: Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment (MCEA)**

Dear Dominic,

We are writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment (MCEA) Study is being initiated for Highway 52 and Powerline Road West Intersection Improvements, in the City of Hamilton.

The purpose of this MCEA is to identify and recommend a preferred solution based on an evaluation of alternatives. The preferred solution will seek to address traffic safety and other related concerns raised by the local community in the vicinity of and adjacent to the intersection of Highway 52 and Powerline Road West. A memo providing additional details on the project is enclosed with this letter.

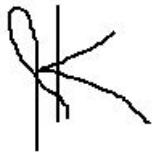
As part of this project, a Stage 1 Archaeological Assessment will be undertaken, and a draft copy of the report will be circulated to you for review and comments prior to submission to the Ministry of Heritage, Sport, Tourism and Culture Industries. It is anticipated that the draft report will be available in the later half of 2025.

A natural heritage assessment will also be completed as part of this project. We are still in the process of scoping the natural heritage requirements, but any fieldwork would be initiated in Spring 2025. We can provide updates on the status of this study and as well further details once the scope and timing have been confirmed.

We will also be following the Municipal Class EA process to contact you at key stages of the planning process: during the development and evaluation of alternative solutions and upon completion of the final report.

Should you be interested in discussing this project in further details or have any questions throughout the study, please do not hesitate to contact us. I would like to thank you in advance for your interest in the study and look forward to hearing from you.

Best Regards,



John Kukalis
Project Manager – Capital Planning
City of Hamilton, Public Works
John.Kukalis@Hamilton.ca
(905)546-2424 Ext. 6134

CC.

Mario Gros-Louis, Huron Wendat First Nation at Wendake
Lori-Jeanne Bolduc, Huron Wendat First Nation at Wendake
Thiefaine Terrier, Huron Wendat First Nation at Wendake

**Enclosure:** Highway 52 and Powerline Road West Intersection Improvements MCEA – Project Summary

**From:** Kukalis, John
**Sent:** Wednesday, March 12, 2025 4:13 PM
**To:** dominic.ste-marie@wendake.ca
**Cc:** Thiefaine.Terrier@wendake.ca; Lori-Jeanne.Bolduc@wendake.ca; Mario.GrosLouis@wendake.ca
**Subject:** Highway 52 & Powerline Rd. W Intersection Improvements MCEA - Project Introduction

Hi Dominic:

I am writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment is planned to be initiated for Highway 52 & Powerline Rd. W Intersection Improvements, in the City of Hamilton.
Attached for your information please find our introduction letter and background memo.

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Should you have any questions or would like to discuss anything, please do not hesitate to contact me.

Best Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

| | |
|---|---|
| **From:** | Kukalis, John |
| **To:** | dominic.ste-marie@wendake.ca |
| **Cc:** | Thiefaine.Terrier@wendake.ca; Lori-Jeanne.Bolduc@wendake.ca; Mario.GrosLouis@wendake.ca |
| **Bcc:** | Salvucci, Megan; Larsen, Alannah; Alvaro L. |
| **Subject:** | RE: Highway 52 & Powerline Rd. W Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT & PIC #1 |
| **Date:** | Monday, March 17, 2025 12:40:00 PM |
| **Attachments:** | image001.png<br>RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

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If you have any questions, please reach out to me and I'll be pleased to discuss.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

Hamilton

Dominic Ste-Marie
Huron Wendat First Nation at Wendake
225 Place Chef Michel-Laveau
Wendake, QC G0A 4V0

Date: March 17, 2025

Dear Dominic Ste-Marie,

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule C Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Please find enclosed the Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

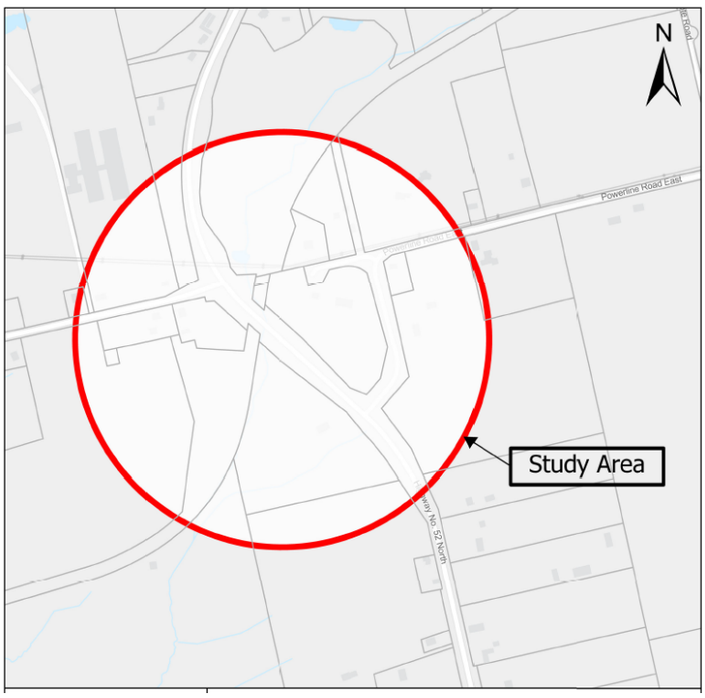
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

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### You are Invited to Participate

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| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

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| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

Outlook

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**From:** Benjamin Labbe <Benjamin.Labbe@wendake.ca>
**Sent:** Thursday, March 20, 2025 1:53 PM
**To:** Kukalis, John <John.Kukalis@hamilton.ca>
**Subject:** RE: Highway 52 & Powerline Rd. W Intersection Improvements MCEA - Project Introduction

Kwe John,

Thank you for this project introduction. We are comfortable with the proposed consultation process. Please send the stage 1 archaeological assessment when it will be complete, and we will be interested in participating in the fieldwork for an eventual stage 2 AA.

Please note that we have updated our way of processing consultations. Any new consultation or project notice must be sent to the following email address: consultations@wendake.ca. We also kindly ask that you remove any other email address that you have on file from all your mailing lists.

Tiawenhk,

**NATION HURONNE-WENDAT**
Bureau du Nionwentsïo

**Benjamin Labbé, M. Sc**
Conseiller en consultations

WENDAKE
255, place Chef Michel Laveau
Wendake (QC) G0A 4V0

T : 418 843-3767
@ : Benjamin.Labbe@wendake.ca

**WENDAKE.CA**

**From:** Kukalis, John <John.Kukalis@hamilton.ca>
**Sent:** April 14, 2025 4:13 PM
**To:** Benjamin Labbe <Benjamin.Labbe@wendake.ca>
**Cc:** Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Alvaro L. Almuina <Alvaro.Almuina@rjburnside.com>
**Subject:** RE: Highway 52 & Powerline Rd. W Intersection Improvements MCEA - Project Introduction

Hi Benjamin:

Thank you for your interest and response.

I look forward to your participation in this project and will forward you the Stage 1 report, as soon as it is available.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Dominic Ste-Marie
Huron Wendat First Nation at Wendake
255 Place Chef Michel-Laveau
Wendake, QC G0A 4V0

September 29, 2025

Dear Dominic Ste-Marie,

**NOTICE OF PUBLIC INFORMATION CENTRE #2**
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**Municipal Class Environmental Assessment**

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Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

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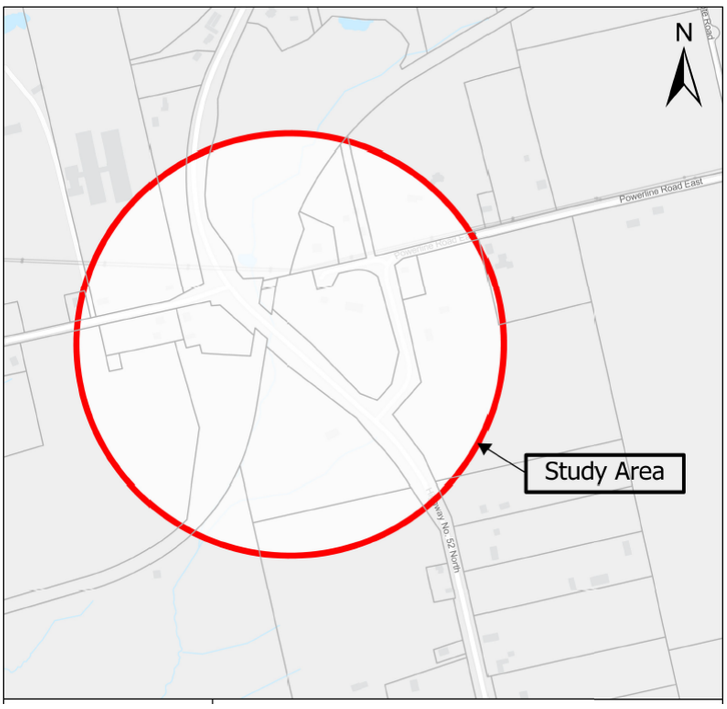


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For more information, to provide comments, or to be added to our mailing list, please contact:


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| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Lori-Jeanne Bolduc
Huron Wendat First Nation at Wendake
255 Place Chef Michel-Laveau
Wendake, QC G0A 4V0

September 29, 2025

Dear Lori-Jeanne Bolduc,

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**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

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Kind regards,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

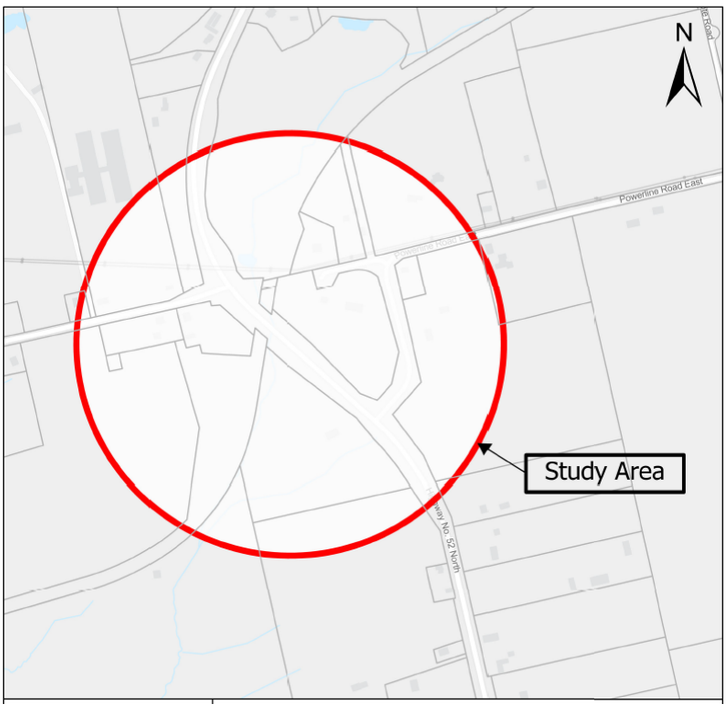
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, last amended 2024).

### You are Invited to Participate

The City of Hamilton is hosting the second and final Public Information Centre (PIC) for this study. The purpose of this second PIC is to present the alternative designs and the associated evaluation process.

Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

Outlook

**Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment**

**From** Lins, Julia <Julia.Lins2@hamilton.ca>
**Date** Wed 10/1/2025 9:00 **AM**
**To** consultations@wendake.ca <consultations@wendake.ca >
**Cc** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>

1 attachment (298 KB)
Notice of PIC#2 - Hwy 52 & PL RD W.pdf;

Dear Lori-Jeanne,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

You will ·also receive a hardcopy of the notice in the mail, as that is a requirement of the province

If you have any questions, please do not hesitate to reach out to me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Métis Nation

**Infrastructure Renewal**
**Engineering Services Division, Public Works**
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2
Phone: 905-546-2424 ext. 1752
Email: ahmad.sarwar@hamilton.ca

March 12,2025

Cassidy Shay Press, Branch Coordinator | Climate Change Advisor
Lands, Resources & Consultations (LRC) Branch
Métis Nation of Ontario
500 Old St. Patrick Street – Unit #3
Ottawa, ON K1N 9G4

**Re: Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment (MCEA)**

Dear Cassidy,

We are writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment (MCEA) Study is being initiated for Highway 52 and Powerline Road West Intersection Improvements, in the City of Hamilton.

The purpose of this MCEA is to identify and recommend a preferred solution based on an evaluation of alternatives. The preferred solution will seek to address traffic safety and other related concerns raised by the local community in the vicinity of and adjacent to the intersection of Highway 52 and Powerline Road West. A memo providing additional details on the project is enclosed with this letter.

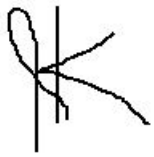
As part of this project, a Stage 1 Archaeological Assessment will be undertaken, and a draft copy of the report will be circulated to you for review and comments prior to submission to the Ministry of Heritage, Sport, Tourism and Culture Industries. It is anticipated that the draft report will be available in the later half of 2025.

A natural heritage assessment will also be completed as part of this project. We are still in the process of scoping the natural heritage requirements, but any fieldwork would be initiated in Spring 2025. We can provide updates on the status of this study and as well further details once the scope and timing have been confirmed.

We will also be following the Municipal Class EA process to contact you at key stages of the planning process: during the development and evaluation of alternative solutions and upon completion of the final report.

Should you be interested in discussing this project in further details or have any questions throughout the study, please do not hesitate to contact us. I would like to thank you in advance for your interest in the study and look forward to hearing from you.

Best Regards,



John Kukalis
Project Manager – Capital Planning
City of Hamilton, Public Works
John.Kukalis@Hamilton.ca
(905)546-2424 Ext. 6134

**Enclosure:** Highway 52 and Powerline Road West Intersection Improvements MCEA – Project Summary

**From:** Kukalis, John
**Sent:** Wednesday, March 12, 2025 4:12 PM
**To:** 'consultations@metisnation.org' <consultations@metisnation.org>
**Subject:** Highway 52 & Powerline Rd. W Intersection Improvements MCEA - Project Introduction

Hi Cassidy:

I am writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment is planned to be initiated for Highway 52 & Powerline Rd. W Intersection Improvements, in the City of Hamilton.
Attached for your information please find our introduction letter and background memo.

The formal Notice of Study Commencement and Public Information Centre 1 will be sent out to you shortly.

Should you have any questions or would like to discuss anything, please do not hesitate to contact me.

Best Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

| | |
|---|---|
| **From:** | Kukalis, John |
| **To:** | "consultations@metisnation.org" |
| **Bcc:** | Salvucci, Megan; Larsen, Alannah; Alvaro L. Almuina |
| **Subject:** | RE: Highway 52 & Powerline Rd. W Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT & PIC #1 |
| **Date:** | Monday, March 17, 2025 12:40:00 PM |
| **Attachments:** | image001.png<br>RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Hi Cassidy:

Further to my email below, attached above please find the formal Notice of Study Commencement and Public Information Centre 1 for the Highway 52 & Powerline Rd. W Intersection Improvements MCEA.

You will also receive a hardcopy notice in the mail as that is a requirement of the province.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

If you have any questions, please reach out to me and I'll be pleased to discuss.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

Hamilton

Cassidy Shay Press, Branch Coordinator | Climate Change Advisor
Lands, Resources & Consultations (LRC) Branch
Métis Nation of Ontario
500 Old St. Patrick Street – Unit #3
Ottawa, ON K1N 9G4

Date: March 17, 2025

Dear Cassidy Shay Press,

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule C Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Please find enclosed the Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

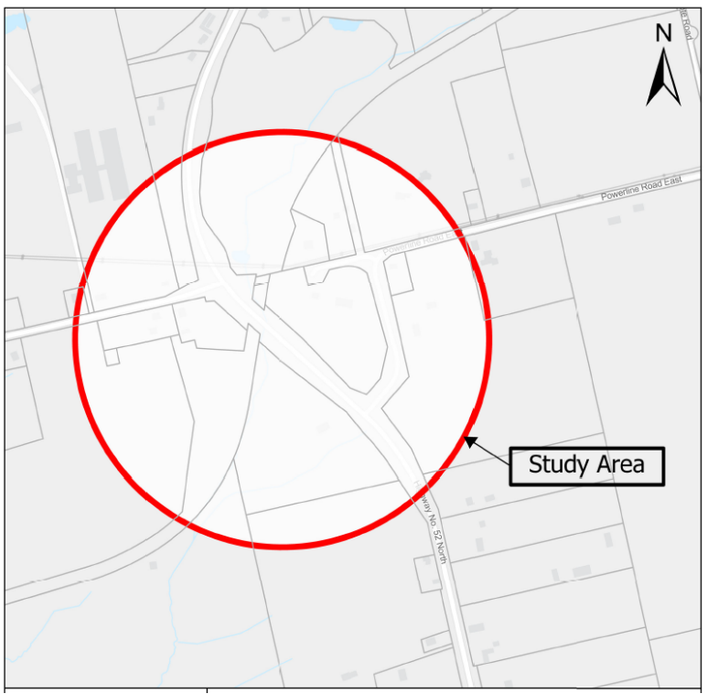
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

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### You are Invited to Participate

The City of Hamilton is hosting the first of two Public Information Centres (PICs) for this study. The purpose of the first PIC will be to gather input and feedback from the local community at the onset of the project. A second PIC will be held at a later date to review the Study's alternative solutions and the associated evaluation process.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


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| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Cassidy Shay Press
Metis Nation of Ontario
500 Old St. Patrick Street, Unit #3
Ottawa, ON K1N 9G4

September 29, 2025

Dear Cassidy Shay Press,

**NOTICE OF PUBLIC INFORMATION CENTRE #2**
**Highway 52 and Powerline Road West Intersection Improvements**
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The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

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Kind regards,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

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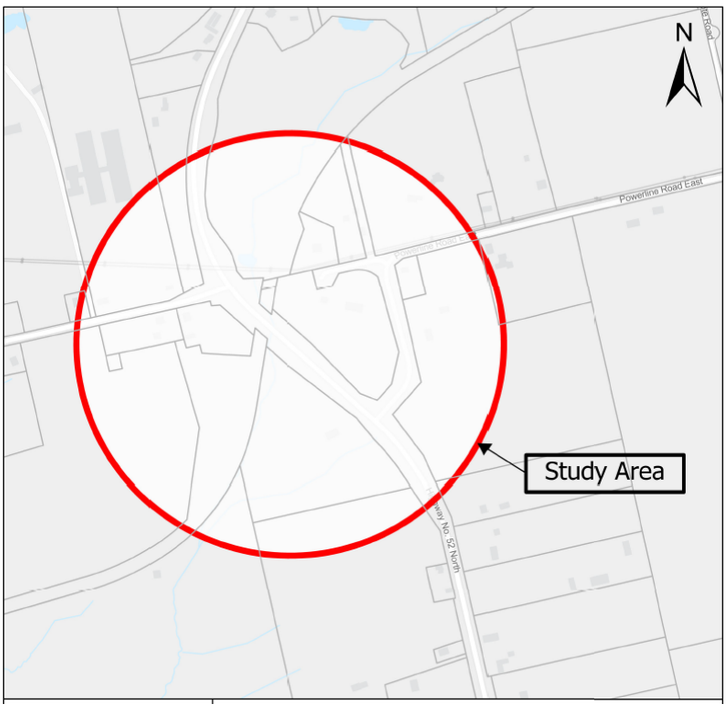


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Outlook

**Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment**

**From** Lins, Julia <Julia.Lins2@hamilton.ca>
**Date** Wed 10/1/2025 9:00 **AM**
**To** consultations@metisnation.org <consultations@metisnation.org >
**Cc** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>

1 attachment (298 KB)
Notice of PIC#2 - Hwy 52 & PL RD W.pdf;

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If you have any questions, please do not hesitate to reach out to me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

BURNSIDE

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# Mississaugas of the Credit First Nation

**Infrastructure Renewal**
**Engineering Services Division, Public Works**
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2
Phone: 905-546-2424 ext. 1752
Email: ahmad.sarwar@hamilton.ca

March 12,2025

Abby LaForme, Consultation Coordinator
Department of Consultation and Accommodation (DOCA)
Mississaugas of the Credit First Nation
2789 Mississauga Road – RR #6,
Hagersville, ON N0A 1H

**Re: Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment (MCEA)**

Dear Abby,

We are writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment (MCEA) Study is being initiated for Highway 52 and Powerline Road West Intersection Improvements, in the City of Hamilton.

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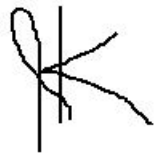
Best Regards,



John Kukalis
Project Manager – Capital Planning
City of Hamilton, Public Works
John.Kukalis@Hamilton.ca
(905)546-2424 Ext. 6134

CC.
Mark LaForme, Mississaugas of the Credit First Nation

**Enclosure:** Highway 52 and Powerline Road West Intersection Improvements MCEA – Project Summary

**From:** Kukalis, John
**Sent:** Wednesday, March 12, 2025 4:12 PM
**To:** Abby LaForme <Abby.LaForme@mncfn.ca>
**Cc:** Mark LaForme <Mark.LaForme@mncfn.ca>
**Subject:** Highway 52 & Powerline Rd. W Intersection Improvements MCEA - Project Introduction

Hi Abby:

I am writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment is planned to be initiated for Highway 52 & Powerline Rd. W Intersection Improvements, in the City of Hamilton.
Attached for your information please find our introduction letter and background memo.

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Should you have any questions or would like to discuss anything, please do not hesitate to contact me.

Best Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

| | |
|---|---|
| **From:** | Kukalis, John |
| **To:** | Abby LaForme |
| **Cc:** | Mark LaForme |
| **Bcc:** | Salvucci, Megan; Larsen, Alannah; Alvaro L. Almuina |
| **Subject:** | RE: Highway 52 & Powerline Rd. W Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT & PIC #1 |
| **Date:** | Monday, March 17, 2025 12:40:00 PM |
| **Attachments:** | image001.png<br>RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

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If you have any questions, please reach out to me and I'll be pleased to discuss.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

Hamilton

Abby LaForme, Consultation Coordinator
Department of Consultation and Accommodation (DOCA)
Mississaugas of the Credit First Nation
2789 Mississauga Road – RR #6,
Hagersville, ON N0A 1H

Date: March 17, 2025

Dear Abby LaForme,

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule C Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Please find enclosed the Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

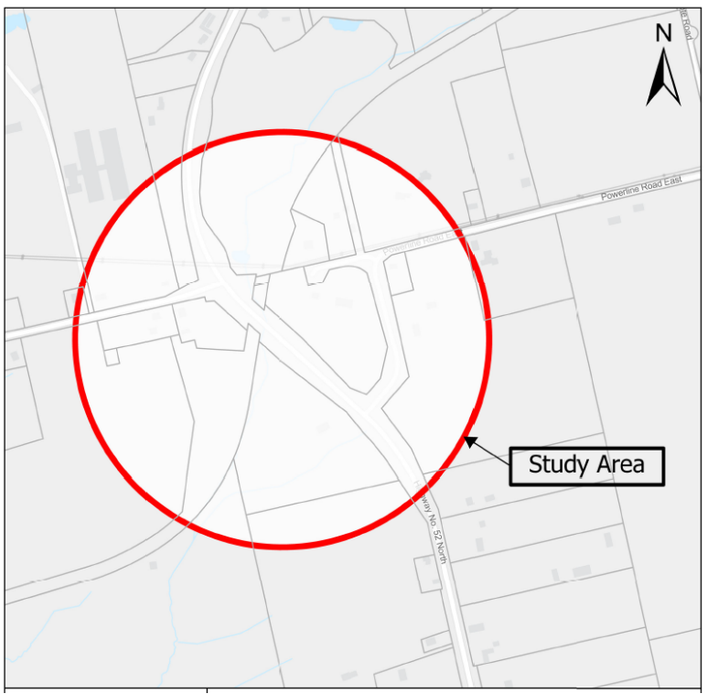
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.

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| In-Person Public Information Centre | Review Materials Online |
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| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

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For more information, to provide comments, or to be added to our mailing list, please contact:


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| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Adam LaForme
Mississaugas of the Credit First Nation
4065 Highway 6
Hagersville, ON N0A 1H0

September 29, 2025

Dear Adam LaForme,

**NOTICE OF PUBLIC INFORMATION CENTRE #2**
**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule “C” Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Kind regards,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

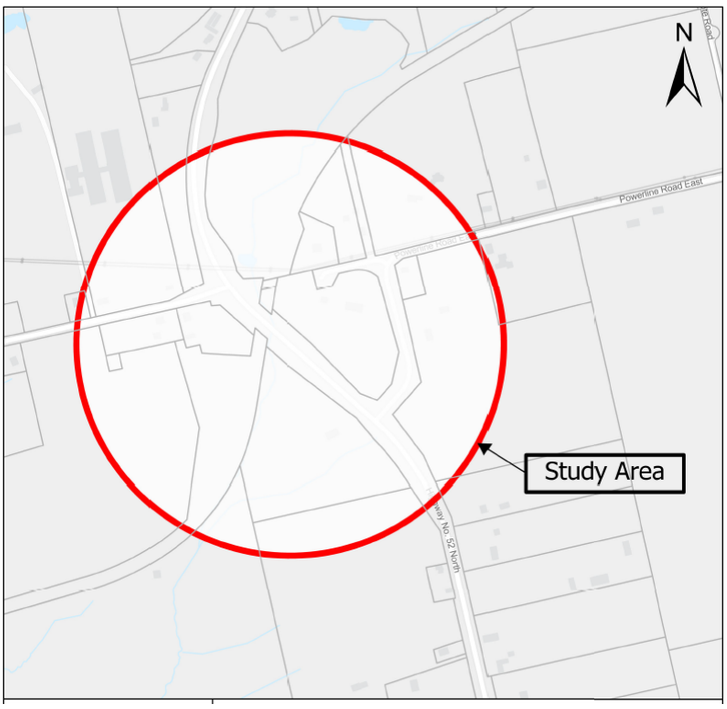
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, last amended 2024).

### You are Invited to Participate

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Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
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| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

Outlook

**Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment**

**From** Lins, Julia <Julia.Lins2@hamilton.ca>
**Date** Wed 10/1/2025 9:00 **AM**
**To** Adam LaForme <adam.laforme@mncfn.ca>
**Cc** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Abby Lee <abby.laforme@mncfn.ca>; Mark LaForme <mark.laforme@mncfn.ca>

1 attachment (298 KB)
Notice of PIC#2 - Hwy 52 & PL RD W.pdf;

Dear Adam,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

You will ·also receive a hardcopy of the notice in the mail, as that is a requirement of the province

If you have any questions, please do not hesitate to reach out to me.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Six Nations of the Grand River

**Infrastructure Renewal**
**Engineering Services Division, Public Works**
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2
Phone: 905-546-2424 ext. 1752
Email: ahmad.sarwar@hamilton.ca

March 12,2025

Tanya Hill-Montour, Archaeology Coordinator
Six Nations Land and Resources Department – Land Use Unit
Six Nations of the Grand River
2498 Chiefswood Road, PO Box 5000
Oshweken, ON N0A 1M0

**Re: Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment (MCEA)**

Dear Tanya,

We are writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment (MCEA) Study is being initiated for Highway 52 and Powerline Road West Intersection Improvements, in the City of Hamilton.

The purpose of this MCEA is to identify and recommend a preferred solution based on an evaluation of alternatives. The preferred solution will seek to address traffic safety and other related concerns raised by the local community in the vicinity of and adjacent to the intersection of Highway 52 and Powerline Road West. A memo providing additional details on the project is enclosed with this letter.

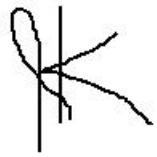
As part of this project, a Stage 1 Archaeological Assessment will be undertaken, and a draft copy of the report will be circulated to you for review and comments prior to submission to the Ministry of Heritage, Sport, Tourism and Culture Industries. It is anticipated that the draft report will be available in the later half of 2025.

A natural heritage assessment will also be completed as part of this project. We are still in the process of scoping the natural heritage requirements, but any fieldwork would be initiated in Spring 2025. We can provide updates on the status of this study and as well further details once the scope and timing have been confirmed.

We will also be following the Municipal Class EA process to contact you at key stages of the planning process: during the development and evaluation of alternative solutions and upon completion of the final report.

Should you be interested in discussing this project in further details or have any questions throughout the study, please do not hesitate to contact us. I would like to thank you in advance for your interest in the study and look forward to hearing from you.

Best Regards,



John Kukalis
Project Manager – Capital Planning
City of Hamilton, Public Works
John.Kukalis@Hamilton.ca
(905)546-2424 Ext. 6134

CC. Lonny Bomberry, Director, Six Nations of the Grand River
Dawn LaForme, Secretary, Six Nations of the Grand River
Robbin Vanstone, Consultation Supervisor, Six Nations of the Grand River

**Enclosure:** Highway 52 and Powerline Road West Intersection Improvements MCEA – Project Summary

**From:** Kukalis, John
**Sent:** Wednesday, March 12, 2025 4:13 PM
**To:** Tanya Hill-Montour <tanyahill-montour@sixnations.ca>
**Cc:** lonnybomberry@sixnations.ca; dlaforme@sixnations.ca; rvanstone@sixnations.ca
**Subject:** Highway 52 & Powerline Rd. W Intersection Improvements MCEA - Project Introduction

Hi Tanya:

I am writing to bring to your attention that a Schedule 'C' Municipal Class Environmental Assessment is planned to be initiated for Highway 52 & Powerline Rd. W Intersection Improvements, in the City of Hamilton.
Attached for your information please find our introduction letter and background memo.

The formal Notice of Study Commencement and Public Information Centre 1 will be sent out to you shortly.

Should you have any questions or would like to discuss anything, please do not hesitate to contact me.

Best Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

| | |
|---|---|
| **From:** | Kukalis, John |
| **To:** | Tanya Hill-Montour |
| **Cc:** | lonnybomberry@sixnations.ca; dlaforme@sixnations.ca; rvanstone@sixnations.ca |
| **Bcc:** | Salvucci, Megan; Larsen, Alannah; Alvaro L. Almuina |
| **Subject:** | RE: Highway 52 & Powerline Rd. W Intersection Improvements MCEA -NOTICE OF STUDY COMMENCEMENT & PIC #1 |
| **Date:** | Monday, March 17, 2025 12:40:00 PM |
| **Attachments:** | image001.png<br>RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Hi Tanya:

Further to my email below, attached above please find the formal Notice of Study Commencement and Public Information Centre 1 for the Highway 52 & Powerline Rd. W Intersection Improvements MCEA.

You will also receive a hardcopy notice in the mail as that is a requirement of the province.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

If you have any questions, please reach out to me and I'll be pleased to discuss.

Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton
Hamilton

Hamilton

Tanya Hill-Montour, Archaeology Coordinator
Six Nations Land and Resources Department – Land Use Unit
Six Nations of the Grand River
2498 Chiefswood Road, PO Box 5000
Oshweken, ON N0A 1M0

Date: March 17, 2025

Dear Tanya Hill-Montour,

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule C Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Please find enclosed the Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

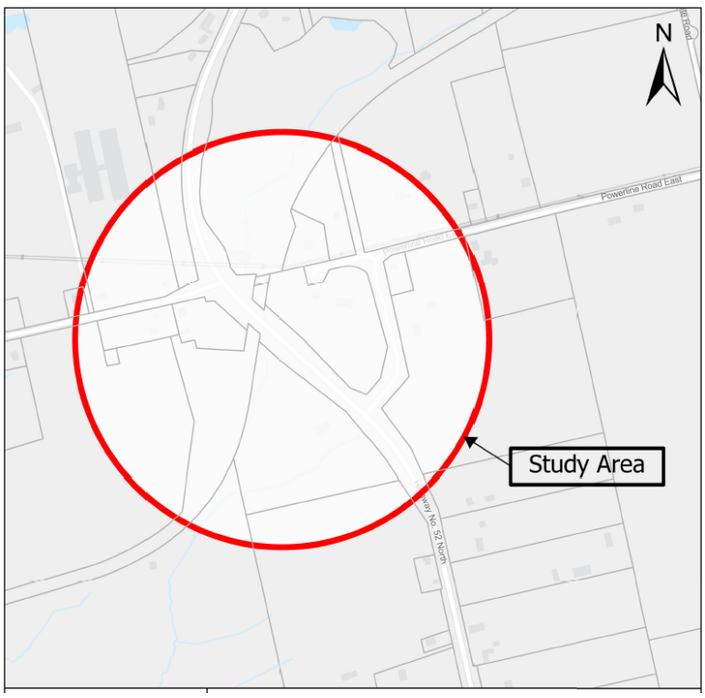
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

### You are Invited to Participate

The City of Hamilton is hosting the first of two Public Information Centres (PICs) for this study. The purpose of the first PIC will be to gather input and feedback from the local community at the onset of the project. A second PIC will be held at a later date to review the Study's alternative solutions and the associated evaluation process.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
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| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Tanya Hill-Montour
Six Nations Land and Resources Department, Land Use Unit for the Six Nations of the Grand River Elected Council (SNEC)
2498 Chiefswood Road, P.O. Box 5000
Oshweken, ON N0A 1M0

September 29, 2025

Dear Tanya Hill-Montour,

**NOTICE OF PUBLIC INFORMATION CENTRE #2**
**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule “C” Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

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Kind regards,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

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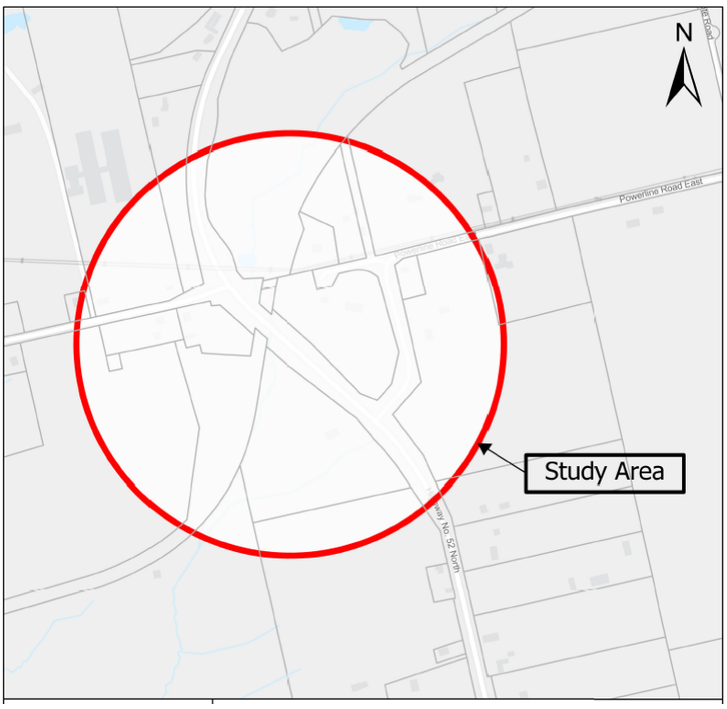


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Outlook

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# Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment

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From Lins, Julia <Julia.Lins2@hamilton.ca>
Date Wed 10/1/2025 9:00 AM
To Tanya Hill-Montour <tanyahill-montour@sixnations.ca>; Tierra Henhawk <acmaa@sixnations.ca>
Cc Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>; Dawn LaForme <dlaforme@sixnations.ca>

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Kind regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

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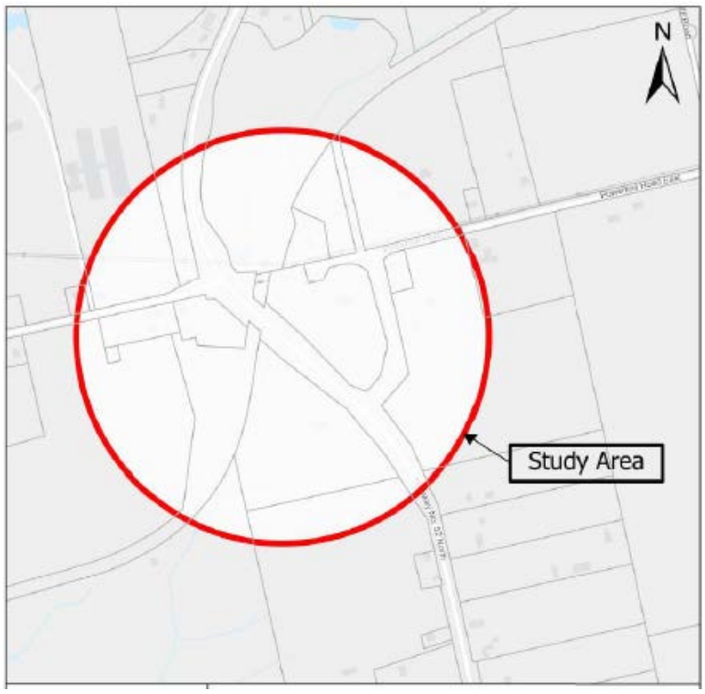


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| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


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| | |
|---|---|
| **From:** | Kukalis, John |
| **To:** | Salvucci, Megan; Larsen, Alannah; Alvaro L. Almuina |
| **Cc:** | Abbott, Lisa; Ammendolia, Carlo; Bainbridge, Mark; Barras, Maryssa; Bergen, Frank; Brooks-Joiner, Carrie; Buffett, James; Catarino, Jennifer; Chaloux, Nicholas; Christie, Lisa; Cluckie, Marnie; Coit, Ken; Cole, Darlene; Collingwood, Tricia; Conley, Rob; Cosyn Heath, Maureen; Cruceru, Ana; Cunliffe, Dave; Curry, Don; Dal Bello, Rino; Daniels, Hanna; Detmar, Tanya; Dewar, Amber; Dockstator, Beth; Ehrenberg, Udo; Fabac, Anita; Fazio, Margaret; Field, Mike; Gardner, Tiffany; Geissler, Cristina; Golden, Alissa; Graham, Cynthia; Hanna, Ashraf; Harvey, Heather; Helka, John; Herstek, Chris; Heyworth, Dave; Hollingworth, Brian; Imhoff, Trevor; Kehler, Mark; Kelemen, Jana; Kennedy, Jackie; Kessler, Ray; Khan, Carlyle; Kiddie, Melissa; Korah, Binu; LaForme, Katelyn; Lam, Judy; Lawson, Matthew; Leishman, Patricia; Leitch, Stuart; Lukasik, Lynda; MacDonald, Jasmine; Manganiello, Joanna; Martin, Michelle; Mater, Grace; McArthur, Helen; McCauley, Shane; McDonald, Andrea; McDonald, Kevin; McMullen, Brian; Milovanovic, Dan; Molloy, Steve; Moniruzzaman, Monir; Mutch, Cindy; Norman, Gavin; Panovski, Zivko; Pham, Melanie; Pilon, Janet; Qu, Shawn; Rahman, Mushfiqur; Richardson, Elizabeth; Robichaud, Steve; Ryall, Carolyn; Salvucci, Megan; Sarker, Bhajan; Sarwar, Ahmad; Sasso, Kayla; Schleehahn, Norm; Shahla, Farhad; Shaikh, Abdul; Smith, Dan (PED); Starr, Joanne; Stewart, Meghan; Storey, Angela; Thomas, Ann; Toman, Charlie; Van Rooi, James; VanderHeide, Jason; Vanderperk, Cari; Vargas, Andrea; Vega, Carmen; Votruba, Michael; Vraets, John; Vrooman, Tim; Winkelmann, Cathrin; Winters, Nick; Yip, Patrick; Zegarac, Mike; DiDomenico, Jennifer |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - Notice of Study Commencement and Public Information Centre #1 - City Internal Staff |
| **Date:** | Monday, March 17, 2025 12:39:00 PM |
| **Attachments:** | image001.png<br>RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton

Hamilton

Planning and Economic
Development Department

# Memorandum


**To:** John Kukalis, Project Manager
Capital Infrastructure Planning

**From:** Melanie Pham, Acting Manager
Sustainable Communities Section
Planning Division

**Phone:** 905-546-2424 Ext. 6685 **Fax:** 905-540-5611


**Date:** March 26, 2025 **File:** N/A

**Subject:** **Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment (Ward 12)**

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**Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment**

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.

Sustainable Communities Staff are pleased to provide the following policy comments to assist with the project.

**Provincial Plans**

**Commented [PM1]:** Add details noting that the property is within the Greenbelt Plan and Niagara Escarpment Plan - what is it identified as in these plans?

The study area contains lands designated as “Natural Area” and “Rural Area” under the Niagara Escarpment Plan (NEP) and lands designated as “Protected Countryside” under the Greenbelt Plan. These designations can be found on Schedule A – Provincial Plans within the Rural Hamilton Official Plan.

The “Natural Area” designation is located adjacent to the intersection of Highway 52 and Powerline Road west, at the north-west corner. This designation permits *infrastructure* land uses which are defined as *“The physical structures (facilities and corridors) that form the foundation for development. Infrastructure includes green infrastructure and utilities*

*as defined in this Plan, in addition to transportation corridors and facilities, including rights-of-way for the movement of people and goods."* However, this designation is intended to be area of conservation and passive recreational uses. The "Rural Area" NEP designation makes up the remainder of the lands located approximately north-west of the intersection of Highway 52 and Powerline Road West. This designation is meant to serve as a buffer to the more ecologically sensitive areas of the Escarpment. Infrastructure related uses as defined in the NEP are also permitted under this designation. A Niagara Escarpment Development Permit may be required for altering the grade of land, including the importation of excess soil. It is recommended to reach out the Niagara Escarpment Commission to find out whether the planned public works require a development permit.

The eastern portion of the study area contain the lands that are designated "Protected Countryside" in the Greenbelt Plan. All existing, expanded or new infrastructure subject to and approved under the Canadian Environmental Assessment Act, the Environmental Assessment Act, the Planning Act, the Aggregate Resources Act or the Telecommunications Act or by the National or Ontario Energy Boards, or which receives a similar environmental approval, is permitted within the Protected Countryside. Infrastructure related uses are required through planning, design and construction to minimize the amount of Greenbelt land occupied by infrastructure as well as negative impacts on the landscape such as but not limited to light intrusion, noise and road salt, in part through the avoidance of key natural heritage and key hydrologic features and areas part of the natural heritage system and water resource system.

**Rural Hamilton Official Plan**

The study area is located within the Rural Hamilton Official Plan. The following Rural Hamilton Official Plan identifications should be noted:

- Greenbelt Protected Countryside, Core Area, Linkages, Greenbelt Natural Heritage System, and Niagara Escarpment Plan Area **(Natural Heritage System – Schedule B)**
- Key Natural Heritage Feature Life Science ANSI **(Detailed Natural Heritage Features, Key Natural Heritage Feature Life Science ANSI – Schedule B-1)**
- Key Natural Heritage Feature Significant Woodlands **(Detailed Natural Heritage Features, Key Natural Heritage Feature Significant Woodlands – Schedule B-2)**

- Key Natural Heritage Feature and Key Hydrologic Feature Wetlands **(Detailed Natural Heritage Features, Key Natural Heritage Feature and Key Hydrologic Feature Wetlands – Schedule B-4)**
- Key Hydrologic Feature Lakes and Littoral Zones **(Detailed Natural Heritage Features, Key Hydrologic Feature Lakes and Littoral Zones – Schedule B-5)**
- Local Natural Area Environmentally Significant Area **(Detailed Natural Heritage Features, Local Natural Area – Schedule B-6)**
- Local Natural Area Earth Science ANSI **(Detailed Natural Heritage Features, Local Natural Area Earth Science ANSI – Schedule B-7)**
- Key Hydrologic Feature Streams **(Detailed Natural Heritage Feature Key Hydrologic Feature Streams – Schedule B-8)**
- Arterial, Collector **(Rural Functional Road Classifications – Schedule C)**
- Future Right-of-Way Highway 52 from Highway 5 to Governors Road – 30.480 m **(Future Right-of-Way Dedications (Rural) – Schedule C-1)**
- Agriculture, Open Space and Rural **(Rural Land Use Designations – Schedule D)**
- Overall Archaeology Potential **(Rural Archaeological Potential – Appendix F-2)**

**Commented [DK2]:** Highway 52

**Commented [DK3]:** Powerline Road East, portion that branches off to connect to Highway 52 as an alternative access

**Staff Comments:**

The subject area contains lands that are designated “Agriculture”, “Open Space” and “Rural” in the Rural Hamilton Official Plan. The study area contains numerous key natural heritage and key hydrologic features and has an environmentally significant area adjacent to Highway 52 approximately in the north-west corner. The study area also has archaeological potential.

Highway 52 is considered an “Arterial Road” in the Rural Hamilton Official Plan and the portion being studied has a future prescribed right-of-way of 30.480 meters as per Schedule C-1 of the Rural Hamilton Official Plan. The portion of Powerline Road East that branches off the main road for an alternative connection to Highway 52 is considered a “Collector Road” per Schedule C of the Rural Hamilton Official Plan, while the main road (Powerline Road East and West) is considered a “Local Road” and is not shown on Schedule C. The section of Highway 52 and Powerline Road that is subject to the Municipal Class Environmental Assessment is also within the jurisdiction of the Grand River Conservation Authority.

Staff note that there are agricultural, rural, open space and natural heritage policies seeking to conserve the area surrounding the Municipal Class Environmental

Assessment. Natural Heritage features within the study area include key hydrological features, key natural heritage features, life science and earth science areas of natural scientific interest. Staff also note that the study area is governed by the Greenbelt Plan and the Niagara Escarpment Plan.

For more information on the Rural Hamilton Official Plan, please contact Dmitriy Kharena at Dmitriy.Kharena@hamilton.ca.

Staff have no further comments. (DK 2025-03-26)

**Applicable Policies**

The following relevant policies from the Rural Hamilton Official Plan are noted for information purposes:

**Rural Hamilton Official Plan Volume 1 Chapter B – Communities**

**3.3.1 Barrier Free Design**

3.3.2 All newly constructed and/or renovated City of Hamilton owned, leased, or operated facilities, parks and open spaces, infrastructure, and any other space that are accessible to the public, shall comply with the City of Hamilton Barrier Free Design Guidelines.

**3.4.4 Archaeology Policies**

The City shall require the protection, conservation, or mitigation of sites of archaeological value and areas of *archaeological potential* as provided for under the Planning Act, the Environmental Assessment Act, the Ontario Heritage Act, the Municipal Act, the Cemeteries Act, or any other applicable legislation.

Archaeological Assessment Requirements

3.4.4.4 *Archaeological assessments* shall be prepared in accordance with any applicable guidelines and Policy F.3.2.5 – Archaeological Assessments.

3.4.4.7 To conserve these resources, avoidance and protection in situ shall be the preferred conservation management strategies. Where it has been demonstrated in an archaeological assessment by a licensed archaeologist that avoidance is not a viable option, alternative mitigation measures shall be

agreed upon by the Province and the City and in accordance with the Archaeology Management Plan.

3.4.4.9 Where a marked or unmarked cemetery or burial place is encountered during any archaeological assessment or excavation activity, the provisions of the Cemeteries Act and associated regulations, and the policies of this Plan shall apply.

3.4.4.10 Where a marked or unmarked cemetery or burial place is found, the nearest First Nation shall be notified.

**3.5.3 Parkland Policies**

3.5.3.5 In addition to the parks hierarchy outlined in Section B.3.5.1.4, there are two open space categories not considered as parks, but which contribute to the City's Open Space and Parks System:

a) General Open Space shall include golf courses, community gardens, pedestrian and bicycle trails, walkways, picnic areas, beaches, and remnant parcels of open space lands. These areas do not function as parks but are used for both active and passive recreational activities. (OPA 5)

b) Natural Open Space shall include lands with significant natural features and landscapes such as wetlands, woodland, hazard lands, forested slopes, creek/ravine corridors, the Niagara Escarpment, environmentally sensitive areas (of natural and scientific interest) and areas of wildlife habitat. These areas perform important biological and ecological functions and provide passive recreational opportunities.

**Rural Hamilton Official Plan Volume 1 Chapter C – City Wide Systems and Designations**

**1.2.1 Protected Countryside**

**1.2.2** All proposals for *development* or *site alteration* within the lands identified as Greenbelt Plan Protected Countryside and Specialty Crop on Schedule A – Provincial Plans, and designated Agriculture, Specialty Crop, Rural, Open Space and Utilities, on Schedule D – Rural Land Use Designations, shall meet the requirements of this Plan, the Zoning-By-law and the Greenbelt Plan. Where there is discrepancy between this Plan, the Zoning By-law and the

Greenbelt Plan policies with the exception of the Section C.1.2. 3, agricultural uses and *mineral aggregate resources*, the most restrictive policies shall prevail.

**2.2 General Policies**

2.2.3 The boundaries of Core Areas are shown on Schedule B – Natural Heritage System and *key natural heritage features*, *key hydrologic features* and any associated *vegetation protection zones*, provincially significant and local natural areas are shown on Schedules B-1 to B-8 – Detailed Natural Heritage Features. Minor refinements to such boundaries may occur through Environmental Impact Statements, watershed studies or other appropriate studies accepted by the City without an amendment to this Plan. Major changes to boundaries, the removal or addition of Core Areas identified on Schedule B – Natural Heritage System, and Schedules B-1 to B-8 – Detailed Natural Heritage Features require an amendment to this Plan.

2.2.5 Notwithstanding the designations on Schedule D – Rural Land Use Designations, the policies of this Plan shall apply to Core Areas not currently identified on Schedule B – Natural Heritage System and Schedules B-1 to B-8 – Detailed Natural Heritage Features. Additional Core Areas may be mapped and identified, or Core Area boundaries may be refined under the following circumstances and shall require an amendment to this Plan:

a) individual Environmental Impact Statements;
b) watershed or subwatershed studies;
c) natural areas inventories;
d) Environmental Assessments; or,
e) other similar studies.

2.2.9 Where properties contain two or more overlapping natural features of differing significance in the Natural Heritage System, the more restrictive policies pertaining to those natural features shall apply. If more than one policy applies to a natural feature, the more restrictive policy shall apply.

2.2.10 Any required Environmental Impact Statement shall be completed in accordance with Section F.3.2.1, Environmental Impact Statements and comply with all provisions of Sections C.2.4 and C.2.6 of this Plan, where applicable.

**2.3 Natural Heritage System – Core Areas**

2.3.3 Any *development* or *site alteration* within or adjacent to Core Areas shall not negatively impact their environmental features or *ecological functions*.

2.3.4 New development or site alteration shall not be permitted within provincially significant wetlands, significant coastal wetlands, or significant habitat of threatened or endangered species, except in accordance with applicable provincial and federal regulations with respect to significant habitat of threatened or endangered species.

**2.4 Core Areas – Within the Greenbelt Plant Area**

2.4.2 New development or site alteration shall not be permitted within a key natural heritage feature within the Greenbelt Natural Heritage System or a key hydrologic feature anywhere in the Protected Countryside, including any associated vegetation protection zone. However, new development or site alteration proposed adjacent to (within 120 metres of) a key natural heritage feature within the Greenbelt Natural Heritage System or a key hydrologic feature anywhere in the Protected Countryside requires an Environmental Impact Statement which identifies a vegetation protection zone, according to the requirements in Sections C.2.4.10, C.2.4.11, C.2.4.12, C.2.4.13, and C.2.4.14.

2.4.6 New *development* or *site alteration* subject to Sections C.2.4.1, C.2.4.2, C.2. 4.3, C.2.4.5, C.2.4.7, C.2.4.8 and C.2.4.9 requires, prior to approval, the submission and acceptance of an Environmental Impact Statement, which demonstrates to the satisfaction of the City in consultation with the relevant Conservation Authority that:

a) There shall be no negative impacts on the Core Areas or their ecological functions;
b) Connectivity between Core Areas shall be maintained, or where possible, enhanced for the movement of surface and ground water, plants and wildlife across the landscape;

c) The removal of other natural features shall be avoided or minimized by the planning and design of the proposed use or site alteration wherever possible; and
d) The disturbed area of a site shall not exceed 25 percent of the total developable area, except for golf courses, where permitted, for which the disturbed area shall not exceed 40 percent of the site. Impervious surfaces to be established in such disturbed areas shall not exceed 10 percent of the total developable area.

**Within The Protected Countryside Outside of the Greenbelt Natural Heritage System**

2.4.8 Beyond the Greenbelt Natural Heritage System within the Protected Countryside new *development* and *site alteration* shall not be permitted within or adjacent to *key natural heritage features* in the Greenbelt Protected Countryside unless it has been evaluated through an Environmental Impact Statement and has been demonstrated that there shall be no *negative impacts* on the natural features or their *ecological functions*.

**Vegetation Protection Zones**

2.4.10 An Environmental Impact Statement shall also propose a vegetation protection zone which:

a) Has sufficient width to protect the Core Area and its *ecological functions* from impacts of the proposed land use or *site alteration* occurring during and after construction, and where possible, restores or enhances the Core Area and/or its *ecological functions*; and
b) Is established to achieve and be maintained as *natural self-sustaining vegetation***.**

2.4.11 Where vegetation protection zones have not been specified by watershed and sub-watershed plans, Secondary or Rural Settlement Area Plan policies, Environmental Assessments and other studies, the following minimum vegetation protection zone width objectives shall be evaluated and addressed by Environmental Impact Statements:

a) Permanent and intermittent streams: 30-metre vegetation protection zone on each side of the watercourse, measured from beyond the stable top of bank;
b) Wetlands: 30-metre vegetation protection zone. The Environmental Impact Statement shall also take into consideration adjacent upland habitat that is

required by wetland species for breeding, foraging, dispersal, and other life processes;

c) Fish habitat: 30-metre minimum vegetation protection zone measured from beyond either side of the top of bank or meander belt allowance;
d) Woodlands: 15-metre minimum vegetation protection zone measured from the drip line of trees at the woodlands edge;
e) Significant Woodlands: a minimum 30-metre vegetation protection zone measured from the drip line of trees at the woodlands edge;
f) Areas of Natural and Scientific Interest (ANSIs): a minimum 30-metre vegetation protection zone.
g) Designated valley lands: 15-metre minimum vegetation protection zone measured from top of bank; and
h) Lakes: 30-metre vegetation protection zone, measured from the stable slope of the shoreline.

2.4.12 Vegetation protection zone widths greater than specified in Sections C. 2. 4.11 and C.2.4.13 may be required if ecological features and functions warrant it, as determined through an approved Environmental Impact Statement.

2.4.13 Within the Protected Countryside of the Greenbelt Plan area, new development and site alteration adjacent to wetlands, seepage areas, springs, fish habitat, lakes, permanent and intermittent streams and significant woodlands shall maintain a minimum 30-metre vegetation protection zone as measured from the outside boundary of the feature. Such a vegetation protection zone shall be established with natural, self-sustaining vegetation where the land within the vegetation protection zone is not used for agricultural purposes. New agricultural buildings and structures for agricultural uses are required to provide a 30-metre vegetation protection zone from a key natural heritage feature within the Greenbelt Natural Heritage System or a key hydrologic feature anywhere in the Protected Countryside but may not be required to establish a condition of natural self-sustaining vegetation, if the land is, and will continue to be, used for agricultural purposes.

2.4.14 Permitted uses in a vegetation protection zone shall be limited to low impact uses, such as passive recreation, trails, boardwalks, landscaping, vegetation restoration, and resource management and open space. Within the Protected Countryside of the Greenbelt Plan Area permitted uses within vegetation protection zones are specified in Section C.2.4.1. New development or site

alteration areas shall be located outside of the vegetation protection zone. Private sewage disposal systems and new impervious surfaces associated with the development shall not be permitted within the vegetation protection zone.

**2.7 Natural Heritage System – Linkages**

2.7.3 On its own properties, including road right-of-ways, utilities, major infrastructure facilities, and storm water management ponds the City shall enhance linkages by restoring natural habitat, where appropriate. The City shall support the naturalization of vegetation in inactive sections of parks and open space areas, where appropriate

2.7.5 Where new development or site alteration is proposed within a linkage in the Natural Heritage System as identified by an Environmental Impact Statement, the Environmental Impact Statement shall include a Linkage Assessment in accordance with Section F.3.2.2. (OPA 5)

2.10 **Tree and Woodland Protection**

2.10.2 Opportunities for tree planting on City-owned lands (such as lands designated Open Space and inactive portions of parks) shall be identified and implemented in co-operation with government agencies and local interest groups. In restoration efforts, the City shall plant only native species, preferably those of local origin.

2.10.3 Where the City is undertaking infrastructure work, existing woodland resources shall be protected and preserved, where feasible. If it is necessary for infrastructure works to destroy any trees, the City shall endeavour to compensate by re-planting on site and/or planting trees elsewhere.

2.12 **Water Resources**

2.12.3 Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved, or restored. Mitigative measures and/or alternative development approaches may be required in order to protect, improve, or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.

**4.0 INTEGRATED TRANSPORTATION NETWORK**

4.2 Integrated Transportation Network

4.2.2 Transportation infrastructure shall be designed and implemented to support the policies of this Plan, including the needs of the agriculture industry.

4.2.4 Transportation demand management measures shall be evaluated in all transportation related studies, masterplans, and environmental assessments.

**4.3 Active Transportation Network**

4.3.1 When roads and other infrastructure are replaced or upgraded, where feasible the City shall accommodate commuter cycling needs on the road network and major recreational pathways in accordance with the City's Cycling Master Plan.

4.3.2 The City shall maintain and, where feasible during replacement or upgrading of infrastructure, build the active transportation network which recognizes the importance of the active transportation network while achieving a high standard of connectivity and protecting agriculture. Active transportation shall be promoted and accommodated inroad design and operation through:

a) continuous improvement and expansion of the existing network of pedestrian and bicycle infrastructure, including paved road shoulders, multiuse paths, bike lanes, and on-street bike routes;
b) establishment of pedestrian-oriented design guidelines where appropriate in rural settlement area plans that promote active transportation; and,
c) provision of traffic calming measures and signage, where appropriate.

**4.5 Road Network**

**Functional Classification**

4.5.2 The road network shall be planned and implemented according to the following functional classifications and right-of-way widths:

b) Arterial roads, subject to the following policies:
   i. The primary function of an arterial road in the rural area is to carry relatively high volumes of intra-municipal and inter-regional traffic through the rural area in association with other types of roads.
   ii. Land accesses shall be permitted but are a secondary consideration to the function of the road.

iii. The maximum basic right-of-way width for arterial roads shall generally be 36.567 metres, but in certain circumstances a right-of-way width of 45.720 may be required, unless otherwise specifically described in Schedule C-1 – Future Right-of-Way Dedications (Rural). (OPA 18).
iv. Arterial roads in the rural area shall generally be organized in a grid pattern.
v. Paved shoulders may be provided to accommodate farm vehicles and equipment, pedestrians, and cyclists.
vi. Separate facilities maybe provided to accommodate pedestrians and cyclists.
vii. On street parking maybe prohibited

c) Collector roads shall be subject to the following policies:
i. The function of a collector road in the rural area is equally shared between carrying moderate volumes of intra- municipal and inter-regional traffic through the rural area and providing direct land access.
ii. The maximum basic right-of-way widths for collector roads in the rural area shall be 36 metres, unless otherwise specifically described in Schedule C-1 – Future Right-of-Way Dedications (Rural). (OPA 18)
iii. Collector roads in the rural area shall generally be connected with local, collector and arterial roads.
iv. Wider lanes or paved shoulders may be in place to accommodate farm vehicles and equipment, pedestrians, and cyclists.
v. Separate facilities may be in place to accommodate cyclists and pedestrians.
vi. Sidewalks may be provided on both sides of the street in Rural Settlement Areas.

d) Local roads, subject to the following policies:
i. The primary function of a local road in the rural area is providing direct property access, while the secondary function is to move low volumes of traffic to collector roads.
ii. The maximum basic right-of-way widths for local roads in the rural area shall be 36 metres, unless otherwise specifically described in Schedule C-1 – Future Right-of-Way Dedications (Rural). (OPA 18)
iii. Local roads shall generally be connected with other local and collector roads.
iv. Sidewalks should be provided on one or both sides of the street in Rural Settlement Areas, but cycling facilities are generally not required.

v. The minimum right of way width for local road classifications shall be 20.117 metres.

**Design and Maintenance**

**4.5.4** The road network shall be designed and maintained according to the following policies:

a) The Functional Road Classification System shown on Schedule C – Rural Functional Road Classification shall be used as the basis for decisions regarding design standards for road construction, bicycle and truck routes, right-of-way dedications, and access policies. The City may re-classify roads by:
   i. re-classifying an existing road to a higher classification where considered necessary, as traffic conditions change in response to development, through an amendment to this Plan; or,
   ii. re-classifying an existing road to a lower classification, which shall be permitted without an amendment to this Plan.

b) The City shall be permitted to design a road according to an urban or rural cross-section regardless of whether the road is in an urban or rural area.

c) The City shall initiate construction and maintenance programs to improve the safety and operation of the road network.

d) Only essential new transportation routes, maintenance, and repairs of existing routes shall be permitted in the Escarpment Natural Area.

4.5.6.6 Where a right-of-way width less than the maximum road allowance or a reduced daylight triangle is established in accordance with Policy C.4.5.6.5, the City may require the establishment of an easement for the installation and maintenance of municipal infrastructure. (OPA 12)

4.5.6.7 Notwithstanding Section C.4.5.6 and C.4.5.7, the City shall interpret the required right-of-way widths detailed in Section C.4.5.2 and Schedule C-1 – Future Right-of-Way Dedications (Rural), where applicable to denote only the basic requirement for the section of the road. Additional right-of-ways may be required at intersections to provide for exclusive turning lanes, daylight triangles and other special treatments to accommodate the optimum road/intersection geometric design. There may also be additional requirements for right-of-ways to provide lands for environmental considerations, the construction of bridges, overpasses, earth filled ramps, grade separations, depressed sections of roads, pathways, roundabouts, and traffic control in accordance with Section C.4.5.7. Any such additional right-of-way requirements shall be determined at the time of design of the road facilities and shall become part of the total required right-of-way.

Daylighting Triangles

4.5.7 The City shall require the conveyance of property for appropriate daylighting triangles and corner rounding on existing roads at such times as the property is to be developed or redeveloped, as a condition of site plan approval, consent, or plan of subdivision approval, in accordance with City standards based on the intersecting roadways of the functional road classification detailed in Section C.4.5.2. Daylighting triangles at intersections shall generally be as follows:

a) Local to local roads: 4.57 m triangle or radius;
b) Collector to local or collector roads: 9.14 m x 9.14 m triangle; and,
c) Arterial to collector or arterial: 15 m x 15 m triangle.\

4.5.10 Traffic calming devices shall only be installed where warranted in accordance with the current City of Hamilton Traffic Calming policies.

4.5.12 Roundabouts, where determined appropriate in accordance with City policy, shall be the preferred method for intersection traffic control over all-way stop and traffic signals. Design of roundabouts shall consider pedestrian and cycling safety and access.

**4.6 Goods Movement Network**

4.6.1 The goods movement network in Hamilton shall be maintained, protected and enhanced to support Hamilton's economic development strategy.

4.6.2 Goods movement corridors include truck and rail transportation routes, the John C. Munro Hamilton International Airport, and the Port of Hamilton. Heavy t ruck traffic, other than local deliveries, shall be restricted to designated truck routes to minimize negative impacts of truck traffic on local roads.

4.6.5 The roads network shall be designed to accommodate heavy trucks on the designated truck route system.

| | |
|---|---|
| **From:** | Kukalis, John |
| **To:** | Salvucci, Megan; Larsen, Alannah; Alvaro L. Almuina |
| **Cc:** | Horwath, Andrea; McCleary, James; Qureshi, Uzma; Baker, Wynne; Lowe, Sarah; Wilson, Maureen; Hilson, Stephanie; Pigott, Mary Louise; Kroetsch, Cameron; Khan, Hasnain; Thomas, Liesl; Nann, Nrinder; Weinberger, Alex; McGillivray, Alex; Hwang, Tammy; Hypolite, Jac; Marchand, Pascale; Francis, Matt; Ronald, David; Jackson, Tom; Kreidl, Samantha; Burden, Nancy; Pauls, Esther; Piedimonte, Diane; Milovanov, Zora; Taylor-Galway, Kim; Danko, John-Paul; Wojewoda, Nicola; Clark, Brad; Ribaric, Robert; Freeman, Lyndzee; Beattie, Jeff; Coffey, Jackie; Tadeson, Mark; Cooper, Crista; Roth, Kristen; Cassar, Craig; Brown, Sherri; Hurst, Nancy; Wilson, Alex; Corcoran, Micaela; Aberdeen, Jody; Geffros, Sophie; Spadafora, Mike; DiGiantomasso, Christine; Waxman, Sydney; McMeekin, Ted; Scally, Maureen |
| **Subject:** | Highway 52 and Powerline Road West Intersection Improvements MCEA - NOTICE OF STUDY COMMENCEMENT - Council |
| **Date:** | Monday, March 17, 2025 12:39:00 PM |
| **Attachments:** | image001.png<br>RF_Final_Notice of Commencement and PIC #1 - Hwy 52 & PL RD W.pdf |

Good afternoon,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and, immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule “C” Municipal Class Environmental Assessment (MCEA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Attached for your information, please find the formal Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Please let me know if you have any comments or questions.

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Infrastructure Planning
*(905) 546-2424, Ext.6134*
*john.kukalis@hamilton.ca*
Infrastructure Renewal Section
Engineering Services Division
Public Works Department, City of Hamilton

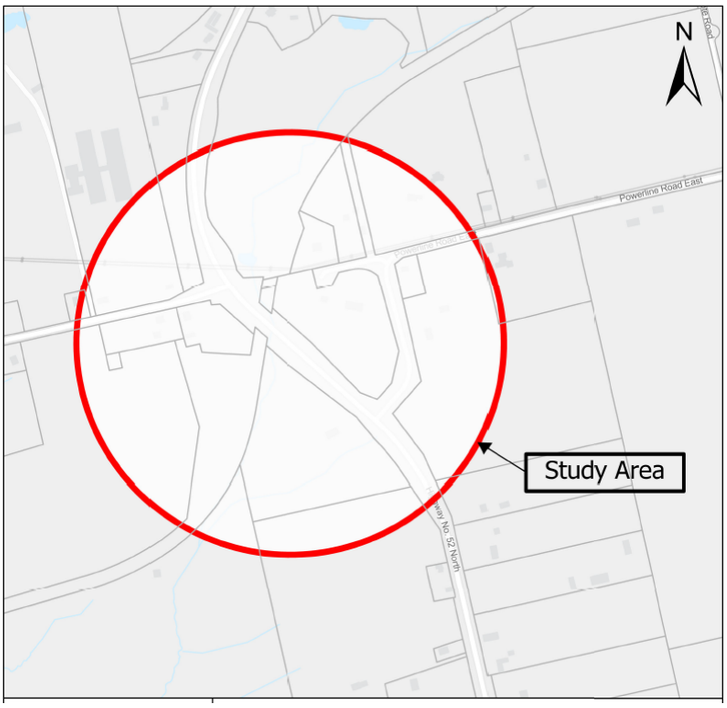
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, last amended 2024).

### You are Invited to Participate

The City of Hamilton is hosting the second and final Public Information Centre (PIC) for this study. The purpose of this second PIC is to present the alternative designs and the associated evaluation process.

Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

Outlook

# Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment - City

**From** Lins, Julia <Julia.Lins2@hamilton.ca>

**Date** Wed 10/1/2025 9:00 AM

**To** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>

**Bcc** Abbott, Lisa <Lisa.Abbott@hamilton.ca>; Ammendolia, Carlo <Carlo.Ammendolia@hamilton.ca>; Bainbridge, Mark <Mark.Bainbridge@hamilton.ca>; Barras, Maryssa <Maryssa.Barras@hamilton.ca>; Bent, Emily <Emily.Bent@hamilton.ca>; Bergen, Frank <fbergen@hamiltonpolice.on.ca>; Brooks-Joiner, Carrie <Carrie.Brooks-Joiner@hamilton.ca>; Buffett, James <James.Buffett@hamilton.ca>; Catarino, Jennifer <Jennifer.Catarino@hamilton.ca>; Chaloux, Nicholas <Nicholas.Chaloux@hamilton.ca>; Christie, Lisa <Lisa.Christie@hamilton.ca>; Christie, Mike <Mike.Christie@hamilton.ca>; Cluckie, Marnie <Marnie.Cluckie@hamilton.ca>; Coit, Ken <Ken.Coit@hamilton.ca>; Cole, Darlene <Darlene.Cole@hamilton.ca>; Collingwood, Tricia <Tricia.Collingwood@hamilton.ca>; Conley, Rob <Rob.Conley@hamilton.ca>; Cruceru, Ana <Ana.Cruceru@hamilton.ca>; Cunliffe, Dave <David.Cunliffe@hamilton.ca>; Curry, Don <Don.Curry@hamilton.ca>; Dal Bello, Rino <Rino.DalBello@hamilton.ca>; Daniels, Hanna <Hanna.Daniels@hamilton.ca>; Detmar, Tanya <Tanya.Detmar@hamilton.ca>; Dewar, Amber <Amber.Dewar@hamilton.ca>; DiDomenico, Jennifer <Jennifer.DiDomenico@hamilton.ca>; Dockstator, Beth <Beth.Dockstator@hamilton.ca>; Ehrenberg, Udo <Udo.Ehrenberg@hamilton.ca>; Fabac, Anita <Anita.Fabac@hamilton.ca>; Fazio, Margaret <Margaret.Fazio@hamilton.ca>; Field, Mike <Mike.Field@hamilton.ca>; Gardner, Tiffany <Tiffany.Gardner@hamilton.ca>; Geissler, Cristina <Cristina.Geissler@hamilton.ca>; Golden, Alissa <Alissa.Golden@hamilton.ca>; Graham, Cynthia <Cynthia.Graham@hamilton.ca>; Hanna, Ashraf <Ashraf.Hanna@hamilton.ca>; Harvey, Heather <Heather.Harvey@hamilton.ca>; Helka, John <John.Helka@hamilton.ca>; Herstek, Chris <Chris.Herstek@hamilton.ca>; Heyworth, Dave <Dave.Heyworth@hamilton.ca>; Hollingworth, Brian <Brian.Hollingworth@hamilton.ca>; Imhoff, Trevor <Trevor.Imhoff@hamilton.ca>; Kehler, Mark <Mark.Kehler@hamilton.ca>; Kelemen, Jana <Jana.Kelemen@hamilton.ca>; Kennedy, Jackie <Jackie.Kennedy@hamilton.ca>; Kenney, Sean <Sean.Kenney@hamilton.ca>; Kessler, Ray <Raymond.Kessler@hamilton.ca>; Kiddie, Melissa <Melissa.Kiddie@hamilton.ca>; Korah, Binu <Binu.Korah@hamilton.ca>; LaForme, Katelyn <Katelyn.LaForme@hamilton.ca>; Lawson, Matthew <Matthew.Lawson@hamilton.ca>; Leishman, Patricia <Patricia.Leishman@hamilton.ca>; Leitch, Stuart <Stuart.Leitch@hamilton.ca>; MacDonald, Jasmine <Jasmine.MacDonald@hamilton.ca>; Manganiello, Joanna <Joanna.Manganiello@hamilton.ca>; Martin, Michelle <Michelle.Martin@hamilton.ca>; Mater, Grace <Grace.Mater@hamilton.ca>; McArthur, Helen <Helen.McArthur@hamilton.ca>; McCauley, Shane <Shane.McCauley@hamilton.ca>; McDonald, Andrea <Andrea.McDonald@hamilton.ca>; McDonald, Kevin <Kevin.McDonald@hamilton.ca>; McMullen, Brian <Brian.McMullen@hamilton.ca>; Milovanovic, Dan <Dan.Milovanovic@hamilton.ca>; Molloy, Steve <Steve.Molloy@hamilton.ca>; Moniruzzaman, Monir <Monir.Moniruzzaman@hamilton.ca>; Mutch, Cindy <Cindy.Mutch@hamilton.ca>; Norman, Gavin <Gavin.Norman@hamilton.ca>; Panovski, Zivko <Zivko.Panovski@hamilton.ca>; Pham, Melanie <Melanie.Pham@hamilton.ca>; Pilon, Janet <Janet.Pilon@hamilton.ca>; Qu, Shawn <Shawn.Qu@hamilton.ca>; Rahman, Mushfiqur <Mushfiqur.Rahman@hamilton.ca>; Richardson, Elizabeth <Elizabeth.Richardson@hamilton.ca>; Robichaud, Steve <Steve.Robichaud@hamilton.ca>; Ryall, Carolyn <Carolyn.Ryall@hamilton.ca>; Sarker, Bhajan <Bhajan.Sarker@hamilton.ca>; Sarwar, Ahmad <Ahmad.Sarwar@hamilton.ca>; Sasso, Kayla <Kayla.Sasso@hamilton.ca>; Schleehahn, Norm <Norm.Schleehahn@hamilton.ca>; Shahla, Farhad <Farhad.Shahla@hamilton.ca>; Shaikh, Abdul <Abdul.Shaikh@hamilton.ca>; Smith, Dan (PED) <Daniel.Smith@hamilton.ca>; Starr, Joanne <Joanne.Starr@hamilton.ca>; Stewart, Meghan <Meghan.Stewart@hamilton.ca>; Storey, Angela <Angela.Storey@hamilton.ca>; Thomas, Ann <Ann.Thomas@hamilton.ca>; Toman, Charlie <Charlie.Toman@hamilton.ca>; Van Rooi, James <James.VanRooi@hamilton.ca>; VanderHeide, Jason <Jason.VanderHeide@hamilton.ca>; Vanderperk, Cari <Cari.Vanderperk@hamilton.ca>; Vega, Carmen <Carmen.Vega@hamilton.ca>; Vraets, Lauren

<Lauren.Vraets@hamilton.ca>; Vrooman, Tim <Tim.Vrooman@hamilton.ca>; Winkelmann, Cathrin <Cathrin.Winkelmann@hamilton.ca>; Winters, Nick <Nick.Winters@hamilton.ca>; Yip, Patrick <Patrick.Yip@hamilton.ca>; Zegarac, Mike <Mike.Zegarac@hamilton.ca>

1 attachment (298 KB)

Notice of PIC#2 - Hwy 52 & PL RD W.pdf;

To whom it may concern,

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule “C” Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Information can also be found on our webpage: https://www.hamilton.ca/Hwy52

Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

Outlook

# Notice of PIC #2 - Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment - Councillors

**From** Lins, Julia <Julia.Lins2@hamilton.ca>

**Date** Wed 10/1/2025 9:00 AM

**To** Kukalis, John <John.Kukalis@hamilton.ca>; Salvucci, Megan <Megan.Salvucci@hamilton.ca>

**Bcc** Horwath, Andrea <Andrea.Horwath@hamilton.ca>; McCleary, James <James.McCleary@hamilton.ca>; Qureshi, Uzma <Uzma.Qureshi@hamilton.ca>; Baker, Wynne <Wynne.Baker@hamilton.ca>; Lowe, Sarah <Sarah.Lowe@hamilton.ca>; Wilson, Maureen <Maureen.Wilson@hamilton.ca>; Hilson, Stephanie <Stephanie.Hilson@hamilton.ca>; Pigott, Mary Louise <MaryLouise.Pigott@hamilton.ca>; Kroetsch, Cameron <Cameron.Kroetsch@hamilton.ca>; McCullough, Joey <Joey.McCullough@hamilton.ca>; Thomas, Liesl <Liesl.Thomas@hamilton.ca>; Nann, Nrinder <Nrinder.Nann@hamilton.ca>; Weinberger, Alex <Alex.Weinberger@hamilton.ca>; McGillivray, Alex <Alex.McGillivray@hamilton.ca>; Le Clair, Kerry <Kerry.LeClair@hamilton.ca>; Hwang, Tammy <Tammy.Hwang@hamilton.ca>; Hypolite, Jac <Jacques.Hypolite@hamilton.ca>; Marchand, Pascale <Pascale.Marchand@hamilton.ca>; Francis, Matt <Matt.Francis@hamilton.ca>; Ronald, David <David.Ronald@hamilton.ca>; Jackson, Tom <Tom.Jackson@hamilton.ca>; Kreidl, Samantha <Samantha.Kreidl@hamilton.ca>; Burden, Nancy <Nancy.Burden@hamilton.ca>; Pauls, Esther <Esther.Pauls@hamilton.ca>; Piedimonte, Diane <Diane.Piedimonte@hamilton.ca>; Taylor-Galway, Kim <Kim.TaylorGalway@hamilton.ca>; Wojewoda, Nicola <Nicola.Wojewoda@hamilton.ca>; Clark, Brad <Brad.Clark@hamilton.ca>; Ribaric, Robert <Robert.Ribaric@hamilton.ca>; Freeman, Lyndzee <Lyndzee.Freeman@hamilton.ca>; Beattie, Jeff <Jeff.Beattie@hamilton.ca>; Coffey, Jackie <Jackie.Coffey@hamilton.ca>; Tadeson, Mark <Mark.Tadeson@hamilton.ca>; Cooper, Crista <Crista.Cooper@hamilton.ca>; Roth, Kristen <Kristen.Roth@hamilton.ca>; Cassar, Craig <Craig.Cassar@hamilton.ca>; Brown, Sherri <Sherri.Brown@hamilton.ca>; Hurst, Nancy <Nancy.Hurst@hamilton.ca>; Wilson, Alex <Alex.Wilson@hamilton.ca>; Corcoran, Micaela <Micaela.Corcoran@hamilton.ca>; Aberdeen, Jody <Jody.Aberdeen@hamilton.ca>; Geffros, Sophie <Sophie.Geffros@hamilton.ca>; Spadafora, Mike <Mike.Spadafora@hamilton.ca>; DiGiantomasso, Christine <Christine.DiGiantomasso@hamilton.ca>; Waxman, Sydney <Sydney.Waxman@hamilton.ca>; McMeekin, Ted <Ted.McMeekin@hamilton.ca>; Scally, Maureen <Maureen.Scally@hamilton.ca>; Cooper, Rob <Rob.Cooper@hamilton.ca>

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Regards,

**John Kukalis, C.E.T.** *(he/him)*
Project Manager - Capital Planning
Infrastructure Renewal Section
Engineering Services Division
Public Works Department
(905) 546-2424, Ext.6134
Hamilton

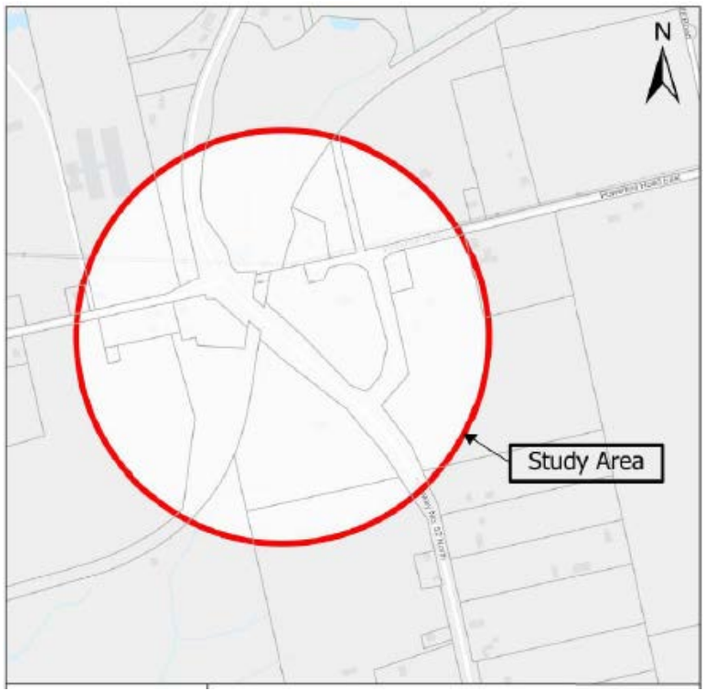
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Study Commencement and Public Information Centre #1

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, as amended in 2007, 2011, 2015, and 2023).

### You are Invited to Participate

The City of Hamilton is hosting the first of two Public Information Centres (PICs) for this study. The purpose of the first PIC will be to gather input and feedback from the local community at the onset of the project. A second PIC will be held at a later date to review the Study's alternative solutions and the associated evaluation process.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, April 8, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Copetown Community Centre, 1950 Governors Road, Dundas, ON, L9H 5E3<br><br>There will be a brief introductory presentation, followed by a drop-in style open house.<br><br>All information in the presentation will remain on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after April 2, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued March 28th, 2025, and April 4th, 2025, in the Hamilton Spectator.

Hamilton

E/A Project Co-ordination Section
2 St. Clair Ave. W. 14th Floor
Toronto, ON M4V 1L5

Date: March 17, 2025

To whom it may concern:

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule C Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Please find enclosed the Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Rob Dobos
867 Lakeshore Blvd.
Burlington, ON L7R 4A6

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Mike Shaw
867 Lakeshore Blvd.
Burlington, ON L7R 4A6

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Rachel Speller
25 St. Clair Ave. E.  8th floor
Toronto, ON M4T 1M2

Date: March 17, 2025

To whom it may concern:

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Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

National Heritage Information Centre
300 Water Street
Peterborough, ON K9J 8M4

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Mark Jakubowski
55 John St. N., 6th Floor
Hamilton, ON L8R 3M8

Date: March 17, 2025

To whom it may concern:

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Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Chris Gill
20 Hunter St. W.
Hamilton, ON L8N 3H2

Date: March 17, 2025

To whom it may concern:

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

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Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Colleen Mitchell
100 - 5th Concession Rd. E.
Waterdown, ON L0R 2H1

Date: March 17, 2025

To whom it may concern:

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**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

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Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Tammy Wong
700 University Avenue
Toronto, ON M5G 1X6

Date: March 17, 2025

To whom it may concern:

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

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Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Bruno Milano
1090 Upper Wellington St
Hamilton, ON L9A 3S6

Date: March 17, 2025

To whom it may concern:

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

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Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

President of Hamilton Health Sciences
100 King Street West
Hamilton, ON L8P 1A2

Date: March 17, 2025

To whom it may concern:

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John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Albert Beaudin
110 Drewry Avenue
North York, ON M2M 1c8

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Anthony Cupido
1280 Main Street West
Campus Services Building, Room 109
Hamilton, ON L8S 4M3

Date: March 17, 2025

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Hamilton

Patrick J. Daly
P.O. Box 2012
Hamilton, ON L8N 3R9

Date: March 17, 2025

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Phone: 905-546-2424, extension 6134

Hamilton

Dawn Danko
PO Box 2558
Hamilton, ON L8N 3L1

Date: March 17, 2025

To whom it may concern:

**NOTICE OF STUDY COMMENCEMENT & PUBLIC INFORMATION CENTRE #1**

**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule C Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended in 2007, 2011, 2015, 2023, and 2024).

Please find enclosed the Notice of Study Commencement & Public Information Centre #1 for the Highway 52 and Powerline Road West Intersection Improvements Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Miguel Ladouceur
116 Cornelius Parkway
Toronto, ON M6L 2K5

Date: March 17, 2025

To whom it may concern:

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Infrastructure Renewal
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Public Works, City of Hamilton
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Phone: 905-546-2424, extension 6134

Hamilton

Ron Mckerlie
135 Fennell Avenue West
Hamilton, ON L9C 0E5

Date: March 17, 2025

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Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Paola Pace-Gubekjian
P.O. Box 2012  90 Mulberry Street
Hamilton, ON L8N 3R9

Date: March 17, 2025

To whom it may concern:

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Chelsea Cox
103-91 James St. N.
Hamilton, ON L8R 2K6

Date: March 17, 2025

To whom it may concern:

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Canada Coach
P.O. Box 4017 Station Main
Peterborough, ON K9J 7B1

Date: March 17, 2025

To whom it may concern:

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Community CarShare
175 Longwood Road South, Suite 304A
Hamilton, ON L8P 0A1

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Jagtar Singh Chahal
430 Cannon Street East
Hamilton, ON L8L 2C8

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Dave Leach
36 Hunter Street East
Hamilton, ON l8N 3W8

Date: March 17, 2025

To whom it may concern:

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Anthony F. Rizzuto
Mount Hope ON L0R 1W0
Hamilton, ON L8N 2C4

Date: March 17, 2025

To whom it may concern:

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Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Mark. Seymour
555 Dixon Road
Toronto, ON M9W 1H8

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Gene Wasik
126 Catherine Street North
Hamilton, ON L8R 1J4

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

John Best
140 King Street East, Suite 14
Hamilton, ON L8N 1B2

Date: March 17, 2025

To whom it may concern:

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Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

Kaye Ceille
129 Spadina Avenue
Toronto, ON M5V 2L3

Date: March 17, 2025

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

John Winkley
241 Stuart St. W.
Hamilton, ON L8N 3P9

Date: March 17, 2025

To whom it may concern:

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

CANADA POST CUSTOMER SERVICE
PO BOX 90022
2701 RIVERSIDE DRIVE
OTTAWA ON K1V 1J8

Date: March 17, 2025

To whom it may concern:

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Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

UNITED CHURCH OF CANADA
ZION HILL CEMETERY C/O K A FORSTER
RR 2
LYNDEN ON L0R 1T0

Date: March 17, 2025

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Project Manager, Capital Infrastructure Planning
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, extension 6134

Hamilton

UNITED CHURCH OF CANADA
C/O MRS L BONHAM
2218 GOVERNOR'S RD RR 1
LYNDEN ON L0R 1T0

Date: March 17, 2025

To whom it may concern:

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Phone: 905-546-2424, extension 6134

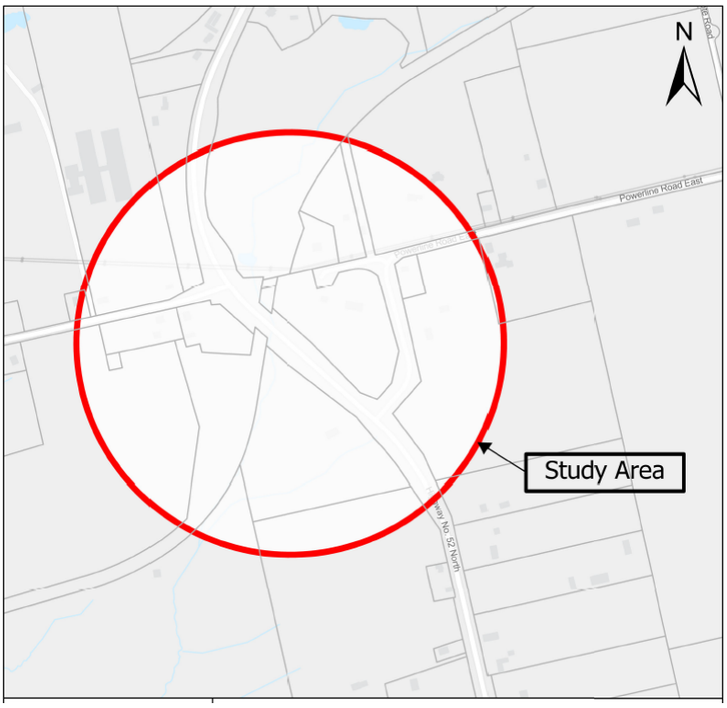
Hamilton

# Highway 52 and Powerline Road West Intersection Improvements
# Municipal Class Environmental Assessment

## Notice of Public Information Centre #2

### The Study

The City of Hamilton has initiated a Municipal Class Environmental Assessment (EA) process to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West.




### Process

This Study is being carried out as a Schedule 'C' project under the Municipal Engineers Association Municipal Class Environmental Assessment (October 2000, last amended 2024).

### You are Invited to Participate

The City of Hamilton is hosting the second and final Public Information Centre (PIC) for this study. The purpose of this second PIC is to present the alternative designs and the associated evaluation process.

Near the end of the project, an Environmental Study Report (ESR) will be prepared to document the EA process, consultation activities and the evaluation. The ESR will be available for a 30-day public review at that time.

### How to Participate

| In-Person Public Information Centre | Review Materials Online |
|---|---|
| **DATE:** Tuesday, October 21, 2025<br>**TIME:** 6:00 p.m. – 8:00 p.m.<br>**LOCATION:** Rotary Community Centre<br>385 Jerseyville Rd W., Ancaster, ON, L9G 3L5<br><br>The PIC will be a drop-in style session where information about the project will be on display and members of the Project Team will be available to answer your questions. | Visit the project webpage anytime on, or after October 20, 2025, to view the information display panels. Materials are available 24 hours a day, 7 days a week. Comments can be provided until November 4, 2025.<br><br>The project website is:<br><br>https://www.hamilton.ca/Hwy52 |

**If you have any accessibility requirements to review the PIC materials and provide comments, please contact the City Project Manager below.**

For more information, to provide comments, or to be added to our mailing list, please contact:


| | |
|---|---|
| **John Kukalis**<br>Project Manager<br>City of Hamilton<br>Phone: 905-546-2424 ext. 6134<br>Email: jkukalis@hamilton.ca | **Alvaro L. Almuina**<br>R.J. Burnside & Associates Ltd.<br>Consultant Project Manager<br>Phone: 1+800-265-9662<br>Email: alvaro.almuina@rjburnside.com |


*Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.*

This Notice will be issued October 10, 2025, and October 17, 2025, in the Hamilton Spectator.

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Ministry of the Environment, Conservation & Parks
135 St. Clair Avenue W, 7th Floor
Toronto, ON M4V 1P5

September 29, 2025

To whom it may concern:

**NOTICE OF PUBLIC INFORMATION CENTRE #2**
**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

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Enclosed for your information, please find a copy of the Notice of Public Information Centre No. 2 for the Highway 52 and Powerline Road West Intersection Improvements, Municipal Class Environmental Assessment.

Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Canada Post
2701 Riverside Drive, PO BOX 90022
Ottawa, ON K1V 1J8

September 29, 2025

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**Municipal Class Environmental Assessment**

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
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Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Rob Dobos
Environment Canada
867 Lakeshore Blvd.
Burlington, ON L7R 4A6

September 29, 2025

To whom it may concern:

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Mike Shaw
Environment Canada
867 Lakeshore Blvd.
Burlington, ON L7R 4A6

September 29, 2025

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

National Heritage Information Centre
300 Water Street
Peterborough, ON K9J 8M4

September 29, 2025

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Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Mark Jakubowski
Alectra Utilities Corporation
55 John St. N., 6th Floor
Hamilton, ON L8R 3M8

September 29, 2025

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Sincerely,

John Kukalis, C.E.T.
Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Chris Gill
Bell Canada
20 Hunter St. W.
Hamilton, ON L8N 3H2

September 29, 2025

To whom it may concern:

**NOTICE OF PUBLIC INFORMATION CENTRE #2**
**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

The City of Hamilton has initiated an Environmental Assessment to develop and assess alternative solutions to address traffic safety and related concerns raised by the local community both at and immediately adjacent to, the intersection of Highway 52 and Powerline Road West. The road improvements are being planned as a Schedule "C" Municipal Class Environmental Assessment (EA) project under the Municipal Engineers Association Municipal Class Environmental Assessment document (October 2000, as amended 2024).

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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Colleen Mitchell
Imperial Oil Products & Chemical Division
100 - 5th Concession Rd. E.
Waterdown, ON L0R 2H1

September 29, 2025

To whom it may concern:

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**Highway 52 and Powerline Road West Intersection Improvements**
**Municipal Class Environmental Assessment**

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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Tammy Wong
Ontario Power Generation
700 University Avenue
Toronto, ON M5G 1X6

September 29, 2025

To whom it may concern:

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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Hamilton Health Sciences
100 King Street West
Hamilton, ON L8P 1A2

September 29, 2025

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Public Works, City of Hamilton
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Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Albert Beaudin
French Catholic School Board
110 Drewry Avenue
North York, ON M2M 1c8

September 29, 2025

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Public Works, City of Hamilton
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Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Anthony Cupido
McMaster University
1280 Main Street West, Campus Services Building, Room 109
Hamilton, ON L8S 4M3

September 29, 2025

To whom it may concern:

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Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Patrick J. Daly
Hamilton-Wentworth Catholic District School Baord
90 Mulberry Street, P.O. Box 2012
Hamilton, ON L8N 3R9

September 29, 2025

To whom it may concern:

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**Highway 52 and Powerline Road West Intersection Improvements**
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Public Works, City of Hamilton
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Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

P. Ferrie
Hamilton-Wentworth Catholic District School Board
90 Mulberry Street, P.O. Box 2012
Hamilton, ON L8N 3R9

September 29, 2025

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Public Works, City of Hamilton
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Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Dawn Danko
Hamilton-Wentworth District School Board
20 Education Court, P.O. Box 2558
Hamilton, ON  L8N 3L1

September 29, 2025

To whom it may concern:

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Miguel Ladouceur
French Public School Board
116 Cornelius Parkway
Toronto, ON M6L 2K5

September 29, 2025

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Public Works, City of Hamilton
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Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Paul Armstrong
Mohawk College
135 Fennell Avenue West
Hamilton, ON L8N 3T2

September 29, 2025

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Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Paola Pace-Gubekjian
Hamilton-Wentworth Catholic District School Baord
90 Mulberry Street, P.O. Box 2012
Hamilton, ON L8N 3R9

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Public Works, City of Hamilton
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Phone: 905-546-2424, ext. 6134

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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Canada Coach
2015 Fisher Drive, Unit 101 P.O. Box 4017
Peterborough, ON K9J 7B1

September 29, 2025

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Project Manager, Capital Infrastructure
Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Community CarShare (Communauto Hamilton)
175 Longwood Road South, Suite 304A
Hamilton, ON L8P 0A1

September 29, 2025

To whom it may concern:

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Infrastructure Renewal
Engineering Services
Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Jagtar Singh Chahal
Hamilton Cab
1051 Main Street East
Hamilton, ON L8M 1N5

September 29, 2025

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Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Anthony Rizzuto
Blue Line Transportation
160 John Street South
Hamilton, ON L8N 2C4

September 29, 2025

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Public Works, City of Hamilton
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Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Mark Bylsma
Ontario Trucking Association
555 Dixon Road
Toronto, ON M9W 1H8

September 29, 2025

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Phone: 905-546-2424, ext. 6134

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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Gene Wasik
Social Bicycle (SoBi)
126 Catherine Street North
Hamilton, ON L8R 1J4

September 29, 2025

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Public Works, City of Hamilton
Email: John.Kukalis@hamilton.ca
Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

John Best
Southern Ontario Gateway Council
140 King Street East, Suite 14
Hamilton, ON L8N 1B2

September 29, 2025

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Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Angelo Adams
Zipcar
129 Spadina Avenue
Toronto, ON M5V 2L3

September 29, 2025

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Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

John Winkley
Southern Ontario Railway
241 Stuart St. W.
Hamilton, ON L8N 3P9

September 29, 2025

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Enclosure: Notice of Public Information Centre No. 2

City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

United Church of Canada
Zion Hill Cemetery c/o K A Forster  RR 2
Lynden, ON L0R 1T0

September 29, 2025

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Phone: 905-546-2424, ext. 6134

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City of Hamilton
Engineering Services Division, Public Works Department
100 King Street West, 3rd Floor, Hamilton, Ontario, L8P 1A2

Ministry of Agriculture, Food and Agribusiness
1 Stone Road West, 2nd Floor
Guelph, ON N1G 4Y2

September 29, 2025

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Phone: 905-546-2424, ext. 6134

Enclosure: Notice of Public Information Centre No. 2

BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

# Appendix D

# Costing

**HIGHWAY 52 AND POWERLINE ROAD INTERSECTION IMPROVEMENTS MCEA**
**30% SUBMISSION**

**CLASS D - CONSTRUCTION COST ESTIMATE**

| No. | Description | Unit | Quantity | Unit Price | Estimated Cost |
|---|---|---|---|---|---|
| **ROADWAY** | | | | | |
| 1 | Traffic Control | LS | 1 | $ 50,000.00 | $ 50,000.00 |
| 2 | Pedestrian Control | LS | - | $ 50,000.00 | $ - |
| 3 | Erosion and Sediment Control | LS | 1 | $ 25,000.00 | $ 25,000.00 |
| 4 | Contract Initiation | LS | 1 | $ 50,000.00 | $ 50,000.00 |
| 5 | Earth Excavation - Pavement Widening | m3 | 4,931 | $ 30.00 | $ 147,934.00 |
| 6 | Cleaning and Grubbing | LS | 1 | $ 15,000.00 | $ 15,000.00 |
| 7 | Tree Removals | LS | 1 | $ 15,000.00 | $ 15,000.00 |
| 8 | Removal of Asphalt | m3 | 773 | $ 38.00 | $ 29,370.00 |
| 9 | Removal of Curb & Gutter | m | 51 | $ 26.00 | $ 1,326.00 |
| 10 | Removal of Median | m2 | - | $ 40.00 | $ - |
| 11 | Removal of Concrete Sidewalk | m2 | - | $ 28.00 | $ - |
| 12 | Granular A | t | 2,650 | $ 43.00 | $ 113,950.00 |
| 13 | Granular B | t | 6,624 | $ 32.00 | $ 211,968.00 |
| 14 | Top Lift Asphalt | t | 1,196 | $ 226.00 | $ 270,296.00 |
| 15 | Bottom Lift Asphalt | t | 2,024 | $ 264.00 | $ 534,336.00 |
| 16 | Concrete Barrier with Gutter Curb | m | 618 | $ 125.00 | $ 77,250.00 |
| 17 | Concrete Barrier Curb | m | 60 | $ 126.00 | $ 7,560.00 |
| 18 | Multi-Use-Path | $m^2$ | 929 | $ 57.00 | $ 52,953.00 |
| 19 | Sod, Water Included | $m^2$ | 5,113 | $ 32.00 | $ 163,616.00 |
| 20 | Topsoil (150mm depth) | m3 | 767 | $ 133.00 | $ 102,005.00 |
| 21 | Median | $m^2$ | 601 | $ 88.00 | $ 52,888.00 |
| 22 | Concrete Sidewalk with Granular 'A' | $m^2$ | - | $ 88.00 | $ - |
| 23 | Concrete Truck Apron with Granular 'A' | $m^2$ | 300 | $ 88.00 | $ 26,400.00 |
| 24 | Concrete Pad with Granular 'A' | $m^2$ | - | $ 88.00 | $ - |
| 25 | Pavement marking and signage | LS | 1 | $ 30,000.00 | $ 30,000.00 |
| 26 | Retaining Wall (50m long) | LS | 1 | $ 135,000.00 | $ 135,000.00 |
| 27 | Excess Soil (assumes 50% off-site) | LS | 1 | $ 87,500.00 | $ 87,500.00 |
| | | | | **ROAD SUB-TOTAL** | **$ 2,199,352.00** |
| **STORM SEWER** | | | | | |
| 28 | Removal of catchbasin, incl. leads | ea | - | $ 510.00 | $ - |
| 29 | Installation of Catchbasins, incl. Standard Frame | ea | 8 | $ 4,000.00 | $ 32,000.00 |
| 30 | Installation of Leads | m | 80 | $ 410.00 | $ 32,800.00 |
| 31 | Culverts (750, 900, 2*1350mm), incl. trench/backfill | m | 146 | $ 1,416.00 | $ 206,736.00 |
| 32 | Subdrain | m | 618 | $ 50.00 | $ 30,900.00 |
| | | | | **STORM SUB-TOTAL** | **$ 302,436.00** |
| **UTILITIES** | | | | | |
| 33 | Removal of Culvert | m | 56 | $ 85.00 | $ 4,760.00 |
| 34 | Replace utility poles | ea | - | $ 20,000.00 | $ - |
| 35 | Replace concrete utility poles | ea | - | $ 17,000.00 | $ - |
| 36 | Relocate Hydrants | ea | - | $ 1,000.00 | $ - |
| 37 | Relocate other hydro, telecom, fibre and gas | LS | 1 | $ 10,000.00 | $ 10,000.00 |
| | | | | **UTILITIES SUB-TOTAL** | **$ 14,760.00** |
| **STREETLIGHTING, INTERSECTION CONTROL** | | | | | |
| 38 | Streetlighting | ea | 18 | $ 15,000.00 | $ 270,000.00 |
| 39 | Traffic Control Signals, per Intersection | ea | - | $ 150,000.00 | $ - |
| | | | | **STREETLIGHTING SUB-TOTAL** | **$ 270,000.00** |
| **LANDSCAPING** | | | | | |
| 40 | For Central Island | LS | 1 | $ 5,000.00 | $ 5,000.00 |
| 41 | For Roadway | LS | 1 | $ 20,000.00 | $ 20,000.00 |
| | | | | **LANDSCAPING SUB-TOTAL** | **$ 25,000.00** |
| | | | | | |
| | | | | **CONSTRUCTION TOTAL** | **$ 2,811,548.00** |
| | | | | Engineering and Architectural Services 15.0% | $ 421,800.00 |
| | | | | City Internal Costs 7.5% | $ 210,900.00 |
| | | | | **SUB-TOTAL** | **$ 3,444,248.00** |
| | | | | Contingency 30.0% | $ 1,033,300.00 |
| | | | | | |
| **TOTAL PRELIMINARY COST ESTIMATE (2028 Construction incl. Escalation)** | | | | | **$ 4,752,000.00** |

R.J. Burnside & Associates Limited