The Corporation of the City of Brampton

# Project File Report

## Intermodal Drive and Region of Peel Watermain Extension to Gorewood Drive

## Municipal Class Environmental Assessment

January 5, 2026

FINAL REPORT

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## Municipal Class Environmental Assessment

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# Acronyms and Abbreviations

| | |
|---|---|
| **AADT** | Annual Average Daily Traffic |
| **AAQC** | Ambient Air Quality Criteria |
| **ANSI** | Areas of Natural or Scientific Interest |
| **CCME** | Canadian Council of Ministers of the Environment |
| **CHER** | Cultural Heritage Evaluation Report |
| **COTTFN** | Chippewas of the Thames First Nation |
| **MCEA** | Municipal Class Environmental Assessment |
| **EMME** | Multi-Modal Equilibrium/Equilibre Multi-Modal |
| **PFR** | Project File Report |
| **LOS** | Level Of Service |
| **MBCA** | Migratory Birds Convention Act |
| **MCM** | Ministry of Citizenship and Multiculturalism |
| **MECP** | Ministry of the Environment, Conservation and Parks |
| **MTCGS** | Ministry of Tourism, Culture and Gaming and Ministry of Sport |
| **MMAH** | Ministry of Municipal Affairs and Housing |
| **MNRF** | Ministry of Natural Resources and Forestry |
| **MTO** | Ontario Ministry of Transportation |
| **MUP** | Multi-Use Path |
| **NSA** | Noise Sensitive Areas |
| **OHN** | Ontario Hydro Network |
| **OTM** | Ontario Traffic Manual |
| **PCE** | Passenger Car Equivalent |
| **PIC** | Public Information Centre |
| **PPS** | Provincial Policy Statement |

| | |
|---|---|
| **PSW** | Provincially Significant Wetlands |
| **ROW** | Right-of-Way |
| **SAR** | Species At Risk |
| **SGRA** | Significant Groundwater Recharge Area |
| **SWM** | Stormwater Management |

# Executive Summary

## Background

The City of Brampton initiated a Schedule 'B' Municipal Class Environmental Assessment (Class EA) for the Intermodal Drive and Region of Peel watermain extension to Gorewood Drive, in accordance with the planning process outlined in the Municipal Class Environmental Assessment (October 2000, amended in 2007, 2011, 2015 and 2023).

The Intermodal Drive extension aligns with key City of Brampton planning policy documents, including the Brampton Plan (2024) and Airport Intermodal Secondary Plan: Area 4 (2021). The latter document envisions the redevelopment of the adjacent Gorewood Drive residential estate lots with 'service commercial' uses and indicates that this road extension would facilitate the successful redevelopment of these properties.

Various technical studies were conducted to review background information, establish existing conditions and identify the feasibility of the alternative solutions/designs developed through this EA process. Studies undertaken included a Traffic Study Report, Utility Relocation Report, Stormwater Management and Drainage Report, Socio-Economic Environment Report, Cultural Heritage Report, Stage 1 Archaeological Assessment (AA), Phase 1 Environmental Site Assessment (ESA), Geotechnical Review and Pavement Assessment, as well as an Air Quality Impact Assessment. The recommendations of these studies were incorporated into the evaluation of alternative solutions/alignments.

This Project File Report summarizes the results and findings of the Municipal Class Environmental Assessment (Municipal Class EA) process that was conducted to select the technically preferred alternative for the Intermodal Drive extension to Gorewood Drive.

## Consultation Process

The consultation process was a key part of the study and was ongoing throughout the EA process. A number of potential engagement opportunities were available for various stakeholder groups that wished to participate, including the following:

- A Notice of Study Commencement (NOSC) was delivered to stakeholders, including Indigenous partners, property owners, business owners/property managers, technical advisory members, as well as any other members of the public that requested to be added to the mailing list. Those wishing to participate in the EA process were encouraged to reach out to the key contacts provided on the NOSC.
- A Technical Advisory Committee (TAC) was formed for this EA and consisted of individuals from the City of Brampton, Region of Peel, Toronto and Region Conservation

Authority (TRCA), Ontario Ministry of Transportation (MTO), as well as various utility companies including Bell, Alectra and Enbridge to allow for input from these key organizations at the conceptual-level planning and preliminary design stages of the project.

- A Stakeholder Group Meeting was held to discuss the preliminary preferred alignment option and gather feedback from impacted property owners, as well as business owners/property managers.
- Multiple rounds of comment packages were received and responded to from the most impacted property owners, in addition to a few formal meetings held with each of these interested parties.
- An online Public Information Centre (PIC) was held from January 15, 2025 to February 12, 2025 to solicit feedback on the functional-level design of the preferred alternative from the above noted stakeholder groups, technical agencies, as well as members of the general public. Comment responses were prepared and submitted to individuals who provided feedback during the PIC comment response period.

**Problem & Opportunity Statement**

Subsequent to a review of background and contextual information pertaining to this EA study, the following problem and opportunity statement was developed:

*There is a lack of connectivity for all modes of travel between Intermodal Drive and Steeles Avenue East. Furthermore, the existing road network does not support potential redevelopment per the City of Brampton's Airport Intermodal Secondary Plan. An extension of Intermodal Drive to connect to Gorewood Drive would improve traffic and active transportation access, connections, and would allow for continuous underground public utilities.*

**Alternative Solutions**

Alternative solutions developed for the proposed Intermodal Drive extension and include the following:

- Alternative 1: 'Do Nothing'
- Alternative 2: Localized Improvements (No Extension)
- Alternative 3: Active Transportation Link Only
- Alternative 4: Intermodal Drive extension to Gorewood Drive

Based on the comparative evaluation that was undertaken using criteria representing the broad definition of the environment as described in the EA Act, incorporating feedback from the public and agencies, and applying a five-tier scoring system, the preferred solution was identified to be **Alternative 4**.

### Alternative Alignments

From a longer list of eight alternative alignments, five alignments were carried forward from an initial screening exercise for a more detailed evaluation of alternatives through various technical studies undertaken through the MCEA process, as described previously.

Alternative alignments for the proposed Intermodal Drive extension investigated through this EA process included:

- Alternative 4A: Realign Intermodal Drive to a Tight 80-degree Turn (Elbow)
- Alternative 4B: Realign Intermodal Drive to a Tight Curved Alignment
- Alternative 4D: Extend Intermodal Drive to a T-intersection
- Alternative 4F: Extend Intermodal Drive to a Large Curved Alignment
- Alternative 4G: Extend Intermodal Drive to a Tight Curved Alignment

An evaluation of the five above-noted alternative alignments was undertaken utilizing the same sub-criteria and scoring methodology that was employed in the alternative solutions evaluation described in the preceding section.

Based on the outcome of this evaluation, and with consideration of feedback from stakeholders, the preferred alternative alignment was identified to be Alternative 4G, a hybrid of Alternatives 4B and 4D, which were previously identified as the top-performing alignments.

### Floodplain Mapping

In May 2025, the Toronto and Region Conservation Authority (TRCA) approved new floodplain mapping which significantly improved the developability of all alternative alignments in relation to the previous 2021 floodplain mapping. With the approval of the updated mapping, the impacts associated with this constraint have been reduced considerably and, as such, floodplain impacts are no longer considered a key driving factor of the alignment selection.

### Recommended Plan

Following the selection of **Alternative 4G**, refinements to the preferred alignment were undertaken to select appropriate active transportation facilities, land on a preferred typical cross-section and develop an overall Recommended Plan for this option. After the successful completion of the EA process, this functional-level design will be carried forward for further development as part of the detailed design process.

# 1 Introduction

The City of Brampton initiated a Municipal Class Environmental Assessment (MCEA) to evaluate the need for the extension of Intermodal Drive from its current eastern terminus to form a connection with Gorewood Drive.

The study has followed the Municipal Engineers Association (MEA) process for a Schedule 'B' project, in accordance with the approach and requirements set out in Ontario's Environmental Assessment Act. This report presents the methodology, findings and conclusions of the EA study.

## 1.1 Study Area

Within the EA Study Limits, Intermodal Drive currently exists as a four-lane, undivided collector road located in the City of Brampton which terminates approximately 160 metres west of Gorewood Drive, while Gorewood Drive serves as a two-lane local road with a rural cross-section and is mostly located within the TRCA floodplain limits.

For the purposes of conducting this EA, a broader Study Area was established and is generally bound by Intermodal Drive to the north, Gorewood Drive to the east, Steeles Avenue East to the south, as well as Goreway Drive to the west. This broader Study Area will allow for the development of a range of alternative solutions and afford a more fulsome understanding of the surrounding area for the purposes of this EA study. A more focused area, referred to as the EA Study Limits, was also identified for the potential development of alternative alignments and includes the northern Gorewood Drive estate properties.

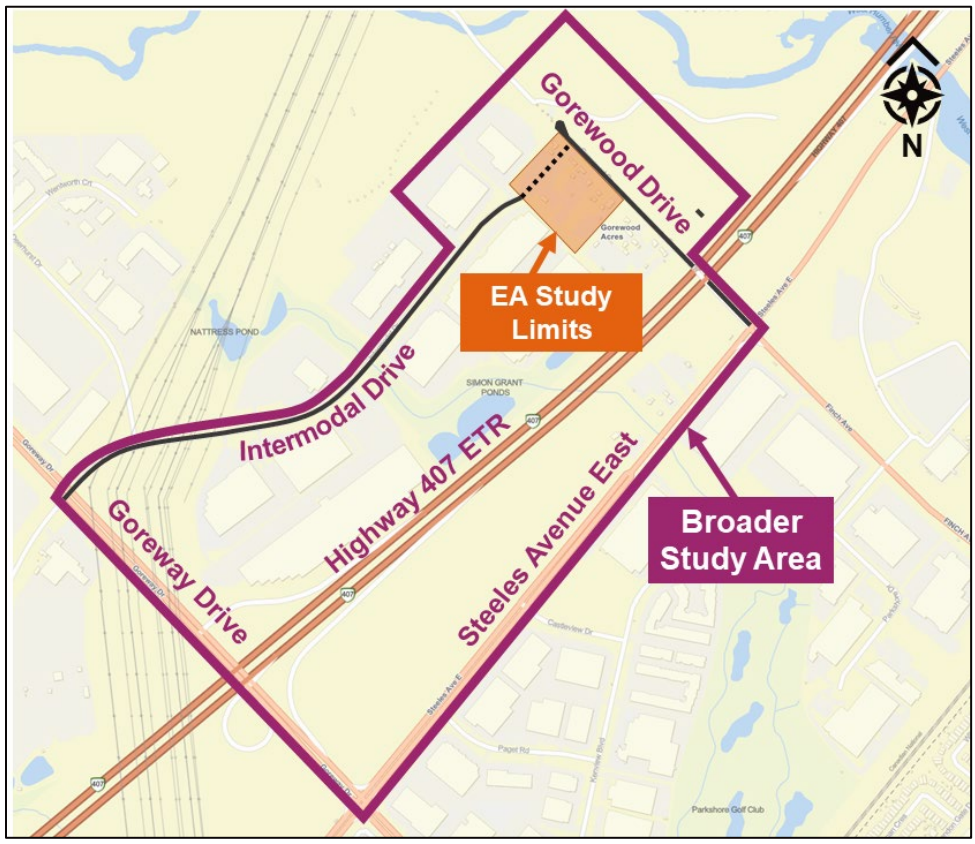
The broader Study Area and more focused EA Study Limits are outlined in **Figure 1-1** below.

## 1.2 Background

The extension of Intermodal Drive is identified in two key City planning policy documents, including the Brampton Plan (2024) and the Airport Intermodal Secondary Plan: Area 4 (2021).

Both documents identify the easterly extension of Intermodal Drive as a future east-west collector road, traversing the upper midblock of the existing Gorewood Drive residential estate properties and connecting to Gorewood Drive.

*Figure 1-1: Study Area Map*




### 1.2.1 Development Applications

Prior to the commencement of this EA process, the City of Brampton had no formal Site Plan Control (SPC) applications submitted within the EA Study Limits; however, the following notable development applications have either been initiated or were approved in recent years within the Gorewood Drive estate properties:

- A phased conceptual development plan (PRE-2019-0040) was initiated in 2019 for the northern Gorewood Drive estate properties but remained incomplete as it lacked required documents, technical reports and environmental studies. No formal SPC application was filed with the City before the EA process commenced.
- Approval was granted for Application PRE-2020-0096 to support a temporary driveway access at 8188 Gorewood Drive via Intermodal Drive, while the existing driveway access from Gorewood Drive was restricted with a wooden swing gate, in recognition of the existing truck prohibitions on this north-south street.
- A temporary driveway access was permitted under a Minor Variance (A-2020-0038) to allow for an outdoor storage area for a period of up to three years. The owner and the

City had entered into a Consent to Enter Agreement, which provides permission to cross the 0.3m reserve for the purpose of accessing the temporary driveway at 8188 Gorewood Drive from Intermodal Drive.

## 1.3 Study Objectives

This Municipal Class EA was initiated in response to the need for connectivity and access to the future 'service commercial' uses on Gorewood Drive, as envisioned in the Airport Intermodal Secondary Plan: Area 4. The purpose of this study was to identify the technically preferred solution and design for the Intermodal Drive and watermain extension to Gorewood Drive. The EA process provided opportunities to investigate a range of mitigation strategies to address traffic and active transportation connectivity needs, develop alternative road designs, as well as the impacts of such improvements on social, cultural and natural environment, while considering the cost implications of potential improvements.

# 2 Municipal Class Environmental Assessment Process

## 2.1 Municipal Class Environmental Assessment Process

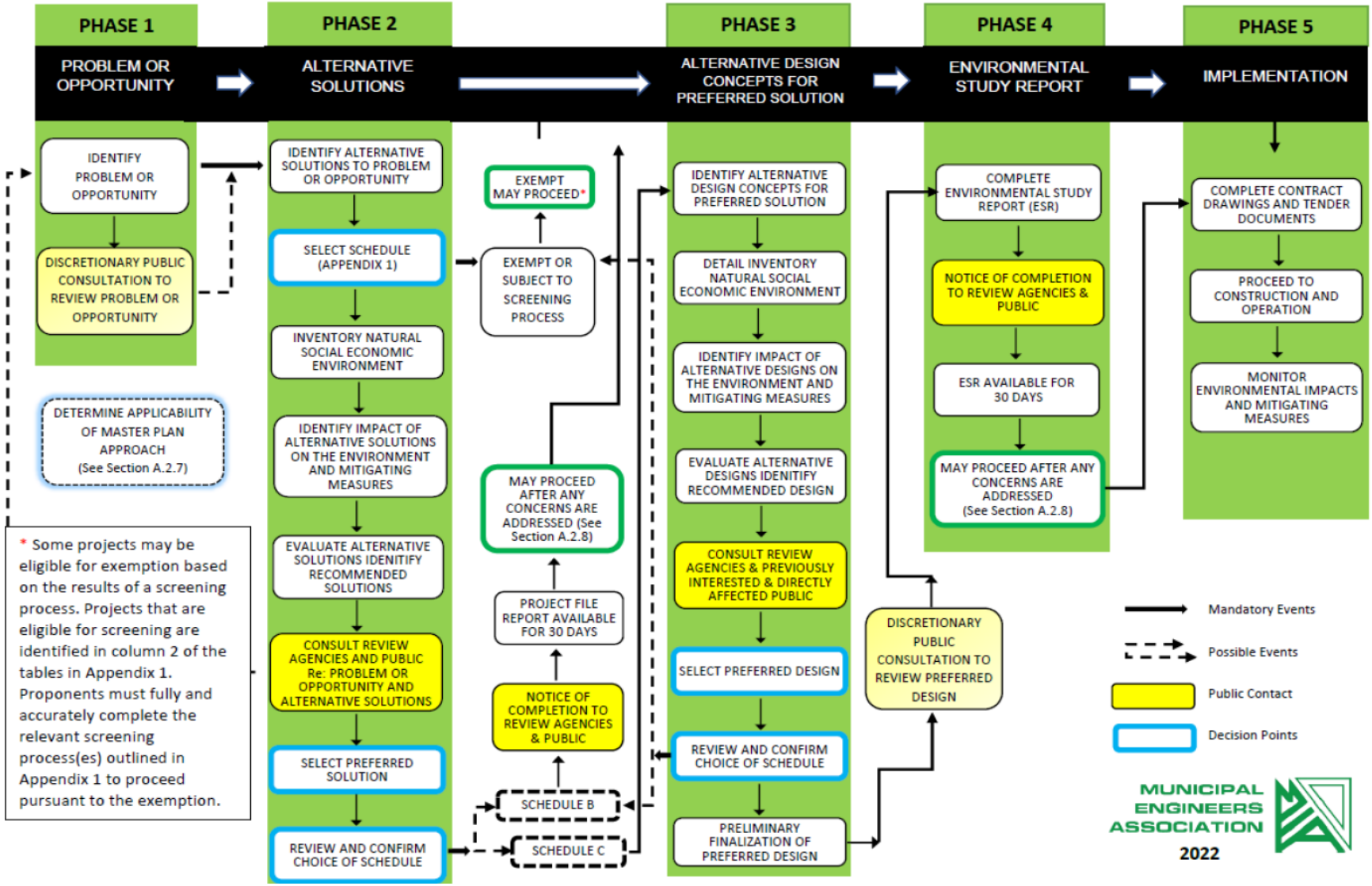
This study was conducted in accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'B', which is an approved process under the *Environmental Assessment Act*. The Class EA consists of the following phases:

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

This project is classified as a Schedule 'B' Municipal Class EA (Class EA) Project and is subject to Phases 1 through 4 of Municipal Class EA, while Phase 5 is the post-EA or implementation phase.

**Figure 2-1** below indicates the five phases generally included in the Municipal Class EA Process and the sub-tasks to be carried out in each phase.

*Figure 2-1: Municipal Class EA Process*



### 2.1.1 Section 16 Order Requests

Any persons with concerns related to any aspect of this study can express concerns in writing to the Project Manager at the City of Brampton within the 30-calendar day public review period following the Notice of Study Completion. All comments and concerns should be sent directly to Project Manager at the City of Brampton. A request can only be made on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Any requests that are not made on these grounds will not be considered by the Minister of the Environment, Conservation and Parks. If a Section 16 Order Request is received by the Minister, the proponent shall not proceed with their project until a decision is made by the Minister on the request, or the ministry notifies the proponent that they may proceed. The Minister's (or delegate's) decision may include a request for information, consultation, monitoring, or requiring an individual/ comprehensive Environmental Assessment, or that further studies be completed.

The request for a Section 16 Order must also be submitted to the study team at the same time it is submitted to the Minister. Written requests for a Section 16 Order must be submitted to the Ministry of Environment, Conservation and Parks (MECP) after the Notice of Completion is issued and within the 30-calendar day review period. Requests after the 30-calendar day review period will not be considered.

The request should be sent in writing or by email to both individuals listed below:

**Hon. Todd McCarthy**
Minister of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
Minister.mecp@ontario.ca

**Kathleen O'Neill**
Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor Toronto ON, M4V 1P5
EABDirector@ontario.ca

## 2.2 Study Organization and Project Team

The Class Environmental Assessment Study was carried out by a consulting team led by Arcadis on behalf of the City of Brampton. The core study team members are listed below, along with broader consulting disciplines which make up for overall project team:

Key City of Brampton Staff:

- Diana Glean – City Project Manager, Public Works
- Bishnu Parajuli – Manager, Public Works

- Ramandeep Singh – Design Technologist

Key Consulting Team:

- Richard Morales – Consultant Project Manager (Arcadis)
- Scott Johnston – Consultant Project Director (Arcadis)
- Ben Pascolo-Neveu – Consultant Deputy Project Manager – EA (Arcadis)

Broader Consulting Disciplines:

- Arcadis – Lead Consultant for Transportation Design, Traffic, Socio-Economics, Stormwater Management, Utilities, Environmental Site Assessment, Geotechnical, Subsurface Utility Investigation, Natural Heritage, Streetlighting, Landscaping
- ASI – Sub-consultant for Cultural Heritage and Archaeological Assessment

## 2.3 Study Schedule

This MCEA study was initiated in January 2024. Key dates throughout the study are shown in **Figure 2-2** below.

*Figure 2-2: Key Dates throughout EA study*

| EA Stage | Date |
|---|---|
| Notice of Study Commencement | January 30, 2024 |
| Technical Advisory Committee (TAC) Meeting – Part 1 | June 27, 2024 |
| TAC Meeting – Part 2 (Utilities) | June 27, 2024 |
| Stakeholder Group Meeting | August 22, 2024 |
| Online Public Information Centre (PIC) | January 15, 2025 to February 12, 2025 |
| Notice of Study Completion | January 7, 2026 |

# 3 Consultation Process

Public input is critical to the success of an EA project and the City of Brampton has provided opportunities for such input at key points in the study process in accordance with the Municipal Class Environmental Assessment (October 2000, amended in 2007, 2011, 2015 & 2023). The purpose of this section is to document the key consultation events pertaining to various

consultation groups, including technical agencies, stakeholders, Indigenous communities, as well as the general public.

## 3.1 Notice of Study Commencement

Study notices were prepared and distributed at key points in the EA process, including a Notice of Study Commencement, Notice of Public Information Centre, as well as a Notice of Study Completion.

This EA study was formally introduced to the public and agencies via a Notice of Study Commencement (NOSC). This notice was distributed to those on the study mailing list via mail or email on January 30, 2024, published on the City's website and advertised in the Brampton Guardian newspaper. All public notices issued for this EA are located in **Appendix A**.

## 3.2 Communication Plan

A Communication Plan was developed at the onset of the study to guide all aspects of communication/consultation throughout the EA process, including issuance of study notices, as well as consultation with various key parties such as Indigenous communities, technical agencies, stakeholders, as well as the general public. This plan also emphasized the importance of regular internal progress client progress meetings and general communication protocols.

The Communication Plan developed for this EA study is included in **Appendix B**.

## 3.3 MECP Acknowledgement Letter

Following the submission of the Streamlined EA Project Information Form to the Ministry of the Environment, Conservation and Parks (MECP) at the beginning of the study, an Acknowledgement of Notice of Commencement letter was received via email on February 1, 2024 and is provided in **Appendix C**.

This acknowledgement letter provides background information regarding potentially impacted Indigenous communities that must be consulted throughout the EA process and references a variety of supporting policy documents/guidelines that were considered in conducting the supporting technical studies.

## 3.4 Consultation with Technical Agencies

Various government agencies, authorities, utility companies, and stakeholders were involved throughout this EA process. A complete list of stakeholders who were contacted is provided in **Appendix D**.

A Technical Advisory Committee (TAC) was formed for this EA and consisted of individuals from the City of Brampton, Region of Peel, Toronto and Region Conservation Authority (TRCA), Ontario Ministry of Transportation (MTO), as well as various utility companies including Bell, Alectra and Enbridge.

## 3.5 Consultation with Stakeholders

Directly impacted property owners, businesses and property managers within and adjacent to the EA Study Limits received direct mailings of all notices, including an invite to the Stakeholder Group Meeting. This stakeholder meeting was held on August 22, 2024 to review the preliminary preferred alignment and functional design. Individuals were requested to provide written comments on these materials. Following this meeting, comment packages were received from attendees and responses were prepared.

Over the course of the EA, multiple rounds of comment packages were received and responded to from the most impacted property owners, in addition to a few formal meetings held with each of these interested parties.

Copies of stakeholder comments received following the Stakeholder Meeting and minutes for any specific meetings with adjacent property owners prepared by the project team are included in **Appendix E**.

## 3.6 Consultation with Indigenous Communities

Various Indigenous Communities were notified of the study, in order to identify any potential issues or concerns regarding possible impacts to Aboriginal and Treaty Rights, or any other interests or questions that the community may have with regards to this study. The following Indigenous Communities were notified of this EA study via email, in accordance with the Acknowledgement of Study Notification issued on February 1, 2024 by MECP:

- Mississaugas of the Credit First Nation
- Curve Lake First Nation
- Mississaugas of Scugog Island First Nation
- Alderville First Nation
- Hiawatha First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation
- Beausoleil First Nation
- Huron-Wendat

In response to the circulation of the Notice of Study Commencement via email, representatives from the Six Nations of the Grand River, Hiawatha First Nation and the Chippewas of the Rama First Nation replied, with the latter responding that this EA Study Limits are outside of their treaty and harvesting areas and, as such, they do not have any concerns with respect to this project.

Six Nations of the Grand River expressed interest in being engaged in the EA process and requested additional information regarding the Natural Environment Report via email on October 28, 2024, with questions pertaining to natural habitat and breeding surveys conducted, mitigation measures to support bat habitation, as well as tree replacement policies. As requested, an updated copy of the Natural Environment Report was shared with Six Nations as part of the circulation of the draft Project File Report on April 22, 2025. It should be noted that Six Nations of the Grand River was not included on the Acknowledgement of Study Notification issued by MECP, but the Project File Report materials were circulated to this Indigenous group voluntarily by the project team, given their involvement with other projects within the City of Brampton.

No additional correspondence has been received from any of the other Indigenous communities.

The complete list of Indigenous communities engaged in this EA process, along with copies of key email correspondence, are provided in **Appendix F**.

## 3.7 Public Information Centre

One online Public Information Centre (PIC) was held during the EA study period from January 15 to February 12, 2025. The City invited members of the general public to learn about the study by reviewing the information presented online, and provide feedback by completing an online comment form or by physical mail. A pre-recorded audio-video presentation approximately 15 minutes in length was also available via YouTube to guide participants through the PIC slide-deck.

A total of 15 individuals/groups submitted comments or comment packages during the online PIC posting period, including 2 comment packages from directly impacted property owners, 12 from members of the general public and 1 from a technical agency (TRCA).

The virtual presentation for the PIC, as well as comments received and corresponding responses prepared by the project team are included PIC Comment Record provided in **Appendix G**.

### 3.7.1 Notice of Public Information Centre

Similar to the Notice of Study Commencement, a Notice of Public Information Centre (PIC) was distributed to all individuals who were either a member of a technical agency engaged on this project, an Indigenous community identified by MECP, a directly impacted or adjacent property

owner, a business owner/tenant/property manager, or a member of the general public who had otherwise requested to be added to the project mailing list.

The Notice of PIC was distributed via email or mail to all individuals on the project mailing list, with the exception of tenant/business owner notices which were physically dropped off.

A copy of the Notice of PIC is provided in **Appendix A**.

## 3.8 Project Website

In addition to the formal consultation described above, contact information of the Project Manager, including email, telephone and mailing address were available to the public on the City's Project web-page and was included on all public notices distributed throughout the study. The webpage provided an ongoing opportunity for members of the public to provide their input to the project team at any time during the EA process.

## 3.9 Notice of Study Completion

In accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'B', a Notice of Study Completion was prepared and distributed, similar to the other study notices described previously. The purpose of the Notice of Study Completion was to announce the Municipal Class EA Study completion and start of the 30-day public review period for the Project File Report (PFR).

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

Following the close of the 30-day public review period, the MECP has an additional 30 days to consider the project and review any potential Section 16 Order requests submitted during the 30-day public review period. The City may not proceed with the project for at least these 30 days following the end of the public review period.

Following this 30-day MECP review period, the project may proceed to detailed design and construction, provided the ministry is not reviewing Section 16 Order requests related to the project, and subject to any other permits and approvals that may be required.

# 4 Planning Policy & Context

Provincial, Regional and Municipal planning policy documents were reviewed and documented, with regards to the Intermodal Drive and watermain extension to Gorewood Drive Municipal Class EA and are highlighted in the following sub-sections.

### 4.1.1 2024 Provincial Planning Statement

The Provincial Planning Statement, 2024 (PPS, Ministry of Municipal Affairs and Housing (MMAH) sets the policy direction for regulating development and land use planning in the province. The PPS also calls for the promotion of economic development and competitiveness by facilitating the conditions for economic investment. The overarching provincial policy document highlights the importance of the connectivity of multi-modal transportation systems, integration of transportation and land use planning, and efficient use of existing infrastructure. This should be done to support efficient, cost-effective, and reliable transportation choices, and should appropriately address projected needs to support the movement of goods and people.

### 4.1.2 Brampton Plan (2024)

The recently adopted City-wide Official Plan (referred to as the 'Brampton Plan') evolved from the results of a pivotal visioning exercise published in 2018 entitled the 'Brampton Vision 2040: Living the Mosaic'. The Brampton Plan guides the City's planning and development to the year 2051.

Within Brampton Plan, the EA Study Limits are generally classified as an 'Employment' area which is bound by a Natural Heritage System to the north and east, encompassing the Claireville Conservation Area.

The following specific references to the Intermodal Drive extension were observed through a review of this document:

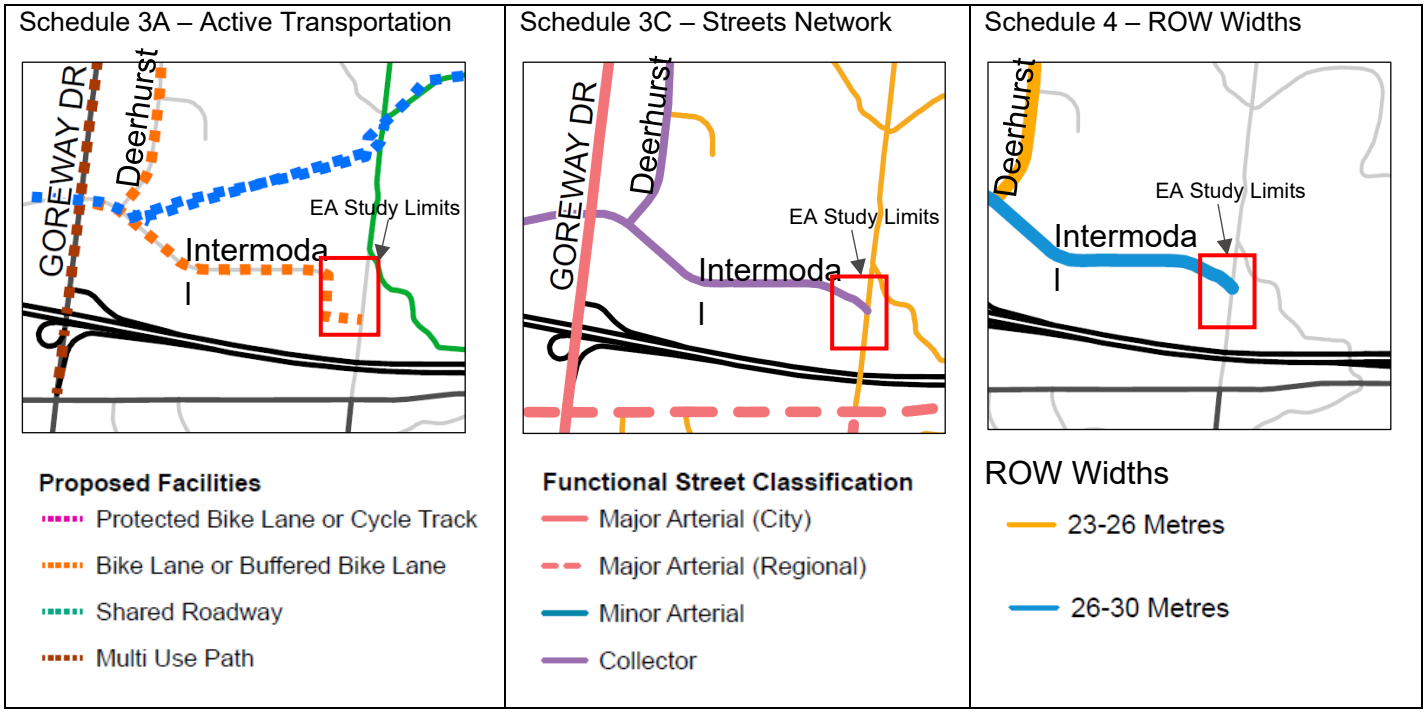
- The Brampton Plan identifies the extension of Intermodal Drive to Gorewood Drive in Schedule 3C – Streets Network. The alignment appears to be curved; however, this plan is intentionally conceptual and does not include any property fabric for reference.
- Schedule 4 indicates a right-of-way range of 26 to 30 metres is appropriate for Intermodal Drive, given its classification, context and overall function within the City's transportation network. This range is consistent with the existing section of Intermodal Drive west of the EA Study Limits which has a 30m ROW.
- Schedule 3A identifies a potential active transportation link in the form of bike lanes or buffered bike lanes along Intermodal Drive east of Goreway Drive and through the existing

private access at 835 & 845 Intermodal Drive; however, it is understood that this link is highly conceptual and subject to further review to determine appropriate active transportation facilities. It is assumed that any extension of Intermodal Drive would also be required to accommodate active users within a consolidated ROW to maximize development potential of adjacent lands and conform to the City's complete streets policies.

- Schedule 3A also identifies the expansion of the Claireville Conservation Area trail network with a connection near the Deerhurst Drive & Intermodal Drive intersection. Both of these transportation linkages aim to achieve the City's objectives of creating a more compact, walkable City which can also serve the municipality's significant industrial and goods movement needs.

Relevant extracts from Schedules 3A, 3C and 4 of the Brampton Plan (2024) are provided in **Figure 4-1** below.

*Figure 4-1: Relevant Images from Brampton Plan (2024) Schedules*



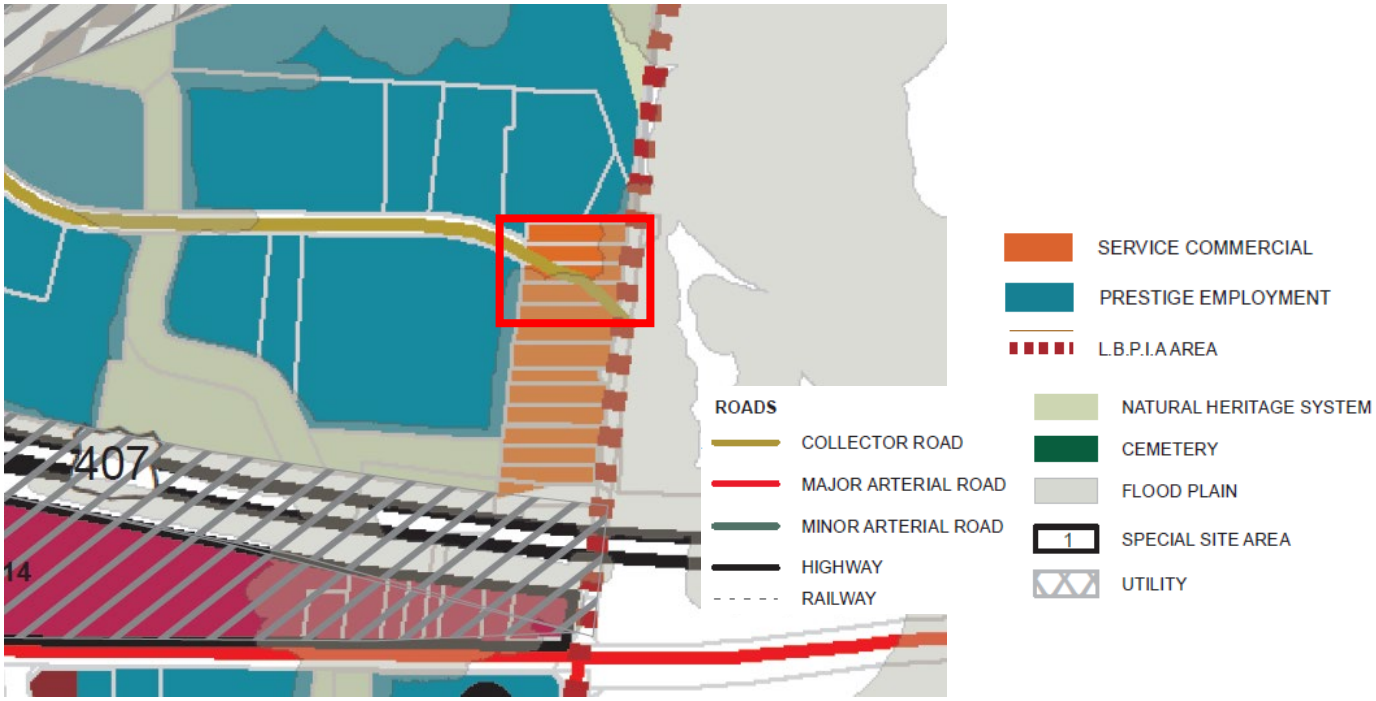

### 4.1.3 Airport Intermodal Secondary Plan (Area 4)

The EA Study Limits fall within the Airport Intermodal Secondary Plan (Area 4) policy area, a supporting document to the Brampton Plan which was passed by City Council in December 2021

and provides strategic direction to guide the long-term development within this significant industrial area in the City of Brampton.

The Secondary Plan Schedule identifies the Intermodal Drive extension to Gorewood Drive within the upper block of the Gorewood Drive estate properties, as shown in **Figure 4-2** below. Although this link is purely illustrative, it provides an indication that the extension of Intermodal Drive to Gorewood Drive would be beneficial to support the long-term economic viability but that its property impacts should be limited.

*Figure 4-2: Intermodal Dr. Ext. Conceptual Alignment*




*Source: Airport Intermodal Secondary Plan (Area 4) Schedule*

## 4.2 Brampton Complete Streets Guide (2023)

The City of Brampton is in the later stages of establishing guidelines to support the development of new streets or the retrofit of existing streets to allocate more space for sustainable modes. The existing Intermodal Drive cross-section west of the EA Study Limits includes just a 1.5-metre sidewalk on the north side and no dedicated cycling facilities along the corridor, therefore this configuration does not align with the complete street vision in its current form.

This policy document also discusses the importance of a context-sensitive approach in which the design speed is equal to the posted speed. To that end, Employment Collector Streets such as Intermodal Drive should be designed to accommodate a reduction in design and posted speeds of 40km/h to support the City of Brampton and Region of Peel's shift towards achieving Vision Zero. The Brampton Complete

Streets Guide provides direction on potential cross-section elements and facility widths to demonstrate the level of transformation that would need to occur for streets of varying contexts to be considered 'complete' such as providing dedicated space for active users on both sides. In an industrial context, overall active usage is typically low enough that a multi-use path can operate without significant mobility restrictions for users.

It is noteworthy that future iterations of the Brampton Complete Streets Guide are also expected to include a framework to support the development of locally-specific Multi-Modal Level of Service (MMLOS) criteria to highlight and evaluate deficiencies, as well as address gaps in the transportation network in a consistent manner.

# 5 Problem and Opportunity Statement

As per Phase 1 requirements of the Municipal Class Environmental Assessment process for a Schedule 'B' project, a 'Problem and Opportunity Statement' was prepared to identify in detail the various problems and opportunities to be addressed by the study. The Problem Statement outlines the need and justification for the overall project and establishes the general parameters, or scope, of the study.

This statement was developed, following a review of background information, including existing conditions information and relevant policy documents and is outlined below:

*There is presently a lack of connectivity for people, goods and services between Intermodal Drive and Gorewood Drive. The goal of this MCEA is to investigate the closure of this gap and the extension of the Region of Peel watermain. By addressing these key issues, the project is anticipated to result in a number of benefits such as:*

- *Enhancing connectivity for pedestrians and cyclists;*
- *Improving goods movement circulation and efficiency;*
- *Optimizing routes for City transit and maintenance vehicles;*
- *Reducing emergency response times;*
- *Unlocking development potential for the Gorewood Drive estate properties; and*
- *Improving performance of underground infrastructure, by closing a longstanding gap in the watermain network.*

# 6 Transportation Needs Assessment

In support of the Class EA, a Traffic Study Report was undertaken to analyse the existing and future needs with and without the Intermodal Drive extension, from an operational and safety perspective.

The Traffic Study Report is provided in **Appendix H**.

## 6.1 Active Transportation Facilities

There are currently no dedicated cycling facilities within the study area, however, providing for active connections is a priority for the City. In terms of pedestrian facilities, the existing segment of Intermodal Drive immediately west of the EA Study Limits has a 1.5-metre concrete sidewalk on the north side, while Gorewood Drive consists of a rural cross-section with no dedicated active transportation facilities.

As discussed previously, Schedule 3A of the Brampton Plan identifies a potential bike lane or buffered bike lane on Intermodal Drive connecting to Gorewood Drive along an existing privately-owned road connection. The potential extension of Intermodal Drive and connection to Gorewood Drive would provide opportunities for a more direct pedestrian and cycling connections to the Claireville Conservation Area.

## 6.2 Public Transit

There are currently six public transit routes serving the broader study area. Five of these are provided by Brampton Transit, including Route 5, Route 11/11A, Route 29A, Route 511/511A, Route 511C. An additional route is provided by GO Transit - Route 38. Providing a connection between Intermodal Drive and Gorewood Drive could potentially accommodate the extension of an existing bus route or service an entirely new route within the study area.

## 6.3 Transportation Analysis

As part of the Traffic Study Report, a capacity analysis exercise was undertaken with the four (4) study area intersections listed below:

- Steeles Avenue East & Goreway Drive (signalized);
- Steeles Avenue East & Finch Avenue/Gorewood Drive (signalized);
- Goreway Drive & Intermodal Drive (signalized); and
- Intermodal Drive & Deerhurst Drive (unsignalized).

The traffic analysis was limited to weekday morning and afternoon peak hours to coincide with the peak travel times on the adjacent street network and analysis years were selected as 2031, 2041 and 2051 to align with the Brampton Plan ultimate planning horizon year.

### 6.3.1 Background Traffic Diversion

The extension of Intermodal Drive to Gorewood Drive will provide an alternate route for traffic heading from the Goreway & Intermodal intersection to the Steeles & Finch/Gorewood intersection and vice versa.

Based on a review of the EMME model projections with and without the Intermodal Drive extension, it is anticipated that approximately 5% of traffic during each weekday peak hour will be diverted from Goreway Drive and Steeles Avenue East to Intermodal Drive.

The extension of Intermodal Drive will also provide a more efficient route for traffic to travel between destinations on Intermodal Drive and the Steeles & Finch/Gorewood intersection, and for traffic to travel between destinations on Gorewood Drive and the Goreway & Intermodal intersection. This has been accounted for in the 'With Extension' traffic volume projections and is considered in addition to the diversion of traffic from Steeles Avenue East and Goreway Drive.

### 6.3.2 Number of Vehicle Lanes

The Average Annual Daily Traffic (AADT) volume projections within the vicinity of the potential Intermodal Drive extension and connection to Gorewood Drive are projected to be in the order of 3,950 and 4,200 vehicles in 2051 which supports the use of a two-lane cross-section, rather than the four-lane cross-section which exists on Intermodal Drive west of the EA Study Limits.

For the purposes of evaluating the most constrained scenario, a stop-controlled intersection with no auxiliary lanes was also modelled at the proposed connection of Intermodal Drive and Gorewood Drive and was determined to operate at a high Level of Service (LOS 'A') under Future (2051) Total Traffic conditions with a two-lane cross-section.

As such, both the Average Annual Daily Traffic (AADT) volumes and transportation analysis conducted for the Traffic Study Report are supportive of a two-lane cross-section for the potential Intermodal Drive extension to Gorewood Drive.

### 6.3.3 Intersection Capacity Analysis

Based on the 2051 total traffic volume projections developed for this study, the results of the intersection capacity analysis with and without the Intermodal Drive extension to Gorewood Drive were determined and are provided in **Figure 6-1** below.

*Figure 6-1: 2051 Total Traffic Results (with & without Intermodal Drive Extension)*

| Study Area Intersection (Intersection Control) | Critical Movement (LOS 'F') | Intersection LOS AM (PM) | Critical Movement (LOS 'F') | Intersection LOS AM (PM) |
|---|---|---|---|---|
| | Without Intermodal Dr. Extension | | With Intermodal Dr. Extension | |
| Steeles & Goreway (Signalized) | AM – NBL<br>PM – EBL, NBT, SBL | D (E) | AM – NBL<br>PM – EBL, SBL | D (D) |
| Steeles & Finch/Gorewood (Signalized) | - | C (C) | AM – SBTRL<br>PM - SBTRL | D (C) |
| Goreway & Intermodal [1] (Signalized) | AM – EBL, WBL<br>PM - WBL | C (B) | AM – WBL<br>PM – EBL | C (C) |
| Intermodal & Deerhurst (Unsignalized) | - | A (A) | - | A (A) |

Notes: [1] Assumes 'protected-permitted' southbound left-turn phasing with the Intermodal Dr. extension in place

Based on the capacity analysis results presented in **Figure 6-1** above, the Intermodal Drive extension has a positive impact on the performance of the critical Steeles Avenue East & Goreway Drive intersection, improving the overall Level of Service (LOS) during the more constrained weekday afternoon peak hour at this intersection from 'E' to 'D'.

The Steeles & Finch/Gorewood intersection is expected to operate at an acceptable Level of Service overall, however, the southbound approach will experience high delays. These delays are primarily a result of the 160s cycle length which forces sidestreet traffic to wait a long time for their signal to change to green.

All other study area intersections operate well overall with some constrained movements.

### 6.3.4 Transportation Recommendations & Mitigation

Based on the intersection capacity analysis presented above, the following mitigation strategies are required to support the Intermodal Drive extension:

- Introduce southbound left-turn 'protected-permitted' phasing at the Goreway Drive & Intermodal Drive intersection, in recognition of the moderate increase in the attractiveness of Intermodal Drive as a new continuously-connected route.

- Formalize the southbound through-right and a southbound left-turn auxiliary lane at the Gorewood Drive & Steeles Avenue East intersection. Downstream impacts indicate that this modification would be beneficial to facilitate proper arrangement of vehicular traffic on this approach, as well as ensuring safe and predictable interactions with active road users.

Based on the results of the transportation modelling analysis conducted as part of the Traffic Study Report and with consideration of opportunities for improved mobility of active and transit modes, the Intermodal Drive extension to Gorewood Drive is supported from a transportation perspective, with the above noted mitigation strategies in place.

# 7 Evaluation Criteria and Scoring

This section presents the evaluation criteria and scoring system that were developed to assess alternative solutions and alignments as part of this EA process.

## 7.1 Evaluation Criteria

A number of evaluation criteria were included in consultation with City technical staff to provide a fulsome assessment and considered a range of sub-criteria organized within several main themes, including transportation, environmental and social impacts, natural/physical environment, as well as cost.

**Transportation & Traffic Analysis**

- Connectivity for Active Transportation
- Traffic Operations
- Goods Movement Efficiency

**Environmental & Social Impacts**

- Development Potential
- Impact to Development Land
- Property Impacts/ Constraints
- Utility Impacts
- Watermain Alignment
- Alignment with Planning Policy Documents

**Natural/ Physical Environment**

- Significant Natural Areas & Resource Disruption
- Potential Impacts to Species at Risk (SAR)
- Environmental Contamination

- Archaeological Potential

**Cost**

- Construction & Long-Term Maintenance Costs
- Property Costs
- Construction Impacts

## 7.2 Evaluation Scoring System

As discussed with City staff, the following scoring system was developed for the purposes of evaluating alternative solutions/alignments for this EA:

- ● Positive impact / Best addresses factor (+2 points)
- ◕ Slight positive impact / Addresses factor (+1 point)
- ◑ Neutral impact / Moderately addresses factor (0 points)
- ◔ Slight negative impact / Does not adequately address factor (-1 point)
- ○ Negative impact / Does not address factor (-2 points)

# 8 Alternative Solutions

During Phase 2 of the Municipal Class EA process, various solutions to address the problem statement were identified and described, including the 'Do Nothing' approach. An assessment of the technical, natural, socio-economic, cultural and cost impacts were determined for each alternative. The evaluation results of the preferred solution were then presented to the public and stakeholders to solicit input.

## 8.1 Alternative Solutions

The alternative solutions considered to address the problem identified with respect to the evaluation criteria are documented in this section below.

### 8.1.1 Alternative 1: 'Do Nothing'

Alternative 1 would maintain status quo within the study area and assumes no new transportation network modifications. The 'Do Nothing' Alternative is required to be considered as part of the EA planning & design process for comparison purposes.

Alternative 1 does not align with the key City planning policy documents, allow for the efficient circulation for goods movement, nor does it resolve existing active transportation barriers that are present between the existing industrial/logistics uses along Intermodal Drive, the Claireville

Conservation Area (CCA) to the north/east and the future service commercial uses envisioned within the Gorewood Drive estate properties.

This option is also not compatible with the Region of Peel's desire to close the loop in the watermain network which currently exists between Intermodal Drive and Gorewood Drive and was identified as one of the primary objectives of this EA study.

### 8.1.2 Alternative 2: Localized Improvements (No Extension)

Alternative 2 proposes isolated geometric and signal phasing modifications at the key study area intersections to alleviate bottleneck conditions experienced along Goreway Drive, including the implementation of a dual eastbound left-turn and overlapping signal phasing with the westbound right-turning movements at Goreway Drive & Steeles Avenue East.

Similar to Alternative 1, this alternative does not align with the key City planning policy documents of establishing a multi-modal connection between Intermodal Drive and Gorewood Drive, allow for the efficient circulation for goods movement or City maintenance vehicles, nor does it resolve existing active transportation barriers that exist between the existing industrial/ logistics uses along Intermodal Drive, the TRCA lands to the north and the Gorewood Drive estate properties. This option is also not compatible with the Region of Peel's desire to close the loop in the watermain network which currently exists between Intermodal Drive and Gorewood Drive.

### 8.1.3 Alternative 3: Active Transportation Link Only

In Alternative 3, the road network and intersections would remain as per existing conditions, with no extensions or widenings; however, the implementation of a formalized pedestrian and cycling connection would be implemented.

This alternative is an improvement over Alternatives 1 and 2 in terms of achieving more cohesive pedestrian and cycling linkages; however, it does not resolve existing issues with respect to efficient circulation for goods movement or accommodate redundancy in the transportation network in case of an emergency during bottleneck traffic conditions.

### 8.1.4 Alternative 4: Intermodal Drive extension to Gorewood Drive

Alternative 4 would extend Intermodal Drive from its existing eastern terminus to form a connection with Gorewood Drive, located approximately 160 metres to the east.

This alternative aligns with planning policy documents, allows for achievement of enhanced transportation connectivity, improved traffic operations, watermain looping and opportunities for more efficient goods movement.

## 8.2 Evaluation of Alternative Solutions

**Figure 8-1** below summarizes the evaluation of alternative solutions for addressing the EA Problem Statement, based on the criteria presented in **Section 7.1**.

*Figure 8-1: Summary of Evaluation of Alternative Solutions*

| CRITERIA | RELEVANT SUBCRITERIA | ALTERNATIVE SOLUTIONS | | | |
|---|---|---|---|---|---|
| | | ALTERNATIVE 1 – 'DO NOTHING' | ALTERNATIVE 2 – ISOLATED TRANSPORTATION NETWORK IMPROVEMENTS (NO EXTENSION) | ALTERNATIVE 3 – ACTIVE TRANSPORTATION LINK ONLY | ALTERNATIVE 4 – ROAD EXTENSION |
| TRANSPORTATION & TRAFFIC ANALYSIS | CONNECTIVITY FOR ACTIVE TRANSPORTATION | ○ | ○ | ● | ● |
| | | • Does not provide an active transportation connection between TRCA and Intermodal Dr | • Does not provide an active transportation connection between TRCA and Intermodal Dr | • Provides opportunities to achieve a more cohesive environment for active users. | • Provides opportunities to achieve a more cohesive environment for active users. |
| | TRAFFIC OPERATIONS | ○ | ◔ | ○ | ● |
| | | • Does not provide a continuous vehicular connection between Gorewood Dr and Intermodal Dr or redundancy in case of an emergency. | • Slight improvements to traffic operations at Goreway Dr & Steeles Ave E but does not address vehicular connectivity issues between Gorewood Dr & Intermodal Dr | • Does not provide a continuous vehicular connection between Gorewood Dr and Intermodal Dr or redundancy in case of an emergency. | • Closes gap in the transportation network between Intermodal Dr and Gorewood Dr to facilitate improved traffic operations and redundancy in case of an emergency. |
| | GOODS MOVEMENT EFFICIENCY | ○ | ○ | ○ | ● |
| | | • Does not resolve inefficient access to the eastern portion of Intermodal Dr | • Does not resolve inefficient access to the eastern portion of Intermodal Dr | • Does not resolve inefficient access to the eastern portion of Intermodal Dr | • Opportunities for improved access to eastern portion of Intermodal Dr to facilitate goods movement operations. |
| ENVIORNMENTAL & SOCIAL IMPACTS | DEVELOPMENT POTENTIAL | ◔ | ◔ | ◔ | ◕ |
| | | • Existing Gorewood Dr frontage provides less flexibility to facilitate redevelopment in comparison with Alt. 4. | • Existing Gorewood Dr frontage provides less flexibility to facilitate redevelopment in comparison with Alt. 4. | • Existing Gorewood Dr frontage provides less flexibility to facilitate redevelopment in comparison with Alt. 4. | • Increased property frontage and potential development options with Intermodal Dr extension. |
| | IMPACT TO DEVELOPMENT LAND | ● | ● | ◑ | ◔ |
| | | • No impact to development land within Gorewood Dr estate properties. | • No impact to development land within Gorewood Dr estate properties. | • Isolated impacts to land within Gorewood Dr estate properties. | • High probability of encroachment on Gorewood Dr estate properties development land. |
| | PROPERTY IMPACTS/ CONSTRAINTS | ● | ◕ | ◑ | ◔ |
| | | • No property impacts. | • Minor property impacts associated with potential intersection upgrades. | • Minor property impacts would likely be limited to just one Gorewood Dr property. | • Moderate property impacts would involve multiple Gorewood Dr properties. |
| | UTILITY IMPACTS | ● | ◕ | ◕ | ◑ |
| | | • No utility impacts. | • Minor utility relocation may be required to accommodate geometric design changes at Steeles Ave. E. & Goreway Dr intersection. | • Minor utility relocations may be required to accommodate active transportation link but lower potential than Alt. 4. | • Highest potential for utility impacts on Intermodal Dr eastern terminus or Gorewood Dr |
| | WATERMAIN ALIGNMENT | ○ | ○ | ◑ | ● |
| | | • Does not achieve Region of Peel's objective to close the gap in the existing watermain network between Gorewood Dr and Intermodal Dr | • Does not achieve Region of Peel's objective to close the gap in the existing watermain network between Gorewood Dr and Intermodal Dr | • Depending on the location of the connection, Alt. 3 could provide an opportunity to close gap in existing watermain. | • Achieves Region of Peel's objective to close the gap in the existing watermain network between Gorewood Dr and Intermodal Dr |
| | ALIGNMENT WITH PLANNING POLICY DOCUMENTS | ○ | ○ | ◑ | ● |
| | | • Not compatible with the vision of the Brampton Plan (2024) which illustrates the Intermodal Dr ext. to Gorewood Dr, as well as the introduction of an active transportation link between these two streets. | • Not compatible with the vision of the Brampton Plan (2024) which illustrates the Intermodal Dr ext. to Gorewood Dr, as well as the introduction of an active transportation link between these two streets. | • Does not satisfy Brampton Plan (2024) & Airport Intermodal Secondary Plan in terms of the Intermodal Dr to Gorewood Dr within the upper mid-block of the estate lots.<br>• Satisfies Brampton Active Transportation Plan (2019) with respect to the development of an active transportation connection between Intermodal Dr and Gorewood Dr | • Satisfies Brampton Plan (2024) and Airport Intermodal Secondary Plan (Area 4) with regards to the extension of Intermodal Dr to Gorewood Dr within the upper mid-block of the estate lots.<br>• Satisfies Brampton Active Transportation Plan (2019) in terms of linkages between Intermodal Dr and Gorewood Dr |
| NATURAL/ PHYSICAL ENVIRONMENT | SIGNIFICANT NATURAL AREAS & RESOURCE DISRUPTION | ◕ | ◕ | ◑ | ◔ |
| | | • No further encroachment on floodplain area; however, maintains existing Gorewood Dr turn-around which is not ideal from a stormwater management perspective.<br>• No tree removals required. | • No further encroachment on TRCA floodplain Regulation Area; however, maintains existing Gorewood Dr turn-around which is not ideal from a stormwater management perspective.<br>• Likely no tree removals required. | • Minor potential encroachment on TRCA floodplain Regulation Area.<br>• Some tree removals likely required; however, opportunities exist to incorporate a more diverse canopy of native trees within the proposed ROW. | • Alignment has highest encroachment on the TRCA floodplain Regulation Area; however, provides opportunities to re-naturalize Gorewood Dr floodplain area.<br>• Tree removals required; however, opportunities exist for a more diverse canopy of native trees within the proposed ROW. |
| | POTENTIAL IMPACTS TO SPECIES AT RISK (SAR) | ● | ◕ | ◕ | ◑ |
| | | • Maintains status quo – no further impacts to Species at Risk (SAR). | • Low potential impact to Species at Risk (SAR). | • Low potential impact to Species at Risk (SAR). | • Low potential impact to Species at Risk (SAR) but slightly higher than Alt. 1 to 3. |
| | ENVIRONMENTAL CONTAMINATION | ● | ◕ | ◑ | ◔ |
| | | • Lowest potential impact to areas of environmental contamination. | • Low potential impacts to areas of environmental contamination. | • Low to moderate potential impacts to areas of environmental contamination. | • Increased likelihood of encountering contaminated soil than Alt. 1, 2 & 3. |
| | ARCHAEOLOGICAL POTENTIAL | ● | ◕ | ◕ | ◑ |
| | | • Lowest potential impact to archaeological resources. | • Potential for slight impacts to archaeological resources until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. | • Potential for slight impacts to archaeological resources until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. | • Higher potential impact to archaeological resources in comparison with Alt. 2 & 3 until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. |
| COSTS | CONSTRUCTION & MAINTENANCE COSTS | ◕ | ◔ | ◑ | ○ |
| | | • No construction costs but there may be higher maintenance costs on the adjacent road network resulting from additional usage. | • Moderate construction and maintenance costs associated with potential transportation network improvements. | • Low construction and maintenance costs associated with active transportation only link. | • Highest construction and maintenance costs in comparison with other alternatives. |
| SUMMARY | | Not Preferred | Not Preferred | Not Preferred | Preferred |
| RATIONALE | | • Despite being the most cost-effective option overall and the least likely to impact the natural environment, Alt. 1 does not align with planning policy documents or allow for achievement of enhanced transportation connectivity, improved traffic operations, watermain looping or efficient goods movement. As such, Alt. 1 is not preferred. | • Although there are potentially reduced property and natural environmental impacts relative to Alt. 3 or 4, Alt. 2 does not align with planning policy documents or allow for achievement of enhanced transportation connectivity, watermain looping or efficient goods movement. As such, Alt. 2 is not preferred. | • Alt. 3 does not accommodate enhanced active transportation connectivity; however, this option does not fully align with planning policy documents, improve traffic operations, watermain looping or allow for efficient goods movement. As such, Alt. 3 is not preferred. | • Alt. 4 aligns with planning policy documents, allows for achievement of enhanced transportation connectivity, improved traffic operations, watermain looping and opportunities for more efficient goods movement. As such, Alt. 4 is preferred. |

## 8.3 Preferred Solution

Based on the evaluation of alternative solutions presented in **Figure 8-1** above, the preferred solution that satisfies the majority of the evaluation criteria is Alternative 4. It is therefore recommended to investigate alternative alignments to extend Intermodal Drive to Gorewood Drive.

This solution would allow existing deficiencies identified through the EA Problem and Opportunity Statement to be addressed.

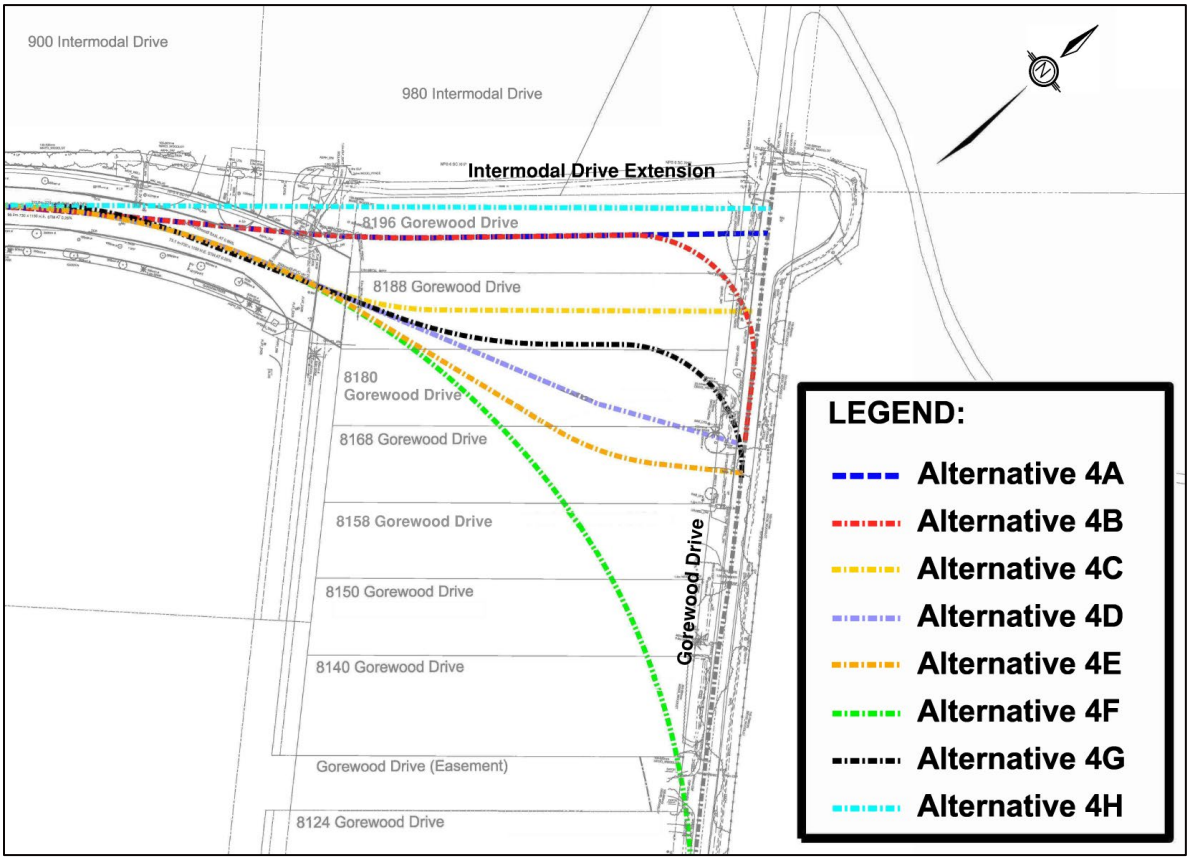
# 9 Alternative Alignments

## 9.1 Long List of Alternative Alignments

Eight (8) sub-options of Alternative 4 were developed to further investigate the potential extension of Intermodal Drive to Gorewood Drive.

The long list of alternative solutions are illustrated in **Figure 9-1** below.

*Figure 9-1: Long List of Alternative Alignments (Alternatives 4A to 4H)*



## 9.2 Initial Screening of Alternative Alignments

Through the initial screening of alternative alignments, Alternatives 4C, 4E and 4H were eliminated, as rationalized briefly below:

**Alternative 4C - Use 8188 Gorewood Drive to Intersection** ✗

- Alternative 4C was screened out based on the shallow 8196 Gorewood Drive property parcel to the north (approx. 28.5m depth) which creates limited opportunities for development.

**Alternative 4E - Straight to 90-degree Intersection** ✗

- Alternative 4E was eliminated for the following reasons:
    - More significant property impacts in comparison with Alternatives 4A to 4D;
    - Requires a larger intersection to accommodate WB-20 trucks passing each other than Alternative 4D which would increase the impervious area within the TRCA regulated floodplain and potentially lengthen active transportation crossing distances.

**Alternative 4H - Straight Alignment** ✗

- Alternative 4H was eliminated for the following reasons:
    - Higher impacts to TRCA lands to the north;
    - Impact to 2 existing businesses including parking areas, existing site access configuration and vehicle circulation;
    - Potential for key utility conflicts, including an existing high-pressure gas main; and
    - Significant tree impacts.

Following this initial screening exercise, Alternatives 4A, 4B, 4D, 4F and 4G were carried forward for a more detailed evaluation, as listed below:

- **Alternative 4A** – Realign Intermodal Drive to a Tight 80-degree Turn (Elbow) ✓
- **Alternative 4B** – Realign Intermodal Drive to a Tight Curve ✓
- **Alternative 4D** – Extend Intermodal Drive to a T-intersection ✓
- **Alternative 4F** – Extend Intermodal Drive to a Large Curve ✓
- **Alternative 4G** – Extend Intermodal Drive to a Tight Curve *('hybrid' of Alt. 4B & Alt. 4D)* ✓

## 9.3 Evaluation of Alternative Alignments

**Figure 9-2** below summarizes the evaluation of alternative alignments for the Intermodal Drive extension. The evaluation of alternative alignments is based on the same sub-criteria presented in previously **Section 7.1** which were assessed against the alternative solutions.

Based on the evaluation of alternative alignments presented below, **Alternative 4G** was selected as the preferred alternative to carry forward for the development of the Recommended Plan.

*Figure 9-2: Evaluation of Alternative Alignments*

| CRITERIA | RELEVANT SUBCRITERIA | ALTERNATIVE ALIGNMENTS | | | | |
|---|---|---|---|---|---|---|
| | | ALTERNATIVE 4A – REALIGN INTERMODAL DR TO A TIGHT 80-DEGREE TURN (ELBOW) | ALTERNATIVE 4B – REALIGN INTERMODAL DR TO A TIGHT CURVED ALIGNMENT | ALTERNATIVE 4D – EXTEND INTERMODAL DR TO A T-INTERSECTION | ALTERNATIVE 4F – EXTEND INTERMODAL DR TO A LARGE CURVED ALIGNMENT | ALTERNATIVE 4G – EXTEND INTERMODAL DR TO A TIGHT CURVED ALIGNMENT |
| TRANSPORTATION & TRAFFIC ANALYSIS | CONNECTIVITY FOR ACTIVE TRANSPORTATION | ◕ | ◕ | ● | ○ | ◕ |
| | | • Slight disconnect between potential north-south active transportation crossing and natural desire line at TRCA Gorewood Dr entrance, but still strengthens overall connectivity. | • Slight disconnect between potential north-south active transportation crossing and natural desire line at TRCA Gorewood Dr entrance, but still strengthens overall connectivity. | • A 'protected intersection' configuration maximizes active transportation connectivity within the vicinity of TRCA Gorewood Dr entrance and strengthens multi-modal connections with adjacent lands. | • Large gradual curve creates a significant barrier in developing a safe north-south active transportation crossings and is not compatible with the project vision to create a cohesive pedestrian environment. | • Slight disconnect between potential north-south active transportation crossing and natural desire line at TRCA Gorewood Dr entrance, but still strengthens overall connectivity. |
| | TRAFFIC OPERATIONS | ○ | ◕ | ● | ◔ | ● |
| | | • Presents potential traffic operational/ safety concerns between eastbound left-turning traffic and thru traffic transitioning from Gorewood Dr to Intermodal Dr ext. due to poor sightlines.<br>• Existing Intermodal Dr realignment would result in reduced throat lengths for existing north side driveways and higher potential for queue spillback issues. | • Tight curve promotes lower vehicle operating speeds but still allows for continuous traffic flow.<br>• Sightline limitations resolved with City maintenance of boulevard within inner curve.<br>• Existing Intermodal Dr realignment would result in reduced throat lengths for existing north side driveways and higher potential for queue spillback issues. | • Proposed Intermodal Dr & Gorewood Dr stop-controlled intersection expected to operate at high Level of Service (i.e. LOS 'A') beyond 2051. | • Maintains traffic flow, however elevated safety risk for all road users due to higher operating speeds. | • Tight curve promotes lower vehicle operating speeds but still allows for continuous traffic flow.<br>• Sightline limitations resolved with City maintenance of boulevard within inner curve. |
| | GOODS MOVEMENT EFFICIENCY | ◔ | ● | ◔ | ● | ● |
| | | • 'Elbow' configuration would be expected to operate similar to a yield-controlled intersection in terms of efficiency due to potential uncertainty among road user priority. | • Allows for a continuous flow of vehicle traffic along the curved transition between Gorewood Dr through to Intermodal Dr ext. | • Requires all vehicles to stop prior to passing through the proposed Intermodal Dr & Gorewood Dr intersection, thereby reducing goods movement efficiency. | • Allows for a continuous flow of vehicle traffic along the curved transition between Gorewood Dr through to Intermodal Dr ext. | • Allows for a continuous flow of vehicle traffic along the curved transition between Gorewood Dr through to Intermodal Dr ext. |
| ENVIRONMENTAL & SOCIAL IMPACTS | DEVELOPMENT POTENTIAL | ● | ◕ | ◔ | ○ | ◑ |
| | | • Alternative alignments generally have high development potential in comparison with Alternative Solutions.<br>• Results in large, contiguous development parcel to the south.<br>• Alt. 4A has lowest overall impact on Gorewood Dr estate properties. | • Alternative alignments generally have high development potential in comparison with Alternative Solutions.<br>• Results in large, contiguous development parcel to the south. | • Alternative alignments generally have high development potential in comparison with Alternative Solutions.<br>• Higher likelihood of resulting in remnant/undevelopable property parcels in comparison with Alt. 4B & 4G. | • Significant impacts to Gorewood Dr estate properties and is more likely to result in remnant/ undevelopable property parcels. | • Alternative alignments generally have high development potential in comparison with Alternative Solutions.<br>• Some minor potential developability constraints in comparison with Alt. 4B. |
| | PROPERTY IMPACTS/ CONSTRAINTS | ◕ | ◑ | ◕ | ○ | ◕ |
| | | • Generally impacts 4 properties – 900 & 980 Intermodal, 8196 & 8188 Gorewood Dr.<br>• Significantly impacts 1 Gorewood Dr estate property.<br>• Minor overall property impacts. | • Generally impacts 5 properties – 900 & 980 Intermodal, 8196, 8188 & 8180 Gorewood Dr.<br>• Significantly impacts 2 Gorewood Dr estate properties.<br>• Minor to moderate overall property impacts. | • Generally impacts 4 properties – 8196, 8188, 8180 & 8168 Gorewood Dr.<br>• Significantly impacts 3 Gorewood Dr estate properties.<br>• Minor overall property impacts. | • Generally impacts 8 properties - 8196, 8188, 8180 & 8168, 8158, 8150, 8140 & 8124 Gorewood Dr.<br>• Significantly impacts 6 Gorewood Dr estate properties.<br>• Significant overall property impacts. | • Generally impacts 4 properties – 8196, 8188, 8180 & 8168 Gorewood Dr.<br>• Significantly impacts 2 Gorewood Dr estate properties.<br>• Minor overall property impacts. |
| | UTILITY IMPACTS | ◑ | ◑ | ◕ | ◔ | ◕ |
| | | • Moderate utility relocation will be required within realigned section of Intermodal Dr. | • Moderate utility relocation will be required within realigned section of Intermodal Dr. | • Maintains existing alignment within eastern terminus of Intermodal Dr, minimizing the need for utility relocations. | • Maintains existing alignment within eastern terminus of Intermodal Dr; however, higher impacts likely on Gorewood Dr. | • Maintains existing alignment within eastern terminus of Intermodal Dr, minimizing the need for utility relocations. |
| | WATERMAIN ALIGNMENT | ◑ | ◑ | ◔ | ◔ | ◕ |
| | | • Achieves Region of Peel's objective to close the gap in watermain network between Gorewood Dr and Intermodal Dr<br>• Watermain alignment lengths of Alt. 4A and 4B are similar. | • Achieves Region of Peel's objective to close the gap in watermain network between Gorewood Dr and Intermodal Dr<br>• Watermain lengths of Alt. 4A and 4B are similar. | • May not achieve Region of Peel's objective of a fully-continuous watermain loop.<br>• Potential for longer watermain alignment than Alt. 4A & 4B to accommodate an additional dead-end section on Gorewood Dr north of Intermodal Dr ext. | • May not achieve Region of Peel's objective of a fully-continuous watermain.<br>• Potential for longer watermain alignment than Alt. 4A & 4B to accommodate an additional dead-end section on Gorewood Dr north of the Intermodal Dr ext. | • Achieves Region of Peel's objective to close the gap in the existing watermain network between Gorewood Dr and Intermodal Dr<br>• Shortest watermain alignment, assuming no dead-end section on Gorewood Dr north of the Intermodal Dr ext. |
| | ALIGNMENT WITH PLANNING POLICY DOCUMENTS | ● | ● | ● | ○ | ● |
| | | • Satisfies overall vision of Brampton Plan (2024) & Airport Intermodal Secondary Plan.<br>• Compatible with Brampton Complete Streets Guidelines (2023) recommended 40km/h design speed. | • Satisfies overall vision of Brampton Plan (2024) & Airport Intermodal Secondary Plan.<br>• Compatible with Brampton Complete Streets Guidelines (2023) recommended 40km/h design speed. | • Satisfies overall vision of Brampton Plan (2024) & Airport Intermodal Secondary Plan.<br>• Compatible with Brampton Complete Streets Guidelines (2023) recommended 40km/h design speed. | • Satisfies overall vision of Brampton Plan (2024) and Airport Intermodal Secondary Plan.<br>• Not compatible with Brampton Complete Streets Guidelines (2023) recommended 40km/h design speed. | • Satisfies overall vision of Brampton Plan (2024) & Airport Intermodal Secondary Plan.<br>• Compatible with Brampton Complete Streets Guidelines (2023) recommended 40km/h design speed. |
| NATURAL/ PHYSICAL ENVIRONMENT IMPACTS | SIGNIFICANT NATURAL AREAS & RESOURCE DISRUPTION | ◔ | ◔ | ◑ | ◔ | ◕ |
| | | • Allows for restoration of Gorewood Dr turn-around as a permeable surface.<br>• Highest tree impacts. | • Allows for restoration of Gorewood Dr turn-around as a permeable surface.<br>• Highest tree impacts. | • Requires maintenance of Gorewood Dr turn-around which is not ideal from a stormwater management perspective.<br>• Moderate tree impacts. | • Requires maintenance of Gorewood Dr turn-around which is not ideal from a stormwater management perspective.<br>• Lowest tree impacts. | • Allows for restoration of Gorewood Dr turn-around as a permeable surface.<br>• Low to moderate tree impacts. |
| | POTENTIAL IMPACTS TO SPECIES AT RISK (SAR) | ◑ | ◑ | ◑ | ◑ | ◑ |
| | | • All alignments have a low potential impact to Species at Risk (SAR). | • All alignments have a low potential impact to Species at Risk (SAR). | • All alignments have a low potential impact to Species at Risk (SAR). | • All alignments have a low potential impact to Species at Risk (SAR). | • All alignments have a low potential impact to Species at Risk (SAR). |

| CRITERIA | RELEVANT SUBCRITERIA | ALTERNATIVE ALIGNMENTS | | | | |
|---|---|---|---|---|---|---|
| | | ALTERNATIVE 4A – REALIGN INTERMODAL DR TO A TIGHT 80-DEGREE TURN (ELBOW) | ALTERNATIVE 4B – REALIGN INTERMODAL DR TO A TIGHT CURVED ALIGNMENT | ALTERNATIVE 4D – EXTEND INTERMODAL DR TO A T-INTERSECTION | ALTERNATIVE 4F – EXTEND INTERMODAL DR TO A LARGE CURVED ALIGNMENT | ALTERNATIVE 4G – EXTEND INTERMODAL DR TO A TIGHT CURVED ALIGNMENT |
| COST & CONSTRUCTION IMPACTS | ENVIRONMENTAL CONTAMINATION | ◔ | ◔ | ◔ | ○ | ◔ |
| | | • Identified in Phase 1 ESA as overlapping with three to five Areas of Potential Environmental Concern (APEC).<br>• Alt. 4A, 4B, 4D & 4G have similar impacts on contaminated lands. | • Identified in Phase 1 ESA as overlapping with three to five Areas of Potential Environmental Concern (APEC).<br>• Alt. 4A, 4B, 4D & 4G have similar impacts on contaminated lands. | • Identified in Phase 1 ESA as overlapping with five Areas of Potential Environmental Concern (APEC).<br>• Alt. 4A, 4B, 4D & 4G have similar impacts on contaminated lands. | • Identified in Phase 1 ESA as overlapping with five Areas of Potential Environmental Concern (APEC).<br>• Alt. 4F has highest overall impacts on contaminated lands. | • Identified in Phase 1 ESA as overlapping with five Areas of Potential Environmental Concern (APEC).<br>• Alt. 4A, 4B, 4D & 4G have similar impacts on contaminated lands. |
| | ARCHAEOLOGICAL POTENTIAL | ◑ | ◑ | ◑ | ◑ | ◑ |
| | | • All alignments are identified as having ‘equal potential’ to impact archaeological resources until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. | • All alignments are identified as having ‘equal potential’ to impact archaeological resources until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. | • All alignments are identified as having ‘equal potential’ to impact archaeological resources until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. | • All alignments are identified as having ‘equal potential’ to impact archaeological resources until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. | • All alignments are identified as having ‘equal potential’ to impact archaeological resources until a Stage 2 Archeological Assessment (AA) can be conducted to confirm otherwise. |
| | ESTIMATED CONSTRUCTION & MAINTENANCE COSTS | ◑ | ◑ | ◔ | ○ | ◑ |
| | | • Construction and long-term maintenance costs of Alt. 4A, 4B & 4G result in the shortest Intermodal Dr extension to Gorewood Dr and are considered to be roughly equal.<br>• Construction Estimate: $3.0M (excludes realignment of existing Intermodal Dr, property acquisition, utility impacts & soil remediation) | • Construction and long-term maintenance costs of Alt. 4A & 4B result in the shortest Intermodal Dr extension to Gorewood Dr and are considered to be roughly equal.<br>• Construction Estimate: $3.2M (excludes realignment of existing Intermodal Dr, property acquisition, utility impacts & soil remediation) | • Higher cost than Alt. 4A, 4B & 4G resulting from a new stop-controlled, ‘protected-intersection’, as well as the long-term maintenance of Gorewood Dr north of Intermodal Dr extension, including the existing turn-around.<br>• Construction Estimate: $3.6M (excludes property acquisition, utility impacts & soil remediation) | • Highest cost in comparison with other alternatives, resulting from increased likelihood of site remediation, longer alignment, as well as long-term maintenance of Gorewood Dr north of Intermodal Dr extension, including the existing turn-around.<br>• Construction Estimate: $5.0M (excludes property acquisition, utility impacts & soil remediation) | • Construction and long-term maintenance costs of Alt. 4A, 4B & 4G result in the shortest Intermodal Dr extension to Gorewood Dr and are considered to be roughly equal.<br>• Construction Estimate: $3.4M (excludes property acquisition, utility impacts & soil remediation) |
| | PROPERTY COSTS | ◑ | ◑ | ◔ | ○ | ◑ |
| | | Low to Moderate | Low to Moderate | Moderate | High | Low to Moderate |
| | CONSTRUCTION IMPACTS (SHORT-TERM) | ◔ | ◔ | ◔ | ○ | ◑ |
| | | • Isolated access impacts to Gorewood Dr within the vicinity of the proposed connection during construction.<br>• Properties with frontage on the existing eastern terminus of Intermodal Dr would experience moderate access impacts with Alt. 4A and 4B, both of which involve realignment. | • Isolated access impacts to Gorewood Dr within the vicinity of the proposed connection during construction.<br>• Properties with frontage on the existing eastern terminus of Intermodal Dr would experience moderate access impacts for Alt. 4A and 4B, both of which involve realignment. | • Moderate access impacts to Gorewood Dr properties within the vicinity and north of the proposed connection during construction.<br>• Properties with frontage on the existing eastern terminus of Intermodal Dr would experience similar short-term and isolated access impacts with Alt. 4D and 4G, with no realignment proposed. | • Significant access impacts to Gorewood Dr properties north of the proposed connection during construction. | • Isolated to moderate access impacts to Gorewood Dr properties within the vicinity and north of the proposed connection during construction.<br>• Properties with frontage on the existing eastern terminus of Intermodal Dr would experience similar short-term and isolated access impacts with Alt. 4D and 4G, with no realignment proposed. |
| SUMMARY | | Not Preferred | Not Preferred | Not Preferred | Not Preferred | Preferred |
| RATIONALE | | • Alt. 4A accommodates active transportation connectivity and aligns with planning policy documents. Overall construction and long-term maintenance costs of Alt. 4A, 4B & 4G are expected to be similar and lower than Alt. 4D & 4F. However, Alt. 4A presents potential traffic operational/ safety concerns, only provides frontage south of the Intermodal Dr ext and involves the realignment of easternmost portion of Intermodal Dr.<br>• As such, Alt. 4A is not preferred. | • Alt. 4B accommodates active transportation connectivity, safe traffic operations, efficient goods movement and aligns with planning policy documents. Overall construction and long-term maintenance costs of Alt. 4A, 4B & 4G are expected to be similar and lower than Alt. 4D & 4F. However, Alt. 4B only provides frontage south of the Intermodal Dr ext and involves the realignment of the easternmost portion of Intermodal Dr.<br>• As such, Alt. 4B is not preferred. | • Alt. 4D accommodates active transportation connectivity, safe traffic operations, aligns with planning policy documents and creates potential opportunities for development north and south of the Intermodal Dr ext. This option loses points for goods movement efficiency and has higher construction and maintenance costs in comparison with Alt. 4A, 4B & 4G. Higher property impacts with respect to Alt. 4G.<br>• As such, Alt. 4D is not preferred. | • Alt. 4F provides opportunities to improve goods movement efficiency; however, this alignment does not allow for north-south active transportation connectivity, has high property impacts and significantly higher construction cost compared with Alt. 4A, 4B, 4D & 4G.<br>• As such, Alt. 4F is not preferred. | • Alt. 4G accommodates active transportation connectivity, safe traffic operations and efficient goods movement. This option aligns with planning policy documents and provides development opportunities north and south of the extension. Construction and long-term maintenance costs of Alt. 4G are expected to be similar to Alt. 4A & 4B and lower than Alt. 4D & 4F.<br>• As such, Alt. 4G is preferred. |

**Evaluation Scoring:**

● Positive impact / Best addresses factor
◕ Slight positive impact / Addresses factor
◑ Neutral impact / Moderately addresses factor
◔ Slight negative impact / Does not adequately address factor
○ Negative impact / Does not address factor

# 10 Supporting Technical Studies

In addition to the Traffic Study Report, which was conducted to determine the overall feasibility of the Intermodal Drive extension from a transportation perspective, the following technical studies reviewed the feasibility of the preferred alternative alignment, Alternative 4G, based on their respective area of specialty.

Where needed, appropriate mitigation measures are recommended to minimize any potential impacts on the surrounding environment associated with the implementation of the preferred alternative.

## 10.1 Utilities

A Utility Relocation Report was prepared by Arcadis in support of this EA study, a copy of which is provided in **Appendix I**.

The purpose of this report was to identify potential above- and below-grade utility conflicts at this preliminary stage in the project through the review of the Utility Conflict Matrix (UCM) and Utility Conflict Identifier Plan (UCIP). The proposed watermain alignment and streetlight layout were also included.

### 10.1.1 Utility Conflict Identification

**Figure 10-1** below summarizes all the conflicts and the identified utility relocation requirements for the road and watermain extension between Intermodal Drive and Gorewood Drive. The 'Requirements' column includes updates and comments from all the stakeholders following the circulation of the Utility Conflict Identifier Plan (UCIP) and the Utility Conflict Matrix (UCM). Note that the current version of the document presents a preliminary analysis of the utility conflicts. A more fulsome analysis will be provided during the detailed design stage.

*Figure 10-1: Utility Conflict Summary*

| Utilities/ Stakeholders | Conflict ID* | Requirements | Future Actions |
|---|---|---|---|
| **REGION OF PEEL**<br>**-Capital Works**<br>**-Water & Wastewater** | • **SAN-01* to SAN-03*:**<br>Manholes (MH) collars may be impacted by the proposed road design.<br>• **STM-01 to STM 11*:**<br>Ditches, Corrugated Steel | Region of Peel identified:<br>• The Sanitary MH contains hazardous wastewater and states if relocation is confirmed or required, a bypass/abandoning plan to be provided. Otherwise, special protective/mitigation | Coordination with the Region of Peel regarding:<br>• The conflicts with the proposed design as per UCM. |

| Utilities/ Stakeholders | Conflict ID* | Requirements | Future Actions |
|---|---|---|---|
| | pipe and catch basins will be impacted by proposed road design and manholes collars adjustments may be required.<br>• **WM-01 to WM-03*:** Watermain valve and chamber will be impacted by the proposed road/sidewalk. | measures are required to protect these assets.<br>• Relocation of valves, chambers, fire hydrants to follow Peel's standards and specification requirements.<br>• The importance of the existing dead end watermain connections to the proposed 300mm PVC watermain between Intermodal Drive and Gorewood Drive.<br>• In general, watermains shall be located in accordance with the local municipality's standards, including:<br>➢ min. horizontal separation of 2.5m (edge to edge)<br>➢ min. vertical separation of 0.5m (bottom of the pipe to top of pipe) from any sewer as per the MECP design criteria. Since this road is not under the jurisdiction of the Region of Peel, the minimum horizontal clearance shall be maintained at 1.2 metres.<br>➢ All fire hydrants shall have 1.2 m minimum clearance from all other utilities.<br>➢ When watermain crosses *over* utilities, a minimum 0.3 m must be provided.<br>• When watermain crosses *under* utilities, a minimum 0.5m must be provided. | • The proposed 300mm PVC watermain installation during the detailed design. |
| **CITY OF BRAMPTON** | • **SL-01 to SL-03*:** Streetlighting poles in front of 900 Intermodal Drive will conflict with the proposed MUP. | Arcadis to review and coordinate the relocation of these streetlight poles. | Coordination with the City of Brampton and Alectra during detailed design regarding relocation of the |

| Utilities/ Stakeholders | Conflict ID* | Requirements | Future Actions |
|---|---|---|---|
| | | | existing streetlight pole. |
| **ALECTRA** | • **AL-01*:**<br>At the west side of Gorewood Drive, the Alectra hydro pole line with its attachment will be impacted by the proposed road design at 1+345. | Coordination Ongoing | Coordination with Alectra during detailed design, regarding pole relocation. |
| **BELL** | • **B-01*:**<br>Bell cables attached to the Alectra poles will be impacted by the proposed road design.<br>• **B-02*:**<br>Underground (UG) Bell cables on boulevard will be impacted by the proposed road design. | Bell Markups # 71542:<br>UG Bell located at 900 Intermodal Drive, identified as potential conflict in field require:<br>• To maintain clearance of 0.6m horizontally, 0.3m vertically from Bell. Within 1m of Bell, hand dig.<br>• Bell depth of cover as per road requirements due to Grade level changes from driveway to road.<br>Relocation of Overhead cables on the hydro Poles to be in accordance with Alectra's pole location and standards. | Intermodal Drive:<br>Determine the existing UG depth of cover to confirm utility treatment.<br>Gorewood Drive:<br>Coordination during detailed design regarding relocation of the existing Overhead Bell cables. |
| **ENBRIDGE** | **G-01*:** Gas valve connected from 150mm SC Gas main will be impacted by the proposed design road. | EGD # 44763638 Markups comments to be provided in the submission of the detailed design plans. | Coordination with Enbridge during detailed design regarding to the potential relocation, removal or adjustment of grade level. |

### 10.1.2 Proposed Watermain Alignment

The Region of Peel Water Engineering Division identified the need to extend Intermodal Drive to facilitate the continuation of the existing 300mm PVC watermain. Extending the watermain along Intermodal Drive will eliminate the operational challenges associated with flushing dead-end mains and will improve overall efficiency of the water distribution network. The Wastewater

Department has confirmed that there is no requirement to extend the sanitary sewer beyond the current limits of Intermodal Drive.

The proposed watermain alignment will run approximately 366 metres along the new road extension at Intermodal Drive, crossing diagonally to the southeast side of Gorewood Drive, until the existing watermain connection located opposite 8112 Gorewood Drive. The future watermain alignment will connect both existing 300mm PVC watermain dead ends by maintaining a minimum 0.75m from the edge of pavement (EOP) as per the City of Brampton's typical road cross section standards.

The proposed watermain alignment is included in **Appendix R**.

### 10.1.3 Streetlighting

A preliminary streetlighting layout was developed with 10 poles located within the proposed right-of-way, staggered along the Intermodal Drive extension following Alternative 4G.

A photometric analysis was undertaken in accordance with *Recommended Practice: Lighting Roadway and Parking Facilities (RP-8-22)*, published in 2022, to verify that the proposed streetlighting layout and arrangements would satisfy the appropriate illuminance requirements. Consistent with the existing segment of Intermodal Drive immediately to the west of the EA Study Limits, the functional design of the preferred alternative features 50' (15.2m) direct-buried concrete streetlighting poles with 2.4-metre arms from the Western EA Study Limits to the proposed Pedestrian Crossover (PXO), prior to the height decreasing to 9.9m further east/south along Gorewood Drive to acknowledge the more pedestrian-oriented environment and compact property built form envisioned in the Airport Intermodal Secondary Plan (Area 4).

Based on discussions with City technical staff, it was determined that dedicated pedestrian-level lighting will not be required along this corridor; however, fixtures will accommodate backlight spillage to provide lighting on the active transportation facilities, including the proposed multi-use path and sidewalk. To this end, illuminance requirements are being achieved for the proposed design for all key transportation elements, including the proposed road surface, sidewalks, multi-use path and Pedestrian Crossover (PXO).

## 10.2 Drainage & Stormwater

A Drainage and Stormwater Report was prepared by Arcadis in support of this EA and is included in **Appendix J**.

The objectives of this report included identifying and evaluating existing drainage patterns, determining potential stormwater runoff quality and quantity impacts to the receiving watercourse from any proposed increases to impervious surfaces, as well as proposing appropriate drainage and stormwater management systems to accommodate Alternative 4G.

### 10.2.1 Stormwater Management Design

Under proposed conditions, the quantity of runoff resulting from major storms will be conveyed to existing outlets as overland flow. A low point exists on the proposed Intermodal Drive extension at the watercourse and will provide an overland flow route to major system runoff for the proposed road.

For Catchment 'C2', as identified on the Proposed Drainage Plan (see **Figure 10-2** below), the major flow is diverted to West Humber River Tributary and only has only minor contributions to Mimico Creek with Alternative 4G. Quantity control will not be required at the Wester Humber River, despite the diversion of major flows to this tributary. The flow from the minor system will continue to drain to existing municipal storm sewer which ultimately drains to stormwater pond within Mimico Creek Watershed.

Mitigation Measures

Quantity control measure are not required to accommodate Alternative 4G, however, to reduce erosion due to increased peak flow, storage is provided in the Low Impact Development (LID) chamber. Various Best Management Practices (BMPs) for stormwater management were reviewed and assessed for their applicability to this project. An Infiltration chamber and two (2) Oil and Grit Separators are proposed in line with storm sewers to prevent runoff from due to peak flows increase and to enhance water quality.

LID measures, such as an underground infiltration chamber, will be used within the road right-of-way areas to offset any negative impacts associated with the proposed Intermodal Drive extension. Infiltration chambers capture runoff for infiltration to groundwater and reduce rates of runoff to the receiving drainage systems. These chambers also provides water quality treatment through the capture of both particulate and dissolved constituents. The proposed underground chamber will be located approximately one metre above the groundwater level.

Online storage pipes and underground storage chamber shall be designed to provide the required storage in the detailed design stage.

It should be noted that the stormwater mitigation measures recommended in the Drainage and Stormwater Report conducted for this EA study are based on the previously-approved

floodplain mapping from 2021. As such, the stormwater management features may have been overdesigned with respect to the newly-approved 2025 floodplain and will be revisited during the detailed design stage.

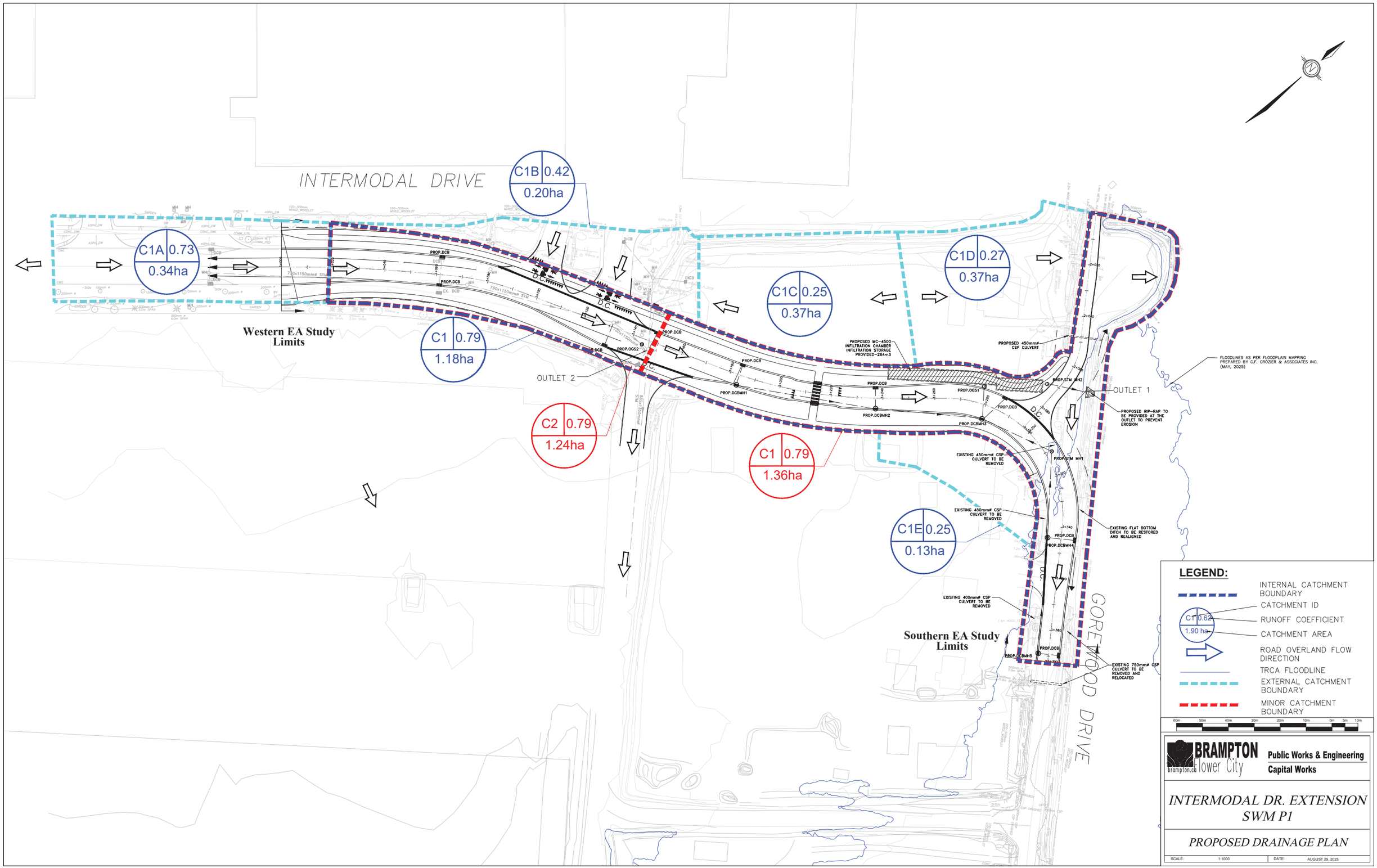



Figure 10-2 - Proposed Drainage Plan

### 10.2.2 Erosion and Sediment Control During Construction

If uncontrolled, the construction activities associated with Intermodal Drive extension could result in increased rates of erosion and sedimentation within and adjacent to the study area. The potential environmental impacts from increased erosion and sedimentation include degradation of water quality; destruction of fisheries habitat; and increased flooding potential.

Erosion and sedimentation processes are typically accelerated due to construction activities. Literature indicates that construction activities can increase erosion and sedimentation rates by 2 to 3 orders of magnitude over expected levels from a natural forested area. Development of an erosion and sedimentation control plan is therefore an integral and important component in the design and construction of any project and should include the following elements:

- Provision for a series of temporary interceptor/conveyor ditches help direct run off to the siltation/watercourses.
- Provision of rock or straw bale within drainage swales/ditches; and
- Placement of a series of silt control fencing for the interception of sheet flow drainage.

All sediment control measures should not be removed until final stabilization of the site. In addition, any accumulated sediment shall be removed, as part of a maintenance program, from all control measures when accumulation reaches 50% of the height or volume of the control structure.

An erosion and sediment control plan for the project must adhere to Erosion and Sediment Control (ESC) Guidelines for Urban Construction, December 2006, Greater Golden Horseshoe Area Conservation Authorities.

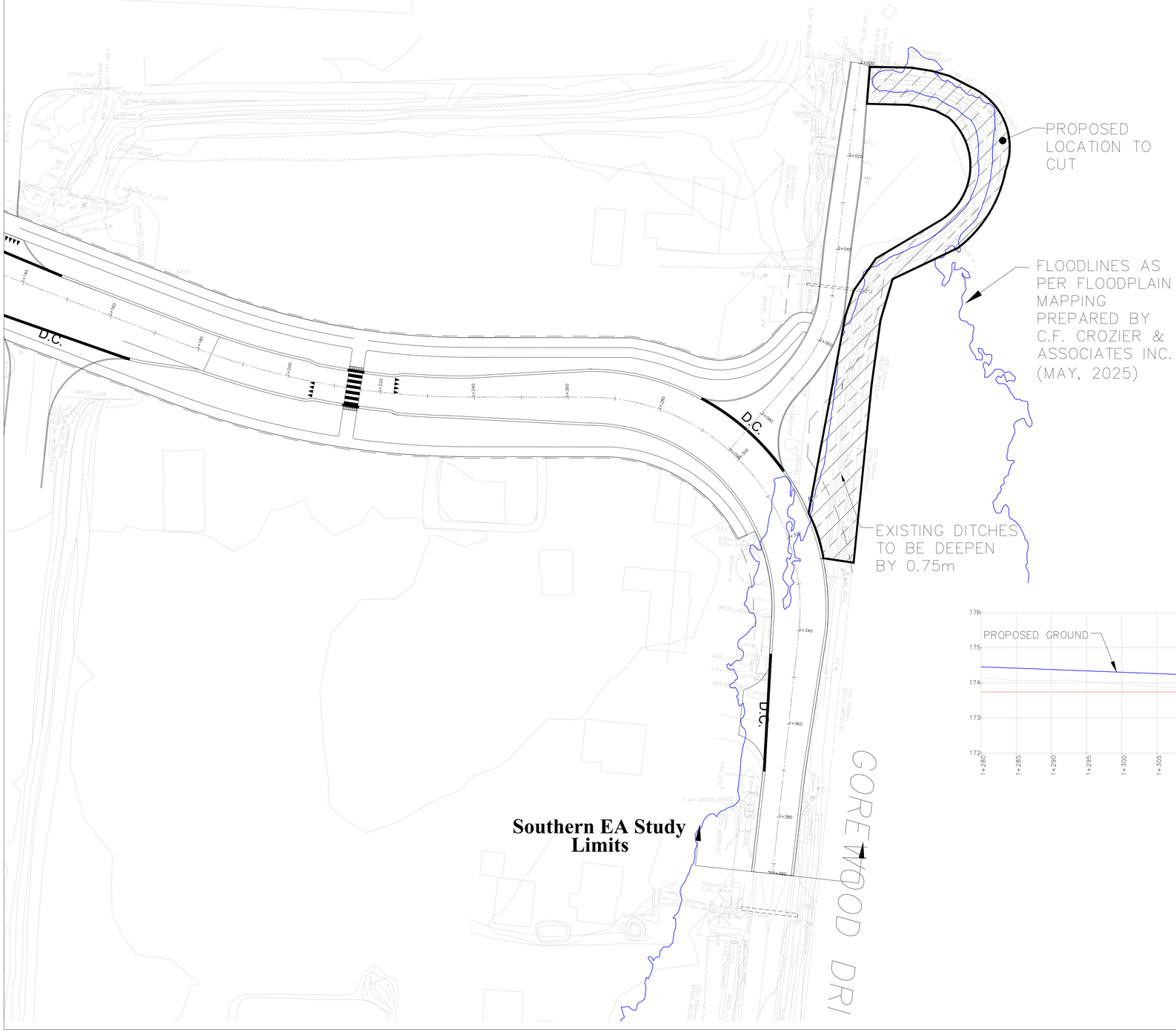
### 10.2.3 Hydraulic Assessment

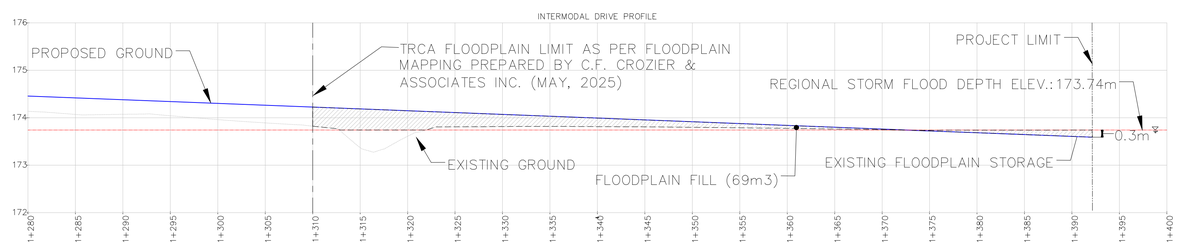
The proposed extension of Intermodal Drive will have an impact on the Mimico Creek Floodplain limits. To assess potential impacts on floodplain mapping with respect to preferred alignment, Alternative 4G, the latest approved hydraulic model provided by TRCA was reviewed and employed to conduct a preliminary hydraulic analysis.

A preliminary Cut and Fill Analysis was carried out using a 0.1 cut and fill factor for existing and proposed surfaces within Floodplain Limits. As per the analysis, a total of approximately 69 cubic metres of fill is proposed within the floodplain as a result of the Intermodal Drive extension project. This should not have any negative impact on the flood elevations and the velocity, since the flooding is mainly due to backwater effects resulting from overflows at left overbank areas between the HEC-RAS cross-sections. In order to compensate proposed fill within the

Floodplain Limits, it is recommended that a cut should be proposed within these limits which will accommodate lost floodplain storage due to proposed development, potentially by increasing the depth of ditches within the vicinity of the Gorewood Drive turn-around area by approximately 0.75 metres.

The Floodplain Analysis Plan, extracted from the Drainage and Stormwater Management Report, is shown in **Figure 10-3** below.




60m 50m 40m 30m 20m 10m 0m 5m 10m

BRAMPTON Flower City
brampton.ca

**Public Works & Engineering**
**Capital Works**

*INTERMODAL DR. EXTENSION*

*FLOODPLAIN ANLAYSIS PLAN*

| SCALE: | 1:1000 | DATE: | AUGUST 29, 2025 |
|---|---|---|---|

Figure 10-3 - Floodplain Analysis Plan

## 10.3 Socio-Economic Environment

Arcadis prepared a Socio-Economic Environment Report to support this EA process, a copy of which is included in **Appendix K**.

The primary objective of this report was to identify whether Intermodal Drive should be extended to Gorewood Drive from a socio-economic perspective and, if so, whether one of the five alternative alignments carried forward from the initial screening exercise is preferred over the others. Consideration was given to guidance from a range of policy documents across various levels of government to better understand the vision and planning context within the EA Study Limits. Implications for health, safety, accessibility, inclusivity and community cohesiveness were considered, while also weighing the importance of goods movement as a key driver of the local economy.

With respect to the five alternative alignment options carried forward from the initial screening exercise, Alternative 4F is consistently the least favourable from a social-economic standpoint as a result of higher potential property impacts, as well as elevated safety risks for active users. This alternative would also likely result in the highest level of disruption to the surrounding area during construction phase through its encroachment on the private access route between Intermodal Drive and Gorewood Drive and impact access to existing Gorewood Drive estate properties north of the connection. In general, Alternative 4F is not compatible with the project vision of fostering a cohesive pedestrian environment that links existing and future uses to improve quality of life.

Alternative 4D provides opportunities to maximize active transportation connectivity within the vicinity of the Gorewood Drive TRCA trail network entrance and strengthens multi-modal connections with existing and future adjacent land uses by providing controlled crossings at natural desire lines. Alternatives 4A, 4B and 4G generally achieve the objective of improved active transportation connectivity, with a slight reduction in score relative to Alternative 4D since the implementation of the north-south crossing would be required to be offset away from the Gorewood Drive Claireville Conservation Area entrance to avoid potential conflicts between road users within the elbow/tight radius configuration.

Alternative 4A generally achieved a similar ranking to Alternative 4B in terms of property impacts; however, the former was ruled out due to potential traffic operational and safety concerns between vehicles through and turning vehicles within the ‘elbow’ configuration proposed to connect Gorewood Drive to the Intermodal Dr. extension as a result of poor sightlines. Any sightline issues associated with Alternative 4B can be mitigated within the inner

curved boulevard through restrictions in the placement of obstructions and regular maintenance of vegetation.

The overall results of this study include recommendations that are generally supportive of either Alternatives 4B, 4D or 4G from a social-economic standpoint.

## 10.4 Natural Environment

A Natural Environment Assessment Report was prepared by Arcadis in support of this EA study and is provided in **Appendix L**. This report provides an evaluation of the anticipated impacts associated with the construction of the Intermodal Drive extension to Gorewood Drive. The environmental impacts and mitigation strategies are based off three field surveys conducted in 2024, and a review of desktop and background information available at that time.

Due to a lack of access to private lands, the assessment was based on areas available to public access at the time of the survey, background data and aerial imagery.

### 10.4.1 Field Surveys

Field surveys to collect data in support of the Natural Environment Assessment were undertaken on three separate occasions from April 2024 to July 2024, when weather conditions and timing were deemed suitable based on the survey protocols being implemented. A brief summary of each field visit is outlined below:

- Site Visit 1: Friday, April 12, 2024
    - Purpose: General habitat survey, trees visible in/from right of way surveyed for general wildlife use, potential woodpecker nests and bat potential, incidental sightings.
- Site Visit 2: Thursday, June 13, 2024
    - Purpose: First Breeding Bird Survey, vegetation, Ecological Land Classification (ELC) survey, incidentals sightings.
- Site Visit 3: Thursday, July 4, 2024
    - Purpose: Second Breeding Bird Survey, incidental sightings.

### 10.4.2 Species at Risk (SAR)

No Species at Risk (SAR) or Special Concern species were found within the study area during the above noted field surveys; however, there is a suitable habitat for SAR bats and Red-

headed Woodpecker immediately east of Gorewood Drive and adjacent to the existing vehicle turn-around area. Potential mitigation measures and suggested actions are outlined below.

Proposed Mitigation Measures for Red-head Woodpeckers:

- ✓ During the Detail Design Stage, a tree inventory and *Tree Preservation Plan* of the Subject Property shall be completed by an ISA Certified Arborist.
- ✓ Avoid clearing any vegetation during active seasons (no clearing between April 1 and August 31 to protect breeding birds and their nests).
- ✓ Replanting of trees within the road right of way to offset any tree removals.

Proposed Mitigation Measures for SAR bats:

- ✓ All trees proposed for removal shall be inspected for potential bat maternity roost features.
- ✓ Avoid clearing any vegetation during active seasons (anticipated timeline to cover all species is no clearing between April 1 and September 30 to protect roosting bats); and
- ✓ Reviewing the advice herein once Detailed Design is completed to update based on any new findings or guidelines. Ensure that at least one full year is available, prior to construction, should new inventories be required.
- ✓ Replanting of trees within the road right of way to offset any tree removals; and
- ✓ Consider installing bat boxes to provide a potential roosting habitat.

### 10.4.3 Tree Impacts

An overall loss of tree cover will result from the construction of the extension of Intermodal Drive, regardless of which alignment option is selected. This loss can be offset through the replanting of native trees post construction. Tree impacts are highest among Alternatives 4A and 4B, moderate among Alternative 4D and lowest for Alternatives 4G and 4F.

**Proposed Mitigation Measures – Construction Implementation**

The following mitigation measures are recommended to protect the existing tree canopy within the EA Study Limits:

- ✓ Tree removals should occur throughout the subject property at the same time rather than in a phased approach;

- ✓ Protection fencing around trees that will be retained shall be installed at the critical root zone (CRZ) and in accordance with the *City of Brampton Temporary Tree Protection Fencing Detail L110* (City of Brampton 2014) to ensure no impacts to this area;
- ✓ Do not place any material or equipment within the CRZ of any trees to be preserved;
- ✓ Do not attach any signs, notices, or posters to any tree;
- ✓ Do not raise or lower the existing grade within the CRZ of trees without approval;
- ✓ Do not tunnel or bore when digging within the CRZ of a tree;
- ✓ Excavation activities around trees shall not damage the root system, trunk or branches of any tree to be preserved;
- ✓ Exhaust fumes from all heavy machinery, vehicles, generators, and other equipment shall not be directed towards any trees for prolonged periods of time; and
- ✓ Tree removals should be avoided during the breeding bird / bat roosting season (April 1 to September 30) to limit disturbance to nesting birds and roosting bats.

**Proposed Mitigation Measures – Post-Construction**

- ✓ Replanting of trees within the road right of way to offset any tree removals;
- ✓ Prior to end of warranty an assessment of planted trees should be conducted. Planted trees that are dead, or in poor health should be replaced or pruned, as determined by an ISA Certified Arborist;
- ✓ Post-construction tree maintenance methods should be used to repair any damage caused to trees by construction activities. These may include, but are not limited to: treating trunk and crown injuries, irrigation and drainage, mulching, and aeration of root zone; and,
- ✓ Within 12 months of completion of construction, an assessment of preserved trees should be conducted. Trees that are dead, in poor health, or hazardous should be removed or pruned, as determined by an ISA Certified Arborist. Tree removal, if necessary, should occur promptly to avoid foreseeable risk of trees falling and causing damage or harm to people and/or property.

### 10.4.4 Floodplain Impacts

All five alternative alignments will enter a limited portion of the Toronto and Region Conservation Authority (TRCA) Regulated Floodplain Area and will have a similar overall

impact on the floodplain, with the exception of Alternative 4F which will have a notably higher encroachment on this regulated area.

A permit from the TRCA will be required for any works within the regulated area and will be sought as the design advances further, following the EA stage of the project.

#### 10.4.4.1 2025 Floodplain Mapping

In May 2025, the Toronto and Region Conservation Authority (TRCA) approved new floodplain mapping which significantly improved the developability of all alternative alignments in relation to the previous 2021 floodplain mapping. With the approval of the updated floodplain, the impacts associated with this constraint have been reduced considerably and, as such, this is no longer considered a key driving factor of the alignment selection. Given that all options benefited similarly from the retreatment in the floodplain area, there was no shift in the overall ranking in the evaluation of alternative alignments.

### 10.4.5 Significant Woodlands

In accordance with the Natural Heritage Reference Manual (MNR 2010), where woodland cover is less than about 5% of the land cover, woodlands 2 ha in size or larger should be considered significant. This woodlot does not meet this requirement.

### 10.4.6 Unevaluated Wetlands

There is one small (0.6 ha) unevaluated wetland located at the northernmost portion of the study area. The distance between the nearest point of the study area and the wetland is over 100 metres and there is a slight rise in ground level between the subject site and the valley that contains the wetland. There are no impacts anticipated to this unevaluated wetland; however, out of an abundance of caution, the following mitigation measures are proposed to be implemented to prevent potential impacts.

**Proposed Mitigation Measures – Construction Implementation**

- ✓ A site-specific erosion and sediment control plan should be implemented to prevent on-site erosion and sedimentation outside of work areas.
- ✓ Orange snow fencing or other suitable fencing should be used to delineate the construction limits from the adjacent TRCA regulated area east of Gorewood Drive.

**Proposed Mitigation Measures – Post-Construction**

- ✓ Replanting of vegetation within the construction area promptly post-construction to prevent soil erosion.

With the mitigation measures outlined above and adherence to timing windows, it is anticipated that the proposed development will not result in impacts to the unevaluated wetland.

### 10.4.7 Overall Natural Environment Impacts

Based on the five alternative alignments carried forward from the initial screening, Alternative 4F or Alternative 4G would have the lowest impact on the Natural Heritage features present within the study area.

It is anticipated that typical best management practices and appropriate mitigation measures outlined above can be implemented to minimize or avoid negative impacts to the natural environment.

## 10.5 Environmental Site Assessment

Arcadis was retained by the City of Brampton, to carry out a Phase One Environmental Site Assessment (ESA) to support this EA study. A copy of the Phase 1 ESA is provided in **Appendix N**.

The Phase One ESA was conducted in accordance with Ontario Regulation 153/04 (O.Reg. 153/04) and also includes applicable elements of a Contaminant Overview Study (COS).

Based on the findings of the Phase One ESA, intrusive soil and groundwater sampling should be conducted if the preferred solution involves 8188, 8150 or 8140 Gorewood Drive, whether wholly or partially, or western-southwestern portions of 8196, 8180, 8168 or 8158 Gorewood Drive. If portions of these properties need to be acquired, a dedicated Phase One ESA may also be required for each of the above noted properties, which should be completed prior to any intrusive sampling or Phase Two ESA.

At the Phase 1 ESA stage, Alternatives 4A, 4B, 4D and 4G were generally determined to have similar potential environmental impacts, while Alternative 4F may have slightly overall higher impacts on the five Areas of Potential Environmental Concern (APEC) reviewed in this study.

## 10.6 Cultural and Built Heritage

Arcadis engaged Archaeological Services Inc. (ASI) on behalf of the City of Brampton to produce a Cultural Heritage Report as part of due diligence site preparation for the study area. A mixture of industrial and residential development occupies much of the study area.

The screening checklist, Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes, developed by the Ministry of Citizenship and Multiculturalism (MCM), was completed and did not identify any Built Heritage Resources (BHRs) or Cultural Heritage Landscapes (CHLs) in the Intermodal Drive Extension to Gorewood Drive study area. Based on this assessment, one potential Cultural Heritage Landscape (CHL), the Claireville Conservation Area, was identified.

With the exception of Alternative 4F which is expected to encroach on this potential CHL, none of the other alternatives carried forward from the initial screening exercise (i.e. Alternatives 4A, 4B, 4D, 4G) were determined to have a direct impact on the Claireville Conservation Area.

None of the properties within the study area have been listed on the City of Brampton Heritage Register. There are also no National Historic Sites or Provincial Heritage Properties present on, or adjacent to, the study area.

No direct or indirect adverse impacts to the potential CHL are anticipated as a result of the proposed alternatives. Based on the results of the assessment, the following recommendations have been developed:

- Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to the identified CHL.
    - Avoidance measures: These may include, but are not limited to: erecting temporary fencing, establishing buffer zones, as well as issuing instructions to construction crews to avoid the identified CHL.
    - Suitable mitigation measures: These may include post construction rehabilitation with sympathetic plantings. Where tree removals are anticipated, post construction rehabilitation including planting with sympathetic plant species should be considered to mitigate any impacts.
- Should future work require an expansion of the study area, then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on the CHL.

The Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment can be found in **Appendix M**.

## 10.7 Stage 1 Archaeological Assessment

Arcadis also retained ASI to conducted a Stage 1 Archaeological Assessment (AA) as part of this EA process. This study determined 75 previously registered sites are located within one kilometre of the EA Study Limits; however, none of these sites are within 50 metres of the EA Study Limits.

The property inspection determined that parts of Alternatives 4A, 4B, 4D, 4F and 4G exhibit archaeological potential. These areas will require a Stage 2 archaeological assessment prior to any construction activities or other proposed impacts.

The remainder of the project area does not retain archaeological potential, based on deep and extensive land disturbances. These lands do not require further archaeological assessment. Should the proposed work extend beyond the current project area, further archaeological assessments should be conducted to determine the archaeological potential of the surrounding lands.

The Stage 1 Archaeological Assessment is provided in **Appendix O**.

## 10.8 Geotechnical Assessment

A Geotechnical Review and Pavement Assessment was conducted by Arcadis to evaluate the suitability of surface and subsurface conditions within the EA Study Limits.

As revealed by the Pavement Condition Survey (PCS) results, the eastern terminus of Intermodal Drive near the proposed extension consists of units that are mostly in poor or very poor condition. As such, it is recommended that the east section of the Intermodal Drive be reconstructed regardless of which design alternative is selected. The pavement condition of Gorewood Drive is satisfactory, therefore, the whole length, or portion of it, could be maintained for the final road alignment, as needed.

The subsurface soil conditions are generally uniform across the project area. The geotechnical suitability of the foundation soil is comparatively similar for the design Alternatives 4A, 4B, 4D, 4F or 4G. It is important to note, however, that any topsoil or fill material containing organic matter must be removed before laying a new pavement structure on the ground. Thus, the amount of non-reusable excavated soil would be highest for Alternative 4F, and least for Alternative 4A. As such, based on this preliminary geotechnical investigation, Alternative 4F is the least desirable alternative to carry forward.

The Geotechnical Review and Pavement Assessment is provided in **Appendix P.**

## 10.9 Air Quality

An Air Quality Impact Assessment (AQIA) was carried out by Arcadis for the study area and utilized analysis years of 2031, 2041 and 2051 to maintain consistency with the Traffic Study Report. The following applicable contaminant guidelines were referenced:

- Ministry of the Environment, Conservation and Parks (MECP) Ambient Air Quality Criteria (AAQC)
- Canadian Council of Ministers of the Environment (CCME) Canada Wide Standards

To assess the impact of the proposed Intermodal Drive extension with the Alternative 4G alignment on air quality, the maximum predicted pollutant concentrations due to the traffic along the proposed collector road connection were compared against the applicable criteria and standards.

Results of operational and constructions of air quality impacts with respect to Alternative 4G are summarized in below:

- Estimated concentrations of all pollutants of concern were shown to be below their corresponding ambient air quality criteria and standards, except 24-hour and annual average of Benzene and benzo(a)pyrene which have background concentrations already above their respective AAQC limits.
- The project's contribution to the cumulative concentration of benzene and benzo(a) pyrene are thus insignificant. For example, the 24-hour Benzene and benzo(a)pyrene are 0.5% and 11.6% of respective AAQC limits.
- The Study concludes that the air quality impacts of the proposed project are insignificant and therefore no specific mitigation measures are proposed.

The Air Quality Impact Assessment (AQIA) can be found in **Appendix Q**.

# 11 Refinements to the Preferred Alternative

This section documents the selection process of the preferred typical cross-section for the preferred alternative (i.e. Alternative 4G), in consultation with City of Brampton staff. Consideration was given to traffic volume projections derived for this EA study, as well as, roadway, safety, and operational requirements for a collector road which is required to accommodate a significant proportion of heavy vehicle traffic.

## 11.1 ROW Width

The width for all cross-section alternatives was selected as 26m ROW to remain within the 26 to 30-metre ROW range specified in the Brampton Plan (2024) for Intermodal Drive. Initially, a 30-metre ROW was employed, however based on stakeholder feedback and the desire to maximize developable land within the adjacent Gorewood Drive estate properties, the proposed ROW width was narrowed to 26 metres.

The proposed 26-metre ROW is designed to support long-term transportation objectives and will accommodate future transit infrastructure along the Intermodal Drive corridor, ensuring integration with Brampton Transit services.

## 11.2 Vehicle Lane Widths

As discussed previously, the transportation analysis conducted for the Traffic Study Report supported the Intermodal Drive extension with a two-lane cross-section. In the case of a two-lane, undivided cross-section with no curbside parking, wider lanes are generally recommended to accommodate the manoeuvrability of larger vehicles which may on occasion extend beyond the limits of a single lane. For the Intermodal Drive extension, 4.0m vehicle lanes were deemed appropriate, as this is the practical upper limit specified in Table 4.2.3 of the Transportation Association of Canada (TAC) Geometric Roadway Design Guidelines. Lane widths beyond 4.0m may, especially on straight segments of road, cause driver confusion and improper lane use in congested urban environments (Section 4.2.1.4 in TAC).

An exception was made for the tight-curved radius at the proposed connection of Intermodal Drive to Gorewood Drive, with swept path analysis using a WB-20 combination tractor-trailer design vehicle per the Brampton Complete Streets Guide, indicating that wider 5.5m lanes would be required to allow these larger vehicles to navigate around this 45-metre centreline radius.

## 11.3 Active Transportation Facilities Selection

Key guiding documents, including Ontario Traffic Manual (OTM) Book 18: Cycling Facilities (2021) and the Brampton Complete Streets Guide (2023), were consulted to inform the selection of appropriate active transportation facilities for the proposed Intermodal Drive extension.

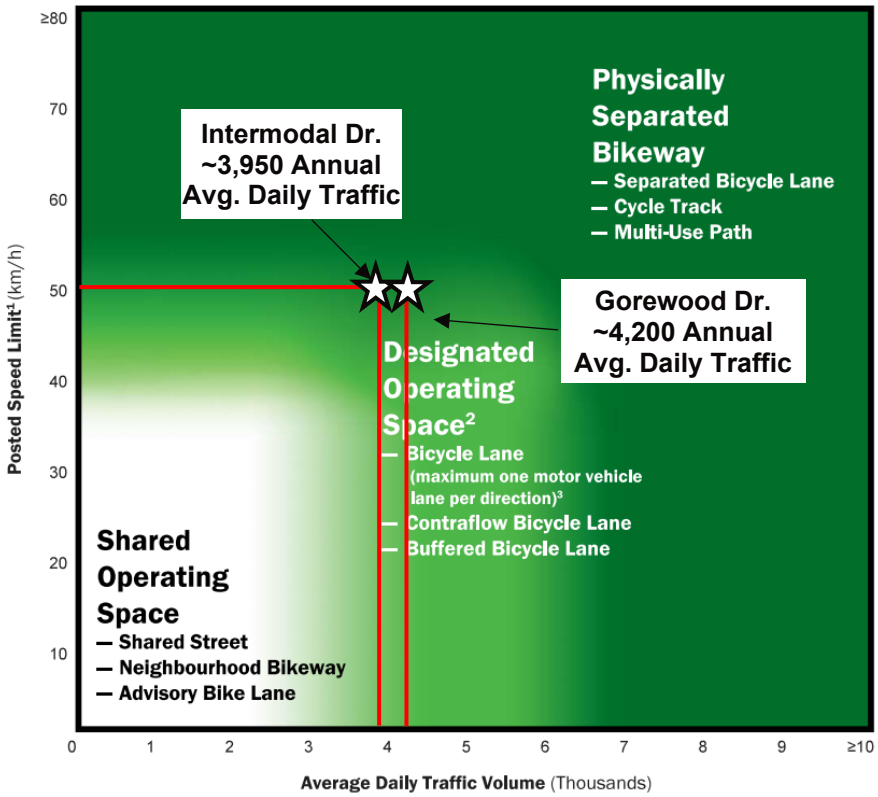
### Ontario Traffic Manual (OTM) Book 18

OTM Book 18 identifies a three-step procedure for identifying appropriate active transportation facilities, as outlined below:

1. Pre-Select Facility Type Option (Nomograph)
2. Detailed & Contextual Evaluation
3. Document & Justify Rationale

**Figure 11-1** below illustrates the recommended cycling facility types based on the pre-selection nomograph (i.e. Step 1).

*Figure 11-1: Active Transportation Nomograph (OTM Book 18)*




*Source: Figure 5.5, OTM Book 18 (2021)*

Based on the projected traffic volumes and the posted speed limit indicated in **Figure 11-1** above, the Intermodal Drive extension and Gorewood Drive within the EA Study Limits are on the border between warranting unseparated and fully separated cycling facilities. A large variety of cycling facilities are therefore potentially feasible, including bike lanes, buffered bike lanes, separated bike lanes, cycle tracks, or multi-use paths. From the more detailed and contextual evaluation undertaken per the second step in the OTM Book 18, physically separated facilities such as buffered bike lanes, cycle tracks or a multi-use path should be considered as a result of heavy vehicle volumes which pose a more significant safety risk for vulnerable road users.

**Brampton Complete Streets Guide (2023)**

The Brampton Complete Street Guide identifies Intermodal Drive as an Employment Collector Street within the study area and generally recommends any of the following active transportation facility arrangements:

- Wider 4.0 to 5.0-metre multi-use path on one side of the street OR
- Narrower 3.0-metre multi-use paths when implemented on both sides
- Uni-directional cycle tracks and sidewalks on both sides

It is noted that whichever arrangement is selected clear widths of 1.8 metres should consistently be maintained for cyclists, while 2.1-metre clear widths are appropriate for pedestrian facilities.

In an industrial/employment use context such as Intermodal Drive, the overall number of active users is expected to be relatively low and therefore shared facilities for pedestrians and cyclists in the form of a multi-use pathway are generally considered appropriate.

**Active Transportation Facility Evaluation**

Following a review of both the OTM Book 18 and the Brampton Complete Streets Guide, four (4) potential scenarios were developed and are listed below:

- Option 4G-1: Multi-use Path on North Side & Sidewalk on South Side
- Option 4G-2: Un-directional Cycle Tracks and Sidewalks
- Option 4G-3: Uni-directional Buffered/Protected Bike Lanes
- Option 4G-4: Multi-use Path on Both Sides

These potential options were evaluated against four (4) suitability criteria which were determined to be most relevant for the purposes of this active transportation facility selection:

- Alignment with OTM Book 18 nomograph
- Reliance on a north-south bicycle crossing facility
- Interim compatibility with adjacent transportation network

- Cost (construction and maintenance)

Given the significant uncertainty that exists for any future potential upgrades to active transportation facilities to the west or south of the EA Study Limits, Option 4G-1 was selected as the most suitable option which consists of a 4.2-metre north side multi-use path and a 2.1-metre south sidewalk. This option will serve to maximize connectivity with the TRCA trail network to the north, while allowing for pedestrian access along the proposed Intermodal Drive extension to the south.

The active transportation facilities evaluation is summarized in **Figure 11-2** below.

*Figure 11-2: Active Transportation Facilities Evaluation*

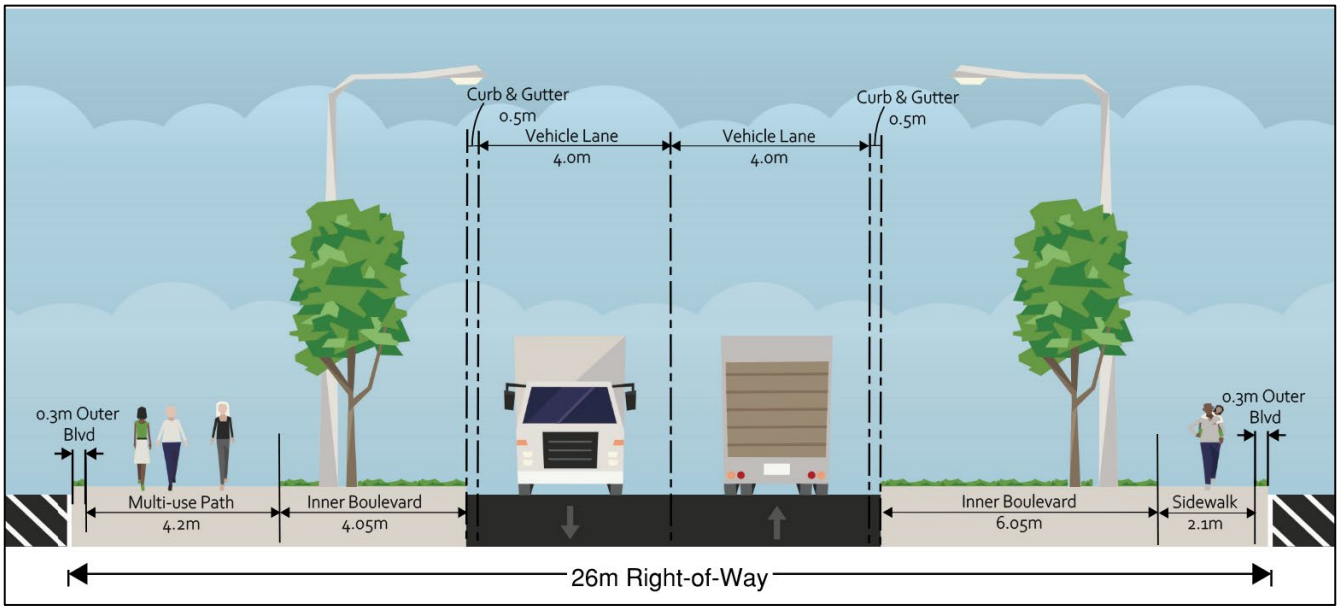
| Options | Criteria | | | | Overall Recommendation |
|---|---|---|---|---|---|
| | Meets OTM Book 18 Nomograph (Protected Bike Lanes) | Reliance on a North-South Bike Crossing Facility | Interim Compatibility with Adjacent Transportation Network | Cost (Construction & Maintenance) | |
| Option 4G-1<br>Multi-use Path on North Side & Sidewalk on South Side Option | ✓ | ✓ | ✓ | ✓ | Preferred |
| | • Protected active transportation facility.<br>• Significant buffer from vehicular traffic. | • Not as dependent on the implementation of a cycling crossing facility as uni-directional facilities. | • Provides a continuous active transportation facility between Deerhurst Dr. & TRCA trail network.<br>• Sidewalk on south side would be implemented solely to provide access to resulting properties on south side of Intermodal Dr. ext. and it is not as crucial that this pedestrian facility be connected to the adjacent network. | • Lowest cost<br>• The only option that is generally compatible with existing Intermodal Dr. but would still benefit further from conversion of north sidewalk to MUP (further study and design required) | |
| Option 4G-2<br>Un-directional cycle tracks and sidewalks | ✓ | ✘ | ✘ | ✘ | Not Preferred |
| | • Protected active transportation facility.<br>• Significant buffer from vehicular traffic. | • Uni-directional cycling facilities are more dependent on crossing facilities.<br>• Lack of crossing facilities along Intermodal Dr. would act as a significant barrier for cyclists. | • Risk of discontinuity; requires reconstruction of Intermodal Dr. further west.<br>• Not compatible with existing Intermodal Dr. configuration; dependent on these facilities being developed on adjacent road sections. | • Highest cost<br>• Highly dependent on future upgrades of adjacent roadway sections to allow for continuity of active transportation facilities. | |
| Option 4G-3<br>Uni-directional buffered/protected bike lanes | ✓ | ✘ | ✘ | ✓ | Not Preferred |
| | • Protected active transportation facility.<br>• Significant buffer from vehicular traffic. | • Uni-directional cycling facilities are more dependent on crossing facilities.<br>• Lack of crossing facilities along Intermodal Dr. would act as a significant barrier for cyclists. | • Risk of discontinuity; requires reconstruction of existing Intermodal Dr. further west.<br>• Not compatible with existing Intermodal Dr. configuration; dependent on these facilities being developed on adjacent road sections. | • Moderate cost<br>• Highly dependent on future upgrades of adjacent roadway sections to allow for continuity of active transportation facilities. | |
| Option 4G-4<br>Multi-use Path on Both Sides | ✓ | ✓ | ✘ | ✓ | Not Preferred |
| | • Protected active transportation facility.<br>• Significant buffer from vehicular traffic. | • Allows flexibility for bi-directional travel, minimizing need for north-south crossing activity. | • Risk of discontinuity; requires reconstruction of Intermodal Dr.<br>• Not compatible with existing Intermodal Dr. configuration; dependent on these facilities being developed on adjacent road sections.<br>• Uncertainty regarding future Gorewood Dr. cross-section configuration and connection. | • Moderate cost<br>• Highly dependent on future upgrades of adjacent roadway sections to allow for continuity of active transportation facilities. | |

## 11.4 Recommended Typical Cross-section

Based on the recommended ROW width, vehicle lane widths and active transportation facilities selection evaluation presented in the preceding sections, the preferred cross-section for the Intermodal Drive extension is provided in **Figure 11-3** below.

Trees and streetlighting are proposed within the boulevard space separating the vehicle lanes and active transportation facilities.

*Figure 11-3: Proposed Typical Cross-section*




### 11.4.1 Multi-Modal Level of Service

Multi-Modal Level of Service (MMLOS) analysis was conducted to assess the performance of the future Intermodal Drive extension. This assessment is based on the preferred alignment and typical cross-section identified **Figure 11-3** above. This MMLOS analysis was undertaken using the Ontario Traffic Council (OTC) Multi-Modal Level of Service Guidelines, published in 2022.

The Intermodal Drive extension is considered an Industrial Boulevard for the purposes of the MMLOS analysis. The base MMLOS targets for Industrial Boulevards are summarized as follows:

- Pedestrian LOS: 'D'
- Bicycle LOS: 'D'
- Transit LOS: 'D'
- Truck LOS 'B'
- Car LOS: 'E'

Upward adjustments have been applied to these targets to reflect local planning direction and strategic policy. The ATMP identifies the need for cycling facilities on Intermodal Drive while the TMP states that there is a city-wide goal to increase the use of sustainable travel modes (i.e., walking, cycling and transit).

It should be stressed that the MMLOS targets represent the Level of Service that should ideally be attained, rather than a minimum requirement that must be met. As such, it is acceptable for some of the targets not to be met.

The adjusted MMLOS targets and results of the analysis are summarized in **Figure 11-4** below.

*Figure 11-4: Future Multi-Modal Level of Service Analysis Results*

| Location | | Pedestrian LOS | Bicycle LOS | Transit LOS | Truck LOS | Car LOS |
|---|---|---|---|---|---|---|
| **Roadway Segments** | | | | | | |
| Intermodal Drive Extension | Actual | D | B | D | A | A |
| | Target | C | B | C | B | E |
| | Deviation | -1 | 0 | -1 | +1 | +4 |

The Intermodal Drive extension would meet the majority of its MMLOS targets except for the Pedestrian and Transit LOS target. Transit along this segment of Intermodal Drive would operate in mixed traffic with only one lane per direction and it is unlikely that transit stops will include an abundance of amenities. These factors result in a Transit LOS of 'D' rather than the target of 'C'. Additionally, as pedestrians would need to share the multi-use path with cyclists, the Pedestrian Level of Service has been decreased by one letter grade to reflect the negative impact sharing operating spaces has on the walking and cycling experience.

Although the Pedestrian Level of Service target is not met it should be noted that the design of the pedestrian and cycling facilities, including facility type, facility widths and boulevard widths, adhere to local design guidance for Employment Collector Streets provided by the City of

Brampton Complete Streets Guide (April 2023). It is anticipated that more locally-specific MMLOS guidance will be provide in future editions of the Brampton Complete Streets Guide.

Further details regarding the MMLOS analysis can be found in Traffic Study Report, located in **Appendix H**.

# 12 Description of the Recommended Plan

The Recommended Plan was developed into a functional-level design, based on the preferred Alternative 4G alignment, the proposed 26-metre typical cross-section and the design criteria discussed further in this section.

This preliminary design of the Recommended Plan is presented in **Appendix R**.

## 12.1 Public Transit

Brampton Transit Planning identified a strong future need for transit infrastructure along Intermodal Drive, driven by the high employment densities within the area. There is currently no public transit service on Intermodal Drive east of Deerhurst Drive, as the existing terminus of this collector street does not provide sufficient space to accommodate the turn-around of a transit vehicle within the public ROW.

The Recommended Plan provisions for future transit service within the EA Study Limits by providing a seamless connection between Intermodal Drive and Gorewood Drive to facilitate efficient transit routing and enhanced coverage through the study area.

The preferred design will improve overall accessibility and comfort for active users, including access to transit service. The proposed multi-use path on the north side of Intermodal Drive, the sidewalk on the south side, along with the mid-block Pedestrian Crossover (PXO), will provide appropriate connectivity to any future transit stops located within the inner boulevard space along the Intermodal Drive extension.

## 12.2 Proposed Tree Layout

As part of the Recommended Plan, a proposed tree layout was developed to define an appropriate spacing and quantity for new tree plantings. The intent of the proposed street trees is to compensate for the loss of any tree removals required as part of this project and to provide a more safe/comfortable environment for active users (i.e. pedestrians and cyclists).

## 12.3 Gorewood Drive Turn-Around Area

At the northern terminus of Gorewood Drive, an asphalt turning basin presently exists to accommodate vehicle turn-around movements, resulting from the discontinuity in the public roadway network between Intermodal Drive and Gorewood Drive.

Introducing a tight curved alignment linking Intermodal Drive and Gorewood Drive would eliminate the need for this turn-around area by linking these two segments of road together. The Recommended Plan identifies the potential for this turn-around area to be re-naturalized and converted to a more permeable greenspace.

## 12.4 Design Criteria

The design criteria for the proposed Intermodal Drive extension will generally be carried out, in accordance with the standards presented in the *Transportation Association of Canada: Geometric Design Guidelines for Canadian* Roads, published in 2017, and are presented in **Figure 12-1** below.

*Figure 12-1: Design Criteria for Intermodal Drive Extension*

| Design Element | Design Criteria | Comments/Reference |
|---|---|---|
| Roadway Classification | UCU | Urban Collector Undivided – Brampton Plan (2024), Schedule 3C |
| Design Speed | 40km/h | Brampton Complete Streets Guide (2023), Table 4.5 |
| Posted Speed | 40km/h | Brampton Complete Streets Guide (2023), Table 4.5 |
| AADT (Ultimate) | ~4,000 vehicles/day | Within the range for a Minor Collector Street of 1,000 to 8,500 ADT, as specified in Appendix D, Table 1 of the City of Brampton Subdivision Design Guidelines (2008). |
| No. of Through Lanes | 2 | It has been confirmed through the traffic analysis conducted as part of this EA study that the vehicle volumes can be accommodated with a two-lane cross-section along the Intermodal Drive extension and that Gorewood Drive can also continue to |

| Design Element | Design Criteria | Comments/Reference |
|---|---|---|
| | | operate within an acceptable LOS beyond the 2051 ultimate planning horizon year. |
| Right of Way Width | 26-30m | Brampton Plan (2024) identifies a ROW ranging from 26m to 30m in Schedule 4 for the Intermodal Drive east of Goreway Drive and its extension to Gorewood Drive. |
| General Traffic Lane Widths | 3.5-4.0m | In this context, 4.0m lane widths were deemed appropriate to accommodate the safe maneuverability of WB-20 trucks and are the practical upper limit for lane widths specified in Table 4.2.3 in TAC on straight sections of road. Wider lanes were noted as contributing to driver confusion and improper lane use in congested urban environments (Section 4.2.1.4 in TAC). |
| Median | None | A raised centre median is not required to reduce collision rates, based on the driveway density per kilometre (Table 4.5.2) and AADT (Table 4.5.3), as specified in TAC. |
| Multi-use Path (MUP) | 4.2m | Brampton Complete Streets Guide (2023), Table 4.1 |
| Sidewalk | 2.1 m | Brampton Complete Streets Guide (2023), Table 4.1 |
| Minimum Stopping Sight Distance | 40 m | TAC, Table 2.5.2 |
| Minimum Horizontal Radius | 45 m | TAC, Table 3.2.4 |
| Minimum Gradient | 0.5 % | This is also the minimum grade shown in Appendix D, Table 1: City of Brampton Subdivision Design Manual (2008). |
| Maximum Gradient | 6 % | This is also the maximum grade shown in Appendix D, Table 1: City of Brampton Subdivision Design Manual (2008). |
| Cross-fall | 3.0% | City of Brampton approved typical cross-sections recommend 3% cross-fall for collector roads. |

| Design Element | Design Criteria | Comments/Reference |
|---|---|---|
| Minimum Vertical Curve - Crest | K = 11 | Refer to Table 3.3.2 in TAC |
| Minimum Vertical Curve - Sag | K = 18 | Refer to Table 3.3.4 in TAC |
| Tangent at Intersection | 30m | Appendix D, Table 1 of City of Brampton Subdivision Design Manual (2008). |

## 12.5 Preliminary Cost Estimate

### 12.5.1 Preliminary Cost Estimate

A preliminary Class 'C' cost estimate was prepared for the implementation of the Recommended Plan developed based on Alternative 4G, as summarized in **Figure 12-2** below.

*Figure 12-2: Preliminary Cost Estimate (Recommended Plan)*

| Cost Component | Cost |
|---|---|
| Part A – Storm Sewer Works | $765,485.00 |
| Part B – Watermain Works | $383,475.00 |
| Part C – Road Works | $1,358,115.00 |
| Part D – Traffic Signs & Pavement Markings | $42,055.00 |
| Part E – Landscape Works | $83,385.00 |
| Part F – Street Lighting | $146,600.00 |
| Contingency (20%) | $555,823.00 |
| **Total** | **$3,334,938.00** |

Based on the preliminary cost estimate summarized above, it is expected that construction costs will be in the order of $3.4M.

It is important to note that this estimate does not account for engineering planning or design work, soil remediation, property acquisition, or contract administration time during construction. The cost estimate will continue to be refined during the detailed design stages of the project.

A further breakdown of the preliminary cost estimate is provided in **Appendix *S***.

# 13 Additional Permits, Approvals, Commitments & Noise Considerations

## 13.1 Anticipated Permits and Approvals

The following approvals have been identified as potentially being required prior to the implementation of the proposed works and may include the following:

- An Environmental Compliance Approval (ECA) could be required prior to construction to ensure that the proposed works comply with MECP guidelines for the design and installation of the proposed watermain or storm sewer infrastructure.
- Ministry of Environment, Conservation and Parks – Form 1, Record of Future Alteration for Watermains, for the installation of the proposed Region of Peel watermain along the proposed alignment.
- Register water taking activity on the Environmental Activity and Sector Registry (EASR) or obtain a Permit to Take Water (PTTW) under the Ontario Water Resources Ac, as required.
- Submit any additional Built Heritage Resources (BHRs) and Cultural Heritage Landscapes (CHLs) identified during the design and construction stage of the project to the Ministry of Tourism, Culture and Gaming and Ministry of Sport (MTCGS).
- Permission to Enter Agreements (PTEs) to allow the project team to enter Gorewood Drive estate properties and TRCA lands directly impacted by the Recommended Plan.
- The site is located within MTO's Permit Control Area, therefore a Building & Land Use Permit will be required prior to the start of any construction works.
- TRCA permit under Ontario Regulation 166/06- Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

## 13.2 Commitments for Future Work

The project team is committed to the following after the successful completion of the EA process:

- Ongoing engagement with Indigenous communities throughout the detailed design stages of the project.
- Ensuring that detailed design refinements continue to maintain cut and fill balances within the TRCA floodplain regulated area to mitigate environmental impacts within these flood-prone areas.
- Develop an erosion and sediment control plan for the project in accordance with the Erosion and Sediment Control (ESC) Guidelines for Urban Construction, December 2006, Greater Golden Horseshoe Area Conservation Authorities.
- Coordinate with developers, as required, to determine their status, build-out timelines and any impacts to the study corridor.
- Consult with impacted property owners, including those whose property is required or where access to their property will be impacted.
- Consult with regulatory agencies, as required, during the detailed design and implementation stages of the project.
- Areas identified as exhibiting archaeological potential from the Stage 1 Archaeological Assessment (AA) conducted in support of this EA will require a Stage 2 AA prior to any construction activities or other proposed impacts.
- Conduct individual Phase One Environmental Site Assessments (ESAs) for each impacted property to determine whether more intrusive sampling in the form of a Phase Two ESA is required during the detailed design stages.
- The project team is committed to working through the TRCA EA Review and Permit and property requirements from the TRCA prior to the implementation of the proposed works on site pertaining to tree or vegetation removal, application for Permission to Enter (PTE) TRCA Property and archaeological review, among others.
- If an existing sanitary sewer is to be exposed at any point or excavation works will be in proximity to the sanitary sewer, calculations of live/dead loads must be provided as part of the detailed design. Along with load calculations, a concluding statement will be provided indicating that "the construction activities and the heaviest construction equipment, idling, performing work in proximity to the sanitary sewer, will not have any negative/detrimental impacts on the existing infrastructure."

## 13.3 Noise Impacts During Construction

In order to mitigate the impacts of noise and vibration during construction:

- Scheduling major construction activities during daytime hours (i.e. 07:00 to 19:00)
- The Contractor is required to keep the idling of construction equipment to a minimum as necessary and to maintain equipment in good working condition to reduce noise from construction activities.
- Installing and properly maintaining noise mitigation equipment (e.g. muffler systems) in accordance with equipment manufacturer requirements.
- Wherever possible, the Contractor is to implement administrative controls such as maintaining setbacks from Noise Sensitive Areas (NSAs), plan activities considering timing constraints, or scheduling of specific construction activities to minimally disturb the NSAs.
- Where required and where practical, the contract documents shall include these best management practice guidelines and identify NSAs in the contract package using Special Provisions 199F33 or similar documents.
- Although the Project is expected to be exempt from the City's Noise By-law 93-84, it is recommended that the Project adhere to the By-law requirements as much as possible for best practices.

# 14 Conclusions

This Project File Report recommends that the City of Brampton proceed with the implementation of the Recommended Plan developed based on the **Alternative 4G** alignment for the Intermodal Drive and Region of Peel watermain extension to Gorewood Drive.

The findings of this study have been based on the application of the Class EA planning process, as outlined in the Municipal Class Environmental Assessment (October 2000, as amended 2007, 2011, 2015 & 2023) document for Schedule 'B' projects. The principles and methodology of the EA process guided the analysis and evaluation of alternatives for the final selection and refinement of the Recommended Plan. Input from study stakeholders was received and recorded throughout the study process and helped to establish the findings and recommendations of the study.

Specifically, the approval of this Project File Report will enable the advancement of the preliminary and detailed design and, ultimately, the construction of the Recommended Plan to proceed.

# Appendix A – Study Notices

# Appendix B – Communication Plan

# Appendix C – MECP Notification

# Appendix D – Agency Consultation

# Appendix E – Stakeholder Consultation

# Appendix F – Indigenous Consultation

# Appendix G – PIC Consultation Record

# Appendix H – Traffic Study Report

# Appendix I – Utility Relocation Report

# Appendix J – Stormwater Management Report

# Appendix K – Socio-Economic Environment Report

# Appendix L – Natural Environment Report

# Appendix M – Cultural Heritage Report

# Appendix N – Phase 1 Environmental Site Assessment (ESA)

# Appendix O – Stage 1 Archaeological Assessment

# Appendix P – Geotechnical Review & Pavement Assessment

# Appendix Q – Air Quality Impact Assessment

# Appendix R – Recommended Plan

# Appendix S – Preliminary Cost Estimate