The City of Brampton

Natural Environment Assessment Report

Extension of Intermodal Drive to Gorewood Drive

FINAL

December 22, 2025

Natural Environment Assessment Report

Extension of Intermodal Drive to Gorewood Drive

December 2025

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4	0D	2025-12-22	49 + Appendices	Final Report	Ben Pascolo-Neveu

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Acronyms and Abbreviations

Arcadis	Arcadis Professional Services (Canada) Inc., formerly IBI Group Professional Services (Canada) Inc.
ESA	*Endangered Species Act, 2007*
FWCA	*Fish and Wildlife Conservation Act, 1997*
GGH	Greater Golden Horseshoe
Growth Plan	*A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019*
ISA	International Society of Arboriculture
MBCA	*Migratory Birds Convention Act, 1994*
MBR	*Migratory Birds Regulations, 2022*
MNRF	Ministry of Natural Resources and Forestry
NEA	Natural Environment Assessment
NHIC	Natural Heritage Information Centre
OP	Official Plan
PPS	*Provincial Planning Statement, 2024*
SAR	Species at Risk
SARA	*Species at Risk Act, 2002*
Study Area	The Subject Site and the area within 120 m of the Subject Site
Subject Site	The area of potential development for this proposed project, encompassing the four route alternatives being considered.
SWH	Significant Wildlife Habitat

1 Introduction

Arcadis Professional Services (Canada) Inc. (Arcadis) was retained by the City of Brampton to provide consulting engineering services for undertaking the necessary works to complete a Schedule “B” Municipal Class Environmental Assessment (MCEA) and Detailed Design for the proposed extension of Intermodal Drive to Gorewood Drive, located in Brampton, Peel Region, Ontario. To support the EA process, the following Natural Environment Assessment (NEA) report has been prepared.

1.1 Project Location

The project aims to connect the existing Intermodal Drive eastward approximately 160 m to connect to Gorewood Drive (at easterly property limit of 835 Intermodal Drive). It is within part of Lot 1, Concession 8, in the Geographic Township of Toronto Gore (**Figure 1**).

1.2 Project Description

Intermodal Drive is a 4-lane, 26-30 m ROW industrial collector road extending from Airport Road that currently does not connect to Gorewood Drive. The City’s Airport Intermodal Secondary Plan Area 4 identifies an extension of Intermodal Drive to Gorewood Drive to provide an alternate, shorter route for traffic to access Steeles Avenue from the east end of the employment area. The intent of the access is to provide a secondary point of access to the properties along Intermodal Drive (east of Gorewood Drive) if the current access point is blocked. This connection is seen as a goods movement network efficiency improvement. The land use framework provided by the secondary plan designates the area along Intermodal Drive extension as Prestige Employment.

1.3 Subject Site and Study Area

The Subject Site refers to the potential areas of impact from the works associated with the road improvement area. It contains the location of each alternative and of any clearing, temporary laydown or access needed for construction that are known at the time this report was prepared. For this assessment, the Study Area includes the area within 120 metres (m) from each of the proposed road alignment alternatives to account for policy requirements and setback distances outlined in the *Provincial Planning Statement* (2024) and the accompanying Natural Heritage Reference Manual (MNRF 2010; Figure 1). As necessary, consideration has been given to wildlife occurrences (including SAR) reported up to 20 km away, due to the nature of desktop resources (i.e., online databases and atlases) with data presented in a 10 km x 10 km grid in many of the provincial atlas’ and up to 20 km x 20 km for “obscured” data on iNaturalist (2024), when applicable.

1.4 Purpose

The purpose of this NEA Report is to provide a summary of the natural heritage features within and adjacent to the four proposed road alignment alternatives, identify key natural heritage constraints, and provide management recommendations to ensure compliance with relevant policies and legislation. The findings in this report are based on three field investigation visits and desktop screening results. Specifically, this Natural Environment Assessment report has been prepared to fulfil the requirements of the MCEA, with respect to the assessment of natural heritage features.

Scale: 1:2,500

0 15 30 60 90 120 Meters

Legend

- Subject Site
- Study Area (120m)
- Roads (GEO)
- Watercourse (GEO)

Client: **City of Brampton**

Project: Extension of Intermodal Drive

Title: Figure 1: Subject Site and Study Area

Prepared By: ARCADIS

Project: 145609

Date: 2025-08-28

1.5 Property Information

The following table provides site-specific information for the Subject Site.

Table 1-1: Property Information

Owner	City of Brampton
Address	8196 – 8108 Gorewood Drive, Brampton, Ontario
Lot and concession	Part Lot 1, Concession 8
Zoning	Employment Areas
City of Brampton Official Plan - City Concept (Schedule 1)	Employment Area
Existing Land Uses	Industrial
Size of Subject Site	8.06 hectares

1.6 First Nations Land Acknowledgement

Arcadis would like to acknowledge that the Subject Site in Brampton, Ontario is located on the traditional lands / territories of the Haudenosaunee, Anishinabewaki, Mississauga of the Credit First Nation, Wendake-Nionwen, Petun and the Mississauga. We acknowledge that the First Nations are land stewards and caretakers of the land and waters within this territory in perpetuity.

1.7 Study Approach

The following approach has been developed to provide a clear methodological direction towards characterizing the natural environment and assessing the potential for significant species and habitats within the Study Area.

Relevant Policy and Legislative Framework:	This section outlines the policies and legislation that apply to the protection of natural heritage features within the Study Area as it relates the Project.
Background Review:	This section provides the detailed background information collected from a variety of publicly accessible resource databases to describe the natural heritage features and significant features that may occur within the Study Area.
Field Survey Methodology:	This section provides a summary of the specific protocols and methods used to evaluate potential natural heritage features and species identified within the natural heritage field surveys.
Field Survey Results:	This section provides the results from the field surveys. This also includes any incidental observations or notable observations made by the field biologists.
Description of the Proposed Project:	This section provides a summary of the Project, including the construction activities and other activities which may have an impact on the natural environment.
Impact Assessment and Mitigation:	This section provides the assessment of potential environmental impacts associated with the Project on the natural heritage system, including the natural heritage features and species surveyed in this study. The mitigation measures proposed in this section are aimed at reducing or eliminating potential impacts to natural heritage features. Where mitigation may not be possible, compensation may be proposed. This section will also identify any future permitting or agency authorizations that may be required before the Project may proceed.
Summary and Conclusions:	This section provides a summary of the Study's findings, outlines any notable provisions, and provides Arcadis' general recommendations.

2 Relevant Policy and Legislative Framework

This study references the regulatory agencies and legislative authorities mandated to protect different elements of the natural heritage features, and functions within the City of Brampton, Ontario, Canada. The scope of this report evaluates the natural heritage features and SAR governed by the policies outlined in the table below. The following subsections provide a high-level summary of the policies and legislation, noting their most recent date of amendment (at this time of preparation of this report). Each subsection also contains a short description of the policy's / legislation's applicability to this specific Project.

Table 2-1: Relevant Environmental Policies and Legislation

Policy / Legislation	Governing Body, Guidelines, and Resources
FEDERAL GOVERNMENT OF CANADA	
Migratory Birds Convention Act (S.C. 1994, c. 22) **(MBCA)**	**Environment and Climate Change Canada (ECCC)** - *Guidelines to Avoid Harm to Migratory Birds* (ECCC 2023a) - *Migratory Birds Regulations, 2022* - *Fact sheet: Nest Protection under the Migratory Birds Regulations, 2022* (ECCC 2023b) - *Nesting Calendars* (ECCC 2023c)
Species at Risk Act (S.C. 2002, c. 29) **(SARA)**	**Environment and Climate Change Canada (ECCC)** - Federal Species at Risk Public Registry - Distribution of aquatic Species at Risk mapping (DFO 2023) - ECCC Open Data: Range Map Extents, and Critical Habitat for Aquatic SAR, Provincial SAR, and National SAR (ECCC 2022)
Fisheries Act (R.S.C., 1985, c. F-14)	**Fisheries and Oceans Canada** - *Projects Near Water* online resources (DFO 2022) - *The Fish and Fish Habitat Protection Program (FFHPP) Regulatory Review Process Map* (DFO 2020) - *Guidance for Maintaining and Repairing Municipal Drains in Ontario* (Kavanagh et al. 2017)
PROVINCIAL GOVERNMENT OF ONTARIO	
Fish and Wildlife Conservation Act (S.O. 1997, c. 41) **(FWCA)**	**Ministry of Natural Resources and Forestry (MNR; formerly the Ministry of Natural Resources and Forestry)** • Wildlife Schedules (*O. Reg. 669/98*)
Conservation Authorities Act, (R.S.O. 1990, c. C.27)	**Toronto Region Conservation Authority (TRCA)** • Prohibited Activities, Exemptions and Permits (*O. Reg 41/24*) • Watershed Report Card (TRCA [2018]) • Floodplain mapping • Evaluation, Classification and Management of Headwater Drainage Features Guidelines (TRCA and CVC 2014)
Endangered Species Act (S.O. 2007, c. 6) **(ESA)**	**Ministry of the Environment, Conservation and Parks (MECP)** - *Species at Risk in Ontario List* (*O. Reg. 230.08*)
Environmental Assessment Act (R.S.O. 1990, c. E. 18)	**Ministry of the Environment, Conservation and Parks (MECP)**
Planning Act (R.S.O. 1990, c. P.13)	**Ministry of Municipal Affairs and Housing** • *Provincial Planning Statement, 2024* (PPS) MNR Natural Heritage Information Centre (NHIC) Database (MNR 2024): • Species at Risk occurrence records • Identification of Species of Conservation Concern • Mapping of Natural Heritage Features

Policy / Legislation	Governing Body, Guidelines, and Resources
	Wildlife Atlases and Databases: • *Ontario Breeding Bird Atlas* (BSC et al. 2006) • *Ontario Reptile and Amphibian Atlas* (Ontario Nature 2020) • *Ontario Butterfly Atlas* (TEA 2024) • *iNaturalist* Observation Records (iNaturalist 2024) • *eBird* HotSpot species lists (eBird 2024) • *Atlas of the Mammals of Ontario* (Dobbyn 1994) Other Resources: • *Ecological Land Classification for Southern Ontario, First Approximation, and its Application* (Lee et al. 1998) • *Significant Wildlife Habitat Technical Guide* (MNR 2000) • *Significant Wildlife Habitat Ecoregion 6E Criterion Schedule* (MNRF 2015).
LOCAL MUNICIPALITIES	
City of Brampton Official Plan, 2020	**City of Brampton** • September 2020 Consolidation • Schedule A – General Land Use Designations (City of Brampton 2020) • Schedule D – Natural Heritage Features and Areas (City of Brampton 2020) • *Tableland Tree Assessment Guidelines* (City of Brampton 2023)
***Region of Peel Official Plan* 2022**	**Peel Region** • April 2022 consolidation • Schedule D - Secondary Plan Areas (Peel Region 2022)
Tree Preservation By-law 317-2012	**City of Brampton** - *Landscape Development Guidelines* (City of Brampton 2019) - *Temporary Tree Protection Fencing (City of Brampton 2014)*
Woodlot Conservation By-law 402-205	**City of Brampton**

Note:
The Subject Site is approximately 80 m south of the land governed by the *Greenbelt Act (S.O. 2005, c.1)*.

2.1 Federal Policies and Legislation

2.1.1 *Migratory Birds Convention Act, 1994* (MBCA)

The federal MBCA was originally adopted in 1916, updated in June 1994 to strengthen the enforcement provisions and significantly increases the penalties. The MBCA was last amended in December 2017 and the associated *Migratory Birds Regulations* (MBR), were most recently updated in November 2024. Together then MBCA and the MBR protect migratory bird populations and individuals by regulating potentially harmful anthropogenic activities which may cause harm to the nests, eggs, and any part of a listed bird species.

Under the MBCA, protected species are listed under Article I. In general, birds not falling under federal jurisdiction within Canada include grouse, quail, pheasants, ptarmigan, hawks, owls, eagles, falcons, cormorants, pelicans, crows, jays, kingfishers, and some species of blackbirds. However, if the species identified is protected under Ontario's *Endangered Species Act, 2007* or Canada's *Species at Risk Act, 2002*, additional restrictions may apply.

Harm to a MBCA-listed bird species that results from human activities that are not directed at the birds or nests is called "incidental take" because it occurs incidental to otherwise lawful activity. Incidental take is a contravention of the MBCA.

2.1.1.1 *Migratory Birds Regulations, 2022* (MBR)

The changes in the *MBR* altered the protection for nests of MBCA-listed birds. With the exception of 18 species listed under Schedule 1 of the MBR, which have year-round protection, instead of safeguarding *all* nests of MBCA-listed birds at *all* time, the new MBR protect *most* nests only when they are "active"; i.e., when they contain a live bird or a viable egg - generally during the breeding window (Late March – Late August with some regional variation, in the southern half of Ontario).

The changes to the MBR support conservation benefits, as the nests of most MBCA-listed birds only have conservation value when they are active. The changes also provide flexibility and predictability for stakeholders to manage their compliance requirements as they undertake activities on the landscape that may affect migratory birds and/or their nests.

Under specific conditions, a permit or authorization for activities that would otherwise not be allowable under the MBR can be obtained from ECCC. Regardless of the time of year, nests of Schedule 1 species may only be removed with a permit from the ECCC.

MBCA - Applicability to the Project

Within Canada, the MBCA applies to activities conducted by the public and all levels of government. The killing or harming of an MBCA-listed bird or destruction / disturbance of a nest and eggs is unlawful, regardless of intent.

*As such, **the MBCA applies to the Subject Site.** Therefore, if a protected species or their nest is encountered during Project activities, the Project must comply with the prohibitions of the MBCA.*

2.1.2 *Species at Risk Act, 2002* (SARA)

The federal SARA was adopted in 2002 and last amended in November 2024. The purposes of SARA are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are Extirpated, Endangered, or Threatened as a result of human activity, and to manage species of Special Concern to prevent them from becoming Endangered or Threatened. Those species listed as Threatened, Endangered, or Extirpated under Schedule 1 are afforded both individual and habitat protection under SARA on federal lands. Additionally, outside of federal land, Section 58 of SARA affords protection to critical habitat of:

- Species of migratory birds protected by the *Migratory Birds Convention Act, 1994* that fall under Schedule 1 of SARA; and
- Aquatic species that fall under Schedule 1 of SARA.

A permit, or authorization, for activities that would otherwise not be allowable under SARA can be obtained from ECCC.

SARA – Applicability to the Project

The Study Area is not on federal land, as such only Section 58 of SARA applies to the Study Area.

2.1.3 *Fisheries Act, 1985*

The federal *Fisheries Act* was established in 1985 and last amended in November 2024. On August 28, 2019, provisions of the new *Fisheries Act* came into force including new protections for fish and fish habitat in the form of standards, codes of practice, and guidelines for projects near water. The *Fisheries Act* provides protection to fish and fish habitat such that:

> *"No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat" (Section 35 (1)).*

Fish habitat is defined by the *Fisheries Act* as:

> *"water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas" (Section 2 (1)).*

The *Fisheries Act* requires that any work, undertaking, or activity avoid harmful alteration, disruption, or destruction of fish habitat unless authorized by Fisheries and Oceans Canada.

Fisheries Act - Applicability to the Project

The Fisheries Act governs all fish habitat (as defined above) within Canada. The Fisheries Act applies to the Study Area where watercourses / drainage features provide fish habitat (as defined above).

2.2 Provincial Policies and Legislation

2.2.1 *Environmental Assessment Act, 1990 (EAA)*

The *Environmental Assessment Act, 1990* (EAA) is triggered when the proponent is a provincial ministry, municipality, or public body (i.e., conservation authorities) for specific types of projects including infrastructure, such as public road widenings/improvements. The Act sets out the guidelines for the evaluation of the potential environmental effects and the steps to be taken with respect to notifications, consultation, and submissions. The assessments can be individual or scoped / streamlined. The streamlined EA is a self-assessment processes that follow a specific standard. The Municipal Class Environmental Assessment (MCEA) created by the Municipal Engineers Association (MEA) applies to various projects carried out by municipalities including road widening/improvements.

The classification of projects and activities under the MCEA (2000, as amended in 2023) is as follows:

- Exempt (formerly Schedule A and A+): Includes municipal maintenance, operational activities, rehabilitation works, minor reconstruction or replacement of existing facilities, and new facilities that are limited in scale and have minimal adverse effects on the environment. These undertakings are exempt from the requirements of the Environmental Assessment Act.
- Eligible for Screening to Exempt: Some municipal maintenance, operational activities, rehabilitation works, minor reconstruction or replacement of existing facilities, and new facilities may be exempt from the Environmental Assessment Act based on the results of the archaeological screening and

collector road screening processes. If the project is not exempt, it may proceed with the Schedule B or C process.

- Schedule B: Includes projects that have the potential for adverse environmental effects. This includes improvements and minor expansions of existing facilities. These projects are approved subject to a screening process which includes consulting with stakeholders who may be directly affected and relevant review agencies.
- Schedule C: Includes the construction of new facilities and major expansions to existing facilities. These undertakings have the potential for significant environmental effects and must proceed under the planning and documentation procedures outlined in the MCEA document.

***Environmental Assessment Act* - Applicability to the Project**

The City of Brampton's Intermodal Drive to Gorewood Drive Class EA Study has been identified as a Schedule 'B' project under the MCEA.

2.2.2 Planning Act, 1990

The *Planning Act* was passed into law in 1990 and was recently amended in April 2022 by the *More Homes for Everyone Act*, and February 22, 2024, by the *Get it Done Act* the amendments to the *Planning Act*. The *Planning Act* is provincial legislation that sets out the ground rules for land use planning in Ontario. It describes how land uses may be controlled and who may control them.

The *Planning Act* is the foundation for creating plans that guide development at both regional and municipal levels.

2.2.2.1 Provincial Planning Statement, 2024 (PPS)

Under Section 3 of the *Planning Act*, the Ministry of Municipal Affairs and Housing issued the PPS. The initial *Provincial Policy Statement* came into effect in 1995, and the PPS 2024 came into effect on October 20, 2024. The PPS offers general policy guidelines about provincial concerns related to land use planning and development. Regional plans, municipal official plans, and the PPS collaborate to establish and protect natural heritage features. The most recent version of the PPS consolidates and replaces the PPS 2020 and the *Growth Plan for the Greater Golden Horseshoe* into a single province-wide planning document.

The PPS identifies seven natural heritage features and provides planning policies for each under Natural Heritage, Policy 2.1. These features are:

- Significant wetlands (including coastal wetlands);
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat (SWH);
- Significant areas of natural and scientific interest;
- Significant habitat of Endangered and Threatened species; and
- Fish habitat.

Each of these features is afforded varying levels of protection subject to guidelines and/or regulations. Municipalities are the primary lead for implementing provincial policies, such as the PPS and other planning-related policies, through their official plans. Generally, special buffers and studies are prescribed based on the natural heritage features present and the land use and impacts proposed.

While the Provincial Planning Statement (PPS) is a tool under the *Planning Act, 1990,* which is not triggered by the proposed road improvements, the MCEA recommends that the PPS and policies listed in the local Official Plan (OP) be considered when assessing the significance of a natural environmental feature for a municipal project.

Planning Act - Applicability to the Project

The City of Brampton's Intermodal Drive to Gorewood Drive Class EA Study has been identified as a Schedule 'B' project under the MCEA.

2.2.3 *Endangered Species Act, 2007* (ESA)

The Ontario ESA first came into effect on June 30, 2008, and the latest amendment came into force on February 22, 2024, when further exemptions were introduced for mineral exploration, newly listed species and reduced habitat protection for Redside Dace.

Section 9 of the ESA protects members of species listed as Endangered, Threatened, or Extirpated on the Species at Risk in Ontario List. Section 10 of the ESA prohibits the damage or destruction of the habitat of species listed as Endangered or Threatened. Species listed as Special Concern provincially are not afforded protection under the ESA. Under the ESA, all species listed as Threatened or Endangered in Ontario receive immediate 'general habitat protection'. This includes places that are used as dens, nests, hibernacula, or other residences. For some species, agencies have defined general habitat descriptions that provide science-based criteria for the habitat to be protected for some SAR species.

A permit, or authorization, for activities that would otherwise not be allowable under Sections 9 or 10 of the ESA can be obtained from Ministry of the Environment, Conservation and Parks (MECP).

ESA - Applicability to the Project

The ESA applies to the entire Study Area. Any Threatened or Endangered SAR or their habitat that may be impacted by Project work requires consideration. If impacts to SAR or their habitat cannot be fully avoided, a permit or approval may be required under the ESA. This determination is made through consultation with MECP via submission of an Information Gathering Form and Avoidance Alternatives Form.

2.2.4 Fish and Wildlife Conservation Act, 1997 (FWCA)

The Ontario *Fish and Wildlife Conservation Act* (FWCA) was established in 1997 and most recently amended in October 2024. The FWCA is managed by the MNRF and applies to 'wildlife' which is defined as:

> *"an animal that belongs to a species that is wild by nature and includes game wildlife and specially protected wildlife" (Section 1 (1)).*

Those species considered "specially protected wildlife" include those specially protected amphibians, birds, invertebrates, mammals, and reptiles, as identified within Schedules 6 to 11 under the FWCA.

Under the FWCA, it is also illegal to destroy, take, or possess the nests, eggs, or young of most native bird species in Ontario without a permit. This includes stick nests constructed by birds such as hawks, owls, ospreys, eagles, and herons.

A permit, or authorization, for activities that would otherwise not be allowable under the FWCA can be obtained from MNRF.

2.2.5 *Conservation Authorities Act, 1990*

The *Conservation Authorities Act* was originally legislated in 1946 but has undergone many amendments since. The recent changes were introduced through Bill 23 (*More Homes Built Faster Act 2022*) and came into effect on April 1, 2024. These changes revoked the existing 36 conservation authority-specific regulations and the regulation governing their contents and replaced them with one new minister's regulation (*Ontario Regulation 41/24: Prohibited Activities, Exemptions and Permits*) governing prohibited activities, exemptions, and permits under the *Conservation Authorities Act*. This minister's regulation applies to all conservation authorities resulting in a clear and streamlined permitting process that protects people and property from natural hazards across Ontario (Government of Ontario 2024).

The Toronto and Region Conservation Authority (TRCA) is the governing body that regulates zones with potential for flooding, protects associated natural features, and restores and enhances ecosystems within the Humber River watershed. Development within these regulated areas is governed by the new regulation (*O. Reg. 41/24)*. TRCA also maintains, monitors, and collects information related to water quality/quantity, fisheries resources, forestry, land use, and wetlands.

Conservation Authorities Act - Applicability to the Project

In the Study Area, the Conservation Authorities Act is applied through Ontario Regulation 41/24. The northeastern portion of the Subject Site is located within the regulation area of Toronto and Region Conservation Authority (TRCA). To develop lands within a regulated area, permission is required as provided under Section 28 of the Conservation Authorities Act. Permission for the development of the regulated area may be granted if it can be shown that control of flooding, erosion, dynamic beaches, pollution, or the conservation of land will not be affected by the development, as stated under Section 1(1).

Any Project activities within the regulation area will require consultation with Toronto and Region Conservation Authority (TRCA) to determine the need for authorization under Ontario Regulation 41/24.

2.3 Municipal Policies and Legislation

2.3.1 Peel Region's Official Plan

Peel Region's Official Plan (Regional OP, 2022) lays out policies for guiding the growth in the region and the protection of natural spaces within the Region. The Regional OP shows the Subject Lands as "Urban System". The Study Area to the north and east mostly "Parkway Belt West Plan Area", and "Greenbelt Plan – Urban River Valley" (Peel Region 2022).

Regional Official Plan - Applicability to the Project

The official plans relevant to the Study Area are the Peel Region's Official Plan (2022).

2.3.2 City of Brampton Official Plan

The City of Brampton Official Plan (City OP, 2024) gives direction for how development and land use decisions should be made within the city. An Official Plan is a land use planning document that guides and shapes development by identifying where and under what circumstances specific types of land uses can be located. It is used to ensure that future planning development appropriately balances social, economic, and environmental interests of the community.

Natural Heritage policies are outlined in Section 2.2.9 of the Official Plan. These policies work in conjunction with other policies in the Official Plan, the conservation authorities and other levels of government to ensure that the Natural System in the city are protected. It provides long term protection of key natural heritage features, key hydrologic features areas and their functions. Schedule 6A and 6B of the Official Plan show the City's Natural Heritage System (Figure 3).

City Official Plan - Applicability to the Project

The official plan relevant to the Study Area is the City of Brampton Official Plan (2024).

2.3.2.1 Urban Forest Strategy

The Urban Forest Strategy was designed to "support and protect trees, forest, and healthy ecosystems in the urban environment" (City of Brampton 2022).

2.3.2.2 Tableland Tree Assessment Guidelines

The City of Brampton has created a Tableland Tree Assessment Guideline (City of Brampton 2023) to provide coordinated guidance for mitigation and replacement of trees lost as part of development activities. Arcadis acknowledges that the tree replacement ratios outlined in the City of Brampton Tableland Tree Assessment Guidelines (2023) are just a guide and we will always strive to exceed these ratios wherever it is feasible.

2.3.2.3 Natural Heritage and Environmental Management Strategy **(NHEMS)**

The City of Brampton has produced a Natural Heritage and Environmental Management Strategy (City of Brampton 2015) that provides a snapshot of the current Natural Heritage System, includes background information and recommended actions to preserve and strengthen the cities Natural Heritage System.

2.3.3 City of Brampton Tree Protection

Tree removal and protection in the City of Brampton is governed by a by-law and an urban forest strategy document. Through these documents the City strives to preserve and protect healthy trees in order to achieve its commitment to maintain a healthy urban forest.

2.3.3.1 Tree Protection By-law 317-2012

The City of Brampton is committed to maintaining a healthy urban forest. To do this, the *Tree Protection By-law 317-2012* may prohibit or regulate the destruction or injuring of trees located on private property. The by-law describes the roles, responsibilities, and exemptions. Permits are issued through Urban Forestry department within the City of Brampton. Under the by-law, an offence may include destruction of a tree or injuring a tree without a permit, failing to protect a tree that is identified for protection in the permit conditions, or failing to comply with the conditions of an order (City of Brampton 2012).

City of Brampton Tree Protection by-laws - Applicability to the Project

Trees on the Subject Site are governed by this Forest Strategy and supporting By-laws.

3 Background Review

A desktop review of the existing natural environment features identified within the Study Area was completed to inform the creation of this report.

A variety of secondary sources were reviewed, the primary of which include:

- Ontario wildlife atlases and observation records:
  - *Natural Heritage Information Centre* (NHIC) Database (MNRF 2022);
  - *Ontario Breeding Bird Atlas* (BSC et al. 2006);
  - *Ontario Reptile and Amphibian Atlas* (Ontario Nature 2020);
  - *Ontario Butterfly Atlas* (TEA 2024);
  - *iNaturalist* observation records (iNaturalist 2024);
  - *eBird* Hotspot species lists (eBird 2024); and
  - *Atlas of the Mammals of Ontario* (Dobbyn 1994).
- Toronto and Region Conservation Authority resources:
  - Conservation Authority Online ELC mapping and Open Data (TRCA 2025)
  - Conservation Authority Online Natural Heritage reports.
- City of Brampton Resources:
  - *City of Brampton Official Plan* (City of Brampton 2022);
  - *Tree Protection By-law* (City of Brampton 2012). *and Urban Forest Strategy* (City of Brampton 2022).
- Species-specific resources (such as recovery strategies etc.), as required; and
- Agency Consultation, as required.

This section outlines the relevant natural heritage background from secondary source review.

3.1 Historic Land Use

A desktop review of recent and historic aerial imagery highlights the land uses within and adjacent to the Study Area (Google 2024) (**Figure 2**). From this review, the landscape within the Study Area has historically been predominantly agricultural with some natural lands and rural residential dating back to 1900s. Approximately around 2004 the lands to the southwest was converted to industrial uses. Lands to the north and northeast remain as natural spaces.

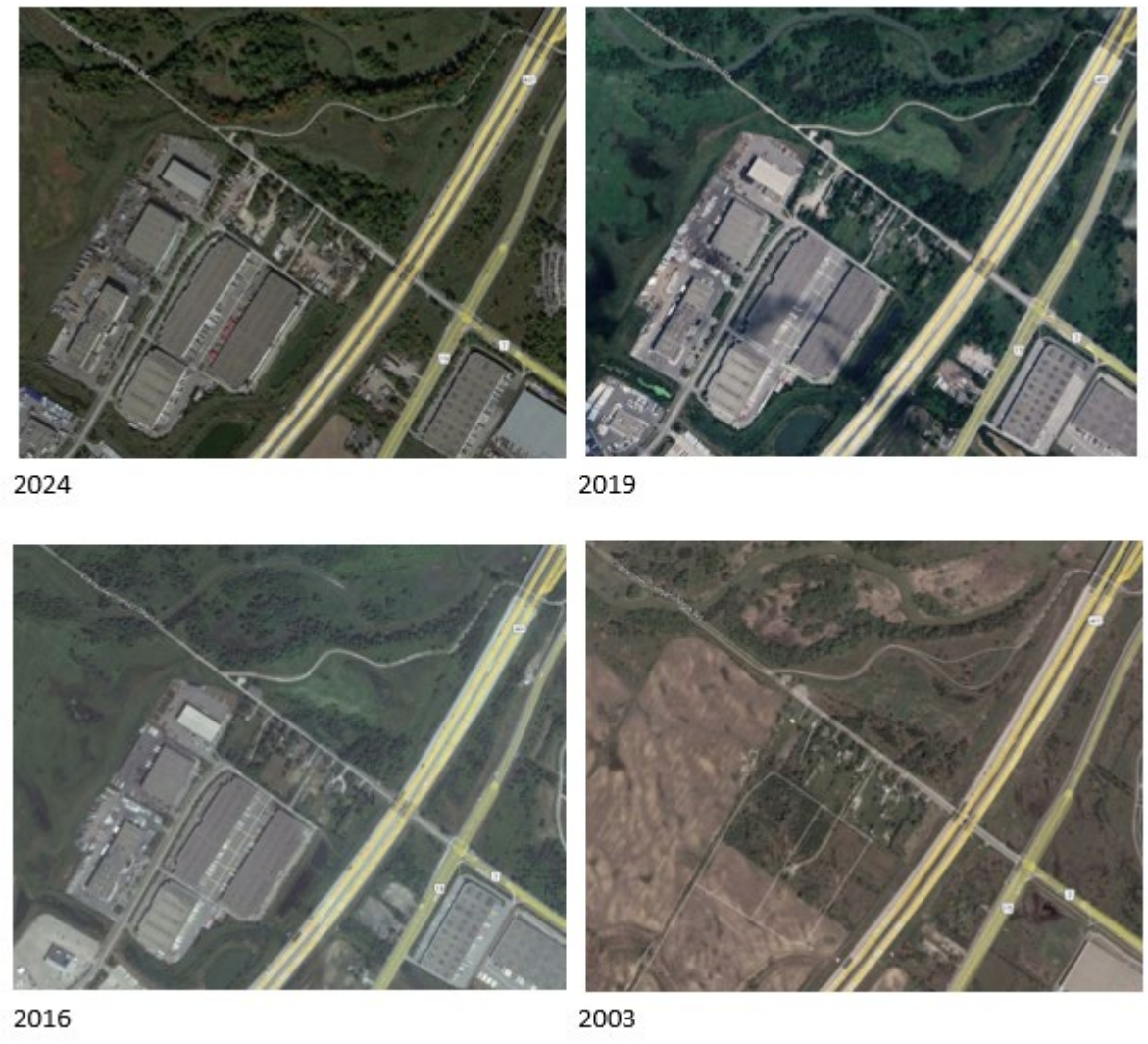


Figure 2 : Land Use Changes

3.2 Landform, Geology, and Soils

The Study Area is situated within the South Slope physiographic region (Geology Ontario 2023). The surficial geology of the Study Area is composed of fine-textured glaciolacustrine deposits as well as modern alluvial deposits near the creek valley that are primarily silty to clayey till. This material is generally poorly drained.

The underlying bedrock of the Study Area is part of the Georgian Bay Formation, consisting of shale, limestone and dolostone (Geology Ontario 2023).

Overall, the Study Area is comprised of neutral, fine textured materials. It is likely that due to the soil and physiographic conditions withing the Study Area, that there are lower rates of infiltration, with damp to wet soils.

3.3 Designated Significant Natural Heritage Features and Areas

Seven specific natural heritage features and areas require consideration for protection under the Ontario PPS. According to the PPS, these features and areas are important for their environmental and social values as a legacy of the natural landscapes of an area. The protection of these features is administered by the local municipality, in accordance with relevant provincial and federal legislation. These natural heritage features and areas are:

- Significant Wetlands (including significant coastal wetlands, other coastal wetlands in Ecoregions 5E, 6E and 7E),
- Fish Habitat,
- Significant Woodlands;
- Significant Valleylands;
- Habitat of Endangered Species and Threatened Species;
- Significant Wildlife Habitat (SWH); and
- Significant Areas of Natural and Scientific Interest.

The subsections below provide a review of available background records of these seven features to determine their potential presence of these natural heritage features and areas within the Study Area.

3.3.1 Significant Wetlands

A review of online provincial natural heritage mapping (NHIC) indicates that there are no Provincial Significant Wetlands mapped within the Study Area.

There is one small wetland within the Study Area approximately .6 ha in size. Given the small size it is expected it would score low in the Ontario Wetland Evaluation System (OWES).

While an official wetland evaluation was not performed **it is expected that this wetland would score low and thus not be considered a Significant Wetland according to the provincial standards set out in the evaluation system (MNRF 2022).**

3.3.2 Fish Habitat

There is no fish habitat located within the boundaries of the Study Area.

3.3.3 Significant Woodlands

A review of the provincial natural heritage mapping and air photos of the site indicates there are mapped woodlands within the Study Area (See **Figure 3**). One of which has been removed and is now comprised of industrial buildings and associated parking areas. The remaining woodlands are on the east side of Gorewood Drive outside of the Subject Site, and on the east and north side of the Study Area within the Claireville Conservation Area. Studies have not been completed to determine the significance of these woodlands, but they are unlikely to meet the requirements for a Significant Woodland based on the size. This woodlot is estimated to

be 1.8 ha. 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.

3.3.4 Significant Valleylands

The West Humber River valley corridor occurs over 80 m to the north of the Subject Site, right at the northern edge of the Study Area. The valley is expected to meet few of the ten criteria set out in the *Natural Heritage Reference Manual*. The one criterion met is the "Landform Prominence" feature with well-defined valley walls occurring for much of the length of the valley. The Humber Valley is part of Brampton's ravine system which was carved out by water erosion over time and now acts as an important channel for urban drainage. The geomorphic boundary of the valley is marked by its gradual transition from valley walls to upland plains, indicating where the valley form ends, and the tablelands begin. The valley's lateral extent is characterized by its geomorphology. For surface water functions, the valley does convey the Humber River flowing from northwest to southeast. The valleyland would provide a linkage function up and down the valley system.

The Clairevile Conservation Area is also designated as a *Valleyland and Watercourse Corridor* in the City of Brampton Official Plan Schedule 6B (City of Brampton 2024). As such it is identified as a locally significant valleyland feature.

Based on the above, the valleylands to the northeast would be considered both locally and provincially Significant.

3.3.5 Habitat of Endangered Species and Threatened Species

A desktop review identified the potential for several Species at Risk (SAR) to occur within and adjacent to the Study Area. Under the ESA, all species listed as Threatened or Endangered in Ontario receive immediate 'general habitat protection'. This includes places that are used as dens, nests, hibernacula, or other residences. For some species, agencies have defined general habitat descriptions that provide science-based criteria for the habitat to be protected for some SAR species.

A review of aerial imagery was used to identify general candidate habitat for SAR based on the description of habitat provided. The Endangered and Threatened species identified as having moderate or high potential to occur within the vicinity of the Study Area are included in **Table 3-1**. A complete assessment of potential for SAR and/or SAR habitat occurrence, based on the species' preferred habitat descriptions, are included in **Appendix A**.

Table 3-1: Species at Risk with Moderate – High Probability of Occurrence on the Study Area

Common Name	Scientific Name	S-Rank	ESA Status	SARA Status
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S4B	END	THR
Little Brown Myotis	*Myotis lucifugus*	S4	END	END
Northern Myotis	*Myotis septentrionalis*	S3	END	END
Eastern Red Bat	*Lasiurus borealis*	S4	END	No status
Hoary Bat	*Lasiurus cinereus*	S4	END	No status
Silver-haired Bat	*Lasionycteris noctivagans*	S4	END	No status
Tri-colored Bat	*Perimyotis subflavus*	S3?	END	END

Notes:

S-Rank is an indicator of commonness in the Province of Ontario. A scale between 1 and 5, with 5 being very common and 1 being the least common.

ESA = *Endangered Species Act, 2007* Status; SARA = *Species at Risk Act, 2002* Status

END: Endangered; THR: Threatened; SC: Special Concern

3.3.6 Significant Wildlife Habitat

The Ontario *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (MNRF 2015) defines the following four categories of SWH:

1. Seasonal Concentration Areas of Animals.
2. Rare Vegetation Communities or Specialized Habitats for Wildlife.
3. Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species).
4. Animal Movement Corridors.

Within each of these categories there are multiple subcategories of SWH. The potential presence of habitats meeting the criteria of these SWH within and adjacent to the Study Area was reviewed using available background information and aerial imagery. A review of the background information and ortho photography shows that “Animal Movement Corridors” may occur in the West Humber River valley areas adjacent to, but outside of, this Project’s Study Area. There are also 9 records of “Species of Conservation Concern” within the vicinity of the Study Area, however the habitat present in the Study Area is not suitable for the majority, but a few species of Conservation Concern may occur in the more natural areas adjacent to the Subject Site. Therefore, the more natural lands within the Study Area shall be considered potential SWH for species of Conservation Concern. A list of these species and their probability of suitable habitat within the Study Area is listed in **Appendix A**.

3.3.7 Areas of Natural and Scientific Interest

No Areas of Natural and Scientific Interest are present within or adjacent to the Study Area.

3.4 Other Aquatic Environment Features

The Study Area is mostly (approximately ¾) within the Mimico Creek watershed, which covers an area of 7,700 ha. Surface water quality for Mimico Creek is graded as Poor. A smaller portion of the Study Area (approximately ¼) is within the West Humber River watershed. The Humber River watershed covers 90,258 ha of area. The Humber River watershed was graded as having fair surface water quality (TRCA 2018).

3.4.1 Floodplain and Regulated Limit

The TRCA floodplain mapping confirms that this Subject Site is located within the Regulated Area limits of a flooding hazard (See **Figure 3**) and all route alternatives do enter the Regulated Area.

3.4.2 Headwater Drainage Features

No headwater drainage features have been identified within the Study Area.

3.5 Other Terrestrial Environment Features

3.5.1 Wetlands

A portion of an unevaluated wetland is located within Study Area, approximately 110 m north of the Subject Site, within the floodplain of the West Humber River valley. Only a portion of this wetland occurs within the Study Area but based on air photo interpretation its total size (including its portions that occur outside the Study Area) is 0.6 ha in total, just over the minimum size of .5 ha for mapping in the Ecological Land Classification.

3.5.2 Trees

A review of aerial imagery shows that the Study Area contains a small woodland area at the east extent, east of Gorewood Drive. A scattering of trees occurs along some of the property lines between the properties and the roads, and a treed fencerow is present in the southeastern extent of Subject Site along Intermodal Drive.

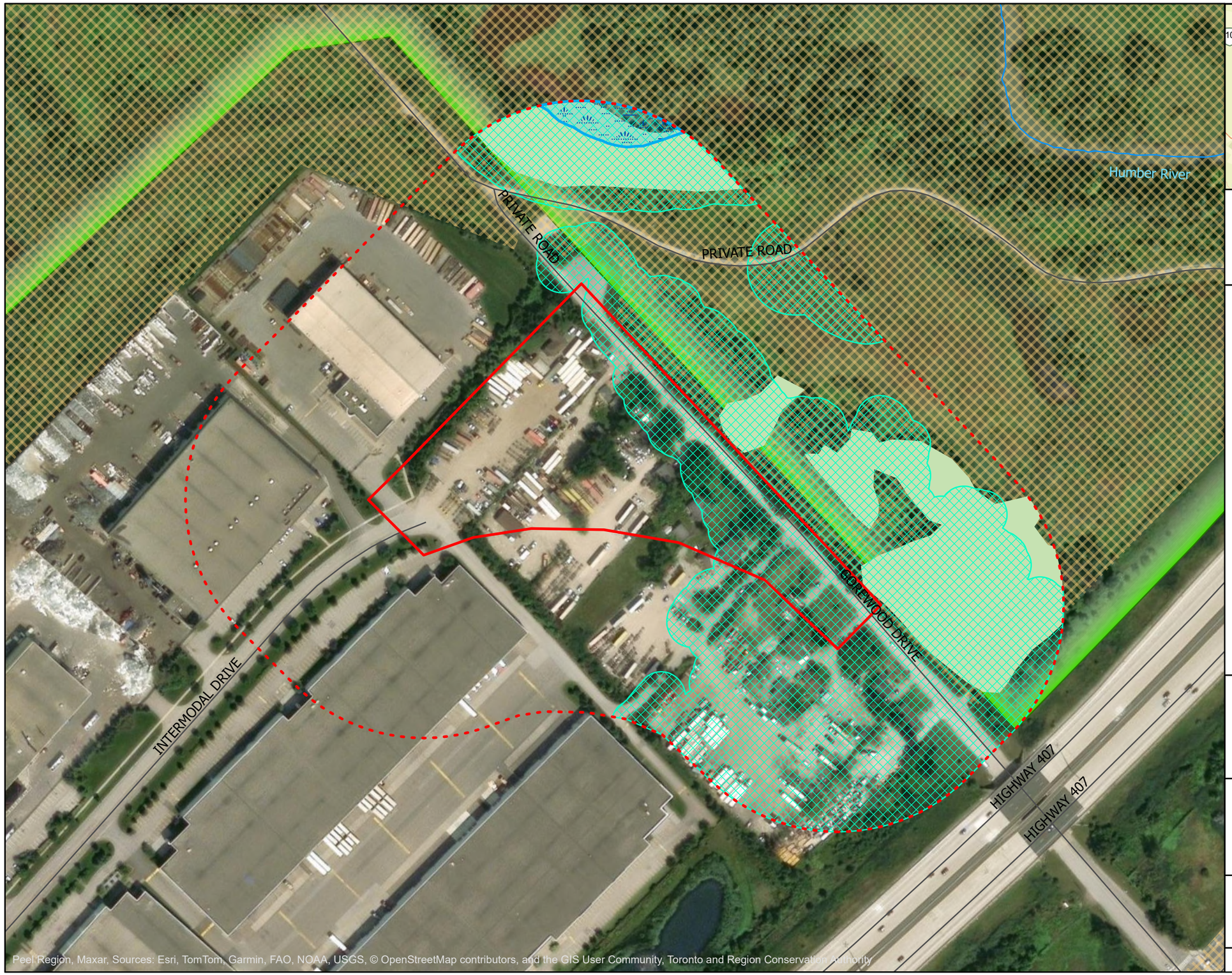
3.5.3 Wildlife Habitat

In addition to the SAR noted above, a review of current and historic aerial photos of the Study Area were used to identify potential wildlife habitat. Several species of fauna common to the City of Brampton rural and urban areas are known to live in the habitats present within the Study Area. These species may include, but are not limited to:

Mammals	• Northern Raccoon • White-tailed Deer • Coyote	• Eastern Gray Squirrel • Eastern Cottontail • Red Fox
Reptiles & Amphibians	• Eastern Gartersnake • American Toad	
Birds	• American Crow • American Robin • Northern Cardinal • American Goldfinch	• Black-capped Chickadee • Blue Jay • Song Sparrow

3.5.4 Ecological Linkages

Upon a review of aerial imagery, the function of the Study Area as an ecological linkage is likely limited to the general movement of common local wildlife throughout the landscape. Given the urbanized nature of the Subject Site and the natural area in the Claireville Conservation Area and the stream valley wildlife movement is much more likely to occur in those areas north and east of the Subject Site. Therefore the stream valley and Claireville Conservation Area would be an important ecological linkage through the Study Area.



Scale: 1:2,500

0 15 30 60 90 120
Meters

Legend

- Subject Site
- Study Area (120m)
- Roads (GEO)
- Watercourse (GEO)
- Wetlands (GEO)
- TRCA Regulated Area 2025 (TRCA)
- Woodlands (GEO)
- Natural Heritage System (City of Brampton)
- Conservation Area Lands (TRCA)

Client:
City of Brampton

Project:
Extension of Intermodal Drive

Title:
Figure 3:
Natural Heritage Constraints

Prepared By:
ARCADIS

Project: 145609

Date: 2025-08-28

4 Field Survey Methodology

4.1 Scope of Work

Based on the description of the existing natural environment outlined above, natural heritage surveys were scoped to assess the potential impacts of the proposed development on the natural environment. Three (3) field surveys were completed by an Arcadis ecologist on April 12, June 13, July 4, 2024. Tasks performed during these surveys included:

- Documentation of wildlife and dominant plant species observed.
- Assessment of the potential for SAR or their associated habitats.
- Breeding Bird Surveys.
- Review of existing mapped natural heritage features, (i.e., wetlands, woodlands, surface water features).
- Photographic inventory of the Study Area with a focus on natural areas and habitats.

4.2 Field Methodology

The surveys are used to evaluate the potential for negative impacts which may occur as a result from the proposed development Project. Surveys were limited to the road right of way and publicly accessible areas of the neighboring conservation area. If possible, natural features within the larger Study Area were evaluated via air-photo interpretation.

4.2.1 Aquatic Environment

There is no watercourse located within Subject Site. Therefore, no fieldwork pertaining to aquatic environment features was completed.

4.2.2 Terrestrial Environment

4.2.2.1 Ecological Land Classification (ELC)

Vegetation communities within the Study Area were characterized and mapped using the ELC system for Southern Ontario (Lee et al. 1998), however, where none of the ecosites identified in the application of the First Approximation were appropriate the 2008 catalogue of ecosite types was applied. The ecological community boundaries were determined through the review of aerial photography and then further refined through on-site vegetation survey within the Study Area, as specified by the protocol.

The ELC protocol recommends that a vegetation community be a minimum of 0.5 ha in size before they are defined as a discrete community. The vegetation on this site does not comprise communities greater than 0.5 ha therefore we have applied the ELC at a smaller scale than recommended in order to provide vegetation community mapping for the Subject Site.

In 2008, the MNRF refined their original vegetation type codes to more fully encompass the vast range of natural and cultural communities across Southern Ontario. Through this process, many new codes have been added while some have changed slightly. Some of these new ELC codes have been used for reporting purposes in this study as they are more representative of the vegetation communities within the Study Area.

4.2.2.2 Trees

Permission to enter the private properties within the Subject Site was not given at the time of this study, therefore no tree survey was completed at this time. A full inventory and inspection of individual trees will need to be completed once the route is finalized and permission to enter the private property has been granted.

4.2.2.3 Breeding Bird Surveys

Two diurnal breeding bird surveys were conducted within the Study Area. The methods outlined in the *Ontario Breeding Bird Atlas Guide for Participants* (Cadman et al. 2007) were modified to extend the survey time to ten minutes rather than five to help ensure all species present are recorded. The surveys were completed between June and early July (for survey locations see **Figure 4**).

4.2.3 Species at Risk and Species at Risk Habitat

Site visits recorded the location for all plant and animal species that are listed as Provincial SAR. If observed, an estimate of abundance of these SAR were included. Site visits also recorded suitable SAR habitat present within the Study Area.

Should any SAR or SAR habitat be identified within or adjacent to the site during field surveys, appropriate measures will be proposed to reduce or eliminate the impact of the proposed development on the observed species or habitat. This may include further consultation with the Ministry of the Environment, Conservation and Parks and/or additional species-specific surveys.

4.2.4 Species of Conservation Concern

Site visits recorded the location for all plant and animals that listed as Special Concern in the Province.

4.2.5 Incidental Wildlife

Any incidental observations of wildlife as well as other wildlife evidence such as vocalizations, dens, tracks, and scat were documented by means of observational notes, and photographed. Such observations help validate our conclusions on the ecological function and wildlife use of the Study Area.

5 Field Survey Results

The following subsections outline the findings from the field surveys completed to characterize the existing conditions within the Study Area. Where applicable, survey points are illustrated in **Figure 4.**

Fieldwork conducted as a component of this report took place in April through July 2024, when weather conditions and timing were deemed suitable based on the survey protocols being implemented. The dates, times, surveyor names, and weather conditions for all surveys are listed in **Table 5-1**.

Table 5-1: Summary of Field Surveys

Purpose of Visit	Date dd/mm/yyyy	Time	Arcadis Personnel	Weather Conditions	Air Temp. (ºC)
Initial site visit	12/04/2024	1:30 PM – 3:15 PM	B. Van Ryswyk, Ben Pascolo-Neveu, Chris Stogios and Vanesa Manchon.	Cloudy skies, cold breeze	4
Breeding Bird Point Count Survey #1	13/06/2024	8:30 AM – 9:30 AM	B. Van Ryswyk	Partly cloudy skies, low winds	25
Breeding Bird Point Count Survey #2, ELC/vegetation inventory	04/07/2024	7:00 AM - 11:00 AM	B. Van Ryswyk	Mostly clear skies, low winds, humid	26

5.1.1 Terrestrial Environment

The subsections below provide the results of surveys related to the Study Area's terrestrial environment.

5.1.1.1 Ecological Land Classification

The Subject Site is comprised of urban residential and industrial lands, as such there is little natural vegetation present. The vegetation within the Subject Site is comprised of individual trees planted in hedgerows on property lines and individual trees planted in residential yards. There are some small pockets of regenerating vegetation in the less frequently disturbed areas such as ditches and at property lines leading to some low regenerating shrubs or herbaceous plants comprised mainly of non-native species. Descriptions of these communities can be found in **Table 5-2**.

The Study Area contains portions of highly developed industrial lands on the east and the natural lands of Claireville Conservation Area on the west.

The vegetation communities in the larger Study Area were delineated through air photo interpretation and verified in the field. The vegetation communities can be seen on **Figure 4**.

Table 5-2 : Ecological Land Classification Community Descriptions

ELC Polygon Number	ELC Community Code	Community Description
1	**CUW** Cultural Woodland	These cultural woodland polygons are within the highly anthropogenic area of the Subject Site. These are isolated trees and small clumps of trees, often with mown grass beneath them.
2	**CUW** Cultural Woodland	These cultural woodland polygons occur on the edge of the Subject Site and are composed of planted trees forming a boundary between the properties and road or adjacent properties. They are mainly composed of deciduous trees.
3	**CUW** Cultural Woodland	This cultural woodland occurs on the east side of Gorewood Drive and is a mix of planted coniferous and deciduous species with some regeneration. It is very sparce with lots of space between trees and meadow species in the ground layer.
4	**FOD** Deciduous Forest	This community is a mix of deciduous tree species on the east side of Gorewood Drive. The dominant trees in the canopy were Silver Maple, Bur Oak and Basswood. There were a few small clumps of poplar trees at the edges. The understory was a mix of species, but the edges of the forest had high amounts of buckthorn and Riverbank Grape vines. It occurs on a rolling hilly area that rises up on the east side of Gorewood Drive before flattening out towards the meadow community.
5	**CUP** Cultural Plantation	This plantation occurs on the east side of Gorewood Drive and was a mix of White Pine and Spruce species planted in rows. There is some deciduous regeneration in the understory but there is a high component of buckthorn present at the edges. There is sparce ground level vegetation, but open patches are dominated by grasses.
6	**CUM** Cultural Meadow	This cultural meadow occurs in much of the area east of Gorewood Drive and has the pedestrian trails through it. This community is dominated by grass and goldenrod species but also has patches Crown Vetch and other non-native species mixed throughout. There are also patches of the invasive Dog-strangling Vine present.
7	**CUT** Cultural Thicket	These are two cultural thicket areas that are dominated by shrubs and herbaceous plants. Dominate species in these areas are buckthorn and dogwood species with grasses and goldenrods in the ground layer.
8	**FOD** Deciduous Forest	This forest community occurs at the far north edge of the Study Area and occurs on the valley slope of the Humber River Valley. It is a mix of deciduous species.
9	**MAM** Meadow Marsh	This meadow marsh occurs at the far north edge of the Study Area at the base of the forested valley slope. It is in the floodplain area of the Humber River and has small pockets water with cattails but is dominated by marsh grasses and sedges.

5.1.1.2 Breeding Bird Surveys

A total of 11 species were recorded during the surveys, survey points can be found on **Figure 4**. A list of the bird species observed within the Study Area and their conservation status can be found in **Appendix B**

Of the species recorded 5 exhibited probable or confirmed breeding evidence. The birds recorded are common within the City of Brampton. Based on surveys conducted by Arcadis, the Subject Lands contains suitable habitat conditions to support breeding birds common to the region and southern Ontario.

Table 5-3 :Summary of Breeding Bird Survey Completed within the Subject Lands

Survey Number	Date dd/mm/yyyy	Species Recorded
Breeding Bird Point Count Survey #1	13/06/2024	American Robin, Warbling Verio, Song Sparow, Common Grackle, Red-winged Blackbird, American Goldfinch
Breeding Bird Point Count Survey #2	04/07/2024	American Goldfinch, Northern Cardinal, Black-capped Chickadee, Song Sparrow, Common Yellowthroat, Red-winged Blackbird, Blue Jay, Hairy Woodpecker, American Robin, European Starling

5.1.2 Species at Risk and Species at Risk Habitat

No SAR was observed within or adjacent to the Subject Site during the site visits completed in 2024. There is very low potential habitat for Red-headed Woodpecker within the Subject Site, however the natural areas east of Gorewood Drive may provide habitat for this species.

The potential SAR bats within the general area are Eastern Small-footed Myotis, Eastern Red Bat, Hoary Bat, Silver-haired Bat, Tri-colored Bat, Northern Myotis, and Little Brown Myotis. There are three types of habitats required by bats: hibernation, maternity sites, and day-roost sites. The latter is not considered regulated habitat.

Most of these bat species prefer to hibernate in caves or mines, and rarely hibernate in buildings (COSEWIC, 2013). No caves or mines were present within the Study Area.

The recovery strategy for the Eastern Small-footed Myotis (Humphrey, 2017) indicates that the species prefer open rock habitats and that it rarely uses old buildings as roosting/maternity sites. No rocky habitat or suitable buildings proposed for impact were present within the Study Area searched; based on this information, this species' roosting/maternity sites are considered absent.

The Atlas of Mammals of Ontario (Dobbyn, 1994) suggests that the Tri-colored Bat is not present within this part of Ontario; however, the NatureServe mapping in the COSSARO (2015) includes all southeastern Ontario. Based on this information, this species is considered to have a moderate potential of occurring within the Study Area. Tri-colored Bats prefer mature deciduous trees, especially large mature oak trees (BCI 2023) which are unlikely to be present within the Subject Site but may be present in the adjacent lands to the east of the Study Area.

The Northern Myotis tends to prefer larger expanses of older forests (late successional or primary forests) and choose maternity sites in snags that are in the mid-stage of decay. They prefer to roost within interior habitat and is shown to be negatively correlated with edge habitat (Menzel et al., 2002; Broders et al., 2006; Yates et al., 2006). As there is only limited tree/shrub presence within the Subject Site this species is considered unlikely to have maternity sites impacted because of this project.

The Little Brown Myotis is one of the few bat species that can use anthropogenic structures as maternity sites. Potential suitable structures can include buildings, bridges, barns, and bat boxes. The Little Brown Myotis can also use tall, large cavity trees that are in the early to mid-stages of decay as maternity roosts, as well as loose/raised tree bark, and/or crevices in cliffs (ECCC, 2018). This bat species occurs in higher densities in mature deciduous and/or mixed forests due to increased opportunities for large snags. However, unlike the Northern Myotis, the Little Brown Myotis does not exclusively require mature forest stands to find appropriate maternity roosts (COSEWIC, 2013). This commonly observed species could establish maternity roosts in this area; however, MECP guidelines provide advice on avoiding impacts to this species.

Eastern Red Bat and Hoary Bat may use the foliage of trees to roost and the Hoary Bat may roost near the forest edge (BCI 2023). Both species were identified in background records as having a high potential for occurrence within the Study Area. These species can utilize any treed areas within the Study Area and roost in the canopy foliage of many trees. Given the nature of the Subject Site, much better habitat is present on adjacent lands,

therefore, there is a low probability bats would use the Subject Site despite this, any trees, especially mature trees, could provide roosting habitat for these foliage roosting bats. As such, the treed areas of the Study Area may provide bat roosting habitat.

5.1.3 Species of Conservation Concern

No species of conservation concern were observed within the Study Area during the site visits completed in 2024.

5.1.4 Incidental Wildlife

Incidental wildlife sightings made during the site visits were recorded and are listed in **Appendix B.**

Scale: 1:2,500

0 15 30 60 90 120 Meters

Legend

- Subject Site
- Study Area (120m)
- Roads (GEO)
- Watercourse (GEO)
- Breeding Bird Point

Ecological Land Classification

- CUM - Cultural Meadow
- CUP - Cultural Plantation
- CUT - Cultural Thicket
- CUW - Cultural Woodland
- FOD - Deciduous Forest
- FOM - Mixed Forest
- MAM - Meadow Marsh

Client: **City of Brampton**

Project: Extension of Intermodal Drive

Title: Figure 4: Ecological Land Classification and Breeding Bird Points

Prepared By: ARCADIS

Project: 145609 | Date: 2025-08-28

6 Description of Proposed Project

The City of Brampton is proposing to extend Intermodal Drive from the existing industrial lands east towards Gorewood Drive. Four routes have been explored as options for the extension. The four alternatives each have differing impacts. The impacts of each option below are based on evaluation from arial imagery and what could be viewed from the public right of way.

6.1 Proposed Alternatives

There have been four route alternatives proposed for the road extension, illustrated in **Figure 5** below. All alternatives will have some impacts on the trees on the site and all alternatives do enter the TRCA regulated area. The four alternatives are discussed below.

6.1.1 Alternatives 4A and 4B

Alternatives 4A and 4B takes Intermodal Drive nearly straight from the existing portion northeast across to Gorewood Drive with an 80-degree t-turn at Gorewood Drive or a sharp curve to Gorewood Drive. This route enters a small portion of the TRCA regulated area and floodplain hazard. This route would allow for the restoration of the Gorewood Dr turn-around as a permeable surface. Based on plotting this route over the air photos this alternative is estimated to impact the largest number of trees removed, assuming the trees within the norther property line are impacted and require removal.

6.1.2 Alternative 4D

Alternative 4D takes Intermodal Drive from the existing portion and curves slightly south before joining Gorewood Drive with a 90-degree t-turn at Gorewood Drive. This alternative enters a small portion of the TRCA regulated area and floodplain hazard. This route would require the maintenance of the Gorewood Dr turn-around as an asphalt surface which is not ideal from a stormwater management perspective. This alternative would impact trees on the private residential properties on Gorewood Drive and based on plotting this route over the air photos this alternative is estimated as having a moderately high impact on the number of trees to be removed.

6.1.3 Alternative 4F

Alternative 4F takes Intermodal Drive from the existing portion and curves significantly south before smoothly joining Gorewood Drive. This route enters the largest portion of the TRCA regulated area and floodplain hazard. This route would require the maintenance of the Gorewood Dr turn-around, which is not ideal from a stormwater management perspective. This alternative would impact trees on the private residential properties on Gorewood Drive and based on plotting this route over the air photos this alternative is estimated to have a low impact on the number of trees to be removed.

6.1.4 Alternative 4G

Alternative 4G takes Intermodal Drive from the existing portion and curves slightly south before straightening out and joining Gorewood Drive with an 80-degree t-turn at Gorewood Drive. This route travels roughly halfway between Alternative 4A - 4B and Alternative 4D. This alternative enters a small portion of the TRCA regulated area and floodplain hazard. This route would allow for the restoration of the Gorewood Dr turn-around as a permeable surface. This alternative would impact trees on the private residential properties on Gorewood Drive

and based on plotting this route over the air photos this alternative is estimated to have a moderate to low impact on the number of trees to be removed.

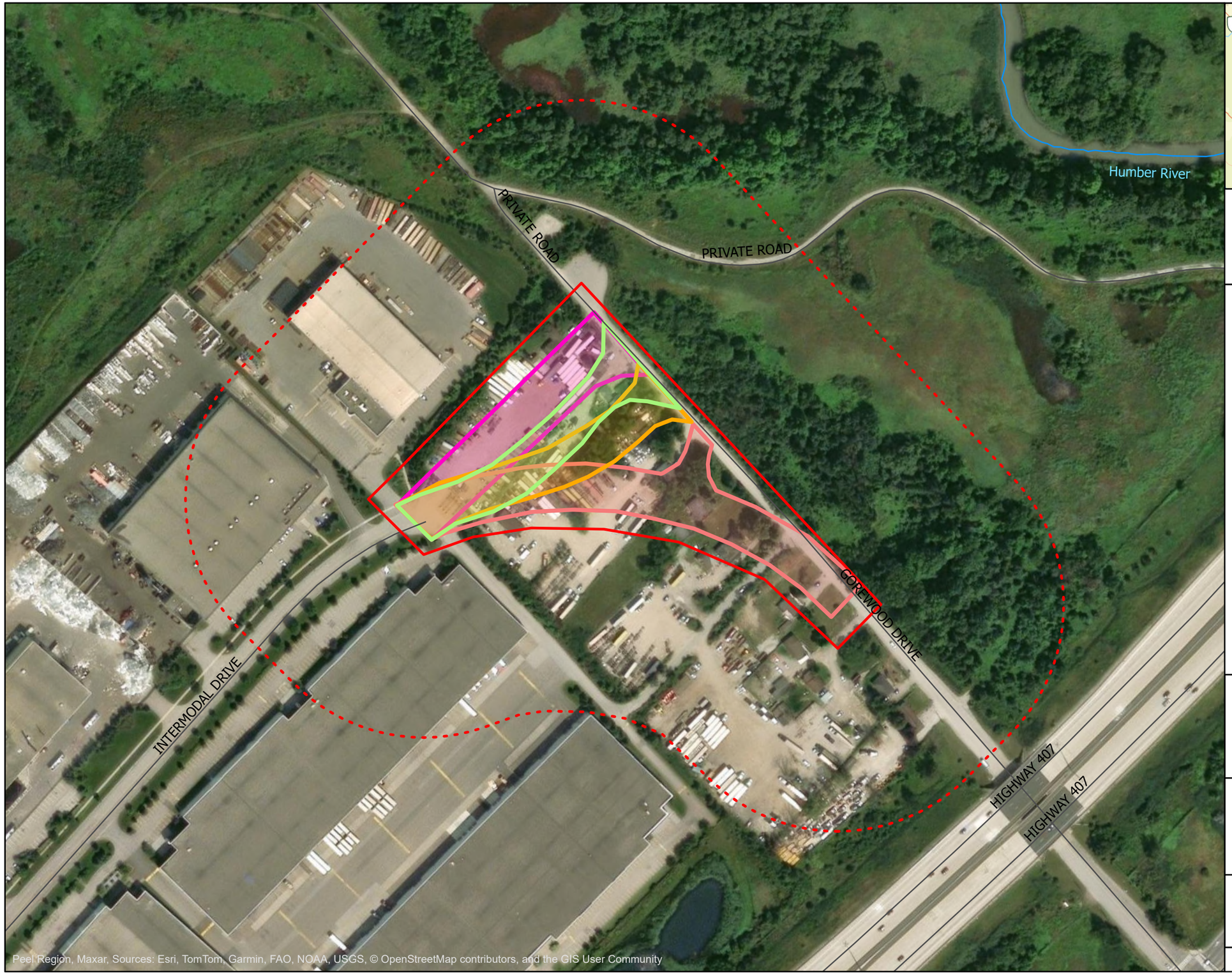
6.1.5 Impact Conclusion

Based on the alternatives analysis at this stage, Alternative 4F or Alternative 4G would have the lowest impact on the Natural Heritage features present within the Subject Property.

6.2 Construction Activities

It is assumed the development of this property will include the following major project components:

- Surveying and staking out the development;
- Clearing, excavation, and grading property to accommodate construction;
- Installation of storm water drainage network and related infrastructure;
- Excavation to accommodate underground utilities including water, gas, and hydro;
- Construction of the road and a multiuse sidewalk;
- Landscaping, lighting and fencing;
- On-going usage and maintenance.



Scale: 1:2,500

0 15 30 60 90 120 Meters

Legend

- Subject Site
- Study Area (120m)
- Roads (GEO)
- Watercourse (GEO)
- Alternative 4A and 4B
- Alternative 4D
- Alternative 4F
- Alternative 4G

Client:

City of Brampton

Project:

Extension of Intermodal Drive

Title:

Figure 5:
Route Alternatives

Prepared By:

ARCADIS

Project: 145609

Date: 2025-08-28

7 Impact Assessment and Mitigation

The following sections describe the anticipated environmental impacts associated with the proposed development and the general measures that should be considered to mitigate the associated impacts. The impact assessment and associated mitigation considers both temporary (i.e., construction related) impacts and permanent impacts associated with the occupation of the development. The four route alternatives are illustrated in **Figure 5**.

The potential natural heritage features identified by the background review and site investigations to be brought forward to evaluation are listed below.

- Potential for Significant Wildlife Habitat
  - Potential presence of Species of Conservation Concern
- Potential for Endangered or Threatened Species and/or their Habitat.
  - Potential presence of SAR Birds
  - Potential presence of Bat Maternity Sites or Day-Roosts
- Confirmed presence of Migratory Birds and General Wildlife

7.1 Development Constraints and Opportunities Analysis

The Subject Site has few natural heritage constraints present. The site is highly disturbed due to past activities and the vegetation present is restricted to scattered trees and small patches of vegetation, much of which is non-native species. Therefore, there are few natural heritage constraints present on the Subject Site. With the approval of the updated floodplain mapping by TRCA within the EA Study Limits in May 2025, the impacts associated with this constraint have been significantly reduced and, as such, this is no longer considered a significant driving factor with respect to this study. In general, the Subject Site is a good candidate for development opportunities due to the lack of natural heritage constraints present.

7.2 Impact Assessment and Mitigation Measures

The following subsections describe the anticipated environmental impacts associated with the proposed development and the mitigation measures that should be implemented. The impact assessment and associated mitigation considers both temporary (i.e., construction-related) impacts and permanent impacts associated with the development. It is recommended that all mitigation measures be considered as part of the Detailed Design process.

7.2.1 Aquatic Environment Features

7.2.1.1 Floodplain and Regulated Limit

The TRCA mapping shows floodplain mapping within the Study Area and is therefore regulated by TRCA. **A permit from the TRCA will be required for any works within the regulated area.**

7.2.2 Terrestrial Environment Features

This section will cover features that are not provincially designated or regulated. The Subject Site contains existing native trees and vegetation that provide general habitat to local wildlife.

7.2.2.1 Vegetation Communities

To accommodate the construction of the proposed ventilation shaft and underground access, the Subject Site and associated vegetation will be cleared and excavated. The impacts associated with this clearing will include:

— The loss of existing trees and vegetation within the chosen alignment;

— Potential for spread of invasive species;

— Potential for accidental damage or loss of additional trees;

— Temporary decrease in biodiversity and abundance of species; and

— Potential for on-site erosion and deposition of sediment into adjacent vegetation communities.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ A landscape plan shall incorporate native vegetation and plantings to offset the loss of species and biodiversity from vegetation removals.

Proposed Mitigation Measures – Construction Implementation

- ✓ Orange snow fencing or other suitable fencing should be used to delineate the construction limits from adjacent areas.
    - This will prevent encroachment of construction activities into adjacent natural heritage features. This fencing should be monitored weekly to ensure it is functioning properly. Any deficiency in the fencing should be dealt with within 48 hours of notification.
- ✓ A site-specific erosion and sediment control plan should be implemented to prevent on-site erosion and sedimentation outside of work areas.
- ✓ Invasive species to be removed shall be done so using species-appropriate methods to prevent further contamination.
- ✓ Machinery will arrive on site in a clean condition and will be free of fluid leaks, invasive species, and noxious weeds as per the Clean Equipment Protocol for Industry (Halloran 2016).

Proposed Mitigation Measures – Post-Construction

- ✓ All excess construction material shall be removed from the Subject Site and disturbed areas shall be restored in accordance with site-specific plans upon Project completion.

With the successful implementation of the mitigation measures outlined above, including implementation of a landscape plan, the impacts should be negligible.

7.2.2.2 Unevaluated Wetland

There is one small (0.6 ha) unevaluated wetland located at the far norther portion of the Study Area. Gorewood Drive and a portion of Claireville Conservation Area occurs between the Subject Site and the wetland. The distance between the nearest point of the Subject Site to the wetland is over 100 m and there is a slight rise in the land between the Subject site and the valley that contains the wetland. **There are no impacts anticipated to this unevaluated wetland.** 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.
    - This will prevent encroachment of construction activities into adjacent natural heritage features. This fencing should be monitored weekly to ensure it is functioning properly. Any deficiency in the fencing should be dealt with within 48 hours of notification.

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.

7.2.2.3 Breeding Birds

It is expected that the removal and disturbance to the trees within the proposed development area will result in a loss of potential nesting and foraging habitat for birds. The following direct and indirect impacts on breeding birds are a possible result of the proposed development.

Potential Impacts

- The permanent loss of nesting and foraging habitat will likely result from the clearing of vegetation within the property;
- Potential physical harm to birds or birds' nests during clearing and construction activities;
- Reduced composition, distribution, and abundance of a bird species within the area;
- The increased potential for fatal bird collisions associated with vehicles following construction.

Proposed Mitigation Measures – Construction Implementation

The following mitigation measures are intended to address potential impacts to breeding birds resulting from the proposed development:

- ✓ Clearing of vegetation should be avoided during the breeding bird season, between April 1 and August 31. Should any clearing be required during the breeding bird season, nest searches shall be conducted by a qualified person must be completed 48 hours prior to clearing activities. If nests are found, an appropriate setback will be established by the qualified professional. No work will be permitted within this setback in accordance with the federal Migratory Birds Convention Act,1994 (MBCA) (Government of Canada);
- ✓ A qualified bird rehabilitation centre should be contacted if any birds are injured or found injured during construction activity. Injured birds should be transported to a qualified for care with a small donation of money to help pay for the care (a local facility is the Toronto Wildlife Centre);

Proposed Mitigation Measures – Post-Construction

- ✓ Replanting of trees within the road right of way to offset any tree removals.

Temporary loss of breeding and foraging habitat for birds is expected, however, with the successful implementation of the recommended avoidance and mitigation measures, impacts to individuals will be avoided.

7.2.2.4 Wildlife and Wildlife Habitat

The proposed development is expected to have a temporary negative impact on local wildlife due to the general loss of natural habitat and direct impacts related to construction activities.

Potential Impacts

- Displacement, injury, or death resulting from contact with heavy equipment during clearing and grading activities;
- Loss of general natural habitat suitable for the life processes of common urban and rural wildlife;
- Disturbance to wildlife resulting from noise associated with construction activities, particularly during breeding periods; and,
- Conflict between wildlife and humans following development, including mortality from vehicles.

Proposed Mitigation Measures – Construction Implementation

The following measures are recommended:

- ✓ Due to the proximity to the Claireville Conservation Area, wildlife exclusion fencing should be installed at the eastern extent of the work area to ensure wildlife cannot enter the work site and should be included on the Erosion and Sediment Control Plan. Fencing should be monitored weekly to ensure that it is functioning as intended, and if issues are identified, should be dealt with promptly;
- ✓ Orange snow fencing should be installed around the perimeter of the work area to clearly demarcate the development area and prevent wildlife from entering the construction zone. Fencing should be monitored regularly to ensure they are functioning properly and if issues are identified should be dealt with promptly;
- ✓ Perimeter fencing should not prevent wildlife from leaving the site during clearing activities by clearing the area prior to installing the fence;
- ✓ Wildlife located within the construction area will be relocated to an area outside of the development into an area of appropriate habitat by a qualified professional, as necessary;
- ✓ Avoid vegetation clearing during sensitive times of year for local wildlife (e.g. spring and early summer);
- ✓ Minimize sensory impacts to fauna by working during the day and ensuring that equipment and vehicles have the appropriate mufflers and implement a no idling policy. If working at night, ensure that only the lighting needed to perform the work safely is installed and this lighting is focused on the work area;
- ✓ Construction crews working on site should be educated on local wildlife and take appropriate measures for avoiding wildlife;
- ✓ A qualified wildlife rehabilitation centre should be contacted if any animals are injured or found injured during construction. Injured animals should be transported to an appropriate wildlife rehabilitation centre for care with a small donation of money to help pay for the care (a local facility is the Toronto Wildlife Centre).

With the mitigation measures outlined above, it is anticipated that the proposed development will result in minimal impacts to the common urban wildlife and associated habitat.

7.2.3 Trees

It is understood that the site development will require grading and will therefore require tree clearing, including several trees within the Study Area. The tree removals will result in a temporary decrease in tree cover which can be offset upon project completion as there are opportunities for diverse tree plantings within the established ROW protection through the EA process. The City of Brampton has created a Tableland Tree Assessment Guideline (City of Brampton 2023) to provide coordinated guidance for mitigation and replacement of trees lost as part of development activities. Arcadis acknowledges that the tree replacement ratios outlined in the City of Brampton

Tableland Tree Assessment Guidelines (2023) are just a guide and we will always strive to exceed these ratios wherever it is feasible.

Each alternative will impact a different number of trees. A full tree inventory has not yet been completed due to a lack of permission to access the private lands within the Subject Site therefore exact numbers of trees impacted is unknown at this time and impacts have been estimated from the trees visible in air photos.

To offset the loss of trees within the Subject Site, it is recommended to incorporate native tree plantings throughout the edge of development. This includes streetscape and plantings to buffer the existing residential and industrial development from roadway, as well as increased tree planting along the multi-use path and in appropriate areas around the roadway. Replanting native trees throughout the subject property will increase the overall diversity and number of trees, as well as generally improving the long-term health and function of trees within the Subject Site and mitigate loss to general wildlife habitat within the Subject Site.

As part of the Preliminary Design, a Tree Preservation Plan and Landscaping Plan were developed to identify which trees are likely to require removal during the roadway construction, as well as 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 (pedestrians and cyclists).

Potential Impact

- Decrease in tree cover; and
- Potential for harm / injury to trees marked for retention.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ During the Detail Design Stage, a tree inventory and *Tree Preservation Plan* of the Subject Property shall be completed by an ISA Certified Arborist;
- ✓ The *Landscape Plan* prepared by a qualified Ontario Association of Landscape Architect 'OALA' should include tree planting recommendations consistent with the City of Brampton's target for increased canopy cover to the extent possible within the property;
- ✓ Invasive species should be prioritized for removal and replacement with suitable native species; and,
- ✓ Prior to construction activities, overhanging limbs and any exposed tree roots of trees to be retained (property boundary) should be pruned in a manner that minimizes physical damage and promotes quick wound closure and regeneration. Maintenance of roots or limbs should be carried out by an ISA Certified Arborist or a tree care specialist under the supervision of an ISA Certified Arborist.

Proposed Mitigation Measures – Construction Implementation

- ✓ 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;
    - Protection fencing around trees that will be retained shall be installed at the critical root zone (CRZ) to ensure no impacts to this area. The CRZ is calculated as the DBH x 10 cm;
    - Groups of trees can be fenced together as long as the fencing still meets the recommended placement described above;
- ✓ 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 is 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.

With the successful implementation of the mitigation measures recommended above, it is anticipated that the proposed development will result in a temporary decrease in number of trees present.

7.2.4 Species at Risk and Species at Risk Habitat (Threatened / Endangered)

7.2.4.1 The Red-headed Woodpecker

This species prefers open deciduous woodland, woodland edges, and sparsely treed habitats (COSEWIC 2007). The province does not currently have guidance for the general habitat of this species, though critical habitat is identified (both federally, and provincially in an adopted Recovery Strategy for this species) as the suitable habitat within a 200 m radius around a nest observation OR the 600 m around confirmed or probable breeding OR two possible breeding records within 600 m and 7 days of each other (MECP, 2022). Observations must be from after 2021. There is no suitable habitat for this species within the Subject Site. However, there is suitable habitat for this species in the natural areas east of Gorewood Drive.

A list of high-level avoidance and mitigation measures is provided for the preferred alternative below.

Potential Impact

- — Decrease in tree cover; and
- — Disturbance resulting from noise associated with construction activities, particularly during breeding periods.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ During the Detail Design Stage, a tree inventory and *Tree Preservation Plan* of the Subject Property shall be completed by an ISA Certified Arborist.

Proposed Mitigation Measures – Construction Implementation

- ✓ Avoid clearing any vegetation during active seasons (no clearing between April 1 and August 31 to protect breeding birds and their nests).

Proposed Mitigation Measures – Post-Construction

- ✓ Replanting of trees within the road right of way to offset any tree removals.

7.2.4.2 SAR Bats

The potential SAR bats within the general area are Eastern Small-footed Myotis, Eastern Red Bat, Hoary Bat, Silver-haired Bat, Tri-colored Bat, Northern Myotis, and Little Brown Myotis. There are three types of habitats required by bats: hibernation, maternity sites, and day-roost sites. The latter is not considered regulated habitat.

Most of these bat species prefer to hibernate in caves or mines, and rarely hibernate in buildings (COSEWIC, 2013). No caves or mines were present within the Study Area therefore hibernation sites were not found in the Study Area.

The potential to impact to bats, especially the foliage roosting species (Eastern Red Bat, Hoary Bat, Tri-colored Bat), is related to a direct loss of habitat (i.e., clearing of vegetation). Indirect impacts can result from sensory disturbances, especially those that could affect feeding or day-roosting. MECP has provided guidance on similar projects that indicate that the use of the appropriate avoidance measures will satisfy the agency that contravention to ESA for SAR bats have been minimized.

A list of high-level avoidance and mitigation measures is provided for the preferred alternative below.

Potential Impacts

- — Loss of general day roosting habitat; and
- — Disturbance resulting from noise associated with construction activities, particularly during breeding periods.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ All trees proposed for removal shall be inspected for potential bat maternity roost features.
- ✓ All buildings proposed for removal shall be inspected for potential bat use.

Proposed Mitigation Measures – Construction Implementation

- ✓ Avoid clearing any vegetation during active seasons (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.

Proposed Mitigation Measures – Post-Construction

- ✓ Replanting of trees within the road right of way to offset any tree removals; and
- ✓ Consider installing a bat box to provide roosting habitat.

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

7.2.5 Species of Conservation Concern

While no species of conservation concern were observed during field surveys there is the potential for their habitat to occur within the Study Area, especially in the lands to the east of Gorewood Drive. A list of these species and their probability of suitable habitat within the Study Area is listed in **Appendix A**.

A list of high-level avoidance and mitigation measures is provided for the preferred alternative below.

Potential Impact

— Decrease in tree cover; and

— Disturbance resulting from noise associated with construction activities, particularly during breeding periods.

Proposed Mitigation Measures – Construction Implementation

✓ Avoid clearing any vegetation during active breeding seasons (no clearing between April 1 and August 31 to protect breeding birds and their nests).

Proposed Mitigation Measures – Post-Construction

✓ Replanting of trees within the road right of way to offset any tree removals.

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

Indirect Impacts

Indirect impacts refer to the negative effects that occur as a result of project activities but not from direct physical disturbance to the natural heritage feature itself. These impacts often arise from changes to the surrounding environment and can degrade the ecological integrity, function, or connectivity of natural heritage features without physically altering them. Indirect impacts from the proposed development may include:

— A potential increase in air and light pollution into the areas immediately adjacent to the development;

— A potential increase in the spread and invasion of the disturbed area by invasive species; and

— New invasive species may be transported in on pedestrian footwear.

Cumulative Impacts

The proposed development is within urban area and cumulative impacts must be considered in the context of the local and regional environment in which the Subject Property is situated. Much of the land surrounding the Study Area is a mix of residential, industrial, and recreational uses, with most of the impacts to the natural heritage features occurring during area development over the last 10 years. The Subject Site itself had previously been used for rural residential land-use shifting towards more industrial uses recently.

Based on field assessments and available information, the removal of the vegetation within the Subject Site will have a negligible negative impact on the existing natural heritage system. Potential cumulative impacts to the natural heritage system resulting from the proposed development include the following:

— Temporary loss of biodiversity and available habitat;

— Increase in impervious surfaces increasing runoff potential; and

— Increase in local light pollution.

Proposed Mitigation Measures – Planning and Design Stage

In addition to the mitigation measures listed above, the following mitigation should be considered to address the cumulative impacts resulting from the proposed development:

- ✓ Landscaping plans should intend to compensate for the removal of vegetation;
- ✓ Project design should consider the use of permeable landscaping materials and rain capture systems such as rain gardens or infiltration areas; and
- ✓ All lighting should be directed downwards and have shielding to prevent light pollution into adjacent natural areas.

With the successful implementation of the mitigation measures recommended above, it is anticipated that the proposed development will be negligible. The proposed development result in only a temporary decrease in number of trees present as the Landscape Plan will incorporate native tree plantings into the Detailed Design Plans.

7.3 General Recommendations

The following recommendations are proposed to support of the Project, while reducing impacts and enhancing surrounding natural heritage features.

- ✓ Minimize the area to be cleared;
- ✓ Cleary mark the areas to be retained on construction drawings and delineate in the field with sturdy fencing;
- ✓ Implement measures to minimize the spread of invasive plants;
- ✓ On-site landscaping should be designed to help increase native plant density, native biodiversity, and wildlife habitat;
- ✓ For the protection of native vegetation, construction activities should avoid the most external dripline of any trees to be retained; 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.

8 Summary and Conclusion

This report provides an evaluation of the anticipated impacts associated with the construction of the extension of Intermodal Drive to Gorewood Drive. The environmental impacts and mitigation are based off field surveys completed 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 surveys, background data and aerial imagery.

No SAR or Special Concern species were found within the Subject Site. However, there is potential for SAR bats using trees within the Subject Site and there is suitable habitat for SAR bats and Red-headed Woodpecker within the Study Area, east of Gorewood Drive.

An overall loss of tree cover will result from the construction of the extension of Intermodal Drive. This loss can be offset through the replanting of native trees post construction.

All route alternatives will enter the TRCA Regulated Area. **Consultations with TRCA is recommended to determine if a permit will be required for any works within the regulated area.**

It is anticipated that typical best management practices and guidelines can be implemented to minimize or avoid negative impacts to the natural environment.

8.1 Policy Conformity

Project-specific details and next steps, to help ensure adherence to the applicable policies and legislation, are included below.

- *Endangered Species Act, 2007* – No tree removal should occur between April 1 and September 30, to reduce the potential for impacts to SAR Bats.
- *Migratory Birds Convention Act, 1994* – No vegetation removal should occur between April 1 and August 31, to reduce the potential for incidental take of active bird nests.
- *Fish and Wildlife Conservation Act, 1997* – In the case that wildlife is observed within the work area, all work in the area shall stop until the animal has left the area on its own. Handling and/or relocation of wildlife is not anticipated for this Project. In the case that wildlife relocation is required, consultation with MNRF would be required to attain the necessary permits and approvals under the FWCA.
- *Conservation Authorities Act, 1990* – *Permitting / approval under O. Reg. 41/24* will be required due to the presence of the regulated floodplain areas.

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Appendix A

Species at Risk and Species of Conservation Concern Occurrences within the vicinity of the Study Area

Table A-1: Species at Risk Preliminary Screening Results for Intermodal Drive Extension to Gorewood Drive

Resource	Area Covered	Species at Risk Records	Details
Desktop Studies			
Ministry of Natural Resources and Forestry's Natural Heritage Information Centre	1 km^2	Wood Thrush, Eastern Wood-pewee, Snapping Turtle, Eastern Meadowlark, Bobolink, Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield population)	Square searched: 17PJ0844
Ontario Breeding Bird Atlas	10 km^2	Eastern Wood-Pewee, Barn Swallow, Bobolink	Square searched: 17TPJ04
Butterfly Atlas	10 km^2	Monarch	Square searched: 17TPJ04
Ontario Reptile and Amphibian Atlas	10 km^2	Midland Painted Turtle, Northern Map Turtle, Snapping Turtle, Western Chorus Frog	Square searched: 17TPJ04
Atlas of the Mammals of Ontario	Study Area	Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Eastern Red Bat, Hoary Bat, Silver-haired Bat, Tri-coloured Bat	General Species Range Maps
EBird Hotspots	2 km buffer	Barn Swallow, Bobolink, Canada Warbler, Chimney Swift, Common Nighthawk, Eastern Meadowlark, Eastern Whip-poor-will, Eastern Wood-Pewee, Evening Grosbeak, Golden Eagle, Golden-winged Warbler, Grasshopper Sparrow, Least Bittern, Lesser Yellowlegs, Olive-sided Flycatcher, Peregrine Falcon, Red Knot, Red-headed Woodpecker, Rusty Blackbird, Short-eared Owl, Wood Thrush	Search area includes an approximate 2 km buffer around the Subject Site.
iNaturalist	500 m buffer	Bobolink, Snapping Turtle, Midland Painted Turtle	Search area includes an approximate 500 m buffer around the Subject Site.
Aquatic Resources Areas	500 m buffer	None	West Humber River
Fisheries and Oceans Canada Aquatic SAR Mapping	500 m buffer	None	None
Land Information Ontario	500 m buffer	None	West Humber River
Correspondence			
Local Conservation Authority	N/A	None	Local conservation authorities no longer provide data related to Species at Risk.

Resource	Area Covered	Species at Risk Records	Details
Field Investigations			
Arcadis Ecologist	N/A	None	April 12, 2024, June 13, 2024, July 4, 2024

Table A-2 : Species at Risk and Species of Conservation Concern Occurrences within the vicinity of the Study Area

English Name	Scientific Name	Habitat Assessment	Conservation Status			Source	Probability of Occurrence within Study Area
			S Rank (Provincial)	SARA Schedule 1	ESA		
Birds							
Barn Swallow	*Hirundo rustica*	Farmlands or rural areas; cliffs, caves, rock niches; buildings or other man-made structures for nesting; open country near body of water (MNR 2000).	S5B	THR	SC		None : No bluff habitat present within the study area. Likely to far from any bluff habitat to provide foraging area.
Bobolink	*Dolichonyx oryzivorus*	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50 ha (MNR 2000).	S4B	THR	THR		None : No suitable buildings in the study area. May provide foraging habitat if there is nesting nearby.
Canada Warbler	*Cardellina canadensis*	an interior forest species; dense, mixed coniferous, deciduous forests with closed canopy, wet bottomlands of cedar or alder; shrubby undergrowth in cool moist mature woodlands; riparian habitat; usually requires at least 30 ha	S4B	THR	SC		Low : small meadow present in the study area does not meet the size requirements of this species.
Chimney Swift	*Chaetura pelagica*	Urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water (MNR 2000).	S4B,S4N	THR	THR		None : No suitable buildings with chimneys in the study area. May provide foraging habitat if there is nesting nearby.
Common Nighthawk	*Chordeiles minor*	open ground; clearings in dense forests; ploughed fields; gravel beaches or barren areas with rocky soils; open woodlands; flat gravel roofs (MNR 2000)	S4B	THR	SC		Low : There is some woodland habitat in the south side of the study area.
Eastern Meadowlark	*Sturnella magna*	open, grassy meadows, farmland, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees; old orchards with adjacent, open grassy areas >10 ha in size (MNR 2000)	S4B	THR	THR		None - No suitable habitat within the Study Area.
Eastern Whip-poor-will	*Antrostomus vociferus*	dry, open, deciduous woodlands of small to medium trees; oak or beech with lots of clearings and shaded leaf- litter; wooded edges, forest clearings with little herbaceous growth; pine plantations; associated with >100 ha forests; may require 500 to 1000 ha to maintain population (MNR 2000)	S4B	THR	THR		None - No suitable habitat within the Study Area.
Eastern Wood-pewee	*Contopus virens*	open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks (MNR 2000)	S4B	SC	SC		Moderate - Some small patches of trees within the Study Area.
Evening Grosbeak	*Coccothraustes vespertinus*	coniferous or mixed forests; deciduous tree stands; parks, orchards (MNR 2000)	S4B	SC	SC		Moderate - Some small patches of trees within the Study Area.
Golden Eagle	*Aquila chrysaetos*		S2B		END		None - No suitable habitat within the Study Area.
Golden-winged Warbler	*Vermivora chrysoptera*	early successional habitat; shrubby, grassy abandoned fields with small deciduous trees bordered by low woodland and wooded swamps; alder bogs; deciduous, damp woods; shrubbery clearings in deciduous woods with saplings and grasses; brier-woodland edges; requires >10 ha of habitat (MNR 2000)	S4B	THR	SC		Moderate - Some grassy and shrubby successional habitat present in the Study Area.
Grasshopper Sparrow	*Ammodramus savannarum*	well-drained grassland or prairie with low cover of grasses, taller weeds on sandy soil; hayfields or weedy fallow fields; uplands with ground vegetation of various densities; perches for singing; requires tracts of grassland > 10 ha (MNR 2000)	S4B	SC	SC		Moderate - Some grassy and shrubby successional habitat present in the Study Area.

Least Bittern	*Ixobrychus exilis*	deep marshes, swamps, bogs; marshy borders of lakes, ponds, streams, ditches; dense emergent vegetation of cattail, bulrush, sedge; nests in cattails; intolerant of loss of habitat and human disturbance (MNR 2000)	S4B	THR	THR	Low - While some marsh habitat is present within the Study Area there is much human disturbance and the area is subject to frequent recreational use.
Olive-sided Flycatcher	*Contopus cooperi*	semi-open, conifer forest, prefers spruce; near pond, lake or river; treed wetlands for nesting; burns with dead trees for perching (MNR 2000)	S4B	SC	SC	None - No conifer forest habitat present within the Study Area.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	open, deciduous forest with little understory; fields or pasture lands with scattered large trees; wooded swamps; orchards, small woodlots or forest edges; groves of dead or dying trees; feeds on insects and stores nuts or acorns for winter; loss of habitat is limiting factor; requires cavity trees with at least 40 cm dbh; require about 4 ha for a territory (MNR 2000)	S4B	END	END	Moderate - Some forest patches present as well as meadows with scattered trees.
Rusty Blackbird	*Euphagus carolinus*	openings in coniferous woodlands bordering bodies of water; tree-bordered marshes, beaver ponds, muskegs, bogs, fens or wooded swamps; stream borders with alder, willow; wooded islands on lakes (MNR 2000)	S4B	SC	SC	Low - Very limited amounts of shrubby wetland habitat occur within the Study Area.
Short-eared Owl	*Asio flammeus*	grasslands, open areas or meadows that are grassy or bushy; marshes, bogs or tundra; both diurnal and nocturnal habits; ground nester; destruction of wetlands by drainage for agriculture is an important factor in the decline of this species; home range 25 -125 ha; requires 75-100 ha of contiguous open habitat (MNR 2000)	S2N,S4B	SC	THR	None - habitat patch size of the open space occurring within and adjacent to the Study Area too small to support this species.
Wood Thrush	*Hylocichla mustelina*	Undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12 m (MNR 2000).	S4B	THR	SC	Low - Some small forest patches occur within the Study Area but they are not the mature ones this species requires.
Reptiles						
Northern Map Turtle	*Graptemys geographica*	large bodies of water with soft bottoms, and aquatic vegetation; basks on logs or rocks or on beaches and grassy edges, will bask in groups; uses soft soil or clean dry sand for nest sites; may nest at some distance from water; home range size is larger for females (about 70 ha) than males (about 30 ha) and includes hibernation, basking, nesting and feeding areas; aquatic corridors (e.g. stream) are required for movement; not readily observed (MNR 2000)	S3	SC	SC	None - Little wetland habitat within the Study Area and no large bodies of water present.
Midland Painted Turtle	*Chrysemys picta marginata*	Quiet, warm, shallow water with abundant aquatic vegetation such as ponds, large pools, streams, ditches, swamps, marshy meadows; eggs are laid in sandy places, usually in a bank or hillside, or in fields; basks in groups; not territorial (MNR 2000).	S4	SC		Low - Little wetland habitat within the Study Area but the wetland to the south side of the Study Area may provide habitat. No appropriate habitat within the Subject Site.
Snapping Turtle	*Chelydra serpentina*	Permanent, semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms; often uses soft soil or clean dry sand on south-facing slopes for nest sites; may nest at some distance from water; often hibernate together in groups in mud under water; home range size ~28 ha (MNR 2000).	S4	SC	SC	Low - Little wetland habitat within the Study Area but the wetland to the north side of the Study Area may provide habitat. No appropriate habitat within the Subject Site.

Western Chorus Frog (Great Lakes	*Pseudacris triseriata*	Roadside ditches or temporary ponds in fields; swamps or wet meadows; woodland or open country with cover and moisture; small ponds and temporary pools (MNR 2000).	S4	THR	NAR	Moderate - Some potential wetland habitat within the Study Area to the north. No suitable habitat on Subject Site.
Mammals						
Eastern Small-footed Myotis	*Myotis leibii*	Roosts in caves, mine shafts, crevices or buildings that are in or near woodland; hibernates in cold dry caves or mines; maternity colonies in caves or buildings; hunts in forests (MNR 2000b).	S2S3		END	None - No suitable habitat within the Study Area.
Little Brown Myotis	*Myotis lucifugus*	Uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges (MNR 2000b).	S3	END	END	Moderate - Potential habitat within the Study Area within the wooded areas of the conservation area.
Northern Myotis	*Myotis septentrionalis*	may be found roosting singly or in colonies underneath lose tree bark, in cavities or in crevices of both live trees and snags, or dead trees. May use artificial bat boxes (BCI 2024)	S3	END	END	Moderate - Potential habitat within the Study Area within the wooded areas of the conservation area.
Eastern Red Bat	*Lasiurus borealis*	usually found roosting singly or sometimes in small groups in the foliage of trees, especially deciduous trees, with a preference for clumps of leaves in the upper portions of the canopy	S4		END	High - Potential habitat within the Study Area within the wooded areas of the conservation area.
Hoary Bat	*Lasiurus cinereus*	Will use the foliage of deciduous or coniferous trees, may preferer forest edge or trees near openings in the forest.	S4		END	High - Potential habitat within the Study Area within the wooded areas of the conservation area.
Tri-coloured Bat	*Perimyotis subflavus*	Will use the foliage of deciduous trees, prefers oak trees, and especially mature trees.	S3?	END	END	Moderate - Potential habitat within the Study Area within the wooded areas of the conservation area but the Subject Site may be outside of its normal range.
Silver-haired Bat	*Lasionycteris noctivagans*	may be found roosting singly or in colonies underneath lose tree bark, in cavities or in crevices of both live trees and snags, or dead trees. (BCI 2024)	S4		END	Moderate - Potential habitat within the Study Area within the wooded areas of the conservation area.
Insects						
Monarch	*Danaus plexippus*	A combination of field and forest and provides locations to feed and to rest. Caterpillars eat exclusively milkweed and adults require the nectar of wildflowers to feed (Ontario 2023a).	S2N,S4B	END	SC	Moderate - There is a small meadow area that could provide habitat.

Appendix B

Species Tables

Table B-1 : Breeding Bird Survey Species

		Conservation Status		
English Name	Scientific Name	S Rank	SARO	SARA
American Goldfinch	Spinus tristis	G5		
American Robin	Turdus migratorius	G5		
Black-capped Chickadee	Poecile atricapillus	G5		
Blue Jay	Cyanocitta cristata	G5		
Common Grackle	Quiscalus quiscula	G5		
European Starling	Sturnus vulgaris	G5		
Hairy Woodpecker	Picoides villosus	G5		
Northern Cardinal	Cardinalis cardinalis	G5		
Red-winged Blackbird	Agelaius phoeniceus	G5		
Song Sparrow	Melospiza melodia	G5		
Warbling Vireo	Vireo gilvus	G5		

Table B-2 : Incidental Wildlife

		Conservation Status		
English Name	Scientific Name	S Rank	SARO	SARA
Black Saddlebags	Tramea lacerata	S4		
Common Ringlet	Coenonympha tullia	S5		
European Common Blue	Polyommatus icarus	SNA		
European Skipper	Thymelicus lineola	SNA		
Silvery Blue	Glaucopsyche lygdamus	S5		

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