GEI Consultants

Environmental Impact Study

Global Properties Inc. – Wildfield Village

Town of Caledon, Ontario

Submitted to:
Global Properties Inc.
122 Romina Drive
Concord, ON L4K 4Z7

Submitted by:
GEI Consultants Canada Ltd.
650 Woodlawn Rd W,
Guelph, ON N1K 1B8
519.824.8150

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Eva Lee
Project Manager & Ecologist

George Buckton
Project Director

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Record of Revisions

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First Submission	January 28, 2025	Wildfield DPOS Environmental Impact Study

1. Introduction

1.1. Project Overview

GEI Consultants Ltd. (GEI) was retained by Global Properties Inc. (Global Properties), to complete an Environmental Impact Study (EIS) in support of a Draft Plan of Subdivision application, for the proposed residential development at Wildfield Village (herein referred to as the Subject Lands; **Figure 1**, **Appendix A**). The Subject Lands are generally located north of Mayfield Road, east of Centreville Creek Road, west of The Gore Road and south of Healey Road, in the Town of Caledon, Ontario. The majority of the Subject Lands are in active agricultural land use.

The Wildfield Village Landowners Group (Wildfield Village LOG), of which Global Properties are participants, submitted the Phase 1 Local Subwatershed Study (LSS) in November 2024, in support of the Secondary Plan process for Wildfield Village. Additionally, the Phase 2 LSS was submitted in January 2025. Ecological data previously gathered within the Study Area to support the LSS has been used to inform this EIS.

1.2. Purpose of the Report

The EIS is required to assess the potential impacts of the proposed development on the natural heritage features and associated functions on and adjacent (120 m) to the Subject Lands. This work considers applicable provincial and municipal policies, including natural heritage policies of the Province of Ontario's Provincial Planning Statement (PPS; MMAH 2024) and associated provincial implementation guidance contained in the Natural Heritage Reference Manual (NHRM; MNR 2010), as well as the Town's Official Plan (OP) and the Toronto and Region Conservation Authority's (TRCA) regulation and policies (**Figure 2, Appendix A**).

An EIS Terms of Reference (TOR) was developed to guide the preparation of the EIS for the Subject Lands. The TOR was initially drafted and circulated to the Town of Caledon, and TRCA on December 3, 2024. The TOR was reviewed by TRCA and comments have been addressed in this EIS report. On January 10, 2025, the Town of Caledon indicated via email that while the draft plan of subdivision would be reviewed concurrently with the Secondary Plan and LSS, their review of the TOR would follow these submissions. A copy of the TRCA approved TOR and comments are provided in **Appendix B**.

2. Natural Heritage Legislations and Policy Context

An assessment of the quality and extent of natural heritage features found on and adjacent (within 120 m) to the Subject Lands, was completed. Ecological opportunities and constraints to development were evaluated in the context of the requirements of the following regulatory agencies, local and regional municipalities, and/or legislation:

- Town of Caledon Official Plan (2024);
- Future Caledon Draft Official Plan (2024);
- Peel Region Official Plan (2022);
- Greenbelt Plan (2017);
- Toronto Region Conservation Authority (TRCA);
- Provincial Planning Statement (MMAH; 2024);
- Provincial *Endangered Species Act* (ESA; 2007);
- *Migratory Birds Convention Act* (2017); and
- *Federal Fisheries Act* (2019).

The relevant portions of each of these, as they apply to the Subject Lands and the development potential, are discussed in the following sections below.

2.1. Town of Caledon Official Plan (2024 Consolidation)

The Subject Lands are designated as "Prime Agricultural Area" on Schedule A ("Land Use Plan") of the Caledon Official Plan (OP). A headwater drainage feature located in the west portion of the Subject Lands is designated as a "Environmental Policy Area" on Schedule A (**Figure 2**, **Appendix A**).

"Environmental Policy Area" encompasses "Natural Core Areas" and "Natural Corridors" within the Town of Caledon OP. Section 5.7.3.1.1 of the Caledon OP states that major development and site alteration is not permitted within lands designated "Environmental Policy Area". Minor refinements to the limits of an "Environmental Policy Area" may be made through environmental studies without the need for an OP Amendment. Major modifications to an "Environmental Policy Area" would require an OP Amendment.

Natural Core Areas and Natural Corridors are defined within Table 3.1 of the OP as including the following features:

Natural Core Areas:

- All Woodland Core Areas;
- All Wetland Core Areas;
- All Niagara Escarpment Natural Areas;
- All Life Science Area of Natural and Scientific Interest;
- All Environmentally Significant Areas;
- All Significant Habitat of Threatened and Endangered Species; and
- All Greenbelt and Oak Ridges Moraine Key Natural Heritage Features and Key Hydrological Features.

Natural Corridors:

- All Core Fishery Resource Areas; and
- All Valley and Stream Corridors.

These components are subject to detailed land use policies for Environmental Protection Areas in Section 5.7 of the Caledon OP.

2.2. Future Caledon Official Plan (Draft, 2024)

The Town of Caledon's Future Caledon Draft OP (2024), was adopted by Council on March 26, 2024. This OP is not yet in force and effect as it must still be approved by the Ministry of Municipal Affairs and Housing. On Schedule B2 of the Future Caledon Draft OP, the Subject Lands are noted as part of the New Urban Area 2051 Schedule B4 denotes proposed Land Uses for the New Urban Area; the Subject Lands include New Community Area, and Natural Features and Areas.

The Future Caledon OP (2024), also brings in additional climate change considerations. In 2010, the Town of Caledon created its first Community Climate Change Action Plan (CCCAP), furthering their climate action efforts in 2017 by signing on to the Global Covenant of Mayors for Climate and Energy (GCOM). The Town created a Future Climate Projections Report (2018) to better understand anticipated trends and impacts of climate change on the community. The climate change objectives and policy directions outlined in Chapter 5 of the Future Caledon OP aim to support the corporate goals, actions, and strategies identified in the newest version of the Resilient Caledon CCCAP, released in 2021. The Resilient Caledon Plan combines adaptation and mitigation actions to reduce GHG emissions and help the community prepare for climate change. The Future Caledon – Our Official Plan (2024), highlights the need to address climate change through a series of objectives and policy decisions that support the corporate goals, actions, and strategies in the Resilient CCCAP.

2.3. Region of Peel Official Plan (2022)

As of July 1, 2024, the Region of Peel Official Plan (RPOP) constitutes an official plan of Peel's lower-tier municipalities. As such, the Town of Caledon is now responsible for the interpretation and implementation of the RPOP.

The RPOP (2022) identifies the Subject Lands as part of the Rural System and Urban System, overlayed with the 2052 New Urban Area as shown on Schedule E-1 ("Regional Structure"). The West Humber River corridor and its tributary across Centreville Creek Road are identified within the Greenlands System containing Core Areas (Schedules C-1; "Greenlands System", and C-2 "Core Areas of the Greenlands System in Peel") (**Figure 2**, **Appendix A**). In addition, several Potential Natural Areas and Corridors (PNAC) are identified within and adjacent to the Subject Lands associated with wetland pockets and a headwater drainage feature in the west portion of the Subject Lands as shown on Figure 7 ("Regional Greenlands System - Core Areas Natural Areas and Corridors and Potential Natural Areas and Corridors") of the RPOP (2022).

The RPOP (2022) defines Core Areas of the Greenlands System as:

- Significant Wetlands;
- Significant Coastal Wetlands;
- Woodlands meeting one or more of the criteria for Core Area woodland in Table 1 of the Peel OP;
- Environmentally Sensitive or Significant Areas;
- Provincial Life Science Areas of Natural and Scientific Interest;
- Escarpment Natural Areas of the Niagara Escarpment Plan; and
- Valley and Stream Corridors that meet criteria outlined in Table 2 of the ROP.

NAC are defined as:

- Evaluated non-provincially significant wetlands and coastal wetlands;
- Woodlands meeting one or more of the criteria for NAC woodland in Table 1 of the Peel OP;
- Significant wildlife habitat;
- Fish habitat;
- Habitat of aquatic species at risk;
- Habitat of endangered and threatened species;
- Regionally significant life science Areas of Natural and Scientific Interest;
- Provincially significant earth science Areas of Natural and Scientific Interest;
- Escarpment Protection Areas of the Niagara Escarpment Plan;
- The Lake Ontario shoreline and littoral zone and other natural lakes and their shorelines;
- Any other valley and stream corridors that have not been defined as part of the Core Areas;
- Sensitive headwater areas and sensitive ground water discharge areas; and
- Any other natural features and functional areas interpreted as part of the Greenlands System Natural Areas and Corridors.

PNAC are defined as:

- Unevaluated wetlands and coastal wetlands;
- Cultural woodlands and cultural savannahs within the Urban System meeting one or more of the criteria for PNAC woodland in Table 1 of the Peel OP (2022);
- Regionally significant earth science Areas of Natural and Scientific Interest;
- Sensitive ground water recharge areas;
- Portions of Historic shorelines;
- Open space portions of the Parkway Belt West Plan Area;
- Enhancement areas, buffers and linkages; and
- Any other natural features and functional areas interpreted as part of the Greenlands System Potential Natural Areas and Corridors.

The RPOP (2022) indicates that development and site alteration will not be permitted within or on adjacent lands to natural heritage features and areas identified as Greenlands System Core Areas, NAC and PNAC, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. Per RPOP (2022) policy 2.14.8, the diversity and connectivity of natural heritage features and areas within the Greenlands System's components shall be maintained, restored and improved.

2.4. Greenbelt Plan

The Greenbelt Plan (2017) works to permanently protect environmentally sensitive areas, due to their ecological value within the Golden Horseshoe. It is intended to enhance the natural landscapes by working to facilitate the connection of environmentally significant areas, and reduce fragmentation of the landscape. Protection is offered also to permanent agricultural areas ensuring the permanency and sustainability of natural resources.

The Greenbelt Plan Area is located off-site to the north and east of the Subject Lands and contains the Natural Heritage System (NHS). As described within Section 3.2 of the Greenbelt Plan (2017), the Protected Countryside contains a Natural System component of a NHS and a Water Resource System (WRS). The NHS includes core and linkage areas of the Protected Countryside with the highest concentration of sensitive and significant natural features and functions, while the WRS is made up of both ground and surface water features, areas and their associated functions. The NHS protects natural heritage, hydrologic and/or landform features (key hydrologic areas, key hydrologic features and key natural heritage features) that contribute to conserving Ontario's biodiversity and the ecological integrity of the Greenbelt itself. As described within Section 3.2.2 of the Greenbelt Plan (2017), new developments and/or site alterations must show that there are no negative impacts on the key natural heritage features or key hydrologic features of their functions.

The Subject Lands are located outside (> 120 m) of the Greenbelt Plan Area.

2.5. Toronto Region and Conservation Authority

Effective January 1, 2023, following the implementation of Bill 23, the role of Conservation Authorities in reviewing development applications has changed. Previously, the TRCA reviewed planning application submissions associated with future development of properties within its jurisdictional boundaries. In addition, the TRCA provided planning and technical advice to planning authorities to assist them in fulfilling their responsibilities regarding natural hazards, natural heritage, and other relevant policy areas pursuant to the Planning Act, as both a watershed-based resource management agency and through planning advisory services, in addition to their regulatory responsibilities. With the changes associated with Bill 23, the commenting role Conservation Authorities will play in Planning Act applications may vary from municipality to municipality.

Effective April 1, 2024, Ontario Regulation (O. Reg.) 41/24: Prohibited Activities, Exemptions and Permits has come into force, replacing the former O. Reg. 166/06: Toronto and Region Conservation Authority: Development, Interference with Wetlands, Alterations to Shorelines and Watercourses Regulation. O.Reg. 41/24 allows Conservation Authorities to implement Section 28 *Conservation Authorities Act*, 1990 (amended 2024), which states under Section 28(1) that:

"*28 (1) No person shall carry on the following activities, or permit another person to carry on the following activities, in the area of jurisdiction of an authority:*

a) Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.

b) Development activities in areas that are within the authority's area of jurisdiction and are,

i. hazardous lands,

ii. wetlands,

iii. river or stream valleys the limits of which shall be determined in accordance with the regulations,

iv. areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or

v. other areas in which development should be prohibited or regulated, as may be determined by the regulations. 2017, c. 23, Sched. 4, s. 25."

Pursuant to O. Reg. 41/24, any interference with or development in or on areas stated in the *Conservation Authorities Act* (e.g., hazardous lands, wetlands, river or stream valleys) requires permission from the Conservation Authority. The Conservation Authority may issue permits under Section 28.1 and may attach conditions on the permits per Section 9(1) of the Regulation. A review of TRCA's Regulation mapping shows that the Study Area includes regulated areas including a watercourse, HDFs and unevaluated wetlands. All mapped watercourses, HDFs, and wetlands will be reviewed in accordance with the definitions under Ontario Regulation 41/24.

The TRCA's Living Cities Policies (2014) document contains the principles, goals, objectives and policies approved by the TRCA for their planning and development approvals process. This document outlines policies related to the determination of the Natural System and recommends buffer widths for natural heritage features such as woodlands, wetlands, and valley and stream corridors.

2.6. Provincial Planning Statement (PPS)

The PPS (MMAH, 2024) provides direction on matters of provincial interest related to land use planning and development. It "…supports a comprehensive, integrated and long-term approach to planning…". The PPS is to be read in its entirety and land use planners and decision-makers need to consider all relevant policies and how they work together.

This report addresses those policies that are specific to Natural Heritage (section 2.1 of the PPS) with some reference to other policies with relevance to Natural Heritage and impact assessment considerations and areas of overlap (e.g., those related to Efficient and Resilient Development and Land Use Patterns, section 1.1; Sewage, Water and Stormwater, section 1.6.6; Water, section 2.2; Natural Hazards, section 3.1).

Eight types of significant natural heritage features are defined in the PPS, as follows:

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat (SWH);
- Fish habitat;
- Habitat of endangered and threatened species; and
- Significant areas of natural and scientific interest (ANSIs).

Development and site alteration shall not be permitted in significant wetlands, or in significant coastal wetlands. Development and site alteration shall not be permitted in significant woodlands, significant valleylands, SWH or significant ANSIs, unless it is demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Development and site alteration shall not be permitted in the habitat of endangered and threatened species or in fish habitat, except in accordance with provincial and federal requirements. Development and site alteration may be permitted on lands adjacent to fish habitat provided it has been demonstrated that there will be no negative impacts on the natural feature or their ecological functions.

2.6.1. Natural Hazards

Section 3.1.1 of the PPS directs development to areas outside of hazardous lands adjacent to the shoreline of the Great Lakes – St. Lawrence River System (flooding, erosion and dynamic beach hazards), hazardous lands adjacent to river, steam and small inland lake systems (flooding and/or erosion hazards) and hazardous sites. Section 3.1.2 further prohibits development and site alteration within:

a) The dynamic beach hazard;
b) Defined portions of the flooding hazard along connecting channels (the St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers);
c) Areas that would be rendered inaccessible to people and vehicles during times of flooding hazards, erosion hazards and/or dynamic beach hazards, unless it has been demonstrated that the site has safe access appropriate for the nature of the development and the natural hazard; and
d) A floodway regardless of whether the area of inundation contains high points of land not subject to flooding.

2.7. Ontario Endangered Species Act (ESA)

The provincial ESA (2007) was developed to:

- Identify Species at Risk (SAR), based upon best available science;
- Protect SAR and their habitats and to promote the recovery of SAR; and,
- Promote stewardship activities that would support those protection and recovery efforts.

The ESA (2007) protects all threatened, endangered and extirpated species listed on the Species at Risk in Ontario (SARO) list. These species are legally protected from harm or harassment and their associated habitats are legally protected from damage or destruction, as defined under the ESA (2007).

2.8. Migratory Birds Convention Act

This federal legislation protects the nests and offspring of listed migratory bird species from destruction or disturbance. In its application, it requires that best management practices be implemented to detect and avoid disturbance to active nests during development activities.

2.9. Federal Fisheries Act

The Department of Fisheries and Oceans Canada (DFO) administers the federal *Fisheries Act*, which defines fish habitat as “spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes” [subsection (2)1]. The *Fisheries Act* prohibits the death of fish by means other than fishing [subsection 34.4 (1)] and the harmful alteration, disruption or destruction of fish habitat [HADD; subsection 35. (1)]. A HADD is defined as “any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat’s capacity to support one or more life processes” (DFO 2019).

3. Summary of Data Collection Approaches and Methodology

3.1. Background Review

The following resources were reviewed for information relating to natural heritage features and species that may be found within the Subject Lands and 120 m adjacent lands:

- Ministry of Natural Resources and Forestry's (MNRF) Natural Heritage Information Centre (NHIC) database (2024);
- MNRF's Land Information Ontario (LIO) database (2024);
- Bird Studies Canada's Atlas of the Breeding Birds of Ontario (BSC et al. 2007);
- Ontario Nature's Reptile and Amphibian Atlas (2020);
- Toronto Entomologists' Association's (TEA) Ontario Butterfly and Moth Atlases (2023, 2020);
- Fisheries and Oceans Canada's (DFO) Aquatic Species at Risk (SAR) Map (2024);
- Humber River Watershed Plan (TRCA 2008) and any on-going updates including the Humber River Watershed Characterization Report (TRCA 2023);
- West Humber River Fisheries Management Plan (MNR and TRCA, 2005); and
- Online Citizen Science databases (e.g., eBird).

The results of these background reviews are discussed in the following sections below.

3.1.1. Land Information Ontario Natural Features Summary

Based on the Ministry of Natural Resources and Forestry (MNRF) Land Information Ontario (LIO) geographic database, the following features were identified within the Study Area (**Figure 2, Appendix A**):

- Unevaluated wetlands are identified within the Study Area.

No Provincially Significant Wetlands (PSWs) have been identified per OWES on or within 120 m of the Subject Lands. The West Humber River, associated with the Greenbelt Plan, is located off-site north and east of the Subject Lands.

3.1.2. Natural Heritage Information Centre

The NHIC database (MNRF 2024) was searched for records of provincially significant plants, vegetation communities and wildlife on and in the vicinity of the Subject Lands. The database provides occurrence data by 1 km^2 area squares, with five squares overlapping at least a portion of the Subject Lands (17NJ9953,, 17PJ0053, 17PJ0052,17PJ0153, 19PJ0152).

A total of six species were recorded in the atlas squares that overlap with the Subject Lands (although given the size of the atlas squares this does not necessarily imply these species have been recorded on or within 120 m of the Subject Lands), with the following species of interest noted:

- Species listed as Threatened or Endangered on the SARO list:
  - Eastern Meadowlark (*Sturnella magna*) – Threatened;

- Bobolink (*Dolichonyx oryzivorus*) – Threatened; and
- Redside Dace (*Clinostomus elongatus*) – Endangered.

- Species listed as Special Concern on the SARO list or identified as an S1-S3 species:
  - Wood Thrush (*Hylocichla mustelina*) – Special Concern;
  - Eastern Wood- Pewee (*Contopus virens*) – Special Concern; and
  - American Brook Lamprey (*Lethenteron appendix*) – S3.

In addition to the above noted species, one wildlife concentration area was identified, a Mixed Wader Nesting Colony.

3.1.3. Ontario Breding Bird Atlas

The Ontario Breeding Bird Atlas contains detailed information on the population and distribution status of Ontario birds (BSC et al. 2006). The data is presented on 100 km^2 area squares with two squares overlapping a portion of the Study Area (17PJ05 and 17NJ95). It should be noted that the Subject Lands may be a small component of the overall bird atlas squares, and therefore it is unlikely that all bird species are found within the Subject Lands. Habitat type, availability and size are all contributing factors in bird species presence and use.

A total of 122 species were recorded in the atlas squares that overlap with the Subject Lands. The following species of interest are noted:

- Species listed as Threatened or Endangered on the SARO list:
  - Acadian Flycatcher (*Empidonax virescens*) – Endangered;
  - Prothonotary Warbler (*Protonotaria citrea*) – Endangered;
  - Red-headed Woodpecker (*Melanerpes erythrocephalus*)- Endangered;
  - Whip-poor-will (*Antrostomus vociferus*) – Threatened;
  - Chimney Swift (*Chaetura pelagica*) – Threatened;
  - Bank Swallow (*Riparia riparia*) – Threatened;
  - Eastern Meadowlark – Threatened; and
  - Bobolink – Threatened.

- Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species):
  - Eastern Wood-Pewee – Special Concern;
  - Wood Thrush – Special Concern;
  - Common Nighthawk (*Chordeiles minor*) – Special Concern;
  - Barn Swallow (*Hirundo rustica*)- Special Concern;
  - Golden-winged Warbler (*Vermivora chrysoptera*) – Special Concern;
  - Grasshopper Sparrow (*Ammodramus savannarum*) – Special Concern;
  - Upland Sandpiper (*Bartramia longicauda*)-S2B; and
  - Purple Martin (*Progne subis*) – S3B.

3.1.4. Ontario Nature's Reptile and Amphibian Atlas

The Ontario Reptile and Amphibian Atlas contains detailed information on the population and distribution status of Ontario herpetofauna (Ontario Nature 2020). The data is presented on 100 km^2 area squares with two squares overlapping the Study Area (17PJ05 and 17NJ95). It should be noted that the Subject Lands are a small component of the overall atlas squares, and therefore it is unlikely that all herpetofauna species are found within the Study Area. Habitat type, availability and size are all contributing factors in herpetofauna species presence and use.

A total of 18 species were recorded in the atlas square that overlaps with the Subject Lands, of which three are salamander and lizard species, nine are frog and toad species, two are turtle species and four are snake species. Of these species, the following species of interest were noted:

- Species of Conservation Concern (i.e., listed as Special Concern on the SARO List or identified as an S1–S3 species):
    - Eastern Ribbonsnake (*Thamnophis saurita*) – Special Concern; and
    - Snapping Turtle (*Chelydra serpentina*) – Special Concern.

3.1.5. Ontario Butterfly and Moth Atlases

The Ontario Butterfly and Moth Atlases (Toronto Entomologists' Association 2023, 2020) contain detailed information on the population and distribution status of Ontario butterflies and moths. The data is presented on 100 km^2 area squares with two squares overlapping a portion of the Subject Lands (17PJ05 and 17NJ95). It should be noted that the Subject Lands are a small component of the overall atlas squares, and therefore it is unlikely that all butterfly and moth species are found within the Subject Lands. Habitat type, availability and size are all contributing factors in butterfly and moth species presence and use.

A total of 64 species were recorded in the atlas square that overlaps with the Subject Lands, of which 46 are butterfly species and 18 are moth species. Of these species, one Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species) was noted:

- Monarch (*Danaus plexippus*) – Special Concern.

3.1.6. Aquatic Species at Risk Distribution Mapping

Aquatic species at risk distribution mapping (DFO 2024) was reviewed to identify any known occurrences of aquatic SAR, including fish and mussels, within the subwatershed where the Subject Lands are located. One aquatic SAR was noted, Redside Dace for the West Humber River, located immediately north of the Study Area. The West Humber River is expected to be considered occupied Redside Dace habitat.

3.1.7. West Humber River Fish Community

The Humber River Fisheries Management Plan (FMP; MNR and TRCA 2005) states that the West Humber River subwatershed is dominated by agricultural land-uses within a highly impermeable clay soil. The West Humber River subwatershed contains the least amount of riparian vegetation out of the entire

Humber River watershed. Historically, the West Humber River supported species such as American Brook Lamprey (*Lethenteron appendix*), Brassy Minnow (*Hydognathus hankinsoni*), Brook Trout (*Salvelinus fontinalis*), Mottled Scuplin (*Cottus bairdii*), Redside Dace, Smallmouth Bass (Micropterus *dolomieu*), Stonecat (*Noturus flavus*) and Yellow Perch (*Perca flavescens*). As of 2001, only 17 fish species were found within the watershed, with the fish community dominated by warmwater species.

As shown in **Figure 22** of the FMP (Locations of the Aquatic Habitat Categories in the Humber River Watershed) the West Humber River is shown as intermediate riverine warmwater habitat. Small riverine warmwater habitat was also identified in one reach within the Study Area. The FMP notes that small riverine warmwater habitats have poor infiltration rates and minimal groundwater inputs, causing many of the reaches to dry up during the summer months or are reduced to standing pools of water.

3.1.8. Citizen Science Database

The iNaturalist (2024) database is a large citizen science-based identification and data collection app. It allows any citizen to submit observations to be reviewed and identified by other naturalists and scientists to help provide accurate species observations. As the observations can be submitted by anyone, and the records are not officially vetted, the data obtained from this tool should not be used as a clear indicator of species presence, and species may be filtered out based on habitat and target survey efforts.

This online database was examined to identify observations made within the Subject Lands that were research grade. The following species of interest are noted below:

- Species listed as Threatened or Endangered on the SARO list:
    - Rapids Clubtail (*Phanogomphus quadricolor*) – Endangered.

- Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species):
    - Snapping Turtle – Special Concern; and
    - Barn Swallow – Special Concern.

The eBird (2024) database is a large citizen science-based project with a goal to gather bird diversity information in the form of checklists of birds, archive it, and share it to power new data-driven approaches to science, conservation and education. As the observations can be submitted by anyone, and the records are not officially vetted, the data obtained from this tool should not be used as a clear indicator of species presence, and species may be filtered out based on habitat and target survey efforts. This online database was examined to identify observations made within and adjacent to the Subject Lands.

A review of the eBird database showed that no species of note were found within the Subject Lands.

3.1.9. Species at Risk Assessment Tool

Mapped natural heritage features on the landscape were cross-referenced with species-specific habitat requirements through GEI's Species at Risk Assessment Tool (SARAT) to determine potential Species at Risk (SAR) habitat in the NHSA. The SARAT includes all potential and known habitats for every species at risk listed under the ESA, and municipalities where these species are known to occur, where indicated in individual species assessment and/or recovery strategy reports.

GEI's SARAT was utilized to assess the Study Area for SAR. The self-screening results showed that the Study Area has potential suitable habitat for thirteen (13) SAR. Refer to **Table 1** (**Appendix C**) for a detailed list of potential SAR on the Subject Lands.

4. Natural Environment Characterization

4.1. Technical Methods and Field Surveys

Ecological field investigations were completed for the Study Area from 2021 through 2024 as part of the LSS for the Wildfield Village Secondary Plan and has been referenced to inform the characterization of ecological features and functions within and adjacent to the Subject Lands.

The field program was designed with consideration of data collected during the background NHIC and wildlife atlas searches, preliminary SAR screening, and aerial photo interpretation. The following ecological surveys were completed for the Subject Lands:

- Botanical Inventory and Ecological Land Classification (ELC; 2022, 2024);
- Wetland Evaluations (2023, 2024);
- Amphibian Call Count Surveys (2022);
- Snake Visual Encounter Surveys (2021, 2022, 2024);
- Turtle Basking Surveys (2021, 2022);
- Breeding Bird Surveys (2022, 2024);
- Bat Habitat Assessment (2022, 2023);
- Bat Acoustic Monitoring (2022);
- Headwater Drainage Feature Assessment (2021, 2022, 2024); and
- Fish Community Sampling (2022, 2024).

Table 2 (Appendix C) lists field dates and personnel engaged with completing the ecological field investigations.

Additionally, as part of the LSS for the Wildfield Village Secondary Plan, geomorphic investigations and assessments were completed to identify erosion hazards including:

- Review of historic and recent aerial imagery; and
- Review of existing geomorphic mapping from the Scoped SWS (Wood, 2022) and refinement based on site specific investigations.

No watercourses were identified within the Subject Lands. All aquatic features identified through desktop exercises and aerial imagery were ground-truthed during site specific investigations and are considered to be headwater drainage features. As a result, no meander belt width assessment was conducted on the headwater drainage features within the Subject Lands.

Survey methodology related to each specific survey type are described in **Appendix D**.

4.2. Biophysical Characterization

4.2.1. Physiography, Soils and Topography

The Subject Lands are within the South Slope physiographic region (Chapman & Putnam 2007). This is a sloping plain that extends from the boundary with the Oak Ridges Moraine, southwards, and consists of Till Plains (Drumlinized). Runoff tends to be higher, and infiltration tends to be lower in the South Slope as the terrain is not hummocky like the Oak Ridges Moraine (TRCA, 2008) and the finer grained soils restrict infiltration.

Ontario Geological Survey surficial geological mapping indicates the Study Area and surrounding is surfaced predominantly by either glaciolacustrine deposits comprising of clay to silt-textured till. Modern alluvial deposits of clay, silt, sand or gravel may exist along the West Humber River east of The Gore Road.

Bedrock in this region corresponds to the Georgian Bay Formation which consists of shale, and limestone. Bedrock topography mapping (O.L. White. 1973) shows bedrock sloping from near an elevation of 240 m in the northwestern corner of the site, down to near 192 to 205 m along the West Humber River to the east of the site.

The topography of the site was observed to be approximately 247 m asl to 227 m asl and slopes from the northwestern border to the southeastern border of the site towards West Humber River. Considering the site's topography, surface runoff is anticipated to drain predominantly towards the headwater drainage features and wetlands on site or towards the east/southeast towards the West Humber River to the east of the site.

4.2.2. Biological Environment

The Subject Lands occur within the Lake Simcoe-Rideau Eco-region 6E (specifically, ecodistrict 6E-7), which extends from Lake Huron to the Ottawa River, and includes most of the Lake Ontario shore and the Ontario portion of the St. Lawrence River Valley. Ecoregion 6E falls within the Great Lakes-St. Lawrence Forest region, an area of moderate climate where natural succession leads to forests of shade tolerant hardwood species including Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), and shade intermediate species such as Red Oak (Quercus rubra) and Yellow Birch (*Betula alleghaniensis*), as well as associations of White Pine (*Pinus strobus*) and Red Pine (*Pinus resinosa*).

4.2.3. Vegetation

4.2.3.1. Ecological Land Classification

A three-season ELC survey was conducted within the Subject Lands. The Subject Lands are dominated by active agricultural lands with some natural vegetation communities including scattered small and isolated marsh wetlands, and a cultural meadow .

ELC mapping of the Subject Lands is shown on **Figure 3** (**Appendix A**). A description of each ELC type is provided in **Table 3** (**Appendix C**). No provincially rare vegetation communities were present within the Subject Lands (NHIC, 2024).

4.2.3.2. Wetlands

Identification of wetlands generally relies on the '50/50 rule', where features having over 50% relative cover of wetland plants are classified as wetland. Based on this, seven marsh wetland communities occur on the Subject Lands, totaling 0.49 ha in area. The wetland boundaries were staked with GEI and TRCA on November 7, 2023.

The Land Information Ontario (LIO) database was accessed to determine if any MNR-identified wetlands have been mapped on or in the vicinity of the Subject Lands. Such wetlands could include Provincially Significant Wetlands (PSW), MNRF evaluated wetlands, or unevaluated wetlands. Results show that multiple unevaluated wetlands have been identified by MNR on the Subject Lands (**Figure 2, Appendix A**).

The seven wetlands identified by GEI were assessed for significance, following the OWES (2022) protocol. These wetlands ranged in size from 0.02 ha to 0.15 ha. Since each of these wetlands are less than 2 ha, GEI completed a screening exercise for each wetland to determine if there was sufficient rationale to complete full wetland evaluations under OWES. It was determined that the wetlands did not have sufficient rationale to warrant a full evaluation, and are herein treated as Other Wetlands (i.e., non-provincially significant). The screening criteria used, and the results of those analyses are provided in **Appendix E**.

4.2.3.3. Botanical Inventory

A three-season botanical inventory completed for the Subject Lands recorded a total of 108 species (i.e., taxa, inclusive of subspecies, varieties, and hybrids). Of these, 52% are native to Ontario and 48% are exotic. A complete list of species documented from the Subject Lands is provided in **Table 4** (**Appendix C**).

The majority of the native plants (94%) are ranked S5 (secure in Ontario). Twelve species (6%) are ranked S4 (apparently secure in Ontario), while none are ranked S1-S3. Four locally rare species were observed, as per the Peel Region rarity rankings (Varga et al. 2005). None of the locally rare species are considered rare in Ontario, and none had a co-efficient of conservatism value of 9 or 10.

No Species at Risk or provincially rare plants were identified within the Subject Lands.

Local plant rarity is based on the number of population occurrences for a given area. For Peel Region, a plant is considered rare if it has ten (10) or fewer known occurrences, the data of which is derived primarily from historical checklists, MNRF reports, site records, and herbaria records (Varga et al. 2005). Overall, three locally rare plants were observed in the Subject Lands These were:

- Tall Beggarticks (*Bidens vulgata*; R1):
    - Rare in MAM2-10 and MAM2-2 communities.
- Pennsylvania Smartweed (*Persicaria pensylvanica*; R3):
    - Rare in MAS2-1 and MAM2-2 communities.
- Peach-Leaved Willow (*Salix amygdaloides*; R6):
    - Rare in MAS2-1, MAM2-10, and MAM2-2 communities.

4.3. Wildlife

4.3.1.1. Amphibian Call Count Surveys

A total of four amphibian species were heard calling within the Subject Lands during the three rounds of call count surveys (**Table 5**, **Appendix C**). Station locations are shown on **Figure 4** (**Appendix A**). The species heard calling were the American Toad (*Anaxyrus americanus*), Gray Treefrog (*Hyla versicolor*), Green Fog (*Lithobates clamitans*), and Wood Frog (*Lithobates sylcaticus*). All of these species are provincially ranked S5 (common and secure) or S4 (apparently common and secure).

4.3.1.2. Snake Visual Encounter Surveys

One round of snake visual encounter surveys was conducted in the agricultural (AG) and fallow lands within the Subject Lands in 2021 (**Figure 4**, **Appendix A**). These surveys revealed there is no suitable habitat within the Study Area as there were no rock piles, logs, and/or debris (e.g. old foundations) located below the frost line. In 2024, Parcel 5 became participating, and three rounds of surveys were conducted looking under rocks, logs and debris. No snake species were observed during the surveys (**Table 6**, **Appendix C**). No suitable hibernacula locations were identified during the surveys.

4.3.1.3. Turtle Basking Surveys

No turtle species were observed within the Subject Lands during a three round survey effort in 2021 and 2022 (**Table 7**, **Appendix C**). However, two Midland Painted Turtles (*Chrysemys picta*) were observed incidentally during the summer round of botanical inventory surveys at BS2. Station locations are shown on **Figure 4** (**Appendix A**).

4.3.1.4. Breeding Bird Surveys

Two rounds of Breeding Bird Surveys (BBS) were completed in 2022, and three rounds were completed in 2024 within the Subject Lands. All species observed on the Subject Lands are listed in **Table 8A** and **Table 8B** (**Appendix C**), and all stations are illustrated on **Figure 4** (**Appendix A**).

<u>2022</u>

A total of forty-eight (48) bird species were observed within Parcels 3 and 4 of the Study Area in 2022. Parcel 3 is primarily agricultural lands with one HDF within the parcel. Parcel 4 is also primarily agricultural lands with scattered wetlands and hedgerows. Of this total, eleven (11) species are confirmed, twenty-one (21) are probable, and eleven (11) are possible breeders on the Study Area. The remaining five (5) bird species are considered non-breeders, flyovers, or migrants. Seven additional species were observed only on surrounding lands. The observed breeding bird species are discussed in the sections below.

A total of forty-nine (49) (100%) of the confirmed, probable or possible breeders are provincially ranked S5 (common and secure), S4 (apparently common and secure) or SNA (species not native to Ontario). One bird species is considered provincially rare (S1- S3; NHIC 2024) and is discussed in the sections below.

Upland Sandpiper (*Bartramia longicauda*) (S2B); a pair was observed in fallow fields on May 31, 2022, near Point Count (PC) 5 and PC 2. Suitable breeding habitat was present as the species prefers short vegetation combined with bare soil in continuous patches greater than 30 ha (pers.obs. P.Burke). These fields had been ploughed last in 2021 or early spring of 2022 and left fallow. No further breeding evidence was observed on this date however their secretive behaviour suggested nesting activity. During the second round of surveys, the fields were observed to have been recently ploughed and had become unsuitable. A singing male Upland Sandpiper was observed approximately 150 m to the west on the bordering agricultural lands on this visit.

The following Species at Risk were observed on, or adjacent to (within 120 m), the Subject Lands in 2022.

- **Bobolink**: Threatened in Ontario;
    - Eleven (11) individuals were detected during round one and seven were detected during round two, off-site on hayfields east of The Gore Road. Probable breeding was observed in these hayfields east of PC 10 that provided suitable breeding habitat. One individual was observed flying over the Study Area at PC 10 however no suitable habitat was observed in this location.
- **Eastern Meadowlark**: Threatened in Ontario;
    - Three (3) individuals were observed during round one and four during round two within the off-site hayfields located east of The Gore Road. This provided probable breeding evidence in suitable breeding habitat.
- **Barn Swallow**: Special Concern in Ontario;
    - Foraging individuals were noted over the Subject Lands during both rounds of surveys. No other breeding evidence or suitable structures were observed.

<u>2024</u>

In 2024, Parcel 5 became participating, and three rounds of surveys were completed. A total of twenty-eight (28) bird species were observed. Of this total, seven (7) species are confirmed, six (6) are probable, and seven (7) are possible breeders on the Subject Lands. The remaining eight (8) bird species are considered non-breeders, flyovers, or migrants. Seven additional species were observed only on surrounding lands. The observed breeding bird species are discussed in the sections below.

A total of 19 (95%) of the confirmed, probable, or possible breeders are provincially ranked S5 (common and secure), S4 (apparently common and secure) or SNA (species not native to Ontario). One species is ranked S2 (imperiled). Four bird species are considered provincially rare (S1- S3; NHIC 2024) and is discussed in the sections below.

The following Species at Risk were observed within the Subject Lands in 2024:

- **Bobolink**: Threatened in Ontario;
    - At Parcel 5, during round one a Bobolink was observed singing at PC 5-4 in an alfalfa field that had been recently harvested. The monoculture alfalfa had been planted within the last three years and did not provide any thatch or grasses with which a Bobolink could

build a nest and provide proper shelter. The habitat here is unsuitable breeding habitat, and it is expected that the Bobolink had visited from more suitable habitat in fields to the south-east of Centreville Creek Road; and

- A second Bobolink was heard during round one at PC 5-6, calling from an alfalfa hayfield on a non-participating property to the south-east. By round two, the alfalfa had been removed and the field seeded with soy. No Bobolinks were observed during rounds 2 or 3 at Parcel 5.

- **Eastern Meadowlark**: Threatened in Ontario;
  - During round 1 there was an Eastern Meadowlark heard and observed calling at PC 5-2 in a small field of mature Rye that had been planted the previous year. While the Rye remained in the southern portion of PC 5-2, it had already been harvested in the northern portion and the ground remained with only stubble. By round two, the northern portion had been seeded with sorghum. No Eastern Meadowlarks were observed in rounds 2 or 3 as the rye, sorghum, soy in the field adjacent to the north, and corn in the adjacent field to the south did not provide suitable habitat for this species.

- **Barn Swallow**: Special Concern in Ontario;
  - Barn Swallows were observed foraging over Parcel 5 during both rounds 1 and 2 of breeding bird surveys. Two rounds of targeted Barn Swallow Nest Surveys were undertaken during breeding bird surveys. Five active nests were confirmed in suitable structures at Parcel 5.

- **Upland Sandpiper** (S3B);
  - During round 2, one Upland Sandpiper was heard vocalizing at PC 5-2 from a narrow, approximately 4-5m wide, strip of long grass border between the field access lane and the seeded corn field to the south. This grass border was mostly occupied by 1 to 2 rows of plastic-wrapped round hay bales as “baleage”. No suitable habitat occurs on Parcel 5, and none of the adjacent fields provide vegetation cover suitable for this species to nest and forage.

4.3.1.5. Bat Exit Surveys

Due to the timing of the proposed development and removal of existing structures on Parcel 5, bat exit surveys will be conducted in Summer 2025 to confirm presence/absence of roosting bat species. However, a preliminary survey prior to conducting the exit surveys was conducted in May 2024 to identify exit points on the structures.

An addendum to the EIS will be provided once these surveys have been completed in 2025.

4.3.1.6. Incidental Wildlife Observations

No incidental wildlife observations of note were recorded during the ecological field investigations completed between 2021 through to 2024.

4.3.2. Aquatic Environment

4.3.2.1. Headwater Drainage Feature Assessment

The Subject Lands support one headwater drainage feature (HDF; **Figure 4**, **Appendix A**) which feeds a tributary of the West Humber River. TRCA policies require HDFs to be identified and managed in accordance with their Evaluation, Classification and Management of Headwater Drainage Features Guideline (CVC and TRCA 2014).

Headwater drainage features are defined as non-permanently flowing drainage features that contribute to the overall health of the watershed. As such, the selection of the appropriate management recommendations is required to adequately protect or mitigate the feature and its ecological functions from any proposed development.

As per the HDF guidelines, GEI completed three rounds of surveys between 2021, 2022 and 2024 (**Table 9**, **Appendix C**). GEI utilized the guidance provided in Part Two of the HDF Guidelines (CVC and TRCA 2014), which addresses the approach for the assessment and classification of the HDFs. By design, the HDF Guidelines are focused on the classification of ephemeral and intermittent headwater drainage features and are not intended to characterize those features that are watercourses.

Management recommendations for all HDFs were decided upon utilizing Part Three of the HDF Guidelines (CVC and TRCA 2014). This section of the Guidelines provides guidance in linking the habitat classification information with the proposed management approach for each HDF. The guidelines and information collected from the surveys were utilized to determine management recommendations. All HDF reaches and their management recommendations are depicted on **Figure 5** (**Appendix A**).

The resulting management recommendations for each reach, along with the recommended management approaches for each management classification (from the HDFA Guidelines), is as follows:

- Mitigation (H1S1)
    - Replicate or enhance functions through enhanced lot level conveyance measures, such as well-vegetated swales (herbaceous, shrub and tree material) to mimic online wet vegetation pockets or replicate through constructed wetland features connected to downstream;
    - Replicate on-site flow and outlet flows at the top end of system to maintain feature functions with vegetated swales, bioswales etc. If catchment drainage has been previously removed due to diversion of stormwater flows, restore lost functions through enhanced lot level controls (i.e., restore original catchment using clean roof drainage); and
    - Replication functions by lot level conveyance measures (e.g. vegetated swales) connected to the NHS, as feasible and/or Low Impact Development (LID) stormwater options.
- No Management Required (H8S1, H9S1, H10S1).

Reach H1S1 has an Interpreted Management Recommendation of ”Mitigation”, based on the anticipated ability to replicate HDF functions and associated wetland functions through the provision of baseflow and on-site compensation of wetland habitat as conceptually shown on **Figure 6** (**Appendix A**).

4.3.2.2. Fish Community Sampling

One round of fish community sampling was completed in 2022 and 2024 within reach H1S1 within the Subject Lands (**Table 10, Appendix C**). Fish sampling locations are illustrated on **Figure 4** (**Appendix A**). No fish were captured within the sampling reach within the Subject Lands.

5. Analysis of Natural Feature Significance

Eight types of natural features and areas are identified in the PPS (MMAH 2024):

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- SWH;
- Fish habitat;
- Habitat of endangered and threatened species; and
- Significant areas of natural and scientific interest.

The presence/absence of these natural features within and adjacent to the Subject Lands are discussed in the subsequent sections of this EIS. The NHRM (MNR 2010) was referenced to assess the potential significance of other natural features, and their associated forms and functions on the landscape.

In addition to the evaluation of natural heritage features and areas identified within the PPS (2024) and criteria outlined within the NHRM (2010), this section evaluates the presence of the NHS of the Town's OP (2024), the Regional Greenlands System of the Region of Peel OP (2022) and the regulated features in accordance with TRCA Ontario Regulation 41/24. The following sections identify the natural features and areas present in the Study Area, and are identified on **Figure 6, Appendix A**.

5.1. Significant Wetland

Within Ontario, significant wetlands are identified by the MNRF or by their designates. Other evaluated or unevaluated wetlands may be identified for conservation by the municipality or the conservation authority.

As stated in the Ontario Wetland Evaluation System (OWES) protocol (MNRF 2022), wetlands smaller than 2 ha are generally not evaluated for significance. However, very small wetlands can provide habitat for wildlife or serve other ecological, hydrological, hydrogeological or social functions and therefore a wetland smaller than 2 ha can undergo a full wetland evaluation provided that the rationale for doing so is provided.

All wetlands on the Subject Lands are smaller than 2 ha and were therefore screened to determine if there was rationale to warrant a full evaluation. For all wetlands, such rationale did not exist, and the wetlands were not evaluated and treated as non-significant.

5.1.1. Other Wetlands

The following non-significant wetlands are identified in and within 120m of the Subject Lands:

- Mineral Meadow Marsh (MAM2);
- Reed Canary Grass Mineral Meadow Marsh (MAM2-2);
- Cattail Mineral Shallow Marsh (MAS2-1);

- Reed Canary Grass Mineral Meadow Marsh/Cattail Mineral Shallow Marsh (MAM2-2/MAS2-1); and
- Reed Canary Grass Mineral Meadow Marsh/ Disturbed (MAM2-2/DIST).

These features are discussed further in **Section 7.1.1**.

5.1.2. Feature-Based Water Balance

Wetlands within the Subject Lands were determined to be Other Wetlands (i.e., non-significant wetlands).

No wetland is being retained within the Subject Lands, however wetlands within 120 m and/or wetlands with 10% or more catchment area within the Subject Lands will be subject to impact assessment in this EIS. Wetlands 24 and 25 are the only retained wetlands located within 120 m of the Subject Lands. Based on a review of the wetland catchment areas (**Figure 7, Appendix A**), four (4) retained wetlands have greater than 10% of their catchment area within 120 m of the Subject Lands: Wetlands 10/11, 31A, 31B, and 37. Therefore, a total of six (6) wetlands are subject to impact assessment. The wetlands to be assessed are detailed in **Table 1, Appendix F**.

A Wetland Water Balance Risk Evaluation was completed for the wetlands within the Subject Lands as part of the LSS. The Risk Evaluation was completed according to the TRCA 2017 guidelines, and the detailed results for the wetlands to be assessed for this EIS are given in **Table 2, Appendix F**. Wetland 10/11 was found to have a high magnitude of hydrological change and a medium ecological sensitivity, and therefore an overall medium risk result. Wetland 24 was found to have a high magnitude of hydrological change and a high ecological sensitivity, and therefore an overall high risk result. Wetland 25 was found to have a low magnitude of hydrological change and a high ecological sensitivity, and therefore an overall low risk result. Wetland 31 (A and B) was found to have a high magnitude of hydrological change and a high ecological sensitivity, and therefore an overall high risk result. Wetland 37 was found to have a high magnitude of hydrological change and a high ecological sensitivity, and therefore an overall high risk result.

Wetland 25 was classified as low risk, and since the catchment area of Wetland 25 lies completely outside of the development area, no FBWB is required for this wetland. Within the Phase 2 LSS, SCS concluded that implementation of the proposed land use plan, and associated servicing, grading and stormwater management will result in an overall increase of runoff volume to Wetlands 24, 31A, 31B, and 37. SCS has concluded that since these three wetlands will experience an increase in runoff, no water balance calculations are required for these wetlands. Wetland 10/11 was classified as medium risk, and therefore this wetland requires a feature based water balance assessment utilizing continuous simulation hydrologic modelling. SCS prepared the hydrologic modelling for this wetland and the detailed results are included in the Phase 2 LSS (2025), with the results summarized here. The wetland model was simulated using twenty-two (22) years of precipitation data, May 1986 to December 2007 from Buttonville Airport Weather Station. The total annual runoff volume for Wetland 10/11 was calculated to decrease by 98% under the proposed development conditions. Mitigation of potential impacts is therefore required with clean water augmentation to the wetland through the implementation of LID measures. The mitigation strategy will be discussed in the Phase 3 LSS. In accordance with the approved LSS Terms of Reference (2024) and based on the amount of field data obtained to date by the LSS work (1 to 2 years), the wetland continuous simulation hydrologic model has not been calibrated at this time. Per Town correspondence and TRCA SWM Criteria, Appendix E (Water Balance for Protection of Natural Features), calibration will be required at the Draft Plan of Subdivision stage once additional data has been obtained. Calibration will be completed following additional collection of field data in the spring of 2025.

Wetlands adjacent to the Subject Lands are primarily supported by surface water inputs, such as direct precipitation, runoff, and interflow through shallow soils. Proposed development may increase impervious surfaces, disrupt existing interflow patterns, and impact surface water quality. To mitigate these impacts, stormwater management facilities, erosion control and LID features will be implemented to attenuate peak flows, maintain water quality, and support groundwater recharge. Mitigation for runoff volume reduction to these features will be further discussed in the Phase 3 LSS. It is recognized that infiltration at the Subject Lands may be challenging, based on the low infiltration rates and the high groundwater table measured as part of the Phase 1 LSS (2024).

5.2. Significant Costal Wetlands

Similar to significant wetlands, the MNRF or their designates identify significant coastal wetlands present on the landscape. Coastal wetlands are defined in the NHRM (MNR 2010) as:

a) "any wetland that is located on one of the Great Lakes or their connecting channels (Lake St. Clair, St. Mary's, St. Clair, Detroit, Niagara and St. Lawrence Rivers); or
b) Any other wetlands that is on a tributary to any of the above-specified water bodies and lies, either wholly or in part, downstream of a line located two km upstream of the 1:100-year floodplain (plus wave run-up) of the large water body to which the tributary is connected."

No significant coastal wetlands are identified on or adjacent to the Subject Lands and would not be expected given the distance of the Subject Landsfrom the waterbodies noted above.

5.3. Significant Woodlands

Significant woodlands are identified by the planning authority in consideration of criteria established by the MNRF. Under the Natural Heritage Reference Manual (MHRM; 2010), woodlands are defined as:

"…treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels."

Woodlands, as defined by the Peel OP, include woodlots, cultural woodlands, cultural savannahs, plantations and forested areas and may also contain remnant of old growth forests. They further define woodlands as any area greater than 0.5 ha that has:

a. A tree crown cover of over 60% of ground, determinable from aerial photography, or;
b. A tree crown cover of over 25% of the ground, determinable from aerial photography, together with on-ground stem estimates of at least:
    i. 1,000 trees of any size per hectare;
    ii. 750 trees measuring over five centimeters in diameter at breast height (1.37 m), per hectare;
    iii. 500 trees measuring over 12 centimeters in diameter at breast height (1.37 m), per hectare; or

iv. 250 trees measuring over 20 centimeters in diameter at breast height (1.37 m), per hectare (densities based on the Forestry Act of Ontario 1998); and, which have a minimum average width of 40 meters or more measured to crown edges

The Peel OP (2022) further evaluates woodlands as being Core Area, NAC, PNAC. The requirements for this classification are derived from Table 1 (Criteria and Thresholds for the Identification of Core Areas, Natural Areas and Corridors (NAC) and Potential Areas and Corridors (PNAC) Woodlands of the Peel OP. The Region of Peel considers NAC and Core woodlands to be significant.

No Significant Woodlands are identified on or within 120 m of the Subject Lands.

5.4. Significant Valleylands

Significant Valleylands should be defined and designated by the planning authority. General guidelines for determining significance of these features are presented in the NHRM (MNR 2010) for Policy 2.1 of the PPS. Recommended criteria for designating Significant Valleylands include prominence as a distinctive landform, degree of naturalness, and importance of its ecological functions, restoration potential, and historical and cultural values.

No Significant Valleylands are identified on or within 120 m of the Subject Lands.

5.5. Significant Wildlife Habitat

Significant wildlife habitat (SWH) is one of the more complex natural heritage features to identify and evaluate. There are several provincial documents that discuss identifying and evaluating SWH including the NHRM (MNR 2010), the Significant Wildlife Habitat Technical Guide (MNR 2000), and the SWH Eco-Region Criterion Schedules (MNRF 2015). The Study Area is located in Eco-Regions 6E and assessed using the 6E Criterion Schedules (MNRF 2015).

There are four general types of SWH:

- Seasonal concentration areas;
- Rare and specialized habitats;
- Habitat for species of special concern; and
- Animal movement corridors.

General descriptions of these types of SWH are provided in the following sections.

Seasonal Concentration Areas

Seasonal Concentration areas are those sites where large numbers of a species gather together at one time of the year, or where several species congregate. Seasonal concentration areas include deer yards; wintering sites for snakes, bats, raptors, and turtles; waterfowl staging and molting areas, bird nesting colonies, shorebird staging areas, and migratory stopover areas for passerines or butterflies. Only the best examples of these concentration areas are usually designated as significant wildlife habitat. Areas that support Special Concern species or provincially vulnerable to imperiled species (S1-S3), or if a large proportion of the population may be lost if the habitat is destroyed, are examples of seasonal concentration areas which should be designated as significant.

No seasonal concentration areas were identified on or within 120 m of the Subject Lands.

Rare or Specialized Habitats

Rare and specialized habitat are two separate components. Rare habitats are those vegetation communities that are considered rare in the province. S-Ranks are rarity rankings applied to species at the 'state', or in Canada at the provincial level, and are part of a system developed under the auspices of the Natural Conservancy (Arlington, VA). Generally, community types with S-Ranks of S1 to S3 (extremely rare to rare uncommon in Ontario), as defined by the NHIC (MNRF 2024), could qualify. It is to be assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. Specialized habitats are microhabitats that are critical to some wildlife species. The NHRM (MNR 2010) defines specialized habitats as those that provide for species with highly specific habitat requirements; areas with exceptionally high species diversity or highly specialized habitat requirements; areas with exceptionally high species diversity or community diversity; and areas that provide habitat that greatly enhances species survival.

No rare or specialized habitats were identified on or within 120 m of the Subject Lands.

Habitat for Species of Conservation Concern

Species of conservation concern include those that are provincially rare (S1 to S3), provincially historic records (SH) and Special Concern species. Several specialized wildlife habitats are also included in this SWH category, i.e., terrestrial crayfish habitat and significant breeding bird habitats for marsh, open country and early successional bird species.

Habitats of species of conservation concern do not include habitats of endangered or threatened species as identified by the ESA (2007). Endangered and threatened species are discussed in **Section 5.7.** The following Species of conservation concern were identified on the Subject Lands:

- *Barn Swallows* – Observed foraging over Parcel 5 during both rounds 1 and 2 of breeding bird surveys. As a result, two rounds of targeted Barn Swallow Nest Surveys were undertaken during breeding bird surveys. Five active nests were confirmed across four suitable structures on Parcel 5; and,
- *Terrestrial Crayfish* – Two terrestrial crayfish chimneys were observed within Wetland 3 (0.009 ha). However, given the low number of chimneys, the wetland's surface water-fed nature, its small size, and isolation within active agricultural lands, it does not meet the criteria for Significant Wildlife Habitat (SWH). This conclusion aligns with the SWH evaluation criteria for species/habitat of conservation concern outlined in Table Q-3 of the *Significant Wildlife Habitat Technical Guide* (2024). Table Q-3 emphasizes the significance of habitats supporting large populations or extensive habitats, rather than isolated or minimal occurrences of a species. In comparison, over 80 terrestrial crayfish chimneys were observed within the Significant Wetland (SWD3-2; Wetlands 8 and 9) in the larger LSS Study Area, which is expected to provide more suitable habitat and a better representation of SWH compared to Wetland 3.

Animal Movement Corridors

Animal movement corridors are areas that are traditionally used by wildlife to move from one habitat to another. This is usually in response to different seasonal habitat requirements, including areas used by amphibians between breeding and summer/over-wintering habitats called amphibian movement corridors.

As neither deer wintering areas nor significant amphibian breeding habitat were identified on or within 120 m of the Subject Lands, this SWH type is not present.

Table 11 (**Appendix C**) assesses all types of SWH relevant to the Subject Lands considering the ecological data collected by GEI. As detailed in the table, the following SWH types are present within the Subject Lands. The confirmed SWH are shown on **Figure 5 (Appendix A**):

- Habitat for Species of Conservation Concern:
    - Barn Swallows were observed on Parcel 5, including five active nests across four structures.

5.6. Fish Habitat

Fish habitat, as defined in the federal *Fisheries Act*, C.F-14, means "spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes." Fish, as defined in S.2 of the *Fisheries Act*, C.F-14, includes "parts of fish, shellfish, crustaceans, marine animals and eggs, sperm, larvae, spat and juvenile stages of fish, crustaceans and marine animals" (DFO 2019).

The West Humber River (> 120m from the Subject Lands) is provides direct fish habitat.

No direct fish habitat is present on or within 120 of the Subject Lands. Additionally, as detailed in **Section 4.3.2.2**, no fish were captured during sampling effort within the Subject Lands. Indirect fish habitat occurs in the form of one ephemeral swale HDF (H1S1) (**Figure 5, Appendix A**).

5.7. Habitat of Endangered and Threatened Species

Species designated as Threatened or Endangered in Ontario are afforded both individual and habitat protection under ESA (2007). To identify the presence of any Threatened or Endangered species a background information review and detailed field investigations were completed.

The background review identified that SAR could potentially be present within the Subject Lands. To assess habitat suitability and species presence/absence targeted surveys were undertaken. A discussion of the potential for endangered and threatened SAR and their habitat within the Subject Lands is provided in **Table 2 (Appendix C)**.

Redside Dace occupied habitat occurs in the West Humber River, located north and east of the Subject Lands and within the Greenbelt Plan Area. GEI is currently in discussions with MECP to understand if Redside Dace contributing habitat occurs on the Subject Lands.

Structures on Parcel 5 have the potential for roosting SAR bats. Due to the timing of the proposed development and removal of existing structures, bat exit surveys will be conducted in the summer of 2025 to confirm presence/absence of roosting SAR bats.

In 2024, Eastern Meadowlark and Bobolink were observed mature rye fields and alfalfa fields located within the Subject Lands on Parcel 5, respectively. However, the habitat here is unsuitable breeding habitat and both crops were harvested by round 2 breeding bird surveys. . Both species were also observed in 2022 on adjacent lands east of The Gore Road and were not observed within the Subject Lands. Rapids Clubtail was identified through background review and was not observed within the Subject Lands, however, this species may be present along the West Humber River corridor. This species prefers large streams and rivers with wooded shorelines and riffle and pool features.

In summary, no habitat of Endangered and Threatened species is present on the Subject Lands, with the exception of potential SAR bats and potential contributing habitat for Redside Dace, which will be confirmed and reported through an EIS Addendum report. Habitat for Eastern Meadowlark and Bobolink occurs off-site within the 120 m adjacent lands, east of The Gore Road.

5.8. Locally Rare Species

Three locally rare species were identified on the Subject Lands. Tall Beggarticks, Pennsylvania Smartweed, and Peach-leaved Willow were observed within some of the wetland communities, as detailed in **Section 4.2.3.3**. The Town of Caledon will be consulted at the detail design stage to discuss suitability and recommendations for transplantation.

5.9. Significant Areas of Natural and Scientific Interest

No ANSIs were identified on or within 120 m of the Subject Lands.

5.10. Town of Caledon Natural Features

Within the Town of Caledon OP (2024), Natural Core Areas and Natural Corridors are defined as including the following features:

Natural Core Areas:

- All Woodland Core Areas;
- All Wetland Core Areas;
- All Niagara Escarpment Natural Areas;
- All Life Science Area of Natural and Scientific Interest;
- All Environmentally Significant Areas;
- All Significant Habitat of Threatened and Endangered Species; and
- All Greenbelt and Oak Ridges Moraine Key Natural Heritage Features and Key Hydrological Features.

Natural Corridors:

- All Core Fishery Resource Areas; and
- All Valley and Stream Corridors.

Supportive Natural Systems and Natural Linkages support and enhance the form, function and integrity of Natural Core Areas and Natural Corridors. These include:

- Other Woodlands
- Other Wetlands;
- All NEC Protection Areas;
- All Earth Science ANSI's
- Potential ESAs
- All Other Wildlife Habitat and Other Habitats of Threatened and Endangered Species; and
- All Other Fishery Resource Areas

All the non-significant wetlands (MAM2, MAM2-2, MAS2-1, MAM2-2/MAS2-1, MAM2-2/DIST) located on and adjacent to the Subject Lands are considered Supportive Natural Systems and Natural Linkages.

5.11. Region of Peel Greenlands System

A review of the RPOP (2022) was undertaken to understand what components of the Regional Greenlands System, as defined in the RPOP, are present on and adjacent to the Subject Lands. The Greenlands System is made up of the following components:

Core Areas of the Greenlands System are:

a) Significant wetlands;
b) Significant coastal wetlands;
c) Woodlands meeting one or more of the criteria for core area woodland in table 1 of the PROP;
d) Environmentally sensitive or significant areas;
e) Provincial life science ANSI;
f) Escarpment natural areas of the Niagara escarpment plan; and
g) Valley and stream corridors meeting one or more of the criteria for core area valley and stream corridors in table 2 and as shown on schedule c-2 of the PROP.

NAC of the Greenlands System are:

a) Evaluated non-provincially significant wetlands and coastal wetlands;
b) Woodlands meeting one or more of the criteria for NAC woodland in table 1 of the PROP;
c) Significant wildlife habitat;
d) Fish habitat;
e) Habitat of aquatic species at risk;
f) Habitat of endangered and threatened species;
g) Regionally significant life science ANSI;
h) Provincially significant earth science ANSI;
i) Escarpment protection areas of the Niagara escarpment plan;
j) The Lake Ontario shoreline and littoral zone and other natural lakes and their shorelines;
k) Any other valley and stream corridors that have not been defined as part of the core areas;
l) Sensitive headwater areas and sensitive ground water discharge areas; and
m) Any other natural features and functional areas interpreted as part of the Greenlands system NAC.

PNAC of the Greenlands System are:

a) Unevaluated wetlands and coastal wetlands;
b) Cultural woodlands and cultural savannahs within the urban system meeting one or more of the criteria for PNAC woodland in table 1 of the PROP;
c) Any other woodlands greater than 0.5 hectares;
d) Regionally significant earth science ANSI;
e) Sensitive ground water recharge areas;
f) Portions of historic shorelines;
g) Open space portions of the parkway belt west plan area;
h) Enhancement areas, buffers and linkages; and
i) Any other natural features and functional areas interpreted as part of the Greenlands system PNAC.

Within the Study Area, the non-significant wetlands (MAM2, MAM2-2, MAS2-1, MAM2-2/MAS2-1, MAM2-2/DIST) are identified as NAC.

5.12. TRCA Regulated Features

Pursuant to O. Reg. 41/24, the TRCA has the authority to regulate development within its regulated areas. The TRCA regulates the following:

- Lands adjacent to or close to the shoreline of the Great Lakes-St. Lawrence River system that may be a river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse;
- Hazardous lands;
- Wetlands; and
- Other areas where development could interfere with the hydrologic function of a wetland, including areas up to 120 m of all PSWs and wetlands greater than 2 ha size, and areas within 30 m of wetlands less than 2 ha in size.

The following wetland communities were identified on and adjacent to the Subject Lands as TRCA regulated features:

- Mineral Meadow Marsh (MAM2);
- Reed Canary Grass Mineral Meadow Marsh (MAM2-2);
- Cattail Mineral Shallow Marsh (MAS2-1);
- Reed Canary Grass Mineral Meadow Marsh/Cattail Mineral Shallow Marsh (MAM2-2/MAS2-1); and
- Reed Canary Grass Mineral Meadow Marsh/ Disturbed (MAM2-2/DIST).

5.13. Summary of Ecological Components Subject to Impact Assessment

The PPS (MMAH, 2024) defines the important natural heritage features and areas to consider in terms of impact assessment. The following components observed on and adjacent to the Subject Lands were identified for consideration in the impact assessment:

- Other and unevaluated Wetlands;

- Significant Wildlife Habitat;
    - Habitat of Species of Conservation Concern (Barn Swallow);
- Candidate Habitat for Endangered and Threatened Species (SAR bats; Contributing habitat for Redside Dace);
- Habitat for Endangered and Threatened Species within 120 m on adjacent lands (Eastern Meadowlark and Bobolink east of The Gore Road); and
- Locally Rare Species.

6. Description of Proposed Development

The Subject Lands are approximately 136.7 ha in size and the proposed development consists of residential units (e.g. single detached dwellings, dual purpose dwellings, townhouse dwellings etc.), associated access roadways, parks and elementary school, and stormwater management (SWM) facilities, as shown on the Draft Plan on **Figure 6 (Appendix A).**

As described in the DSEL Functional Servicing and Stormwater Management Report (FSSWMR; 2025), three SWM facilities are proposed within the Global Properties residential area. Each pond services a distinct development area and all facilities are proposed as wet ponds. SWM Pond 3 will be located along Centreville Creek Road and SWM 7 and 8 will be located along The Gore Road. These SWM ponds will provide quality controls to provide Enhanced (Level 1) treatment and have been sized per Appendix E of the TRCA's Stormwater Management Criteria (TRCA, 2012), where applicable, with Regional Controls to match pre-development. In addition, all facilities will be designed accordingly to meet the criteria in Section 4.2.1 of the TRCA's Approaches to Manage Regulatory Event Flow Increases resulting from Urban Development (TRCA, 2016), where applicable.

The FSSWMR (2025) notes that flood control for the Subject Lands is to be provided for a 2-to-100 year and Regional Storm events based on the target release rates in Section 5.1 of the FSSWMR (2025). The stormwater management concept is to consider opportunities to reduce thermal inputs to the receiving watercourses. The typical outlet structure for all SWM facilities will consist of a deep outlet pool, reverse-slope extended detention pipe, and a sub-surface outlet pipe. The thermal mitigation strategy including planting/landscaping details will be further refined during the detailed SWM facility design stage (DSEL 2025).

Any overland flow routes and roading grading will direct major system events to one of the three proposed SWM ponds. The extent and location of Low Impact Development (LID) measures will be defined at the detail design stage. Current plans prioritize infiltration trenches in ROWs with deeper groundwater, and infiltration galleries in Park Blocks (DSEL 2025).

A Wetland Relocation and Compensation Area is proposed along the western boundary of the Subject Lands, located approximately at the downstream extent of mitigation HDF Reach H1S1, which is proposed for removal. This area will accommodate wetland relocation and compensation requirements, as well as the addition of bioswale features. Despite the mitigation classification for Reach H1S1, the proposed compensation area provides an opportunity to conserve swale length and overall feature form from mitigation Reach H1S1 (Geo Morphix 2025).

Reach H1S1 is proposed to be piped from the northern limit of the Subject Lands, and approximately 59 ha of drainage will be captured and conveyed through the subdivision via a 1650 mm clean water pipe (CWP), sized to convey the Regional event. The CWP will convey the flows to the Wetland Relocation and Compensation Block.

In addition to the HDF flows, the wetland relocation and compensation area will receive approximately 0.32 ha of clean drainage from adjacent roofs and backyards flowing directly to the feature. The feature has been designed by Geo Morphix and is further detailed in their Wetland Relocation and Compensation Area Conceptual Design Brief report(2025. Additionally, the wetland relocation and replication block will discharge across Centreville Creek Road to the West Tributary of West Humber River, via the existing culvert.

7. Impact Assessment and Mitigation Measures

This section assesses the potential impacts, predicted effects, proposed mitigation and enhancement measures associated with proposed development of the Subject Lands. Potential effects to the natural heritage features and environmental functions that exist on and adjacent to the Subject Lands are evaluated over the short and long term, with consideration given to measures to avoid and/or mitigate negative impacts, where appropriate. Areas to be maintained, and where possible, improved or restored, to promote the health, diversity and size of natural heritage features within the Study Area, are also identified.

The range of potential impacts associated with a proposed development can generally be divided into three categories:

1. Direct impacts are normally associated with the physical removal or alteration of natural features that could occur based upon a land use application;
2. Indirect impacts may be changes or impacts (these could be minor or major) to less visible functions or pathways that could cause negative impacts to natural heritage features over time; and
3. Induced impacts are associated with post-development impacts that may result in increased demand on natural resources.

7.1. Direct Effects

This section assesses the potential impacts associated with the proposed development on the Study Area. Potential effects to the natural heritage features and environmental functions that exist within the Study Area are evaluated over the short and long term.

7.1.1. Other Wetlands

Seven non-significant wetland communities were identified on the Subject Lands (Wetlands 2, 3, 4, 5, 6, 7, and 17). and are proposed to be relocated and/or compensated on-site, to accommodate the development application. As described in **Section** 4.2.3.2, these wetlands are generally comprised of common and secure species, with the exception of Terrestrial Crayfish, and three locally rare plants.

The proposed wetland relocation and compensation area is located adjacent to Centreville Creek Road, at the downstream end of HDF H1S1, which will be piped in a Clean Water Pipe (CWP). The wetland relocation and compensation area will be fed by the CWP, and is aimed to provide a net ecological gain, through increased plant species diversity, removal of invasive species, enhanced wildlife habitat, and improved water quality to downstream reaches via water polishing. Further details are discussed in **Section 8.0**. Provided the wetland relocation and compensation area can be designed and implemented as recommended, no negative impacts to onsite wetlands are anticipated.

Wetlands adjacent to the Subject Lands are primarily supported by surface water inputs, such as direct precipitation, runoff, and interflow through shallow soils. Proposed development may increase impervious surfaces, disrupt existing interflow patterns, and impact surface water quality. The FSSWMR (DSEL 2025) describes mitigation for these potential impacts, including stormwater management facilities, erosion control and LID features aimed to attenuate peak flows, maintain water quality, and support groundwater recharge. Mitigation for runoff volume reduction to these features will be further discussed in the Phase 3 LSS. Feature Based water balance calibration will be completed following additional collection of field data in the spring of 2025.

Provided that surface water volume and quality contributions to the wetlands can be managed as predicted within the FSSWMR (DSEL 2025), utilizing the proposed stormwater management approaches and mitigation measures outlined above, negative effects associated with surface water runoff are not predicted and no negative impacts to off-site wetlands are expected.

7.1.2. Significant Wildlife Habitat

The proposed development will remove nesting habitat for Barn Swallow, within the four structures located on Parcel 5 (**Figure 6, Appendix A**). Replacement habitat structures (RHS) with artificial nest cups are proposed for construction within 1 km of the original structures, prior to the first spring after the structures have been removed. Barn Swallows returning in that spring may be temporarily displaced given that the structures will no longer be present, but they are expected to find suitable nesting habitat nearby, including the proposed replacement structures. The RHS location will be scoped with a site visit in Spring/Summer 2025, and the final location will be determined through discussions with DSEL.

Provided that the RHS are constructed as described above, no negative impact to SWH is anticipated.

7.1.3. Habitat of Endangered and Threatened Species

As discussed **in Section 5.7**, candidate habitat for SAR bats may be present within the structures on Parcel 5. Due to the timing of the proposed development and removal of existing structures, bat exit surveys will be conducted in Summer 2025 to confirm presence/absence of roosting bat species. There is also potential for Redside Dace contributing habitat in the form of an HDF. This is currently being discussed with MECP and the EIS will be updated accordingly.

Should SAR bats or Redside Dace contributing habitat be present, then appropriate mitigation and compensation will be determined in consultation with MECP.

7.1.4. Fish Habitat

No direct fish habitat is present on the Subject Lands. The West Humber River occurs north and east (> 120 m) of the Subject Lands and provides direct fish habitat.

Indirect fish habitat occurs on the Subject Lands in the form of ephemeral HDF H1S1, which flows to downstream off-site fish habitat. HDF H1S1 is proposed to be piped and will receive flows at the north property boundary from the upstream (off-site) HDF. The flows will be conveyed through the subdivision via a clean water pipe (CWP), that will maintain water quality and flows. The flow from the CWP will outlet to the wetland relocation and compensation area which will provide water polishing before outletting to the culvert under Centreville Creek Road.

The proposed development is anticipated to increase impervious surfaces and has potential to impact surface water quality and quantity and thereby impact downstream fish habitat. The stormwater management facilities, erosion control and LID features described in the FSSWMR (DSEL 2025) are designed to help attenuate peak flows, maintain water quality, and support groundwater recharge. Mitigation for runoff volume reduction to downstream fish habitat will be further discussed in the Phase 3 LSS.

Other potential impacts to off-site downstream fish habitat include:

- Erosion and sedimentation due to construction activities on the Subject Lands; and
- Accidental spills during construction on the Subject Lands.

It is anticipated that potential impacts can be effectively mitigated through an Erosion and Sediment Control (ESC) Plan and the Spill Prevention and Response Plan prior to construction and detailed further in **Section 7.4**.

In-stream work for HDF H1S1 is recommended to be conducted during dry conditions, or otherwise restricted to July 1 to March 31.

Provided that surface water volume and quality contributions to downstream tributaries can be managed as predicted within the FSSWMR (DSEL 2025), utilizing the proposed stormwater management approaches and mitigation measures outlined above, no negative impacts to fish habitat are expected.

7.1.5. Locally Rare Species

As identified in **Section 5.8**, three locally rare species were observed within some of the wetland communities on the Subject Lands. These wetland communities are proposed for relocation and compensation, and suitability and recommendations for transplantation of these locally rare species will be reviewed at the detail design stage.

7.2. Potential Indirect Effects

Indirect effects are those potential effects on the biophysical environment that could potentially result in adverse effects on the Subject Lands.

7.2.1. Migratory Birds

The federal MBCA (1994), prohibits the killing, capturing, injuring, taking or disturbing of migratory birds (including eggs) or the damaging, destroying, removing or disturbing of nests. During construction, particularly during activities that may result in tree or native vegetation removals, with lack of appropriate mitigation, migratory birds, and eggs and nests of these birds could be harmed inadvertently.

As per the MBCA (1994), it is recommended that any tree removals occur prior to, or after, the migratory breeding bird season (April 1 to August 31). If this window cannot be avoided, nest searches are necessary to determine the presence/absence of nesting birds or breeding habitat every 72 hours until clearing is complete, or until August 31, whichever comes first. If an active nest is observed, a designated setback will be identified within which no construction activity will be allowed while the nest remains active. The setback distance typically ranges from 5 m to 60 m from the nest, depending on the species and its sensitivity to adjacent activities.

With the implementation of the above-stated mitigation measures, no disturbance to migratory birds and/or their nests are anticipated during the breeding season.

During construction activities such as clearing and grubbing, dust can lead to changes in vegetation due to increased heat absorption and decreased transpiration; adverse effects to plants and/or wildlife that are not adapted to high levels of sedimentation; and visual impact. To mitigate dust, it is recommended to dampen exposed soil areas with water during construction activities, thereby minimizing the presence of dust within the development zone. Erosion and sediment control measures must be implemented and will assist in the reduction of dust.

7.2.2. Introduction of Exotic and Invasive Plant Species

The spread of invasive and non-native plant species along the disturbed areas may occur due to the existing presence of invasive species. To reduce opportunities for the colonization of invasive and non-native species, all equipment should be cleaned prior to transport to site, and areas where disturbance has exposed bare soils should be seeded with a cover crop and native species seed mix.

7.3. Potential Induced Effects

Induced impacts are potential environmental effects associated with the post-development landscape. Each of these are discussed in the following sections:

7.3.1. Light and Noise Effects on Wildlife

Light could also be a concern where it is directed towards sensitive natural features, with functions and/or species that may be intolerant of light disturbance. Primary sources for “new light” will be from the industrial warehouses and associated parking lots. Given that the existing surrounding land uses are largely residential, commercial and industrial, existing wildlife communities are expected to be somewhat tolerant of disturbance from artificial lighting.

Additionally, noise associated with heavy equipment movement may temporarily disturb wildlife. However, given the existing traffic noise along The Gore Road and Centreville Creek Road , it is expected that local wildlife communities are desensitized and are fairly tolerant of anthropogenic noise sources.

7.4. General Construction Mitigation

<u>Dust</u>

During construction activities such as clearing and grubbing, dust can lead to changes in vegetation due to increased heat absorption and decreased transpiration; adverse effects to plants and/or wildlife that are not adapted to high levels of sedimentation; and visual impact. To mitigate dust, it is recommended to dampen exposed soil areas with water during construction activities, thereby minimizing the presence of dust within the development zone. Erosion and sediment control measures must be implemented and will assist in the reduction of dust.

Erosion and Sedimentation

Erosion and sedimentation from the disturbed work area associated with the proposed development could potentially result in adverse effects to water quality (e.g., increased turbidity) or sedimentation and associated effects on fish (e.g., injury or mortality due to suspended sediments or altered habitat use) or fish habitat (e.g., loss of interstitial spaces in rocky areas, smothering of aquatic vegetation and/or incubating eggs) in downstream areas.

DSEL has provided recommendations for ESC measures within the FSSWMR (2025). An ESC Plan will be finalized by DSEL during the detailed design and implemented during construction to minimize the potential for erosion and sedimentation from the construction site. The ESC Plan will be developed based on the guidance provided in the Erosion and Sediment Control Guideline for Urban Construction (GGHCA 2019). Basic elements of the plan should include consideration of:

- Construction phasing to minimize the amount of time soils are barren and therefore, more susceptible to erosion;
- Requirements and timing for rehabilitation of disturbed areas;
- Stormwater management strategies during construction;
- Erosion prevention measures (e.g., hydroseeding, sodding, erosion control matting, tarping of stockpiles);
- Sedimentation control measures (e.g., silt fences); and
- Inspection and performance monitoring requirements and adaptive management considerations.

Implementation of an effective ESC Plan, incorporating both erosion and sedimentation controls, coupled with regular inspection and performance monitoring and implementation of any remedial actions necessary to ensure effective performance.

Accidental Spills

Accidental spills of potentially hazardous materials (e.g., fuel and oil from heavy equipment), could cause stress or injury to downstream fish and wildlife.

In order to mitigate the potential for adverse effects on aquatic and wetland habitats due to potential accidental spills during construction, it is recommended that a spill prevention and response plan be prepared to outline the material handling and storage protocols, mitigation measures (e.g., spill kits on-site), monitoring measures and spill response plans (i.e., emergency contact procedures, including the Spills Action Centre, and response measures including containment and clean-up). Implementation of an effective spill prevention and response plan is anticipated to be largely effective in preventing adverse effects on natural heritage features.

8. Wetland Compensation/ Relocation

8.1. Wetlands Proposed for Removal and Relocation and/or Compensation

Wetlands 2, 3, 4, 5, 6, 7, and 17 (totaling 0.49 ha) were assessed by GEI as Other Wetlands (i.e., not Provincially Significant) and are proposed for removal and compensation/ relocation to facilitate development. These wetlands consist of either Mineral Meadow marsh or Cattail Mineral shallow marsh communities (**Figure 5**, **Appendix A**). None of these wetlands provide fish habitat or significant wildlife habitat for amphibians and/or turtle overwintering habitat . Wetlands 7 and 17 are also associated with a headwater drainage feature (H1S1) that will also be removed and piped to accommodate the proposed development.

It should be noted that two Midland Painted Turtles, and two terrestrial crayfish chimneys were observed within Wetland 3. A wildlife salvage will be required prior to any relocation or removal efforts within Wetland 3. A wildlife salvage requires two permits administered by the MNRF. Wildlife Scientific Collector's Authorization (WSCA) is necessary for capturing, handling, and relocating wildlife to ensure activities are conducted safely and in compliance with regulations. Additionally, a Wildlife Custodian Authorization is required if temporary care of wildlife is needed before relocation, ensuring proper housing and humane treatment. Both permits must be obtained before starting the salvage, with all activities carried out by qualified professionals following best practices for wildlife handling.

All wetland communities within the Study Area are comprised of common and secure plants and wildlife for southern Ontario. No Species at Risk or provincially rare plants were identified within the wetlands proposed for removal. Locally rare vegetation is discussed further in **Section 8.2.**

The Town of Caledon's Official Plan (Section 3.2.5.4.2) permits the removal and replacement of non-significant or other wetlands, provided it can be demonstrated to the satisfaction of the Town, the Conservation Authority, the Ministry of Natural Resources and Forestry, or other delegated authority that such removal will not degrade ecosystem integrity. The Official Plan does not include specific policies regarding requirements for feature replacement. TRCA has a Guideline for Determining Ecosystem Compensation (June 2023) that could be considered to follow for wetland compensation.

In accordance with O. Reg. 41/24, any interference with or development in areas specified under the Conservation Authorities Act—such as wetlands—requires permission from the relevant Conservation Authority. The TRCA has the authority to issue permits under Section 28.1 of the Act and may impose specific conditions on these permits as outlined in Section 9(1) of the Regulation. These conditions ensure that development activities do not negatively impact the ecological integrity or flood control functions of these sensitive areas. It is essential to obtain the necessary permits before proceeding with any development or disturbance in these regulated areas.

8.2. Wetland Relocation

The TRCA considers wetland relocation to be the intact salvage of hydric soil and native wetland vegetation and transplant into graded wetland areas that will receive suitable hydrological inputs to maintain wetland processes. Wetlands dominated by aggressive invasive species are not appropriate candidates for wetland relocation, as the transport of invasive species is prohibited under Section 7 of the Invasive *Species Act* (2015).

Invasive plants are those that can become (or presently are) a serious problem within a defined location. These plants reproduce and spread aggressively, reducing the local biodiversity and threatening ecological function. Depending on existing conditions, some invasive species can outcompete all other species.

Urban Forest Associates (2002) provides a categorical ranking system for plants known to be invasive in southern Ontario. Category 1 plants are deemed to be the most invasive and can dominate a site indefinitely. These are a threat to natural areas wherever they occur because they have very effective reproduction and dispersal mechanisms. The following Category 1 and potentially invasive plants were documented within the wetlands identified for relocation:

- Wetland 2
    - Canada Thistle (*Cirsium arvense*) - Category 1
        - Rare within the wetland
    - Reed Canary Grass (*Phalaris arundinacea var. arundinacea*) - Potentially Invasive
        - Occasional within the wetland
- Wetland 3
    - Purple Loosestrife (*Lythrum salicaria*) - Category 1
        - Rare within the wetland
    - Reed Canary Grass - Potentially Invasive
        - Rare to occasional within the wetland
    - Blue Cattail (*Typha x glauca*) - Potentially Invasive
        - Dominant within the wetland
- Wetland 4
    - Reed Canary Grass - Potentially Invasive
        - Dominant within the wetland
- Wetland 5
    - Purple Loosestrife - Category 1
        - Rare within the wetland
- Wetland 6
    - Canada Thistle - Category 1
        - Rare to occasional within the wetland
    - Narrow-Leaved Cattail (*Typha angustifolia*) - Potentially Invasive
        - Dominant within the wetland
    - Reed Canary Grass - *Potentially Invasive*
        - Occasional to abundant within the wetland

- Wetland 7
    - Purple Loosestrife - Category 1
        - Occasional within the vegetation community
    - Reed Canary Grass - Potentially Invasive
        - Dominant within the vegetation community
- Wetland 17
    - Reed Canary Grass
        - Dominant within the wetland

Wetlands with rare or occasional invasive species, such as Wetlands 2 and 5, may be suitable for relocation if care is taken to avoid areas with invasive plants like Reed Canary Grass, Canada Thistle, or Purple Loosestrife. Conversely, wetlands dominated by invasive plants, such as Wetlands 3, 4, 6, 7, and 17, may not be candidates for relocation and wetland compensation is to be considered. The timing for field delineation of aggressive invasive species within wetland communities by a botanist/ecologist is to be included in a Phasing and Sequencing Plan during detailed design.

For wetlands proposed for removal containing invasive species, proper disposal practices must align with the Ontario Invasive Plant Council's best management practices. These include verifying landfill acceptance of invasive materials or obtaining municipal burn permits for safe disposal. Such measures minimize the risk of spreading invasive species during wetland removal or relocation.

In addition to invasive plants, three locally rare plants were identified within the wetlands proposed for compensation/ relocation. Local plant rarity is discussed further within **Section 4.2.3.3**. These locally rare plants include:

- Tall Beggarticks (*Bidens vulgata*; R1)
    - Rare in MAM2-10 and MAM2-2 communities.
    - Present within Wetland 7 (MAM2-2).
- Pennsylvania Smartweed (*Persicaria pensylvanica*; R3)
    - Rare in MAS2-1 and MAM2-2 communities;
    - Present within Wetland 4 (MAM2-2), and Wetland 6 (MAS2-1).
- Peach-Leaved Willow (*Salix amygdaloides*; R6)
    - Rare in MAS2-1, MAM2-10 and MAM2-2 communities.
    - Present within Wetland 3 (MAS2-1), Wetland 4 (MAM2-2), and Wetland 6 (MAS2-1).

All three of the wetlands where locally rare plants are found are dominated by invasive species. As such, these wetlands may not be considered feasible for relocation. To preserve these rare species, the following measures should be considered:

- Tall Beggarticks and Pennsylvania Smartweed: Seeds from both species should be collected when fully mature, typically from late summer to early fall (late August to October for tall Tall Beggarticks and September to October for Pennsylvania Smartweed). Disperse in late fall, prior to the first

snow cover to align with their natural lifecycle. If possible, plants can be transplanted during the early spring. Care should be taken to preserve the entire root system during transplant; the root stock should be examined and cleared of any soil that may contain unwanted seeds or plant materials prior to transplant.

- Peach-Leaved Willow: Harvest cuttings and live stakes during the dormant winter period for transplantation into the relocated wetland area. Cuttings and live stakes should be transplanted into the relocated wetland area during late fall or early spring.

The timing to salvage and transplant rare species to be included within the phasing and sequencing plan at time of detailed design.

Vegetation/hydric soil mats from wetland removal areas are transplanted to the wetland relocation area once the relocation area has been graded and suitable hydrological inputs are available. Relocated wetlands are typically monitored for up to three years (1-2 years in many cases) to ensure that seasonal hydrological conditions support the transplanted vegetation community (Maria Parrish, pers. comm. Dec. 2024). This monitoring focuses on water levels, soil moisture, and flooding patterns essential for vegetation survival. In cases where rare or sensitive species have been transplanted or seeded, additional monitoring tracks their establishment and presence.

8.3. Wetland Compensation

Wetland compensation approaches differ by municipality and conservation authority. In absence of a Town of Caledon wetland compensation strategy, the TRCA Ecological Offsetting Guidelines (2023) can be considered for providing wetland compensation. Wetland compensation refers to the process of creating, restoring, or enhancing wetlands to replace ecological functions, services, and land area lost due to development or other activities. The goal is to achieve no net loss of wetland functions and, where possible, a net gain. The following discussion is TRCA's approach for wetland compensation.

In cases where relocating a wetland is not feasible, compensation becomes necessary to demonstrate no net loss. A minimum 1:1 compensation ratio is required. On the Subject Lands, one location is proposed for wetland creation, which will include wetland relocation (where feasible) and wetland compensation (**Figure 6, Appendix A)**.

The TRCA typically requires that compensation wetlands are constructed (graded), stabilized (vegetated) and at least interim wetland hydrological conditions are provided, prior to proposed wetland removal. This EIS provides the seasonal hydroperiod for the targeted wetland vegetation communities, based on baseline monitoring data (Section 8.4). A future water availability assessment (i.e., Thornthwaite Mather) is required to assess whether precipitation inputs alone can support interim and/or ultimate hydrological conditions needed for targeted vegetated communities with and without a climate lens. At detailed design a monthly wetland water balance analysis is prepared to assess whether the long-term flow volumes from the piped HDF and precipitation inputs will support the ultimate targeted vegetation communities within the compensation/relocation wetland.

Where wetland compensation is required, a native species planting plan is prepared at detailed design illustrating suitable species (forbs, graminoids, shrubs), stock sizes (seed mix, plugs, potted stock), hydric soil specifications, soil amendments and planting approaches for each targeted wetland vegetation community. Wetland compensation and naturalization efforts within the Subject Lands should include the use of a seed mix tailored to the site conditions. This seed mix should be supplemented with seeds collected from native plants within the wetlands designated for removal.

The seed mixes must be specifically designed to thrive across the range of soil and moisture conditions expected in the compensation wetlands. While proponents may select a supplier of their choice for the seed mixes, consultation with the local CA is recommended to ensure alignment with regional ecological objectives before finalizing the seed mix.

In contrast to relocated wetlands, wetland compensation typically takes longer to develop hydric soil conditions. As a result, wetland compensation may require a longer post-construction monitoring period to assess whether hydric soil conditions are established.

8.4. Conceptual Wetland Relocation and Compensation Area

A singular wetland creation area (0.50 ha) is proposed for wetland relocation/compensation **Figure 6**, **Appendix A**) on the Subject Lands. Mineral meadow marsh and Cattail mineral shallow marsh are the targeted vegetation communities for the wetland compensation area. The wetland relocation and compensation area is identified on the Draft Plan (and the conceptual design was discussed with TRCA ahead of EIS submission (Maria Parish, pers. Comm. Dec. 2024). The created wetland will not receive hydrological inputs from stormwater management systems, and a 10 m vegetated setback from adjacent development will be provided.

Hydrological support for the created wetland will be provided by clean water drainage through a piped headwater drainage feature (H1S1), potentially from backyard run off from the lots adjacent to the wetland relocation and compensation area, and through precipitation inputs. Water flows will be captured at the north end of the Study Area and piped through the subdivision through internal roads or along Centreville Creek Road. At detailed design, a wetland water balance analysis to assess the hydrological inputs required to maintain the targeted wetland vegetation communities is to be completed.

Also at detailed design stage, the need for an outlet connecting the created wetland to the natural channel that discharges into the culvert under Centerville Creek Road will be evaluated. Opportunities for culvert replacement will also be considered during this phase.

8.4.1. Hydrological conditions for targeted wetland vegetation communities

The hydroperiod for the two targeted wetland vegetation communities, can be inferred from monitored baseline wetland hydrological conditions (pre-development) for four of the wetland communities proposed for removal and replication. See hydroperiod observations from wetlands 2, 3, 4 and 17 below. At detailed design a monthly wetland water balance analysis is needed to assess whether the long-term flow volumes from the piped HDF and precipitation inputs will support the ultimate targeted vegetation communities within the compensation wetland.

Cattail Marsh Hydroperiod Observations

Wetland 2 - SG15 (MAS2-1)

- No logger data, therefore, the feature response to precipitation events, or the frequency and duration of flooding is undetermined. Below results are general, based on manual measurements only;
- April through May: Manual measurements show consistent flooding. 0.2-0.3 m depth;
- June: Manual measurement is dry. Likely an isolated event due to low precipitation, but unable to confirm;
- July and August: Manual measurements show consistent flooding. 0.2-0.3 m depth;
- October through December: Manual measurements show consistent dry conditions. 0 m depth. Likely floods with precipitation events, but unable to confirm;
- January through April: Manual measurements show consistent flooding. 0.2-0.4 m depth; and
- June through November: Dry. 0 m depth. Most likely floods briefly during precipitation events in summer, but unable to confirm.

Wetland 3 - SSG12 (MAS2-1)

- February to Late September: Almost permanent flooding (very brief period of no standing water in early June 2023). 0-0.3 m depth; and
- Late September to December: Dry. 0 m depth.

Mineral Meadow Marsh Hydroperiod Observations

Wetland 4 - SG10 (MAM2-2)

- No logger data, therefore, the feature response to precipitation events, or the frequency and duration of flooding is undetermined. Below results are general, based on manual measurements only;
- February through May: Manual measurements consistently show flooded conditions. 0-0.4 m depth. Likely fairly consistently flooded, but unable to confirm;
- June to October: 0-0.1 m depth. Likely floods following precipitation events then dries out, but unable to confirm; and
- October through November: Dry. 0 cm depth.

Wetland 17 - SG14 (MAM2-2)

- No logger data, therefore, the feature response to precipitation events, or the frequency and duration of flooding is undetermined. Below results are general, based on manual measurements only;
- April through May: Manual measurements show consistent flooding. 0-0.4 m depth;
- June through November: Manual measurements show consistent dry conditions with one event showing 0.2 m depth. Likely floods with precipitation events then dries out, but unable to confirm; and
- December through April: Manual measurements show consistent flooding. 0.3-0.5 m depth.

Hydroperiod Seasonal Summary

The typical seasonally observed hydroperiod for the Mineral Meadow Marsh (MAM2) and Mineral Shallow Cattail Marsh (MAS2-1) communities proposed for removal are:

Mineral Shallow Cattail Marsh (MAS2-1)

- **Spring (April to May)**: 0-30 cm water depth. Consistent flooding observed with brief dry-down in early June.
- **Summer (June to August)**: Can go dry in June (likely due to low precipitation), otherwise consistent flooding of 20-30 cm.
- **Fall (October to December)**: Dry conditions observed (0 cm). Likely floods with precipitation events but not confirmed.
- **Winter (January to April)**: 20-40 cm water depth. Consistent flooding.

Meadow Marsh (MAM2-2)

- **Spring (April to May)**: 0-40 cm water depth. Consistent flooding observed.
- **Summer/ Fall (June to November)**: Generally dry conditions with occasional flooding up to 20 cm. Likely floods during precipitation events.
- **Winter (December to April)**: 30-50 cm water depth. Consistent flooding observed.

Detailed Design Considerations

At detailed design the following studies and drawings are recommended for the wetland compensation area:

- Field delineation by botanist/wetland ecologist of a) vegetation suitable for wetland relocation and b) submeter GPS delineation of rare species targeted for salvage;
- Feature-based water balance for the created wetland to assess hydrological inputs required to maintain targeted wetland vegetation communities (mineral shallow marsh, cattail mineral shallow marsh);
- Ecological input into the Erosion and Sediment Control Plan;
- Ecological input into the Phasing and Sequencing Plan with respect to invasive species removal, rare species salvage, created wetland grading and stabilization, wetland removal, plant installation within created wetland (with consideration for interim and ultimate hydrological conditions, as applicable);
- Grading, planting plan and details; and
- Wetland outfall design (if required) to natural channel connecting to Centreville Creek Road.

9. Conclusions and Recommendations

This EIS has been developed as part of the planning process for the proposed development of the Global Properties Inc. Wildfield Village lands. An assessment of impacts on natural features and their associated functions has been conducted and discussed in relation to the PPS and associated provincial implementation guidance contained in the Natural Heritage Reference Manual (NHRM; MNR 2010).

Based on the studies and analyses carried out on the Subject Lands, the following conclusions are provided:

- The results of the natural heritage assessment identified the following natural heritage features on or adjacent to the Subject Lands:
    - Other Wetlands;
    - Significant Wildlife Habitat;
        - Habitat of Species of Conservation Concern (Barn Swallow);
    - Potential Habitat for Endangered and Threatened Species;
        - SAR Bats; Redside Dace contributing habitat;
    - Indirect Fish Habitat; and,
    - Locally Rare Species.
- All seven wetlands (0.49) identified on the Subject Lands will be relocated or compensated in one location east of Centreville Creek Road, at the downstream end of H1S1;
- Four structures with active Barn Swallow nests are being proposed to be removed on Parcel 5 to support the proposed development. To mitigate impacts, replacement habitat structures will be constructed within 1km of the original structures, prior to the first spring after the structures have been removed;
- Due to the timing of the proposed development and removal of existing structures on Parcel 5, bat exit surveys will be conducted in the summer 2025 to confirm presence/absence of roosting bat species. An addendum to the EIS will be provided once these surveys have been completed;
- GEI is in discussions with MECP to understand if contributing habitat for Redside Dace is present on the Subject Lands;
- Should SAR bats or contributing habitat for Redside Dace be present on the Subject Lands, an EIS Addendum will be provided;
- Three locally rare species have been identified within the Subject Lands. Suitability for transplantation will be discussed with the Town of Caledon in the detailed design stage;
- As identified in the DSEL FSSWMR (2025), three SWM ponds will provide quality controls to provide Enhanced (Level 1) treatment and have been sized per Appendix E of the TRCA's Stormwater Management Criteria (TRCA, 2012), where applicable, with Regional Controls to match pre-development. Flood control for the Subject Lands is to be provided for a 2-to-100 year and Regional Storm events.
- The hydrogeological investigation report recommends maintaining groundwater function at the site by following typical Low Impact Development (LID) measures such as collection of runoff from the building rooftops and redirection to grass areas and overland flow. Provision of gentle slopes in open areas or along grass swales will allow time for water infiltration. The extent and location of Low Impact Development (LID) measures will be defined at the detail design stage;
- A feature-based water balance for adjacent wetlands will be finalized after additional monitoring work that is planned for spring 2025;

- Provided that surface water volume and quality contributions to the wetlands and downstream fish habitat can be managed as predicted within the FSSWMR (DSEL 2025), utilizing the proposed stormwater management approaches and mitigation measures, negative impacts to wetlands and downstream fish habitat associated with surface water runoff are not anticipated;
- The proposed wetland relocation and compensation will include 0.49 ha of on-site wetland, incorporating a minimum 5 m grading buffer and an overall 10 m wetland buffer;
- Hydrological inputs for the wetland relocation and compensation area will be provided by clean water drainage through a piped headwater drainage feature (H1S1), backyard run off from the lots adjacent to the wetland relocation and compensation area, and precipitation inputs;
- In-stream work for HDF H1S1 is recommended to be conducted during dry conditions, or otherwise restricted to July 1 to March 31;
- A wildlife salvage will be required prior to any relocation or removal efforts within Wetland 3. A Wildlife Scientific Collection Authorization (WSCA) from the MNRF prior to any fauna salvage works within the proposed areas during the window specified on the permit. Any captured fauna will be transferred to a suitable location within 1km of Wetland 3;
- The hydrogeological investigation report recommends maintaining groundwater function at the site by following typical Low Impact Development (LID) measures such as collection of runoff from the building rooftops and redirection to grass areas and overland flow. Provision of gentle slopes in open areas or along grass swales will allow time for water infiltration;
- The extent and location of Low Impact Development (LID) measures will be defined at the detail design stage.
- An Erosion and Sedimentation Control Plan is recommended to be prepared at the detailed design stage (DSEL 2024) to mitigate impacts to vegetation communities on and adjacent to the Study Area as well as downstream fish habitat; and
- Vegetation removal during the construction phase is recommended to occur outside of the migratory bird window (April to August), a nest search is recommended prior to construction activities if work is proposed within the window.

In summary, the proposed wetland relocation and compensation, and mitigation measures are expected to maintain and enhance the natural features and associated functions occurring on and adjacent to the Subject Lands and would maintain ecological integrity. Negative impacts on significant natural features and their associated functions are not predicted.

Prepared By:
GEI Consultants Ltd.

Eva Lee
Project Manager & Ecologist
647-530-3660
elee@geiconsultants.com

Reviewed By:

George Buckton
Project Director
416-816-2246
gbuckton@geiconsultants.com

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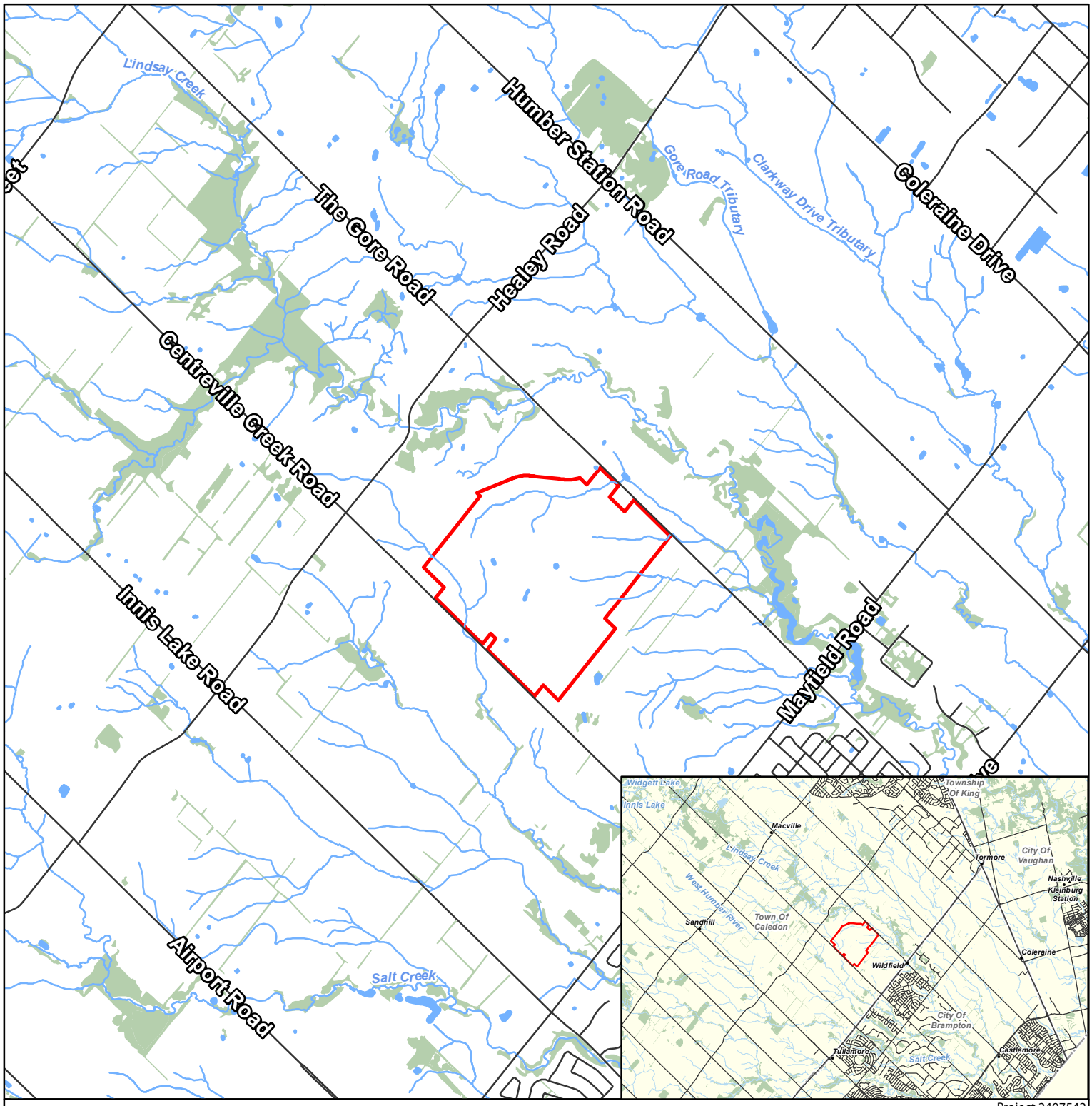
APPENDIX A – FIGURES



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Legend

- Subject Lands
- Road
- Watercourse (TRCA)
- Waterbody
- Wooded Area

Wildfield Village Solmar Draft Plan of Subdivision
Environmental Impact Study
GLOBAL PROPERTIES INC.

Figure 1
Location of Study Area

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GEI Consultants

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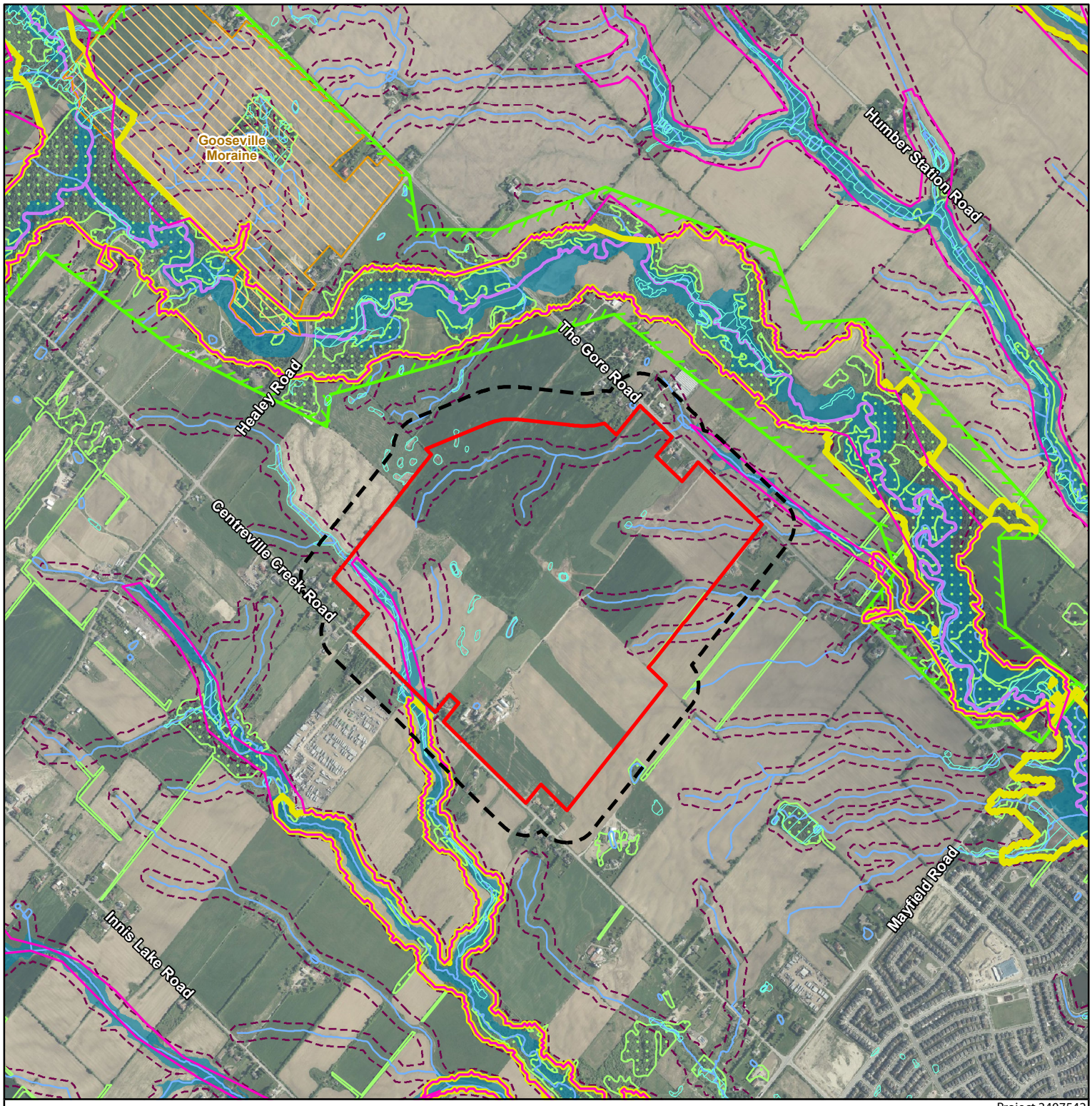

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Legend

- Subject Lands
- 120 m Adjacent Lands
- Watercourse (TRCA)
- Waterbody (Land Information Ontario)
- Aquatic Species at Risk - Fish
- Candidate Earth Science ANSI
- Core Area of the Greenlands System (Region of Peel OP; Schedule A)
- Environmental Policy Area (Town of Caledon OP)
- Greenbelt Natural Heritage System
- TRCA Floodplain (Estimate)
- Wetland - Not evaluated per OWES (Land Information Ontario)
- Wooded Area (Land Information Ontario)
- TRCA Regulated Area

Wildfield Village Solmar Draft Plan of Subdivision
Environmental Impact Study
GLOBAL PROPERTIES INC.

Figure 2
Landscape Setting

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GEI Consultants

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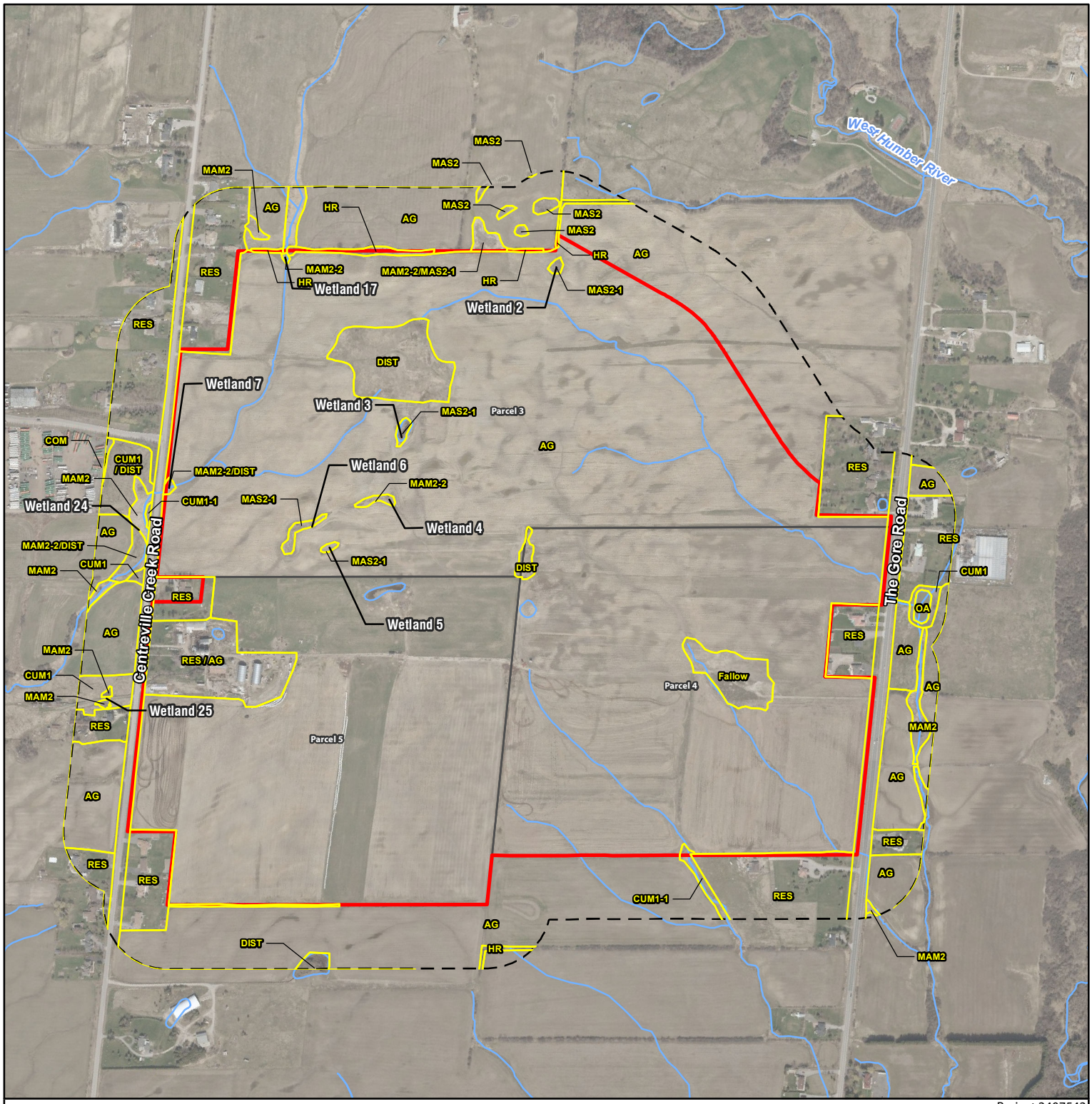

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* The Wildfield Village Study area was assessed through air photo interpretation to the ELC Ecosite level, with the exception of the Solmar-owned participating lands, which were ground-truthed to the ELC Vegetation Type level.

- Subject Lands
- Participating Parcels
- 120 m Adjacent Lands
- Watercourse (TRCA)
- Waterbody
- Ecological Land Classification*

ELC LEGEND

AG, Agricultural
COM, Commercial
CUM1, Mineral Cultural Meadow
CUW1, Mineral Cultural Woodland
DIST, Disturbed
FOD, Deciduous Forest
FOD5-1, Dry – Fresh Sugar Maple Deciduous Forest
Fallow, Fallow
HR, Hedgerow
MAM2, Mineral Meadow Marsh
MAM2-2, Reed Canary Grass Mineral Meadow Marsh
MAS2, Mineral Shallow Marsh
MAS2-1, Cattail Mineral Shallow Marsh
OA, Open Aquatic
RES, Residential
SWD3-3, Swamp Maple Mineral Deciduous Swamp

Wildfield Village Solmar Draft Plan of Subdivision
Environmental Impact Study
GLOBAL PROPERTIES INC.

Figure 3
Ecological Land Classification

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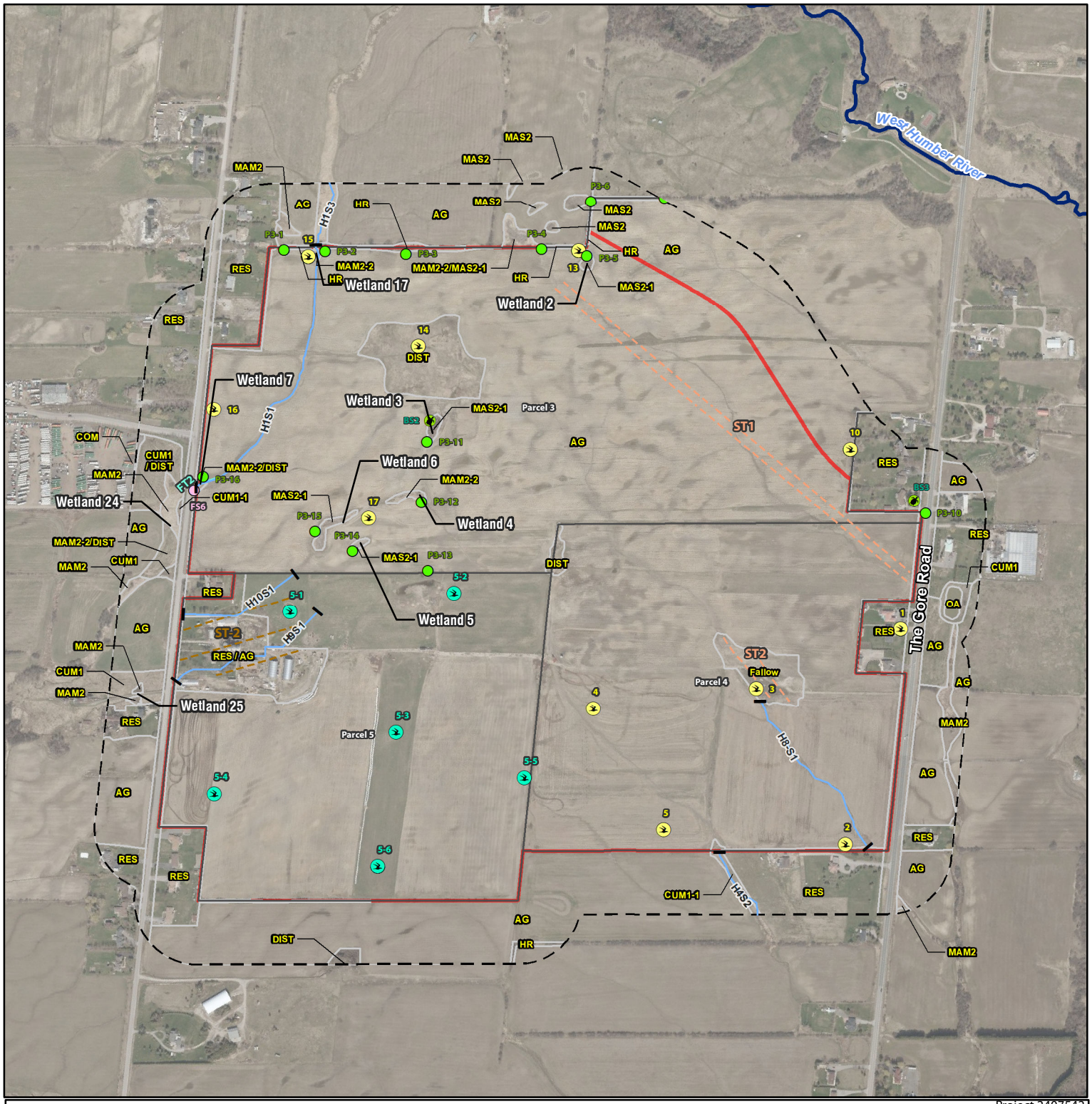
GEI Consultants



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* The Wildfield Village Study area was assessed through air photo interpretation to the ELC Ecosite level, with the exception of the Solmar-owned participating lands, which were ground-truthed to the ELC Vegetation Type level.

Legend

- Subject Lands
- Participating Parcels
- 120 m Adjacent Lands
- Ecological Land Classification*
- West Humber River
- Amphibian Call Count Stations (2022)
- Turtle Basking Stations
- Breeding Bird Survey Stations (2022)
- Breeding Bird Survey Stations (2024)
- Fish Community Sampling Locations (2024)
- Fish Community Sampling Locations (2022)
- Snake Visual Encounter Transects (2021-2022)
- Snake Visual Encounter Transects (2024)
- Headwater Drainage Features

ELC LEGEND

AG, Agricultural
COM, Commercial
CUM1, Mineral Cultural Meadow
CUW1, Mineral Cultural Woodland
DIST, Disturbed
FOD, Deciduous Forest
FOD5-1, Dry – Fresh Sugar Maple Deciduous Forest
Fallow, Fallow
HR, Hedgerow
MAM2, Mineral Meadow Marsh
MAM2-2, Reed Canary Grass Mineral Meadow Marsh
MAS2, Mineral Shallow Marsh
MAS2-1, Cattail Mineral Shallow Marsh
OA, Open Aquatic
RES, Residential
SWD3-3, Swamp Maple Mineral Deciduous Swamp

Wildfield Local Subwatershed Study
Wildfield Village Landowners Group Inc.

Figure 4
Survey Stations

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GEI Consultants

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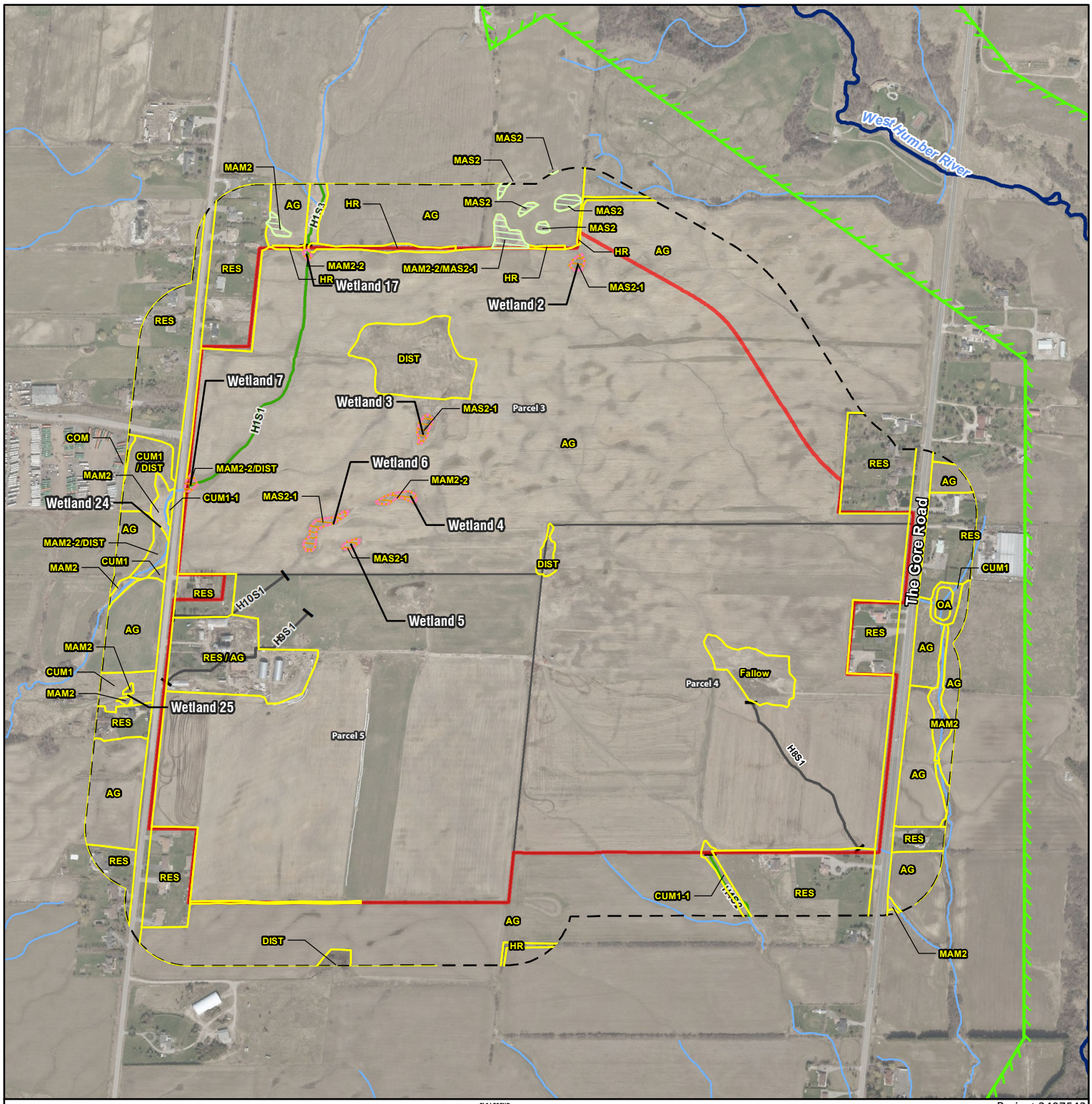

Project 2407542

NOTES:

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* The Wildfield Village Study area was assessed through air photo interpretation to the ELC Ecosite level, with the exception of the Solmar-owned participating lands, which were ground-truthed to the ELC Vegetation Type level.

Legend

- Subject Lands
- Participating Parcels
- 120 m Adjacent Lands
- Greenbelt Natural Heritage System
- Ecological Land Classification*
- Potential Watercourse or Headwater Drainage Feature
- West Humber River
- Wetland Staked by TRCA and GEI on November 7, 2023 and September 20, 2024

Headwater Drainage Feature

Management Recommendations

- Mitigation
- No Management Required

Wetland Evaluation (GEI Consultants Ltd.)

- Other Wetland
- Unevaluated Wetland

ELC LEGEND

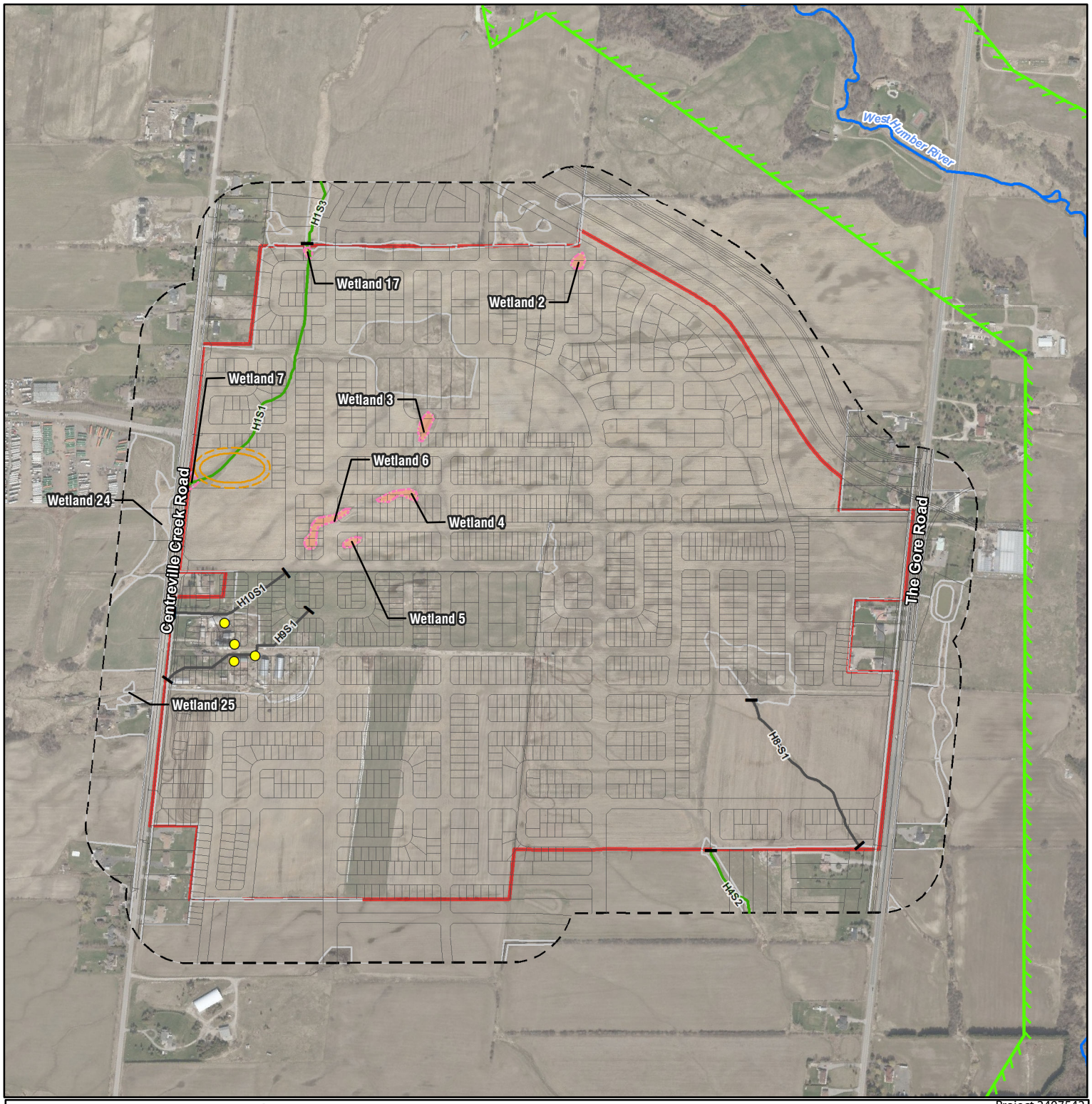
AG, Agricultural
COM, Commercial
CUM1 / DIST, Mineral Cultural Meadow/Disturbed
CUM1 / MAM2, Mineral Cultural Meadow/Mineral Meadow Marsh
CUM1 / OA, Mineral Cultural Meadow/Open Aquatic
CUM1, Mineral Cultural Meadow
CUM1-1 (mowed), Mineral Cultural Meadow
CUP3, Coniferous Plantation
CUT1, Mineral Cultural Thicket
CUW1, Mineral Cultural Woodland
DIST / CUM1, Disturbed/Mineral Cultural Meadow
DIST, Disturbed
Drain, Drain
FOC, Coniferous Forest
FOC2-2, Dry – Fresh White Cedar Coniferous Forest
FOD7, Fresh-Moist Lowland Deciduous Forest
FOM, Mixed Forest
Fallow, Fallow
HR, Hedgerow
Lawn, Lawn
MA, Marsh
MAM2 / DIST, Mineral Meadow Marsh / Disturbed
MAM2 / Drain, Mineral Meadow Marsh / Drain
MAM2, Mineral Meadow Marsh
MAM2-10, Forb Mineral Meadow Marsh
MAM2-2, Reed Canary Grass Mineral Meadow Marsh
MAM2-2/DIST, Reed-canary Grass Mineral Meadow Marsh/Disturbed
MAM2-2/MAS2-1, Reed Canary Grass Mineral Meadow Marsh/Cattail Mineral Shallow Marsh
MAS2, Mineral Shallow Marsh
MAS2-1, Cattail Mineral Shallow Marsh
OA, Open Aquatic
RES / AG, Residential/Agicultural
RES, Residential
SA, Shallow Aquatic
SWD3-2, Silver Maple-Mineral Deciduous Swamp
SWD3-3, Swamp Maple-Mineral Deciduous Swamp
THDM2-6, Buckthorn Deciduous Shrub Thicket

Wildfield Local Subwatershed Study
Wildfield Village Landowners Group Inc.

Figure 5
Observed Natural Heritage Features

0 100 m
1:10,000

GEI Consultants



NOTES:

1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2025; © Toronto Region Conservation Authority, 2021.
3. Orthoimagery © First Base Solutions, 2021. Imagery taken in 2022.

* The Wildfield Village Study area was assessed through air photo interpretation to the ELC Ecosite level, with the exception of the Solmar-owned participating lands, which were ground-truthed to the ELC Vegetation Type level.

Legend

- Subject Lands
- 120 m Adjacent Lands
- Greenbelt Natural Heritage System
- Ecological Land Classification*
- Wetlands to be Removed (0.45 ha)
- Site Plan (Jan 27, 2025)
- Habitat for Endangered Species (Redside Dace)
- Wetland Staked by TRCA and GEI on November 7, 2023 and September 20, 2024
- Species of Conservation Concern SWH - Structures with Active Barn Swallow Nests (2024)

Management Recommendations

- Mitigation
- No Management Required

Post Development NHS

- Wetland Relocation and Compensation Area
- Wetland Relocation and Compensation Area + 10 m

Project 2407542

Wildfield Local Subwatershed Study
Wildfield Village Landowners Group Inc.

Figure 6
Draft Plan and Ecological Constraints

0 100 m
1:10,000

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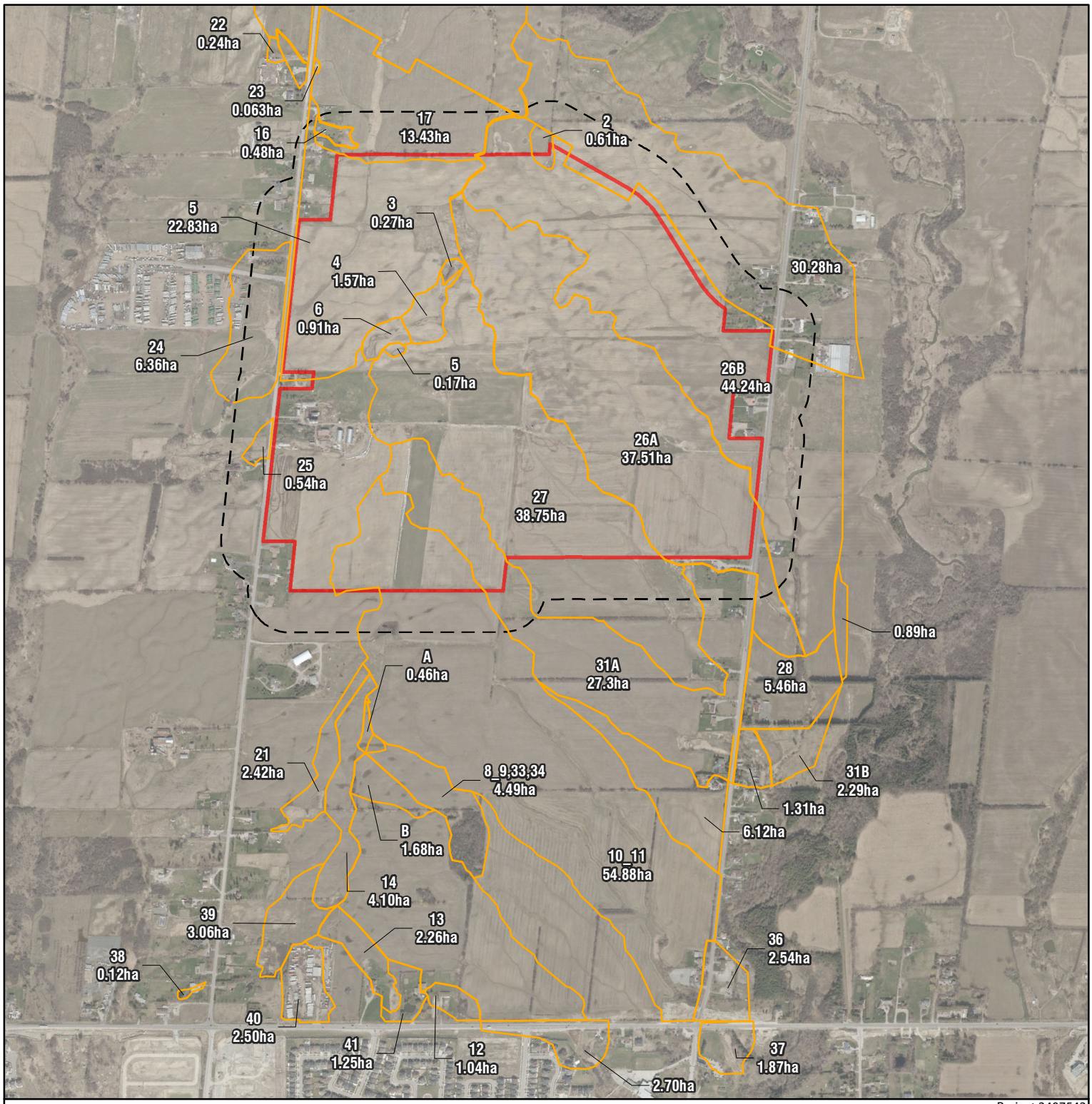
e\Working\GLOBAL PROPERTIES INC\2407542 Wildfield Village Solmar Draft Plan of Subdivision\05_GIS\MXD\2024 11 EIS\2407542_rpt_fig6_draft_plan_and_eco_constraints.mxd Date Saved: Monday, January 27, 2025



NOTES:

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3. Orthoimagery © First Base Solutions, 2021. Imagery taken in 2022.

* The Wildfield Village Study area was assessed through air photo interpretation to the ELC Ecosite level, with the exception of the Solmar-owned participating lands, which were ground-truthed to the ELC Vegetation Type level.

Legend

- Subject Lands
- 120 m Adjacent Lands
- Wetland Catchment Area

Project 2407542

Wildfield Local Subwatershed Study
Wildfield Village Landowners Group Inc.

Figure 7
Wetland Catchment Areas

0 100 m
1:15,000

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APPENDIX B – TERMS OF REFERENCE

December 13, 2024

Jason Elliott, Senior Planner
Town of Caledon
6311 Old Church Road
Caledon East, ON
L7C 1J6

Nick Cascone, Senior Planner
Toronto and Region Conservation Authority
101 Exchange Ave
Concord, ON,
L4K 5R6

Dear Mr. Elliott and Mr. Cascone

RE: Environmental Impact Study – Terms of Reference
Wildfield Village, Town of Caledon, Ontario

1.0 INTRODUCTION

GEI Consultants Ltd. (GEI) was retained by Solmar Development Corp., to complete an Environmental Impact Study (EIS) in support of a Plan of Subdivision application, for the proposed residential development at Wildfield Village (herein referred to as the Subject Lands; **Figure 1**, **Appendix A**). The Subject Lands are generally located north of Mayfield Road, east of Centreville Creek Road, west of The Gore Road and south of Healey Road, in the Town of Caledon, Ontario. The majority of the Subject Lands are in active agricultural land use.

The north corner of the Subject Lands falls within the Greenbelt Natural Heritage System, and the headwater drainage features, are regulated by TRCA (**Figure 2, Appendix A**).

Consistent with the requirements of Section 3.5 of the Town of Caledon Official Plan (OP), an EIS is required in support of the draft plan application for the Subject Lands, as natural features are present on the Subject Lands and within the 120 m adjacent lands. The EIS is required to assess the potential impacts of the proposed development on the natural heritage features and associated functions on the Subject Lands and adjacent lands. The intent of this Terms of Reference (TOR) is to outline the proposed work plan in support of the EIS submission.

The Wildfield Village Landowners Group have submitted a Local Subwatershed Study (LSS) in November 2024, in support of the Secondary Plan process for Wildfield Village. Ecological data previously gathered on the Subject Lands to support the LSS, has been used to inform this TOR. This TOR has been prepared in accordance with the TRCA Environmental Impact Statement Guidelines (2014).

2.0 ENVIRONMENTAL IMPACT STUDY

The EIS will consider applicable provincial and municipal policies, including the natural heritage policies of the Provincial Policy Statement (PPS; MMAH 2020) and associated provincial implementation guidance contained in the Natural Heritage Reference Manual (NHRM; MNR 2010). In addition, this EIS considers the policies of the Region, the Town and TRCA.

The field investigations were completed as part of the LSS from 2021 through 2024, and the ecological data gathered on the Subject Lands will inform the EIS. Impacts to adjacent lands (i.e., within 120 m of the Subject Lands, as identified within the Natural Heritage Reference Manual; MNR 2010) will also be considered.

The EIS will consider and include the following information:

- Description of the proposal;
- Description of the surrounding environment;
- Identification and assessment of the potential impacts of the proposal on the environment, natural heritage features and their functions natural heritage features (e.g., headwater drainage features and wetlands), found on the Subject Lands and adjacent lands; **Figure 2, Appendix A**;
- Identification of positive effects of the proposal such as opportunities for enhancement and/or restoration of significant features;
- Evaluation of the feasibility of alternative mitigation measures or techniques and the ability of such measures to prevent or minimize impacts;
- Recommendation on the suitability of proceeding with the proposal, appropriate mitigation measures, whether changes to the proposal are advised; and
- Recommendation for a monitoring plan and contingency plans should the proposal result in any unexpected impacts to natural heritage features on the Subject Lands, if necessary.

The following aspects of the natural heritage system will be addressed within the EIS submission:

- Terrestrial natural habitat features and functions including wetland and wildlife habitat;
- Known watercourses and hydrologic features and functions;
- Significant physical features and landforms;
- Riparian zones or buffer areas and functions;
- Vegetation communities and species of concern; and
- Significant aquatic features and functions.

All figures provided within the EIS will utilize the most up-to-date aerial imagery available.

2.1 Natural Heritage Planning Considerations

The Subject Lands are subject to federal, provincial, and municipal legislation as well as land use policies established by the Region, the Town, and the TRCA.

An assessment of the quality and extent of natural heritage features found on, and adjacent to, the Subject Lands and the potential impacts to these features from the proposed development application was completed to address the natural heritage components of the following regulatory agencies, local and regional municipalities, and/or legislation:

- Provincial Policy Statement (MMAH 2020);
- Town of Caledon Official Plan (2024 Consolidation);
- Future Caledon Official Plan (Draft, 2024);
- Regional of Peel Official Plan (2010);
- The Greenbelt Plan (2017);
- *Endangered Species Act, 2007*;

- *Fisheries Act, 1985*;
- *Migratory Birds Convention Act, 1994*; and
- TRCA's The Living City Policies (2014);

2.1.1 Provincial Policy Statement

The PPS (MMAH 2020) provides direction on matters of provincial interest related to land use planning and development. It " supports a comprehensive, integrated and long-term approach to planning… " The PPS is to be read in its entirety and land use planners and decision-makers need to consider all relevant policies and how they work together.

This report addresses those policies that are specific to Natural Heritage (Section 2.1) with some reference to other policies with relevance to Natural Heritage and impact assessment consideration and areas of overlap (e.g., those related to Efficient and Resilient Development and Land Use Patterns, Section 1.1; Sewage, Water and Stormwater, Section 1.6.6; Water, Section 2.2; Natural Hazards, Section 3.1).

Eight types of significant natural heritage features are defined in the PPS, as follows:

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat (SWH);
- Fish habitat;
- Habitat of endangered and threatened species; and
- Significant areas of natural and scientific interest (ANSIs).

Development and site alteration shall not be permitted in significant wetlands, or in significant coastal wetlands. Development and site alteration shall not be permitted in significant woodlands, significant valleylands, SWH or significant ANSIs, unless it is demonstrated that there will be no negative impacts on the natural features or their ecological functions.

Development and site alteration shall not be permitted in the habitat of endangered and threatened species or in fish habitat, except in accordance with provincial and federal requirements. Development and site alteration may be permitted on lands adjacent to fish habitat provided it has been demonstrated that there will be no negative impacts on the natural feature or their ecological functions.

2.1.1.1 Natural Hazards

Section 3.1.1 of the PPS directs development to areas outside of hazardous lands adjacent to the shoreline of the Great Lakes – St. Lawrence River System (flooding, erosion and dynamic beach hazards), hazardous lands adjacent to river, steam and small inland lake systems (flooding and/or erosion hazards) and hazardous sites. Section 3.1.2 further prohibits development and site alteration within:

a) the dynamic beach hazard;
b) defined portions of the flooding hazard along connecting channels (the St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers);

c) areas that would be rendered inaccessible to people and vehicles during times of flooding hazards, erosion hazards and/or dynamic beach hazards, unless it has been demonstrated that the site has safe access appropriate for the nature of the development and the natural hazard; and
d) a floodway regardless of whether the area of inundation contains high points of land not subject to flooding.

2.1.2 Region of Peel Official Plan

As of July 1, 2024, the Region of Peel Official Plan (Peel OP) constitutes an official plan of Peel's lower-tier municipalities. As such, the Town of Caledon is now responsible for the interpretation and implementation of the Peel OP.

The Peel OP (2022) identifies the Subject Lands as part of the Rural System and Urban System, overlayed with the 2052 New Urban Area as shown on Schedule E-1 ("Regional Structure"). The West Humber River corridor and the headwater drainage feature along the west-side of the Subject Lands that crosses Centreville Creek Road are identified within the Greenlands System containing Core Areas (Schedules C-1; "Greenlands System", and C-2 "Core Areas of the Greenlands System in Peel") (**Figure 2**, **Appendix A**). In addition, several Natural Areas and Corridors (NAC) and Potential Natural Areas and Corridors (PNAC) are identified within and adjacent to the Subject Lands associated with wetland pockets and a headwater drainage feature east of Centreville Creek Road as shown on Figure 7 ("Regional Greenlands System- Core Areas Natural Areas and Corridors and Potential Natural Areas and Corridors") of the Peel OP (2022).

2.1.3 Town of Caledon Official Plan (2024 Consolidation)

The Subject Lands are designated as "Prime Agricultural Area" on Schedule A ("Land Use Plan") of the Caledon Official Plan (OP). The West Humber River, identified north of the Subject Lands, and a headwater drainage feature located east of Centreville Creek Road are designated as an "Environmental Policy Area" on Schedule A. In addition, within 120 m of the Subject Lands, two tributaries of the West Humber River located south and northeast of the site are also designated as a "Environmental Policy Area" on Schedule A. The West Humber River is located within the Greenbelt Plan area which overlaps the north corner of the Subject Lands (**Figure 2, Appendix A**). "Environmental Policy Area" encompasses "Natural Core Areas" and "Natural Corridors" within the Town of Caledon OP. Section 5.7.3.1.1 of the Caledon OP states that major development and site alteration is not permitted within lands designated "Environmental Policy Area". Minor refinements to the limits of an "Environmental Policy Area" may be made through environmental studies without the need for an OP Amendment. Major modifications to an "Environmental Policy Area" require an OP Amendment.

2.1.4 Future Town of Caledon Official Plan (2024)

The Town of Caledon's Future Caledon Draft OP (2024) was adopted by Council on March 26, 2024. This OP is not yet in force and effect as it must still be approved by the Ministry of Municipal Affairs and Housing. On Schedule B2 of the Future Caledon Draft OP, the Subject Lands is noted as part of the New Urban Area 2051 and within the Planned Highway 413 Transportation Corridor. Schedule B4 denotes proposed Land Uses for the New Urban Area; the Subject Lands includes New Community Area, Prime Agricultural Area, Planned Highway 413 and NWGTA Transmission Corridor Protection Area and Natural Features and Areas.

2.1.5 Greenbelt Plan

The Greenbelt Plan (2017) works to permanently protect environmentally sensitive areas due to their ecological value within the Golden Horseshoe. It is intended to enhance the natural landscapes by working to facilitate the connection of environmentally significant areas and reduce fragmentation of the landscape. Protection is offered also to permanent agricultural areas ensuring the permanency and sustainability of natural resources.

The Greenbelt Plan Area is located within the north corner of the Subject Lands and contains the Natural Heritage System (NHS). As described within Section 3.2 of the Greenbelt Plan (2017), the Protected Countryside contains a Natural System component of a NHS and a Water Resource System (WRS). The NHS includes core and linkage areas of the Protected Countryside with the highest concentration of sensitive and significant natural features and functions, while the WRS is made up of both ground and surface water features, areas and their associated functions. The NHS protects natural heritage, hydrologic and/or landform features (key hydrologic areas, key hydrologic features and key natural heritage features) that contribute to conserving Ontario's biodiversity and the ecological integrity of the Greenbelt itself. As described within Section 3.2.2 of the Greenbelt Plan (2017), new developments and/or site alterations must show that there are no negative impacts on the key natural heritage features or key hydrologic features of their functions.

2.1.6 Toronto and Region Conservation Authority

Effective January 1, 2023, following the implementation of Bill 23, the role of Conservation Authorities in reviewing development applications has changed. Previously, the TRCA reviewed planning application submissions associated with future development of properties within its jurisdictional boundaries. In addition, the TRCA provided planning and technical advice to planning authorities to assist them in fulfilling their responsibilities regarding natural hazards, natural heritage, and other relevant policy areas pursuant to the Planning Act, as both a watershed-based resource management agency and through planning advisory services, in addition to their regulatory responsibilities. With the changes associated with Bill 23, the commenting role Conservation Authorities will play in Planning Act applications may vary from municipality to municipality.

Effective April 1, 2024, Ontario Regulation (O. Reg.) 41/24: Prohibited Activities, Exemptions and Permits has come into force, replacing the former O. Reg. 166/06: Toronto and Region Conservation Authority: Development, Interference with Wetlands, Alterations to Shorelines and Watercourses Regulation. O. Reg. 41/24 allows Conservation Authorities to implement Section 28 Conservation Authorities Act, 1990 (amended 2024), which states under Section 28(1) that:

"*28 (1) No person shall carry on the following activities, or permit another person to carry on the following activities, in the area of jurisdiction of an authority:*

a) Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.
b) Development activities in areas that are within the authority's area of jurisdiction and are,
   i. hazardous lands,
   ii. wetlands,

iii. river or stream valleys the limits of which shall be determined in accordance with the regulations,

iv. areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or

v. other areas in which development should be prohibited or regulated, as may be determined by the regulations. 2017, c. 23, Sched. 4, s. 25."

Pursuant to O. Reg. 41/24, any interference with or development in or on areas stated in the Conservation Authorities Act (e.g., hazardous lands, wetlands, river or stream valleys) requires permission from the Conservation Authority. The Conservation Authority may issue permits under Section 28.1 and may attach conditions on the permits per Section 9(1) of the Regulation. A review of TRCA's Regulation mapping shows that the Subject Lands includes regulated areas including a watercourse, HDFs and unevaluated wetlands. All mapped watercourses, HDFs, and wetlands will be reviewed in accordance with the definitions under Ontario Regulation 41/24 in the EIS report.

The TRCA's Living Cities Policies (2014) document contains the principles, goals, objectives and policies approved by the TRCA for their planning and development approvals process. This document outlines policies related to the determination of the Natural System and recommends buffer widths for natural heritage features such as woodlands, wetlands, and valley and stream corridors.

2.1.7 Ontario Endangered Species Act (ESA)

The provincial ESA (2007) was developed to:

- Identify Species at Risk (SAR), based upon best available science;
- Protect SAR and their habitats and to promote the recovery of SAR; and
- Promote stewardship activities that would support those protection and recovery efforts.

The ESA (2007) protects all threatened, endangered and extirpated species listed on the Species at Risk in Ontario (SARO) list. These species are legally protected from harm or harassment and their associated habitats are legally protected from damage or destruction, as defined under the ESA (2007).

2.1.8 Migratory Birds Convention Act

This federal legislation protects the nests and offspring of listed migratory bird species from destruction or disturbance. In its application, it requires that best management practices be implemented to detect and avoid disturbance to active nests during development activities.

2.1.9 Federal Fisheries Act

The Department of Fisheries and Oceans Canada (DFO) administers the federal *Fisheries Act*, which defines fish habitat as "spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes" [subsection (2)1]. The *Fisheries Act* prohibits the death of fish by means other than

fishing [subsection 34.4 (1)] and the harmful alteration, disruption or destruction of fish habitat [HADD; subsection 35. (1)]. A HADD is defined as “any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat’s capacity to support one or more life processes” (DFO 2019).

2.2 Data Collection Approach and Methodology

2.2.1 Background References

GEI has relied, in part, upon supporting background information to provide additional insight into the overall character of the Subject Lands.

The following background materials have already been reviewed by GEI:

- Ministry of Natural Resources and Forestry’s (MNRF) Natural Heritage Information Centre (NHIC) database (2024);
- MNRF’s Land Information Ontario (LIO) database (2020);
- Bird Studies Canada’s Atlas of the Breeding Birds of Ontario (BSC et al. 2008);
- Ontario Nature’s Reptile and Amphibian Atlas (2024);
- Toronto Entomologists’ Association’s (TEA) Ontario Butterfly and Moth Atlases (2024 a, b);
- Fisheries and Oceans Canada’s (DFO) Aquatic Species at Risk (SAR) Map (2020);
- Humber River Watershed Plan (TRCA 2008) and any on-going updates including the Humber River Watershed Characterization Report (TRCA 2003);
- West Humber River Fisheries Management Plan (MNR and TRCA, 2005); and
- Online Citizen Science databases (e.g., eBird).

2.2.2 Technical Methods and Field Studies

Ecological field investigations were completed for the Subject Lands from 2021 through 2024 to inform the LSS. The completed field program was designed with consideration of data collected during the background Natural Heritage Information Centre (NHIC) and wildlife atlas searches, preliminary Species at Risk (SAR) screening, and aerial photo interpretation. The following ecological field investigations were completed for the Subject Lands:

- Botanical Inventory and Ecological Land Classification (ELC; 2022, 2024);
- Wetland Evaluations (2023, 2024);
- Amphibian Call Count Surveys (2022);
- Snake Visual Encounter Surveys (2021, 2022, 2024);
- Turtle Basking Surveys (2021, 2022);
- Breeding Bird Surveys (2022, 2024);
- Bat Habitat Assessment (2022, 2023);
- Headwater Drainage Feature Assessment (2021, 2022, 2024); and
- Fish Community Sampling (2022, 2024).

As noted in previous sections above, the ecological data collected from 2021 through 2024 for the LSS will inform the characterization of ecological features and functions within and adjacent to the Subject Lands.

As part of the LSS for the Wildfield Village Secondary Plan, geomorphic investigations and assessments have been completed to identify erosion hazards including:

- Reviewing historic and recent aerial imagery; and
- Reviewing existing geomorphic mapping from the Scoped SWS (Wood, 2022) and refining based on site specific investigations.

No watercourses were identified on the Subject Lands. All identified watercourses through desktop exercises and aerial imagery were ground-truthed during site specific investigations and are considered to be headwater drainage features. As a result, no meander belt width assessment was conducted on the headwater drainage features on the Subject Lands.

Structures were observed and screened for potential bat exit holes in May 2024 for the cattle farm (located centrally on the west boundary of the Subject Lands, along Centreville Creek Road), and will require two evenings of surveys in June 2025. It is GEI's understanding that the removal of structures will occur between November 2025 and March 2026. As a result, an addendum to the EIS will be prepared after the surveys have been completed.

Survey methodology related to each specific survey type is described in the next sections in detail.

2.2.2.1 Bat Exit Surveys (Structures)

Survey Methods

In accordance with protocols provided by Ministry of Environment, Conservation and Parks (MECP), buildings that have the potential to be used as maternity roosts by bats will be monitored through exit surveys combined with acoustic monitoring equipment, to identify bats to the species level.

Bat exit surveys and data analysis will be conducted by qualified biologists with experience in bat identification and monitoring. A preliminary survey prior to conducting the exit surveys was completed (Summer 2024) to identify exit points at the identified structures on the Subject Lands.

Prior to sunset, surveyors will be placed at all possible exit points with a handheld heterodyne bat detector (Wildlife Acoustics EMT2 Pro). The handheld heterodyne bat detector will be set between 40-45 kHz to - identify SAR bat species and will be recording in full spectrum.

The exit surveys begin at sunset and continue to be monitored for one hour after. Each exit is monitored for a minimum of two evening during the months of June to early July under appropriate weather conditions (e.g., temperature above 15 degrees Celsius, no rain, and low wind).

2.3 Natural Heritage Features Analysis

As noted above in **Section 2.1.7**, the eight types of significant natural heritage features defined in the PPS (MMAH 2020) will be evaluated. SWH will be assessed using the Significant Wildlife Habitat Technical Guide (MNR 2000) and the SWH Eco-Region Criterion Schedule 6E (MNRF 2015). All four general types of SWH (seasonal concentration areas, rare or specialized habitats, habitat for species of conservation concern, and animal movement corridors) will be evaluated. In addition to the PPS policies, the EIS will include an evaluation of the Town's natural heritage policies where those policies may be more restrictive than the PPS.

Where applicable, the EIS will assess existing conditions and extent of ecological features and their functions as follows:

- **Feature and Function Identification:** Document natural features, ecological functions, and interconnections with adjacent ecosystems.
- **Hazard Assessment:** Identify risks such as flooding and erosion.
- **Environmental Analysis:** Describing soil, landform, geology, hydrological, and hydrogeological studies.
- **Biophysical Inventory:** Assess terrestrial and aquatic communities, and determine significance of natural heritage features.
- **Ecosystem Interrelationships:** Analyze ecosystem dynamics locally and regionally.
- **Development Limits:** Define boundaries and constraints to protect natural heritage systems.
- **Corridor Assessment:** Evaluate linkages and ecological connectivity.
- **Water Balance:** Provide pre-development assessments.

SAR and their habitats are considered provincially sensitive information. Due to the sensitive nature of this information, all correspondence and precise location-related information will remain with the MECP. All SAR information will be disclosed to the MECP through their Information Gathering Form, or a similar process upon completion of the EIS prior to site alteration/development.

2.4 Description of Development Proposal

The EIS will discuss and describe the development proposal for the Subject Lands. The proposed development is anticipated to be a mix of freehold residential townhomes, detached homes, and open/park spaces.

Key details outlined within engineering reports (e.g., stormwater management, hydrology) will be discussed within this section. Any potential impacts associated with the proposed site alteration, or the development will be discussed within the impact assessment portion of the report.

2.5 Impact Assessment, Avoidance and Mitigation Measures Discussion

Where applicable, the EIS will provide an impact assessment, avoidance and mitigation measures, and recommended restoration and ecological monitoring (where applicable). The report will also provide recommendations for maintaining or enhancing ecological connectivity and functionality. The EIS will reference and review engineering reports (e.g., proposed grading, stormwater management and functional servicing plan, Wetland Water Balance Risk Assessment (WWBRA), and feature-based water balance) to be incorporated into the impact assessment to inform and assess potential impacts on the Subject Lands. A WWBRA will be completed through the future phases of the Local Subwatershed Study for the retained wetlands on the Subject lands and within 120m of adjacent lands (and will be carried through for the draft plan of subdivision application).

The EIS will also assess the direct and indirect effects to natural heritage features and functions that occur over various periods of time (short and long term) following the implementation and construction of a conceptual site plan (e.g., lighting and noise, erosion, surface water drainage, water balance, groundwater recharge and flow).

The EIS will identify planning, design and construction practices that are recommended to maintain, and where possible, improve or restore the health, diversity and size of natural heritage features on and adjacent to the Subject Lands. Impact avoidance, mitigation and/or restoration measures will be identified along with predicted net effects. Recommended monitoring strategies will be provided to assess the effectiveness of mitigation measures.

The impact assessment will identify direct and indirect impacts, as well as cumulative impacts associated with site alteration and/or development, while the mitigation measures section will specifically target discussions around measures proposed to eliminate or reduce impacts (e.g., restoration and enhancement, avoidance, invasive species management, adaptive management, erosion and sediment control). Setbacks and buffers from natural heritage features and hazards will be recommended.

Overall, the EIS will speak to the environmental effects of the development proposal that may have potential impact on the natural areas (as outlined in Section 2.0 of the TRCA Environmental Impact Statement Guidelines (2014)).

3. PROPOSED TIMELINE

Below is the proposed timeline for the EIS.

Table 1: Proposed Timeline

TIME PERIOD	KEY ACTIVITIES
November; and December 2024	Prepare EIS Report
January 2025	Submit EIS Report to Reviewing Agencies with Planning Application
June 2025	Conduct Bat Exit Surveys (two evenings) and Addendum EIS Report

We trust that the above information and proposed EIS TOR is satisfactory. Should you have any questions or comments, please do not hesitate to contact the undersigned.

Yours truly,
GEI Consultants (Canada) Ltd.

Eva Lee
Project Manager
647-530-3660
elee@geiconsultants.com

George Buckton
Project Director
416-816-2246
gbuckton@geiconsultants.com

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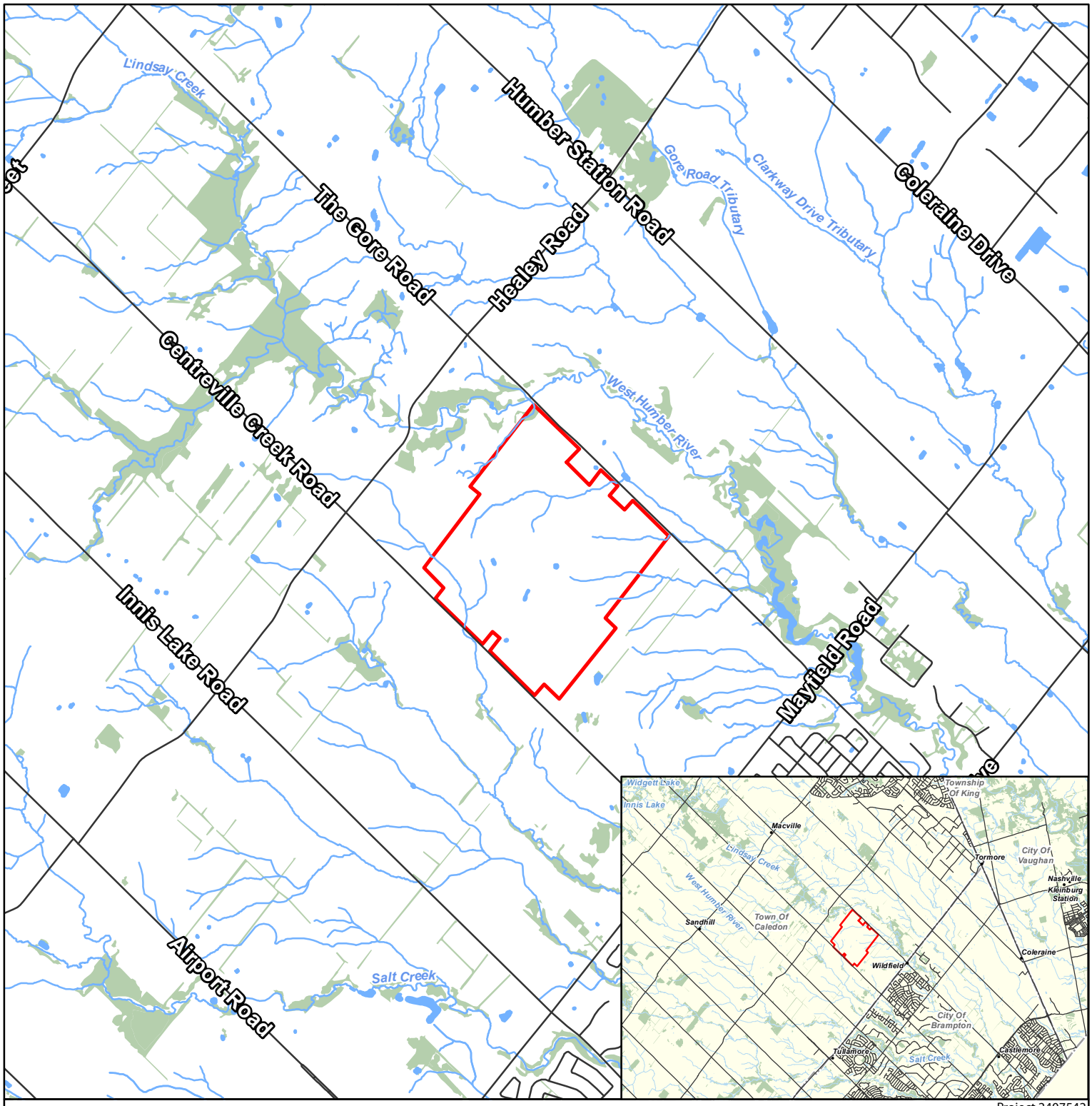
APPENDIX A

Figures



Project 2407542

NOTES:
1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2024; © Toronto Region Conservation Authority, 2024.

Legend

- Study Area
- Road
- Watercourse (TRCA)
- Waterbody
- Wooded Area

Wildfield Village Solmar Draft Plan of Subdivision
Environmental Impact Study
GLOBAL PROPERTIES INC.

Figure 1
Location of Study Area

0 500 m
1:34,800

N

GEI Consultants

Path: \\bov-pzcc-1\Data_Storage\Working\GLOBAL PROPERTIES INC\2407542 Wildfield Village Solmar Draft Plan of Subdivision\05_GIS\MXD\2024 11 EIS\2407542_rpt_fig01_location_of_study_area.mxd Date Saved: Thursday, November 28, 2024

APPENDIX C – TABLES

Table 1. Species at Risk Overview: Designations, Habitat Preferences and Potential Implications

Species Common Name	Species Scientific Name	Provincial Status	S Rank	Federal Status	Regulated Habitat	Most recent occurrence	Source	Ontario Range and Occurrences	Description of Suitable Habitat in Ontario	Habitat Suitability Assessment of Subject Lands
INSECTS										
Monarch	*Danaus plexippus*	SC	S2N, S4B	SC				In Canada, Monarchs are most abundant in southern Ontario and Quebec where milkweed plants and breeding habitat are widespread (MECP 2022)	Only the caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats (MECP 2022)	Potential occurrence within CUM communities on the Subject Lands/within 120m.
Rapids Clubtail	*Phanogomphus quadricolor*	THR	S2	END	Regulated Habitat Protection July 1, 2012			The Rapids Clubtail has only been recorded in six rivers in southern and eastern Ontario: the Thames, Humber, Credit Grand, Nith and Mississippi (MECP 2022)	The Rapids clubtail is typically found in clear, cool medium-to-large rivers with gravel shallows and muddy pools. Larvae occupy quiet muddy pools. Adult males perch on exposed rocks and other projections in the rapids. Adult females typically inhabit forests along riverbanks, and only visit shallows and pools when they are ready to mate and lay eggs (MECP 2022).	Potentially found in the tributary of the West Humber River.
REPTILES										
Snapping Turtle	*Chelydra serpentina*	SC	S3	SC				In Ontario, the range of the Snapping Turtle is limited to southern Ontario (MECP 2022).	Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams (MECP 2022).	Potentially suitable habitat wetlands, ponds, and watercourses provide suitable habitat on the Subject Lands/within 120m.

Eastern Ribbonsnake	*Thamnophis saurita*	SC	S4	SC				In Ontario, this snake occurs throughout southern and eastern Ontario and is locally common in parts of the Bruce Peninsula, Georgian Bay and eastern Ontario (MECP 2022).	The Eastern Ribbonsnake is usually found close to water, especially in marshes, where it hunts for frogs and small fish. These snakes congregate in underground burrows or rock crevices to hibernate over winter (MECP 2022).	No suitable rock piles present within the Subject Lands.
BIRDS										
Eastern Meadowlark	*Sturnella magna*	THR	S4B, S3N	THR	General Habitat Desciption July 2, 2013			Eastern Meadowlark is widespread in Ontario and found mostly south of the Canadian Shield (MECP 2022).	Eastern Meadowlarks breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas. Small trees, shrubs or fence posts are used as elevated song perches (MECP 2022).	Potential for Eastern Meadowlark, CUM and AG communities are present on/within 120m of the Subject Lands
Bobolink	*Dolichonyx oryzivorus*	THR	S4B	THR	General Habitat Desciption July 2, 2013			Bobolink is widespread in Ontario and is found throughout the province, generally south of the boreal forest (MECP 2022).	Historically, Bobolinks lived in North American tallgrass prairie and other open meadows. With the clearing of native prairies, Bobolinks moved to living in hayfields. Bobolinks often build their small nests on the ground in dense grasses. Both parents usually tend to their young, sometimes with a third Bobolink helping (MECP 2022).	Potential Bobolink, CUM communities are present on/within 120m of the Subject Lands.

Wood Thrush	*Hylocichla mustelina*	SC	S4B	THR				The wood thrush is found all across southern Ontario. It is also found, but less common, along the north shore of Lake Huron, as far west as the southeastern tip of Lake Superior. There is a very small population near Lake of the Woods in northwestern Ontario, and there have been scattered sightings in the mixed forest of northern Ontario (MECP 2022)	The wood thrush lives in mature deciduous and mixed (conifer-deciduous) forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. These birds prefer large forests, but will also use smaller stands of trees. They build their nests in living saplings, trees or shrubs, usually in sugar maple or American beech (MECP 2022)	Potential for Wood Thrush, deciduous swamp and deciduous forest located on/within 120m of the Subject Lands
Eastern Wood-pewee	*Contopus virens*	SC	S4B	SC				The eastern wood-pewee is found across most of southern and central Ontario, and in northern Ontario as far north as Red Lake, Lake Nipigon and Timmins (MECP 2022)	The eastern wood-pewee lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-age mature forest stands with little understory vegetation (MECP 2022)	Suitable forested ecosites are present on/within 120m of the Subject Lands.
Acadian Flycatcher	*Empidonax virescens*	END	S1B	END	General Habitat Desciption July 2, 2013			In Ontario, the Acadian Flycatcher primarily lives in the warmer climate of southern Ontario's Carolinian forests. It needs large, undisturbed forests, often more than 40 hectares in size. It has also been known to nest at a few sites in the Greater Toronto Area but this is unusual. The Acadian Flycatcher population in Ontario is very small, with 25 to 75 breeding pairs recorded in 2010 (MECP 2022).	Typically found in mature, shady forests with ravines, or in forested swamps with a lot of maple and beech trees. Nests are placed at the tip of lower limbs on a tree and formed by loosely woven plant material. Acadian Flycatchers nest only in southwestern Ontario, mostly in large forests and forested ravines near the shore of Lake Erie (MECP 2022).	Unsuitable habitat, forested ecosites do not meet size criteria.

Bank Swallow	*Riparia riparia*	THR	S4B	THR				The bank swallow is found all across southern Ontario, with sparser populations scattered across northern Ontario. The largest populations are found along the Lake Erie and Lake Ontario shorelines, and the Saugeen River (which flows into Lake Huron) (MECP 2022).	Bank swallows nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. Many nests are on banks of rivers and lakes, but they are also found in active sand and gravel pits or former ones where the banks remain suitable. The birds breed in colonies ranging from several to a few thousand pairs (MECP 2022).	Unsuitable habitat, there are no river or lake banks, and silt and/or sand stockpile deposits on Subject Lands.
Chimney Swift	*Chaetura pelagica*	THR	S3B	THR	General Habitat Desciption July 2, 2013			In Ontario, the species is most widely distributed in the Carolinian zone in the south and southwest of the province, but has been detected throughout most of the province south of the 49th parallel (MECP 2022).	They are more likely to be found in and around urban settlements where they nest and roost (rest or sleep) in chimneys and other manmade structures. They also tend to stay close to water as this is where the flying insects they eat congregate (MECP 2022).	Potential chimney swift habitat, West Humber river and Gore Road tributaries transect Subject Lands. Residential buildings found on/within 120 m of subject lands.
Barn Swallow	*Hirundo rustica*	SC	S4B	SC				The Barn Swallow may be found throughout southern Ontario and can range as far north as Hudson Bay, wherever suitable locations for nests exist (MECP 2022).	Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts. The species is attracted to open structures that include ledges where they can build their nests, which are often re-used from year to year. They prefer unpainted, rough-cut wood, since the mud does not adhere as well to smooth surfaces (MECP 2022).	Potential Barn Swallow as residential buildings are present on the Subject Lands/within 120m.
Upland Sandpiper	*Bartramia longicauda*		S2B					Upland Sandpipers live in grasslands in southern Ontario.	Upland Sandpipers live in grasslands.	Potential Upland Sandpiper, CUM and AG communities are present on/within 120m of Subject Lands

Prothonotary Warbler	*Protonotaria citrea*	END	S1B	END	General Habitat Protection June 30, 2008			In Canada, the Prothonotary warbler is only known to nest in southwestern Ontario, primarily along the north shore of Lake Erie. Over half of the small and declining population is found in Rondeau Provincial Park. In Ontario, the Prothonotary warbler is found in the warmer climate of the Carolinian deciduous forests. In 2005, it was estimated that there were only between 28-34 individuals in Ontario (MECP 2022).	The Prothornatory Warbler nests in small, shallow holes, found low in the trunks of dead or dying trees standing in or near flooded woodlands or swamps. They will also readily use properly placed artificial nest boxes (MECP 2022).	Potential Prothonotary Warbler, forested ecosites are present on the Subject Lands/within 120m.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	S3	END				The Red-headed Woodpecker is found across southern Ontario, where it is widespread but rare (MECP 2022).	The Red-headed Woodpecker lives in open woodland and woodland edges and is often found in parks, golf courses and cemeteries that contain many dead trees, which the bird uses for nesting and perching (MECP 2022).	Potential Red-headed Woodpecker, forested ecosites are present on the Subject Lands/within 120m.
Eastern Whip-poor-will	*Antrostomus vociferus*	SC	S4B	THR				In Ontario they breed as far north as the shore of Lake Superior. Although Eastern Whip-poor-wills were once widespread throughout the central Great Lakes region of Ontario, their distribution in this area is now fragmented (MECP 2022).	The Eastern Whip-poor-will is usually found in areas with a mix of open and forested areas, such as savannahs, open woodlands or openings in more mature, deciduous, coniferous and mixed forests (MECP 2022)	Potential Eastern Whip-poor-will, forested ecosites are present on the Subject Lands/within 120m.
Common Nighthawk	*Chordeiles minor*	SC	S4B	THR				In Canada, the species is found in all provinces and territories except Nunavut. In Ontario, the Common Nighthawk occurs throughout the province except for the coastal regions of James Bay and Hudson Bay (MECP 2022)	Traditional Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings. Although the species also nests in cultivated fields, orchards, urban parks, mine tailings and along gravel roads and railways, they tend to occupy natural sites (MECP 2022)	No logged or burned over areas, forest clearings, rock battres, peat bogs, lakeshores and mine tailings are not present on the Subject Lands/within 120m

Golden-winged Warbler	*Vermivora chrysoptera*	SC	S4B	THR				In Ontario, these birds breed in central-eastern Ontario, as far south as Lake Ontario and the St. Lawrence River, and as far north as the northern edge of Georgian Bay. Golden-winged Warblers have also been found in the Lake of the Woods area near the Manitoba border, and around Long Point on Lake Erie (MECP 2022)	Golden-winged Warblers prefer to nest in areas with young shrubs surrounded by mature forest – locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas (MECP 2022)	No, while field edges are present within the Subject Lands, the Subject Lands are not located within the known occurrence range of this species.
Grasshopper Sparrow	*Ammodramus savannarum*	SC	S4B	SC				The Grasshopper Sparrow can be found throughout southern Ontario, but only occasionally on the Canadian Shield. It is most common where grasslands, hay or pasture dominate the landscape (MECP 2022).	It lives in open grassland areas with well-drained, sandy soil. It will also nest in hayfields and pasture, as well as alvars, prairies and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated. Its nests are well-hidden in the field and woven from grasses in a small cup-like shape (MECP 2022).	Potential cultural meadow ecosites are present on the Subject Lands/within 120m.
Purple Martin	*Progne subis*		S3B					Purple Martin are found in southwest Ontario (Ontario Purple Martin Association 2023).	Purple Martins live in open areas near wetlands, swamps, and wet meadows. The can be found along forest edges, in mountain forests, shrubland, agricultural areas, farms and in urban settlements. Purple Martin almost exclusively nest in artificial roosting boxes (Ontario Purple Martin Association 2023).	No artificial roosting boxes are present on the Subject Lands/within 120m.

MAMMALS										
Eastern Small-footed Myotis	*Myotis leibii*	END	S2S3					The eastern small-footed bat has been found from south of Georgian Bay to Lake Erie and east to the Pembroke area. There are also records from the Bruce Peninsula, the Espanola area, and Lake Superior Provincial Park (MECP 2022)	In the spring and summer, eastern small-footed bats will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. In the winter, these bats hibernate, most often in caves and abandoned mines. They seem to choose colder and drier sites than similar bats and will return to the same spot each year (MECP 2022)	No forested ecosites within Subject Lands.
Little Brown Myotis	*Myotis lucifugus*	END	S3	END				Widespread in southern Ontario and found as far north as Moose Factory and Favourable Lake (MECP 2022)	Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings and barns for summer colonies where they can raise their young. Little brown bats hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing (MECP 2022).	No forested ecosites within Subject Lands.
Northern Myotis	*Myotis septentrionalis*	END	S3	END	General Habitat Protection January 24, 2013			The northern long-eared bat is found throughout forested areas in southern Ontario, to the north shore of Lake Superior and occasionally as far north as Moosonee, and west to Lake Nipigon (MECP 2022)	Northern long-eared bats are associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April, most often in caves or abandoned mines (MECP 2022).	No forested ecosites within Subject Lands.

Tri-coloured Bat	*Perimyotis subflavus*	END	S3?	END				This bat is found in southern Ontario and as far north as Espanola near Sudbury. Because it is very rare, it has a scattered distribution (MECP 2022).	During the summer, the Tri-colored Bat is found in a variety of forested habitats. It forms day roosts and maternity colonies in older forest and occasionally in barns or other structures. They overwinter in caves where they typically roost by themselves rather than part of a group (MECP 2022).	No forested ecosites within Subject Lands.
FISH										
Redside Dace	*Clinostomus elongatus*	END	S1	END	Regulated July 1, 2011			Redside Dace are found in a few tributaries of Lake Huron, in streams flowing into western Lake Ontario, the Holland River (which flows into Lake Simcoe) and Irvine Creek of the Grand River system (which flows into Lake Erie) (MECP 2022).	Redside Dace are found in pools and slow-moving areas of small streams and headwaters with gravel substrates. Overhanging vegetation is frequently found at the waters' edge where the fish leap out of the water to catch prey (MECP 2022).	Redside Dace is not present on Subject Lands or within 120m of adjacent lands. However, occuopied habitat occurs in the West Humber River located north and east of the Subject Lands.
American Brook Lamprey	*Lethenteron appendix*		S3					American Brook Lamprey range extends from west of Thunder Bay along the northern shores of the Great Lakes and includes the Ottawa River. In the Great Lakes, the species is found in tributaties of Lakes Superior, Michigan, Huron and Erie, but has not been found in Lake Ontario. Northern Brook Lamprey has also been documented in Lake Nipissing and its tributaries (MECP 2023).	Adults in gravel/sand riffles and runs of creeks and small to medium sized rivers with strong flow and clear waters; ammocoetes in sandy or silty pools; preferred water temperature range 9-12 degrees Celcius (Ontario Fishes 2023).	No the Subject Lands are not in the range where American Brook Trout are located.

Last Updated

S Rank: NHIC Biodiversity Explorer
Provinicial Status: March 2023
COSSARO Priority Species: May 2018 (http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_CSSR_MTNG_RSLTS_EN.html)
Federal Status: May 2018 (http://www.sararegistry.gc.ca/sar/index/default_e.cfm?stype=species&lng=e&index=
^no schedule or status in SARA, but listed in COSEWIC

Source

MECP (2023). Northern Brook Lamprey. Available online at: https://www.ontario.ca/page/northern-brook-lamprey#:~:text=In%20Ontario%2C%20the%20Northern%20Brook,been%20found%20in%20Lake%20Ontario.
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Table 2. Field Studies and Natural Inventories (2021-2024)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
2021										
Rochon, M., Robinson O.	1	Headwater Drainage Feature Assessment	24-MR	09:45	15:13	8.9	79	80	3	None
Leslie, J., Lee, R.	1	Snake Survey and Turtle Basking Survey	7-AP	10:00	13:00	10	83	75	3	None
2022										
Williamson, L.	1	Amphibian Call Count Survey	25- AP	20:30	23:30	12	100	100	2	Light showers
Nieroda, M., Cartwright, C.	1	Fish Community Sampling	2-MA	10:30	14:44	12	85	100	1	None
Williamson, L., Nieroda, M.	2	Amphibian Call Count Survey	2-MA	21:00	23:15	10	93	80	1	None
Leslie, J.	1	ELC and Botanical Inventory	9-MA	09:30	15:00	17	35	90	3	None
Kimble, B., Robinson, O.	2	Headwater Drainage Feature Assessment	18-MA	11:00	14:00	12	44	80	4	None

Table 2. Field Studies and Natural Inventories (2021-2024)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
Burke, P.	1	Breeding Bird Survey	31-MA-2-JN	05:15	09:30	21	69	5	1	None
Williamson, L., Cartwright, C.	3	Amphibian Call Count Survey	16-JN	21:15	23:00	27	36	0	3	None
Burke, P.	2	Breeding Bird Survey	21-23-JN	05:20	09:30	17	82	50	3	None
Leslie, J.	2	ELC and Botanical Inventory	14-JL	08:30	15:00	22	47	0	2	None
Leslie, J.	3	ELC and Botanical Inventory	19-JL	09:00	16:30	28	62	0	3	None
Nieroda, M., Cartwright, C.	3	Headwater Drainage Feature Assessment	3-AU	11:25	12:05	24	65	75	4	None
Leslie, J.	4	ELC and Botanical Inventory	15-SE	09:15	12:30	14	55	10	2	None
Williamson, L.	1	Turtle Basking Survey	25- OC	12:00	12:45	15	92	60	1	None
Williamson, L.	2	Turtle Basking Survey	27- OC	11:30	12:00	11	54	25	1	None

Table 2. Field Studies and Natural Inventories (2021-2024)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
2023										
Buckton, G., Siddiqui, A.	1	Headwater Drainage Feature Assessment	13-AP	09:00	14:00	19	48	20	3	None
Mueller, L.	2	Headwater Drainage Feature Assessment	18-MA	09:00	14:00	10	52	20	3	None
Leslie, J	1	Feature Staking	07-NO	09:00	14:00	10	72	50	3	None
2024										
Nieroda, M., Lee, E.	1	Headwater Drainage Feature Assessment	10-AP	08:30	17:00	11	62	50	2	None
Lee, E.	1	Amphibian Call Count Survey	18-AP	21:29	21:37	N/A	72	65	0	None
Nieroda, M., Balsdon, M.	1	Snake Visual Encounter Survey and Bat Exit Structure Screening	01-MA	09:00	11:00	10	100	50	2	None

Table 2. Field Studies and Natural Inventories (2021-2024)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
Nieroda, M.	1	Snake Visual Encounter Survey	03-MA	9:00	9:55	10	70	0	2	None
Balsdon, M., Brunelle, P.	2	Snake Visual Encounter Survey	10-MA	12:30	13:30	15	75	75	2	None
Nieroda, M.	2/3	Snake Visual Encounter Survey	15-MA	15:00	17:00	16	70	0	2	None
Nieroda, M.	3	Snake Visual Encounter Survey	16-MA	09:00	09:46	17	68	10	1	None
Leslie, J.	1	Spring Botanical Survey	16-MA	09:00	15:00	17	68	10	1	None
Nieroda, M., Cartwright, C.	1	Fish Community Sampling	17-MA	08:30	13:30	16	83	75	1	None
Lee, E.	2	Amphibian Call Count Survey	27-MA	22:23	22:30	11	56	25	1	None
Martin, S.	1	Breeding Bird Survey and Barn Swallow Survey	30-MA	05:23	10:00	7	76	0	2	None

Table 2. Field Studies and Natural Inventories (2021-2024)

SURVEYORS (SURNAME, INTL)	SURVEY ROUND	SURVEY TYPE	DATE	TIME		AIR TEMP (C°)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION COMMENTS
				START	END					
Nieroda, M., Brunelle, P.	2	Headwater Drainage Feature Assessment	31-MA	08:00	14:00	14	55	25	1	None
Martin, S.	2	Breeding Bird Survey and Barn Swallow Survey	19-JN	05:55	09:40	24	83	100	2	None
Lee, E.	3	Amphibian Call Count Survey	20-JN	21:35	21:50	23	88	90	1	None
Martin, S.	3	Breeding Bird Survey	05-JL	06:22	08:17	19	78	30	2	None
Nieroda, M., Brunelle, P. Fleming, D. Love, S.	3	Headwater Drainage Feature Assessment	14-AU	08:30	12:30	22	59	0	3	None
Leslie, J.	2	Summer Botanical Survey	19-AU	09:00	15:00	15	83	100	3	None

Table 2. Field Studies and Natural Inventories (2021-2024)

LEGEND:

BEAUFORT WIND SPEED SCALE	
0	Calm (<1 km/hr)
1	Light Air (1-5 km/hr)
2	Light Breeze (6-11 km/hr)
3	Gentle Breeze (12-19
4	km/hr)
	Moderate Breeze (20-28 km/hr)

MONTH (CODE)	
JA	January
FB	February
MR	March
AP	April
MA	May
JN	June
JL	July
AU	August
SE	September
OC	October
NO	November
DE	December

Table 3. Ecological Land Classification (ELC) Community Descriptions

ELC TYPE	COMMUNITY DESCRIPTION	S-RANK (NHIC 2024)
MARSH		
Meadow Marsh		
MAM2-2 Reed-Canary Grass Mineral Meadow Marsh	• Reed-Canary Grass was the dominant species within the ground layer vegetation. Other species commonly observed included Panicled Aster (*Symphyotrichum lanceolatum*), Fowl Bluegrass (*Poa palustris*), Common Water Parsnip, Northern Willowherb (*Epilobium ciliatum),* Creeping Bentgrass (*Agrostis stolonifera)* and Narrow-Leaved Cattail (*Typha angustifolia)*, • Shallow surface water (~5 cm) present in some isolated areas in the spring, though generally absent overall. • Occasionally complexed with MAS2-1.	S5
Shallow Marsh		
MAS2-1 Cattail Mineral Shallow Marsh	• Community type observed at various locations, typically small remnant features within active agricultural fields. • Dense ground layer vegetation was typically dominated by Narrow-Leaved Cattail and Blue Cattail (*Typha* x *glauca*). Other species commonly observed include Fowl Bluegrass, Small Duckweed (*Lemna minor)*, Reed-Canary Grass, Bittersweet Nightshade, and Common Water-Parsnip. • All features of this community type had moist soil from spring through fall, with some features having standing water up to 40 cm in the spring and greater than 20 cm in the summer.	S5

FAMILY	LATIN NAME	COMMON NAME	COEFFICIENT OF CONSERVATISM (NHIC SEP 19 2023)	WETNESS INDEX (NHIC SEP 19 2023)	OWES WETLAND SPECIES	WEEDINESS INDEX	INVASIVE EXOTIC RANK (Urban Forest Associates 2002)	PROVINCIALLY TRACKED (NHIC) (NHIC FEB 6 2024)	PROVINCIAL STATUS (S-RANK) (NHIC FEB 6 2024)	GLOBAL STATUS (G-RANK) (NHIC FEB 6 2024)	SARO (MNRF) (NHIC FEB 6 2024)	COSEWIC STATUS (NHIC FEB 6 2024)	PEEL (Varga 2005)	TRCA (TRCA April 2023)	AUTHORITY
Amaranthaceae	Amaranthus retroflexus	Redroot Amaranth		3		-1		N	SNA	G5			X	L+	L.
Anacardiaceae	Rhus typhina	Staghorn Sumac	1	3				N	S5	G5			X	L5	L.
Apiaceae	Daucus carota	Wild Carrot		5		-2		N	SNA	GNR			X	L+	L.
Apiaceae	Sium suave	Common Water-Parsnip	4	-5	I			N	S5	G5			X	L5	Walter
Asteraceae	Ambrosia artemisiifolia	Common Ragweed	0	3				N	S5	G5			X	L5	L.
Asteraceae	Arctium lappa	Great Burdock		3				N	SNA	GNR			X	L+	L.
Asteraceae	Bidens frondosa	Devil's Beggarticks	3	-3	I			N	S5	G5			X	L5	L.
Asteraceae	Bidens vulgata	Tall Beggarticks	5	0	T			N	S5	G5			R1	L5	Greene
Asteraceae	Carduus acanthoides ssp. acanthoides	Spiny Plumeless Thistle		5		-1		N	SNA	GNRTNR			X	L+	L.
Asteraceae	Cichorium intybus	Wild Chicory		5		-1		N	SNA	GNR			X	L+	L.
Asteraceae	Cirsium arvense	Canada Thistle		3		-1	1	N	SNA	G5			X	L+	(L.) Scop.
Asteraceae	Cirsium vulgare	Bull Thistle		3		-1		N	SNA	GNR			X	L+	(Savi) Tenore
Asteraceae	Erigeron annuus	Annual Fleabane	0	3				N	S5	G5			X	L5	(L.) Pers.
Asteraceae	Erigeron canadensis	Canada Horseweed	0	3				N	S5	G5			X		(L.)
Asteraceae	Euthamia graminifolia	Grass-Leaved Goldenrod	2	0				N	S5	G5			X	L5	(L.) Nutt.
Asteraceae	Lactuca serriola	Prickly Lettuce		3		-1		N	SNA	GNR			X	L+	L.
Asteraceae	Solidago altissima var. altissima	Tall Goldenrod	1	3				N	S5	G5			X		L.
Asteraceae	Solidago canadensis	Canada Goldenrod	1	3				N	S5	G5			X	L5	L.
Asteraceae	Solidago flexicaulis	Zigzag Goldenrod	6	3				N	S5	G5			X	L5	L.
Asteraceae	Sonchus arvensis ssp. arvensis	Field Sow-Thistle		3				N	SNA	GNRTNR			X	L+	L.
Asteraceae	Sonchus asper	Prickly Sow-Thistle		3		-1		N	SNA	GNR			X	L+	(L.) Hill
Asteraceae	Symphyotrichum cordifolium	Heart-Leaved Aster	5	5				N	S5	G5			X		(L.) G.L. Nesom
Asteraceae	Symphyotrichum lanceolatum	Panicled Aster	3	-3	I			P	S5	G5			X		(Willd.) G.L. Nesom
Asteraceae	Symphyotrichum novae-angliae	New England Aster	2	-3				N	S5	G5			X		(L.) G.L. Nesom
Asteraceae	Taraxacum officinale	Common Dandelion		3		-2		N	SNA	G5			X	L+	F.H. Wiggers
Asteraceae	Tripleurospermum inodorum	Scentless Chamomile		0		-1		N	SNA	GNR			X		(L.) Schultz-Bip.
Asteraceae	Tussilago farfara	Coltsfoot		3	T	-2	4	N	SNA	GNR			X	L+	L.
Asteraceae	Xanthium strumarium	Rough Cocklebur	2	0	T			N	S5	G5			X	L5	L.
Bignoniaceae	Catalpa speciosa	Northern Catalpa		3		-1		N	SNA	G4?			X	L+	Warder ex Engelm.
Boraginaceae	Hydrophyllum virginianum var. virginian	Virginia Waterleaf	6	0				N	S5	G5T5			X	L5	L.
Brassicaceae	Barbarea vulgaris	Bitter Wintercress		0		-1	3	N	SNA	GNR			X	L+	W.T. Aiton
Brassicaceae	Capsella bursa-pastoris	Common Shepherd's Purse		3		-1		N	SNA	GNR			X	L+	(L.) Medikus
Brassicaceae	Draba verna	Spring Draba		5		-2		N	SNA	GNR			X		L.
Brassicaceae	Erysimum cheiranthoides	Wormseed Wallflower		3		-1		N	S5?	G5			X	L+	L.
Brassicaceae	Sinapis arvensis	Corn Mustard		5		-1		N	SNA	GNR			X	L+	L.
Caryophyllaceae	Stellaria media	Common Chickweed		3		-1		N	SNA	GNRTNR			X	L+	(L.) Villars
Convolvulaceae	Calystegia sepium ssp. americana	American False Bindweed	2	0				N	S5	G5T5			U	L5	(Sims) Brummitt
Convolvulaceae	Convolvulus arvensis	Field Bindweed		5		-1	3	N	SNA	GNR			X	L+	L.
Cucurbitaceae	Echinocystis lobata	Wild Cucumber	3	-3	T			N	S5	G5			X	L5	(Michx.) Torr. & A. Gray
Fabaceae	Lotus corniculatus	Garden Bird's-Foot Trefoil		3		-2	2	N	SNA	GNR			X	L+	L.
Fabaceae	Melilotus albus	White Sweet-Clover		3		-3	2	N	SNA	G5			X		Medik.
Fabaceae	Robinia pseudoacacia	Black Locust		3		-3	2	N	SNA	G5			X	L+	L.
Fabaceae	Trifolium repens	White Clover		3		-1	4	N	SNA	GNR			X	L+	L.
Fabaceae	Vicia cracca	Tufted Vetch		5		-1	2	N	SNA	GNR			X	L+	L.
Geraniaceae	Geranium robertianum	Herb-Robert	2	3		-2		N	S5	G5			X	L+?	L.
Juglandaceae	Juglans nigra	Black Walnut	5	3				N	S4?	G5			X	L5	L.
Lamiaceae	Lamium amplexicaule	Common Dead-Nettle		5		-1		N	SNA	GNR			X	L+	L.
Lamiaceae	Leonurus cardiaca ssp. cardiaca	Common Motherwort		5		-2		N	SNA	GNRTNR			X	L+	L.
Lythraceae	Lythrum salicaria	Purple Loosestrife		-5	I	-3	1	N	SNA	G5			X	L+	L.
Malvaceae	Abutilon theophrasti	Velvetleaf		3		-1	3	N	SNA	GNR			X	L+	Medikus
Moraceae	Morus alba	White Mulberry		0		-3	1	N	SNA	GNR			X	L+	L.
Oleaceae	Syringa vulgaris	Common Lilac		5		-2	2	N	SNA	GNR			X	L+	L.
Onagraceae	Circaea canadensis ssp. canadensis	Canada Enchanter's Nightshade	2	3				N	S5	G5T5			X		(L.) Hill
Onagraceae	Epilobium ciliatum ssp. ciliatum	Northern Willowherb	3	-3	I*			N	S5	G5T5			X	L5	Raf.
Onagraceae	Epilobium parviflorum	Small-Flowered Willowherb		3	T	-1		N	SNA	GNR			X	L+	Schreber
Penthoraceae	Penthorum sedoides	Ditch-Stonecrop	4	-5	I			N	S5	G5			X	L4	L.
Plantaginaceae	Plantago major	Common Plantain		3		-1		N	SNA	G5			X	L+	L.
Plantaginaceae	Plantago rugelii	Rugel's Plantain	1	0				N	S5	G5			X	L5	Decaisne
Plantaginaceae	Veronica arvensis	Corn Speedwell		5		-1		N	SNA	GNR			X	L+	L.
Polygonaceae	Fallopia scandens	Climbing False Buckwheat	3	0				N	S4S5	G5			X		(L.) Holub
Polygonaceae	Persicaria hydropiper	Marshpepper Smartweed		-5	I			N	SNA	GNR			X		(L.) Delarbre
Polygonaceae	Persicaria lapathifolia	Pale Smartweed	2	-3	T			N	S5	G5			X		(L.) Delarbre
Polygonaceae	Persicaria maculosa	Spotted Lady's-Thumb		-3	T	-1		N	SNA	G3G5			X		Gray
Polygonaceae	Persicaria pensylvanica	Pennsylvania Smartweed	3	-3	I			N	S5	G5			R3		(L.) M. Gómez de la Maza
Polygonaceae	Rumex crispus	Curled Dock		0	T	-2		N	SNA	GNR			X	L+	L.
Ranunculaceae	Actaea rubra ssp. rubra	Red Baneberry	6	3				N	S5	G5T5			X	L5	(Aiton) Willdenow
Ranunculaceae	Ranunculus sceleratus	Cursed Buttercup	2	-5	I			N	S5	G5			X	L+?	L.
Rhamnaceae	Rhamnus cathartica	European Buckthorn		0	T	-3	1	N	SNA	GNR			X	L+	L.
Rosaceae	Geum laciniatum	Rough Avens	4	-3	T			N	S4	G5			X	L4	Murray
Rubiaceae	Galium mollugo	Smooth Bedstraw		5		-2	2	N	SNA	GNR			X	L+	L.
Salicaceae	Populus deltoides ssp. deltoides	Eastern Cottonwood	4	0	T			N	S5	G5T5			X		Bartram ex Marshall
Salicaceae	Salix alba	White Willow		-3	T	-2	3	N	SNA	G5			X	L+	L.
Salicaceae	Salix amygdaloides	Peach-Leaved Willow	6	-3	T			N	S5	G5			R6	L4	Andersson
Salicaceae	Salix petiolaris	Meadow Willow	3	-3	I			N	S5	G5			X	L4	J.E. Smith
Sapindaceae	Acer negundo	Manitoba Maple	0	0	T		1	N	S5	G5			X	L+?	L.
Sapindaceae	Acer saccharinum	Silver Maple	5	-3	I			N	S5	G5			X		L.
Solanaceae	Solanum dulcamara	Bittersweet Nightshade		0	T	-2	3	N	SNA	GNR			X	L+	L.
Ulmaceae	Ulmus americana	White Elm	3	-3	T			N	S5	G4			X	L5	L.
Verbenaceae	Verbena hastata	Blue Vervain	4	-3	I			N	S5	G5			X	L5	L.
Vitaceae	Vitis riparia	Riverbank Grape	0	0				N	S5	G5			X	L5	Michaux
Cupressaceae	Thuja occidentalis	Eastern White Cedar	4	-3	T			N	S5	G5			X	L5	L.
Pinaceae	Picea glauca	White Spruce	6	3	T			N	S5	G5			R3	L3	(Moench) Voss
Araceae	Lemna minor	Small Duckweed	5	-5	I			N	S5	G5			X	L5	L.
Cyperaceae	Carex cristatella	Crested Sedge	3	-3	I			N	S5	G5			X	L5	Britton
Cyperaceae	Carex retrorsa	Retrorse Sedge	5	-5	I			N	S5	G5			X	L4	Schweinitz

FAMILY	LATIN NAME	COMMON NAME	COEFFICIENT OF CONSERVATISM (NHIC SEP 19 2023)	WETNESS INDEX (NHIC SEP 19 2023)	OWES WETLAND SPECIES	WEEDINESS INDEX	INVASIVE EXOTIC RANK (Urban Forest Associates 2002)	PROVINCIALLY TRACKED (NHIC) (NHIC FEB 6 2024)	PROVINCIAL STATUS (S-RANK) (NHIC FEB 6 2024)	GLOBAL STATUS (G-RANK) (NHIC FEB 6 2024)	SARO (MNRF) (NHIC FEB 6 2024)	COSEWIC STATUS (NHIC FEB 6 2024)	PEEL (Varga 2005)	TRCA (TRCA April 2023)	AUTHORITY
Cyperaceae	Carex stipata var. stipata	Awl-Fruited Sedge	3	-5	I			N	S5	G5T5			X	L5	Muhlenb. ex Willdenow
Cyperaceae	Carex vulpinoidea	Fox Sedge	3	-5	I			N	S5	G5			X	L5	Michaux
Juncaceae	Juncus bufonius	Toad Rush	1	-3	T			N	S5	G5			X	L5	L.
Juncaceae	Juncus effusus	Soft Rush	4	-5				N	S5	G5			X	L5	L.
Poaceae	Agrostis gigantea	Redtop		-3		-2		N	SNA	G4G5			X	L+	Roth
Poaceae	Agrostis stolonifera	Creeping Bentgrass		-3	T			N	SNA	G5			X	L+?	L.
Poaceae	Bromus inermis	Smooth Brome		5		-3	4	N	SNA	G5T5			X		Leysser
Poaceae	Bromus japonicus	Japanese Brome		3		-1		N	SNA	GNR			X	L+	Thunberg ex Murray
Poaceae	Dactylis glomerata	Orchard Grass		3		-1	3	N	SNA	GNR			X	L+	L.
Poaceae	Echinochloa crus-galli	Large Barnyard Grass		-3	T	-1		N	SNA	GNR			X	L+	(L.) Palisot de Beauvois
Poaceae	Elymus repens	Quackgrass		3		-3	3	N	SNA	GNR			X	L+	(L.) Gould
Poaceae	Eragrostis minor	Little Lovegrass		5		-1		N	SNA	GNR			X	L+	Host
Poaceae	Hordeum jubatum ssp. jubatum	Foxtail Barley	0	0	T			N	S5?	G5T5			X		L.
Poaceae	Lolium arundinaceum	Tall Fescue		3		-1	3	N	SNA	GNR			X		(Schreber) Darbyshire
Poaceae	Panicum capillare	Common Panicgrass	0	0				N	S5	G5			X	L5	L.
Poaceae	Panicum dichotomiflorum ssp. dichotom	Fall Panicgrass		-3		-1		N	SNA	G5T5			X		Michaux
Poaceae	Phalaris arundinacea var. arundinacea	Reed Canary Grass	0	-3	T		P	N	S5	G5TNR			X		L.
Poaceae	Phleum pratense ssp. pratense	Common Timothy		3		-1		N	SNA	GNRTNR			X	L+	L.
Poaceae	Poa palustris	Fowl Bluegrass	5	-3	I			N	S5	G5			X	L5	L.
Poaceae	Setaria pumila	Yellow Foxtail		0		-1	4	N	SNA	GNR			X		(Poir.) Roemer & Schultes
Poaceae	Setaria viridis var. viridis	Green Foxtail		5		-1	4	N	SNA	GNRTNR			X	L+	(L.) Palisot de Beauvois
Typhaceae	Typha angustifolia	Narrow-Leaved Cattail		-5	I		P	N	SNA	G5			X	L+	L.
Typhaceae	Typha x glauca	Blue Cattail		-5	I		P	N	SNA	GNA			X	L+	Godron

STATISTICS		
Species Diversity		
Total Number of Species:	108	
Native Species:	52	48%
Exotic Species:	56	52%
S1-S3 Species:	0	0%
S4 Species:	3	6%
S5 Species:	49	94%
Provincially Tracked Species:	0	0%
Floristic Quality Assessment (FQA)		
Mean Co-efficient of Conservatism (CC)	2.9	
CC 0 - 3 = lowest sensitivity	32	62%
CC 4 - 6 = moderate sensitivity	19	37%
CC 7 - 8 = high sensitivity	0	0%
CC 9 - 10 = highest sensitivity	0	0%
Floristic Quality Index (FQI)	21	
Weedy & Invasive Species		
Mean Weediness Index (Oldham et al):	-1.5	
-1 = low potential invasiveness	32	57%
-2 = moderate potential invasiveness	13	23%
-3 = high potential invasiveness	7	13%
Mean Exotic Rank (Urban Forest Associates):	3	
Category 1	5	9%
Category 2	6	11%
Category 3	8	14%
Category 4	5	9%
Potentially Invasive (P)	3	5%
Wetland Species		
Mean Wetness Index	0.5	
Upland	16	15%
Facultative upland	37	34%
Facultative	19	18%
Facultative wetland	24	22%
Obligate wetland	12	11%

Table 5. Amphibian Call Count Survey Station Results (2022)

SURVEY ROUND	STATION NUMBER	SPECIES CODE												WATER
		NOAM	AMTO	FOTO	GRTR	SPPE	CHFR	WOFR	NLFR	PIFR	GRFR	BULL	MIFR	Present (Y/N)
1	3-1	X												NA
2	3-1	X												NA
3	3-1	X												NA
1	3-2	X												NA
2	3-2	X												NA
3	3-2	X												NA
1	3-3	X												Y
2	3-3	X												NA
3	3-3	X												N
1	3-4							2(2)						NA
2	3-4										1(1)			NA
3	3-4				1(2)									NA
1	3-5							2(3)						Y
2	3-5	X												Y
3	3-5	X												Y
1	3-6	X												NA
2	3-6	X												N/A
3	3-6	X												NA
1	3-10		2(3)											NA
2	3-10	X												NA
3	3-10										1(4)			NA
1	3-11							1(2)						Y
2	3-11	X												Y
3	3-11				1(3)									Y
1	3-12							1(1)						Y
2	3-12	X												Y
3	3-12	X												N

Table 5. Amphibian Call Count Survey Station Results (2022)

SURVEY ROUND	STATION NUMBER	SPECIES CODE												WATER
		NOAM	AMTO	FOTO	GRTR	SPPE	CHFR	WOFR	NLFR	PIFR	GRFR	BULL	MIFR	Present (Y/N)
1	3-13		3(5)											Y
2	3-13	X												NA
3	3-13	X												NA
1	3-14	X												Y
2	3-14	X												Y
3	3-14	X												Y
1	3-15	X												Y
2	3-15	X												Y
3	3-15	X												N
1	3-16	X												Y
2	3-16	X												N

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOAM	No Amphibians	No amphibians despite survey effort
AMTO	American Toad	*Anaxyrus americanus*
FOTO	Fowler's Toad	*Anaxyrus fowleri*
GRTR	Gray Treefrog	*Hyla versicolor*
SPPE	Spring Peeper	*Pseudacris crucifer*
CHFR	Western Chorus Frog	*Pseudacris triseriata*
WOFR	Wood Frog	*Lithobates sylvaticus*
NLRF	Northern Leopard Frog	*Lithobates pipiens*
PIFR	Pickerel Frog	*Lithobates palustris*
GRFR	Green Frog	*Lithobates clamitans*
BULL	American Bullfrog	*Lithobates catesbeianus*
MIFR	Mink Frog	*Lithobates septentrionalis*

CALL CODES	
X	No amphibians heard
1	Calls can be counted without error
2	Calls overlap but can be reliably estimated
3	Calls overlap too much to estimate number

Note: For each species, the first number is the call code and the second number, which is in brackets, is the number of individuals of that species heard calling.

Table 6. Snake Survey Results

DATE SURVEYED	SURVEY ROUND	TRANSECT OR STATION NUMBER	SPECIES CODE														
			NOSN	EAGA	MISN	BRSN	RBSN	NWSN	RISN	BLRA	BUGA	FOSN	HOSN	MASS	RNSN	SGSN	QUSN
2021																	
AP 07	1	ST-1	X														
AP 07	1	ST-2	X														
2024																	
MA 03	1	ST-2	X														
MA 15	2	ST-2	X														
MA 16	3	ST-2	X														

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOSN	No snakes observed despite survey effort	
EAGA	Eastern Gartersnake	*Thamnophis sirtalis sirtalis*
MISN	Eastern Milksnake	*Lampropeltis triangulum*
BRSN	DeKay's Brownsnake	*Storeria dekayi*
RBSN	Northern Red-bellied Snake	*Storeria occipitomaculata occipitomaculata*
NWSN	Northern Watersnake	*Nerodia sipedon sipedon*
RASN	Gray Ratsnake	*Pantherophis spiloides*
RISN	Eastern Ribbonsnake	*Thamnophis sauritus*
BLRA	Blue Racer	*Coluber constrictor foxii*
BUGA	Butler's Gartersnake	*Thamnophis butleri*
FOSN	Eastern Foxsnake	*Pantherophis gloyd*
HOSN	Eastern Hog-nosed Snake	*Heterodon platifhinos*
MASS	Massassauga	*Sistrusus catenatus catenatus*
RNSN	Ring-necked Snake	*Diadophis punctatus*
SGSN	Smooth Greensnake	*Opheodrys vernalis*
QUSN	Queensnake	*Regina septemvittata*

DATE	
MONTH	CODE
January	JA
February	FE
March	MR
April	AP
May	MA
June	JN
July	JL
August	AU
September	SE
October	OC
November	NO
December	DE

Table 7. Turtle Survey Results

DATE SURVEYED	SURVEY ROUND	TRANSECT OR STATION NUMBER	SPECIES CODE								
			NOTU	MPTU	SNTU	MATU	BLTU	SSTU	WOTU	STIN	SPTU
07-AP-21	1	BS2	X								
25-OC-22	2	BS2	X								
27-OC-22	3	BS2	X								
07-AP-21	1	BS3	X								
25-OC-22	2	BS3	X								
27-OC-22	3	BS3	X								

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOTU	No turtles observed despite survey effort	
MPTU	Midland Painted Turtle	*Chrysemys picta marginata*
SNTU	Snapping Turtle	*Chelydra serpentina*
MATU	Northern Map Turtle	*Graptemys geographica*
BLTU	Blanding's Turtle	*Emydoidea blandingii*
SSTU	Spiny Soft-shelled Turtle	*Apalone spinifera*
WOTU	Wood Turtle	*Glyptemys insculpta*
STIN	Stinkpot Turtle	*Stemotherus odoratus*
SPTU	Spotted Turtle	*Clemmys guttata*

DATE	
MONTH	CODE
January	JA
February	FE
March	MR
April	AP
May	MA
June	JN
July	JL
August	AU
September	SE
October	OC
November	NO
December	DE

No.	X	Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
	X									
	X									
	X	**Anseriformes**								
	X	***Anatidae***								
		Canada Goose	CANG	*Branta canadensis*	S5	G5			X	OB-X
		Mallard	MALL	*Anas platyrhynchos*	S5	G5			X	PR-P
	X									
	X	**Columbiformes**								
	X	***Columbidae***								
		Rock Pigeon	ROPI	*Columba livia*	SNA	G5				PO-H
		Mourning Dove	MODO	*Zenaida macroura*	S5	G5				CO-FY
	X									
	X	**Charadriiformes**								
	X	***Charadriidae***								
		Killdeer	KILL	*Charadrius vociferus*	S4B	G5				CO-DD
	X									
	X	***Scolopacidae***								
		Upland Sandpiper	UPSA	*Bartramia longicauda*	S2B	G5			X	PR-P
		Spotted Sandpiper	SPSA	*Actitis macularius*	S5B	G5			X	PR-A
	X									
	X	***Laridae***								
		Ring-billed Gull	RBGU	*Larus delawarensis*	S5	G5			X	OB-X
	X									
	X	**Pelecaniformes**								
	X	***Ardeidae***								
		Great Blue Heron	GBHE	*Ardea herodias*	S4	G5			X	OB-X
	X									
	X	**Accipitriformes**								
	X	***Accipitridae***								
		Cooper's Hawk	COHA	*Accipiter cooperii*	S4	G5	NAR	NAR	X	PO-H
		Red-tailed Hawk	RTHA	*Buteo jamaicensis*	S5	G5	NAR	NAR	X	PO-H
	X									
	X	**Piciformes**								
	X	***Picidae***								
		Downy Woodpecker	DOWO	*Dryobates pubescens*	S5	G5				PO-H
		Northern Flicker	NOFL	*Colaptes auratus*	S5	G5				PR-P
	X									
	X	**Falconiformes**								
	X	***Falconidae***								
		American Kestrel	AMKE	*Falco sparverius*	S4	G5			X	PO-H
	X									
	X	**Passeriformes**								
	X	***Tyrannidae***								
		Great Crested Flycatcher	GCFL	*Myiarchus crinitus*	S5B	G5				PO-H
		Eastern Kingbird	EAKI	*Tyrannus tyrannus*	S4B	G5				PR-T
		Willow Flycatcher	WIFL	*Empidonax traillii*	S4B	G5			X	PR-T
		Eastern Phoebe	EAPH	*Sayornis phoebe*	S5B	G5				PR-V
	X									
	X	***Vireonidae***								
		Warbling Vireo	WAVI	*Vireo gilvus*	S5B	G5				PR-T
		Red-eyed Vireo	REVI	*Vireo olivaceus*	S5B	G5				PO-S
	X									
	X	***Corvidae***								
		Blue Jay	BLJA	*Cyanocitta cristata*	S5	G5				PR-T
		American Crow	AMCR	*Corvus brachyrhynchos*	S5	G5				PR-T
		Common Raven	CORA	*Corvus corax*	S5	G5				OB-X
	X									
	X	***Alaudidae***								
		Horned Lark	HOLA	*Eremophila alpestris*	S4	G5				CO-NE
	X									
	X	***Hirundinidae***								
		Tree Swallow	TRES	*Tachycineta bicolor*	S4S5B	G5				PO-H
		Barn Swallow	BARS	*Hirundo rustica*	S4B	G5	THR	SC		OB-X
	X									
	X	***Paridae***								
		Black-capped Chickadee	BCCH	*Poecile atricapillus*	S5	G5				PR-T
	X									
	X	***Sittidae***								
		Red-breasted Nuthatch	RBNU	*Sitta canadensis*	S5	G5			X	PO-H
	X									
	X	***Troglodytidae***								
		House Wren	HOWR	*Troglodytes aedon*	S5B	G5				PR-T

No.	X	Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
	X									
	X									
	X									
	X	***Turdidae***								
		American Robin	AMRO	*Turdus migratorius*	S5	G5				CO-FY
	X									
	X	***Mimidae***								
		Brown Thrasher	BRTH	*Toxostoma rufum*	S4B	G5			X	PR-T
	X									
	X	***Sturnidae***								
		European Starling	EUST	*Sturnus vulgaris*	SNA	G5				CO-FY
	X									
	X	***Bombycillidae***								
		Cedar Waxwing	CEDW	*Bombycilla cedrorum*	S5	G5				PR-P
	X									
	X	***Passeridae***								
		House Sparrow	HOSP	*Passer domesticus*	SNA	G5				CO-AE
	X									
	X	***Fringillidae***								
		American Goldfinch	AMGO	*Spinus tristis*	S5	G5				PR-P
	X									
	X	***Passerellidae***								
		Chipping Sparrow	CHSP	*Spizella passerina*	S5B, S3N	G5				PR-T
		Field Sparrow	FISP	*Spizella pusilla*	S4B, S3N	G5			X	PO-S
		Vesper Sparrow	VESP	*Pooecetes gramineus*	S4B	G5			X	CO-DD
		Savannah Sparrow	SAVS	*Passerculus sandwichensis*	S5B, S3N	G5			X	CO-CF
		Song Sparrow	SOSP	*Melospiza melodia*	S5	G5				CO-CF
		Swamp Sparrow	SWSP	*Melospiza georgiana*	S5B, S4N	G5				PO-S
	X									
	X	***Icteridae***								
		Bobolink	BOBO	*Dolichonyx oryzivorus*	S4B	G5	THR	THR		PR-T
		Eastern Meadowlark	EAME	*Sturnella magna*	S4B, S3N	G5	THR	THR		PR-T
		Red-winged Blackbird	RWBL	*Agelaius phoeniceus*	S5	G5				CO-CF
		Brown-headed Cowbird	BHCO	*Molothrus ater*	S5	G5				CO-FY
		Common Grackle	COGR	*Quiscalus quiscula*	S5	G5				PR-P
	X									
	X	***Parulidae***								
		Common Yellowthroat	COYE	*Geothlypis trichas*	S5B, S3N	G5				PR-T
	X									
	X	***Cardinalidae***								
		Northern Cardinal	NOCA	*Cardinalis cardinalis*	S5	G5				PR-T
	X									

Species Common Name and Scientific Name: Chesser, R. T., K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., D. F. Stotz, B. M. Winger, and K. Winker. 2018. Check-list of North American Birds (online). American Ornithological Society. Available online: http://checklist.aou.org/taxa

Species Code: Consistent with the American Ornithologists' Union. 2018. Species 4-Letter-Codes. Available online: http://www.birdsontario.org/atlas/codes.jsp?lang=en&pg=species

Highest Breeding Evidence: Codes assigned for breeding evidence are consistent with the Ontario Breeding Bird Atlas (OBBA). 2018. Breeding Evidence Codes. Available online: http://www.birdsontario.org/atlas/codes.jsp?lang=en&pg=breeding&sortorder=aou

S ranks: Provincial ranks are from the Natural Heritage Information Centre; S1 (critically imperiled), S2 (imperlied), S3 (vulnerable), S4 (apparently secure), S5 (secure); ranks were updated using NHIC species list 2021. Available to download from: https://www.ontario.ca/page/get-natural-heritage-information

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COSEWIC: Assessed Species at Risk at the national level as listed by the Committee on the Status of Endangered Wildlife in Canada (from COSEWIC: https://wildlife-species.canada.ca/species-risk-registry/sar/index/default_e.cfm); END - Endangered, THR - Threatened, SC - Special Concern, NAR - Not at Risk

SWH Indicator Species: SWH refers to Significant Wildlife Habitat as defined by the MNRF (2015) Significant Wildlife Habitat Criteria Schedules for Ecoregions 7E and 6E (as appropriate for the Subject Lands). SWH indicator species are identified in this table and any potential SWH is discussed in the text of this report. Available online: http://www.townofnemi.on.ca/wp-content/uploads/2016/02/NEMI-OP-App-C-schedule-6e-jan-2015-access-ver-final-s.pdf

No.	X	Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
	X									
	X									
	X	**Anseriformes**								
	X	***Anatidae***								
	X	Canada Goose	CANG	*Branta canadensis*	S5	G5			X	OB-X
	X	Mallard	MALL	*Anas platyrhynchos*	S5	G5			X	OB-X
	X									
	X	**Columbiformes**								
	X	***Columbidae***								
	X	Rock Pigeon	ROPI	*Columba livia*	SNA	G5				CO-NE
	X	Mourning Dove	MODO	*Zenaida macroura*	S5	G5				PO-S
	X									
	X	***Charadriidae***								
	X	Killdeer	KILL	*Charadrius vociferus*	S4B	G5				CO-FY
	X									
	X	***Scolopacidae***								
	X	Upland Sandpiper	UPSA	*Bartramia longicauda*	S2B	G5			X	PO-S
	X	Spotted Sandpiper	SPSA	*Actitis macularius*	S5B	G5			X	PO-S
	X									
	X	***Laridae***								
	X	Ring-billed Gull	RBGU	*Larus delawarensis*	S5	G5			X	OB-X
	X									
	X	***Ardeidae***								
	X	Great Blue Heron	GBHE	*Ardea herodias*	S4	G5			X	OB-X
	X									
	X	***Accipitridae***								
	X	Red-tailed Hawk	RTHA	*Buteo jamaicensis*	S5	G5		NAR	X	OB-X
	X									
	X	***Corvidae***								
	X	Blue Jay	BLJA	*Cyanocitta cristata*	S5	G5				PO-S
	X									
	X	***Alaudidae***								
	X	Horned Lark	HOLA	*Eremophila alpestris*	S4	G5				PR-P
	X									
	X	***Hirundinidae***								
	X	Northern Rough-winged Swallow	NRWS	*Stelgidopteryx serripennis*	S4B	G5			X	OB-X
	X	Barn Swallow	BARS	*Hirundo rustica*	S4B	G5	SC	SC		CO-FY
	X									
	X	***Turdidae***								
	X	American Robin	AMRO	*Turdus migratorius*	S5	G5				PR-T
	X									
	X	***Sturnidae***								
	X	European Starling	EUST	*Sturnus vulgaris*	SNA	G5				CO-FY
	X									
	X	***Bombycillidae***								
	X	Cedar Waxwing	CEDW	*Bombycilla cedrorum*	S5	G5				PR-P
	X									
	X	***Passeridae***								
	X	House Sparrow	HOSP	*Passer domesticus*	SNA	G5				CO-NE
	X									
	X	***Fringillidae***								
	X	American Goldfinch	AMGO	*Spinus tristis*	S5	G5				PR-T
	X									
	X	***Passerellidae***								
	X	Vesper Sparrow	VESP	*Pooecetes gramineus*	S4B	G5			X	PR-T
	X	Savannah Sparrow	SAVS	*Passerculus sandwichensis*	S5B, S3N	G5			X	CO-FY
	X	Song Sparrow	SOSP	*Melospiza melodia*	S5	G5				PR-T
	X									
	X	***Icteridae***								
	X	Bobolink	BOBO	*Dolichonyx oryzivorus*	S4B	G5	THR	THR		PO-H
	X	Eastern Meadowlark	EAME	*Sturnella magna*	S4B, S3N	G5	THR	THR		PO-H
	X	Red-winged Blackbird	RWBL	*Agelaius phoeniceus*	S5	G5				CO-FY
	X	Brown-headed Cowbird	BHCO	*Molothrus ater*	S5	G5				PO-S
	X	Common Grackle	COGR	*Quiscalus quiscula*	S5	G5				OB-X
	X									
	X	***Cardinalidae***								
	X	Rose-breasted Grosbeak	RBGR	*Pheucticus ludovicianus*	S5B	G5				OB-X
	X									

Species Common Name and Scientific Name: Chesser, R. T., K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., D. F. Stotz, B. M. Winger, and K. Winker. 2018. Check-list of North American Birds (online). American Ornithological Society. Available online: http://checklist.aou.org/taxa

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No.	X	Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	SARO (MECP)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
	X									
	X									

Highest Breeding Evidence: Codes assigned for breeding evidence are consistent with the Ontario Breeding Bird Atlas (OBBA). 2018. Breeding Evidence Codes. Available online: http://www.birdsontario.org/atlas/codes.jsp?lang=en&pg=breeding&sortorder=aou

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Table 9. Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION PER HDFA GUIDELINES	INTERPRETED MANAGEMENT RECOMMENDATION – WILDFIELD VILLAGE CONSULTANT TEAM
	FUNCTION	MODIFIERS					
H1S1	FT – 7 (swale) FC – 2 (Round 1) FC– 2 (Round 2; 2022) FC – 1 (Round 2; 2024) FC– 1 (Round 3; 2022) **Contributing** – Reach was holding standing water during spring assessments and was dry by early summer. Considering the local topography, it is anticipated this feature will display ephemeral flow.	Hydrology modified by adjacent and upstream agricultural activities.	**Limited** – Riparian area consists of active agricultural crops.	**Contributing** – No direct fish habitat.	**Limited** – The swale provides limited terrestrial function.	**Mitigation**	**Mitigation**
H8S1	FT-7 (swale) FC – 1 (Round 1; 2022) FC-2 (Round 1; 2024) FC-2 (Round 2; 2024) FC- 1 (Round 3; 2024) **Limited** – Reach was holding standing water during early and late spring assessments and was dry by summer.		**N/A**	**N/A**	**N/A**	**No Management Required**	**No Management Required**

Table 9. Headwater Drainage Feature Classification and Management Recommendations

DRAINAGE FEATURE SEGMENT	STEP 1. HYDROLOGY		STEP 2. RIPARIAN	STEP 3. FISH HABITAT	STEP 4. TERRESTRIAL HABITAT	MANAGEMENT RECOMMENDATION PER HDFA GUIDELINES	INTERPRETED MANAGEMENT RECOMMENDATION – WILDFIELD VILLAGE CONSULTANT TEAM
	FUNCTION	MODIFIERS					
H9S1	FT-7 (swale) FC-2 (Round 1) FC-2 (Round 2) FC- 1 (Round 3) **Limited** – Reach was holding standing water during early and late spring assessments and was dry by summer		**N/A**	**N/A**	**N/A**	**No Management Required**	**No Management Required**
H10S1	FT-7 (swale) FC-2 (Round 1) FC-2 (Round 2) FC- 1 (Round 3) **Limited** – Reach was holding standing water during early and late spring assessments and was dry by summer		**N/A**	**N/A**	**N/A**	**No Management Required**	**No Management Required**

LEGEND:

FT	Feature Types (1-defined natural channel, 2-channelized, 3-multi-thread, 4-no defined feature, 5-tiled drainage, 6-wetland, 7-swale, 8-roadside ditch, 9-online pond outlet)
FC	Flow Conditions (1-no surface water, 2-standing water, 3-interstitial flow, 4-surface flow minimal, 5-surface flow substantial)

Note: Codes correspond with Ontario Stream Assessment Protocol (OSAP) guidelines.

Table 10. Fish Community Survey Results

SPECIES		STATION IDENTIFICATION	
Common Name	**Scientific Name**	**FT2 at H1S1 (2022)**	**FS6 at H1S1 (2024)**
No Fish Species Captured		0	0

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
1. SEASONAL CONCENTRATION AREAS				
Waterfowl Stopover and Staging Areas (terrestrial)	No –CUM vegetation communities identified within 120 m of the Subject Lands are considered too small to support sufficient numbers of species.	N/A	N/A	No – SWH type is not present within the Subject Lands
Waterfowl Stopover and Staging Areas (aquatic)	No – While MAS and SWD vegetation communities are present within the Subject Lands, they are considered too small to support sufficient numbers of species.	N/A	N/A	No – SWH type is not present within the Subject Lands
Shorebird Migratory Stopover Areas	Yes – MAM vegetation communities are present within the Subject Lands.	No – Muddy and unvegetated shorelines are not present within the Subject Lands.	N/A	No – SWH type is not present within the Subject Lands
Raptor Wintering Areas	No – Combinations of forested and upland vegetation communities are not present within the Subject Lands.	N/A	N/A	No – SWH type is not present within the Subject Lands
Bat Hibernacula	No – Cave and Crevice communities are absent from the Subject Lands.	N/A	N/A	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
Bat Maternity Colonies	No- Suitable forest vegetation communities are not present within the Subject Lands.	N/A Subject LandsSubject Lands	N/A Subject LandsSubject Lands	No – SWH type is not present in the Subject Lands
Turtle Wintering Areas	Yes – Suitable ecosite (MA) are present within the Subject Lands.	Yes – Two potentially suitable features were assessed within the Subject Lands. These included the following: BS2 (Cattail Mineral Shallow Marsh (MAS2-1)) and B3 (a ponded area on residential property on the Gore Road).	Yes – Turtle Basking Surveys were completed within the Subject Lands (**Table 7**, **Appendix C**). BS2: A single Midland Painted Turtle was recorded within this feature, during targeted surveys. Two additional Midland Painted Turtles were observed incidentally in July at a MAS2-1, however, this is not deemed to indicate or confirm turtle overwintering behaviour. BS3: No turtles were recorded at this feature during targeted surveys..	No – SWH type is not present in the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
Reptile Hibernacula	Yes – Ecosites may be present on the Subject Lands.	Yes - Suitable rocks, logs or debris were recorded during field investigations.	Yes - Snake Visual Encounters Surveys were conducted within the Subject Lands (**Table 6**, **Appendix C**). However, no snake species were identified and no suitable hibernacula was present.	No – SWH type is not present within the Subject Lands
Colonial Bird Nesting Sites (bank/cliff)	Yes – CUM vegetation communities are present within 120 m of the Subject Lands.	No – Presence of exposed or eroding banks, hills, steep slopes and sand piles were not recorded within the Subject Lands.	N/A	No – SWH type is not present within the Subject Lands
Colonial Bird Nesting Sites (tree/shrubs)	No – SWD vegetation communities are not present within the Subject Lands.	N/ASubject Lands	N/A	No – SWH type is not present within the Subject Lands
Colonial Bird Nesting Sites (ground)	No – No rocky islands or peninsulas are present on the Subject Lands.	N/A	N/A	No – SWH type is not present within the Subject Lands
Migratory Butterfly Stopover Areas	Yes – CUM vegetation communities are identified within 120 m of the Subject Lands.	No – The Subject Lands is located more than 5 km from Lake Ontario.	N/A	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
Migratory Landbird Stopover Areas	No- Forested vegetation communities are not identified within the Subject Lands.	N/A Subject Lands	N/A	No – SWH type is not present within the Subject Lands
Deer Yarding Areas	No – Mapping from the MNRF LIO database did not depict any deer yarding areas onor adjacent to the Subject Lands.	N/A	N/A	No – SWH type is not present within the Subject Lands
Deer Winter Congregation Areas	No – Mapping from the MNRF LIO database did not depict any deer wintering areas on or adjacent to the Subject Lands.	N/A	N/A	No – SWH type is not present within the Subject Lands
2. RARE VEGETATION COMMUNITIES OR SPECIALIZED HABITAT FOR WILDLIFE				
2a. Rare Vegetation Communities				
Rare Vegetation Types (cliffs, talus slopes, sand barrens, alvars, old-growth forests, savannahs, and tallgrass prairies)	No – Rare vegetation types are not present within the Subject Lands	N/A	N/A	No – SWH type is not present within the Subject Lands
Other Rare Vegetation Types (S1 to S3 communities)	No – Other rare vegetation types are not present within the Subject Lands	N/A	N/A	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
2b. Specialized Wildlife Habitat				
Waterfowl Nesting Area	Yes – MA vegetation communities are present within the Subject Lands.	No- Upland habitat is not adjacent to wetlands habitat within the Subject Lands	N/A	No – SWH type is not present within the Subject Lands
Bald Eagle and Osprey Habitats	No- Forested vegetation communities are not present within the Subject Lands	N/A Subject Lands	N/A	No – SWH type is not present within the Subject Lands
Woodland Raptor Nesting Habitat	No- Forested vegetation communities are not present within the Subject Lands.	N/A Subject LandsSubject Lands	N/A	No – SWH type is not present within the Subject Lands
Turtle Nesting Areas	Yes – MAS ecosites are present within the Subject Lands.	No- No gravel or sandy areas were observed during field investigations	N/A	No – SWH type is not present within the Subject Lands
Seeps and Springs	No– Forested vegetation communities are not present within the Subject Lands.	N/A	N/A	No – SWH type is not present within the Subject Lands
Woodland Amphibian Breeding Habitats (within or < 120m from woodland)	No- Forested vegetation communities are not present within the Subject Lands.	N/A Subject Lands	N/A Subject Lands.	No – SWH type is not present within the Subject Lands
Wetland Amphibian Breeding Habitats (wetland >120m from woodland)	Yes –MA ecosites are present within the Subject Lands.	Yes – Potentially suitable wetland breeding habitats were identified within the Subject Lands.	No – Amphibian call surveys were completed (**Table 5**, **Appendix C**).	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
			However, an insufficient number of individuals and species were recorded at each station. As such, no SWH breeding habitats were confirmed significant.	
Woodland Area-Sensitive Bird Breeding Habitat	No- Forested vegetation communities are not present within the Subject Lands.	N/A Subject Lands	N/A	No – SWH type is not present within the Subject Lands
3. SPECIES OF CONSERVATION CONCERN				
Marsh Bird Breeding Habitat	Yes – MAM ecosites are present within the Subject Lands.	No – MAM2 communities within the Subject Lands lacked shallow water and dense emergent vegetation	N/A	No – SWH type is not present within the Subject Lands
Open Country Bird Breeding Habitat	Yes – CUM vegetation communities are present within 120 m of the Subject Lands.	No – Minimum size criteria is not met (>30 ha).	N/A	No – SWH type is not present within the Subject Lands
Shrub/Early Successional Bird Breeding Habitat	No- Suitable ecosites are not present within the Subject Lands	N/A	N/A	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
Terrestrial Crayfish	Yes – MAM vegetation communities are present within the Subject Lands	N/A	Yes – Observations of terrestrial crayfish were recorded during ecological investigations. Two chimneys were recorded at wetland 3 (MAS2-1) Ten chimneys were recorded in unsuitable disturbed habitat along the south-central portion of the Subject Lands east of amphibian station P3-13	No – SWH type is not present within the Subject Lands. Given the low number of chimneys, the wetland's surface water-fed nature, its small size, and isolation within active agricultural lands, it does not meet the SWH criteria.
Special Concern and Rare Wildlife Species (based on the Secondary Source Review – Section 2.1)				
(i) Common Nighthawk (*Chordeiles minor*) - SC	N/A	No – preferred habitat types of the species (i.e., logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailing) are not present within the Subject Lands.	N/A	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
(ii) Eastern Wood-Pewee (*Contopus virens*) - SC	N/A	No – Forested ecosites are not present within the Subject Lands.	N/A Subject Lands	No- SWH type is not present within the Subject Lands
(iii) Barn Swallow (*Hirundo rustica*)- SC	N/A	Yes- Anthropogenic structures are present and adjacent to the Subject Lands.	Yes – Breeding bird surveys were completed and identified 5 structures on Parcel 5 with active nesting habitat (**Table 8B**, **Appendix C**).	Yes- SWH type is present within farm structures on Parcel 5.
(iv) Golden-winged Warbler (*Vermivora chrysoptera*)- SC	N/A	No – While field edges, a preferred habitat type of the species, is present within the Subject Lands; the Subject Lands are not located within the known occurrence range of the species (MECP 2021).	No – Breeding bird surveys were completed; however, the species was not present within the Subject Lands (**Table 8A** and **8B**, **Appendix C**).	No – SWH type is not present within the Subject Lands
(v) Grasshopper Sparrow (*Ammodramus savannarum*)-SC	N/A	Yes – potentially suitable cultural meadow ecosites are present within 120 m of the Subject Lands.	No – Breeding bird surveys were completed; however, the species was not present within the Subject Lands (**Tables 8A** and **8B**, **Appendix C**).	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
(vi) Purple Martin (*Progne subis*) – S3B	N/A	No – This species almost exclusively nests in artificial roosting boxes. No nesting boxes were present.	No – Breeding bird surveys were completed; however, the species was not present within the Subject Lands (**Table 8A** and **8B**, **Appendix C**).	No – SWH type is not present within the Subject Lands
(vii) Wood Thrush (*Hylocichla mustelina*) - SC	N/A	No – Forested ecosites are not present within the Subject Lands.	N/A Subject Lands	No – SWH type is not present within the Subject Lands
(viii) Upland Sandpiper (*Bartramia longicauda*) S3B	N/A	No - Suitable fallow fields were present within the Subject Lands during the first visit; however, plowing had occurred before the second visit which rendered the habitat unsuitable.	Yes – Breeding bird surveys were completed, and a pair of Upland Sandpiper were observed in fallow fields near PC 5 to PC 2 in 2021. The species was recorded at Point Count 5 in suitable breeding habitat (**Table 8A**, **Appendix C**). In 2024, an Upland Sandpiper was heard vocalizing at PC 5-2.	No – SWH type is no longer present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
			Due to active farming, suitable fallow fields are no longer present within the Subject Lands (**Table 8B**, **Appendix C**).	
(ix) Monarch (*Danaus plexippus*) - SC	N/A	No –Cultural meadow ecosites with Milkweed are not present within the Subject Lands.	N/A	No – SWH type is not present within the Subject Lands
(x) American Brook Lamprey (*Lampretra appendix*)-S3	N/A	Yes - potentially suitable watercourses may provide suitable habitat.	Yes- Fish community sampling was completed. No American Brook Lamprey were observed within the Subject Lands.	No- SWH type is not present within the Subject Lands
(xi) Snapping Turtle (*Chelydra serpentina*)- SC	N/A	Yes – Potentially suitable MAM wetlands may provide suitable habitat.	Yes- Turtle Basking Surveys were completed within the Subject Lands No Snapping Turtle were recorded within the Subject Lands.	No – SWH type is not present within the Subject Lands

Table 11. Significant Wildlife Habitat Assessment (6E)

SIGNIFICANT WILDLIFE HABITAT (SWH) TYPE	ELC ECOSITE(S) PRESENT	HABITAT CRITERIA MET	TARGETED FIELD STUDIES REQUIRED	POTENTIAL FOR SWH TYPE PRESENCE?
(xii) Eastern Ribbonsnake (*Thamnophis sauritus*)- SC	N/A	Yes - potentially suitable wetlands may provide suitable habitat.	Yes- Snake visual encounter surveys were completed within the Subject Lands. No Eastern Ribbonsnakes were recorded within the Subject Lands.	No- SWH type is not present within the Subject Lands.
4. ANIMAL MOVEMENT CORRIDORS				
Amphibian Movement Corridors	N/A	N/A: Since no Amphibian Breeding Amphibian Habitats (wetland) are present, no corridors are present.	N/A	No – SWH type is not present within the Subject Lands
Deer Movement Corridors	NA	NA – Mapping from the MNRF LIO database did not depict any deer wintering areas or deer yarding area on the Subject Lands.	N/A	No – SWH type is not present within the Subject Lands

APPENDIX D – SURVEY METHODOLOGY

1. Botanical Inventory and Ecological Land Classification Methodology

Vegetation communities were first identified on aerial imagery and then verified in the field. Vegetation community types were confirmed, sampled and revised, if necessary, using the sampling protocol of the ELC for Southern Ontario (Lee at al. 1998). ELC was completed to the finest level of resolution (Vegetation Type) where feasible. Generally, vegetation communities of at least 0.5 ha in size were mapped; however, distinct communities smaller than this were also mapped where appropriate. Scientific names primarily follow nomenclature from the Database of Vascular Plants of Canada (Brouillet et al. 2010+). The provincial status of all plant taxa and vegetation communities is based on NHIC (2024).

Identification of potentially sensitive native plant species is based on their assigned coefficient of conservatism (CC) value, as determined by Oldham et al. (1995). This CC value, ranging from 0 (low) to 10 (high), is based on a species' tolerance of disturbance and fidelity to a specific natural habitat. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

2. Wetland Evaluation Methodology

Wetlands present on the Subject Lands were assessed as part of the Phase 1 LSS, as completed for the Wildfield Village LOG. The results of those assessments were carried into this EIS. The assessment approach followed the Ontario Wetland Evaluations System (OWES; 2022).

As stated in the OWES (2022), wetlands smaller than 2 ha are generally not evaluated. However, very small wetlands can provide habitat for wildlife or serve other ecological, hydrological, hydrogeological or social functions and therefore a wetland smaller than 2 ha can undergo a full wetland evaluation provided that the rationale for doing so is provided.

Since the OWES does not provide a defined set of criteria for rationalizing the evaluation of wetlands smaller than 2 ha, GEI developed a standardized approach that is consistent and gives consideration to each of the four main components of OWES: Biological, Social, Hydrological, and Special Features. This approach is based on the logic that high scoring OWES attributes within each of the four main components represent features/functions that are of greatest importance. Wetlands having such features are therefore deemed to have greater value relative to other wetlands, thereby warranting a full evaluation. The presence of these attributes does not necessarily mean the wetland will be provincially significant, but rather that rationale exists for a full evaluation.

Therefore, for unevaluated wetland units smaller than 2 ha, GEI first determined if rationale existed to warrant a full evaluation. Where it did, GEI completed a full evaluation following OWES protocol using GEI's comprehensive field data. Where rationale did not exist, the wetlands were treated as non-provincially significant.

3. Feature Staking Methodology

Feature staking for the wetland limits within the Subject Lands were completed on November 7, 2023, and September 20, 2024 with TRCA and GEI to determine their limits.

The limits of wetlands were delineated and surveyed in accordance with the methods outlined in the OWES Manual for Southern Ontario (MNRF 2022).

4. Amphibian Call Count Survey Methodology

These surveys followed standard protocols in the Great Lakes Marsh Monitoring Program (BSC 2014). Surveys were conducted on warm nights with little wind. Surveys commenced one half hour before dusk and end before midnight. Visits were at least 15 days apart and as per protocols. The first visit occurred within a minimum nighttime air temperature of 5°C, the second visit with a minimum of 10°C and the third visit with a minimum of 17°C. If noise from plane, road traffic and/or trains was present, monitoring was delayed and began during a quiet period.

Each station was surveyed for three minutes and a three-level call category system was used to identify the level and type of frog activity.

The standard levels are:

1. Individual calls do not overlap and calling individuals can be discreetly counted;
2. Calls of individuals sometimes overlap but number of individuals can still be estimated; and
3. Overlap among calls seems continuous (full chorus) and a count estimate is impossible.

Amphibians were recorded as within the station if they were within 100 m. All other species were recorded as incidental records heard outside the station.

5. Snake Visual Encounter Survey Methodology

Preliminary aerial photography review was performed to identify suitable snake habitat, which may include cultural meadow, disturbed meadow, wetland edges, cultural woodland, cultural savannah, rural residence and farm buildings. Surveys focused on searching natural cover like rocks, logs and debris.

Transects were walked along the Subject Lands. Surveys were conducted between 9:00 and 17:00 under sunny conditions with air temperatures between 10°C and 25°C, or alternatively under overcast conditions where air temperatures are between 15°C and 30°C. On days when afternoon air temperature exceeds 25°C surveys were conducted between 8:00 and 12:00 or 17:00 and 20:00. Data recorded during snake surveys includes species observed and locations (UTM coordinates), air temperature, water temperature, start and end time, and weather conditions. Other wildlife observed during these surveys were also recorded. This survey methodology focuses on snake hibernacula features, to determine if these features occur on the Subject Lands. Survey methods are based on MNRF (2016) and Toronto Zoo (Caverhill et al. 2011) snake survey protocols and are also informed by species-specific habitat preferences.

6. Turtle Basking Survey Methodology

Potentially suitable aquatic habitat for turtles was determined using aerial photography (ponds, open wetlands, and riparian/ lacustrine areas). Surveys were conducted between 8:00 and 17:00 under sunny conditions with air temperatures between 5°C and 25°C, or alternatively under overcast conditions where air temperatures are between 15°C and 30°C. On days when afternoon air temperature exceeds 25°C surveys were conducted between 8:00 and 10:00. Binoculars were used to scan, from a distance, for 30 minutes, the edges and surface of each water body for basking turtles (COSEWIC 2008; MNRF 2015; Caverhill et al. 2011). Data recorded includes: water and air temperatures (basking prevalent when air is warmer than water), vegetation composition around the water body, and presence of basking features (logs, floating vegetation mats, floating/ emergent debris such as tires).

7. Breeding Bird Survey Methodology

Breeding bird surveys were conducted following protocol set forth by the Ontario Breeding Bird Atlas (Cadman et al. 2007), the Ontario Forest Bird Monitoring Program (Cadman et al. 1998) and the Marsh Monitoring Program (Bird Studies Canada 2014 and 2006).

Surveys were conducted between dawn and five hours after dawn with suitable wind conditions, no thick fog or precipitation (Cadman et al. 2007). Point count stations were located in various habitat types within the Subject Lands and combined with area searches to help determine the presence, variety and abundance of bird species. Each point count station was surveyed for 10 minutes for birds within 100 m outside 100 m. All species recorded on a point-count were mapped to provide specific spatial information and were observed for signs of breeding behaviour. Surveys were conducted at least 10 days apart.

During breeding bird surveys, vegetation was assessed for potential presence of Species at Risk habitat. If suitable habitat was encountered or individuals were observed standard protocols were utilized (in consultation with the Ministry of Natural Resources; MNRF).

8. Bat Exit Structure Screening Methodology

Four bat species are listed on the Species at Risk in Ontario (SARO) list as Endangered: Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Tri-coloured Bat (*Perimyotis subflavus*) and Northern Myotis (*Myotis septentrionalis*), and as such habitat for these species is protected under the *Endangered Species Act, 2007* (ESA). This survey methodology is adapted from the methodology described in the MNRF publication "Bats and Bat Habitats: Guidelines for Wind Power Projects" (July 2011), with appropriate modifications for surveying a building.

In accordance with protocols, buildings that have the potential to be used as maternity roosts by bats were examined to identify exit points (i.e., peak of roof, vents near roofline, under soffit or where fascia meets roofline, etc.). This survey occurred on Parcel 5 of the Subject Lands. An addendum to the EIS will be provided once the bat exit surveys have been completed in June 2025.

9. Headwater Drainage Feature Assessment Methodology

Per the requirements of the Headwater Drainage Feature Assessment Guidelines (CVC and TRCA 2014), GEI completed three rounds of surveys to assess HDFs on the Subject Lands.

During the first visit, all areas of the Subject Lands were walked to identify potential headwater drainage features. Each headwater drainage feature observed was separated into specific reaches, per the guidance on reach delineation in the HDF Assessment Guidelines, and data collection was completed for each reach based on the Ontario Stream Assessment Protocols for Unconstrained Headwater Sampling, Section 4: Module 11 (Stanfield, et. 2010).

Following completion of all three rounds, the collected data will be used to classify each headwater drainage feature, based on the HDF Assessment Guidelines.

10. Fish Community Sampling Methodology

Fish community sampling was completed to confirm the distribution and extent of direct fish habitat within watercourses and headwater drainage features on the Subject Lands, while also identifying species diversity and relative abundance.

GEI obtained a License to Collect Fish for Scientific Purposes from the MNRF to facilitate the collection efforts. During the sampling event, a Halltech HT-2000 Battery Backpack Electrofisher and two D-frame dip nets with a 500-micron mesh size was utilized to retrieve fish and semi-aquatic organisms (e.g., frogs) from the features. Sampling methodology was based off of the Ontario Stream Assessment Protocol standard single pass survey method (Stanfield 2013). Surveys were completed within a defined stretch throughout riffles, pools, and runs. Fish captured were transferred into an aerated bucket for processing and then identified to species level, enumerated and weighed before returning them into the feature at a downstream location.

APPENDIX E – WETLAND SCREENING TABLES

Wetland ID	2 (MAS2-1)
Wetland Size (ha)	0.06
Project Number	2100463 (Wildfield Village)
Date	4-Apr-23
Staff Name	J. Leslie

NOTES:
Consistent with page 10 of the OWES manual (2022), available field data demonstrates that no rationale exists for a full OWES evaluation, which infers that this wetland is not PSW. OWES documents are considered 'living'; therefore, any future field studies / observations could influence these results.

OWES Section		Criteria	Notes	Evaluate for Significance if	Evaluate?
		BIOLOGICAL			
1.1.1	1	Growing Degree-Days/Soils: Wetland is situated south of the 3600 GDD isoline and has predominantly clay-based or silt-based soil?	North	Any 2 of the 3 criteria are present	no
1.2.1	2	Number of Wetland Types: Wetland unit contains 2 or more wetland types each > 0.5 ha?	No. Just marsh		
1.2.6	3	Open Water Type: One of Type 3, 4, 5, or 7 open water is present?	No open water		
		SOCIAL			
2.2	1	Recreational Activities: Wetland has "moderate use" or higher for any one of hunting, enjoyment/study, or fishing?	No evidence of any such use	Any 3 of the 6 criteria are present	no
2.4.1	2	Educational Uses: Wetland is "frequently" used for educational uses?	No		
2.4.2	3	Facilities and Programs: At minimum, wetland must have staffed nature center, or have obvious human-maintained trail network and/or brochure.	No		
2.5	4	Proximity to Areas of Human Settlement: Wetland is within or adjacent to settlement of >10,000 people?	No. Over 3km away from Brampton		
2.8.1	5	Aboriginal Values: Wetland is considered significant from local First Nations?	Unknown		
2.8.2	6	Cultural Heritage: Wetland is considered significant from cultural heritage perspective?	No indicators of cultural significance		
		HYDROLOGICAL			
3.1	1	Flood Attenuation: Wetland is entirely "isolated" in site type?	No. Palustrine	Any 3 of the 4 criteria are present	no
3.2.1	2	Short Term Water Quality Improvement: The following three conditions must be present: a. Palustrine wetland with inflows b. Upstream landuse appears to be > 50% agricultural and/or urban c. Wetland consists entirely of emergent,submergent or floating-leaved vegetation	No. 'A' absent		
3.2.3	3	Groundwater Discharge: At least 3 of the following conditions must be present: a. Wetland is a fen b. Wetland occurs on steep topography c. Extensive lagg development d. Four or more seeps observed e. Surface marl deposits observed at 4 or more locations f. Iron precipitates observed at 4 or more locations g. Wetland within 1km of a major aquifer	None present		
3.5.1	4	Site Type: Wetland consist of any combination of palustrine, riverine, or isolated	Yes. Palustrine		
		SPECIAL FEATURES - RARITY			
4.1.1	1	Rarity within the Landscape: Wetland situated in 6E1, 6E2, 6E4, 6E7, 6E13, or any 7E ecodistrict?	Yes. 6E7	Any 2 of criteria 1-6 are met, or, criteria 7 is met	no
4.1.1	2	Rarirty of Wetland Type: Wetland is a bog or fen in any ecodistrict, or a swamp in 7E1?	No		
4.1.2.1	3	Provincially Significant Animal Species: Two or more provincially tracked species known to use the wetland?	No. Crayfish chimneys, but no other provincially significant species.		
4.1.2.2	4	Provincially Significant Plant Species: Two or more provincially tracked species known to occur in the wetland?	No		
4.1.2.3	5	Regionally Significant Species: Three or more species known to use the wetland?	No		
4.1.2.4	6	Locally Significant Species: Four or more locally rare species known to occur in the wetland?	No. Only Wood Frog, and Great Blue Heron (per TRCA rankings)		
4.1.2	7	If only criteria 3 or 4 are met: Three or more provincially tracked species overall use the wetland?			
		SPECIAL FEATURES - WILDLIFE HABITAT			
4.2.1	1	Colonial Waterbirds: Currently nesting in wetland?	No	Any one of these criteria are met	no
4.2.2	2	Winter Cover for Wildlife: Wetland satisfies SWH criteria?	No		
4.2.3	3	Waterfowl Staging and/or Moulting Areas: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.4	4	Waterfowl Breeding: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.5	5	Migratory Passerine, Shorebird or Raptor Stopover Area: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.6.1	6	Fish Habitat: Spawning and Nursery Habitat: Wetland contains any provincially listed fish species using the wetland as spawning or nursery habitat?	No significance species		
4.2.6.1	7	Fish Habitat: Spawning and Nursery Habitat: Wetland contains mappable vegetation type(s) that fall under one or more defined vegetation groups: a. Shortgrass-Sedge b. Waterlily-Lotus c. Waterweed-Watercress d. Coontail-Naiad-Watermilfoil e. Broadleaf Pondweed	No.		
4.4	8	Great Lakes Coastal Wetland: Wetland qualifies as a Great Lakes Coastal Wetland and is equal to or greater than 51 ha.	No.		

Wetland ID	3 (MAS2-1)	NOTES:
Wetland Size (ha)	0.13	Consistent with page 10 of the OWES manual (2022), available field data demonstrates that no rationale exists for a full OWES evaluation, which infers that this wetland is not PSW. OWES documents are considered 'living'; therefore, any future field studies / observations could influence these results.
Project Number	2100463 (Wildfield Village)	
Date	4-Apr-23	
Staff Name	J. Leslie	

OWES Section		Criteria	Notes	Evaluate for Significance if	Evaluate?
		BIOLOGICAL			
1.1.1	1	Growing Degree-Days/Soils: Wetland is situated south of the 3600 GDD isoline and has predominantly clay-based or silt-based soil?	North	Any 2 of the 3 criteria are present	no
1.2.1	2	Number of Wetland Types: Wetland unit contains 2 or more wetland types each > 0.5 ha?	No. Just marsh		
1.2.6	3	Open Water Type: One of Type 3, 4, 5, or 7 open water is present?	No. Only open water Type 1 is present		
		SOCIAL			
2.2	1	Recreational Activities: Wetland has "moderate use" or higher for any one of hunting, enjoyment/study, or fishing?	No evidence of any such use	Any 3 of the 6 criteria are present	no
2.4.1	2	Educational Uses: Wetland is "frequently" used for educational uses?	No		
2.4.2	3	Facilities and Programs: At minimum, wetland must have staffed nature center, or have obvious human-maintained trail network and/or brochure.	No		
2.5	4	Proximity to Areas of Human Settlement: Wetland is within or adjacent to settlement of >10,000 people?	No. Over 2km away from Brampton		
2.8.1	5	Aboriginal Values: Wetland is considered significant from local First Nations?	Unknown		
2.8.2	6	Cultural Heritage: Wetland is considered significant from cultural heritage perspective?	No indicators of cultural significance		
		HYDROLOGICAL			
3.1	1	Flood Attenuation: Wetland is entirely "isolated" in site type?	No. Palustrine	Any 3 of the 4 criteria are present	no
3.2.1	2	Short Term Water Quality Improvement: The following three conditions must be present: a. Palustrine wetland with inflows b. Upstream landuse appears to be > 50% agricultural and/or urban c. Wetland consists entirely of emergent,submergent or floating-leaved vegetation	No. 'A' absent		
3.2.3	3	Groundwater Discharge: At least 3 of the following conditions must be present: a. Wetland is a fen b. Wetland occurs on steep topography c. Extensive lagg development d. Four or more seeps observed e. Surface marl deposits observed at 4 or more locations f. Iron precipitates observed at 4 or more locations g. Wetland within 1km of a major aquifer	None present		
3.5.1	4	Site Type: Wetland consist of any combination of palustrine, riverine, or isolated	Yes. Palustrine		
		SPECIAL FEATURES - RARITY			
4.1.1	1	Rarity within the Landscape: Wetland situated in 6E1, 6E2, 6E4, 6E7, 6E13, or any 7E ecodistrict?	Yes. 6E7	Any 2 of criteria 1-6 are met, or, criteria 7 is met	no
4.1.1	2	Rarirty of Wetland Type: Wetland is a bog or fen in any ecodistrict, or a swamp in 7E1?	No		
4.1.2.1	3	Provincially Significant Animal Species: Two or more provincially tracked species known to use the wetland?	No. Crayfish chimneys, but no other significant species		
4.1.2.2	4	Provincially Significant Plant Species: Two or more provincially tracked species known to occur in the wetland?	No		
4.1.2.3	5	Regionally Significant Species: Three or more species known to use the wetland?	No		
4.1.2.4	6	Locally Significant Species: Four or more locally rare species known to occur in the wetland?	No. Only Gray Treefrog and Wood Frog (per TRCA rankings)		
4.1.2	7	If only criteria 3 or 4 are met: Three or more provincially tracked species overall use the wetland?			
		SPECIAL FEATURES - WILDLIFE HABITAT			
4.2.1	1	Colonial Waterbirds: Currently nesting in wetland?	No	Any one of these criteria are met	no
4.2.2	2	Winter Cover for Wildlife: Wetland satisfies SWH criteria?	No		
4.2.3	3	Waterfowl Staging and/or Moulting Areas: Wetland satisfies SWH criteria?	No. SWH critieria not met.		
4.2.4	4	Waterfowl Breeding: Wetland satisfies SWH criteria?	No. SWH critieria not met.		
4.2.5	5	Migratory Passerine, Shorebird or Raptor Stopover Area: Wetland satisfies SWH criteria?	No. SWH critieria not met.		
4.2.6.1	6	Fish Habitat: Spawning and Nursery Habitat: Wetland contains any provincially listed fish species using the wetland as spawning or nursery habitat?	No significance species		
4.2.6.1	7	Fish Habitat: Spawning and Nursery Habitat: Wetland contains mappable vegetation type(s) that fall under one or more defined vegetation groups: a. Shortgrass-Sedge b. Waterlily-Lotus c. Waterweed-Watercress d. Coontail-Naiad-Watermilfoil e. Broadleaf Pondweed	No.		
4.4	8	Great Lakes Coastal Wetland: Wetland qualifies as a Great Lakes Coastal Wetland and is equal to or greater than 51 ha.	No.		

Wetland ID	4 (MAM2-2)
Wetland Size (ha)	0.09
Project Number	2100463 (Wildfield Village)
Date	4-Apr-23
Staff Name	J. Leslie

NOTES:
Consistent with page 10 of the OWES manual (2022), available field data demonstrates that no rationale exists for a full OWES evaluation, which infers that this wetland is not PSW. OWES documents are considered 'living'; therefore, any future field studies / observations could influence these results.

OWES Section		Criteria	Notes	Evaluate for Significance if	Evaluate?
		BIOLOGICAL			
1.1.1	1	Growing Degree-Days/Soils: Wetland is situated south of the 3600 GDD isoline and has predominantly clay-based or silt-based soil?	North	Any 2 of the 3 criteria are present	no
1.2.1	2	Number of Wetland Types: Wetland unit contains 2 or more wetland types each > 0.5 ha?	No. Just marsh		
1.2.6	3	Open Water Type: One of Type 3, 4, 5, or 7 open water is present?	No open water		
		SOCIAL			
2.2	1	Recreational Activities: Wetland has "moderate use" or higher for any one of hunting, enjoyment/study, or fishing?	No evidence of any such use	Any 3 of the 6 criteria are present	no
2.4.1	2	Educational Uses: Wetland is "frequently" used for educational uses?	No		
2.4.2	3	Facilities and Programs: At minimum, wetland must have staffed nature center, or have obvious human-maintained trail network and/or brochure.	No		
2.5	4	Proximity to Areas of Human Settlement: Wetland is within or adjacent to settlement of >10,000 people?	No. Over 2km away from Brampton		
2.8.1	5	Aboriginal Values: Wetland is considered significant from local First Nations?	Unknown		
2.8.2	6	Cultural Heritage: Wetland is considered significant from cultural heritage perspective?	No indicators of cultural significance		
		HYDROLOGICAL			
3.1	1	Flood Attenuation: Wetland is entirely "isolated" in site type?	No. Palustrine	Any 3 of the 4 criteria are present	no
3.2.1	2	Short Term Water Quality Improvement: The following three conditions must be present: a. Palustrine wetland with inflows b. Upstream landuse appears to be > 50% agricultural and/or urban c. Wetland consists entirely of emergent,submergent or floating-leaved vegetation	Yes. All present		
3.2.3	3	Groundwater Discharge: At least 3 of the following conditions must be present: a. Wetland is a fen b. Wetland occurs on steep topography c. Extensive lagg development d. Four or more seeps observed e. Surface marl deposits observed at 4 or more locations f. Iron precipitates observed at 4 or more locations g. Wetland within 1km of a major aquifer	None present		
3.5.1	4	Site Type: Wetland consist of any combination of palustrine, riverine, or isolated	Yes. Palustrine		
		SPECIAL FEATURES - RARITY			
4.1.1	1	Rarity within the Landscape: Wetland situated in 6E1, 6E2, 6E4, 6E7, 6E13, or any 7E ecodistrict?	Yes. 6E7	Any 2 of criteria 1-6 are met, or, criteria 7 is met	no
4.1.1	2	Rarirty of Wetland Type: Wetland is a bog or fen in any ecodistrict, or a swamp in 7E1?	No		
4.1.2.1	3	Provincially Significant Animal Species: Two or more provincially tracked species known to use the wetland?	No. Crayfish chimneys, but no other significant species		
4.1.2.2	4	Provincially Significant Plant Species: Two or more provincially tracked species known to occur in the wetland?	No		
4.1.2.3	5	Regionally Significant Species: Three or more species known to use the wetland?	No		
4.1.2.4	6	Locally Significant Species: Four or more locally rare species known to occur in the wetland?	No. Only Wood Frog (per TRCA rankings), and Pennsylvania Smartweed (6E7)		
4.1.2	7	If only criteria 3 or 4 are met: Three or more provincially tracked species overall use the wetland?			
		SPECIAL FEATURES - WILDLIFE HABITAT			
4.2.1	1	Colonial Waterbirds: Currently nesting in wetland?	No	Any one of these criteria are met	no
4.2.2	2	Winter Cover for Wildlife: Wetland satisfies SWH criteria?	No		
4.2.3	3	Waterfowl Staging and/or Moulting Areas: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.4	4	Waterfowl Breeding: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.5	5	Migratory Passerine, Shorebird or Raptor Stopover Area: Wetland satisfies SWH criteria?	No. SWH criteria not met		
4.2.6.1	6	Fish Habitat: Spawning and Nursery Habitat: Wetland contains any provincially listed fish species using the wetland as spawning or nursery habitat?	No. Habitat absent		
4.2.6.1	7	Fish Habitat: Spawning and Nursery Habitat: Wetland contains mappable vegetation type(s) that fall under one or more defined vegetation groups: a. Shortgrass-Sedge b. Waterlily-Lotus c. Waterweed-Watercress d. Coontail-Naiad-Watermilfoil e. Broadleaf Pondweed	No.		
4.4	8	Great Lakes Coastal Wetland: Wetland qualifies as a Great Lakes Coastal Wetland and is equal to or greater than 51 ha.	No.		

Wetland ID	5 (MAS2-1)
Wetland Size (ha)	0.04
Project Number	2100463 (Wildfield Village)
Date	4-Apr-23
Staff Name	J. Leslie

NOTES:
Consistent with page 10 of the OWES manual (2022), available field data demonstrates that no rationale exists for a full OWES evaluation, which infers that this wetland is not PSW. OWES documents are considered 'living'; therefore, any future field studies / observations could influence these results.

OWES Section		Criteria	Notes	Evaluate for Significance if	Evaluate?
		BIOLOGICAL			
1.1.1	1	Growing Degree-Days/Soils: Wetland is situated south of the 3600 GDD isoline and has predominantly clay-based or silt-based soil?	North	Any 2 of the 3 criteria are present	no
1.2.1	2	Number of Wetland Types: Wetland unit contains 2 or more wetland types each > 0.5 ha?	No. Just marsh		
1.2.6	3	Open Water Type: One of Type 3, 4, 5, or 7 open water is present?	No open water		
		SOCIAL			
2.2	1	Recreational Activities: Wetland has "moderate use" or higher for any one of hunting, enjoyment/study, or fishing?	No evidence of any such use	Any 3 of the 6 criteria are present	no
2.4.1	2	Educational Uses: Wetland is "frequently" used for educational uses?	No		
2.4.2	3	Facilities and Programs: At minimum, wetland must have staffed nature center, or have obvious human-maintained trail network and/or brochure.	No		
2.5	4	Proximity to Areas of Human Settlement: Wetland is within or adjacent to settlement of >10,000 people?	No. Over 2km away from Brampton		
2.8.1	5	Aboriginal Values: Wetland is considered significant from local First Nations?	Unknown		
2.8.2	6	Cultural Heritage: Wetland is considered significant from cultural heritage perspective?	No indicators of cultural significance		
		HYDROLOGICAL			
3.1	1	Flood Attenuation: Wetland is entirely "isolated" in site type?	Yes, isolated in active AG field	Any 3 of the 4 criteria are present	no
3.2.1	2	Short Term Water Quality Improvement: The following three conditions must be present: a. Palustrine wetland with inflows b. Upstream landuse appears to be > 50% agricultural and/or urban c. Wetland consists entirely of emergent,submergent or floating-leaved vegetation	No, 'A' absent		
3.2.3	3	Groundwater Discharge: At least 3 of the following conditions must be present: a. Wetland is a fen b. Wetland occurs on steep topography c. Extensive lagg development d. Four or more seeps observed e. Surface marl deposits observed at 4 or more locations f. Iron precipitates observed at 4 or more locations g. Wetland within 1km of a major aquifer	None present		
3.5.1	4	Site Type: Wetland consist of any combination of palustrine, riverine, or isolated	Yes. Isolated		
		SPECIAL FEATURES - RARITY			
4.1.1	1	Rarity within the Landscape: Wetland situated in 6E1, 6E2, 6E4, 6E7, 6E13, or any 7E ecodistrict?	Yes. 6E7	Any 2 of criteria 1-6 are met, or, criteria 7 is met	no
4.1.1	2	Rarirty of Wetland Type: Wetland is a bog or fen in any ecodistrict, or a swamp in 7E1?	No		
4.1.2.1	3	Provincially Significant Animal Species: Two or more provincially tracked species known to use the wetland?	No		
4.1.2.2	4	Provincially Significant Plant Species: Two or more provincially tracked species known to occur in the wetland?	No		
4.1.2.3	5	Regionally Significant Species: Three or more species known to use the wetland?	No		
4.1.2.4	6	Locally Significant Species: Four or more locally rare species known to occur in the wetland?	No.		
4.1.2	7	If only criteria 3 or 4 are met: Three or more provincially tracked species overall use the wetland?			
		SPECIAL FEATURES - WILDLIFE HABITAT			
4.2.1	1	Colonial Waterbirds: Currently nesting in wetland?	No	Any one of these criteria are met	no
4.2.2	2	Winter Cover for Wildlife: Wetland satisfies SWH criteria?	No		
4.2.3	3	Waterfowl Staging and/or Moulting Areas: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.4	4	Waterfowl Breeding: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.5	5	Migratory Passerine, Shorebird or Raptor Stopover Area: Wetland satisfies SWH criteria?	No. SWH criteria not met		
4.2.6.1	6	Fish Habitat: Spawning and Nursery Habitat: Wetland contains any provincially listed fish species using the wetland as spawning or nursery habitat?	No. Habitat absent		
4.2.6.1	7	Fish Habitat: Spawning and Nursery Habitat: Wetland contains mappable vegetation type(s) that fall under one or more defined vegetation groups: a. Shortgrass-Sedge b. Waterlily-Lotus c. Waterweed-Watercress d. Coontail-Naiad-Watermilfoil e. Broadleaf Pondweed	No.		
4.4	8	Great Lakes Coastal Wetland: Wetland qualifies as a Great Lakes Coastal Wetland and is equal to or greater than 51 ha.	No.		

Wetland ID	6 (MAS2-1)
Wetland Size (ha)	0.17
Project Number	2100463 (Wildfield Village)
Date	4-Apr-23
Staff Name	J. Leslie

NOTES:
Consistent with page 10 of the OWES manual (2022), available field data demonstrates that no rationale exists for a full OWES evaluation, which infers that this wetland is not PSW. OWES documents are considered 'living'; therefore, any future field studies / observations could influence these results.

OWES Section		Criteria	Notes	Evaluate for Significance if	Evaluate?
		BIOLOGICAL			
1.1.1	1	Growing Degree-Days/Soils: Wetland is situated south of the 3600 GDD isoline and has predominantly clay-based or silt-based soil?	North	Any 2 of the 3 criteria are present	no
1.2.1	2	Number of Wetland Types: Wetland unit contains 2 or more wetland types each > 0.5 ha?	No. Just marsh		
1.2.6	3	Open Water Type: One of Type 3, 4, 5, or 7 open water is present?	No open water		
		SOCIAL			
2.2	1	Recreational Activities: Wetland has "moderate use" or higher for any one of hunting, enjoyment/study, or fishing?	No evidence of any such use	Any 3 of the 6 criteria are present	no
2.4.1	2	Educational Uses: Wetland is "frequently" used for educational uses?	No		
2.4.2	3	Facilities and Programs: At minimum, wetland must have staffed nature center, or have obvious human-maintained trail network and/or brochure.	No		
2.5	4	Proximity to Areas of Human Settlement: Wetland is within or adjacent to settlement of >10,000 people?	No. Over 2km away from Brampton		
2.8.1	5	Aboriginal Values: Wetland is considered significant from local First Nations?	Unknown		
2.8.2	6	Cultural Heritage: Wetland is considered significant from cultural heritage perspective?	No indicators of cultural significance		
		HYDROLOGICAL			
3.1	1	Flood Attenuation: Wetland is entirely "isolated" in site type?	No, palustrine	Any 3 of the 4 criteria are present	no
3.2.1	2	Short Term Water Quality Improvement: The following three conditions must be present: a. Palustrine wetland with inflows b. Upstream landuse appears to be > 50% agricultural and/or urban c. Wetland consists entirely of emergent,submergent or floating-leaved vegetation	Yes, present		
3.2.3	3	Groundwater Discharge: At least 3 of the following conditions must be present: a. Wetland is a fen b. Wetland occurs on steep topography c. Extensive lagg development d. Four or more seeps observed e. Surface marl deposits observed at 4 or more locations f. Iron precipitates observed at 4 or more locations g. Wetland within 1km of a major aquifer	None present		
3.5.1	4	Site Type: Wetland consist of any combination of palustrine, riverine, or isolated	Yes, palustrine		
		SPECIAL FEATURES - RARITY			
4.1.1	1	Rarity within the Landscape: Wetland situated in 6E1, 6E2, 6E4, 6E7, 6E13, or any 7E ecodistrict?	Yes. 6E7	Any 2 of criteria 1-6 are met, or, criteria 7 is met	no
4.1.1	2	Rarirty of Wetland Type: Wetland is a bog or fen in any ecodistrict, or a swamp in 7E1?	No		
4.1.2.1	3	Provincially Significant Animal Species: Two or more provincially tracked species known to use the wetland?	No. Only Terrestrial Crayfish observed		
4.1.2.2	4	Provincially Significant Plant Species: Two or more provincially tracked species known to occur in the wetland?	No		
4.1.2.3	5	Regionally Significant Species: Three or more species known to use the wetland?	No		
4.1.2.4	6	Locally Significant Species: Four or more locally rare species known to occur in the wetland?	No.		
4.1.2	7	If only criteria 3 or 4 are met: Three or more provincially tracked species overall use the wetland?			
		SPECIAL FEATURES - WILDLIFE HABITAT			
4.2.1	1	Colonial Waterbirds: Currently nesting in wetland?	No	Any one of these criteria are met	no
4.2.2	2	Winter Cover for Wildlife: Wetland satisfies SWH criteria?	No		
4.2.3	3	Waterfowl Staging and/or Moulting Areas: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.4	4	Waterfowl Breeding: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.5	5	Migratory Passerine, Shorebird or Raptor Stopover Area: Wetland satisfies SWH criteria?	No. SWH criteria not met		
4.2.6.1	6	Fish Habitat: Spawning and Nursery Habitat: Wetland contains any provincially listed fish species using the wetland as spawning or nursery habitat?	No. Habitat absent		
4.2.6.1	7	Fish Habitat: Spawning and Nursery Habitat: Wetland contains mappable vegetation type(s) that fall under one or more defined vegetation groups: a. Shortgrass-Sedge b. Waterlily-Lotus c. Waterweed-Watercress d. Coontail-Naiad-Watermilfoil e. Broadleaf Pondweed	No.		
4.4	8	Great Lakes Coastal Wetland: Wetland qualifies as a Great Lakes Coastal Wetland and is equal to or greater than 51 ha.	No.		

Wetland ID	7 (MAM2-2)
Wetland Size (ha)	0.03
Project Number	2100463 (Wildfield Village)
Date	4-Apr-23
Staff Name	J. Leslie

NOTES:
Consistent with page 10 of the OWES manual (2022), available field data demonstrates that no rationale exists for a full OWES evaluation, which infers that this wetland is not PSW. OWES documents are considered 'living'; therefore, any future field studies / observations could influence these results.

OWES Section		Criteria	Notes	Evaluate for Significance if	Evaluate?
		BIOLOGICAL			
1.1.1	1	Growing Degree-Days/Soils: Wetland is situated south of the 3600 GDD isoline and has predominantly clay-based or silt-based soil?	North	Any 2 of the 3 criteria are present	no
1.2.1	2	Number of Wetland Types: Wetland unit contains 2 or more wetland types each > 0.5 ha?	No. Just marsh		
1.2.6	3	Open Water Type: One of Type 3, 4, 5, or 7 open water is present?	No open water		
		SOCIAL			
2.2	1	Recreational Activities: Wetland has "moderate use" or higher for any one of hunting, enjoyment/study, or fishing?	No evidence of any such use	Any 3 of the 6 criteria are present	no
2.4.1	2	Educational Uses: Wetland is "frequently" used for educational uses?	No		
2.4.2	3	Facilities and Programs: At minimum, wetland must have staffed nature center, or have obvious human-maintained trail network and/or brochure.	No		
2.5	4	Proximity to Areas of Human Settlement: Wetland is within or adjacent to settlement of >10,000 people?	No. Over 2km away from Brampton		
2.8.1	5	Aboriginal Values: Wetland is considered significant from local First Nations?	Unknown		
2.8.2	6	Cultural Heritage: Wetland is considered significant from cultural heritage perspective?	No indicators of cultural significance		
		HYDROLOGICAL			
3.1	1	Flood Attenuation: Wetland is entirely "isolated" in site type?	No, palustrine	Any 3 of the 4 criteria are present	no
3.2.1	2	Short Term Water Quality Improvement: The following three conditions must be present: a. Palustrine wetland with inflows b. Upstream landuse appears to be > 50% agricultural and/or urban c. Wetland consists entirely of emergent,submergent or floating-leaved vegetation	Yes, present		
3.2.3	3	Groundwater Discharge: At least 3 of the following conditions must be present: a. Wetland is a fen b. Wetland occurs on steep topography c. Extensive lagg development d. Four or more seeps observed e. Surface marl deposits observed at 4 or more locations f. Iron precipitates observed at 4 or more locations g. Wetland within 1km of a major aquifer	None present		
3.5.1	4	Site Type: Wetland consist of any combination of palustrine, riverine, or isolated	Yes, palustrine		
		SPECIAL FEATURES - RARITY			
4.1.1	1	Rarity within the Landscape: Wetland situated in 6E1, 6E2, 6E4, 6E7, 6E13, or any 7E ecodistrict?	Yes. 6E7	Any 2 of criteria 1-6 are met, or, criteria 7 is met	no
4.1.1	2	Rarirty of Wetland Type: Wetland is a bog or fen in any ecodistrict, or a swamp in 7E1?	No		
4.1.2.1	3	Provincially Significant Animal Species: Two or more provincially tracked species known to use the wetland?	No		
4.1.2.2	4	Provincially Significant Plant Species: Two or more provincially tracked species known to occur in the wetland?	No		
4.1.2.3	5	Regionally Significant Species: Three or more species known to use the wetland?	No		
4.1.2.4	6	Locally Significant Species: Four or more locally rare species known to occur in the wetland?	No		
4.1.2	7	If only criteria 3 or 4 are met: Three or more provincially tracked species overall use the wetland?	3 / 4 were not met		
		SPECIAL FEATURES - WILDLIFE HABITAT			
4.2.1	1	Colonial Waterbirds: Currently nesting in wetland?	No	Any one of these criteria are met	no
4.2.2	2	Winter Cover for Wildlife: Wetland satisfies SWH criteria?	No		
4.2.3	3	Waterfowl Staging and/or Moulting Areas: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.4	4	Waterfowl Breeding: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.5	5	Migratory Passerine, Shorebird or Raptor Stopover Area: Wetland satisfies SWH criteria?	No. SWH criteria not met		
4.2.6.1	6	Fish Habitat: Spawning and Nursery Habitat: Wetland contains any provincially listed fish species using the wetland as spawning or nursery habitat?	No, species absent		
4.2.6.1	7	Fish Habitat: Spawning and Nursery Habitat: Wetland contains mappable vegetation type(s) that fall under one or more defined vegetation groups: a. Shortgrass-Sedge b. Waterlily-Lotus c. Waterweed-Watercress d. Coontail-Naiad-Watermilfoil e. Broadleaf Pondweed	No.		
4.4	8	Great Lakes Coastal Wetland: Wetland qualifies as a Great Lakes Coastal Wetland and is equal to or greater than 51 ha.	No.		

Wetland ID	17 (MAM2-2)
Wetland Size (ha)	0.02
Project Number	2100463 (Wildfield Village)
Date	7-Nov-23
Staff Name	J. Leslie

NOTES:
Criteria not met. Due to the small size of this wetland and limited significance, there is no rationale for completing a full wetland evaluation. This wetland was once contiguous with a similar, larger wetland on adjacent lands to the north, but that portion of the wetland was tilled - presumably for agricultural purposes.

OWES Section		Criteria	Notes	Evaluate for Significance if	Evaluate?
		BIOLOGICAL			
1.1.1	1	Growing Degree-Days/Soils: Wetland is situated south of the 3600 GDD isoline and has predominantly clay-based or silt-based soil?	North	Any 2 of the 3 criteria are present	no
1.2.1	2	Number of Wetland Types: Wetland unit contains 2 or more wetland types each > 0.5 ha?	No. Just marsh		
1.2.6	3	Open Water Type: One of Type 3, 4, 5, or 7 open water is present?	No open water		
		SOCIAL			
2.2	1	Recreational Activities: Wetland has "moderate use" or higher for any one of hunting, enjoyment/study, or fishing?	No evidence of any such use	Any 3 of the 6 criteria are present	no
2.4.1	2	Educational Uses: Wetland is "frequently" used for educational uses?	No		
2.4.2	3	Facilities and Programs: At minimum, wetland must have staffed nature center, or have obvious human-maintained trail network and/or brochure.	No		
2.5	4	Proximity to Areas of Human Settlement: Wetland is within or adjacent to settlement of >10,000 people?	No. Over 2km away from Brampton		
2.8.1	5	Aboriginal Values: Wetland is considered significant from local First Nations?	Unknown		
2.8.2	6	Cultural Heritage: Wetland is considered significant from cultural heritage perspective?	No indicators of cultural significance		
		HYDROLOGICAL			
3.1	1	Flood Attenuation: Wetland is entirely "isolated" in site type?	No. Palustrine	Any 3 of the 4 criteria are present	no
3.2.1	2	Short Term Water Quality Improvement: The following three conditions must be present: a. Palustrine wetland with inflows b. Upstream landuse appears to be > 50% agricultural and/or urban c. Wetland consists entirely of emergent,submergent or floating-leaved vegetation	Yes.		
3.2.3	3	Groundwater Discharge: At least 3 of the following conditions must be present: a. Wetland is a fen b. Wetland occurs on steep topography c. Extensive lagg development d. Four or more seeps observed e. Surface marl deposits observed at 4 or more locations f. Iron precipitates observed at 4 or more locations g. Wetland within 1km of a major aquifer	None present		
3.5.1	4	Site Type: Wetland consist of any combination of palustrine, riverine, or isolated	Yes. Palustrine		
		SPECIAL FEATURES - RARITY			
4.1.1	1	Rarity within the Landscape: Wetland situated in 6E1, 6E2, 6E4, 6E7, 6E13, or any 7E ecodistrict?	Yes. 6E7	Any 2 of criteria 1-6 are met, or, criteria 7 is met	no
4.1.1	2	Rarirty of Wetland Type: Wetland is a bog or fen in any ecodistrict, or a swamp in 7E1?	No		
4.1.2.1	3	Provincially Significant Animal Species: Two or more provincially tracked species known to use the wetland?	No		
4.1.2.2	4	Provincially Significant Plant Species: Two or more provincially tracked species known to occur in the wetland?	No		
4.1.2.3	5	Regionally Significant Species: Three or more species known to use the wetland?	No		
4.1.2.4	6	Locally Significant Species: Four or more locally rare species known to occur in the wetland?	No.		
4.1.2	7	If only criteria 3 or 4 are met: Three or more provincially tracked species overall use the wetland?			
		SPECIAL FEATURES - WILDLIFE HABITAT			
4.2.1	1	Colonial Waterbirds: Currently nesting in wetland?	No	Any one of these criteria are met	no
4.2.2	2	Winter Cover for Wildlife: Wetland satisfies SWH criteria?	No		
4.2.3	3	Waterfowl Staging and/or Moulting Areas: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.4	4	Waterfowl Breeding: Wetland satisfies SWH criteria?	No. Habitat not suitable		
4.2.5	5	Migratory Passerine, Shorebird or Raptor Stopover Area: Wetland satisfies SWH criteria?	No. SWH criteria not met		
4.2.6.1	6	Fish Habitat: Spawning and Nursery Habitat: Wetland contains any provincially listed fish species using the wetland as spawning or nursery habitat?	No. Habitat absent		
4.2.6.1	7	Fish Habitat: Spawning and Nursery Habitat: Wetland contains mappable vegetation type(s) that fall under one or more defined vegetation groups: a. Shortgrass-Sedge b. Waterlily-Lotus c. Waterweed-Watercress d. Coontail-Naiad-Watermilfoil e. Broadleaf Pondweed	No.		
4.4	8	Great Lakes Coastal Wetland: Wetland qualifies as a Great Lakes Coastal Wetland and is equal to or greater than 51 ha.	No.		

APPENDIX F – WETLAND WATER BALANCE RISK ASSESSMENT

Table 1: Wetlands Subject to Impact Assessment

WETLAND ID	WETLAND TO BE RETAINED	APPROXIMATE DISTANCE FROM SOLMAR LANDS*	WITHIN 120 M OF SOLMAR LANDS	TOTAL CATCHMENT AREA	AREA OF CATCHMENT WITHIN SOLMAR LANDS	PERCENT OF CATCHMENT WITHIN SOLMAR LANDS	>10% OF CATCHMENT WITHIN SOLMAR LANDS	SUBJECT TO IMPACT ASSESSMENT
A	No	420 m	No	0.46 ha	0 ha	0 %	No	No
B	No	605 m	No	1.38 ha	0 ha	0 %	No	No
2	No	0 m	Yes	0.61 ha	0.22 ha	36 %	Yes	No
3	No	0 m	Yes	0.27 ha	0.27 ha	100 %	Yes	No
4	No	0 m	Yes	1.84 ha	1.84 ha	100 %	Yes	No
5	No	0 m	Yes	0.17 ha	0.17 ha	100 %	Yes	No
6	No	0 m	Yes	2.57 ha	2.57 ha	100 %	Yes	No
7	No	0 m	Yes	0.17 ha	0.17 ha	100 %	Yes	No
8/9	Yes	640 m	No	-	0 ha	0 %	No	No
10/11	**Yes**	**1,035 m**	**No**	**54.88 ha**	**7.37 ha**	**13 %**	**Yes**	**Yes**
12	No	1,165 m	No	1.04 ha	0 ha	0 %	No	No
13	No	1,050 m	No	2.26 ha	0 ha	0 %	No	No
14	No	820 m	No	4.10 ha	0 ha	0 %	No	No
16	No	15 m	Yes	0.48 ha	0 ha	0 %	No	No
17	No	0 m	Yes	58.35 ha	0.66 ha	1 %	No	No
21	No	545 m	No	2.42 ha	0 ha	0 %	No	No

Table 1: Wetlands Subject to Impact Assessment

WETLAND ID	WETLAND TO BE RETAINED	APPROXIMATE DISTANCE FROM SOLMAR LANDS*	WITHIN 120 M OF SOLMAR LANDS	TOTAL CATCHMENT AREA	AREA OF CATCHMENT WITHIN SOLMAR LANDS	PERCENT OF CATCHMENT WITHIN SOLMAR LANDS	>10% OF CATCHMENT WITHIN SOLMAR LANDS	SUBJECT TO IMPACT ASSESSMENT
22	Yes	320 m	No	0.24 ha	0 ha	0 %	No	No
23	No	235 m	No	0.63 ha	0 ha	0 %	No	No
24	**Yes**	**10 m**	**Yes**	**88.06 ha**	**20.35 ha**	**23 %**	**Yes**	**Yes**
25	**Yes**	**50 m**	**Yes**	**0.54 ha**	**0 ha**	**0 %**	**No**	**Yes**
26A	No	70 m	Yes	37.51 ha	33.83 ha	90 %	Yes	No
26B	No	70 m	Yes	73.89 ha	25.05 ha	34 %	Yes	No
27	No	335 m	Yes	38.75 ha	27.01 ha	70 %	Yes	No
28	No	360 m	No	107.01 ha	59.10 ha	55 %	Yes	No
29	Yes	465 m	No	2401.28 ha	0 ha	0 %	No	No
30	Yes	560 m	No	2409.08 ha	0 ha	0 %	No	No
31A	**Yes**	**500 m**	**No**	**62.95 ha**	**33.03 ha**	**52 %**	**Yes**	**Yes**
31B	**Yes**	**550 m**	**No**	**109.48 ha**	**59.10 ha**	**54 %**	**Yes**	**Yes**
32	Yes	575 m	No	2411.87 ha	0 ha	0 %	No	No
33	Yes	605 m	No	-	0 ha	0 %	No	No
34	Yes	750 m	No	-	0 ha	0 %	No	No
35	Yes	1,090 m	No	2880.99 ha	0 ha	0 %	No	No

Table 1: Wetlands Subject to Impact Assessment

WETLAND ID	WETLAND TO BE RETAINED	APPROXIMATE DISTANCE FROM SOLMAR LANDS*	WITHIN 120 M OF SOLMAR LANDS	TOTAL CATCHMENT AREA	AREA OF CATCHMENT WITHIN SOLMAR LANDS	PERCENT OF CATCHMENT WITHIN SOLMAR LANDS	>10% OF CATCHMENT WITHIN SOLMAR LANDS	SUBJECT TO IMPACT ASSESSMENT
36	No	1,220 m	No	57.40 ha	7.37 ha	14 %	Yes	No
37	**Yes**	**1,300 m**	**No**	**59.27 ha**	**7.37 ha**	**12 %**	**Yes**	**Yes**
38	Yes	1,140 m	No	0.12 ha	0 ha	0 %	No	No
39	No	975 m	No	7.16 ha	0 ha	0 %	No	No
40	No	1,130 m	No	2.50 ha	0 ha	0 %	No	No
41	No	1,135 m	No	3.51 ha	0 ha	0 %	No	No
43	Yes	1,305 m	No	30.69 ha	0 ha	0 %	No	No

*DISTANCE FROM EDGE OF FEATURE TO NEAREST PROPERTY BOUNDARY

Table 2: Wetland Water Balance Risk Assessment

IMPERVIOUS COVER CHANGE CALCULATIONS						
WETLAND ID	**ELC VEGETATION COMMUNITY**	**IC***	**C_{DEV}****	**C+**	**S++**	**IMPERVIOUS COVER MAGNITUDE OF CHANGE**
10/11	MAM2-10 / MAM2	76	53.99	54.88	75%	High
24	MAM2-10 / DIST / MAM2	71	36.78	88.06	30%	High
25	MAM2	0	0.00	0.54	0%	No Change
31A	MAM2	74	61.64	62.95	72%	High
31B	MAM2	74	88.01	109.48	59%	High
37	MAM2	72	57.40	59.27	70%	High

*Proportion of impervious cover (as a percentage between 0 and 100) proposed within the area of wetland catchment that is within the proponent's holdings

**Total development area of the catchment (ha)

+Size of the wetland's catchment (pre-development) (ha)

++Impervious Cover Score

Impervious Cover Score (S) Magnitude of Change Criteria:
Greater than 25% is categorized as high magnitude
Between 10% and 25% is categorized as medium magnitude
Less than 10% is categorized as low magnitude

Table 2: Wetland Water Balance Risk Assessment

CATCHMENT SIZE CHANGE CALCULATIONS					
WETLAND ID	**ELC VEGETATION COMMUNITY**	**PRE-DEVELOPMENT CATCHMENT (HA)**	**POST-DEVELOPMENT CATCHMENT (HA)**	**CHANGE IN CATCHMENT SIZE**	**MAGNITUDE OF CHANGE IN CATCHMENT SIZE**
10/11	MAM2-10 / MAM2	54.88	0.89	-98%	High
24	MAM2-10 / DIST / MAM2	88.06	88.06	0%	No Change
25	MAM2	0.54	0.54	0%	No Change
31A	MAM2	62.95	62.95	0%	No Change
31B	MAM2	109.48	109.48	0%	No Change
37	MAM2	59.27	59.27	0%	No Change
Catchment Size Magnitude of Change Criteria: Greater than 25% is categorized as high magnitude Between 10% and 25% is categorized as medium magnitude Less than 10% is categorized as low magnitude					

Table 2: Wetland Water Balance Risk Assessment

HYDROLOGIC CHANGE RANKING						
WETLAND ID	**ELC VEGETATION COMMUNITY**	**IMPERVIOUS COVER MAGNITUDE OF CHANGE**	**MAGNITUDE OF CHANGE IN CATCHMENT SIZE**	**MAGNITUDE OF CHANGE IN WATER TAKING OR DISCHARGE**	**MAGNITUDE OF IMPACTS TO RECHARGE AREAS**	**HYDROLOGIC CHANGE RANKING**
10/11	MAM2-10 / MAM2	High	High	High	High	High
24	MAM2-10 / DIST / MAM2	High	No Change	High	High	High
25	MAM2	No Change	No Change	Low	Low	Low
31A	MAM2	High	No Change	High	High	High
31B	MAM2	High	No Change	High	High	High
37	MAM2	High	No Change	High	High	High

Water Taking or Discharge Criteria:
Greater than 400,000 L/day for longer than 6 months is considered High Magnitude
Between 50,000 and 400,000 L/day for greater than 6 months OR greater than 400,000 L/day for less than 6 months is considered Medium Magnitude
Between 50,000 and 400,000 L/day for less than 6 months is considered Low Magnitude

Impacts to Recharge Areas Criteria:
The presence of locally significant recharge areas is considered High Risk
No presence of locally significant recharge areas is considered Low Risk

Hydrological Change rank is the highest rank assigned of all preceding results

Table 2: Wetland Water Balance Risk Assessment

ECOLOGICAL SENSITIVITY RANKING							
WETLAND ID	**LOCATION**	**ELC VEGETATION COMMUNITY**	**VEGETATION COMMUNITY SENSITIVITY**	**HIGH SENSITIVITY FAUNA SPECIES**	**HIGH SENSITIVITY FLORA SPECIES**	**SWH SENSITIVITY**	**ECOLOGICAL SENSITIVITY RANKING**
10/11	1,035 m away from Study Area	Forb Mineral Meadow Marsh and Meadow Marsh (MAM2-10/MAM2)	Low	Low (no amphibians, no fish)	Medium (Peachleaf Willow, Fowl Meadow-Grass)	Low (no SWH types)	Medium
24	10 m away from Study Area	Reed Canary Grass Mineral Meadow Marsh, Disturbed and Meadow Marsh (MAM2-2/DIST/MAM2)	Medium	Low (no fish), Medium (American Toad)	No Data Available	No Data Available	Full Data Not Available – Assume High
25	50 m away from Study Area	Meadow Marsh (MAM2)	Medium	No Data Available	No Data Available	No Data Available	Full Data Not Available – Assume High
31A	500 m away from Study Area	Meadow Marsh (MAM2)	Medium	Low (Fathead Minnow)	No Data Available	No Data Available	Full Data Not Available – Assume High
31B	550 m away from Study Area	Meadow Marsh (MAM2)	Medium	Low (Fathead Minnow)	No Data Available	No Data Available	Full Data Not Available – Assume High
37	1,300 m away from Study Area	Meadow Marsh (MAM2)	Medium	Low (Brook Stickleback, Fathead Minnow)	No Data Available	No Data Available	Full Data Not Available – Assume High

Table 2: Wetland Water Balance Risk Assessment

ECOLOGICAL SENSITIVITY RANKING							
WETLAND ID	**LOCATION**	**ELC VEGETATION COMMUNITY**	**VEGETATION COMMUNITY SENSITIVITY**	**HIGH SENSITIVITY FAUNA SPECIES**	**HIGH SENSITIVITY FLORA SPECIES**	**SWH SENSITIVITY**	**ECOLOGICAL SENSITIVITY RANKING**
Vegetation Community Type Criteria: Presence of high sensitivity vegetation community results in a ranking of high sensitivity Presence of medium sensitivity vegetation community results in a ranking of medium sensitivity No high or medium sensitivity criteria satisfied results in a ranking of low sensitivity Where the dominant vegetation species is not available for an ELC community (e.g., MAM2) the wetland sensitivity of all vegetation types in the category were reviewed.							
High Sensitivity Fauna Species Criteria: Presence of high sensitivity species results in a ranking of high sensitivity Presence of medium sensitivity species results in a ranking of medium sensitivity No high or medium sensitivity criteria satisfied results in a ranking of low sensitivity High Sensitivity Flora Species Criteria: Presence of multiple high sensitivity species results in a ranking of high sensitivity Presence of multiple medium sensitivity species or presence of one high sensitivity species results in a ranking of medium sensitivity No high or medium sensitivity criteria satisfied results in a ranking of low sensitivity SWH Criteria: Presence of SWH for high sensitivity species results in a ranking of high sensitivity No high sensitivity criteria satisfied results in a ranking of low sensitivity							

Table 2: Wetland Water Balance Risk Assessment

RISK ASSESSMENT					
WETLAND ID	**LOCATION**	**ELC VEGETATION COMMUNITY**	**MAGNITUDE OF HYDROLOGICAL CHANGE**	**SENSITIVITY OF WETLAND**	**RISK ASSESSMENT**
10/11	1,035 m away from Study Area	Forb Mineral Meadow Marsh and Meadow Marsh (MAM2-10/MAM2)	High	Medium	Medium
24	10 m away from Study Area	Reed Canary Grass Mineral Meadow Marsh, Disturbed and Meadow Marsh (MAM2-2/DIST/MAM2)	High	Full Data Not Available – Assume High	High
25	50 m away from Study Area	Meadow Marsh (MAM2)	Low	Full Data Not Available – Assume High	Low
31A	500 m away from Study Area	Meadow Marsh (MAM2)	High	Full Data Not Available – Assume High	High
31B	550 m away from Study Area	Meadow Marsh (MAM2)	High	Full Data Not Available – Assume High	High
37	1,300 m away from Study Area	Meadow Marsh (MAM2)	High	Full Data Not Available – Assume High	High

Results above are summarized from the Wildfield Local Subwatershed Study Phase 2 Report (GEI and SCS, 2025)