ENVIRONMENTAL IMPACT ASSESSMENT

4495 North Service Road

Burlington, Ontario

Prepared for

Dream Summit Industrial (1250 Appleby Line)



LGL File TA9453

June 2026

ENVIRONMENTAL IMPACT ASSESSMENT

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Dream Industrial Summit (1250 Appleby Line)

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1 Introduction

LGL Limited has been retained by Dream Summit Industrial to provide an Environmental Impact Assessment (EIA) in support of a Zoning By-law Amendment (ZBA) for 4495 North Service Road, Burlington (the "Subject Lands") (**Figure 1**). A portion of the Subject Lands are within the Region of Halton Natural Heritage System (RNHS) due to the presence of a regulated watercourse (Appleby Creek) and associated floodplain and riparian lands. The lands were also considered candidate for potentially unmapped features including Species at Risk (SAR) habitat, Significant Wildlife Habitat (SWH) and fish habitat (direct or indirect).

This EIA is an objective, science-based study of the proposed development which includes an examination of potential negative impacts to key features on the Subject Lands, as well as identification of appropriate buffers, and methods for mitigation and enhancements to preserve the function and ecological integrity of the NHS. The primary objectives of this EIA are to:

- Identify, delineate and assess the sensitivity and significance of any key features identified as defined components of the NHS including a watercourse (Appleby Creek) within the Subject Lands and larger Study Area (within 120 metres);
- Evaluate the magnitude of likely impacts from the proposed development on the identified key features, including habitat loss, fragmentation, and degradation in the context of the ecological integrity of the feature as well as its functional contribution to the greater NHS;
- Develop mitigation measures to avoid (preferred) or minimize negative impacts on key features; and
- Provide recommendations for the protection and enhancement of key features on the Subject Lands, including their functional contribution to the greater NHS.

1.1 Pre-consultation, Terms of Reference and Proposed Undertaking

Pre-consultation meeting notes dated October 15, 2025, were reviewed with respect to the requirements for an EIA. Our understanding of the proposed undertaking is a development proposal for two single storey industrial buildings with associated office space and parking. The development has a proposed gross floor area (GFA) of 40,769.07 m^2.

The Subject Lands currently have split zoning including the Mixed-Use Employment (MXE) Zone on the eastern portion of the lands and the General Employment 1 (GE1) Zone on the western portion of the lands. A Zoning By-law Amendment (ZBA) is required to facilitate the proposed use and proposes to harmonize the zoning across the Subject Lands such that the uses permitted in both the MXE and GE1 zones are permitted throughout.

The EIA will serve to delineate and refine the NHS. The refined NHS will in turn be zoned for protection in the Open Space (OS) Zone and ownership will be transferred to the City of Burlington. Through this land transfer, a triangular shaped parcel will be created on the north-east side of Appleby Creek. At this time there is no development proposed on this additional parcel, and the zoning is proposed to remain as the Mixed-Use Employment (MXE) Zone.

Terms of Reference for an EIA were developed and approved by City of Burlington staff for the proposed Site Plan Application for the Subject Lands. In correspondence with City of Burlington staff, these terms of reference were subsequently approved for use for the Zoning By-law Amendment (ZBA) application as well (**Appendix A**).

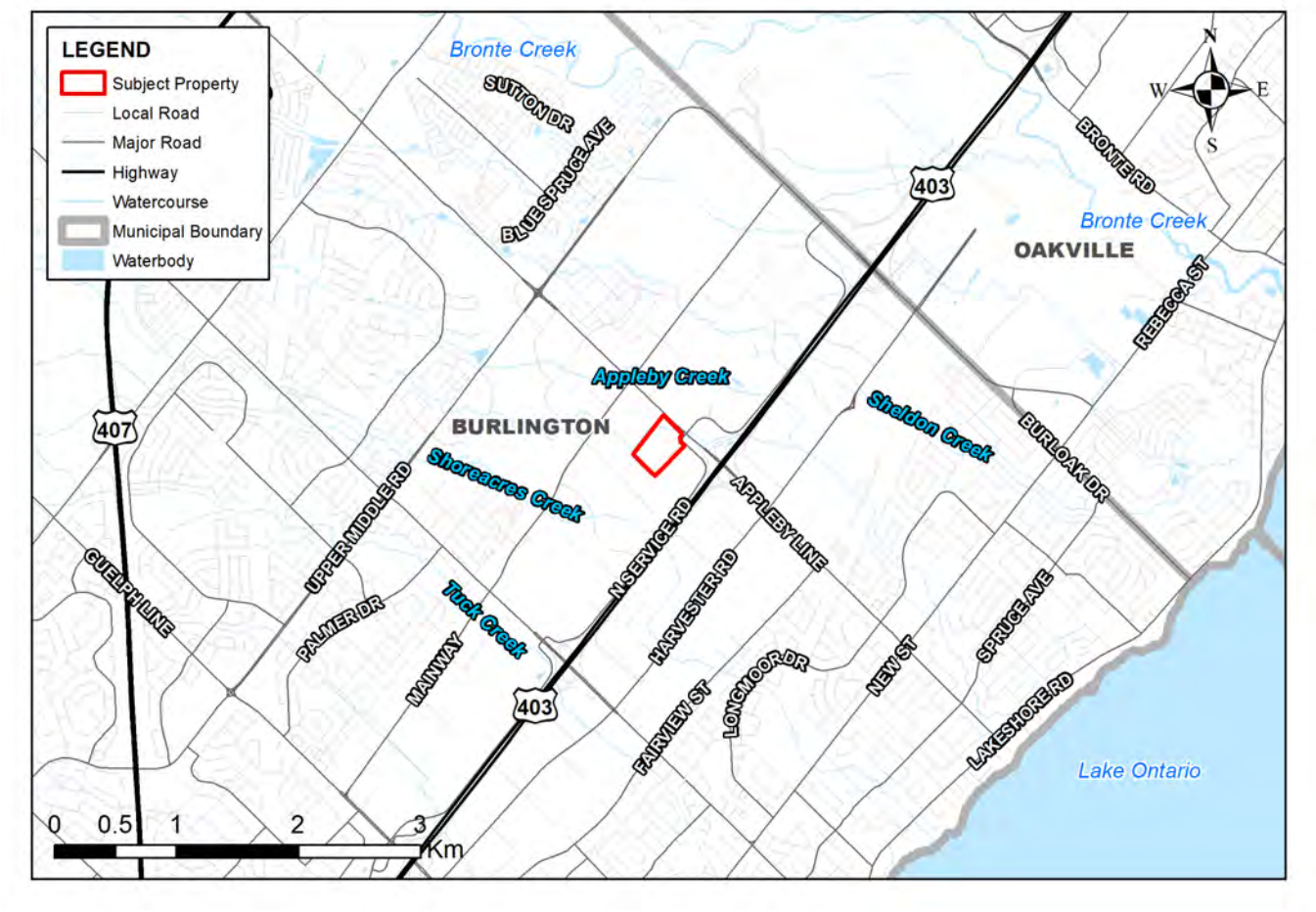


Figure 1. Location of the Subject Lands (4495 North Service Road, Burlington, Ontario).

2 Policy Summary and Implications

Though this EIA is an objective and science-based study, it is important to understand the environmental protection policy framework governing approvals on the Subject Lands. The following subsections briefly discuss relevant legislation and policy.

2.1 The Provincial Planning Statement (2024)

The Provincial Planning Statement (PPS) (Ministry of Municipal Affairs and Housing, effective October 20, 2024) is issued under Section 3 of the *Planning Act*. The PPS provides policy direction for development that protects resources of provincial interest, public health and safety, and the quality of the natural environment. The proposed development must demonstrate consistency with the PPS (2024).

Chapter 4.1 addresses the Wise Use and Management of Resources:

> 4.1.1 Natural features and areas shall be protected for the long term;
>
> 4.1.2. The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features;

4.1.3. Natural heritage systems shall be identified in Ecoregions 6E & 7E, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.

4.1.4. Development and site alteration shall not be permitted in

a) significant wetlands in Ecoregions 5E, 6E and 7E; and

b) significant coastal wetlands.

4.1.5. Development and site alteration shall not be permitted in:

a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;

b) significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);

c) significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);

d) significant wildlife habitat;

e) significant areas of natural and scientific interest; and

f) coastal wetlands in Ecoregions 5E, 6E and 7E that are not subject to policy 4.1.4.b), unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

4.1.6. Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

4.1.7. Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

4.1.8. Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 4.1.4, 4.1.5, and 4.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

Negative impacts mean, in the context of the PPS and in regard to other natural heritage features and areas, degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple, or successive development or site alteration activities.

Consistent with the PPS, this submission uses the following terms and definitions:

- Ecological function describes the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes. These may include biological, physical and socio-economic interactions.
- Negative impacts (fish habitat) are the harmful alteration, disruption or destruction of fish habitat, except where an exemption to the prohibition has been authorized under the *Fisheries Act*.
- Negative impacts (natural heritage features and areas) describes degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities.
- Natural heritage features and areas means features and areas, including significant wetlands, significant coastal wetlands, other coastal wetlands in Ecoregions 5E, 6E and 7E, fish habitat, significant woodlands and significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River), habitat of endangered species and threatened species, significant wildlife habitat, and significant areas of natural and scientific interest, which are important for their environmental and social values as a legacy of the natural landscapes of an area.

2.2 Halton Region Official Plan (2024 Office Consolidation)

As of July 1, 2024, the Regional Official Plan (ROP) was no longer an Official Plan for the Regional Municipality of Halton. Instead, it was deemed an Official Plan for each of the Local Municipalities in Halton (which includes the City of Burlington), until such time as it is revoked or amended by the City. Therefore, the relevant policies continue to apply and the subject application must demonstrate conformity with the applicable policies of the ROP (2024).

The land use designations within the ROP include a Natural Heritage System designation. The designation consists of the Greenbelt Natural Heritage System and the Regional Natural Heritage System. The goals of the Natural Heritage System which are particularly relevant to the Subject Lands include: directing development to locations outside hazard lands; protecting or enhancing the diversity of fauna and flora, ecosystems, plant communities, and significant landforms of Halton; to protect or enhance Key Features; to protect or enhance fish habitats; to preserve and enhance the quality and quantity of ground and surface water; to contribute to a continuous natural open space system; to provide visual separation of communities and; to provide continuous corridors and interconnections between the Key Features and their ecological functions.

The Regional Natural Heritage System consists of areas designated on Map 1G to the Official Plan as well as significant habitats or endangered species and threatened species. Section 115.3 of the ROP defines the components of the Regional Natural Heritage System as including the following:

- Key features:
    - Provincially significant natural heritage features;
    - Fish habitat;
- Enhancements to key features;
- Linkages;
- Buffers;
- Watercourses that are within CH Regulation Limit or that provide a linkage to a wetland or significant woodland; and
- Wetlands other than those considered provincially significant.

Section 115.4 of the ROP states that "Regulated Flood Plains as determined, mapped and refined from time to time by the appropriate Conservation Authority", are included within the Regional Natural Heritage System.

Section 116.1 of the ROP states that "[t]he boundaries of the Regional Natural Heritage System may be refined, with additions, deletions and/or boundary adjustments, through: …b) an Individual Environmental Impact Assessment accepted by the Region, as required by this Plan…".

Section 118 of the ROP states that it is the policy of the Region to:

"(2) Apply a systems-based approach to implementing the Regional Natural Heritage System by:

b) Not permitting the alteration of any components of the Regional Natural Heritage System unless it has been demonstrated that there will be no negative impacts on the natural features and areas or their ecological functions;

(3) The purpose of an EIA is to demonstrate that the proposed development or site alteration will result in no negative impacts to that portion of the Regional Natural Heritage System or unmapped Key Features affected by the development or site alteration by identifying components of the Regional Natural Heritage System as listed in Section 115.3 and their associated ecological functions and assessing the potential environmental impacts, requirements for impact avoidance and mitigation measures, and opportunities for enhancement. The EIA, shall, as a first step identify Key Features on or near the subject site that are not mapped on Map 1G;

(11) Require that Local Zoning By-laws prohibit new construction and the expansion or replacement of existing non-conforming uses within hazard lands, except where specifically exempted or identified as a Special Policy Area in the

Local Official Plan. Special Policy Areas, including any policy or boundary changes thereto, must be approved by the Minister of Natural Resources and the Minister of Municipal Affairs and Housing prior to municipal adoption."

Section 220.1.1 defines "Buffers" as:

> *The area of land located adjacent to Key Features or watercourses and usually bordering lands that are subject to development or site alteration. The purpose of the buffer is to protect the feature and ecological functions of the Regional Natural Heritage System by mitigating impacts of the proposed development and site alteration. The extent of the buffer and activities that may be permitted within it shall be based on the sensitivity and significance of the Key Features and watercourses and their contribution to the long term ecological functions of the RNHS as determined through a Sub-watershed Study, an Environmental Impact Assessment or similar studies that examine a sufficiently large area.*

2.3 Burlington Official Plan (2020)

On January 4, 2023, the OLT formally confirmed which parts of the Burlington Official Plan (2020) came into effect on December 22, 2020, and which parts did not. The OLT also confirmed that no parts of the Official Plan (other than policies where appeal rights are limited by the *Planning Act*) are in effect on lands with site-specific appeals. Until all broad appeals to the Region's approval of the Burlington Official Plan (2020) are resolved, part of the old Official Plan (1997, as amended), will stay in effect. Parts of the Burlington Official Plan (2020) that are broadly appealed (e.g., the Natural Heritage Systems policies) may be considered on an informative, but not determinative basis. As a result of the above, this EIA focuses on consistency with the PPS, and conformity with the applicable natural heritage policies of the 1997 (as amended) Burlington Official Plan (BOP) as well as the Regional Official Plan (ROP).

2.4 Burlington Official Plan (1997, as amended)

The Official Plan (1997) for the Burlington Planning Area was adopted on July 11, 1994, and subsequently approved, with modifications, by the Regional Municipality of Halton on March 5, 1997. The Office Consolidation of the Official Plan (July 2025) includes all modifications, subsequent approvals, and amendments to the Plan up to and including this date.

The BOP (1997) includes a policy objective to identify a connected NHS which conforms with the Regional NHS, the Niagara Escarpment Plan and Provincial Greenbelt Plan. The policy directs the City to include connections between existing natural heritage features and where these connections do not exist, identify areas for improvement to the system. The BOP (1997) recognizes that natural heritage features provide many benefits to the City including wildlife habitat, flood attenuation, recreational opportunities and renewable resource use such as forestry and recreational fishing.

Section 2.5 requires that an Environmental Evaluation Report shall be prepared by a proponent of development to the satisfaction of the City as part of the consideration of a development application within an area designated as Greenlands on Schedule B or C to the BOP (1997); an Environmentally Sensitive Area; or on Adjacent Lands of a natural heritage feature (as defined by the Plan). Adjacent lands are defined in part, as those lands that are within 50 metres of a Greenlands or Watercourse designation on Schedule B.

Schedule B does not identify the Subject Lands as being within the Greenlands designation, however it does identify a watercourse on the Subject Lands. Section 6.4 of the BOP (1997) pertains to watercourses and states that it is the objective of the BOP to 1) ensure the protection of life and property in the floodplain areas of watercourses; 2) to minimize the threat of injury, loss of life, property damage and economic and social disruptions caused by flooding; and 3) to promote the net gain of fish habitat as per applicable legislation. Section 6.4.2 states that the precise limits of the Watercourse designation will be determined by the City in conjunction with the Conservation Authority based

on mapping of the Regulatory floodplain. Section 6.4.2 (e) states that new development adjacent to watercourses shall be subject to a setback from the stable top of bank, the regulatory floodplain, and meander belt width (whichever is greater).

2.5 Fisheries Act, 1985

The federal *Fisheries Act* requires that new development avoid causing serious harm to fish unless authorized by the Minister of Fisheries and Oceans Canada. This applies to work being conducted in or near waterbodies that support fish that are part of, or support, a commercial, recreational, or Aboriginal fishery. Appleby Creek provides direct fish habitat.

2.6 Migratory Birds Convention Act, 1994

The *Migratory Birds Convention Act (MBCA)* is administered by the Canadian Wildlife Service of Environment Canada. The MBCA enables regulations that require authorization for designs which cause permanent destruction/disturbance of migratory bird habitat and authorization for killing/removing migratory bird fledglings, eggs, nests, or for other harmful activity to migratory birds to enable bridge construction/demolition, construction access and construction work areas. The Subject Lands fall within Environment Canada's Nesting Zone C2 (Nesting Period: end of March – end of August).

2.7 Species Conservation Act, 2025

The *Species Conservation Act* (SCA), 2025 is administered by the Province of Ontario and replaces the former *Endangered Species Act*, 2007. The SCA establishes Ontario's current legislative framework for the protection and conservation of species at risk and their protected habitat. The SCA enables regulations that identify protected species, define protected habitat, establish prohibitions, and set out requirements for activities that may affect protected species or protected habitat.

Under the SCA, legal protections apply to species listed on Ontario's Protected Species List. The SCA prohibits activities that may kill, harm, capture, possess, collect, buy, sell, trade, lease, transport, or disturb protected species, except where permitted, registered, or otherwise authorized under the SCA and its regulations. The SCA also regulates activities that may damage or destroy protected habitat, where habitat protection applies.

The SCA establishes a compliance framework that includes exemptions, registration requirements, and permits for prescribed activities. The SCA also includes provisions addressing species assessment, classification, listing, enforcement, and the relationship between provincial and federal species protection requirements.

2.8 Ontario Regulation 41/24

Ontario Regulation 41/24 (Prohibited Activities, Exemptions and Permits) is a provincial regulation under the *Conservation Authorities Act* that streamlines requirements for development in areas susceptible to flooding, erosion, or hazardous lands. Conservation Halton utilizes the One Zone Concept for flood plain management wherein the entire floodplain is considered the floodway. Conservation Halton regulates an area which extends 15 metres from the greater of:

- The Floodplain;
- Stable top of bank; or
- Meander belt allowance

In this case, consultation with Conservation Halton determined that a setback of 7.5 metres from the greatest hazard limit would be considered acceptable. On the Subject Lands, this constitutes a setback of 7.5 metres from the meander belt on the unconfined (southwest) side of the creek, and a setback of 7.5 metres from the stable top of

bank on the confined (northeast) side of the creek. These erosion hazard limits exceed the limit of the floodplain according to mapping available from Conservation Halton. These agreed upon limits have been studied and respected as part of this EIA.

3 Natural Heritage Screening

A search of publicly accessible natural heritage background information sources has been conducted for the Study Area (within 120 metres of the Subject Lands; **Figure 2**). The background records screening of species occurrence within the study area is included as **Appendix B**.

3.1 Aquatic Species at Risk (Fisheries and Oceans, 2025)

A search of Fisheries and Oceans Canadian Aquatic Species at Risk database reveals that there is no critical habitat mapped for aquatic species at risk, nor any species at risk found (or potentially found) within one kilometre of the Subject Lands.

3.2 MNR Aquatic Resources Area (ARA) Survey (GeoHub)

A tributary to Appleby Creek flows in a south-easterly direction through the Subject Lands. It is a second order tributary of Appleby Creek that is part of the Appleby Creek Watershed within the jurisdiction of Conservation Halton and the Ontario Ministry of Natural Resources (MNR) Aurora Midhurst Owen Sound District. Background information from the MNR indicates that the thermal regime of this watercourse is warm. According to ARA data, this watercourse is known to be direct fish habitat (**Figure 2**). The ARA line segment within the Subject Lands was used to generate a fish inventory for the Study Area (**Table 1**). The data available shows the tributary supporting up to seven (7) fish species. These species are a mix of cool and warmwater species and all are considered common and secure within the Province of Ontario. As stated above, no aquatic SAR habitat or species have been mapped within the Study Area.

Table 1. Fish Species documented in Appleby Creek tributary (MNR ARA Data, 2026)

Common Name	Scientific Name	Thermal Regime	Tolerance	SARA Status	SCA/PSO Status
Blacknose Dace	*Rhinichthys atratulus*	Coolwater	Intermediate	None	None
Bluegill	*Lepomis macrochirus*	Warmwater	Intermediate	None	None
Brook Stickleback	*Cuaea inconstans*	Coolwater	Intermediate	None	None
Creek Chub	*Semotilus atromaculatus*	Coolwater	Intermediate	None	None
Fathead Minnow	*Pimephales promelas*	Warmwater	Tolerant	None	None
Goldfish	*Carassius auratus*	Warmwater	Tolerant	None	None
Green Sunfish	*Lepomis cyanellus*	Warmwater	Tolerant	None	None

3.3 Ecologically Significant Areas

A review of Conservation Halton mapping reveals there are no Ecologically Significant Areas near the Study Area.

3.4 Conservation Halton Regulated Areas

A review of Conservation Halton interactive mapping (accessed June 2026) identifies portions of the Subject Lands as regulated by Conservation Halton **(Figure 4)**.

3.5 Natural Heritage Information Centre (MNRF 2024)

A review of the Natural Heritage Information Centre (NHIC) database was used to screen the Study Area for known natural heritage features and areas of provincial significance. The NHIC database does not identify any provincially significant wetlands, woodlands, valleylands or areas of natural and scientific interest (ANSIs) within the Study Area.

The NHIC database was also used to document any provincially tracked species that might be present within the study area. Bobolink (*Dolichonyx oryzivorus*) was the only tracked species which is sensitive. This record represents broad-scale information for the particular NHIC square and does not confirm presence or suitable habitat within the Subject Lands or greater Study Area (**Appendix B**).

3.6 Ontario Breeding Bird Atlas (2008)

A background review of data from the two most recent Ontario Breeding Bird Atlas (OBBA) data collection periods (2001–2005 and 2021–2023) identified breeding evidence for nine sensitive bird species within the 10×10-kilometer atlas square encompassing the Subject Lands. These species include Least Bittern *(Ixobrychus exilis)*, Eastern Wood-Pewee *(Contopus virens)*, Bank Swallow *(Riparia riparia)*, Barn Swallow *(Hirundo rustica)*, Wood Thrush *(Hylocichla mustelina)*, Canada Warbler *(Cardellina canadensis)*, Yellow-breasted Chat *(Icteria virens)*, Bobolink *(Dolichonyx oryzivorus)*, and Eastern Meadowlark *(Sturnella magna)*. These records represent broad-scale atlas information and indicate regional breeding potential rather than confirmed or current breeding activity within the Subject Lands or Study Area themselves (**Appendix B**).

3.7 eBird

A review of local eBird data revealed no records of sensitive bird species within one kilometre of the Subject Lands. No sensitive species have been reported from the nearby eBird hotspot North Service Road Stormwater Ponds, which represents the closest regularly surveyed location to the Subject Lands (**Appendix B**).

3.8 Ontario Butterfly Atlas (2022)

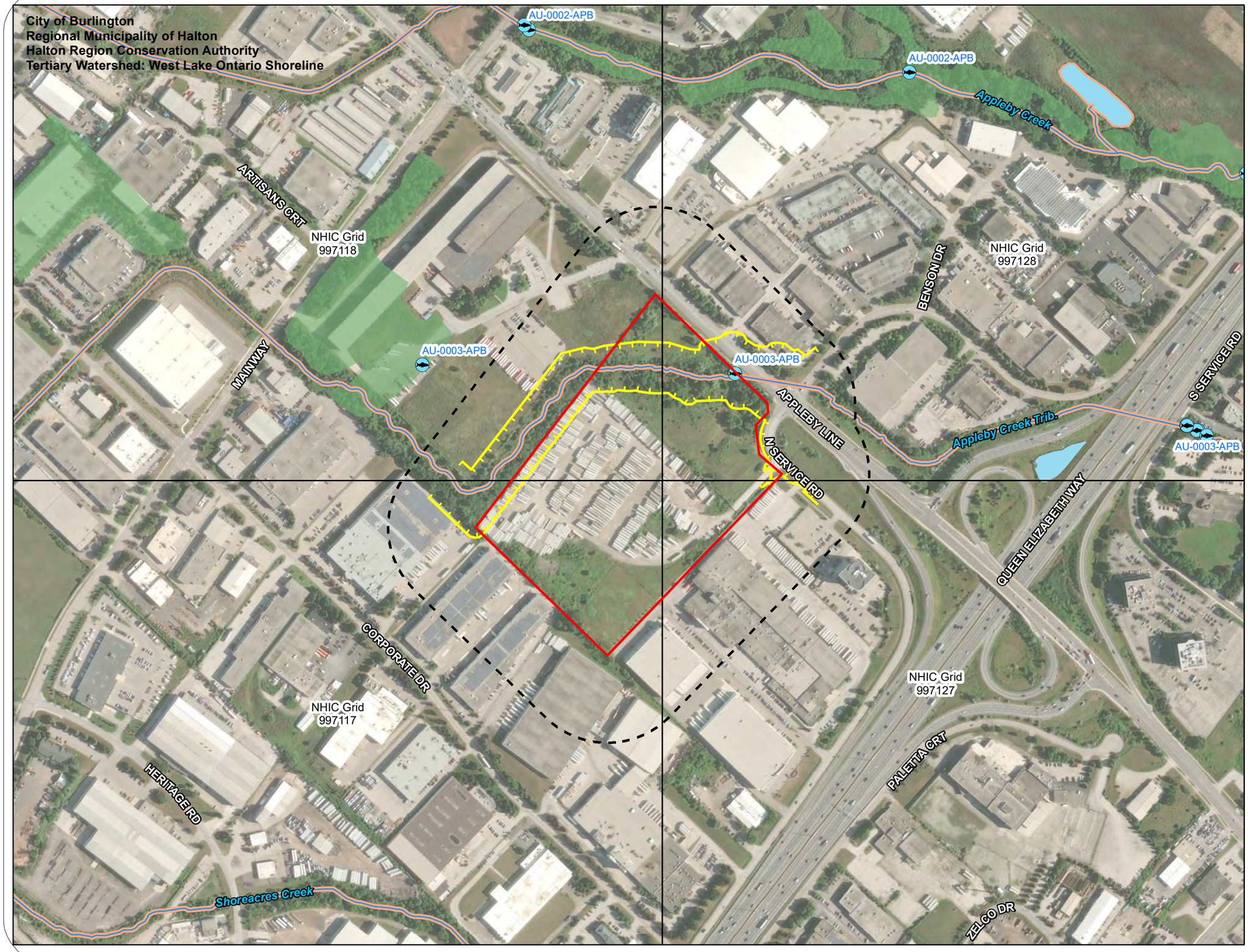
Historical data from the Ontario Butterfly Atlas within the applicable atlas grid square revealed records for many butterfly species including the Monarch *(Danaus Plexippus)* and Mottled Duskywing (*Erynnis martialis*) which are sensitive butterfly species (**Appendix B**).

3.9 Ontario Reptile and Amphibian Atlas

A background review of historical data from the Ontario Reptile and Amphibian Atlas within the applicable atlas grid square (17NJ90) revealed records for 29 species within the Study Area. The Reptile and Amphibian Atlas records represent a 10 km x 10 km square. Therefore, not all records are likely to occur within the Subject Lands. Several of the recorded species in the screening results are considered sensitive including a variety of turtle, snake, frog and salamander species (**Appendix B**).

3.10 Species at Risk Screening

All of the species considered sensitive (those ranked as Special Concern, Threatened or Endangered) in the background records review were carried forward for a more detailed analysis. The SAR Screening is presented in **Appendix C** and its results are discussed in Section 6.5 of the report.



LEGEND

- Subject Property
- 120m from Subject Property
- ARA Survey Point
- Regulation Limit Halton Conservation - Approximate
- Watercourse
- ARA Watercourse - Warm Thermal Regime
- Provincially Tracked Species 1km by 1km Grid Square
- Waterbody
- ARA Waterbody - Warm Thermal Regime
- Wooded Area

Data Source: Contains public sector information made available from the Ministry of Natural Resources and Forestry (LIO). Contains information licensed under the Open Government Licence - Conservation Halton. Contains information licensed under the Open Government Licence - Ontario. Produced by LGL Limited under License with the Ontario Ministry of Natural Resources © King's Printer for Ontario, 2026.

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N

4495 North Service Road

Natural Heritage Screening

LGL Est. 1971 LIMITED
environmental research associates

Project:	TA9453	**Figure:**	2
Date:	May, 2026	**Prepared By:**	AME
Scale:	1:5,000	**Verified By:**	SB

3.11 Physiography and Soils

The Study Area is part of the Iroquois Plains physiographic region (Chapman, 1984), which is characterized by soil formation overtop of red shale that was eroded by the former Iroquois Lake. Quaternary geology for the area is Halton Till, which is characterized by predominantly silt to silty clay matrix, high in carbonate. Surficial geology for the area is Paleozoic Bedrock (Geology Ontario).

Historically, soils for the area are identified as dominantly very fine textured and formed on till or lacustrine sediments and moderately rolling topography. Soils are slightly acidic, and moderately deep red clay over red shale, but with good drainage (Hoffman, 1964).

More recently, the Subject Lands and surrounding properties have undergone significant anthropogenic influences. Air photo comparison shows the property to the north had extensive alterations in the period between 2004 and 2005 including realignment of the channel and significant construction including the grading of soils and vegetation removal. Analysis of historical air photo imagery (Photograph 1) from 1954 also indicates that the current topography is changed from the historical conditions shown at that time. Current conditions show several areas of soil mounding within the Subject Lands particularly in the area to the southeast, as confirmed by contours and site visits. Air photos from 1954 do not show evidence of these mounds, leading to the belief that these features are fill of some kind and subsurface soil conditions may be unknown in several parts of the Subject Lands.



Photograph 1. Present day and 1954 Aerial Photography

4 Fluvial Geomorphology Assessment

A site visit was held with the applicant, Conservation Halton, and LGL Limited, on November 14, 2024. The south top of bank had characteristics of an unconfined and confined valley. Three stakes were placed within the confined portion near the upstream limit (near the existing outdoor storage facility), and areas downstream of the stakes were part of the unconfined valley. Discussion was held on site with a result being that a meander belt analysis would be required to delineate hazard lands.

GeoMorphix Ltd. has prepared a fluvial geomorphology assessment for the portion of Appleby Creek within the Subject Lands. The purpose of the assessment was to support the derivation of the erosion hazard limits for the watercourse, with a specific focus on the southern bank of channel that is understood to be largely unconfined and had not been included in previous top of bank staking activities by Conservation Halton (CH). Key results of the GEO Morphix assessment are as follows:

- The channel had been historically straightened;

- The channel is partially confined with the channel bank abutting the north valley wall. The channel bank abuts only a smaller portion, by comparison, of the south valley wall;
- The channel is well-vegetated;
- Erosion-sedimentation patterns at the channel included instances of minor to moderate bank erosion, reflected by exposed tree roots and undercutting;
- A toe-erosion allowance of 5 to 8 metres was deemed appropriate for the confined portions of the channel reach; and
- A meander belt width was modelled to be 33 metres for the unconfined reach.

The meander belt, which represents the greatest hazard extent, is identified on **Figure 4. Site Plan and Setbacks.**

5 Slope Assessment

A site visit was held with the applicant, Conservation Halton, and LGL Limited, on November 14, 2024. The north top of bank of Appleby Creek was staked by LGL, endorsed by CH, and surveyed by R. Avis surveying during the site meeting. The north bank was later the subject of a slope stability study by Pinchin (2026).

A draft stable slope assessment was prepared by Pinchin Ltd. (dated May 29, 2026). The assessment was needed to determine the long-term stable top of slope and total development setback limits for the lands to be severed on the north side of Appleby Creek. In accordance with MNR guidelines, the study recommends development setbacks that consist of a toe erosion allowance; a stable slope allowance; and an erosion access allowance or regulatory allowance.

Pinchin's study recommends a 5-metre toe erosion allowance; a stable slope allowance of 7.1 to 9.9 metres depending on slope height; while Conservation Halton's regulatory allowance is 7.5 metres from the stable top of bank. The final development setback from the north bank of the creek is shown on **Figure 4**.

6 Characterizing the Natural Environment

LGL Limited conducted surveys to document the existing natural heritage features and functions of the Subject Lands and Study Area. These included feature boundary delineations, Ecological Land Classification (ELC) and botanical inventories, breeding bird surveys, a significant wildlife habitat assessment and SAR habitat assessment. **Table 1** below provides a list of the natural heritage surveys that were completed as part of the EIA.

Table 2. Biophysical Surveys

Date of Inventory	Task	Personnel Involved
October 3, 2024	Tree Inventory	Justin Brodeur (LGL)
November 14, 2024	Top of Bank Staking	Martin O'Halloran (LGL) Laura Schreiner, David Irwin (Conservation Halton) Angie Dwinnell, Aaron Clodd (Dream), Theepan R (R. Avis Surveying)
June 18, 2025	Breeding Bird Survey # 1, wildlife habitat assessment	Heather Polan (LGL)
July 4, 2025	Breeding Bird Survey # 2, wildlife habitat assessment	Brett Fried (LGL)
September 19, 2025	ELC and botanical inventory	Justin Brodeur (LGL)

6.1 Vegetation

Vegetation communities were identified through air photo interpretation and a detailed site investigation. Air photos were interpreted to determine the limits and general characteristics of vegetation communities. The field investigations were conducted within the Subject Lands on September 19, 2025, to delineate and describe vegetation communities and to conduct a botanical survey.

Vegetation communities were classified according to the *Ecological Land Classification (ELC) for Southern Ontario: First Approximation and Its Application* (Lee et al., 1998). Communities were sampled using a plotless method for the purpose of determining general composition and structure of the vegetation. Plant species status was reviewed for Ontario (Oldham, 2009) and Halton Region (Riley, 1989 and Varga, 2000). Vascular plant nomenclature follows Newmaster et al. (1998) with a few exceptions that have been updated to Newmaster et al. (2007).

The existing developed (disturbed) area of the Subject Lands is used for truck and trailer storage. To the east of this disturbed area are lands which appear to have been left fallow leading to conditions supportive of cultural meadow, cultural woodland and cultural thicket. The cultural meadow is dominated by a small variety of grasses including Awnless Brome (*Bromus inermis* ssp. *inermis*), Kentucky Bluegrass (*Poa pratensis* ssp. *pratensis*); shrubs; common buckthorn (*Rhamnus cathartica*), and Russian olive (*Elaeagnus angustifolia*). The cultural thicket community at the rear of the Subject Lands supports tree species such as Colorado Spruce (*Picea pungens*), White Elm (*Ulmus americana*), and Shagbark Hickory (*Carya ovata* var. *ovata*). The cultural woodland community parallels Appleby Creek and is comprised of a variety of species including Colorado Spruce *(Picea pungens)*, White Elm *(Ulmust americana)*, Black Walnut (*Juglans nigra*), Black Locust (*Robinia pseudo-acacia*) and White Ash (*Fraxinus americana*).

Vegetation communities are identified and delineated on **Figure 3** and are described in further detail in **Table 3**.

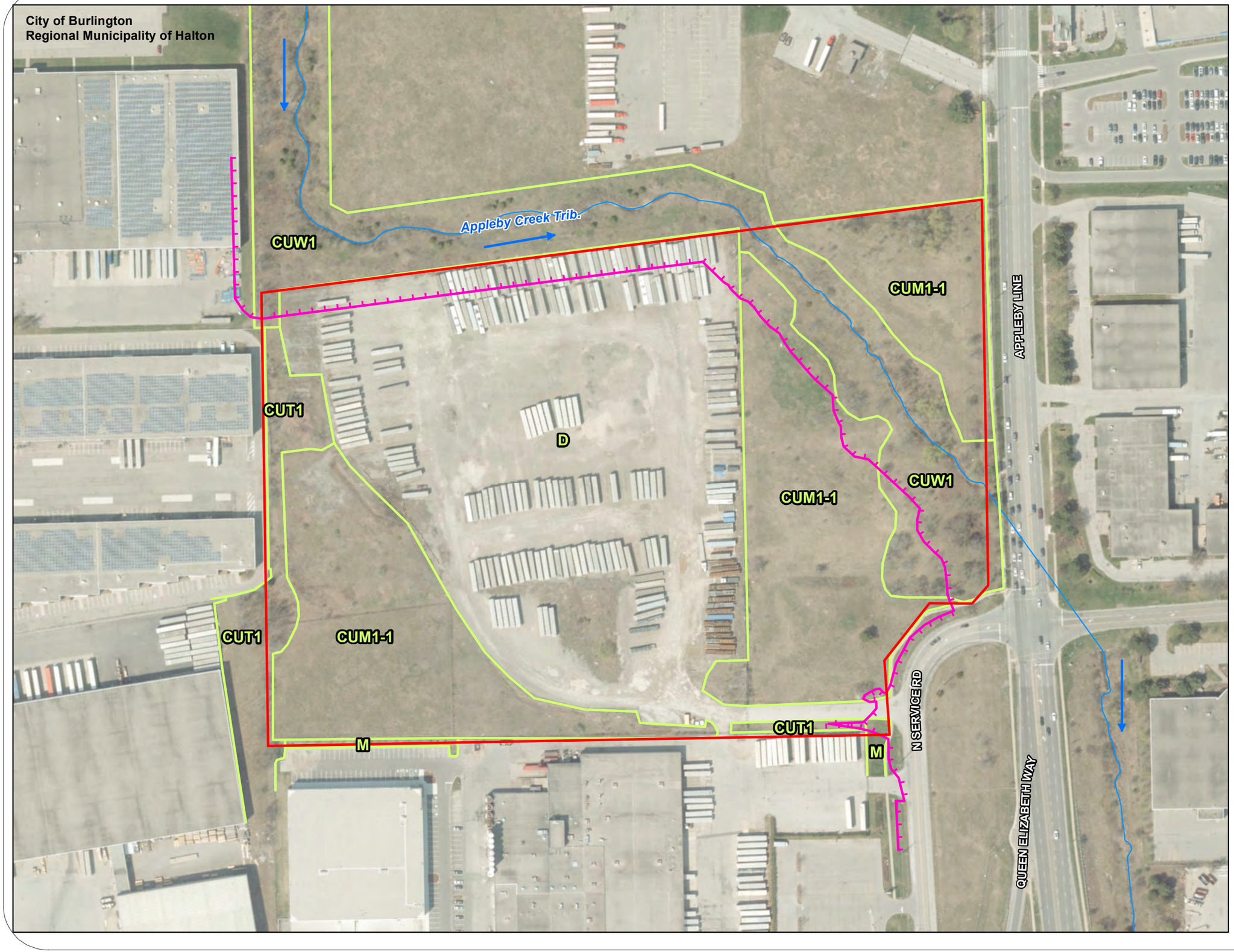
A total of 49 vascular plant species were recorded within the Subject Lands: twenty (20), or 41% of the total flora, are identified as native to Ontario, and twenty-nine (29) plants of the total flora are considered introduced and non-native to Ontario. The vascular plant list of species identified during the field investigations is presented in **Appendix D**.

Table 3. Summary of Ecological Land Classification

ELC Code	Vegetation Type	Species Association	Community Characteristics
TERRESTRIAL- CULTURAL			
CUM	CULTURAL MEADOW		
CUM1	Mineral Cultural Meadow		
CUM1-1	Dry-Moist Old Field Meadow	**Ground Cover:** includes awnless brome *(Bromus inermis ssp. inermis)*, Canada goldenrod (*Solidago canadensis*), common milkweed *(*Asclepias syriaca, and wild carrot (Daucus carota).	Tree cover and shrub cover < 25 % (CUM). This community can occur on a wide range of soil moisture regimes (Dry-Moist) (1-1). Grass and forb dominant. Community resulting from, or maintained by, anthropogenic-based influences.
CUT	CULTURAL THICKET		
CUT1	Mineral Cultural Thicket		
CUT1	Mineral Cultural Thicket	**Canopy:** includes Colorado spruce (*Picea pungens*), white elm (*Ulmus americana*), shagbark hickory (*Carya ovata* var. *ovata*), and bur oak (*Quercus macrocarpa*). **Understory:** includes common buckthorn (*Rhamnus cathartica*), Tartarian honeysuckle (*Lonicera tatarica*) and riverbank grape (*Vitis riparia*). **Ground Cover:** includes Canada goldenrod and Kentucky bluegrass (*Poa pratensis* ssp. *pratensis*).	Cultural communities (CU). Tree cover between <25 % and shrub cover > 25% (CUT). This community can occur on a wide range of soil moisture regimes (Dry-Moist) (1). Community resulting from, or maintained by, anthropogenic-based influences.
CUW	CULTURAL WOODLAND		
CUW1	Mineral Cultural Woodland		
CUW1	Mineral Cultural Woodland	**Canopy:** includes black walnut (*Juglans nigra*), shagbark hickory, black locust (*Robinia pseudoacacia*) and, crack willow (*Salix fragilis*). **Understory:** includes common buckthorn, Manitoba maple (*Acer negundo*), Russian olive (*Elaeagnus angustifolia*) and, common pear (*Pyrus communis*). **Ground Cover:** includes quack grass (*Elymus repens*), common motherwort (*Leonurus cardiaca*	Cultural communities (CU). Tree cover between <35 % and tree cover ≤ 60% (CUW). This community can occur on a wide range of soil moisture regimes (Dry-Moist) (1). Community resulting from, or maintained by, anthropogenic-based influences.

ELC Code	Vegetation Type	Species Association	Community Characteristics
		ssp. *cardiaca*), and common burdock (*Arctium minus*).	
OTHER*-			
M	Manicured lawn and or planted trees	Aeras where large expanses of grass are maintained with planted trees. Planted trees: Freeman's maple (*Acer* X *Freemanii*).	Feature resulting from, or maintained by, anthropogenic-based influences.

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LEGEND

- Subject Property
- Regulation Limit Halton Conservation - Approximate
- Vegetation Community Boundary
- Watercourse

Ecological Land Classification

CUM1-1: Dry-Moist Old Field Meadow Type

CUT1: Mineral Cultural Thicket Ecosite

CUW1: Mineral Cultural Woodland Ecosite

D: Disturbed

M: Manicured

Data Source: LGL Field Survey. Contains public sector information made available from the Ministry of Natural Resources and Forestry (LIO). Contains information licensed under the Open Government Licence - Conservation Halton. Contains information licensed under the Open Government Licence - Ontario. Produced by LGL Limited under License with the Ontario Ministry of Natural Resources © King's Printer for Ontario, 2025.

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4495 North Service Road

Existing Conditions

LGL Est. 1971 LIMITED
environmental research associates

Project:	TA9453	**Figure:**	3
Date:	September, 2025	**Prepared By:**	AME
Scale:	1:2,000	**Verified By:**	LMC

6.2 Aquatic Habitat

A tributary to Appleby Creek flows in a south-easterly direction through the Subject Lands. It is a second order tributary that is part of the Appleby Creek Watershed. It is identified as a warm thermal regime stream and according to ARA data presented in Section 3 supports up to 7 fish species. The documented fish species are a mix of cool and warm thermal regime species and are all warmwater tolerant. The tributary can be described as a less sensitive aquatic ecosystem (versus a cold thermal regime stream which would be considered highly sensitive). Additionally, no highly sensitive or SAR aquatic species are known to inhabit Appleby Creek according to the background screening conducted for this EIA.

The reach of the tributary of Appleby Creek that flows through the Subject Lands was characterized in a geomorphology report by Geomorphix (2025). Along the northern property line of the subject lands, the watercourse runs parallel to the property boundary and appears to have previously been reconstructed. It then begins to flow in a south-easterly direction through the northeastern portion of the Subject Property and is described as generally straight (low sinuosity with the occasional, irregular meander) and partially confined. A corrugated steel pipe culvert of approximately 2.5 metres was present around the mid-point of the reach running through the Subject Lands. Immediately downstream of the culvert a failing concrete outfall headwall was identified, and at the downstream extent of the reach there was a knickpoint and large woody debris jam. The riparian vegetation along the length of the reach consists of grasses and establishing trees. Instream vegetation consisted of a few patches of watercress along the banks' margins. The average bankfull width was approximately 3.60 metres, and average stream depth was approximately 0.65 metres. The substrate was composed mainly of gravel to boulders in riffle areas, and finer particles (i.e., clay/silt) in pools (GeoMorphix, 2025).

6.3 Tree Inventory

A tree inventory was conducted on October 3, 2024, following methods described by the City of Burlington Tree Protection and Preservation Specification SS12A. The tree inventory is submitted under separate cover.

6.4 Wildlife

6.4.1 Breeding Bird Surveys

Breeding bird surveys were completed on June 18 and July 4, 2024. Territorial songs, along with direct observations of breeding bird evidence, were used to record breeding bird evidence (BBE) within the Subject Lands.

A total of 18 bird species were documented within the Subject Lands and are summarized in Table 3. Of the bird species observed, fourteen are regulated under the MBCA.

Five bird species are considered probable breeders within the Subject Lands based on pairs being observed, presumed on territory, or observations of agitated behaviour. Nine species are considered possible breeders based on singing males and species observed in suitable nesting habitat. Confirmed breeding evidence was only found for one common species: European Starling (*Sturnus vulgaris*). All other species were observed in unsuitable breeding habitat during field visits or as flyovers; therefore, no breeding evidence was documented.

One bird species protected under the SARA was identified during LGL's survey; Barn Swallow (*Hirundo rustica*). This species was observed foraging, no nesting habitat is present within the Subject Lands.

Table 4. Breeding Bird Survey Results

Common Name	Scientific Name	BBE	SCA/PSO	COSSARO	SARA	Legal Status
American Goldfinch	*Spinus tristis*	T	Not listed	Not listed	Not listed	MBCA
Baltimore Oriole	*Icterus galbula*	S	Not listed	Not listed	Not listed	MBCA
Barn Swallow	*Hirundo rustica*	H	Not listed	SC	THR	MBCA
Brown-headed Cowbird	*Molothrus ater*	S	Not listed	Not listed	Not listed	
Cedar Waxwing	*Bombycilla cedrorum*	H	Not listed	Not listed	Not listed	MBCA
European Starling	*Sturnus vulgaris*	FY	Not listed	Not listed	Not listed	
Gray Catbird	*Dumetella carolinensis*	T	Not listed	Not listed	Not listed	MBCA
Great Blue Heron	*Ardea herodias*	X	Not listed	Not listed	Not listed	MBCA
Herring Gull	*Larus smithsonianus*	X	Not listed	Not listed	Not listed	MBCA
House Finch	*Haemorhous mexicanus*	P	Not listed	Not listed	Not listed	MBCA
Killdeer	*Charadrius vociferus*	H	Not listed	Not listed	Not listed	MBCA
Mourning Dove	*Zenaida macroura*	P	Not listed	Not listed	Not listed	MBCA
Northern Cardinal	*Cardinalis cardinalis*	S	Not listed	Not listed	Not listed	MBCA
Northern Flicker	*Colaptes auratus*	H	Not listed	Not listed	Not listed	MBCA
Red-winged Blackbird	*Agelaius phoeniceus*	S	Not listed	Not listed	Not listed	
Ring-billed Gull	*Larus delawarensis*	X	Not listed	Not listed	Not listed	MBCA
Song Sparrow	*Melospiza melodia*	S	Not listed	Not listed	Not listed	MBCA
Yellow Warbler	*Setophaga petechia*	T	Not listed	Not listed	Not listed	MBCA

Legend

Breeding Evidence Codes:

Observed

X Species observed during its breeding season, but not in suitable nesting habitat (no breeding evidence found).

Possible

H Species observed in suitable nesting habitat during its breeding season.

S Singing male or adults producing sounds associated with breeding (e.g. calls or drumming) in suitable nesting habitat during the species' breeding season.

Probable

P Pair observed in suitable nesting habitat during the species' breeding season.

T Presumed Territory based on the presence of an adult bird (usually singing, but not necessarily so), in the same suitable nesting habitat patch on at least two visits, one week or more apart, during the species' breeding season.

A Agitated behaviour or alarm calls of an adult in suitable nesting habitat during the species' breeding season.

Confirmed

CF Adult carrying food for young.

ESA/SARA

END: endangered

THR: threatened

SC: special concern

Legal Status

MBCA *Migratory Birds Convention Act, 1994*

FWCA *Fish and Wildlife Conservation Act, 1997*

6.4.2 Mammals

Mammal observations within the Subject Lands were limited to common species typically associated with open, fragmented, and urban-influenced landscapes. Vegetation within the Subject Lands was generally sparse, and treed/wooded areas occurred as small, discontinuous patches of limited structural complexity and lesser overall ecological value. Although a small creek corridor is present, the Subject Lands are primarily open and influenced by surrounding development. Three mammal species were documented during field surveys: Eastern Grey Squirrel *(Sciurus carolinensis*), Red Squirrel (*Tamiasciurus hudsonicus*), and Eastern Cottontail (*Sylvilagus floridanus*).

Eastern Grey Squirrel was the most frequently observed mammal species and was noted in several areas within the Subject Lands. Red Squirrel was also detected in association with mixed vegetation. Eastern Cottontail was observed in open grassy areas and along shrub and thicket edges, where limited cover and foraging opportunities are present. Overall, the mammal community documented during field investigations was consistent with the disturbed and fragmented habitat conditions present, and no mammal species of conservation concern were observed.

6.5 Species at Risk (SAR)

Barn Swallow was the only SAR observed during the biophysical surveys. This species is listed as Threatened under the federal SARA. Individuals were observed flying over the Subject Lands; however, no suitable nesting habitat was identified. Nesting for this species typically occurs on anthropogenic structures such as buildings, barns, bridges, culverts, sheds, or overhangs that provide suitable nesting surfaces. As none of these features are present, the Subject Lands do not support nesting habitat for Barn Swallow. Use of the area is expected to be limited to occasional aerial foraging or flyover activity. No other SAR were observed.

The results of the background record review (Appendix B) identified many candidate SAR species previously recorded within the vicinity of the Study Area (in addition to barn swallow which was observed during breeding bird surveys). The SAR screening determined that the Subject Lands do not provide suitable habitat for the majority of the SAR species listed. The exceptions to this statement include the Monarch butterfly, Eastern Milksnake and all seven (7) SAR bat species (Appendix C). Though no observations of these species were made during site visits, recommendations for mitigation have been made as a precaution and include recommendations to improve the quality of habitat for these species within the buffer areas (e.g., planting Milkweed species as well as woody species that will provide SAR roosting habitat).

6.6 Significant Wildlife Habitat

A Significant Wildlife Habitat (SWH) Screening has been prepared (Appendix E) upon consideration of ELC data, fauna evidence, and professional expertise. The evaluation considers the following types of SWH:

- Seasonal Concentration Areas
- Rare Vegetation Communities
- Specialized Habitat for Wildlife
- Habitat for Species of Conservation Concern

None of these SWH types are present within the Subject Lands (Appendix E).

7 Proposed Plan

The proposed plan has been designed with consideration of the defined components of the regional NHS, municipal and provincial requirements for natural heritage protection, and hazard lands avoidance in mind.

The proposed design is consistent with the applicable policies of the PPS (2024) by:

- Proposing all development/site alteration outside of fish habitat; and

- Reccomending development/site alteration within 120 metres of fish habitat where the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts to the feature or its function(s).

The proposed design conforms with the applicable Official Plan policies by:

- Supporting and enhancing the function of a system of inter-connected natural heritage features;
- Prohibiting development and site alteration within key features of the Regional Natural Heritage System including watercourses within a Conservation Authority Regulation Limit, fish habitat and CA regulated floodplains.
- Prohibiting development within the buffer (as defined in the ROP) adjacent to a watercourse/fish habitat by demonstrating no negative impacts to the natural features and areas and their ecological functions; and
- Refining the boundaries of the Regional Natural Heritage System through an individual Environmental Impact Assessment (subject to approval by the City).

7.1 Concept Plan

The proposed concept plan includes two single storey industrial buildings with associated office space and parking areas. The building design is 40,769.07 m^2 in GFA and associated required parking and loading spaces (**Figure 4**).

7.2 Conservation Authority Permitting and Setbacks

Conservation Halton (CH) regulates a distance of 15 metres from the greatest hazard, which in this case, is 15 metres from the meander belt allowance on the south side of the creek; 15 metres from the stable top of bank on the north side of the creek (on the east side of the property); and 15 metres from the top of bank along the north property line. Development within 15 metres of the hazard area will require a permit from CH. Conservation Halton also has a required regulatory setback of 7.5 metres from the greatest hazard extent.

Through this EIA, the regulatory setbacks for hazards were found to be sufficient for protecting the watercourse/fish habitat from any anticipated impacts resulting from the proposed development. Planting of native woody and herbaceous vegetation is proposed within the entirety of the regulatory setback. The resulting buffers are illustrated on **Figure 4**. The following section presents our rationale demonstrating the sufficiency of the proposed buffers from Appleby Creek in protecting the feature as well as the contribution of the feature to the function of the overall NHS.

7.3 Natural Heritage Feature Buffers

The main objective of natural heritage feature protection on the Subject Lands is to buffer the watercourse (i.e., water quality) from any anticipated land use impacts based on the sensitivity and significance of the feature, as well as its contribution to the function of the overall natural heritage system (i.e., fish/aquatic habitat). To attain this objective, it is necessary to identify a sufficient width on either side of the creek to be protected from development or site alteration which will be enhanced with the planting of native, self-sustaining woody and herbaceous vegetation. This EIA determined that the riparian areas of the creek have limited existing ecological function, and thus, attaining this objective of a sufficiently wide, protected and self-sustaining vegetated buffer will provide an overall net benefit to the feature, as well as the greater NHS.

7.3.1 Regional Official Plan Requirements for Buffers

The ROP states that the regional NHS is scientifically structured on the basis of various components including key features, enhancements to key features, linkages, buffers, watercourses, wetlands and floodplains. The ROP defines a "buffer" as:

> *…an area of land located adjacent to **Key Features** or **watercourses** and usually bordering lands that are subject to development or site alteration. The purpose of the **buffer** is to protect the*

> *features and ecological functions of the Regional Natural Heritage System by mitigating impacts of the proposed **development** or **site alteration**. The extent of the **buffer** and activities that may be permitted within it shall be based on the sensitivity and significance of the **Key Features** and **watercourses** and their contribution to the long term **ecological functions** of the Regional Natural Heritage System as determined through a Sub-watershed Study, an Environmental Impact Assessment or similar studies that examine a sufficiently large area.*

Ecological function is defined as: "…the natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes. These may include biological, physical and socio-economic interactions".

7.3.1.1 Feature Sensitivity

Appleby Creek is identified as a warm thermal regime stream and would generally be categorized as a less sensitive feature (versus a cold thermal regime stream which would be considered highly sensitive). Therefore, the aquatic species known to inhabit Appleby Creek are generally tolerant of wider temperature fluctuations leading to this general classification of a low sensitivity feature. Additionally, no highly sensitive or SAR aquatic species are known to inhabit Appleby Creek according to the background screening conducted for this EIA. In terms of the contribution of the feature to the long-term ecological function of the NHS, Appleby Creek has been identified as direct fish habitat and may also be used as a travel corridor for species utilizing both the watercourse and adjacent riparian habitat.

7.3.1.2 Assessment of Proposed Adjacent Land Use

The proposed adjacent land use is considered a lower intensity land use (i.e., in comparison to a high density residential or busy commercial use such as a supermarket), based on the assumption that the use (whether employment or industrial), will be contained within the proposed warehouse facilities, and will be accompanied by adequate stormwater management on site. The stormwater management plan demonstrates that there is no direct surface runoff from the development area or any impervious surfaces contributing contaminants or sediments directly to the watercourse within the Subject Lands. The SWM plan demonstrates that all run-off will be directed to underground and surface level storage and will go through a filtration system (attaining at least 80% TSS removal) before entering the storm sewers and being directed offsite.

7.3.2 Buffer Guidelines & Background Research

An Ecological Buffer Guideline Review conducted by Beacon Environmental (2012) primarily focused on recommendations for urbanizing contexts. The study also focused on buffers in terms of their ability to protect the natural feature or function of interest from the impacts of the adjacent land use, rather than examining buffer widths under broader definitions including habitat/critical function or linkage provision. This approach aligns with the ROP definition of "buffer" cited previously in this report.

A summary of research for buffers adjacent to watercourses (relevant to this proposal) in Beacon's study is as follows:

- Water Quality: Research cites buffer widths of 10 metre to 40 metres, noting that sediment alone can generally be well-attenuated in buffers that are less than 10 metres, and that a combination of herbaceous and woody vegetation is most effective for overall nutrient attentuation. The study notes that wider buffers are required for attenuation of nitrogen, but given the site-specifc circumstances of this application, including the topography and drainage patterns, proposed land use and site-specific mitigation (i.e., stormwater mangement and buffer enhancements), the proposed adjacent land use is not expected to generate additional nitrogen or significant increases in sediment inputs.
- Core Habitat Function: Research cites buffer widths of 10 metre to 75 metres, with significant variabilty in recommended buffer widths both between and within different taxonomic groups. Given the low sensitivity

of the fish species known to inhabit Appleby Creek, in combination with the topography and drainage patterns, proposed land use and site-specific mitigation (i.e., stormwater management and buffer enhancements), a buffer on the lower end of this range is likely adequate to protect core habitat function.

Additional research (e.g., Castelle, Johnson and Conolly [1994]) has concluded that a buffer of at least 15 metres is necessary to protect wetlands and streams under most conditions. The Natural Heritage Reference Manual (2005) also cites the likely adequacy of buffer widths of 15 metres for less sensitive streams.

Therefore, we propose that a vegetated buffer with a minimum width of at least 15 metres from the watercourse on the Subject Lands, in combination with the proposed site-specific mitigation, is likely to be sufficient to protect the water quality of the watercourse feature, as well as it's long-term functional contribution to the NHS as fish/aquatic habitat.

7.3.3 Proposed Watercourse Buffer – Southern Bank Appleby Creek

The proposed buffer on the south bank of Appleby Creek ranges between 15.4 metres and 29.6 metres. These buffer widths result from the required regulatory setback of 7.5 metres from the meander belt on the east side of the property, and 7.5 metres from the top of bank on the north side of the property (**Figure 4**). For the majority of the stream reach on the east side of the Subject Lands, the buffer width is greater than 20 metres. In two locations on the east side the buffer dips below 20 metres (but never below 15 metres). On the north side of the property the buffer width is greater than 28 metres in all locations. Based on the assessed sensitivity and significance of the watercourse, in combination with the proposed adjacent land use and mitigation measures, the watercourse and associated fish habitat are not expected to incur any negative impacts resulting from the change in land use.

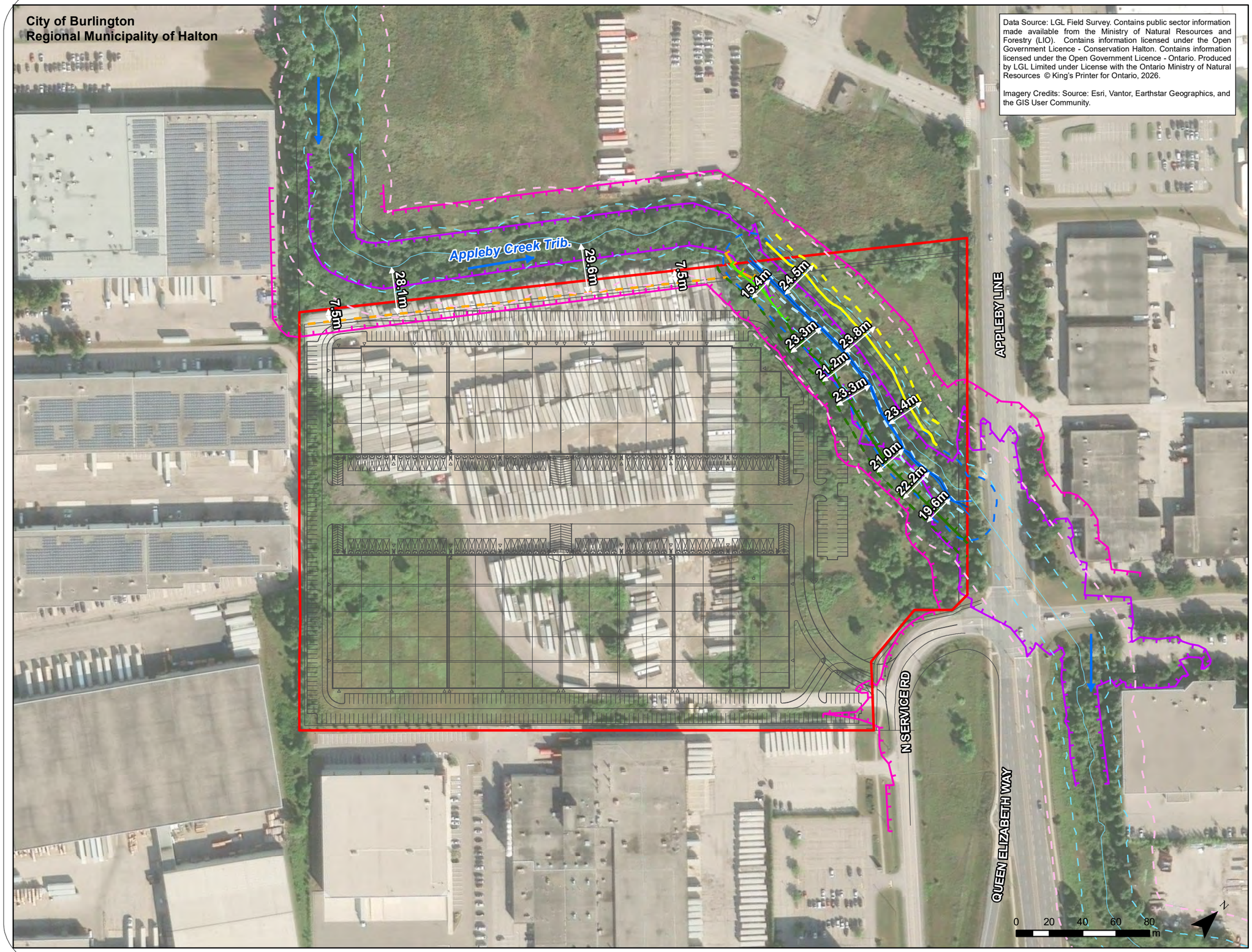
7.3.4 Proposed Watercourse Buffer – Northern Bank Appleby Creek

The proposed vegetated buffer on the north bank of Appleby Creek on the Subject Lands ranges between 23.4 metres and 24.5 metres. These buffer widths result from the required regulatory setback of 7.5 metres from the stable top of slope (**Figure 4**). Though development is not currently proposed for the parcel that will be created in the north-eastern corner of the Subject Lands as a result of the NHS dedication, based on the assessed sensitivity and significance of the watercourse, this buffer/setback width should be adequate for any permitted uses within the Mixed Use Employment (MXE) Zone, assuming the appropriate technical studies confirm adequate site-specific mitigation (e.g., stormwater management) as part of the development approval process.

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LEGEND

- Subject Property
- Proposed Site Plan
- Vegetated Buffer Size
- Floodplain Delineation Halton Conservation - Approximate
- Regulation Limit Halton Conservation - Approximate
- Meanderbelt (GEO Morphix)
- Top of Bank (GEO Morphix)
- 7.5m from GEO Morphix Meander Belt and Top of Bank (LGL)
- Top of Bank - Endorsed by Conservation Halton Nov. 14, 2024
- Top of Bank 7.5m from Subject Property
- Stable Slope Allowance
- Regulatory Allowance
- Top of Slope (GEO Morphix)
- Watercourse (GeoHub)
- 15m from Watercourse (GeoHub)
- Watercourse Centre
- Watercourse Extents / Bottom of Slope (GEO Morphix)
- 15m from Watercourse Extents Fisheries Setback (LGL)
- 30m from Watercourse

4495 North Service Road

Site Plan and Setbacks

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environmental research associates

Project:	TA9453	**Figure:**	4
Date:	June, 2026	**Prepared By:**	KC
Scale:	1:2,190.23	**Verified By:**	SB

8 Impact Assessment and Mitigation

This impact assessment considers the proposed development and activities (e.g. vegetation removal, grading, stormwater management) that may impact the watercourse/fish habitat and associated NHS. Transitioning the Subject Lands from the existing land use to the proposed, includes consideration of direct, indirect, as well as cumulative impacts to the adjacent NHS. This EIA incorporates the results of supporting studies (e.g., hazard analyses, SWM plans) to ensure no negative impacts to the watercourse and the greater NHS.

The following sub-sections consider different types of potential effects (direct, indirect & cumulative), and various mitigation measures that are available and proven to address predicted impacts. Avoidance of negative impacts is the preferred approach to land development applications. However, where impacts are anticipated, mitigation measures are recommended to minimize the extent of impacts on the NHS.

8.1 Direct Impacts

Direct impacts are generally defined as those that are directly the result of the proposed development plan. Grading, servicing and building construction can result in vegetation removal, loss of wildlife habitat, disturbance/impediment to animal movement, increased erosion, sedimentation and turbidity, and an increase in impervious surfaces.

At the time of writing this EIA, the final grading plan was not available. Assuming that no grading will occur within the proposed limits of the NHS, no additional erosion, sedimentation or turbidity within Appleby Creek because of the proposed construction is expected. According to Husson (2026), the creek is contained within its own drainage boundaries (catchment area) and drainage patterns will remain in their existing condition. As a precaution, and to protect downstream areas of the watershed, mitigation measures are included to prevent any impacts associated with erosion or sedimentation due to on-site construction.

Minimal vegetation removal is necessary to facilitate the proposed development, as the majority of the proposed development footprint is disturbed and lacks vegetation. Additionally, vegetative species of local or provincial rarity were not found in the proposed development area. Some vegetation and tree removal will be required to facilitate the proposed development, and therefore, some minimal loss of habitat may occur for birds and mammals.

Other potential direct impacts may include wildlife becoming entrapped by exclusionary fencing on the periphery of the construction site; water contamination by oils, gasoline, grease and other materials used during construction; and increased vulnerability of graded areas to invasion by non-native species.

8.1.1 Recommended Mitigation Strategies

- A Tree Preservation Plan (TPP) should identify specific requirements to ensure impacts to trees are avoided or minimized where possible. This report should be conducted as part of the detailed design process by a qualified Arborist;
- Enhance and maintain all recommended buffers with native herbaceous and woody vegetation species to enhance habitat value of riparian areas;
- Implement a stringent Erosion and Sedimentation Control (ESC) Plan and work site isolation (e.g., exclusionary fencing) from the NHS, to be submitted at detail design;
- Inspect all exclusionary fencing daily to identify wildlife that may have become entrapped. Contact a qualfieid professional to assist with releasing any affected wildlife;
- Control any potential contamination through good housekeeping practices and maintain an emergency spill kit on site;
- Respect recommended sensitive timing windows for construction. Avoid vegetation removals during the breeding bird window (i.e., April 1 to August 31), and bat roosting window (March 15-November 30)

- If vegetation removals occur during this time, a nest sweep is required by a qualified biologist to ensure adherance to the MBCA
- Revegetate all exposed soils outside of the NHS as soon as possible with native seed mix or plantings.

8.2 Indirect Impacts

Indirect impacts may be caused by altered uses and activities on the Subject Lands after construction has been completed. These secondary effects are reasonably foreseeable and may occur after the initial site clearing and may include: 1) effects of noise or light on wildlife which may disrupt their ability to communicate and/or nocturnal behaviour; 2) wandering wildlife may enter the development site post-construction and possibly undergo injury or death; and 3) human activity may encroach within the NHS creating disturbance, ad-hoc trails, litter, etc.

Though the proposed land use will greatly increase impervious surfaces on the Subject Lands, hydrological changes to Appleby Creek are not expected based on the existing topography of the site and proposed SWM plan (Husson, 2026). According to Husson (2026), the portion of the creek located on the Subject Lands is contained within its own drainage boundary (subcatchment) and existing drainage patterns within the area of the creek will remain unaltered. Therefore, changes to the ecological conditions of the receptor habitat of the NHS, including the watercourse and riparian (buffer) areas are not anticipated. Additionally, the FSR states that both the quality and quantity of stormwater being managed on site will meet the City of Burlington SWM design guidelines, attaining at least 80% TSS removal and retaining at least 5mm from a 24-hour storm on-site. Thus, no indirect negative impacts are anticipated within downstream portions of Appleby Creek.

8.2.1 Recommended Mitigation Strategies

- Utilize fencing along boundary of NHS to prevent human encroachment as well as wildlife from entering the site; and
- Design buildings appropriately to prevent/minimize disturbance and mortality post-construction (e.g., bird friendly design; dark sky friendly lighting).

8.3 Cumulative Impacts

Cumulative impacts are the result of incremental impacts of successive development. These may include the effects of other developments, municipal road and infrastructure construction, increased runoff, etc., and may interact with each other and compound or increase the degree of environmental impact. Provided developments are planned with appropriate avoidance of important or sensitive-species habitats, systems-based protection and enhancement, implementation of setbacks, demonstration of water budget pre/post-development, and adequate SWM, the cumulative effects are anticipated to be minimal. The implementation of buffers as well as a grading and SWM plan which respect the existing drainage and topography of the Subject Lands are of prime importance in mitigating potential cumulative effects within the watershed.

8.3.1 Recommended Mitigation Strategies

- Employ all mitigation strategies recommended for potential direct and indirect impacts listed above; and
- Employ all recommended mitigation strategies contained within the FSR/SWM to prevent downstream impacts within the watershed.

8.4 Timing Windows

Timing windows are an effective strategy to avoid harm to sensitive species (i.e., SAR). These timing windows are recommended to avoid harm to nesting birds and roosting bats:

Nesting Birds

- Vegetation removals to occur outside of the nesting period considered to be April 1 – August 31.

Roosting Bats

- Vegetation removals should occur outside of the roosting period considered to be March 15 – November 30.

8.5 Significant Wildlife Habitat Mitigation

The likelihood of the Subject Lands providing Significant Wildlife Habitat is very low, and accordingly, there is no mitigation specific to SWH. The recommended NHS buffers and enhancement plantings will increase the quality of available habitat for all species.

8.6 Buffer Planting

The proposed buffers are intended to be deliberately planted and maintained with native tree and shrub species. The buffer is intended to support local biodiversity, stabilize soils, attenuate pollutants and sediments, support the maintenance of microclimate, and improve overall ecological resilience. All plantings within the buffer must consist exclusively of native species that are well-adapted to the local climate and soil conditions. It is recommended that all plantings be implemented in accordance with a planting plan approved by the City as part of the Site Plan approval process. The selection, placement, and density of vegetation must meet the satisfaction of the City to ensure long-term sustainability and alignment with local environmental objectives. It is recommended that woody/tree species which would produce suitable maternity roosting habitat for SAR bats be included in the planting plan. Since Monarch butterfly has been observed in the vicinity of the study area (according to the background records review), it is also recommended that Milkweed species be included in the planting plan.

8.7 Monitoring Plan

A monitoring plan should be developed at detailed design for the site for the construction and post construction phases. Compliance and effectiveness monitoring tasks are recommended to ensure that construction mitigation and restoration measures are effective. The following draft measures may be included in the monitoring plan and may not be limited to the following:

8.7.1 Compliance Monitoring During Construction by Civil Engineering Inspectors

- Inspection/confirmation that vegetation removals occurred during the appropriate window to mitigate impacts to wildlife.
- Regular erosion and sediment controls (ESC) inspections to ensure that ESC's are performing as intended and to ensure that the work zone delineation and natural heritage setbacks are respected.
- Regular tree protection fence/hoarding inspections to ensure that they are performing as intended and to ensure that tree protection zones are respected.

8.7.2 Performance Monitoring Post-Construction

- Monitoring success of enhancement and landscape plantings and replacements as required, within the warranty period.

9 Policy Conformance

An essential test of natural heritage protection planning is to demonstrate whether a proposed activity meets the requirements of various tiers of protection policy.

Regulatory policy is compared against the proposed development application in **Table 4** below.

Table 5. Policy Analysis

Relevant Federal and Provincial Policy	Discussion
Fisheries Act, 1985	• Serious harm to fish or fish habitat is not expected • Appleby Creek is contained within its own drainage boundaries • All proposed site alteration and development is at least 15 metres from Appleby Creek (direct fish habitat). • The proposed stormwater management plan, and implementation of best practices regarding erosion and sedimentation controls protects downstream reaches of Appleby Creek and the watershed as whole.
Migratory Birds Convention Act, 1994	• Harm to migratory birds, their nests or eggs is not expected • Site disturbance, grading and vegetation removals are to be conducted outside of the timing window for breeding birds.
Species Conservation Act, 2025	• One SAR bird (Barn Swallow) was confirmed to be using the Subject Lands as foraging habitat. Though the Subject Lands do not appear to contain suitable breeding habitat, the recommended timing windows serve as a precautionary measure to prevent impacts to individuals as well as their nests. • To protect any SAR bats that may be utilizing vegetation on the site for habitat at the time of construction, timing windows have been recommended to avoid negative impacts to SAR bats as well as maternal roosting habitat. • When the site plan is finalized and specific trees/shrubs have been identified for removal, a qualified biologist should be consulted to determine whether registration under the SCA (2025) is required.
Provincial Planning Statement, 2024	• The only natural heritage feature (as defined in the PPS) which was identified on the Subject Lands was fish habitat; • Development/site alteration is not proposed within fish habitat; • The EIA evaluates development/site alteration within 120 metres of all known fish habitat and demonstrates that negative impacts to the feature or its function(s) are not expected.
Region of Halton Official Plan (2024 Consolidation)	• The proposal supports and enhances the function of a system of inter-connected natural heritage features; • Prohibits development and site alteration within key features of the Regional Natural Heritage System including watercourses within a Conservation Authority Regulation Limit, fish habitat and CA regulated floodplains. • Recommends a buffer width based on the sensitivity and significance of the Appleby Creek and its contribution to the long term ecological functions of the RNHS; • Prohibits development within the buffer (as defined in the ROP) adjacent to a watercourse/fish habitat by demonstrating no negative impacts on the natural feature and areas or their ecological functions; and • Refines the boundaries of the Regional Natural Heritage System through an individual Environmental Impact Assessment (subject to approval by the City).
City of Burlington Official Plan, 1997	• The proposal does not include any proposed development or site alteration within lands designated as Watercourse; • Mapping of the regulatory floodplain from Conservation Halton was used to delineate the flood hazard/Watercourse designation; and • In accordance with Section 6.4.2. (f), all proposed development respects the regulatory setbacks from the defined hazard limits (stable top of bank, regulatory floodplain, meander belt).

10 Recommendations for Approval

To ensure mitigation is implemented the following conditions are recommended to be included as part of Site Plan Approval:

- Site alteration, specifically within CH regulation area should be reviewed by CH with issuance of a permit (O. Reg. 41/24) to the discretion of CH;
- Restrict vegetation removals during important wildlife periods, such as the nesting bird window and the roosting bat window. Tree removals should be avoided between March 15 and November 30 for roosting bats, and vegetation removals should be avoided between April 1 and August 31 for breeding birds;
- Plant herbaceous and woody vegetation (including trees) within the buffer to protect and enhance the watercourse/fish habitat as well as enhance the diversity of fauna and flora, ecosystems and plant communities (to conform with Section 114.1 (5) and (7));
- Plant trees and shrubs on the property to compensate for those removed, in accordance with City of Burlington By-Law 40-2022;
- An erosion and sedimentation control plan and commitment for regular inspections and maintenance during the construction period;
- Prohibition of any site alteration (including grading) or equipment storage within the proposed buffers/NHS;
- Installation of a rigid fence along the boundary of the NHS (Open Space [OS] Zone) to restrict encroachment into the NHS and prevent wildlife from wandering into the development area of the site;
- Adherence to the CH-approved Erosion Hazard Limit of 7.5 metres from the greatest hazard; and
- Stormwater quantity and quality controls consistent with the recommendations of the FSR/SWM.

11 Summary and Conclusions

The Subject Lands support cultural meadow, cultural thicket and cultural woodlands adjacent to a regulated watercourse (Appleby Creek). This watercourse and riparian habitat constitute an important component of the Regional Natural Heritage System within Burlington and provide linkages to other local natural heritage features. This EIA has confirmed the area is host to fish habitat and a variety of flora and fauna species and recommended a buffer width which conforms with the applicable ROP policies and demonstrates consistency with the PPS (2024).

It is integral to consider protection and mitigation during design of the site plan. To that end the following has been included in this process:

- Identification of natural heritage system boundaries, in this case, delineation of the regulatory setback from the hazard lands associated with Appleby Creek, which meet the recommended vegetated buffer width of at least 15 metres;
- Detailed tree inventory;
- Recommendations for a planting plan for the buffer areas;
- Review of the proposed stormwater management plan to ensure no negative impacts to Appleby Creek or the ecological function of any lands receiving storm runoff including downstream/off-site areas of the watershed;
- Design of mitigation measures to include timing windows for vegetation removals to protect migratory birds and bats protected under the SCA, as well as recommendations to include erosion and sediment control during construction; and
- Recommendations for a monitoring plan to be submitted as a condition of Site Plan approval.

Connectivity of the NHS will be maintained in the post-development scenario and protection of its boundary will be guaranteed through the zoning process, erection of a fence, and dedication of the lands to the City. Any trees that are removed to facilitate the proposed development will be replaced/compensated to the satisfaction of the City.

Given all the above, a residual negative impact to the watercourse/fish habitat or its contribution to the function of the NHS is not anticipated. It is the author's opinion that the recommendations made herein conform to the applicable Official Plan policies and are consistent with the PPS (2024).

12 References

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GeoMorphix (March 11, 2025). Appleby Creek Fluvial Geomorphology Assessment – 4495 North Service Road, Burlington, Ontario. Prepared for Dream. GEO Morphix Project No. 24130.

Husson (June, 2026 [draft]). Functional Servicing and Stormwater Management Report. Prepared for Dream Summit (1250 Appleby Line) LP.

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Pinchin (May 29, 2026 [draft]). Slope Stability Assessment – Proposed Commercial Development – 4495 North Service Road (1250 Appleby Line), Burlington, Ontario.

Riley, J.L. 1989. Distribution and status of the vascular plants of Central Region. Ontario Ministry of Natural Resources, Parks and Recreational Areas Section, Central Region, Richmond Hill, Ontario.

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Appendix A
Terms of Reference

Appendix D-2

Scoping and Terms of Reference Checklist

The **Scoping Checklist** provides a brief summary of components to be considered in the preparation of an EIA Terms of Reference. Scoping is to be completed in consideration of the following:

- Scope and scale of the proposed *development* or *site alteration*;
- Scope and scale of potential impacts resulting from the proposed *development* or *site alteration*;
- Sensitivity or complexity of the features on or adjacent to the proposed project to land use change and specific impacts associated with the proposed project;
- Surrounding land use context (e.g., existing *development*);

Depending on the items above, not all elements listed below will necessarily be required. Large projects, those with a higher risk of potential impact, and those with complex natural heritage features and functions will generally require a more comprehensive set of assessments, analyses, etc. Smaller scale projects with lower potential impacts and where natural heritage features and functions are less complex are suitable for a scoped EIA and a greater number of items may be 'scoped out' (i.e., not required). In all cases, some items listed below may not be required depending on the specific site conditions and project.

Who Prepares the Checklist: The checklist is to be completed by the Lead Planning Agency (or by their delegate or assign) with input from other agencies with jurisdiction within the subject property or features that triggered the EIA requirement.

Who Uses the Checklist: The scoping checklist is to be used by the EIA practitioner who will be preparing the EIA to inform the preparation of a Terms of Reference for submission, review and approval.

When is the Checklist Completed? The scoping checklist may be completed through Step 2 of the EIA Process (Scoping the EIA).

Part 1 – Project Information

1-A | General Information

Project Name:	4495 North Service Road
Proponent:	Dream Summit
Primary Contact:	
Contact Information:	E: P:
Project Location:	(*Street Address or Lot and Concession*) 4495 NSR
Consultant:	LGL Limited
Consultant Lead:	Grant Kauffmen
Contact Information:	E: gkauffman@lgl.com P: 905-833-1244

1-B | Project Type

- ☐ *Agricultural building* or structure within building cluster
- ☐ *Agricultural building* or structure outside building cluster
- ☐ Lot Severance for *single detached dwelling*
- ☐ New *single detached dwelling* on an existing lot
- ☐ New accessory structure (garage, shed, etc.)
- ☐ New accessory *development* (e.g., swimming pool, driveway)
- ☐ Re-build – same footprint
- ☐ Re-build – larger or altered footprint
- ☐ Addition to existing dwelling / structure
- ☐ Accessory re-*development* or modification (e.g., swimming pool, driveway)
- ☐ Septic system or other servicing
- ☒ Other *development* or *site alteration*. Specify: Warehouse - Commercial

Part 2 – Scoping of Inventories and Delineations

Project Area / Adjacent Lands

☐ ☐

This section provides general guidance on what types of field inventories and feature delineations are anticipated to be required for the EIA. The proponent (or consultant) is to provide detailed description(s) of the proposed approach (survey type, specific methods, seasons, etc.), rationale and locations for surveys as part of a Draft Terms of Reference.

☒ ☒ Species at Risk

- ☒ ☒ Screening Assessment[19]
- ☐ ☐ Targeted surveys are anticipated to be required. To be confirmed through Screening Assessment and/ or in consultation with MECP, as appropriate
- ☐ ☐ **All of the above**

☒ ☒ *Significant Wildlife Habitat*

- ☒ ☒ Screening Assessment[20]
- ☒ ☒ Field program to address assessment of *Significant Wildlife Habitat*, as appropriate
- ☒ ☒ **All of the above**

☒ ☒ Terrestrial

- ☒ ☒ Ecological Land Classification (ELC)
- ☒ ☒ Botanical Inventory
- ☐ ☐ Significant woodland assessment[21]
- ☒ ☒ Avifauna (Birds)
  - ☒ ☒ In-Field Habitat Assessment
  - ☒ ☒ Incidental / General Observations[22]
  - ☐ ☐ Detailed or Targeted Survey(s)
- ☒ ☒ Herpetofauna (Amphibians and Reptiles)

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[19] The Terms of Reference (TOR) is to include a preliminary Species at Risk (SAR) screening assessment to identify if any SAR have potential to occur within or adjacent to the study area within a distance appropriate to determine impacts to the species or influence of species presence on the proposed *development* or *site alteration*. This may include species listed Provincially (ESA 2007) or federally (SARA 2004), as applicable to the species type and project.

[20] A Screening Assessment for *Significant Wildlife Habitat* (SWH) includes a desktop and secondary-source level assessment of habitats present against criteria for SWH in the applicable Ecoregion Criteria Schedule for the Project. This assessment approach is suitable for identifying most candidate habitat areas (e.g., by vegetation community); for most SWH types this approach is not enough to confirm presence or absence. Where candidate areas may be impacted, additional field surveys to confirm will be required.

[21] A significant woodland assessment may require targeted field surveys to inform the assessment of significance (e.g., prism sweeps, forest patch age).

[22] This survey approach should be limited to only those projects with low risk of impact to this species group and where the potential presence of Species at Risk or *Significant Wildlife Habitat* is very low.

☒☒ In-Field Habitat Assessment
☒☒ Incidental / General Observations[21]
☐☐ Detailed or Targeted Survey(s)

☒☒ Mammals
☐☐ In-Field Habitat Assessment
☒☒ Incidental / General Observations
☐☐ Detailed or Targeted Survey(s)

☒☒ Terrestrial Crustaceans (e.g., chimney crawfish)
☐☐ In-Field Habitat Assessment
☒☒ Incidental / General Observations
☐☐ Detailed or Targeted Survey(s)

☐☐ Insects
☐☐ In-Field Habitat Assessment
☐☐ Incidental / General Observations
☐☐ Detailed or Targeted Survey(s)

☐☐ **All of the above**

☒☒ Aquatic
☒☒ In-Field Habitat Assessment / General Assessment
☐☐ Detailed / Targeted Survey(s)
☐☐ **All of the above**

☒☒ Delineation of Features[23]
☐☐ Woodland (If determined to be a *significant woodland*)
☐☐ Wetland
☒☒ Valleyland (Top of Bank / Slope)
☐☐ Other: _____
☐☐ **All of the above**

Notes:

General NHS feature in proximity is Appleby Creek and its associated valleylands/riparian areas. Based on aerial photography, available mapping, and knowledge of the site, no significant woodlands or wetlands are anticipated to be impacted. Mitigation should consider the implementation of a naturalized buffer within the identified north and east buffers making use of native/non-invasive vegetative species.

Part 3 – Other Studies[24]

[23] Where Species at Risk are found to occur, delineation of habitat will also be required, but cannot be known at the scoping stage. Delineation of habitat is to be done in consultation with, or be approved by the MECP, as appropriate.
[24] These studies are generally prepared as stand-alone reports. Relevant information on the interaction of these processes and functions with natural heritage features and functions is to be addressed in the EIS. It is strongly encouraged that the programs for these studies be integrated with the EIA Terms of Reference to ensure information appropriate to informing the EIA is collected.

☒ ☒ Geotechnical
- ☐ ☐ Secondary Source
- ☒ ☒ Study Required

☐ ☐ Hydrogeological
- ☐ ☐ Secondary Source
- ☐ ☐ Study Required

☐ ☐ Geomorphological
- ☐ ☐ Secondary Source
- ☐ ☐ Study Required

☒ ☒ Surface Water (e.g. hydrologic review, fluvial geomorphology)
- ☐ ☐ Secondary Source
- ☒ ☒ Study Required

☒ ☒ Natural Hazard(s)[25]
- ☐ ☐ Secondary Source
- ☒ ☒ Study Required

☐ ☐ Wetland Water Balance

☐ ☐ Other (specify): _____

☐ ☐ **All of the above**
- ☐ ☐ Secondary Source
- ☐ ☐ Study Required

Part 4 – Terms of Reference Requirements

☒ Introduction
- ☒ Description of Subject Property
- ☒ Description of proposed d*evelopment* or *site alteration*
- ☒ Description of known site history pertinent to the EIA (e.g., former land use(s), grading, filling)
- ☒ Description of landscape context
- ☒ **Map**: location of subject property, orthophotography base.

☒ Planning Context
- ☒ Legislative, regulatory and policies applicable to the property and the proposed *development* or *site alteration*.
- ☒ Current land use designation and zoning
- ☒ Proposed land use designation and zoning to support proposed *development*

☒ Background Review
- ☒ List relevant natural heritage information secondary sources (e.g., species atlases, databases);
- ☒ List relevant existing studies, plans, etc. (if / as available).
- ☒ **Map**: location of subject property, mapped feature(s), orthophotography base.

☒ Biophysical Inventory
- ☒ Define and provide rationale for study area.
- ☒ Detailed study approach and methods for all identified inventories and delineations identified in **Part 2.** Where there is rationale to exclude a specific feature or area from assessment, provide rationale for consideration. Appropriate justification /

[25] This includes slopes, valleylands, steep and oversteep slopes, etc.

rationale for single-season or multi-season surveys shall be provided (e.g., vegetation community / ELC, wetland delineation, etc.)

☒ **Map**: location of proposed surveys, subject property, proposed study area, orthophotography base.

☒ Biophysical Analysis

Describe the general approach and anticipated approach and/or method(s) of analyses for the following:

- ☒ Species at Risk:
  - ☒ Preliminary screening assessment to be provided as part of the TOR. This will inform the field program.
- ☒ *Significant Wildlife Habitat*:
  - ☒ Preliminary screening assessment to be provided as part of the TOR. This will inform the field program.
- ☒ Evaluation of significance for natural heritage species, features and/or areas within the study area against appropriate policies and guidelines[26];
- ☐ *Linkage* Assessment;
- ☒ Enhancement Area(s);
- ☒ Natural Hazards within the study area;
- ☐ *Buffer* assessment;

☒ Alternative Assessment

Outline approach to identifying or assessing alternatives to avoid or minimize impacts.

☒ Impact Assessment

Confirm scope includes an impact assessment that will consider direct, indirect (including induced) and cumulative impacts and provide general approach to impact assessment.

☒ Mitigation

Confirm scope includes identification of mitigation measures that effectively address anticipated impacts resulting from the proposed development or site alteration. Mitigation is to include recommendations for enhancement or restoration.

☒ Monitoring Program

If a monitoring program may be required, confirm that consideration and recommendations for a monitoring plan (or rationale that one is not required) will be included in the EIA.

☒ Recommendations and Conclusions

Confirm that recommendations and conclusions with respect to the 'no negative impact' test will be included in the EIA.

☒ Maps and Figures

Outline anticipated maps and figures to be prepared for and included in the EIA to document and support assessment(s), recommendations and conclusions.

Note: Maps / figures may be combined for ease of production and review. The maps / figures listed are provided to illustrate the information that is to be included as part of the TOR submission.

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[26] This may include local municipal, regional, provincial, federal legislation, policies, plans and guidance documents, as appropriate and applicable to the study area, project type, species and features.

CHECKLIST COMPLETION RECORD

A record of the individuals who complete the checklist is provided below.

COMPLETED BY:			
Name:	John Stuart	Name:	
Position	Sr. Env. Planner	Position	
Agency:	COB	Agency:	
Contact Information:		Contact Information:	
Date:	January 8, 2025	Date:	

CHECKLIST COMPLETION RECORD (Continued)

COMPLETED BY (Continued):	
Name: _____	Name: _____
Position _____	Position _____
Agency:	Agency:
Contact Information:	Contact Information:
Date: _____	Date: _____

Appendix B
Background Records of Wildlife for the Study Area

Appendix B – Background Records of Wildlife for the Study Area

Scientific Name	Common Name	SARA	SCA/PSO	FWCA	MBCA	Ontario Reptile and Amphibian Atlas-17PJ00	Ontario Breeding Bird Atlas - 17TNJ90	eBird-Burlington--North Service Road Stormwater Ponds	iNaturalist	Ontario Butterfly Atlas-17NJ90	NHIC Square – OGF ID 997117 17NJ9803
BIRDS											
Branta canadensis	Canada Goose	-	-	-	X		X	X			
Cygnus olor	Mute Swan	-	-	-	X		X	X			
Cygnus buccinator	Trumpeter Swan	-	-	-	X		X	X			
Aix sponsa	Wood Duck	-	-	-	X		X				
Anas rubripes	American Black Duck	-	-	-	X			X			
Anas americana	American Wigeon	-	-	-	X			X			
Anas discors	Blue-winged Teal	-	-	-	X			X			
Anas strepera	Gadwall	-	-	-	X			X			
Anas crecca	Green-winged Teal	-	-	-	X			X			
Anas platyrhynchos	Mallard	-	-	-	X		X	X			
Anas clypeata	Northern Shoveler	-	-	-	X			X			
Bucephala albeola	Bufflehead	-	-	-	X			X			
Lophodytes cucullatus	Hooded Merganser	-	-	-	X			X			
Mergus merganser	Common Merganser	-	-	-	X			X			
Mergus serrator	Red-breasted Merganser	-	-	-	X			X			
Spinus tristis	American Goldfinch	-	-	-	X		X				
Meleagris gallopavo	Wild Turkey	-	-	G			X				
Ixobrychus exilis	Least Bittern	THR	-	-	X		X				
Butorides virescens	Green Heron	-	-	-	X		X				
Cathartes aura	Turkey Vulture	-	-	P	X		X				
Haliaeetus leucocephalus	Bald Eagle	-	-	P	X		X				
Astur cooperii	Cooper's Hawk	-	-	P	X		X				
Accipiter striatus	Sharp-shinned Hawk	-	-	P	X		X				
Buteo jamaicensis	Red-tailed Hawk	-	-	P	X		X				
Falco sparverius	American Kestrel	-	-	P	X		X				
Rallus limicola	Virginia Rail	-	-	-	X		X				
Porzana carolina	Sora	-	-	-	X		X				

Scientific Name	Common Name	SARA	SCA/PSO	FWCA	MBCA	Ontario Reptile and Amphibian Atlas-17PJ00	Ontario Breeding Bird Atlas - 17TNJ90	eBird-Burlington--North Service Road Stormwater Ponds	iNaturalist	Ontario Butterfly Atlas-17NJ90	NHIC Square – OGF ID 997117 17NJ9803
Gallinula galeata	Common Gallinule	-	-	-	X		X				
Charadrius vociferus	Killdeer	-	-	-	X		X				
Actitis macularius	Spotted Sandpiper	-	-	-	X		X				
Gallinago delicata	Wilson's Snipe	-	-	-	X		X				
Scolopax minor	American Woodcock	-	-	-	X		X				
Columba livia	Rock Pigeon	-	-	-			X				
Zenaida macroura	Mourning Dove	-	-	-	X		X				
Coccyzus erythropthalmus	Black-billed Cuckoo	-	-	-	X		X				
Coccyzus americanus	Yellow-billed Cuckoo	-	-	-	X		X				
Bubo virginianus	Great Horned Owl	-	-	P	X		X				
Archilochus colubris	Ruby-throated Hummingbird	-	-	-	X		X				
Megaceryle alcyon	Belted Kingfisher	-	-	P	X		X				
Melanerpes carolinus	Red-bellied Woodpecker	-	-	-	X		X				
Picoides pubescens	Downy Woodpecker	-	-	-	X		X				
Picoides villosus	Hairy Woodpecker	-	-	-	X		X				
Colaptes auratus	Northern Flicker	-	-	-	X		X				
Dryocopus pileatus	Pileated Woodpecker	-	-	-	X		X				
Contopus virens	Eastern Wood-Pewee	SC	-	-	X		X				
Empidonax alnorum	Alder Flycatcher	-	-	-	X		X				
Empidonax traillii	Willow Flycatcher	-	-	-	X		X				
Sayornis phoebe	Eastern Phoebe	-	-	-	X		X				
Myiarchus crinitus	Great-crested Flycatcher	-	-	-	X		X				
Tyrannus tyrannus	Eastern Kingbird	-	-	-	X		X				
Vireo solitarius	Blue-headed vireo	-	-	-	X		X				
Vireo olivaceus	Red-eyed Vireo	-	-	-	X		X				
Vireo gilvus	Warbling Vireo	-	-	-	X		X				
Vireo flavifrons	Yellow-throated Vireo	-	-	-	X		X				

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Cyanocitta cristata	Blue Jay	-	-	P			X				
Corvus brachyhrynchos	American Crow	-	-	-			X				
Corvus corax	Common Raven	-	-	P			X				
Eremophila alpestris	Horned Lark	-	-	-	X		X				
Progne subis	Purple Martin	-	-	-	X		X				
Tachycineta bicolor	Tree Swallow	-	-	-	X		X				
Stelgidopteryx serripennis	Northern Rough-winged Swallow	-	-	-	X		X				
Riparia riparia	Bank Swallow	THR	-	-	X		X				
Petrochelidon pyrrhonota	Cliff Swallow	-	-	-	X		X				
Hirundo rustica	Barn Swallow	THR	-	-	X		X				
Poecile atricapillus	Black-capped Chickadee	-	-	-	X		X				
Sitta canadensis	Red-breasted Nuthatch	-	-	-	X		X				
Sitta carolinensis	White-breasted Nuthatch	-	-	-	X		X				
Thryothorus ludovicianus	Carolina Wren	-	-	-	X		X				
Troglodytes aedon	Northern House Wren	-	-	-	X		X				
Troglodytes hiemalis	Winter Wren	-	-	-	X		X				
Cistothorus palustris	Marsh Wren	-	-	-	X		X				
Cistothorus platensis	Sedge Wren	-	-	-	X		X				
Sialia sialis	Eastern Bluebird	-	-	-	X		X				
Hylocichla mustelina	Wood Thrush	THR	-	-	X		X				
Turdus migratorius	American Robin	-	-	-	X		X				
Dumetella carolinensis	Gray Catbird	-	-	-	X		X				
Mimus polyglottos	Northern Mockingbird	-	-	-	X		X				
Toxostoma rufum	Brown Thrasher	-	-	-	X		X				
Sturnus vulgaris	European Starling	-	-	-			X				

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Vermivora cyanoptera	Blue-winged Warbler	-	-	-	X		X				
Oreothylpis ruficapilla	Nashville Warbler	-	-	-	X		X				
Setophaga ruticilla	American Redstart	-	-	-	X		X				
Setophaga virens	Black-throated Green Warbler	-	-	-	X		X				
Setophaga pensylvanica	Chestnut-sided Warbler	-	-	-	X		X				
Setophaga magnolia	Magnolia Warbler	-	-	-	X		X				
Setophaga pinus	Pine Warbler	-	-	-	X		X				
Setophaga petechia	Yellow Warbler	-	-	-	X		X				
Setophaga coronata	Yellow-rumped Warbler	-	-	-	X		X				
Mniotilta varia	Black-and-white Warbler	-	-	-	X		X				
Seiurus aurocapilla	Ovenbird	-	-	-	X		X				
Helmitheros vermivorum	Worm-eating Warbler	-	-	-	X		X				
Geothlypis trichas	Common Yellowthroat	-	-	-	X		X				
Setophaga citrina	Hooded Warbler	-	-	-	X		X				
Cardellina canadensis	Canada Warbler	THR	-	-	X		X				
Icteria virens virens	Yellow-breasted Chat	END	-	-	X		X				
Piranga olivacea	Scarlet Tanager	-	-	-	X		X				
Pipilo erythrophthalmus	Eastern Towhee	-	-	-	X		X				
Spizella passerina	Chipping Sparrow	-	-	-	X		X				
Spizella pallida	Clay-coloured Sparrow	-	-	-	X		X				
Spizella pusilla	Field Sparrow	-	-	-	X		X				
Pooecetes gramineus	Vesper Sparrow	-	-	-	X		X				

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Passerculus sandwichensis	Savannah Sparrow	-	-	-	X		X				
Melospiza melodia	Song Sparrow	-	-	-	X		X				
Melospiza georgiana	Swamp Sparrow	-	-	-	X		X				
Zonotrichia albicollis	White-throated Sparrow	-	-	-	X		X				
Cardinalis cardinalis	Northern Cardinal	-	-	-	X		X				
Pheucticus ludovicianus	Rose-breasted Grosbeak	-	-	-	X		X				
Passerina cyanea	Indigo Bunting	-	-	-	X		X				
Dolichonyx oryzivorus	Bobolink	THR	-	-	X		X				X
Agelaius phoeniceus	Red-winged Blackbird	-	-	-			X				
Sturnella magna	Eastern Meadowlark	THR	-	-	X		X				
Quiscalus quiscula	Common Grackle	-	-	-			X				
Molothrus ater	Brown-headed Cowbird	-	-	-			X				
Icterus galbula	Baltimore Oriole	-	-	-	X		X				
Icterus spurius	Orchard Oriole	-	-	-	X		X				
Haemorhous mexicanus	House Finch	-	-	-	X		X				
Haemorphous purpureus	Purple Finch	-	-	-	X		X				
Passer domesticus	House Sparrow	-	-	-			X				
INSECTS											
Calopteryx maculata	Ebony Jewelwing	-	-	-					X		
Epargyreus clarus	Silver-spotted Skipper	-	-	-						X	
Erynnis juvenalis	Juvenal's Duskywing	-	-	-						X	
Erynnis baptisiae	Wild Indigo Duskywing	-	-	-						X	
Thorybes pylades	Northern Cloudywing	-	-	-						X	
Polites mystic	Long Dash Skipper	-	-	-						X	
Polites peckius	Peck's Skipper	-	-	-						X	

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Polites themistocles	Tawny-edged Skipper	-	-	-						X	
Euphyes vestris	Dun Skipper	-	-	-						X	
Poanes hobomok	Hobomok Skipper	-	-	-						X	
Anatrytone logan	Delaware Skipper	-	-	-						X	
Thymelicus lineola	European Skipper	-	-	-						X	
Ancyloxypha numitor	Least Skipper	-	-	-						X	
Pompeius verna	Little Glassywing	-	-	-						X	
Pieris rapae	Cabbage White	-	-	-						X	
Colias philodice	Clouded Sulphur	-	-	-						X	
Colias eurytheme	Orange Sulphur	-	-	-						X	
Papilio polyxenes	Black Swallowtail	-	-	P						X	
Papilio glaucus	Eastern Tiger Swallowtail	-	-	P						X	
Papilio troilus	Spicebush Swallowtail	-	-	P						X	
Heraclides cresphontes	Eastern Giant Swallowtail	-	-	-							
Callophyrs niphon	Eastern Pine Elfin	-	-	-						X	
Satyrium acadica	Acadian Hairstreak	-	-	-						X	
Satyrium calanus	Banded Hairstreak	-	-	-						X	
Satyrium titus	Coral Hairstreak	-	-	-						X	
Satyrium edwardsii	Edwards' Hairstreak	-	-	-						X	
Satyrium caryaevorus	Hickory Hairstreak	-	-	-						X	
Satyrium liparops	Striped Hairstreak	-	-	-						X	
Lycaena phlaeas	American Copper	-	-	-						X	
Glaucopsyche lygdamus	Silvery Blue	-	-	-						X	
Celastrina lucia	Northern (Spring) Azure	-	-	-						X	
Celastrina neglecta	Summer Azure	-	-	-						X	

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Polyommatus icarus	European Common Blue	-	-	-						X	
Cupido (Everes) comyntas	Eastern Tailed Blue	-	-	-						X	
Speyeria cybele	Great Spangled Fritillary	-	-	-						X	
Satyrodes eurydice	Eyed Brown	-	-	-						X	
Cercyonis pegala	Common Wood-Nymph	-	-	-						X	
Nymphalis vaualbum	Compton Tortoiseshell	-	-	-						X	
Nymphalis antiopa	Mourning Cloak	-	-	-						X	
Polygonia comma	Eastern Comma	-	-	-						X	
Polygonia progne	Grey Comma	-	-	-						X	
Polygonia interrogationis	Question Mark	-	-	-						X	
Aglais milberti	Milbert's Tortoiseshell	-	-	-						X	
Danaus plexippus	Monarch	END	-	P					X	X	
Phyciodes cocyta	Northern Crescent	-	-	-						X	
Phyciodes tharos	Pearl Crescent	-	-	-						X	
Enodia anthedon	Northern Pearly-Eye	-	-	-						X	
Vanessa virginiensis	American Lady	-	-	-						X	
Vanessa cardui	Painted Lady	-	-	-						X	
Vanessa atalanta	Red Admiral	-	-	-						X	
Limenitis arthemis astyanax	Red-spotted Purple	-	-	-						X	
Limenitis archippus	Viceroy	-	-	-						X	
Limenitis arthemis	White Admiral	-	-	-						X	
Euptoieta claudia	Variegated Fritilary	-	-	-						X	
Pholisora catullus	Common sootywing	-	-	-						X	
Erynnis martialis	Mottled Duskywing	END	END	P						X	
Euphyes conspicua	Black Dash	-	-	-						X	

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Hylephila phyleus	Fiery Skipper	-	-	-						X	
Polites egeremet	Northern Broken-Dash	-	-	-						X	
Pterourus solstitius	Midsummer Tiger Swallowtail	-	-	-						X	
Pterourus glaucus complex	Tiger Swallowtail Complex	-	-	-						X	
Pieris virginiensis	West Virginia White	-	-	P						X	
Limenitis arthemis arthemis x astyanax	Red-spotted Admiral Intergrade	-	-	-						X	
Junonia coenia	Common buckeye	-	-	-						X	
Euphydryas phaeton	Baltimore Checkerspot	-	-	-						X	
Chlosyne nycteison	Silvery Checkerspot	-	-	-						X	
Coenonympha california	Common Ringlet	-	-	-						X	
Lethe appalachia	Apalachian Brown	-	-	-						X	
Megisto cymela	Little Wood-Satyr	-	-	-						X	
MAMMALS											
Sylvilagus floridanus	Eastern Cottontail	-	-	G							
Tamias striatus	Eastern Chipmunk	-	-	P							
Tamiasciurus hudsonicus	Red Squirrel	-	-	F							
Sciurus carolinensis	Eastern Grey Squirrel	-	-	G							
Marmota monax	Groundhog	-	-	-							
Canis latrans	Coyote	-	-	F							
Vulpes vulpes	Red Fox	-	-	F							
Procyon lotor	Northern Raccoon	-	-	F					X		
Mustela richardsonii	American Ermine	-	-	F							
Mustela vison	American Mink	-	-	F							
Mephitis mephitis	Striped Skunk	-	-	F							
REPTILES/AMPHIBIANS											
Chrysemys picta marginata	Midland Painted Turtle	SC	-	P		X					

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Graptemys geographica	Northern Map Turtle	SC	-	P		X					
	Red-eared Slider	-	-	-		X					
Heterodon platirhinos	Eastern Hog-nosed Snake	THR	THR	P		X					
	Northern Ring-necked Snake	-	-	-		X					
	Red-bellied snake	-	-	-		X					
Opheodrys vernalis	Smooth Greensnake	-	-	P		X					
Hyla versicolor	Gray Treefrog	-	-	P		X					
	Green Frog	-	-	-		X					
	Spring Peeper	-	-	-		X					
Pseudacris triseriata	Western Chorus Frog	THR	-	-		X					
	Wood frog	-	-	-		X					
Anaxyrus americanus	American Toad	-	-	-		X			X		
Lithobates pipiens	Northern Leopard Frog	-	-	-		X					
Ambystoma laterale	Blue-spotted Salamander	-	-	P		X					
Ambystoma (2) laterale - jeffersonianum	Blue-spotted Salamander-dependent unisexual salamander	-	-	-		X					
Plethodon cinereus	Eastern Red-backed Salamander	-	-	P		X					
Ambystoma jeffersonianum	Jefferson Salamander	END	END	P		X					
Ambystoma Laterale – (2) jeffersonianum	Jefferson Salamander-dependent unisexual salamander	END	END	-		X					
Necturus maculosus	Mudpuppy	-	-	-		X					

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Notophthalmus viridescens viridescens	Red-spotted Newt	-	-	-		X					
Ambystoma maculatum	Spotted Salamander	-	-	P		X					
Plestiodon fasciatus	Five-lined Skink	END	END	P		X					
Chelydra serpentina	Snapping Turtle	SC	-	G		X					
Storeria dekayi	Dekay's Brown Snake	-	-	-		X					
Thamnophis sirtalis sirtalis	Eastern Gartersnake	-	-	-		X					
Lampropeltis triangulum	Eastern Milksnake	SC	-	P		X					
Nerodia sipedon sipedon	Northern Watersnake	-	-	P		X					

Legend

SARA - Species at Risk Act Schedule 1- official list of wildlife Species at Risk
THR- threatened; a wildlife species likely to become endangered if limiting factors are not reversed
END- endangered, a wildlife species facing imminent extirpation or extinction
EXT- extirpated; a species no longer existing in the wild in Canada but occurring elsewhere
SC- species concern; a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats
FWCA- Fish and Wildlife Conservation Act: G- Game Species; F- Fur Bearing Species; P- Specially Protected Species
MBCA- Migratory Birds Convention Act: X- protected species
OBBA – Ontario Breeding Bird Atlas species records from square 17NJ90
OBA- Ontario Butterfly Atlas species records from square 17NJ90
NHIC- Natural Heritage Information Centre records of provincially tracked species

Appendix C
Species At Risk (SAR) Screening

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Birds	Bank Swallow	Not listed	THR	THR	In Ontario, the bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and river banks, sand and gravel pits, and roadcuts. Nests are generally built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided.	The Subject Lands may contain suitable habitat for breeding or foraging, however they were not observed during breeding bird surveys or incidentally.	No	Implement timing windows to avoid site alteration during sensitive life periods.
Birds	Barn Swallow	Not listed	SC	THR	In Ontario, barn swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake and river shorelines, cleared right-of-ways, and wetlands. Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused.	The Subject Lands contain some habitat that is suitable for foraging but do not contain the appropriate habitat for breeding.	Yes	Implement timing windows to avoid site alteration during sensitive life periods.
Birds	Bobolink	Not listed	THR	THR	In Ontario, bobolink breeds in grasslands or graminoid dominated hayfields with tall vegetation. Bobolink prefers grassland habitat with a forb component and a moderate litter layer. They have low tolerance for presence of woody vegetation and are sensitive to frequent mowing within the breeding season. They are most abundant in established, but regularly maintained, hayfields, but also breed in lightly grazed pastures, old or fallow fields, cultural meadows and newly planted hayfields. Their nest is woven from grasses and forbs. It is built on the ground, in dense vegetation, usually under the cover of one or more forbs.	No, species prefers large, open grasslands. Subject Lands are too small to support Bobolink.	No	Implement timing windows to avoid site alteration during sensitive life periods.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Birds	Canada warbler	Not listed	SC	THR	In Ontario, breeding habitat for Canada warbler consists of moist mixed forests with a well-developed shrubby understory. This includes low-lying areas such as cedar and alder swamps, and riparian thickets. It is also found in densely vegetated regenerating forest openings. Suitable habitat often contains a developed moss layer and an uneven forest floor. Nests are well concealed on or near the ground in dense shrub or fern cover, often in stumps, fallen logs, overhanging stream banks or mossy hummocks.	No suitable habitat on the Subject Lands.	No	Implement timing windows to avoid site alteration during sensitive life periods.
Birds	Eastern Meadowlark	Not listed	THR	THR	In Ontario, the eastern meadowlark breeds in pastures, hayfields, meadows and old fields. Eastern meadowlark prefers moderately tall grasslands with abundant litter cover, high grass proportion, and a forb component. They prefer well drained sites or slopes, and sites with different cover layers.	No, area to small to support Eastern Meadowlark.	No	Implement timing windows to avoid site alteration during sensitive life periods.
Birds	Eastern Wood-pewee	Not listed	SC	SC	The eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats but is most commonly associated with the mid-canopy of forest clearings, and edge habitat in deciduous and mixed forests. It also occurs in anthropogenic habitats that provide an open forested aspect such as parks and suburban neighborhoods. It prefers intermediate-age mature forest stands with little understory vegetation.	No, species prefers open-canopy, mid-successional and mature deciduous/mixed forests.	No	Implement timing windows to avoid site alteration during sensitive life periods.
Birds	Least Bittern	Not listed	SC	THR	In Ontario, the Least bittern is found in a variety of wetland habitats but strongly prefers cattail marshes with a mix of open pools and channels. It builds nests above the marsh water in stands of dense vegetation, hidden amongst the cattails. The nests are almost always built near open water, which is needed for foraging. This species easts mostly frogs, small fish, and aquatic insects.	No, there are no suitable wetland habitats on the Subject Lands.	No	Implement timing windows to avoid site alteration during sensitive life periods.
Birds	Yellow-breasted Chat	Not listed	END	END	In Ontario, yellow-breasted chat lives in thickets and scrub, especially locations where clearings have been overgrown. They eat insects gathered from the foliage of low, dense shrubs or from the ground.	Suitable habitat is not present on the Subject Lands.	No	Implement timing windows to avoid site alteration during sensitive life periods.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Birds	Wood Thrush	Not listed	THR	THR	In Ontario, wood thrush breeds in moist, deciduous hardwood or mixed stands that are often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches. This species selects nesting sites with the following characteristics: lower elevations with trees less than 16 m in height, a closed canopy cover (>70 %), a high variety of deciduous tree species, moderate subcanopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter.	No, species prefers large, moist, mature or mixed forest with a dense, shrubby understory, and closed canopy.	No	Implement timing windows to avoid site alteration during sensitive life periods.
Reptiles	Midland Painted Turtle	Not listed	SC	SC	The Northern Map Turtle inhabits rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river. They require high-quality water that supports the female's mollusc prey. Their habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled.	Appleby Creek unlikely to support turtles.	No	Ensure exclusionary fencing is installed prior to construction to avoid individuals from wandering into the worksite.
Reptiles	Northern Map Turtle	Not listed	SC	SC	The Northern Map Turtle inhabits rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river. They require high-quality water that supports the female's mollusc prey. Their habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled.	Appleby Creek unlikely to support turtles.	No	Ensure exclusionary fencing is installed prior to construction to avoid individuals from wandering into the worksite.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Reptiles	Snapping Turtle	Not listed	SC	SC	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. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	Appleby Creek unlikely to support turtles.	No	Ensure exclusionary fencing is installed prior to construction to avoid individuals from wandering into the worksite.
Reptiles	Eastern-Hog Nosed Snake	THR	THR	THR	The Eastern Hog-nosed Snake specializes in hunting and eating toads, and usually only occurs where toads can be found. Eastern Hog-nosed Snakes prefer sandy, well-drained habitats such as beaches and dry forests where they can lay their eggs and hibernate. They use their up-turned snout to dig burrows below the frost line in the sand where eggs are deposited.	The Subject Lands do not appear to contain suitable habitat such as beaches or dry forests.	No	Ensure exclusionary fencing is installed prior to construction to avoid individuals from entering into the worksite.
Reptiles	Eastern Milksnake	Not listed	Not at Risk	SC	The Eastern Milksnake inhabits a wide variety of natural and human-modified habitats including prairies, meadows, pastures, hayfields, rocky outcrops, rocky hillsides and forests (deciduous, coniferous, and mixed). The species is frequently encountered in rural areas around buildings such as barns, sheds and houses, and may also be found in suburban parks and gardens. Eastern Milksnakes may be found near a water source such as the edges of bogs, marshes, swamps and other wetlands.	Potential, species habitat preferences are fairly general. No observations of any snakes were made on field visits. There are were no stone piles observed or crumbling foundations.	No	No further recommendations.
Reptiles	Five-Lined Skink	END	END	SC	Common Five-lined Skink enjoys basking on sunny rocks and logs to maintain a preferred body temperature between 28 and 36°C. During the winter, they hibernate in crevices among rocks or buried in the soil. The species occurs throughout hardwood forests in Ontario.	No hardwood forests present on the Subject Lands, and therefore suitable habitat does not appear to be present.	No	No further recommendations.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Amphibian	Western Chorus Frog	Not listed	Not listed	THR	The western chorus frog inhabits forest openings around woodland ponds but can also be found in or near damp meadows, marshes, bottomland swamps and temporary ponds in open country, or even urban areas. This frog breeds in almost any fishless pond with at least 10 centimetres of water, including quiet, shallow, usually temporary waterbodies with vegetation that is submerged or protrudes from the water, and especially in rain-flooded meadows and ditches, and in temporary ponds on floodplains. The western chorus frog overwinters underground or under surface cover, such as fallen logs.	Suitable habitat is not present on Subject Lands.	No	No further recommendations.
Amphibian	Jefferson Salamander-dependent unisexual salamander	END	END	END	Unisexual Ambystoma salamanders live in leaf litter, under logs and in underground cavities in deciduous and mixed forests, typically within close proximity to breeding habitats. Adults breeds in vernal pools (temporary woodland ponds) or fish-free permanent wetlands.	Suitable habitat is not present on Subject Lands.	No	No further recommendations.
Amphibian	Jefferson Salamander	END	END	END	Adults live in moist, loose soils, under logs or in leaf litter. Jefferson salamanders require woodland ponds to breed and lay their eggs on underwater vegetation. These salamanders feed primarily on insects and worms.	Suitable habitat is not present on Subject Lands.	No	No further recommendations.
Insects	Mottled Duskywing	END	END	END	While many butterflies thrive in lush meadows, the mottled duskywing tends to live in dry habitats with sparse vegetation. These include open barrens, sandy patches among woodlands, and alvars. In Ontario, the mottled duskywing will only deposit their eggs on two closely-related plants: New Jersey tea and prairie redroot.	Suitable habitat is not present on Subject Lands.	No	No further recommendations.
Insects	Monarch	Not listed	SC	END	In Ontario, monarch is found throughout the northern and southern regions of the province. This butterfly is found wherever there are milkweed (*Asclepius spp.*) plants for its caterpillars and wildflowers that supply a nectar source for adults. It is often found on abandoned farmland, meadows, open wetlands, prairies and roadsides, but also in city gardens and parks. Important staging areas during migration occur along the north shores of the Great Lakes.	Milkweed species were not observed during vegetation surveys.	No	A variety of native species are recommended as part of the planting plan. This should include milkweed species.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Mammals	Tri-colored Bat	END	END	END	In Ontario, tri-colored bat may roost in foliage, in clumps of old leaves, hanging moss or squirrel nests. They are occasionally found in buildings although there are no records of this in Canada. They typically feed over aquatic areas with an affinity to large-bodied water and will likely roost in close proximity to these. Hibernation sites are found deep within caves or mines in areas of relatively warm temperatures. These bats have strong roost fidelity to their winter hibernation sites and may choose the exact same spot in a cave or mine from year to year.	The woody vegetation present in the cultural thicket and woodland communities on the Subject Lands could provide potential roosting habitat for SAR bat species. Based on the assumption that the required vegetation removal is minimal, no significant impacts are expected. A pre-cautionary approach is recommended.	No bat surveys (acoustic monitoring) were conducted.	Works should be completed outside of the active season for bats (March 15 – November 30). At detailed design when vegetation and trees for removal have been identified, a qualified biologist should be consulted as to any applicable requirements under the *Species Conservation Act*. Woody species and trees suitable for bat habitat should be included as part of the planting plan for the buffer areas.
Mammals	Northern Myotis	END	END	END	In Ontario, this species range is extensive and covers much of the province. It will usually roost in hollows, crevices, and under loose bark of mature trees. Roosts may be established in the main trunk or a large branch of either living or dead trees. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required.	The woody vegetation present in the cultural thicket and woodland communities on the Subject Lands could provide potential roosting habitat for SAR bat species. Based on the assumption that the required vegetation removal is minimal, no significant impacts are expected. A pre-cautionary approach is recommended.	No bat surveys (acoustic monitoring) were conducted.	Works should be completed outside of the active season for bats (March 15 – November 30). At detailed design when vegetation and trees for removal have been identified, a qualified biologist should be consulted as to any applicable requirements under the *Species Conservation Act*. Woody species and trees suitable for bat habitat should be included as part of the planting plan for the buffer areas.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Mammals	Hoary Bat	END	END	END	Hoary Bats typically roost among the foliage of trees and occasionally shrubs. Hoary Bats use both deciduous and coniferous forests, of any age class. Trees used as maternity roosts tend to be large diameter and tall, reaching or exceeding the height of the surrounding canopy Hoary Bats forage in the open, and suitable habitats may include wetlands, grasslands and open fields with patchily distributed trees. Little is known about the winter ecology of Hoary Bats.	The woody vegetation present in the cultural thicket and woodland communities on the Subject Lands could provide potential roosting habitat for SAR bat species. Based on the assumption that the required vegetation removal is minimal, no significant impacts are expected. A pre-cautionary approach is recommended.	No bat surveys (acoustic monitoring) were conducted.	Works should be completed outside of the active season for bats (March 15 – November 30). At detailed design when vegetation and trees for removal have been identified, a qualified biologist should be consulted as to any applicable requirements under the *Species Conservation Act*. Woody species and trees suitable for bat habitat should be included as part of the planting plan for the buffer areas.
Mammals	Silver-haired Bat	END	END	END	Most closely associated with coniferous, mixed coniferous and deciduous forests, especially old growth with significant densities of dead and dying trees (at least 21 snags per hectare). Hibernation roosts for this species include small tree hollows, beneath exfoliating bark, in wood piles, and in the crevices of cliff faces. Occasionally silver-haired bats will hibernate in cave entrances, especially in northern regions of their range Foraging is predominantly in disturbed areas, sometimes at treetop levels, often in small clearings and along roadways or water courses.	The woody vegetation present in the cultural thicket and woodland communities on the Subject Lands could provide potential roosting habitat for SAR bat species. Based on the assumption that the required vegetation removal is minimal, no significant impacts are expected. A pre-cautionary approach is recommended.	No bat surveys (acoustic monitoring) were conducted.	Works should be completed outside of the active season for bats (March 15 – November 30). At detailed design when vegetation and trees for removal have been identified, a qualified biologist should be consulted as to any applicable requirements under the Species Conservation Act. Woody species and trees suitable for bat habitat should be included as part of the planting plan for the buffer areas.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Mammals	Eastern Red Bat	END	END	END	Eastern red bats roost in the foliage of deciduous or sometimes evergreen trees. In the summertime, eastern red bats are among the earliest evening fliers, typically feeding around forest edges, in clearings, or around streetlights. Very little is known about their winter habitat or behavior.	The woody vegetation present in the cultural thicket and woodland communities on the Subject Lands could provide potential roosting habitat for SAR bat species. Based on the assumption that the required vegetation removal is minimal, no significant impacts are expected. A pre-cautionary approach is recommended.	No bat surveys (acoustic monitoring) were conducted.	Works should be completed outside of the active season for bats (March 15 – November 30). At detailed design when vegetation and trees for removal have been identified, a qualified biologist should be consulted as to any applicable requirements under the Species Conservation Act. Woody species and trees suitable for bat habitat should be included as part of the planting plan for the buffer areas.
Mammals	Little Brown Myotis	END	END	END	In Ontario, this species range is extensive and covers much of the province. It will roost in both natural and man-made structures. They require a number of large dead trees, in specific stages of decay and that project above the canopy in relatively open areas. May form nursery colonies in the attics of buildings within 1 km of water. Caves or abandoned mines may be used for hibernaculum, but high humidity and stable above freezing temperatures are required.	The woody vegetation present in the cultural thicket and woodland communities on the Subject Lands could provide potential roosting habitat for SAR bat species. Based on the assumption that the required vegetation removal is minimal, no significant impacts are expected. A pre-cautionary approach is recommended.	No bat surveys (acoustic monitoring) were conducted.	Works should be completed outside of the active season for bats (March 15 – November 30). At detailed design when vegetation and trees for removal have been identified, a qualified biologist should be consulted as to any applicable requirements under the Species Conservation Act. Woody species and trees suitable for bat habitat should be included as part of the planting plan for the buffer areas.

Group	Common Name	SCA/PSO Status	COSSARO Status	SARA Status	Habitat Description	Habitat Suitable on Subject Lands	Observed During LGL Biophysical Surveys	Recommendations
Mammals	Eastern Small-footed Myotis	END	END	END	The species generally roosts on the ground under rocks, in rock crevices, talus slopes and rock piles. There is growing evidence that the species can sometimes roost in cavity trees as well. It occasionally inhabits buildings. Areas near the entrances of caves or abandoned mines may be used for hibernaculum, where the conditions are drafty with low humidity, and may be subfreezing.	The woody vegetation present in the cultural thicket and woodland communities on the Subject Lands could provide potential roosting habitat for SAR bat species. Based on the assumption that the required vegetation removal is minimal, no significant impacts are expected. A pre-cautionary approach is recommended.	No bat surveys (acoustic monitoring) were conducted.	Works should be completed outside of the active season for bats (March 15 – November 30). At detailed design when vegetation and trees for removal have been identified, a qualified biologist should be consulted as to any applicable requirements under the *Species Conservation Act*. Woody species and trees suitable for bat habitat should be included as part of the planting plan for the buffer areas.

Appendix D
Vascular Plant List

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Halton	CUM1-1	CUT1	CUW1
	PINACEAE	**PINE FAMILY**								
*	*Picea pungens*	Colorado spruce	G5	SE1					X	X
*	*Pinus nigra*	Austrian pine	G?	SE2						X
	CUPRESSACEAE	**CEDAR FAMILY**								
	Juniperus virginiana	eastern red cedar	G5	S5				X		X
	ULMACEAE	**ELM FAMILY**								
	Ulmus americana	white elm	G5?	S5			X		X	X
	JUGLANDACEAE	**WALNUT FAMILY**								
	Carya ovata var. *ovata*	shagbark hickory	G5	S5			X		X	X
	Juglans nigra	black walnut	G5	S4			X	X		X
	FAGACEAE	**BEECH FAMILY**								
	Quercus macrocarpa	bur oak	G5	S5			X		X	
	POLYGONACEAE	**SMARTWEED FAMILY**								
*	*Rumex crispus*	curly-leaf dock	G?	SE5			X	X		
	TILIACEAE	**LINDEN FAMILY**								
	Tilia americana	basswood	G5	S5			X		X	X
*	*Tilia cordata*	small leaf linden	G?	SE1						X
	CUCURBITACEAE	**GOURD FAMILY**								
	Echinocystis lobata	prickly cucumber	G5	S5			X		X	
	SALICACEAE	**WILLOW FAMILY**								
	Populus deltoides	cottonwood								X
*	*Salix fragilis*	crack willow	G?	SE5			X			X
	ROSACEAE	**ROSE FAMILY**								
*	*Prunus avium*	sweet cherry	G?	SE4			X		X	X
*	*Pyrus communis*	common pear	G5	SE4			X			X
	FABACEAE	**PEA FAMILY**								
*	*Melilotus alba*	white sweet-clover	G?	SE5			X	X		
*	*Robinia pseudo-acacia*	black locust	G5	SE5			X			X
*	*Vicia cracca*	tufted vetch	G?	SE5			X	X		
	ELAEAGNACEAE	**OLEASTER FAMILY**								
*	*Elaeagnus angustifolia*	Russian olive	G?	SE3			X	X		X
	RHAMNACEAE	**BUCKTHORN FAMILY**								
*	*Rhamnus cathartica*	common buckthorn	G?	SE5			X	X	X	X
	VITACEAE	**GRAPE FAMILY**								
	Parthenocissus vitacea	inserted Virginia-creeper	G5	S5			X			X
	Vitis riparia	riverbank grape	G5	S5			X	X	X	
	ACERACEAE	**MAPLE FAMILY**								
	Acer negundo	manitoba maple	G5	S5			X			X

	Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Halton	CUM1-1	CUT1	CUW1
	Acer saccharinum	silver maple	G5	S5			X			X
	ANACARDIACEAE	**SUMAC FAMILY**								
	Rhus hirta	staghorn sumac	G5	S5			X		X	X
	APIACEAE	**PARSLEY FAMILY**								
*	*Daucus carota*	wild carrot	G?	SE5			X	X		
	ASCLEPIADACEAE	**MILKWEED FAMILY**								
	Asclepias syriaca	common milkweed	G5	S5			X	X		
	SOLANACEAE	**POTATO FAMILY**								
*	*Solanum dulcamara*	bitter nightshade	G?	SE5			X			X
	BORAGINACEAE	**BORAGE FAMILY**								
*	*Echium vulgare*	blueweed	G?	SE5			X	X		
	LAMIACEAE	**MINT FAMILY**								
*	*Leonurus cardiaca* ssp. *cardiaca*	common motherwort	G?T?	SE5			X		X	X
	OLEACEAE	**OLIVE FAMILY**								
	Fraxinus americana	white ash	G5	S5			X			X
	SCROPHULARIACEAE	**FIGWORT FAMILY**								
*	*Verbascum thapsus*	common mullein	G?	SE5			X	X		
	CAPRIFOLIACEAE	**HONEYSUCKLE FAMILY**								
*	*Lonicera tatarica*	tartarian honeysuckle	G?	SE5			X		X	
	DIPSACACEAE	**TEASEL FAMILY**								
*	*Dipsacus fullonum* ssp. *sylvestris*	wild teasel	G?T?	SE5			X	X		
	ASTERACEAE	**ASTER FAMILY**								
*	*Arctium minus*	common burdock	G?T?	SE5						X
	Aster lateriflorus var. *lateriflorus*	calico aster	G5T5	S5				X		
*	*Cichorium intybus*	chicory	G?	SE5			X	X		
*	*Cirsium arvense*	Canada thistle	G?	SE5			X	X		
	Euthamia graminifolia	flat-topped bushy goldenrod	G5	S5				X		
*	*Hieracium caespitosum*	field hawkweed		SE5			X	X		
*	*Leucanthemum vulgare*	ox-eye daisy	G?	SE5			X		X	X
	Solidago canadensis	canada goldenrod	G5	S5			X	X	X	
	Symphyotrichum novae-angliae	New England aster	G5	S5			X	X	X	
*	*Taraxacum officinale*	common dandelion	G5	SE5			X	X		
*	*Tussilago farfara*	coltsfoot	G?	SE5			X			X
	POACEAE	**GRASS FAMILY**								
*	*Bromus inermis* ssp. *inermis*	awnless brome	G4G5T?	SE5			X	X		
	Danthonia spicata	poverty oat grass	G5	S5			X	X		
*	*Elymus repens*	quack grass	G?	SE5			X			X

Scientific Name	Common Name	GRank	SRank	MNR	COSEWIC	Halton	CUM1-1	CUT1	CUW1
Poa pratensis ssp. *pratensis*	Kentucky bluegrass	G5T	S5			X	X	X	

x-indicates presence/*-indicates non-native

Appendix E
Significant Wildlife Habitat Screening

Appendix C – Significant Wildlife Habitat

Type	Habitat	Candidate ELC		Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
Seasonal Concentration Area	Waterfowl Stopover and Staging Areas (Terrestrial)	CUM1, CUT1 plus, evidence of annual spring flooding from melt water or run-off within these Ecosites.		American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	Fields with sheet water or fields utilized by Tundra Swans during Spring (mid March to May). - Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. - Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless used by Tundra Swans in the Long Point, Rondeau, Lk. St. Clair, Grand Bend and Pt. Pelee areas.	Suitable habitat is not present within the Study Area; no mitigation measures or additional recommendations are required.
Seasonal Concentration Area	Waterfowl stopover and Staging Area (Aquatic)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SAS1	SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	Canada Goose Cackling Goose Snow Goose Northern Pintail Northern Shoveler American Wigeon Gadwall Redhead Green-winged Teal Blue-winged Teal Canvasback Lesser Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked Duck Common Goldeneye Bufflehead Ruddy Duck Red-breasted Merganser Brant Hooded Merganser Common Merganser Greater Scaup	- Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. - These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). - Studies carried out and verified presence of: - Aggregations of 100 or more of listed species for 7 days, results in >700 waterfowl use days. - Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. - The combined area of the ELC ecosites and a 100m radius area is the SWH - Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat.	Suitable habitat is not present within the Study Area; no mitigation measures or additional recommendations are required.

Type	Habitat	Candidate ELC	Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
Seasonal Concentration Area	Raptor Wintering Area	Combination of ELC community series- need to have one present from each land class. **Forest**: FOD FOM FOC **Upland**: CUM CUT CUS CUW	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl **Special Concern**: Short-eared Owl	- The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. - Raptor wintering sites (hawk/owl) need to be > 20 ha with a combination of forest and upland. - Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. - Field area of the habitat is to be wind swept with limited snow depth or accumulation. - Eagle sites have open water, large trees and snags available for roosting.	Suitable habitat for this candidate Significant Wildlife Habitat does not meet the criteria within the Study Area. As such, no mitigation measures or additional recommendations are required.
Seasonal Concentration Area	Bat Hibernacula	CCR1 CCR2 CCA1 CCA2 (**Buildings not considered to be SWH**)	Big Brown Bat Little Brown Myotis Tri-coloured Bat Northern Myotis Eastern Small-footed Myotis	- Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Locations of bat hibernacula are poorly known. The areas of 200 m radius around the hibernaculum entrance is the defining criteria for most development. - Mines not considered SWH.	Based on available information, ideal habitat features for bat species are not present within the Subject Property. Given the lack of suitable habitat characteristics, the likelihood of the species occurring on the Subject Property is considered low. SWH Criteria is not met within Study Area.
Seasonal Concentration Area	Bat Maternity Colonies	FOD FOM SWD SWM	Big Brown Bat Little Brown Myotis Silver-haired Bat Northern Myotis	Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Maternity colonies considered SWH are found in mature deciduous or mixed forest stands with >10/ha large diameter (>25 cm DBH) trees.	Candidate Ecological Land Classification communities associated with bat maternity roosting habitat are not present; therefore, Significant Wildlife Habitat criteria are not met within the Study Area.
Seasonal Concentration Area	Turtle Wintering Area	ELC Community Classes: SW, MA, OA and SA ELC Community Series: FEO and BOO	Snapping Turtle Midland Painted Turtle Northern Map Turtle	- For most turtles, wintering areas are in the same general area as their core habitat. Water must be deep enough not to freeze and have soft mud substrates. - Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. -Manmade ponds such as sewage lagoons or stormwater ponds, should not be considered SWH.	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.

Type	Habitat	Candidate ELC		Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
		Northern Map Turtle: Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.				
Seasonal Concentration Area	Reptile Hibernaculum	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3. Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures.		Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Milksnake **Special Concern**: Eastern Ribbonsnake, Five-lined Skink (Southern Shield population)	Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.	No observations of congregations of snakes during field investigations. Features that go below the frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations are not present in the Study Area. As such, no mitigation measures or additional recommendations are required.
Seasonal Concentration Area	Colonial Nesting Bird Breeding Habitat (Bank and Cliff)	CUM1 CUT1 CUS1 BLO1	BLS1 BLT1 CLO1 CLS1 CLT1	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies).	Eroding banks, sandy hills, pits, steep slopes, rock faces, etc. with 8 or more Cliff Swallow pairs or Northern Rough-winged Swallow pairs. Does not include man-made structures (bridges of buildings) or active aggregate pits or stockpiles.	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.
Seasonal Concentration Area	Colonial-Nesting Bird Breeding	SWM2 SWM5 SWD1 SWD3	SWM3 SWM6 SWD2 SWD4	Great Blue Heron Black-crowned Night-Heron	Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no

Type	Habitat	Candidate ELC		Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
	Habitat (Trees and Shrubs)	SWD5 SWD7	SWD6 FET1	Great Egret Green Heron	- Most nests in trees are 11 to 15 m from ground, near the top of the tree.	mitigation measures or additional recommendations are required.
Seasonal Concentration Area	Colonial-Nesting Bird Breeding Habitat (Ground)	MAM1 – 6 MAS1 – 3 CUM CUT CUS		Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	-Any rocky island or peninsula (natural or artificial) within a lake or large river. Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). -Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. -Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. Presence of 5 or more pairs for Brewer's Blackbird.	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.
Seasonal Concentration Area	Migratory Butterfly Stopover Areas	Combination of ELC Community Series: need one series present from each land class. Field: CUM CUT CUS Forest: FOC FOD FOM CUP		Painted Lady White Admiral **Special Concern**: Monarch	A butterfly stopover area will be a minimum of 10 ha in size with a combination of undisturbed field and forest habitat present and will be located within 5 km of Lake Ontario or Lake Erie. Anecdotally, a candidate site will have a history of butterflies being observed.	The criteria for Significant Wildlife Habitat are not met within the Study Area. The minimum size threshold of 10 ha is not satisfied, and the combination of undisturbed field and forest habitat characteristic of butterfly stopover areas is adequate. Accordingly, the Study Area does not qualify as this Significant Wildlife Habitat, and no mitigation measures or additional recommendations are required
Seasonal Concentration Area	Landbird Migratory Stopover Areas	FOC FOM FOD	SWC SWM SWD	All migratory songbirds All migrant raptors	Woodlots need to be >5 ha and within 5 km of Lake Ontario. Sites may have a variety of habitats: forest, grassland and wetland complexes.	The criteria for this Significant Wildlife Habitat are not met, as the woodlot within the Study Area is less than 5 ha in size and therefore does not satisfy the minimum area requirement. In addition, the Study Area is not located within 5 km of Lake Ontario. As such, the Study Area does not meet the criteria for this Significant Wildlife Habitat. No mitigation measures or additional recommendations are required.

Type	Habitat	Candidate ELC		Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
Seasonal Concentration Area	Deer Yarding Areas Deer Congregation Areas	FOC FOM FOD	SWC SWM SWD	White-tailed Deer	Deer management is an MNRF responsibility, deer yarding and congregation areas considered significant are mapped by MNRF.	Deer Yarding Area was not identified within the Study Area by the MNRF. SWH Criteria is not met within Study Area.
Rare Vegetation Communities	Cliff and Talus Slopes	TAO TAS TAT	CLO CLT CLS		Most cliff and talus slopes occur along the Niagara Escarpment.	Rare vegetation communities are not present within the Study Area. The habitat conditions required to support rare vegetation communities are absent, and as such, the criteria for Significant Wildlife Habitat are not met within the Study Area.
Rare Vegetation Communities	Sand Barrens	SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always < 60%.			-Exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. -Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%. -No minimum size. -Site not dominated by exotic or introduced species (<50% exotics).	Rare vegetation communities are not present within the Study Area. The habitat conditions required to support rare vegetation communities are absent, and as such, the criteria for Significant Wildlife Habitat are not met within the Study Area.
Rare Vegetation Communities	Alvar	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2			-An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. -Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. -Vegetation cover varies from patchy to barren with a less than 60% tree cover. -An Alvar site should be >0.5 ha in size.	Rare vegetation communities are not present within the Study Area. The habitat conditions required to support rare vegetation communities are absent, and as such, the criteria for Significant Wildlife Habitat are not met within the Study Area.

Type	Habitat	Candidate ELC	Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
Rare Vegetation Communities	Old Growth Forest	FOD FOC FOM SWD SWC SWM		Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.	Rare vegetation communities are not present within the Study Area. The habitat conditions required to support rare vegetation communities are absent, and as such, the criteria for Significant Wildlife Habitat are not met within the Study Area.
Rare Vegetation Communities	Savannah	TPS1 TPS2 TPW1 TPW2 CUS2		-A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. -No minimum size however site must be restored or a natural site. Remnant sites such as railway right-of-ways are not considered SWH. -Site not dominated by exotic or introduced species (<50% exotics).	Rare vegetation communities are not present within the Study Area. The habitat conditions required to support rare vegetation communities are absent, and as such, the criteria for Significant Wildlife Habitat are not met within the Study Area.
Rare Vegetation Communities	Tallgrass Prairie	TPO1 TP02		-A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has <25% tree cover. -No minimum size however site must be restored or a natural site. Remnant sites such as railway right-of-ways are not considered SWH. -Site not dominated by exotic or introduced species (<50% exotics).	Rare vegetation communities are not present within the Study Area. The habitat conditions required to support rare vegetation communities are absent, and as such, the criteria for Significant Wildlife Habitat are not met within the Study Area.
Rare Vegetation Communities	Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.		-Rare Vegetation Communities may include beeches, fens, forest, marsh, barrens, dunes and swamps. -Rare community bases on listing with Appendix M. -The whole area of the ELC Vegetation Type polygon is the SWH.	Rare vegetation communities are not present within the Study Area. The habitat conditions required to support rare vegetation communities are absent, and as such, the criteria for Significant Wildlife Habitat are not met within the Study Area.
Specialized Habitat for Wildlife	Bald Eagle and Osprey Nesting, Foraging and	FOD FOM FOC SWD	Osprey **Special Concern**: Bald Eagle	-Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. For a Bald Eagle, the active nest and a 400 – 800 m radius around the nest is	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no

Type	Habitat	Candidate ELC	Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
	Perching habitat	SWM SWC (adjacent to riparian areas, lakes, ponds and wetlands)		the SWH. For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH.	mitigation measures or additional recommendations are required.
Specialized Habitat for Wildlife	Woodland Raptor Nesting Habitat	All forested ELC Ecosites and also found in: SWC SWM SWD CUP3	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	All natural or conifer plantation woodland/forest stands >30 ha with >4 ha of interior habitat. Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees.	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.
Specialized Habitat for Wildlife	Seeps and Springs	Any forested Ecosite within the headwater areas of a stream.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	-Predominantly forested areas with < 25% meadow/field/pasture within the headwaters of a stream or river system. -Presence of > 2 seeps/springs present even during dry summers.	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.
Specialized Habitat for Wildlife	Amphibian Breeding Habitat (Woodland)	FOC FOM FOD SWC SWM SWD	Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Eastern Newt Blue-spotted Salamander Wood Frog	-Presence of a wetland, pond or woodland pool (including vernal pools) >500 m2 (about 25 m diameter) within or adjacent (within 120 m) to a woodland. -Supporting one or more listed species with at least 20 individuals.	There are no wetlands, woodland pools or ponds on the Subject Lands, and therefore suitable habitat for this candidate Significant Wildlife Habitat is not met. As such, no mitigation measures or additional recommendations are required.
Specialized Habitat for Wildlife	Amphibian Breeding Habitat (Wetlands)	SW MA FE BO OA SA Typically, wetlands isolated (>120m) from woodland ecosites with exception of large wetlands supporting predominantly aquatic sp.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	-Wetlands >500 m^2 (~ 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be outlined on MNRF mapping and could support important amphibian habitats. -Habitat features: shrubs and logs provide structure for calling, foraging, escape and concealment from predators. -Defining criteria: presence of breeding population of 1 or more of the listed newt/salamander species and 2 or more of listed frog/toad species, with call codes of 3, or supporting breeding bullfrogs.	Anuran surveys were not conducted within the Study Area as suitable habitat for anuran breeding is limited; candidate SWH is not present. As such, no mitigation measures or additional recommendations are required.

Type	Habitat	Candidate ELC		Wildlife Species		Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
Specialized Habitat for Wildlife	Woodland Area-Sensitive Bird Breeding Habitat	FOC FOM FOD SWC SWM SWD		Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler	Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren **Special Concern:** Cerulean Warbler, Canada Warbler	-Habitats where interior forest birds are breeding, typically large mature (>60 years old) forest stands or woodlots >30 ha. -With at least of 10 ha of interior forest 100m from edge.	Suitable habitat is not present within the Study Area; mitigation measures or additional recommendations are required.
Specialized Habitat for Wildlife	Turtle Nesting Habitat	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1		Midland Painted Turtle **Special Concern:** Northern Map Turtle Snapping Turtle		-Studies confirm: - Presence of 5 or more nesting Midland Painted Turtles - One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. - The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. -Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. - Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.- SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Candidate ELC communities are not present within the Study Area. Several site visits were conducted between late spring and early summer and neither nests nor nesting turtles were observed.
Habitat for Species of Conservation Concern	Marsh Breeding Bird Habitat	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6	For Green Heron: All SW, MA and CUM1 sites.	American Bittern Virginia Rail Sora Common Gallinule American Coot Pied-billed Grebe.		-Nesting occurs in wetlands -All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. -Green Heron: habitat is at edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less	No target marsh birds were identified during breeding bird surveys. Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.

Type	Habitat	Candidate ELC		Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
		SAS1 SAM1 SAF1 FEO1 BOO1		Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan **Special Concern:** Black Tern, Yellow Rail	frequently found in upland shrubs or forest, a considerable distance from water. -Presence of 5 of more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species. -Any wetland with 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH.	
Habitat for Species of Conservation Concern	Open Country Bird Breeding Habitat	CUM1 CUM2		Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern**: Short-eared Owl	-Large grassland areas > 30 ha, but not Class 1 or 2 agricultural lands and not being actively used for farming. -Presence of 2 or more indicator or special concern species and at least one common species.	Suitable habitat for this candidate Significant Wildlife Habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.
Habitat for Species of Conservation Concern	Shrub/Early Successional Bird Breeding Habitat	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2	Patches of shrub ecosites can be complexed into a larger habitat for some bird species.	**Indicator Spp:** Brown Thrasher Clay-coloured Sparrow **Common Spp.** Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** Yellow-breasted Chat Golden-winged Warbler	-Large field areas succeeding to shrub and thicket habitats>10ha in size. -Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years).	Large field areas succeeding to shrub and thicket habitats (>10 ha), including unmanaged shrubland or early successional fields, are not present within the Study Area. Suitable habitat for this candidate Significant Wildlife Habitat is not present; therefore, no mitigation measures or additional recommendations are required.
Habitat for Species of Conservation Concern	Terrestrial Crayfish	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1		Chimney or Digger Crayfish (*Fallicambarus fodiens*) Devil Crawfish or Meadow Crayfish (*Cambarus Diogenes*)	-Meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish. -Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. -Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.	Terrestrial crayfish burrows were not observed within the Study Area, and suitable habitat for this candidate Significant Wildlife Habitat is not present. As such, no mitigation measures or additional recommendations are required.

Type	Habitat	Candidate ELC	Wildlife Species	Summary of Criteria	Description of Candidate SWH in Study Area and Recommendations for Mitigation
		MAS2 MAS3		-Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable marsh meadow or terrestrial sites.	
Habitat for Species of Conservation Concern	Special Concern and Rare Wildlife Species		All Special Concern and rare (S1 to S3, SH) plant or animal species or communities.	All plant and animal element occurrences (EO) within a 1 or 10km grid.	Habitat conditions on the Subject Lands does not provide specific or life-dependent habitats for Barn Swallow. Barn Swallow were observed flying over the Subject Lands. Identification and protection of the natural heritage system is proposed and includes the Appleby Creek corridor which will continue to provide Barn Swallow with potential foraging habitat.
Animal Movement Corridors	Amphibian Movement Corridors	All ecosites associated with water	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	-Movement corridors between breeding habitat and summer habitat. Must be considered when amphibian breeding habitat is confirmed as SWH. -Corridor should consist of native vegetation, roadless area with no gaps and at least 200m wide.	Significant Wildlife Habitat amphibian breeding habitat is not present within the Study Area. As such, no mitigation measures or additional recommendations are required.
Animal Movement Corridors	Deer Movement Corridors	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	White-tailed Deer	-Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH. -Corridors typically follow riparian areas, woodlots, areas of physical geography ravines or ridges) -Corridors should be at least 200m wide, with at least 15m of vegetation on both side of waterways.	A Deer Wintering Area was not identified through background screening of the Subject Property. In addition, suitable habitat characteristics associated with deer wintering areas, such as extensive coniferous cover providing thermal protection and shelter, were not found within the Study Area. As a result, the Study Area does not contain candidate Significant Wildlife Habitat related to deer wintering.