GEI Consultants
Savanta Division

Scoped Environmental Impact Study

1580 and 1650 Dundas Street
Mississauga, Ontario

NOVEMBER 2021

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Mississauga, Ontario

REPORT PREPARED FOR
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1.0 INTRODUCTION

GEI Consultants, Savanta Division (GEI) was retained by Hazelview Investments (Hazelview) to complete a scoped Environmental Impact Study (EIS) to support the proposed mixed-use development, located at 1580 and 1650 Dundas Street East (herein referred to as the Subject Lands), within the City of Mississauga, Ontario (**Figure 1**, **Appendix A**). The Subject Lands are legally described as Parts of Lot 4, Concession 1, South of Dundas Street Toronto. The proposed mixed-use development is generally bound by Dundas Street to the north, Little Etobicoke Creek to the west, and existing residential developments to the east. Mattawa Avenue bisects the Subject Lands before turning east south of the eastern parcel.

1.1 Purpose of the Report

A scoped Environmental Impact Study is required to assess the potential impacts of the proposed mix-use development on the natural heritage features and associated functions on the Subject Lands. This work considers applicable provincial and municipal requirements and policies including reference to the natural heritage policies of the Province of Ontario's Provincial Policy Statement (PPS; MMAH 2020) and associated provincial implementation guidance contained in the Natural Heritage Reference Manual HRM (NHRM; MNR 2010).

The scoped EIS is a requirement of the municipal planning process and is intended to address the policies of the Regional Municipality of Peel, City of Mississauga, and the Toronto and Region Conservation Authority (TRCA).

The study components included:

- A review of existing natural heritage background information, policies and legislation applicable to the Subject Lands in its regional context;
- A field review of the natural heritage features on and immediately adjacent to the Subject Lands through the completion of a preliminary botanical inventory and Ecological Land Classification (ELC);
- An evaluation of the sensitivity of the natural heritage features and their functions on the Subject Lands;
- A preliminary assessment of whether any of the existing natural heritage features within the Subject Lands meet the test of 'significance' as defined by the PPS;
- A description of the proposed undertaking and lot creation/adjustment proposal;
- Identification and discussion of the potential impacts that could occur to the natural heritage features as a result of the proposed development;
- Recommendation for mitigation to avoid or minimize impacts; and
- Opportunities for the enhancement or restoration of natural features if required.

1.2 The Consulting Team

GEI is one of several consulting firms providing planning, technical advice and guidance to Hazelview in the preparation of their planning application. These reports and key results from these assessments have been included within the impact assessment portion of GEI's Scoped EIS. Other critical team members include the following:

- Functional Servicing Report and Site Grading Plan – Counterpoint Engineering;
- Supplementary Geotechnical Investigations and Hydrological Review - Terrapex Environmental Ltd;
- Arborist Report and Tree Protection Plan - Aquafor Beech Limited; and
- Landscape Plans – SvN Architects + Planners.

2.0 NATURAL HERITAGE PLANNING CONSIDERATIONS

An assessment of the natural heritage features found on the Subject Lands and the potential constraints of these features on any future development or use of these lands was completed to address the natural heritage components of the following regulatory agencies, local and regional municipalities, and/or legislation:

- Provincial Policy Statement (PPS; MMAH 2020);
- Regional Municipality of Peel Official Plan (2018);
- City of Mississauga Official Plan (2019); and
- Toronto and Region Conservation Authority policies.

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

2.1 Provincial Policy Statement and Associated Guideline Documents

The PPS (MMAH 2020) provides direction on matters of provincial interest related to land use planning and development. It "supports improved land use planning and management, which contributes to a more effective and efficient land use planning system." The PPS is to be read in its entirety and land use planners and decision-makers need to consider all relevant policies and how they work together. The PPS (2020) came into effect May 1, 2020, and replaces the previous PPS issued April 30, 2014.

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

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

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat;
- Fish habitat;
- Habitat of endangered and threatened species; and
- Significant Areas of Natural and Scientific Interest (ANSIs).

Development and site alteration shall not be permitted in significant wetlands within Ecoregions 5E, 6E or 7E, or in significant coastal wetlands. Development and site alteration shall not be permitted in significant woodlands, significant valleylands, significant wildlife habitat or significant ANSIs, unless it is demonstrated that there will be no negative impacts on the natural features or their ecological functions.

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

2.2 Region of Peel Official Plan (ROP 2018)

The Region of Peel Official Plan (Schedule A – Core Areas of the Greenlands System in Peel) identifies parts of the Subject Lands as 'Core Areas of the Greenlands System'. Schedule D – Regional Structure, of the ROP designates the Subject Lands as being within the Urban System. 'Core Areas' as defined within the ROP are protected features within the Region that provide ecological form and functions that support biodiversity and natural connectivity within the landscape.

2.3 City of Mississauga Official Plan (2019)

Schedule 1 – Urban System of the City of Mississauga Official Plan identifies parts of the Subject Lands as 'Employment Area' and parts of the Subject Lands as 'Green System'. Schedule 3 – Natural System of the Official Plan identifies parts of the Subject Lands as 'Significant Natural Areas and Natural Green Spaces' and 'Natural Hazard'. 'Green System' within the Official Plan is defined as areas associated with natural hazards, the Natural Heritage System, urban forest, and parks and open spaces.

'Significant Natural Areas' within the Official Plan are areas within the Natural Heritage System that contain significant environmental features such as significant woodlands, significant wetlands, and/or significant wildlife habitat. 'Natural Green Spaces' are areas within the Natural Heritage System that contain woodlands, wetlands and valleylands that do not meet significance criteria.

Section 11.2.3 of the CMOP identifies that Greenlands are generally associated with "natural hazards and/or natural areas where development is restricted to protect people and property from damage and to provide for the protection, enhancement and restoration of the Natural Heritage System". More specifically, lands designated Greenlands permits the following uses:

- Conservation;
- Electric power distribution and transmission facility;
- Facilities that by their nature must locate near water or traverse watercourses (e.g., bridges, storm sewer outlets and stormwater management facilities);
- Flood control and/or erosion management;
- Passive recreational activity;
- Parkland;

- Piped services and related facilities for water, wastewater and stormwater; and
- Accessory uses.

Greenlands have been identified on the Subject Lands, it is associated with the Cultural woodland feature on Subject Lands.

2.4 Toronto and Region Conservation Authority

The TRCA conducts reviews of planning processes associated with future development of properties within its jurisdictional boundaries. In addition, TRCA provides planning and technical advice to planning authorities to assist them in fulfilling their responsibilities regarding natural hazards, natural heritage and other relevant policy areas pursuant to the Planning Act. In addition to their regulatory responsibilities, TRCA provides advice as both a watershed-based resource management agency and through planning advisory services.

TRCA administers the Development, Interference with Wetlands, Alterations to Shorelines and Watercourses Regulation, (O. Reg.) 166/06, which defines the areas of interest that allow TRCA to:

- Prohibit, regulate, or provide permission for straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream, watercourse or changing or interfering with a wetland; and
- Prohibit, regulate, or provide permission for development if the control of flooding, erosion, dynamic beaches, pollution or the conservation of land may be affected by the development.

2.5 Ontario Endangered Species Act (ESA), 2007

The provincial ESA was developed to:

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

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

2.6 Migratory Birds Convention Act

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

2.7 Federal Fisheries Act

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

Some projects may be eligible for exemption from the DFO review process, as specified under Step 3 of the DFO Fish and Fish Habitat Protection Program review process (DFO 2019b; e.g., clear-span bridges and bridge maintenance projects where DFO mitigation measures are applied, artificial waterbodies with no hydrological connection to occupied fish habitat, and projects that follow the Standards and Codes of Practice defined by DFO). All other projects or activities that have the potential to impact fish or fish habitat should be submitted to DFO through the "Request for Review" process. DFO will review the proposed project to determine whether there is potential to (1) impact an aquatic species at risk, (2) cause the death of fish or (3) result in HADD of fish habitat. The death of fish by means other than fishing or a HADD of fish habitat can be authorized by DFO under paragraphs 34.4(2)(b) or 35(2)(b) of the *Fisheries Act*. Authorizations require the preparation and submission of an application package identifying the impacts on fish and fish habitat as well as the avoidance, mitigation and offsetting measures that will be implemented as well as any monitoring that is proposed.

3.0 DATA COLLECTION APPROACH AND METHOD

3.1 Background References

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

- MNRF Land Information Ontario (LIO) Natural Features Mapping;
- Natural Heritage Information Centre (NHIC 2021) database;
- Provincial wildlife atlases (i.e., Ontario Breeding Bird Atlas, etc.); and
- DFO Aquatic Species at Risk Distribution Mapping (DFO 2021).

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

3.1.1 Land Information Ontario Natural Features Summary

Based on the MNRF Land Information Ontario (LIO) geographic database, the following features were identified on or adjacent to the Subject Lands (**Figure 2**, **Appendix A**):

- No natural heritage features were identified in the database as being present on or within 120 m of the Subject Lands. No Provincially Significant Wetlands, unevaluated wetlands, Environmentally Significant Areas, and/or Areas of Natural or Scientific Interest were noted.

3.1.2 Natural Heritage Information Centre Database

The NHIC database (MNRF 2021) was searched for records of provincially significant plants, vegetation communities, and wildlife on and in the vicinity of the Subject Lands. The database provides occurrence data within 1km^2 area squares, with four squares overlapping at least a portion of the Subject Lands (17PJ1530, 17PJ1529, 17PJ1430, and 17PJ1429).

Within these squares, the search revealed four records of species listed as Threatened or Endangered on the SARO list, and two records of a Species of Conservation Concern (i.e., listed as a Special Concern on the SARO list, or identified as an S1-S3 species) were noted.

- Species listed as Threatened or Endangered on the SARO list:
    - Henslow's Sparrow (*Ammodramus henslowii*) – Endangered in Ontario;
    - Redside Dace (*Clinostomus elongatus*) – Endangered in Ontario; and,
    - Chimney Swift (*Chaetura pelagica*) – Threatened in Ontario.
- Species of Conservation Concern (i.e., listed as Special Concern in the SARO list, or identified as an S1-S3 species):
    - Eastern Wood-pewee (*Contopus virens*) – listed as Special Concern in Ontario; and
    - Snapping Turtle (*Chelydra serpentina*) – listed as Special Concern in Ontario.

3.1.3 Ontario Breeding Bird Atlas

The Ontario Breeding Bird Atlas (OBBA) contains detailed information on the population and distribution status of Ontario birds (2005). The data is presented on 10 km x 10 km squares. The data squares that overlap with the Subject Lands are used to determine the potential bird species list for that area. It should be noted that the Subject Lands are a small component of the overall bird atlas square, and therefore it is unlikely that all bird species are found within the Subject Lands. Habitat type, availability and size are all contributing factors in bird species presence and use.

A total of 102 bird species were recorded in the atlas square (17PJ12) that overlaps with the Subject Lands. The following species of interest were noted:

- Species listed as Threatened or Endangered on the SARO list:
    - Bank Swallow (*Riparia riparia*) – Threatened in Ontario;
    - Barn Swallow (*Hirundo rustica*) – Threatened in Ontario;
    - Bobolink (*Dolichonyx oryzivorus*) – Threatened in Ontario;
    - Eastern Meadowlark (*Sturnella magna*) – Threatened in Ontario; and
    - Chimney Swift – Threatened in Ontario.
- Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species):
    - Common Nighthawk (*Chordeiles minor*) – Special Concern in Ontario;
    - Eastern Wood-pewee – Special Concern in Ontario;
    - Wood Thrush (*Hylocichla mustelina*) – Special Concern in Ontario;
    - Peregrine Falcon (*Falco peregrinus*) – Special Concern in Ontario
    - Purple Martin (*Progne subis*) – ranked S3S4B in Ontario; and
    - Red-necked Grebe (*Podiceps grisegrena*) – ranked S3BS4N in Ontario.

3.1.4 Ontario Butterfly and Moth Atlases

The Ontario Butterfly and Moth Atlases (Toronto Entomologists' Association 2018a, 2018b) contain detailed information on the population and distribution status of Ontario butterflies and moths. The data are presented on 10 km^2 area squares with one square overlapping a portion of the Subject Lands (17PJ12). It should be noted that the Subject Lands are a small component of the overall atlas square, and therefore it is unlikely that all butterfly and moth species are found within the Subject Lands. Habitat type, availability and size are all contributing factors in butterfly and moth species and presence and use.

A total of 81 species were recorded in the atlas square the overlaps with the Subject Lands, of which 55 are butterfly species and 26 are moth species. Of these species, one Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species) was noted: Monarch (*Danaus plexippus*), ranked Special Concern in Ontario and Endangered in Canada.

3.1.5 iNaturalist

The iNaturalist (2021) database is a large citizen science-based project that aims to collect, archive, and share sightings of flora and fauna species. Users can submit observations to be reviewed and identified by naturalists and scientists to help provide accurate species observations. As the observations can be submitted by anyone, and the records are not officially vetted, the data obtained from this tool should not be used as a clear indicator of species presence. Species may be filtered out based on habitat and target survey efforts, note that only "research grade" observations will be referenced.

A total of 258 species were identified within 1 km of the Subject Lands. The following species of interest were noted.

- Species listed as Threatened or Endangered on the SARO list:
  - Butternut (*Juglans cinerea*) – listed as Endangered in Ontario;
- Species of Conservation Concern (i.e., listed as a Special Concern in the SARO list, or identified as an S1-S3 species):
  - Monarch – listed as Special Concern in Ontario; and
  - Black-crowned Night Heron (*Nycticorax nycticorax*) – listed as S3BS3N.

3.1.6 Fisheries Oceans Canada Aquatic Species at Risk Distribution Mapping

Aquatic species at risk distribution mapping (DFO 2021) was reviewed to identify any known occurrences of aquatic SAR, including fish and mussels, within the subwatershed where the Subject Lands are located. No aquatic SAR or critical habitat were identified on the Subject Lands.

3.2 Technical Methods and Field Studies

GEI completed field surveys and natural environment inventories on the Subject Lands in 2020 and 2021. The field investigations included seasonal botanical inventories (fall and summer), Ecological Land Classification (ELC) of vegetation communities, and wildlife habitat reconnaissance. Some additional commentary regarding ecological field methods are presented in the following sections.

3.2.1 Vegetation and ELC Methods

Two rounds of botanical inventory and ELC were conducted on November 4, 2020, and July 5, 2021. Vegetation communities were first identified on aerial imagery and then verified in the field. Vegetation community types were confirmed, sampled and revised, if necessary, using the sampling protocol of the ELC for Southern Ontario (Lee et al., 1998). ELC was completed to the finest level of resolution (Vegetation Type) where feasible. Species names generally follow nomenclature from the Database of Vascular Plants of Canada (Brouillet et al. 2010+).

The provincial status of all plant species and vegetation communities is based on NHIC (2020). Identification of potentially sensitive native plant species is based on their assigned coefficient of conservatism (CC) value, as determined by Oldham et al. (1995). This CC value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific natural habitat. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

4.0 BIO-PHYSICAL CHARACTERIZATION

4.1 Physiography and Topography

Geotechnical investigations were completed in 2020 by Terrepex Environmental Ltd. (Terrapex). The Subject Lands are located over two levels of existing underground parking. In areas outside of the underground parking complex, soils were found to generally consist of a surficial layer of asphalt and associated granular base underlain, at a depth of 275 mm to 525 mm below ground, by surficial fill at a depth of 1 m to 3.5 m below ground (Terrepex 2020). Beneath the surficial fill is a strata of glacial till consisting of sandy silt and clayey silt, followed by a complex of hard shale and till extending to the shale bedrock found from 4 m to 7 m below ground surface (Terrepex 2020).

The Subject Lands are highly anthropogenic in nature, with the majority of the development area comprised of pavement and existing structures. From a topography perspective the Subject Lands are gently sloped towards the south.

4.2 Hydrogeology

Terrepex conducted a hydrogeological study on the Subject Lands to assess existing groundwater conditions, including groundwater levels and groundwater flow vectors. The study consisted of the installation of six monitoring wells in 2020, at depths of approximately 14 m below ground surface. The wells were subsequently monitored between December 2020 and January 2021. Groundwater was observed below ground level at an approximate depth ranging from 2.72 m to 3.79 m (Terrepex 2021). Groundwater on the Subject Lands was observed to be flowing horizontally from the southeast to northwest, and the Subject Lands were found to be a functioning groundwater recharge area (Terrepex 2021).

4.3 Landscape Ecology

From a landscape perspective, the Subject Lands are situated within the eastern end of the Mississauga urban area. The Subject Lands are located within the Little Etobicoke Creek subwatershed, surrounded on all sides by existing residential and commercial developments. Little Etobicoke Creek runs north-south, west of the Subject Lands before turning east and merging with Lower Etobicoke Creek further south.

The Little Etobicoke Creek subwatershed exhibits the highest amount of impervious cover (68.7%) within the Etobicoke Creek watershed (Etobicoke Creek Watershed Characterization Report, TRCA 2021). Due to the highly developed nature of the surrounding area, natural cover is low throughout the subwatershed. However, what natural cover remaining is likely used by wildlife as a movement corridor connecting habitat from the north to the south.

4.4 Vegetation

4.4.1 Ecological Land Classification

The Subject Lands are almost entirely composed of industrial and commercial warehouses and associated large parking lots. Fenced off at the southern side is the Little Etobicoke Creek ravine, vegetated with a Willow-Maple Cultural Woodland. At the south-east corner is a small, disturbed area covered by Old Field Meadow species.

The ravine is extremely degraded. The narrow slopes erode at several places, with some installation of gabion baskets. Large debris abounds, including concrete slabs, trash, and boulders. The western half of the ravine is somewhat more open with an uneven tree canopy.

ELC mapping of the Subject Lands is shown on **Figure 3** (**Appendix A**). A description of each ELC unit is provided in **Table 1** (**Appendix B**). No provincially rare vegetation communities were present on the Subject Lands (NHIC, 2020).

4.4.2 Vascular Plants

Botanical inventories completed on the Subject Lands identified a total of 105 species of vascular plants. Of that number, 37 (35%) are native and 68 (65%) are exotic. A full species list is included in **Table 2 (Appendix B).**

The majority of the native species (95%) are ranked S5 (secure in Ontario), while two species (5%) are ranked S4 (apparently secure in Ontario; NHIC, 2020). Two regionally rare plants were observed, as per the Peel Region rarity rankings (Varga et al. 2005). None of the regionally rare species are considered rare in Ontario. None of the species recorded from the Subject Lands had a co-efficient of conservation value of 9 or 10.

No provincially rare or protected Species at Risk were observed on or adjacent to the Subject Lands.

4.4.3 Wetlands

Wetland communities are not present on, or immediately adjacent to the Subject Lands. Although the Subject Lands include a portion of the Little Etobicoke Creek, this flowing watercourse was generally unvegetated and does not qualify as wetland.

The Land Information Ontario (LIO) database was accessed to determine if any wetlands mapped by the MNRF occur on or in the vicinity of the Subject Lands. Such wetlands could include Provincially Significant Wetlands, MNRF evaluated wetlands, unevaluated wetlands, or wetlands identified as “other”. Results of this search show that no wetlands are known to the MNRF on or within 120 m of the Subject Lands.

4.4.4 Invasive Species

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

Urban Forest Associates (2002) provides a categorical ranking system for species known to be invasive in southern Ontario. Of the 105 species observed on the Subject Lands, 11 are ranked as Category 1 by Urban Forest Associates.

Category 1 species are deemed to be the most invasive and can dominate a site to exclude all other species, remaining dominant on the site indefinitely. These are a threat to natural areas wherever they occur because they have very effective reproduction and dispersal mechanisms, allowing them to move long distances. These are regarded as a top priority for control, where eradication and follow-up monitoring are often necessary to ensure its effective removal, where sought. The 11 Category 1 species observed on the Subject Lands are:

- European Swallowort (*Vincetoxicum rossicum*);
- Canada Thistle (*Cirsium arvense*);
- Dame's Rocket (Hesperis matronalis);
- Tatarian Honeysuckle (*Lonicera tatarica*);
- European Buckthorn (*Rhamnus cathartica*);
- Garlic Mustard (Alliaria petiolata);
- Purple Crown-vetch (*Securigera varia*);
- Purple Loosestrife (*Lythrum salicaria*);
- Multiflora Rose (*Rosa multiflora*);
- Manitoba Maple (*Acer negundo*); and
- European Reed (Phragmites australis ssp. australis).

These species were observed in the cultural meadow and/or the cultural woodland.

5.0 ANALYSIS OF ECOLOGICAL AND NATURAL HERITAGE SIGNIFICANCE

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

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

The presence/absence of these elements on or adjacent to the Subject Lands is discussed in detail in the following sections. The NHRM (MNR 2010) was referenced to assess the potential significance of natural areas and associated functions. Where significant natural heritage features are present, the sensitivity of those features is also discussed.

5.1 Significant Wetlands

No wetlands were observed during field investigations on or within 120 m of the Subject Lands and no wetlands were noted in the LIO database as occurring on or within 120 m of the Subject Lands. No Significant Wetlands are present on or within 120 m of the Subject Lands.

5.2 Significant Woodlands

The PPS notes that significant woodlands should be defined and designated by the planning authority using criteria established by the MNRF. The City of Mississauga Official Plan (2020 Consolidation) defines significant woodlands as ecologically important woodlands. These include woodlands that meet one or more of the following criteria:

- Woodlands, excluding cultural savannahs, greater than or equal to four hectares;
- Woodlands, excluding cultural woodlands and cultural savannahs, greater than or equal to two hectares and less than four hectares;
- Any woodland greater than 0.5 hectares that:
    - Supports old growth trees (greater than or equal to 100 years old;
    - Supports a significant linkage function as determined through an Environmental Impact Study approved by the City in consultation with the appropriate conservation authority;
    - Is located within 100 meters of another Significant Natural Area supporting a significant ecological relationship between the two features;
    - Is located within 30 m of a watercourse or significant wetland; or,
    - Supports significant species or communities.

Woodlands are defined by the City of Mississauga as *treed areas that include woodlots, cultural woodlands, cultural savannahs, plantations and forested areas and may also contain remnants of old growth forests*.

Due to the proximity of the CUW feature to Little Etobicoke Creek, the CUW along the southern edge of the Subject Lands is considered Significant Woodland.

5.3 Significant Valleylands

Significant valleylands should be defined and designated by the planning authority. General guidelines for determining the significance of these features are presented in the NHRM (MNR 2010) for Policy 2.1 of the PPS, and within Table 2 of the Peel ROP (2018). Recommended criteria for designating significant valleylands include surface water functions, distinctive landform, degree of naturalness, and importance of ecological functions, restoration potential, and historical and cultural values.

Valleylands associated with Little Etobicoke Creek are present on and within 120m of the Subject Lands. The Valleylands meet form and function criteria outlined in Table 2 of the ROP (2018) and are considered significant.

5.4 Significant Wildlife Habitat

Significant wildlife habitat (SWH) is one of the more complex natural heritage features to identify and evaluate. There are several provincial documents that provide guidance for identifying and evaluating SWH: the NHRM (MNR 2010) and the SWH Ecoregion 6E Criterion Schedule (MNRF 2015). The Peel – Caledon Significant Woodlands and Significant Wildlife Habitat Study (2009) was also reviewed.

There are four general types of significant wildlife habitat: seasonal concentration areas, rare or specialized habitat, habitat for species of conservation concern and animal movement corridors. A detailed screening assessment of all SWH types was completed to support the assessment of potential SWH on the Subject Lands. SWH types that contained candidate habitat on the Subject Lands (based on habitat criteria being met) or within 120 m of the Subject Lands are discussed in the following sections. SWH types that could not be present on the Subject Lands due to lack of suitable habitat conditions are not specifically discussed in the following sections.

5.4.1 Seasonal Concentration Areas of Animals

Seasonal concentration areas are those sites where large numbers of a species gather together at one time of the year, or where several species congregate.

The Subject Lands or adjacent lands within 120 m did not have suitable habitat conditions to provide any of the seasonal concentration areas of animals SWH types identified in MNRF (2015).

5.4.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

Rare or specialized habitats are two separate components. Rare habitats are those with vegetation communities that are considered rare in the province. SRANKS are rarity rankings applied to species at the 'state', or in Canada at the provincial level, and are part of a system developed under the auspices of the Nature Conservancy (Arlington, VA). Generally, community types with SRANKS of S1 to S3 (extremely rare to rare-uncommon in Ontario), as defined by the NHIC, could qualify. It is assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. As previously identified, there are no rare vegetation communities on or adjacent to the Subject Lands.

Specialized habitats require large areas of suitable habitat for successful breeding. This SWH type is community/diversity based. The largest and least fragmented habitats are generally considered more significant. Similar to the approach taken with Season Concentration Areas, this SWH component requires specific habitat criteria to warrant targeted surveys.

The Subject Lands or adjacent lands within 120 m did not have suitable habitat conditions to provide any of the other specialized habitat SWH types identified in MNRF (2015).

5.4.3 Habitat for Species of Conservation Concern

Species of conservation concern include those that are rare and whose populations are significantly declining.

According to the Significant Wildlife Habitat Ecoregion Criterion Schedule (MNRF 2015), habitat for species of conservation concern includes five types of habitats:

a) Marsh bird breeding habitat;
b) Open country bird breeding habitat;
c) Shrub/early successional bird breeding habitat;
d) Terrestrial crayfish; and
e) Special concern and rare wildlife species.

Habitats of species of conservation concern do not include habitats of Endangered or Threatened species, as identified by the *Endangered Species Act, 2007*. These are discussed in Section 5.6.

No special concern or rare wildlife species were observed on or adjacent to the Subject Lands during the ecological surveys completed. Background database searches noted the potential presence of nine species of conservation concern (i.e.., listed as Special Concern in the SARO list, or identified as an S1-S3 species.

Due to the disturbed and anthropogenic nature of the Subject Lands limited habitat for these species is present. Of the nine species identified in the background database search only three have the potential to occur on or within 120 m of the Subject Lands:

- Monarch – This species was not observed incidentally during field investigations but may be utilizing the limited cultural meadow feature. However, due to the highly disturbed nature and size of the feature it is unsuitable for Monarch breeding and if present, is likely used only for incidental foraging;
- Eastern Wood-pewee – this species may utilize the cultural woodlands along the western boundary of the Subject Lands as breeding and foraging habitat. However, due to the disturbed nature of the feature, small size, and prevalence of invasive species, Eastern Wood-pewee is not expected to be present; and
- Snapping Turtle – Snapping turtle habitat is not present on the Subject Lands, however this species if present in the area likely utilizes the Little Etobicoke Creek as a movement corridor between foraging, nesting and overwintering habitats.

5.4.4 Animal Movement Corridors

Animal movement corridors are areas that are traditionally used by wildlife to move from one habitat to another. This is usually in response to different seasonal habitat requirements. Some examples are trails used by deer to move to wintering areas and areas used by amphibians between breeding and summering habitat.

As neither deer wintering areas nor significant amphibian breeding habitats were identified on the Subject Lands, this SWH type is not present.

5.4.5 Significant Wildlife Habitat Summary

Based on the results of the assessment described above there is no confirmed Significant Wildlife Habitat on the Subject Lands.

Candidate Habitat for Species of Conservation Concern is present within 120m of the Subject Lands and is associated with Little Etobicoke Creek.

5.5 Fish Habitat

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

No fish habitat is present on the Subject Lands; however Little Etobicoke Creek may provide suitable fish habitat. The Etobicoke Creek Watershed Characterization Report (TRCA 2021) identifies barriers to fish movement north of the Subject Lands at Dundas Road and immediately south of the Subject Lands. The aquatic habitat within Little Etobicoke Creek subwatershed (TRCA 2006) is highly degraded, however limited fish habitat may be present. Little Etobicoke Creek is therefore considered Candidate Fish Habitat.

5.6 Habitat of Endangered and Threatened Species

Endangered and threatened species are those identified on the SARO list. No SAR were observed on the Subject Lands during field investigations. A background search of available ecological databases noted nine Endangered and Threatened species in the general area. Due to the limited and disturbed nature of the Subject Lands, only one of these species has the potential to occur on the Subject Lands:

- Butternut – This species has the potential to occur within the cultural woodlands along the western boundary of the Subject Lands, however; botanical field investigations did not observe any Butternut on the Subject Lands.
- Myotis Bat Species - These species have the potential to occur within the cultural woodlands along the western boundary and within 120 m into the valleyland of the Subject Lands.

5.7 Significant ANSIs

An ANSI is identified by the MNRF as “areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education” (MNR 2010).

A review of mapping from MNRF’s LIO and NHIC databases did not indicate the presence of a provincially significant ANSI’s on or within 120 m of the Subject Lands.

5.8 Summary of Natural Heritage System Components Subject to Impact Assessment

An analysis of existing natural heritage features on the Subject Lands was completed, followed by an evaluation of their significance against criteria in the PPS, NHRM and Ecoregion 7E Criteria Schedule.

The results of this analysis determined that per the PPS, the following significant natural features are present that will require assessment in Section 7.0:

- Candidate Significant Wildlife Habitat – Candidate Habitat for Species of Conservation Concern (Snapping Turtle) within 120 m of the Subject Lands and associated with Little Etobicoke Creek;
- Significant Woodland – located on and within 120 m of the Subject Lands and associated with Little Etobicoke Creek;
- Significant Valleyland – located on and within 120 m of the Subject Lands and associated with Little Etobicoke Creek; and,
- Candidate Fish Habitat – located on and within 120 m of the Subject Lands and associated with Little Etobicoke Creek.

6.0 DESCRIPTION OF DEVELOPMENT PROPOSAL

The development proposal for the 7.39 ha site includes the development of five mixed-use development blocks, parkland and creek hazard dedications, and an allowance for a future right of way bridge extension over Little Etobicoke Creek (**Figure 4, Appendix A)**. The blocks will contain 13 buildings with a total of 2,506 units, along with 2,506m^2 and 449m^2 of retail, and community space, respectively. Four levels of underground parking are contemplated, as shown on the architectural plans. Mattawa Avenue is proposed to have a new above grade cross-section along with a widening as well. The subject site is currently divided into two separate blocks, with Parcel 1 being on the north-east side of Mattawa Avenue, and Parcel 2 being on the south-west side of Mattawa.

As shown on **Figure 4** (**Appendix A**), the proposed development will occupy the majority of the Subject Lands, with a 10m buffer from the drip line of the cultural woodland, 30 m from Little Etobicoke Creek, 10 m from the top of slope, but not including existing paved areas. The Functional Servicing and Stormwater Management Report (FSSR; Counterpoint 2021) identifies the proposed servicing and grading required to facilitate development on the Subject Lands.

The subject site currently drains stormwater to Mattawa Avenue and in turn Little Etobicoke Creek. All development blocks will have storm connections into the existing storm sewers within Mattawa Avenue. The FSSR report compared the City and TRCA stormwater management requirements to establish the required block level controls (Counterpoint 2021). Preliminary controls have been established in order to meet stormwater objectives.

7.0 IMPACT ASSESSMENT, MITIGATION, AND ENHANCEMENT OPPORTUNITIES

This section of the EIS assesses the potential effects on the previously identified natural heritage features that could occur over the short-term and long-term, following implementation of the development plan discussed in Section 6. Appropriate mitigation measures to avoid or minimize negative impacts and/or to enhance features and functions are suggested where practical.

Impacts from a proposed land development application can generally be considered in two broad categories, direct and indirect. Direct impacts are normally associated with the physical removal or alteration of natural features that could occur based upon a land use application, and indirect impacts may be changes or impacts to les visible functions or pathways that could cause negative impacts to natural heritage features over time.

7.1 Significant Woodlands

A cultural woodland was identified during field investigations along the western edge of the Subject Lands and is considered significant. This community extends west from the Subject Lands and is present on either side of Little Etobicoke Creek (**Figure 3**, **Appendix A**).

A 10 m vegetated buffer is proposed from the limits of the woodland feature, as recommended by the TRCA Living City Policies (TRCA 2014). A Tree Inventory and Preservation Plan was prepared by Aquafor Beech Limited (Aquafor) in 2023. Aquafor identified 410 trees for removal based on the proposed redevelopment, none of the trees identified for removal are part of the significant woodland or within the 10 m vegetated buffer (Aquafor 2023).

Currently the existing development is paved up to the limit of the cultural woodland. Construction equipment will need to remove existing asphalt to prepare the area for native plantings and restoration. Encroachment into the buffer area will be temporary, and a net gain in natural area will be created. The proposed 10 m vegetated buffer will be planted with native trees and plants in accordance with the TRCA Post-Construction Restoration Guidelines (2004), and Seed Mix Guidelines (2004).

As described above, the proposed redevelopment of this site will occur on existing paved or parking areas and no direct and/or indirect impacts to the significant woodland are anticipated. In fact, a net gain in natural area and forest is expected as a result of the proposed development.

No direct and/or indirect impacts to water balance and water quality are anticipated. All runoff from a 5mm event will be retained on site through infiltration, evapotranspiration and rainwater re-use. This will be done through the use of green roofs/landscaping and rainwater harvesting (Counterpoint 2021).

7.2 Candidate Significant Wildlife Habitat

Snapping Turtle was identified as a species that has the potential to occur on or within 120 m of the Subject Lands through a background review (Section 3.1.2). No suitable Snapping Turtle habitat exists on the Subject Lands; however Little Etobicoke Creek may function as a movement corridor for Snapping Turtles that may be in the area.

The proposed development is not anticipated to have any direct or indirect impacts on the Candidate Significant Wildlife Habitat identified as the natural areas and functions of the Little Etobicoke Creek will be maintained. The 10 m vegetated buffer from the limits of the significant woodlands will ensure this feature will not be affected by construction and the proposed development will not affect the movement of Snapping Turtle across the landscape. Further discussion on the potential impacts to Little Etobicoke Creek are detailed in Section 7.4 below.

7.3 Significant Valleyland

Significant Valleyland occurs on and immediately adjacent to the Subject Lands, in association with Little Etobicoke Creek. The long-term top of slope (**Figure 4**, **Appendix A**) is largely located on the Subject Lands, behind the 10 m setback from the limits of the significant woodland.

No direct impacts to the valleyland are anticipated as the proposed development footprint will occur outside of this buffer, and no grading adjacent to the long-term top of slope is proposed. An Erosion and Sediment Control Plan will be developed, and potential erosion and sediment control measures are discussed further in Section 7.4. Based on the FSSR (Counterpoint 2021) infiltration levels will be maintained within the Subject Lands, as well as the existing drainage, and no direct or indirect impacts are anticipated.

7.4 Candidate Fish Habitat

This section discusses the potential impacts of the proposed development on adjacent fish habitat associated with Little Etobicoke Creek. As discussed in Section 5.5 barriers to fish passage exist to the north and south of the Subject Lands. However, the potential for fish to be present within Little Etobicoke creek still exists. Potential impacts on fish habitat include:

<u>Construction</u>

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

Post-Construction

- Changes in water quality due to urban runoff; and
- Changes in flow.

Each of these potential impacts is discussed in the following sections.

Erosion and Sedimentation During Construction

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

As noted in the FSSR (Counterpoint 2021) an Erosion and Sedimentation Control (ESC) Plan will be prepared during detailed design and implemented during construction to minimize the potential for erosion and sedimentation from the construction site. The ESC Plan will be developed based on the guidance provided in the TRCA Erosion and Sediment Control Guide for Urban Construction (TRCA 2019).

Implementation of an effective ESC Plan, incorporating both erosion and sedimentation controls, coupled with regular inspection and performance monitoring and implementation of any remedial actions necessary to ensure effective performance, is anticipated to be largely effective in preventing the movement of eroded soil particles off-site towards the fish habitat in Little Etobicoke Creek.

Overall, no adverse effects to direct fish and fish habitat are predicted to occur as a result of erosion and sedimentation during construction, provided an effective ESC Plan, including monitoring and adaptive management, is implemented.

Accidental Spills During Construction

Accidental spills of potentially hazardous materials (e.g., fuel and oil from heavy equipment), if transported to the unnamed surface water drainage feature on the Subject Lands and eventually to Lake Scugog, could cause stress or injury to fish and other aquatic biota (e.g., benthic invertebrates, zooplankton, phytoplankton).

In order to mitigate the potential for adverse effects on fish and fish habitat due to accidental spills during construction, it is recommended that the contractor prepare a spill prevention and response plan to outline the material handling and storage protocols, mitigation measures (e.g., spill kits on-site, Action Centre, and response measures including containment and clean-up). Implementation of an effective spill prevention and response plan is anticipated to be largely effective in preventing adverse effects on fish and fish habitat.

Potential Construction Impacts on Water Quality

Surface water runoff that is not infiltrated into the ground will be collected by storm sewers within the proposed development, draining to Mattawa Avenue and in turn Little Etobicoke Creek. All development blocks will have storm connections into the existing storm sewers within Mattawa Avenue (Counterpoint 2021).

A 10 m vegetated buffer will be maintained from the limits of the significant woodland on the Subject Lands and this buffer area will assist in mitigating potential effects on surface water sheetflow that may reach the Little Etobicoke Creek valley. The 10 m vegetated buffer will be planted with a mix of suitable native flora (e.g., grasses and forbs), native shrubs, and native trees, to improve riparian functions including long-term erosion prevention and hydrology regulation functions within the setback area.

The buffer will also provide some quantity and quality control for stormwater runoff, which may originate from adjacent development blocks or within the buffer itself. The vegetated buffer will assist in managing surface water runoff quantity through the processes of storage (associated with micro-topography within the setback), evaporation, infiltration and transpiration. The buffer will also function to maintain water quality in Little Etobicoke Creek by trapping sediments and slowing the flow of surface water to promote uptake of nutrients or contaminants by vegetation. In addition, the buffer will also provide organic inputs to Little Etobicoke Creek.

Given the above, no adverse effects on fish habitat as a result of changes in water quality are anticipated to occur.

Post-Construction Impacts on Flow

The on-site stormwater measures will provide quantity, quality and erosion controls to ensure that overland flows do not result in impacts on fish habitat. Given the controls proposed in the FSSR (Counterpoint 2021), no negative impacts on fish habitat in Little Etobicoke Creek are anticipated due to changes in runoff and infiltration on the Subject Lands.

7.5 Habitat of Endangered or Threatened Species

No direct or indirect impacts are anticipated to Butternut and SAR bat species on the Subject Lands and/or within 120m of adjacent lands.

There is the potential for SAR bat species *(Myotis spp.)* utilizing suitable snag trees within the cultural woodland and the valleyland of Little Etobicoke Creek located within 120m of the Subject Lands. Overall, the majority of trees inventoried were Norway maple (*Acer platanoides*) growing along property boundaries and parking lot medians as a part of the existing building's landscaping (Aquafor Beech 2021).

In addition, the portion of the cultural woodland along the western boundary of the Subject Lands is within the 10m buffer of the dripline and will be protected.

As mentioned in Section 5.6, Butternut was not observed on the Subject Lands and/or within 120m on adjacent lands.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This Scoped EIS has been developed as part of the planning process for the proposed commercial development on the 1580 Dundas Mattawa property in Mississauga, Ontario. An assessment of impacts on natural heritage features and their associated functions has been conducted, and discussed in relation to the PPS, related guidance documents and the local and regional official plans. Pursuant to the existing conditions of the site, a summary of measures to avoid or minimize impacts to the natural heritage features and ecological functions has been provided.

The concept plan does not include activities (i.e., grading and vegetation removal) that will cause direct or indirect impacts on the identified natural heritage features.

Based upon the natural heritage feature inventories and analyses carryout out, the following conclusions are provided:

- The results of the natural heritage assessment identified the following significant natural heritage features on or within 120 m of the Subject Lands:
    - Candidate Significant Wildlife Habitat – Candidate Habitat for Species of Conservation Concern (Snapping Turtle) within 120 m of the Subject Lands and associated with Little Etobicoke Creek;
    - Significant Woodland – located on and within 120 m of the Subject Lands and associated with Little Etobicoke Creek;
    - Significant Valleyland – located on and within 120 m of the Subject Lands and associated with Little Etobicoke Creek; and,
    - Fish Habitat – located on and within 120 m of the Subject Lands and associated with Little Etobicoke Creek.
- No direct or indirect impacts are anticipated on the significant woodland or candidate significant wildlife habitats located within 120 m of the Subject Lands;
- An Erosion and Sedimentation Control Plan and Accidental Spills Response Plan will be required as part of the detailed design to ensure no indirect impacts on fish habitat in Little Etobicoke Creek occur as a result of the proposed works;
- Currently paved areas within the 10m dripline buffer will be renaturalized (e.g., with pollinator plantings) at the detailed design stage.
- In order to avoid potential impacts to nesting migratory birds and bat species, it is recommended that vegetation removal be conducted outside of the active breeding window (mid-March to October). If construction is scheduled within the active nesting window then nest searches will be conducted prior to the start of activities to ensure no nests or individuals will be affected.
- The proposed development will include measures to reduce the possibility of bird strikes with windows. These measures are based on bird-friendly design guidelines from the City of Toronto (2016) and include mitigation measures such as glazed and/or treated glass and visual markers to increase visibility to birds. It is anticipated that these bird-friendly designs will reduce the probability of bird strikes as a result of the proposed development.

- A 10m buffer from the dripline of the cultural woodland, 30 m from Little Etobicoke Creek, 10 m from the top of slope, but not including existing paved areas, will assist in mitigating negative impacts during and following construction.

Considering the above, and as discussed within the Impact Assessment section, it is GEI's opinion that the development of the Subject Lands can be completed without measurable impacts on the natural heritage features and associated functions, and in fact, the ability to remove and replace a portion of historic paved surface with buffer plantings will result in a net gain adjacent to the valley.

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10.0 APPENDICES

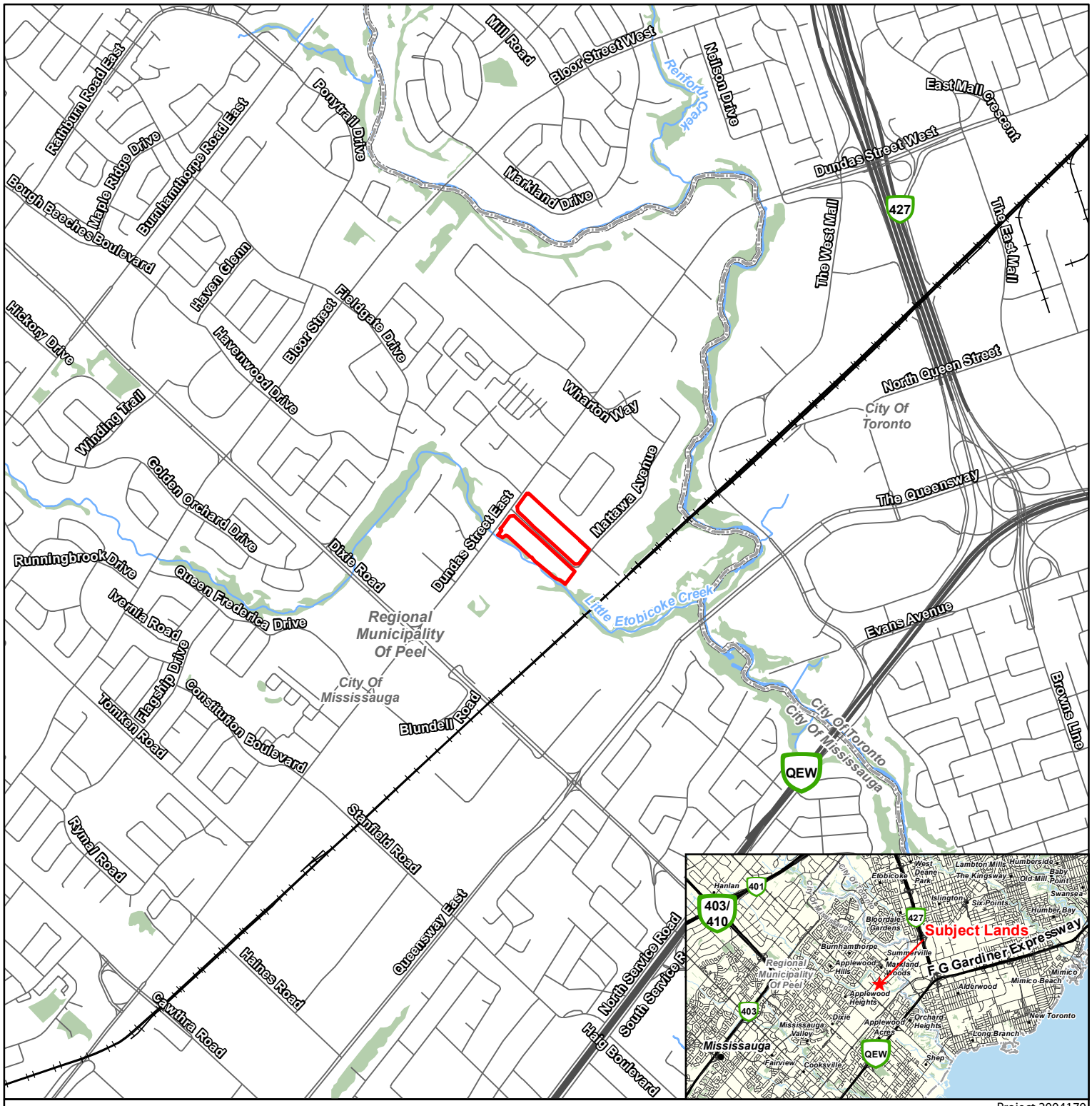
Appendix A – Figures

Appendix B – Tables

Appendix C – Consultation and Agency Correspondence

APPENDIX A

Figures



Project 2004170

NOTES:
1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.

Legend

- Subject Lands
- Railway
- Highway
- Road
- Municipal Boundary, Lower/Single Tier
- Municipal Boundary, Upper Tier
- Watercourse
- Waterbody
- Wooded Area

1580 Dundas Street
Hazelview Investments

Figure 1
Location of Subject Lands

0 500 m
1:25,000

N

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Project 2004170

NOTES:
1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Orthoimagery © First Base Solutions, 2021. Imagery taken in 2020.

Legend

- Subject Lands
- Hydro Line
- Unknown Transmission Line
- Railway - Operational
- Highway
- Road
- Trail Segment (OTN)
- Trail Segment
- Municipal Boundary, Lower/Single Tier
- Municipal Boundary, Upper Tier
- Greenbelt Boundary
- Wetland - Not evaluated per OWES
- Watercourse
- Waterbody
- Wooded Area
- Urban River Valley

1580 Dundas Street
Hazelview Investments

Figure 2
Landscape Setting

0 200 m
1:25,000

N

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Path: C:\SAVANTA\2004170 - 1580 Dundas Street Scoped Environmental Impact Study\figures\report_figures\2021008 eis figures\2004170_rpt_fig02_landscape_setting.mxd Date Saved: Monday, August 16, 2021

Project 2004170

NOTES:
1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
3. Orthoimagery © First Base Solutions, 2021. Imagery taken in 2020.

Legend

Subject Lands

Ecological Land Classification

ELC Legend

CUM1-1/DIST, Dry - Moist Old Field Meadow Type / Disturbed

CUW, Cultural Woodland Type

1580 Dundas Street
Hazelview Investments

Figure 3
Ecological Land Classification

0 20 m
1:2,500

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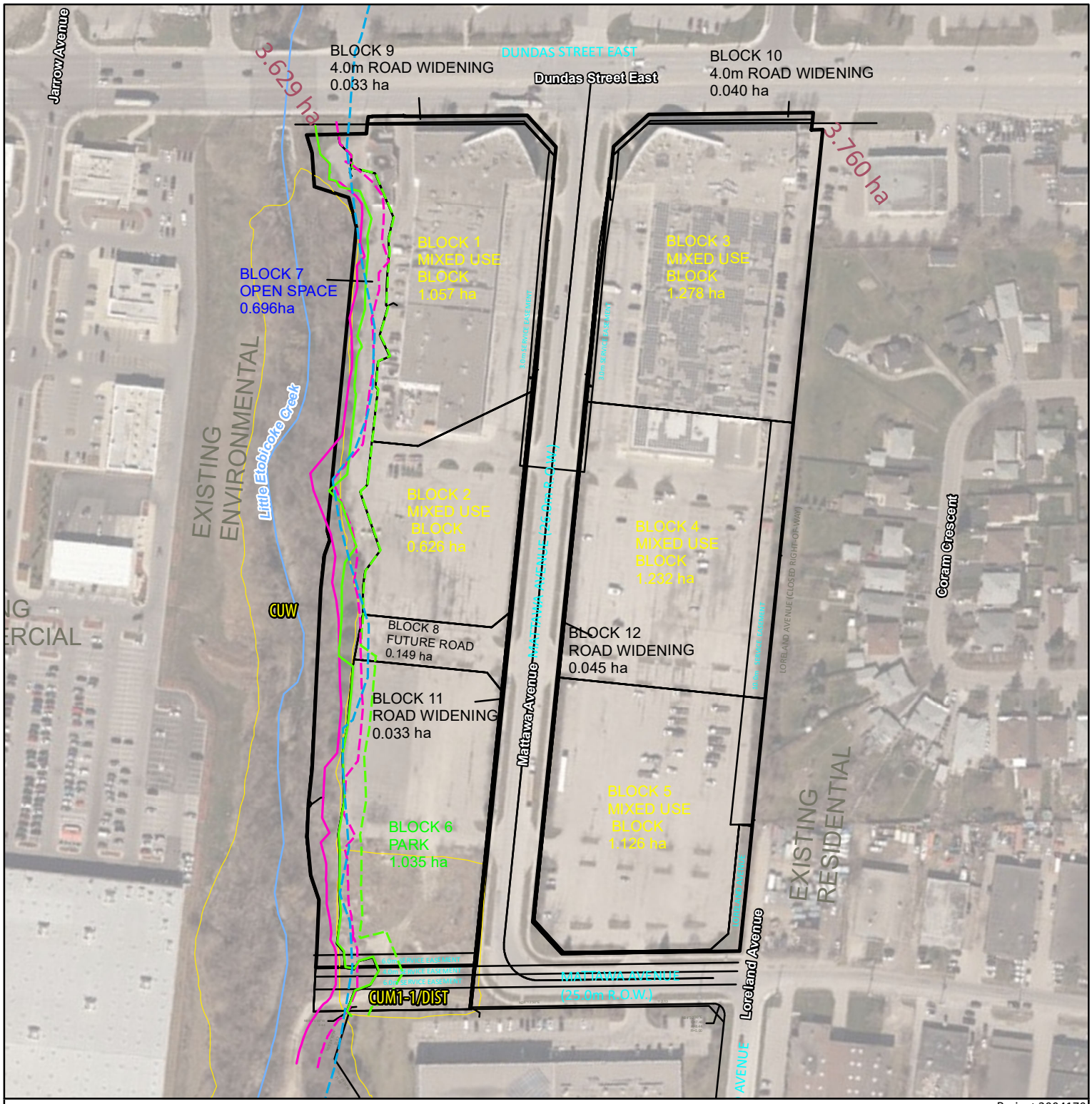

NOTES:

1. Coordinate System: NAD 1983 UTM Zone 17N.
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2023.
3. Orthoimagery © First Base Solutions, 2023. Imagery taken in 2020.
4. Site plan received from SvN Architects and Planners - received on September 24, 2021.

Legend

- Subject Lands
- Dripline (Completed by Aquafor Beech and confirmed by TRCA (December 7, 2020))
- Dripline + 10 metres
- Long Term Top of Slope (Completed by Aquafor Beech and confirmed by TRCA (December 7, 2020))
- Long Term TOS + 10 metres
- Watercourse + 30 metres
- Watercourse
- Ecological Land Classification

ELC Legend

CUM1-1/DIST, Dry - Moist Old Field Meadow Type / Disturbed

CUW, Cultural Woodland Type

Project 2004170

1580 Dundas Street
Hazelview Investments

Figure 4
Site Plan

0 20 m
1:2,500

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Appendix B – Tables

Table 1: Ecological Landscape Characterization (ELC) Community Descriptions

ELC TYPE	COMMUNITY DESCRIPTION	S-RANK / G-RANK (NHIC, 2013)
CULTURAL		
Cultural Meadow		
CUM1-1 Old-Field Mineral Cultural Meadow	• Open meadow consisting primarily of White Sweet-Clover (*Melilotus albus*), Old Field Aster (*Symphyotrichum pilosum* var. *pilosum*), Purple Crown-vetch (*Securigera varia*), Kentuck Bluegrass (*Poa pratensis*), Tall Goldenrod (*Solidago altissima)*, and Wild Carrot (*Daucus carrota*), among others. • Few scattered woody shrubs and trees.	Not ranked
Cultural Woodland		
CUW1 Mineral Cultural Woodland	• Open-canopy woodland composed primarily of Eastern Cottonwood (*Populus deltoides ssp. deltoides*), Norway Maple (*Acer platanoides*), Hybrid Crack Willow (*Salix x fragilis*), and Manitoba Maple (*Acer negundo*). • Understory composed primarily of European Buckthorn (*Rhamnus cathartica*), Tatarian Honeysuckle (*Lonicera tatarica*), Choke Cherry (*Prunus virginiana*), and Multiflora Rose (*Rosa multiflora*) • Groiund cover included Garlic Mustard (*Alliaria petiolata*), Tall Godenrod (*Solidago altissima*), Erect Hedge-Parsley (*Torilis japonica*), and Dames Rocket (*Hesperis matronalis*).	Not ranked

Table 2: Plant List

											LOCAL / REGIONAL STATUS		
FAMILY	**LATIN NAME**	**COMMON NAME**	**COEFFICIENT OF CONSERVATISM**	**WETNESS INDEX**	**OWES WETLAND SPECIES**	**WEEDINESS INDEX**	**INVASIVE EXOTIC RANK** (Urban Forest Associates 2002)	**PROVINCIAL STATUS (S-RANK)**	**GLOBAL STATUS (G-RANK)**	**COSSARO (MNRF)**	**COSEWIC STATUS**	**PEEL** (Varga 2005)	**GTA** (Varga 2005)	**AUTHORITY**
Adoxaceae	Viburnum opulus ssp. opulus	Cranberry Viburnum		-3		-1	4	SNA	G5			X	X	L.
Amaranthaceae	Atriplex patula	Spear Saltbush		-3				SNA	G5			X	X	L.
Anacardiaceae	Rhus typhina	Staghorn Sumac	1	3				S5	G5			X	X	L.
Apiaceae	Daucus carota	Wild Carrot		5		-2		SNA	GNR			X	X	L.
Apiaceae	Pastinaca sativa	Wild Parsnip		5		-3	3	SNA	GNR			X	X	L.
Apiaceae	Torilis japonica	Erect Hedge-Parsley		3		-3		SNA	GNR			X	X	(Houtt.) de Candolle
Apocynaceae	Asclepias syriaca	Common Milkweed	0	5				S5	G5			X	X	L.
Apocynaceae	Vinca minor	Lesser Periwinkle		5		-2	2	SNA	GNR			X	X	L.
Apocynaceae	Vincetoxicum rossicum	European Swallowwort		5			1	SNA	GNR			X	X	(Kleopow) Barbaricz
Asteraceae	Arctium lappa	Great Burdock		3				SNA	GNR			X	X	L.
Asteraceae	Artemisia vulgaris	Common Wormwood		5		-1	P	SNA	GNR			X	X	L.
Asteraceae	Carduus acanthoides ssp. acanthoides	Spiny Plumeless Thistle		5		-1		SNA	GNR			X	X	L.
Asteraceae	Cichorium intybus	Wild Chicory		5		-1		SNA	GNR			X	X	L.
Asteraceae	Cirsium arvense	Canada Thistle		3		-1	1	SNA	GNR			X	X	(L.) Scop.
Asteraceae	Cirsium vulgare	Bull Thistle		3		-1		SNA	G5			X	X	(Savi) Tenore
Asteraceae	Erigeron annuus	Annual Fleabane	0	3				S5	G5			X	X	(L.) Pers.
Asteraceae	Euthamia graminifolia	Grass-Leaved Goldenrod	2	0				S5	G5			X	X	(L.) Nutt.
Asteraceae	Lactuca serriola	Prickly Lettuce		3		-1		SNA	GNR			X	X	L.
Asteraceae	Solidago altissima var. altissima	Tall Goldenrod	1	3				S5	GNR			X	X	L.
Asteraceae	Solidago flexicaulis	Zigzag Goldenrod	6	3				S5	G5			X	X	L.
Asteraceae	Solidago gigantea	Giant Goldenrod	4	-3	T			S5	G5			X	X	Aiton
Asteraceae	Sonchus arvensis ssp. arvensis	Field Sow-Thistle		3				SNA	GNR			X	X	L.
Asteraceae	Symphyotrichum ericoides var. ericoide	White Heath Aster	4	3				S5	GST5			X	X	(L.) G.L. Nesom
Asteraceae	Symphyotrichum lateriflorum var. lateri	Calico Aster	3	0	T			S5	GST5			X	X	(L.) Á. & D. Löve
Asteraceae	Symphyotrichum novae-angliae	New England Aster	2	-3				S5	G5			X	X	(L.) G.L. Nesom
Asteraceae	Symphyotrichum pilosum var. pilosum	Old Field Aster	1	3				S5	GST5			R1	R	(Willd.) G.L. Nesom
Asteraceae	Tanacetum vulgare	Common Tansy		5		-1	3	SNA	GNR			X	X	L.
Asteraceae	Taraxacum officinale	Common Dandelion		3		-2		SNA	G5			X	X	F.H. Wiggers
Asteraceae	Xanthium strumarium	Rough Cockleburr	2	0	T			S5	G5			X	X	L.
Boraginaceae	Echium vulgare	Common Viper's Bugloss		5		-2		SNA	GNR			X	X	L.
Boraginaceae	Hydrophyllum virginianum var. virginiar	Virginia Waterleaf	6	0				S5	G5			X	X	L.
Brassicaceae	Alliaria petiolata	Garlic Mustard		0		-3	1	SNA	G5			X	X	(M. Bieb.) Cavara & Grande
Brassicaceae	Cardamine impatiens	Narrow-Leaved Bittercress		0		-1		SNA	GNR			X	X	L.
Brassicaceae	Hesperis matronalis	Dame's Rocket		3		-3	1	SNA	G4G5			X	X	L.
Brassicaceae	Lepidium campestre	Field Peppergrass		5		-1		SNA	GNR			X	X	(L.) W.T. Aiton
Brassicaceae	Thlaspi arvense	Field Pennycress		5		-1		SNA	GNR			X	X	L.
Caprifoliaceae	Dipsacus fullonum	Common Teasel		3		-1	3	SNA	G?T?			X	X	L.
Caprifoliaceae	Lonicera tatarica	Tartarian Honeysuckle		3		-3	1	SNA	GNR			X	X	L.
Celastraceae	Euonymus europaeus	European Euonymus		5		-1	3	SNA	GNR			X	X	L.
Convolvulaceae	Convolvulus arvensis	Field Bindweed		5		-1	3	SNA	GNR			X	X	L.
Cornaceae	Cornus sericea	Red-Osier Dogwood	2	-3	I*			S5	G5			X	X	L.
Elaeagnaceae	Elaeagnus angustifolia	Russian Olive		3		-1	3	SNA	GNR			X	X	L.
Fabaceae	Lotus corniculatus	Garden Bird's-Foot Trefoil		3		-2	2	SNA	GNR			X	X	L.
Fabaceae	Medicago lupulina	Black Medick		3		-1	4	SNA	GNR			X	X	L.
Fabaceae	Melilotus albus	White Sweet-Clover		3		-3	2	SNA	GNR			X	X	Medik.
Fabaceae	Melilotus altissimus	Tall Yellow Sweet-Clover		5		-1		SNA	GNR					Thuillier
Fabaceae	Securigera varia	Purple Crown-Vetch		5		-2	1	SNA	GNR			X	X	(L.) Lassen
Fabaceae	Trifolium repens	White Clover		3		-1	4	SNA	GNR			X	X	L.
Fabaceae	Vicia cracca	Tufted Vetch		5		-1	2	SNA	GNR			X	X	L.
Fagaceae	Quercus macrocarpa	Burr Oak	5	3	T			S5	G5			X	X	Michaux
Geraniaceae	Geranium robertianum	Herb-Robert	2	3		-2		S5	G5			X	X	L.
Grossulariaceae	Ribes rubrum	European Red Currant		5	T	-2		SNA	G4G5			X	X	L.
Juglandaceae	Juglans nigra	Black Walnut	5	3				S4?	G5			X	X	L.
Lamiaceae	Leonurus cardiaca ssp. cardiaca	Common Motherwort		5		-2		SNA	GNR			X	X	L.
Lamiaceae	Prunella vulgaris ssp. vulgaris	Common Self-Heal		0		-1		SNA	GST?			X	X	L.
Lythraceae	Lythrum salicaria	Purple Loosestrife		-5	I	-3	1	SNA	G5			X	X	L.
Malvaceae	Tilia americana	Basswood	4	3				S5	G5			X	X	L.
Malvaceae	Tilia cordata	Little-Leaved Linden		5			P	SNA	GNR				X	Miller
Oleaceae	Fraxinus pennsylvanica	Red Ash	3	-3	T			S4	G5			X	X	Marshall
Papaveraceae	Chelidonium majus	Greater Celandine		5		-3		SNA	GNR			X	X	L.
Plantaginaceae	Plantago lanceolata	English Plantain		3		-1		SNA	G5			X	X	L.
Plantaginaceae	Plantago major	Common Plantain		3		-1		SNA	G5			X	X	L.
Polygonaceae	Reynoutria japonica var. japonica	Japanese Knotweed		3		-1	2	SNA	GNR			X	X	Houttuyn
Polygonaceae	Rumex crispus	Curled Dock		0	T	-2		SNA	GNR			X	X	L.
Ranunculaceae	Anemone virginiana	Tall Anemone	4	3				S5	G5			X	X	L.
Rhamnaceae	Rhamnus cathartica	European Buckthorn		0	T	-3	1	SNA	GNR			X	X	L.
Rosaceae	Crataegus macracantha	Large-Thorned Hawthorn	4	5				S5	GNR			X	X	Loddiges ex Loudon
Rosaceae	Geum aleppicum	Yellow Avens	2	0	T			S5	G5			X	X	Jacquin
Rosaceae	Potentilla recta	Sulphur Cinquefoil		5		-2		SNA	GNR			X	X	L.
Rosaceae	Prunus virginiana var. virginiana	Chokecherry	2	3				S5	G5T?			X	X	L.
Rosaceae	Pyrus communis	Common Pear		5		-1		SNA	G5			X	X	L.
Rosaceae	Rosa multiflora	Multiflora Rose		3		-3	1	SNA	GNR			X	X	Thunberg
Rosaceae	Rubus occidentalis	Black Raspberry	2	5				S5	G5			X	X	L.
Salicaceae	Populus balsamifera	Balsam Poplar	4	-3	T			S5	G5			X	X	L.
Salicaceae	Populus deltoides ssp. deltoides	Eastern Cottonwood	4	0	T			S5	G5T5			X	X	Bartram ex Marshall
Salicaceae	Populus tremuloides	Trembling Aspen	2	0	T			S5	G5			X	X	Michaux
Salicaceae	Salix x fragilis	Hybrid Crack Willow			T	-3	3	HYB_e	GNA			XSR	X	L.
Sapindaceae	Acer negundo	Manitoba Maple	0	0	T		1	S5	G5			X	X	L.
Sapindaceae	Acer platanoides	Norway Maple		5		-3	2	SNA	GNR			X	X	L.
Sapindaceae	Acer pseudoplatanus	Sycamore Maple		5		-1	2	SNA	GNR				X	L.
Sapindaceae	Acer saccharinum	Silver Maple	5	-3	I			S5	G5			X	X	L.
Sapindaceae	Aesculus hippocastanum	Horse Chestnut		5		-1	3	SNA	GNR			X	X	L.
Scrophulariaceae	Verbascum thapsus ssp. thapsus	Common Mullein		5		-2		SNA	GNR			X	X	L.
Simaroubaceae	Ailanthus altissima	Tree-Of-Heaven		5		-1	2	SNA	GNR			X	X	(P. Miller) Swingle
Solanaceae	Solanum dulcamara	Bittersweet Nightshade		0	T	-2	3	SNA	GNR			X	X	L.
Ulmaceae	Ulmus americana	White Elm	3	-3	T			S5	G5			X	X	L.
Ulmaceae	Ulmus pumila	Siberian Elm		3		-1	2	SNA	GNR			X	X	L.

Table 2: Plant List

											LOCAL / REGIONAL STATUS		
FAMILY	**LATIN NAME**	**COMMON NAME**	**COEFFICIENT OF CONSERVATISM**	**WETNESS INDEX**	**OWES WETLAND SPECIES**	**WEEDINESS INDEX**	**INVASIVE EXOTIC RANK** (Urban Forest Associates 2002)	**PROVINCIAL STATUS (S-RANK)**	**GLOBAL STATUS (G-RANK)**	**COSSARO (MNRF)**	**COSEWIC STATUS**	**PEEL** (Varga 2005)	**GTA** (Varga 2005)	**AUTHORITY**
Urticaceae	Urtica dioica ssp. gracilis	Slender Stinging Nettle	2	0	T			S5	G5T5			X	X	(Aiton) Selander
Vitaceae	Parthenocissus vitacea	Thicket Creeper	4	3				S5	G5			X	X	(Knerr) Hitchcock
Vitaceae	Vitis riparia	Riverbank Grape	0	0				S5	G5			X	X	Michaux
Cupressaceae	Juniperus virginiana var. virginiana	Eastern Red Cedar	4	3				S5	G5T			R5	U	L.
Pinaceae	Picea abies	Norway Spruce		5		-1		SNA	GNR			X	X	(L.) Karsten
Pinaceae	Pinus nigra	Austrian Pine		5		-1		SNA	GNR				X	Arnold
Juncaceae	Juncus tenuis	Path Rush	0	0				S5	G5			X	X	Willdenow
Poaceae	Agrostis stolonifera	Creeping Bentgrass		-3	T			SNA	G5			X	X	L.
Poaceae	Bromus inermis	Smooth Brome		5		-3	4	SNA	G5TNR			X	X	Leysser
Poaceae	Dactylis glomerata	Orchard Grass		3		-1	3	SNA	GNR			X	X	L.
Poaceae	Elymus repens	Quackgrass		3		-3	3	SNA	GNR			X	X	(L.) Gould
Poaceae	Lolium pratense	Meadow Fescue		3		-1		SNA	G5			X	X	(Hudson) Darbyshire
Poaceae	Phalaris arundinacea var. arundinacea	Reed Canary Grass	0	-3	T		P	S5	GNR			X	X	L.
Poaceae	Phleum pratense ssp. pratense	Common Timothy		3		-1		SNA	GNR			X	X	L.
Poaceae	Phragmites australis ssp. australis	European Reed		-3	T		1	SNA	G5T5			X	X	(Cav.) Trinius ex Steudel
Poaceae	Poa compressa	Canada Bluegrass		3				SNA	GNR			X	X	L.
Poaceae	Poa pratensis	Kentucky Bluegrass	0	3			2	S5	G5			X	X	L.
Xanthorrhoeaceae	Hemerocallis fulva	Orange Daylily		5		-3	4	SNA	GNR			X	X	(L.) L.

Table 2: Plant List

FAMILY	LATIN NAME	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	OWES WETLAND SPECIES	WEEDINESS INDEX	INVASIVE EXOTIC RANK (Urban Forest Associates 2002)	PROVINCIAL STATUS (S-RANK)	GLOBAL STATUS (G-RANK)	COSSARO (MNRF)	COSEWIC STATUS	LOCAL / REGIONAL STATUS		AUTHORITY
												PEEL (Varga 2005)	GTA (Varga 2005)	
STATISTICS														
Species Diversity														
Total Number of Species:	105													
Native Species:	37	35%												
Exotic Species:	68	65%												
S1-S3 Species:	0	0%												
S4 Species:	2	5%												
S5 Species:	35	95%												
Floristic Quality Indices														
Mean Co-efficient of Conservatism (CC)	2.6													
CC 0 - 3 = lowest sensitivity	23	62%												
CC 4 - 6 = moderate sensitivity	14	38%												
CC 7 - 8 = high sensitivity	0	0%												
CC 9 - 10 = highest sensitivity	0	0%												
Floristic Quality Index (FQI)	16													
Weedy & Invasive Species														
Mean Weediness Index (Oldham et al):	-1.7													
-1 = low potential invasiveness	33	54%												
-2 = moderate potential invasiveness	13	21%												
-3 = high potential invasivenss	15	25%												
Mean Exotic Rank (Urban Forest Associates):	2													
Category 1	11	27%												
Category 2	10	24%												
Category 3	11	27%												
Wetland Species														
Mean Wetness Index	2.4													
Upland	33	32%												
Facultative upland	39	38%												
Facultative	17	17%												
Facultative wetland	12	12%												
Obligate wetland	1	1%												