Preliminary Scoped Environmental Impact Study

10249 Hunsden Sideroad

Caledon, Ontario

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1. Introduction

GEI Consultants (GEI) was retained by Carringwood Homes to prepare an Environmental Impact Study (EIS) in support of a proposed residential development on lands known as 10249 Hunsden Sideroad (herein referred to as the Subject Lands), within the Town of Caledon, Ontario (**Figure 1, Appendix A**). The Subject Lands are legally known as Part Lots 25 and 26, Concession 9 Albion.

The Subject Lands presently consist predominantly of row-crop agricultural lands, currently planted in soy, with surrounding mature woodland communities within the southern and northeastern extents of the Subject Lands. The Subject Lands are situated within the Palgrave Estates Residential Community Secondary Plan area within the Town of Caledon, ON. The surrounding lands consist of a mixture of agricultural lands to the north, continuations of the natural areas present on the Subject Lands, a recently developed residential subdivision to the south, and rural residential lots.

A scoped EIS is required to assess the potential impacts of the proposed development on the natural heritage features and associated ecological functions on the Subject Lands. This report provides a characterization of the existing natural heritage conditions of the Subject Lands based on preliminary ecological investigations completed in late 2021 and early 2022. Additional ecological investigations are underway and will be discussed within an Addendum to this report.

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 (NHRM; MNR 2010).

This scoped EIS is a requirement of the municipal planning process and is intended to address the policies of the Town of Caledon, Region of Peel, and the Nottawasaga Valley Conservation Authority (NVCA).

The study components to date, have included:

- A review of existing background information, policies and legislation applicable to the Subject Lands in its regional context;
- A field review and description of the natural environmental features and functions on, and immediately adjacent to, the Subject Lands through the completion of various ecological surveys and inventories;
- Identification and delineation of key natural heritage features (KNHF) and key hydrologic features (KHF) in accordance with the ORMCP;
- An evaluation of the sensitivity of the natural heritage features and their functions on the Subject Lands;

- An assessment of linkage functions between the identified natural heritage features;
- A description of the proposed development based on the Draft Plan;
- Identification and discussion of the impacts that could affect the natural heritage features as a result of the proposed development; and
- Recommendations for mitigation to avoid or minimize impacts.

This report is considered to be a preliminary version of the Scoped EIS as various field investigations remain underway. Following the completion of the field programs, an Addendum to this preliminary EIS will be prepared that addresses any changes to the descriptions of natural heritage features contained herein, as well as any additional mitigation measures that are recommended.

2. Natural Heritage Planning Considerations

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

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

- Town of Caledon Official Plan (TCOP; 2018 Office Consolidation);
- Region of Peel Official Plan (ROP; 2018 Office Consolidation);
- Oak Ridges Moraine Conservation Plan (ORMCP; 2017)
- Provincial Policy Statement (PPS; 2020);
- Nottawasaga Valley Conservation Authority (NVCA); and
- Provincial Endangered Species Act (ESA; 2007).

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

2.1 Town of Caledon Official Plan (TCOP)

The Subject Lands are situated within the limits of the Palgrave Estate Residential Community Secondary Plan Area. The secondary plan for this area provides protection from development to woodlots, wetlands and other ecologically significant areas, including valley and stream corridors (Policy 7.1.2.3), ORMCP Key Natural Heritage Features (KNHF) and Hydrologically Sensitive Features (also referred to as key hydrologic features, KHF) (Policy 7.1.2.12), and ORMCP Natural Core and Natural Linkage Areas (Policy 7.1.2.13).

Schedule G of the TCOP shows the Subject Lands situated within a mixture of Policy Areas 2, 3 and 4. Per TCOP Policies within section 7.1.5, Policy Areas 2 and 3 correspond with ORMCP Countryside Areas and are suitable for estate residential development, while Policy Area 4 corresponds with ORMCP Natural Core and Natural Linkage Areas, and is unsuitable for estate residential development.

Schedule I of the TCOP shows the Subject Lands contain settlement area with Environmental Zone 1 (EZ1) and Environmental Zone 2 (EZ2) Designations. Per TCOP Policy 7.1.9, EZ1 designations includes all ORMCP KNHF and KHF, and their related Minimum Vegetation Protection Zones (MVPZ), along with other features of local or regional importance. EZ2 Designations are locations with high groundwater table, seasonal flooding, dry swale lowlands and natural depressions performing natural run-off, detention and groundwater recharge functions, and smaller hedgerows and strips of native vegetation. Though general mapping is provided within Schedule I, the actual limits of the features are to be determined through

detailed studies, including Natural Heritage Evaluations (NHE) and/or Hydrological Evaluations.

The TCOP notes that development is not permitted within areas designated as EZ1, while limited development may be permitted within areas designated as EZ2, such as crossing of a narrow point of EZ2 with a driveway to permit reasonable access to a development lot.

2.2 Region of Peel Official Plan

The ROP implements the PPS natural features policies through the Greenlands System's Core Areas, Natural Areas and Corridors (NAC) and Potential Natural Areas and Corridors (PNAC) policy framework. The ROP natural heritage policies and identifies the following components as Core Areas (Schedule A) of the Peel Greenlands system (section 2.3.2.2):

- Significant wetlands;
- Significant coastal wetlands;
- Core woodlands meeting one or more criteria in Table 1 (of the Regional Official Plan);
- Environmentally Sensitive or Significant Areas;
- Provincial Life Science Areas of Natural and Scientific Interest (ANSIs);
- Significant habitats of threatened and endangered species;
- Escarpment Naturals Areas of the Niagara Escarpment Plan; and,
- Core Valley and Stream corridors meeting one or more criteria in Table 2 (of the ROP).

Schedule A of the ROP identifies the woodland situated at the southern extent of the Subject Lands as Core Area of the Regional Greenlands System. The remaining areas of the Subject Lands are identified as within the limits of the Palgrave Estate Residential Community.

2.3 Oak Ridges Moraine Conservation Plan

The Subject Lands occur within the Oak Ridges Moraine physiographic region. The Subject Lands contain a mixture of Natural Linkage Area as well as Countryside Areas within the Palgrave Estate Residential Community.

The purpose of Natural Linkage Areas is to protect critical natural and open space linkages between the Natural Core Areas and along rivers and streams, and maintain and where possible improve or restore the ecological integrity of the Plan Area. Applications must ensure connectivity between KNHF and KHF is maintained within and adjacent to the Natural Linkage Areas.

Residential development is expressly permitted within Palgrave Estates Residential Community of the Countryside Area of the ORMCP subject to the requirements of the Town of Caledon Official Plan, and various sections within the ORMCP.

A NHE and a hydrological evaluation are required with respect to the development of land within the minimum area of influence, but outside the related MVPZ of a KNHF or KHF, respectively.

The ORMCP defines KNHF and KHF and stipulates where development is or is not permitted.

KNHF are defined in Section 22(1) as one or more of the following:

- Wetlands;
- Habitat of endangered and threatened species;
- Fish habitat;
- ANSI (life science);
- Significant valleylands;
- Significant woodlands;
- Significant wildlife habitat (including habitat of special concern species); and/or
- Sand barrens, savannahs and tallgrass prairies.

KHF are defined in Section 26(1) as:

- Permanent and intermittent streams;
- Wetlands;
- Kettle Lakes; and,
- Seepage areas and springs.

2.4 Provincial Policy Statement

The PPS (2020) provides direction on matters of provincial interest related to land use planning and development. It "…supports a comprehensive, integrated and long-term approach to planning…"

The PPS is to be read in its entirety and land use planners and decision-makers need to consider all relevant policies and how they work together.

Policies in section 2.1 (Natural Heritage) of the PPS identify eight types of significant natural heritage features, as follows:

- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat (SWH);
- Fish habitat;

- Habitat of endangered and threatened species; and
- ANSIs.

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

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

2.5 Nottawasaga Valley Conservation Authority

The NVCA conducts reviews of planning processes associated with future development of properties within its jurisdictional boundaries. In addition, the NVCA 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, as both a watershed-based resource management agency and through planning advisory services, in addition to their Regulatory responsibilities. The Regulation Limit delineates hazardous lands, wetlands, shorelines and areas susceptible to flooding and associated allowances.

Pursuant to the Development, Interference with Wetland and Alterations to Shorelines and Watercourse Regulation (NVCA; Ontario Regulation 172/06), any development in or on areas defined in the Regulation (e.g., river or stream valleys, hazardous land, wetlands) requires permission from the Conservation Authority. The Conservation Authority may grant permission for development in or on these areas if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. The Regulation also states that it is prohibited to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or change or interfere in any way with a wetland without permission from the Conservation Authority.

Per NVCA's interactive map viewer, a tributary of Beeton Creek enters the Subject Lands near the existing residence on the property. This tributary, and it's associated floodplain, is identified as regulated area by the NVCA. Based on existing mapping, the regulated area is limited to the woodland in the northeastern corner of the property.

2.6 Provincial Endangered Species Act

The provincial ESA was developed to:

- Identify Species at Risk (SAR), based upon best available science;

- Protect SAR and their habitats and to promote the recovery of SAR; and
- Promote stewardship activities that would support those protection and recovery efforts.

The ESA 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.

3. Data Collection and Analyses

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) database;
- Provincial wildlife atlases (i.e., Ontario Breeding Bird Atlas, etc.);
- Citizen Science Databases (i.e., iNaturalist and eBird); and,
- DFO Aquatic Species at Risk Distribution Mapping
- Innisfil Creek Subwatershed Health Check 2018 (NVCA 2018)

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

3.1.1 Land Information Ontario

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

- Woodlands
- Tributary of Beeton Creek
- ORMCP Natural Linkage Area

3.1.2 Natural Heritage Information Centre

The Natural Heritage Information Centre (NHIC) database (MNRF 2022) was searched for records of provincially significant plants, vegetation communities and wildlife on, and in the vicinity of the Subject Lands. The database provides occurrence data by 1 km^2 area squares, with 4 squares overlapping at least a portion of the Subject Lands (17NJ9569, 17NJ9669, 17NJ9668, 17NJ9568). Within these squares, the search revealed 11 records, the following records are considered as current occurrences in this reporting:

- Species listed as Threatened or Endangered on the Species at Risk in Ontario (SARO) list:
    - Eastern Meadowlark (*Sturnella magna*) – Threatened in Ontario; and
    - Bobolink *(Dolichonyx oryzivorus)* – Threatened in Ontario;
- Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species):

- Lilypad Clubtail (*Arigomphus furcifer*) – S3 species
- Nerveless Kuhlenberg's Sedge (*Carex muehlenbergii var. enervis*) – S1/S2 species

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 (Bird Studies Canada et al. 2006). The data is presented on 100 km^2 area squares with one square overlapping a portion of the Subject Lands (17NJ96). 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 129 species was recorded in the atlas squares that overlap with the Subject Lands, with the following species of interest noted:

- Species listed as Threatened or Endangered on the SARO list:
  - Bank Swallow (*Riparia riparia*) – Threatened;
  - Barn Swallow (*Hirundo rustica*) – Threatened;
  - Bobolink – Threatened;
  - Chimney Swift (*Chaetura pelagica*) – Threatened;
  - Eastern Meadowlark – Threatened;
  - Least Bittern (*Ixobrychus exilis*) – Threatened; and
  - Eastern Whip-poor-will (*Antrostomus vociferus*) – Threatened.
- 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;
  - Eastern Wood-Pewee (*Contopus virens*) – Special Concern;
  - Grasshopper Sparrow (*Ammodramus savannarum*) – Special Concern;
  - Golden-winged Warbler (*Vermivora chrysoptera*) – Special Concern;
  - Red-headed Woodpecker (*Melanerpes erythrocephalus*) – Special Concern; and
  - Wood Thrush (*Hylocichla mustelina*) – Special Concern.

3.1.4 Ontario Reptile and Amphibian Atlas

The Ontario Reptile and Amphibian Atlas contains detailed information on the population and distribution status of Ontario herpetofauna (Ontario Nature 2022). The data are presented on 100 km^2 area squares with 1 square overlapping a portion of the Subject Lands (17NJ96). It should be noted that the Subject Lands are a small component of the overall atlas square, and therefore it is unlikely that all herpetofauna species are found within the Subject Lands.

Habitat type, availability and size are all contributing factors in herpetofauna species presence and use.

A total of 20 species was recorded in the atlas squares that overlap with the Subject Lands, of which 4 are salamander species, 10 are frog and toad species, 2 are turtle species and 4 are snake species. Of these species, the following species of interest are noted:

- Species of Conservation Concern (i.e., listed as Special Concern on the SARO list, or identified as an S1-S3 species):
    - Snapping Turtle (*Chelydra serpentina*) – Special Concern; and
    - Western Chorus Frog (Great Lakes/St. Lawrence – Canadian Shield Population) (*Pseudacris triseriata*) – Special Concern.

3.1.5 Ontario Butterfly and Moth Atlas

The Ontario Butterfly and Moth Atlases (Toronto Entomologists' Association 2022a, 2022b) contain detailed information on the population and distribution status of Ontario butterflies and moths. The data are presented on 100 km^2 area squares with 1 square overlapping a portion of the Subject Lands (17NJ96). 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 presence and use.

A total of 63 species was recorded in the atlas squares that overlap with the Subject Lands, of which 44 are butterfly species and 19 are moth species. Of these species, only one species of conservation concern was identified; Monarch *(Danaus plexippus*), listed as Special Concern.

3.1.6 Citizen Science Database (iNaturalist)

The iNaturalist (2022) database is a large citizen science-based identification and data collection app. It allows any citizen to submit observations to be reviewed and identified by other naturalists and scientists to help provide accurate species observations. As the observations can be submitted by anyone, and the records are not officially vetted, the data obtained from this tool should not be used as a clear indicator of species presence, and species may be filtered out based on habitat and target survey efforts.

This online database was examined to identify observations made within the Subject Lands that were research grade. However, no significant species were found on the Subject Lands or within 120 meters of its boundaries.

3.1.7 Citizen Science Database (eBird)

The eBird (2022) database is a large citizen science-based project with a goal to gather bird diversity information in the form of checklists of birds, archive it, and share it to power new data-driven approaches to science, conservation and education. As the observations can be

submitted by anyone, and the records are not officially vetted, the data obtained from this tool should not be used as a clear indicator of species presence, and species may be filtered out based on habitat and target survey efforts.

This online database was examined to identify observations made within the Subject Lands. However, no significant bird species were found on the Subject Lands or within 120 meters of its boundaries.

3.1.8 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 habitats were identified on or within 120m of the Subject Lands or within the subwatershed.

3.1.9 Innisfil Creek Subwatershed Health Check 2018

The NVCA prepares watershed health checks, and a report was prepared for the Innisfil Creek subwatershed in 2018 (NVCA 2018). The report provides a high level overview of the state of the subwatershed, with the following observations noted:

- Forest cover within the subwatershed is generally poor, primarily due to the high quality of the land to support agricultural landscapes. Large stands are restricted to wetland communities and the scatted stands within the Oak Ridges Moraine, including those present on the Subject Lands. The woodland community that overlaps the southern portion of the Subject Lands is shown as containing interior forest habitat. In addition, a natural corridor for wildlife movement is shown generally in an east-west direction through the woodland communities across the Oak Ridges Moraine, with the greatest connectivity shown north of the Subject Lands.
- Wetland habitats within the subwatershed are generally fair to poor when compared to targets; no wetlands are identified in the vicinity of the Subject Lands.
- The Subject Lands eventually drain through tributaries towards Beeton Creek near Tottenham to the north of the Subject Lands. Beeton Creek is generally mapped as impaired to below potential stream health.
- The Subject Lands are mapped as being within a significant groundwater recharge area

3.2 Technical Methods and Field Studies

A site reconnaissance visit was completed in June 2021 to assess ecological conditions on the Subject Lands. Following that a scoped ecological field survey program was planned for the 2022 field season to provide the data required to complete a significance assessment for the natural features present on and adjacent to the Subject Lands. Planned ecological survey efforts to be completed in 2022 included:

- Botanical Inventories and Ecological Land Classification (ELC)
- Headwater Drainage Feature Assessment; and
- Breeding Bird Surveys.

To date, the headwater drainage feature assessment and spring botanical inventory and ELC works have been completed. A summer botanical inventory and the breeding bird surveys remain to be completed in 2022 and will be addressed within a subsequent addendum.

Incidental observations of wildlife will be recorded during all surveys on the Subject Lands.

3.2.1 Vegetation and ELC Methods

ELC surveys were completed in June 2021 and assessed again in May 2022. Vegetation community types were initially assessed through the use of aerial imagery, and were confirmed, sampled and revised, as necessary, using the sampling protocol of the ELC 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+). A spring vegetation inventory was also completed in May 2022, with subsequent inventories to be completed in summer and fall 2022.

The provincial status of all plant species and vegetation communities is based on NHIC (MNRF 2022). Identification of potentially sensitive native plant species is based on their assigned coefficient of conservatism (CC) value, as determined by Oldham et al. (1995). The 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.

3.2.2 Headwater Drainage Feature Assessment

Potential headwater drainage features (HDFs) on the Subject Lands were assessed using the TRCA/CVC (2014) “Evaluation, Classification and Management of Headwater Drainage Features Guidelines” (herein referred to as the HDFA Guidelines). These guidelines provide a standardized means of identifying and assessing the value of HDFs and identifying long-term management recommendations to protect or maintain the important ecological or biophysical functions provided by HDFs in a developing landscape.

Per the requirements of the HDFA Guidelines, GEI completed two site visits to verify the presence of any features identified through a review of aerial imagery, provide up-to-date data regarding existing HDF conditions and ensure that a full data set is available. HDFA surveys are completed in accordance with the protocols in the HDFA Guidelines, with up to 3 site visits potentially required.

During the first site visit, all areas of the Subject Lands were walked to identify potential HDFs. No HDFs were identified, and as a result, subsequent site visits were not completed.

In addition, the mapped watercourse was also inspected during this initial visit, as well as a subsequent site inspection completed in late May 2022 following a precipitation event.

3.2.3 Breeding Bird Surveys

Breeding bird surveys will be conducted following protocol set forth by the Ontario Breeding Bird Atlas (Cadman et al. 2007) and the Ontario Forest Bird Monitoring Program (Cadman et al. 1998).

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

Both the NHIC (MNRF 2022) database and the Species at Risk in Ontario (SARO) list (O.Reg. 230/08) were reviewed to determine the current provincial status for each bird species.

4. Bio-Physical Characterization

4.1 Physiography

The Subject Lands are located on the Oak Ridges Moraine (ORM), an important geological landform that was formed through the advancement and retreat of glaciers, and the deposition of stratified sediment. The ORM and underlying sediments are late Pleistocene in age and overlie thin Paleozoic bedrock platform strata.

The Subject Lands reach a high point at the woodland communities at the southern extent of the Subject Lands, and generally the land falls away to the north, west and east of that point, with some rolling topography present across the Subject Lands.

4.2 Landscape Ecology

Situated within the Oak Ridges Moraine, movement predominantly occurs through the landscape in an east-west direction through the various woodlands. Larger communities in relative proximity to the Subject Lands are predominantly to the west, with movement occurring towards Palgrave and the Palgrave Forest and Wildlife Area to the north and Albion Hills Conservation Park to the south of the residential developments in that area.

Movement to the south through the scattered woodlands eventually connects to the Humber River and the surrounding valleylands that would connect to the south towards Lake Ontario.

4.3 Vegetation

4.3.1 Ecological Land Classification

The Subject Lands are dominated by recently tilled agricultural lands, which GEI understands have been planted in soy. Surrounding these agricultural lands are mid-aged woodland communities classified Fresh-Moist Sugar Maple – Hardwood Deciduous Forest Type. These communities are described as dominated by Sugar Maple, with occurrences of other species in the overstory. Green ash present within the woodland are showing evidence of dieback from emerald ash borer infestation.

Immediately west of the Subject Lands are a small cultural plantation community, situated centrally to the Subject Lands, with a cultural meadow community present between this plantation and Hunsden Sideroad to the north.

Vegetation communities are shown on **Figure 2 (Appendix A)**.

4.3.2 Vascular Plants

Botanical inventories completed on the Subject Lands to date have identified a total of 86 species of vascular plants. Of that number, 72 (or 84%) are native and 14 (or 16%) are exotic. The species list completed to date is included in **Table 1** (**Appendix B**).

The majority of the native species (88%) are ranked S5 (secure in Ontario) and eight species (11%) are ranked S4 (apparently secure in Ontario; NHIC, 2017). One species is listed as an S2? (rare in Ontario); Butternut, which are also listed as Endangered on the SARO List.

In addition to Butternut, ten regionally rare or uncommon plants were observed, as per the Peel Region, rarity rankings (Varga 2005). None of these 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. The regionally rare species are summarized below:

- Rare Species:
    - Blue Cohosh (*Caulophyllum thalictroides*);
    - Common Bedstraw (*Galium aparine*);
    - White Bear Sedge (*Carex albursina*);
    - Loose-Flowered Sedge (*Carex leptalea*);
    - Sprengel's Sedge (*Carex sprengelii*);
    - Interrupted Fern (*Osmunda claytoniana*);
- Uncommon Species:
    - Squirrel-Corn (*Dicentra canadensis*);
    - Canada Plum (*Prunus nigra*);
    - Rough Bedstraw (*Galium asprellum*);
    - Bristle-Stalked Sedge (*Carex leptalea*);

These species were identified within forest communities on the Subject Lands.

4.4 Wildlife

4.4.1 Breeding Bird Surveys

Results from breeding bird surveys will be provided within an Addendum to this report.

Given the size of the woodland communities that surround the agricultural lands, it is considered likely that species of conservation concern, such as Eastern Wood-pewee or Wood Thrush would be present within these communities.

4.4.2 Incidental Wildlife

Incidental species of wildlife will be recorded during all surveys. To date, observations have been generally limited to Grey Squirrel and Eastern Chipmunk, with evidence of White-tailed Deer browse observed within the woodlands.

Acoustic monitoring surveys for bats have not been proposed on the Subject Lands given that all woodland features are proposed to be retained, however it is assumed that these woodland communities provide maternity roosting habitat for bats, including the endangered species.

4.5 Headwater Drainage Features

A site visit was completed on April 20, 2022 to assess for presence of drainage features on the Subject Lands. Agricultural fields had been recently tilled prior to the site investigation, however no evidence of water movement or presence was observed on the site.

A mapped watercourse is shown on NVCA mapping within the northeastern extent of the Subject Lands, near the existing residence. This area was largely dry during this site visit and a subsequent investigation in May 2022 following a rain event. As a result, this feature may be more accurately classified as a seasonal drainage swale or headwater feature. The current landowners have indicated that the feature primarily conveys water only during the spring freshet and significant precipitation events. A culvert is present beneath Hunsden Sideroad that connects the feature downstream to the tributary of Beeton Creek.

5. Analysis Of Ecological and Natural Heritage Significance

Eight types of natural features are identified in the PPS (MMAH 2020):

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

In addition to natural features identified in the PPS, consideration was also given to the KNHF and KHF identified within the ORMCP. KNHF include:

- Wetlands;
- Habitat of endangered and threatened species;
- Fish habitat;
- ANSI (life science);
- Significant valleylands;
- Significant woodlands;
- SWH (including habitat of special concern species); and/or
- Sand barrens, savannahs and tallgrass prairies.

KHF are defined in Section 26(1) as:

- Permanent and intermittent streams;
- Wetlands;
- Kettle Lakes; and,
- Seepage areas and springs.

The presence/absence of these natural features on the Subject Lands are discussed in the subsequent sections of this EIS. The NHRM (MNR 2010) and the Peel-Caledon Significant Woodlands and Significant Wildlife Habitat Study (NSE Inc et al 2009) were referenced to assess the potential significance of these feature types.

Where natural features are present on the Subject Lands, their sensitivities are discussed.

5.1 Wetlands/Significant Wetlands

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

No significant wetlands are known to occur within 750 m of the Subject Lands, with the nearest provincially significant wetland (PSW), known as the Gibson Lake Wetland Complex, identified more than 1 km to the West. No wetlands were identified on the Subject Lands during the site investigations. As a result, this feature type is not present.

5.2 Significant Coastal Wetlands

Significant coastal wetlands are not present on or adjacent to the Subject Lands.

5.3 Habitat of Endangered and Threatened Species

Endangered and threatened species are identified by the Committee on the Status of Species at Risk in Ontario ("COSSARO") using criteria established by the International Union for the Conservation of Nature (IUCN) and the Committee on the Status of Endangered Wildlife in Canada) COSEWIC.

Butternut and endangered species of bats are addressed below. Should additional species on the SARO list be identified during surveys to be completed later in 2022, this section will be updated within the Addendum.

5.3.1 Butternut

Three Butternut trees (*Juglans cinerea*) have been identified within the northeastern woodland community on the Subject Lands. Butternut are listed as Endangered on the SARO List. Two of the trees were identified along the southern extent of the woodland community, and so would be within 50 m of the proposed development.

These three trees will be subject to a Butternut Health Assessment to be completed during the summer vegetation survey. Butternut Trees that are identified as Category 2 or Category 3 trees are protected under the ESA. Category 1 Butternut are considered to be those individuals infected by Butternut canker to an advanced degree such that they offer no value towards the protection or recovery of Butternut in the area. An exemption under O.Reg. 830/21 provides that authorization from MECP is not required to remove Category 1 Butternut trees. As the features are associated with the woodland community, direct removal of any of the trees is not required.

5.3.2 Endangered Species of Bats

Suitable bat maternity roosting habitat (tree cavities, peeling bark, etc.) are present within the woodland communities on the Subject Lands. Targeted surveys for bats were not completed

as no encroachment into these features are proposed. As a result, the woodlands are treated as candidate species at risk (SAR) bat habitat, and this habitat type will be carried forward to the Impact Assessment section.

5.4 Fish Habitat

Fish habitat, as defined in the federal Fisheries Act, c. F-14, means… spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly 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.

Though no water movement was observed during site investigations completed in 2022, the mapped watercourse present in the northeastern portion of the Subject Lands may be considered to provide indirect fish habitat. As this feature is located away from the development within a retained woodland, a conservative approach will be taken and this feature will be considered to be fish habitat.

5.5 Significant Woodlands

The PPS notes that, significant woodlands should be defined and designated by the planning authority using criteria established by the MNRF. Within the Region of Peel, woodlands are assessed against criteria to determine whether they are considered to be Core Areas of the Greenlands System, Natural Areas and Corridors (NAC) of the Greenlands System, or Potential NAC (PNAC) using criteria identified in Table 1 of the Official Plan.

Both woodland communities on the Subject Lands were assessed against these criteria.

The southern woodland is a large feature that is well more than 16 ha in size. Based on size alone, this feature would be considered a Core Area under the ROP, and so would be considered a significant woodland.

The northeastern woodland on the Subject Lands is approximately 6 ha in size. As this woodland community contains Butternut, a species listed as Endangered by both the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Committee on the Status of Species at Risk in Ontario (COSSARO), this feature would also be considered to be a Core Area under the ROP.

The cultural plantation west of the Subject Lands was also considered. The feature measures approximately 1.5 ha in size, with several large openings within the canopy. As a cultural woodland feature, it does not meet size criteria to be considered a PNAC. Further, plantations are excluded from age consideration, the woodland does not provide significant linkage functions, is located more than 100 m from another significant feature, is not situated near any watercourses or wetlands, and does not contain rare or endangered species or community types. As a result, this feature is not considered to be a significant woodland.

5.6 Significant Valleylands

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

No valley features were identified on the Subject Lands.

5.7 Significant Areas of Natural and Scientific Interest (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 showed that there are no ANSIs identified on or in proximity to the Subject Lands.

5.8 Significant Wildlife Habitat

Significant wildlife habitat (SWH) is one of the more complex natural heritage features to identify and evaluate. There are several provincial documents that discuss identifying and evaluating SWH: the NHRM, the SWH Technical Guide (MNR 2000), and the relevant SWH Ecoregion Criterion Schedule (MNRF 2015). The Subject Lands are located in Ecoregion 6E and were therefore assessed using the 6E Criterion Schedule (MNRF 2015).

There are four general types of significant wildlife habitat, including seasonal concentration areas of animals, migration corridors, rare vegetation communities or specialized habitat for wildlife, habitat for species of conservation concern and animal movement corridors. All types of significant wildlife habitat are discussed in more detail below.

5.8.1 *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 following is a partial list of numerous examples: deer yards, snake and bat hibernacula, waterfowl staging areas, raptor wintering areas, bird nesting colonies, shorebird stopover areas, and colonial nesting bird habitats. Areas that support a Species at Risk, or if a large proportion of the population may be lost if the habitat is destroyed, are examples of seasonal concentration areas which should be designated as significant.

5.8.2 *Rare Vegetation Communities or Specialized Habitat for Wildlife*

Rare vegetation communities or specialized habitat, are two separate components.

Rare vegetation communities are those that are considered rare in the province. These include cliff and talus slopes, sand barrens, alvars, old growth forest, savannah, and tallgrass prairie. Provincially ranked vegetation communities with SRANKS of S1 to S3 (extremely rare to rare-uncommon in Ontario) as defined by the NHIC, would also typically 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. Such vegetation communities do not occur on or adjacent to the Subject Lands.

Specialized habitats are microhabitats that are critical to some wildlife species. The NHRM defines specialized habitats as those that provide for species with highly specific habitat requirements; areas with exceptionally high species diversity or community diversity; and areas that provide habitat that greatly enhances species' survival.

5.8.3 *Habitat for Species of Conservation Concern*

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, which are discussed in section 5.2.

5.8.4 *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. Animal movement corridors are only identified as significant wildlife habitat where a confirmed or candidate significant wildlife habitat has been identified by MNRF or the planning authority.

Given that wildlife surveys remain ongoing on the Subject Lands, a complete assessment of significant wildlife habitat cannot be completed at this time. However, as the Subject Lands are currently in active agricultural production, it is anticipate that these habitats, if present, would be associated with the woodland communities on and adjacent to the Subject Lands, such as candidate bat maternity roosting habitat, candidate habitat for species of conservation concern, etc. These woodland communities are treated as candidate significant wildlife habitat at this time, and where specific habitat types are confirmed following wildlife studies, these will be updated within an Addendum to this report.

5.9 Sand Barrens, Savannahs and Tallgrass Prairies

These vegetation types were not identified on the Subject Lands.

5.10 Permanent and Intermittent Streams

Though water was not observed moving within the mapped watercourse on the Subject Lands, as the feature is located within a retained woodland away from the limit of development, the watercourse will be treated as an intermittent stream for the purposes of this EIS.

5.11 Kettle Lakes

Kettle lakes are not present on the Subject Lands.

5.12 Seepage Areas and Springs

No seepage areas or springs were identified on the Subject Lands.

5.13 Linkage Assessment

The Oak Ridges Moraine Conservation Plan identifies Natural Linkage Areas on the Subject Lands, consisting of an east-west corridor along Hunsden Sideroad, and a north south corridor connecting the two woodlands that overlap the Subject Lands. This Natural Linkage Area was later refined in accordance with the provisions of the ORMCP within the Town of Caledon Official Plan to reduce the extent of the Natural Linkage Area on the Subject Lands. Schedule G of the Official Plan shows the east-west linkage corridor predominantly along the northern side of Hunsden Sideroad. Given the increased prevalence of trees/shrubs along the northern side of Hunsden Sideroad, this is the most probable location for wildlife movement across the landscape. Along the southern side of Hunsden Sideroad, there is a general absence of vegetation cover, with several large gaps between trees. Wildlife movement along the southern side of Hunsden Sideroad is less preferred when compared to the northern side. Preservation of a linkage along the southern side of Hunsden Sideroad would not be warranted, and would be consistent with the mapping shown in Schedule G of the Town of Caledon Official Plan.

The other location shown for a linkage is along the eastern property limit between the northern and southern woodland communities. A projection of the northern woodland extends towards the southern woodland along the adjacent property to the east. A 60 m gap exists between the two woodland communities. The natural linkage area within this area would exist through the woodland communities, and along the remnant vegetation within the gap between the two features.

5.14 Summary of Ecological Components Subject to Impact Assessment

An analysis of existing natural heritage features on the Subject Lands was completed. The results of this analysis identified the following natural heritage features as present, within and/or adjacent to the Subject Lands:

- Habitat of Endangered and Threatened Species (Butternut, Endangered Species of Bats), associated with the deciduous forest communities on and adjacent to the Subject Lands
- Significant Woodlands/Core Area Woodlands associated with the deciduous forest communities on and adjacent to the Subject Lands
- Fish Habitat/Intermittent Stream associated with the mapped watercourse on the Subject Lands
- Generalized Candidate SWH associated with the deciduous woodland communities on the Subject Lands
- Linkage corridor along the eastern portion of the Subject Lands between the two significant woodlands.

These features are shown on **Figure 3** (**Appendix A**).

6. Description Of Proposed Development

The proposed development would consist of estate residential development within the existing agricultural lands.

The Draft Plan (Appendix C) considers 18 estate residential lots of approximately 1 acre in size, connected via a Street “B” connection to the development presently in construction to the west, and a Street A connection to Hunsden Sideroad. Street “A” is presently proposed to terminate at a cul-de-sac within the southeastern extent of the Subject Lands. The Draft Plan proposes a 20 m setback from the woodland communities on the Subject Lands.

It is GEI’s understanding that there may be an interest on the part of the Town in extending Street “A” to connect to future developments that may occur east of the Subject Lands. This connection is considered at a high level within this report.

Technical reports to support the development are currently in preparation and will be addressed within a subsequent addendum to the EIS.

7. Impact Assessment, Mitigation and Enhancement Opportunities

This section of the report assesses the potential effects on the natural heritage features and their associated functions that could occur over the short-term and long-term following implementation of a future development plan, based on the draft concept plan. It also suggests appropriate mitigation measures to limit negative impacts and/or to enhance features and functions where practical.

7.1 Vegetation Protection Zone

The outer boundaries of significant woodlands on the Subject Land have been established through aerial interpretation. These limits should be confirmed in the field at a later date following a staking exercise to be completed with the regulatory authorities. The identified watercourse is situated well within the woodland community, such that staking of this feature is not required.

This section provides a technical summary regarding the recommended vegetation protection zone for the significant woodlands. The significant woodlands were also assessed as being habitat for endangered species (Butternut, endangered species of bats), as well as generalized candidate significant wildlife habitat.

The key functions of these areas on the Subject Lands are:

- Provision of breeding, foraging, and wintering habitat for wildlife, including birds, mammals, and amphibians, including endangered species of bats and Butternut, and potentially including other species listed on the SARO List following completion of the 2022 field program;
- Provision of movement corridors for wildlife with connections to other natural core areas within the Oak Ridges Moraine area;
- Nutrient cycling and hydrological cycling associated with woodland vegetation communities; and
- Improvements in air quality relating to the presence of woodland vegetation.

Understanding those features and functions, allows for the consideration of an appropriate protective buffer. The recommended buffers or vegetation protection zones, has considered the physical characteristics of the natural edge (e.g., soils types, moisture regime, woodland edge structure and composition and rooting habits of adjacent trees) and has addressed other pertinent aspects.

A 20 m vegetation protection zone is proposed from the significant woodlands (**Appendix C**). The following outlines the rationale for this recommended vegetation protection zone or vegetation protection zone:

- Given the use of the adjacent agricultural fields that are proposed for development as row crop agricultural, these lands do not provide critical support functions for wildlife within the significant woodlands, which would necessitate the maintenance of larger buffers for protection, as noted below:
    - General wildlife use of the lands adjacent to the significant woodlands is likely restricted to periodic transit through, or foraging opportunities within, given the existing conditions;
    - Bat species may forage over the agricultural lands, however, alternate foraging habitat is abundant in the local area. In addition, with the estate residential development, open landscaped areas will remain on the landscape that would also provide foraging opportunities.
- Mitigation measures with respect to soil erosion, stormwater management, and water balance are addressed separately in the sections below;
- No vegetation removal is proposed, and therefore there would be no anticipated impact on nutrient cycling or air quality benefits within this feature;
- A 20 m vegetation protection zone has been proposed between the two significant woodlands as a movement corridor between these features. It has been noted previously that a roadway may be required by the Town between these two features to the adjacent lands to the East. Given both the proximity and general narrowness of the connection between these two features, this section of roadway would likely see significantly higher wildlife movement than other connections on the landscape. If a roadway is placed through this area, the design should consider the potential for increased wildlife/vehicle interactions, and appropriate signage should be displayed.
- The vegetation protection zones should be the subject of a comprehensive planting plan.

The assessment above supports the proposal that a 20 m vegetation protection zone would be effective at protecting and enhancing both the form and the function of the significant woodland communities, and movement between these communities. Additional mitigation measures to ensure that alterations to the adjacent lands resulting from construction and development of the proposed residential subdivision do not impact the significant woodlands and associated natural heritage features are addressed in the sections below with respect to the individual features.

7.2 Watercourse/Fish Habitat

7.2.1 *Potential Impacts During Construction*

As this feature is situated within the woodland community away from the proposed development, no direct impacts would occur.

Potential indirect impacts during construction include:

- Erosion and sedimentation from the construction area;
- Effects due to stormwater management during construction; and
- Accidental spills (e.g., fuel or oil from machinery) with transport of spilled material to watercourses.

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

Erosion and Sedimentation

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

It is recommended that the contractor prepare and implement an Erosion and Sedimentation Control (ESC) Plan to minimize the potential for erosion and sedimentation from the construction site. The ESC Plan should be developed based on the guidance provided in the *Erosion and Sediment Control Guideline for Urban Construction* (GGHCA 2006). Basic elements of the plan should include consideration of:

- Requirements and timing for rehabilitation of disturbed areas;
- Stormwater management strategies during construction;
- Erosion prevention measures (e.g., hydroseeding, sodding, erosion control matting, tarping of stockpiles);
- Sedimentation control measures (e.g., silt fences and other barriers); and
- Inspection and performance monitoring requirements and adaptive management considerations.

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

However, should erosion and off-site sedimentation occur during the construction process, the proposed setbacks from the watercourse, which is located more than 50 m from the proposed development within a woodland community will assist in mitigating potential effects on fish and their habitat.

Overall, no adverse effects on the watercourse 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.

Stormwater Management During Construction

Increases in stormwater runoff from the disturbed areas of the construction site or pumping of groundwater from excavations, potentially resulting in higher flows to the watercourse could cause increases in bed and bank erosion with associated potential effects on the watercourse, downstream features and associated fish habitat, aside from the obvious potential increase in erosion from the work area.

It is recommended that the contractor consider management of stormwater throughout the construction period as part of the overall ESC Plan, since stormwater flows through disturbed areas are one of the primary causes of erosion and sedimentation from construction sites. Increased volumes of runoff during construction could also potentially result in increases in erosion due to overland flow, particularly if stormwater runoff from the construction area is concentrated. To mitigate these potential effects, stormwater management techniques should be implemented prior to construction to control surface water runoff throughout the construction period. Implementation of an effective stormwater control plan during construction is anticipated to prevent adverse effects on the watercourse and fish habitat.

Pumping of groundwater from excavations may be required, depending on the depth of the excavation and groundwater level at the time. If pumping is necessary, consideration should be given to the discharge location, and potential impacts on surface water quality and quantity. Mitigation (e.g., sedimentation filter bags) should be provided to ensure that discharge quality criteria are met (e.g., highly turbid water is not discharged to the environment), and mitigation (e.g., rip rap pad) employed to ensure that discharge water does not erode the soils at the immediate discharge location. Implementation of effective mitigation is anticipated to prevent adverse effects on the watercourse and associated fish habitats.

Accidental Spills

Accidental spills of potentially hazardous materials (e.g., fuel and oil from heavy equipment), if transported to the watercourse on the Subject Lands, could cause stress or injury to fish, amphibians and other aquatic biota (e.g., benthic invertebrates).

In order to mitigate the potential for adverse effects on these species and their habitats 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), monitoring measures and spill response plans (i.e., emergency contact procedures, including MOECC Spills Action Centre, and response measures including containment and clean-up). Implementation of an effective spill prevention and response plan is anticipated to be largely effective in preventing adverse effects on these species and their habitats.

7.2.2 *Potential Post-Construction Impacts*

No direct impacts on the watercourse and associated fish habitat are anticipated to occur during the post-construction period, since there would be no requirement for any activity within these features.

However, potential indirect impacts may occur, including:

- Changes in flow and water quality due to stormwater management and changes in groundwater infiltration;
- Effects on water quality associated with runoff from urban areas; and
- Disturbance effects associated with anthropogenic activity at local residences.

These potential impacts and recommended mitigation measures are discussed in the following sections.

7.2.2.1 Stormwater Management and Changes in Infiltration

The proposed development and associated changes in soil permeability, and storm water treatment and flows, may affect the watercourse.

The stormwater management system should be designed to convey water to the same areas as at present, and relevant regulatory requirements. Compliance with these limits is anticipated to be largely effective at mitigating potential impacts on the watercourse. Consideration should also be given to ensure water balance into the groundwater table is maintained.

Implementation of these measures would mitigate potential impacts on the watercourse and associated fish habitat.

7.2.2.2 Impacts on Water Quality

The proposed stormwater management system should be designed to provide water quality control.

Some surface water on the Subject Lands will infiltrate through residential lawns and into the shallow groundwater or will flow directly as overland runoff from residential rear yards towards the watercourse. This runoff or infiltration water could potentially be impaired due to residential use of potential contaminants (e.g., lawn fertilizers) or other residential land use activities (including accidental spills in rear yards). As the watercourse is situated well away from the proposed development, potential effects on water quality within the watercourse are not anticipated.

7.3 Significant Woodlands/Habitat of Endangered and Threatened Species/Generalized Candidate Significant Wildlife Habitat

The woodland community and associated wildlife habitats are being protected from the direct impacts (i.e., avoidance) and from indirect impacts, in part through the implementation of a 20 m vegetation protection zone

Noise from construction activities may result in wildlife avoidance of the edges abutting active work areas during the construction period. Where possible, construction activities should be

timed outside of the nighttime and early morning periods during the bat and bird breeding seasons (typically May through July). Some localized movement of wildlife out of these edge areas may still occur during the construction phase. Given continued development in this area and active agricultural operations, wildlife likely have some tolerance to background noise and so would be somewhat tolerant of construction activities.

Following construction, increased noise in vicinity of the woodland community due to residential activities (e.g., lawn mowing, vehicle movement, etc.), and the potential for increased predation pressure from domestic cats allowed to roam free outdoors may occur. These effects are already present to a degree given the existing residential development to the southwest, as well as rural residential dwellings on the Subject Lands and surrounding properties. Measurable alterations in wildlife composition within the significant woodlands are not anticipated following occupation of the residential subdivision. These potential effects may be further reduced through the development and distribution of a homeowner's manual that explains the relationship between the development and adjacent significant natural areas.

7.4 Migratory Birds/Endangered Species of Bats

To ensure that migratory birds or endangered species of bats are not impacted during construction, vegetation removal should occur outside of the breeding bird window of April 1 – August 31 (dates approximate) and the active bat window (April 1 through September 30). In rare circumstances where this window cannot be avoided, a nest search or bat exit survey (as appropriate) is recommended to ensure that the vegetation being removed is not providing active nesting/roosting habitat for these species. If activity is confirmed, a buffer will be marked off surrounding any active nests/roost trees, that must be maintained until activity in the nest/roost tree has ceased.

8. Conclusions and Recommendations

This preliminary Scoped EIS has been developed as part of the planning process for the proposed development at 10249 Hunsden Sideroad in the Town of Caledon, Ontario. An assessment of impacts on natural features and their associated functions has been conducted and discussed in relation to the PPS and the ORMCP.

The proposed development occurs in areas that are agricultural, and a 20 m vegetation protection zone has been proposed from the natural heritage features associated with the significant woodlands.

Based upon the natural heritage feature inventories and analyses carried out, the following conclusions are drawn:

- The agricultural lands upon which development is proposed, do not provide habitat for any significant natural features/KNHF/KHF when considered through both the PPS and the ORMCP;
- The significant woodlands on the Subject Lands were also identified as providing habitat for threatened and endangered species (Butternut, endangered species of bats), and have also been identified as generalized candidate significant wildlife habitat pending completion of further studies.
- The 20 m vegetation protection zone is expected to protect the identified natural heritage features. It is also proposed that a 0.47 ha open space block be subject to a comprehensive planting plan to restore additional woodland community on the landscape;
- Linkage functions along the eastern extent of the Subject Lands will be maintained. Should a roadway be required to cross to the lands to the East, careful consideration should be given to ensuring appropriate design as this area is likely to see greater wildlife traffic given the proximity between two significant features on the landscape; and,
- A formal Erosion and Sediment Control Plan will be provided as part of the detailed design phase of the Project. The use of standard mitigation measures regarding the use of fuels and chemicals during the construction process will reduce the risk of groundwater or surface water contamination from accidental spills.

Based upon current and available technical information and analyses, the predicted effects on the natural features and associated functions will be avoided/minimized through the protection, mitigation and enhancement measures recommended and discussed in this report. The proposed mitigation measures will maintain important natural features and associated functions, with the recommended restoration works proposed on lands adjacent to the tributary of the Upper East Don River expected to enhance wildlife habitat available in this area, while also providing improved aquatic conditions.

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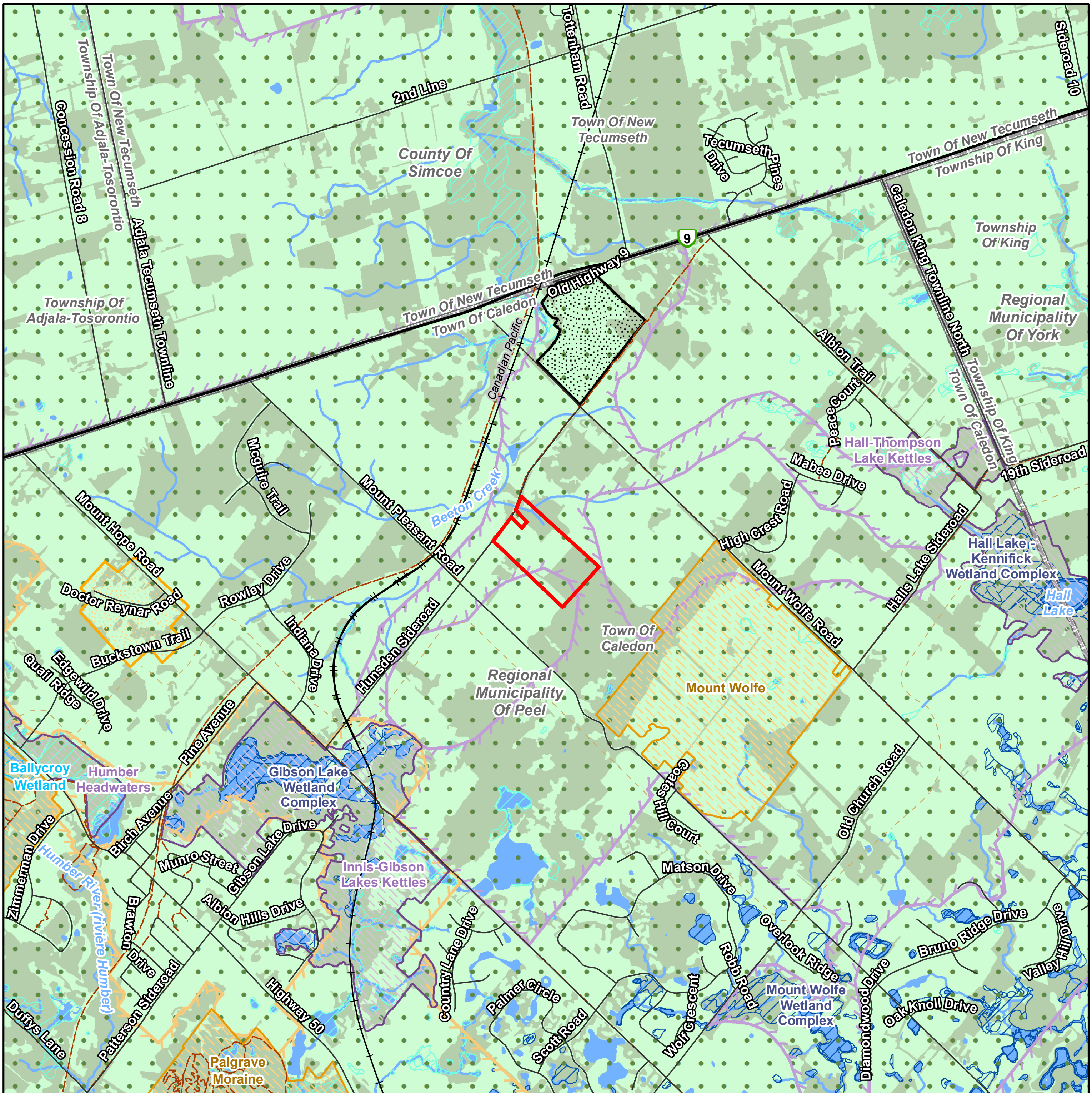
Appendix A

Figures



Project 2101948

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, 2022.
3. Orthoimagery © First Base Solutions, 2022. Imagery taken in 20XX.

Legend

- Subject Lands
- Municipal Boundary, Lower/Single Tier
- Municipal Boundary, Upper Tier
- Watercourse
- Waterbody
- Wooded Area
- Railway
- Highway
- Road
- Trail Segment (OTN)
- Trail Segment
- Aggregate Site - Active
- Aggregate Site - Inactive
- Candidate Earth Science ANSI
- Candidate Life Science ANSI
- Provincially Significant Wetland
- Locally/Other Significant Wetland
- Wetland - Not evaluated per OWES
- Oak Ridges Moraine Planning Area
- Oak Ridges Moraine Conservation Plan Core Area
- Oak Ridges Moraine Conservation Plan Linkage Area
- Greenbelt Boundary

Greenbelt Designation

- Oak Ridges Moraine Conservation Plan

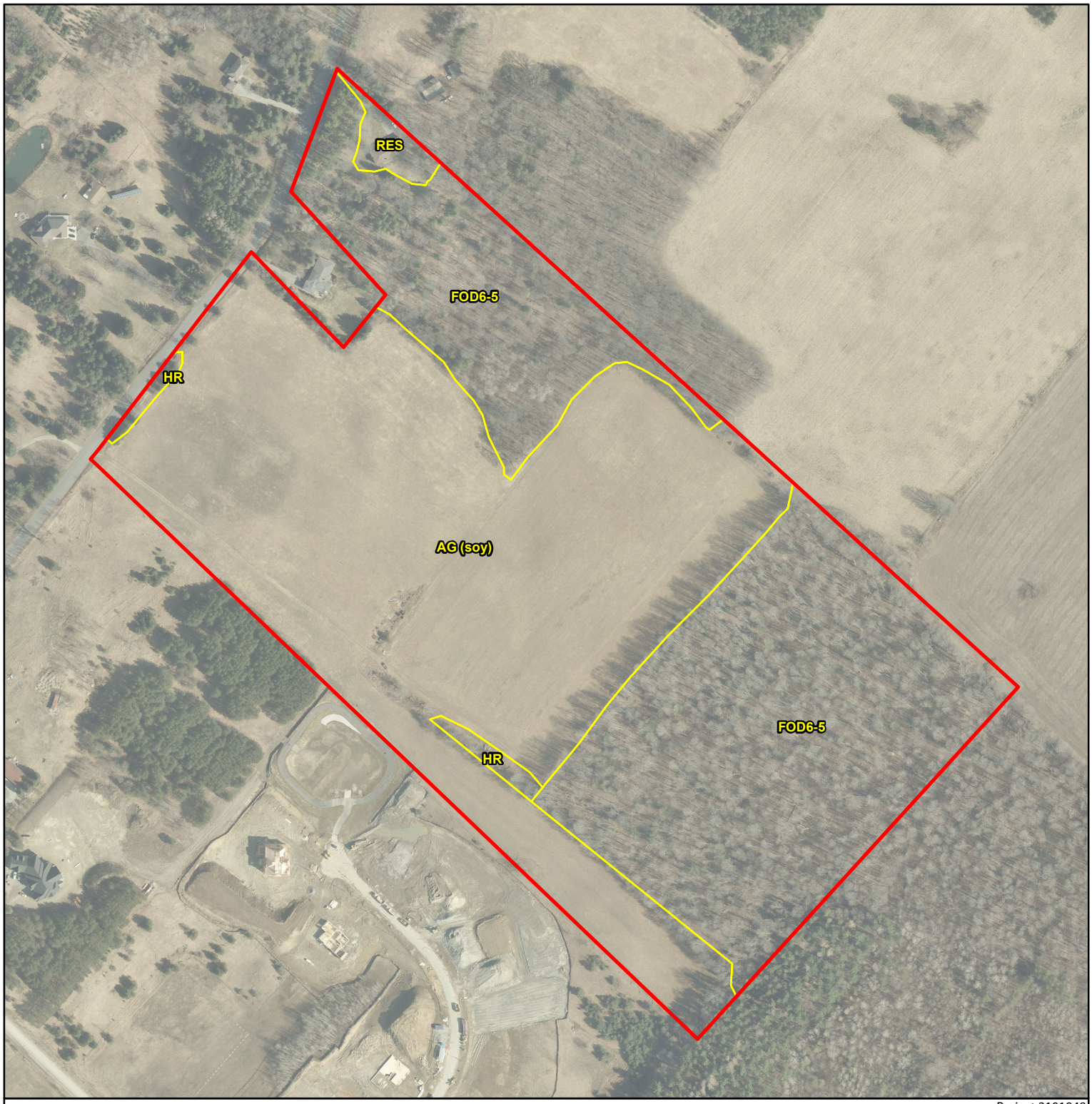
Carringwood Homes
10249 Hunsden Sideroad, Caledon, ON

Figure 1
Project Location and Landscape Context

0 200 m
1:35,000

N

GEI Consultants



Project 2101948

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

Legend

- Subject Lands
- Watercourse
- Ecological Land Classification

ELC Legend

AG, Agricultural

FOD6-5, Fresh – Moist Sugar Maple Hardwood Deciduous Forest

HR, Hedgerow

RES, Residential

Carringwood Homes
10249 Hunsden Sideroad, Caledon, ON

Figure 2
Ecological Land Classification

0 50 m
1:4,000

N

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Project 2101948

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

Legend

- Subject Lands
- Watercourse/Fish Habitat
- Core Areas/Significant Woodlands /Habitat for Endangered Species of Bats /Candidate Significant Wildlife Habitat
- Ecological Land Classification

ELC Legend

AG, Agricultural

FOD6-5, Fresh – Moist Sugar Maple Hardwood Deciduous Forest

HR, Hedgerow

RES, Residential

Carringwood Homes
10249 Hunsden Sideroad, Caledon, ON

Figure 3
Designated Natural Heritage Features

0 50 m
1:4,000

N

GEI Consultants

Appendix B

Tables

	ORDER	FAMILY	LATIN NAME	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS (S-RANK)	GLOBAL STATUS (G-RANK)	COSSARO (MNRF)	COSEWIC STATUS		PEEL (Varga 2005)	FOD6-1	FOD6-5
x	DICOTYLEDONS	Adoxaceae	Sambucus racemosa ssp. pubens	Red Elderberry	5	3		S5	G5				X	x	x
x	DICOTYLEDONS	Adoxaceae	Viburnum acerifolium	Maple-Leaved Viburnum	6	5		S5	G5				X	x	
x	DICOTYLEDONS	Apocynaceae	Vinca minor	Lesser Periwinkle		5	-2	SNA	GNR				X		x
x	DICOTYLEDONS	Aristolochiaceae	Asarum canadense	Canada Wild-Ginger	6	5		S5	G5				X	x	x
x	DICOTYLEDONS	Asteraceae	Symphyotrichum species	Aster Species										x	x
x	DICOTYLEDONS	Asteraceae	Taraxacum officinale	Common Dandelion		3	-2	SNA	G5				X	x	x
x	DICOTYLEDONS	Balsaminaceae	Impatiens capensis	Spotted Jewelweed	4	-3		S5	G5				X	x	x
x	DICOTYLEDONS	Berberidaceae	Caulophyllum thalictroides	Blue Cohosh	5	5		S5	G5				R1	x	x
x	DICOTYLEDONS	Betulaceae	Betula alleghaniensis	Yellow Birch	6	0		S5	G5				X		x
x	DICOTYLEDONS	Betulaceae	Betula papyrifera	Paper Birch	2	3		S5	G5				X	x	
x	DICOTYLEDONS	Betulaceae	Ostrya virginiana	Eastern Hop-Hornbeam	4	3		S5	G5				X	x	x
x	DICOTYLEDONS	Boraginaceae	Hydrophyllum virginianum var. virginian	Virginia Waterleaf	6	0		S5	G5				X	x	x
x	DICOTYLEDONS	Brassicaceae	Alliaria petiolata	Garlic Mustard		0	-3	SNA	G5				X	x	x
x	DICOTYLEDONS	Brassicaceae	Cardamine diphylla	Two-Leaved Toothwort	7	3		S5	G5				X	x	
x	DICOTYLEDONS	Caprifoliaceae	Lonicera tatarica	Tartarian Honeysuckle		3	-3	SNA	GNR				X	x	
x	DICOTYLEDONS	Cornaceae	Cornus alternifolia	Alternate-Leaved Dogwood	6	3		S5	G5				X	x	x
x	DICOTYLEDONS	Fabaceae	Amphicarpaea bracteata	American Hog-Peanut	4	0		S5	G5				X	x	
x	DICOTYLEDONS	Fabaceae	Trifolium pratense	Red Clover		3	-2	SNA	GNR				X		x
x	DICOTYLEDONS	Fagaceae	Fagus grandifolia	American Beech	6	3		S4	G5				X	x	x
x	DICOTYLEDONS	Geraniaceae	Geranium robertianum	Herb-Robert	2	3	-2	S5	G5				X	x	x
x	DICOTYLEDONS	Grossulariaceae	Ribes cynosbati	Eastern Prickly Gooseberry	4	3		S5	G5				X		x
x	DICOTYLEDONS	Juglandaceae	Juglans cinerea	Butternut	6	3		S2?	G4	END	END		X		x
x	DICOTYLEDONS	Juglandaceae	Juglans nigra	Black Walnut	5	3		S4?	G5				X	x	
x	DICOTYLEDONS	Lamiaceae	Ajuga reptans	Creeping Bugleweed		5	-1	SNA	GNR				X		x
x	DICOTYLEDONS	Lamiaceae	Leonurus cardiaca ssp. cardiaca	Common Motherwort		5	-2	SNA	GNR				X	x	x
x	DICOTYLEDONS	Malvaceae	Tilia americana	Basswood	4	3		S5	G5				X	x	x
x	DICOTYLEDONS	Oleaceae	Fraxinus pennsylvanica	Red Ash	3	-3		S4	G5				X	x	x
x	DICOTYLEDONS	Onagraceae	Circaea canadensis ssp. canadensis	Canada Enchanter's Nightshade	2	3		S5	G5T5				X	x	x
x	DICOTYLEDONS	Papaveraceae	Dicentra canadensis	Squirrel-Corn	7	5		S5	G5				U	x	x
x	DICOTYLEDONS	Papaveraceae	Sanguinaria canadensis	Bloodroot	5	3		S5	G5				X	x	x
x	DICOTYLEDONS	Primulaceae	Lysimachia borealis	Northern Starflower	6	0		S5	G5T?				X		x
x	DICOTYLEDONS	Ranunculaceae	Actaea pachypoda	White Baneberry	6	5		S5	G5				X	x	
x	DICOTYLEDONS	Ranunculaceae	Actaea rubra ssp. rubra	Red Baneberry	6	3		S5	G5				X	x	x
x	DICOTYLEDONS	Ranunculaceae	Anemone acutiloba	Sharp-Lobed Hepatica	8	5		S5	G5				X	x	
x	DICOTYLEDONS	Ranunculaceae	Ranunculus abortivus	Kidney-Leaved Buttercup	2	0		S5	G5				X	x	x
x	DICOTYLEDONS	Ranunculaceae	Thalictrum dioicum	Early Meadow-Rue	6	3		S5	G5				X		x
x	DICOTYLEDONS	Rhamnaceae	Rhamnus cathartica	European Buckthorn		0	-3	SNA	GNR				X	x	x
x	DICOTYLEDONS	Rosaceae	Fragaria virginiana	Wild Strawberry	2	3		S5	G5				X		x
x	DICOTYLEDONS	Rosaceae	Geum aleppicum	Yellow Avens	2	0		S5	G5				X	x	
x	DICOTYLEDONS	Rosaceae	Geum urbanum	Wood Avens		5	-1	SNA	G5				X		x
x	DICOTYLEDONS	Rosaceae	Prunus nigra	Canada Plum	4	3		S4	G4G5				U	x	x
x	DICOTYLEDONS	Rosaceae	Prunus pensylvanica	Pin Cherry	3	3		S5	G5				X	x	x
x	DICOTYLEDONS	Rosaceae	Rubus occidentalis	Black Raspberry	2	5		S5	G5				X	x	x
x	DICOTYLEDONS	Rubiaceae	Galium aparine	Common Bedstraw	4	3		S5	G5				R4	x	x
x	DICOTYLEDONS	Rubiaceae	Galium asprellum	Rough Bedstraw	6	-5		S5	G5				U		x
x	DICOTYLEDONS	Rubiaceae	Galium triflorum	Three-Flowered Bedstraw	4	3		S5	G5				X		x
x	DICOTYLEDONS	Salicaceae	Populus tremuloides	Trembling Aspen	2	0		S5	G5				X		x
x	DICOTYLEDONS	Sapindaceae	Acer negundo	Manitoba Maple	0	0		S5	G5				X		x
X	DICOTYLEDONS	Sapindaceae	Acer saccharum	Sugar Maple	4	3		S5	G5				X	x	x
x	DICOTYLEDONS	Saxifragaceae	Tiarella cordifolia	Heart-Leaved Foamflower	6	3		S5	G5				X		x
x	DICOTYLEDONS	Scrophulariaceae	Verbascum thapsus ssp. thapsus	Common Mullein		5	-2	SNA	GNR				X		x
x	DICOTYLEDONS	Ulmaceae	Ulmus americana	White Elm	3	-3		S5	G5				X	x	x
x	DICOTYLEDONS	Urticaceae	Urtica dioica ssp. dioica	European Stinging Nettle		0	-1	SNA	G5T5?				XSR		x
x	DICOTYLEDONS	Violaceae	Viola canadensis var. canadensis	Canada Violet	6	3		S5	GNR				X	x	x
x	DICOTYLEDONS	Violaceae	Viola pubescens	Downy Yellow Violet	5	3		S5	G5				X	x	
x	DICOTYLEDONS	Vitaceae	Parthenocissus vitacea	Thicket Creeper	4	3		S5	G5				X	x	x
x	DICOTYLEDONS	Vitaceae	Vitis riparia	Riverbank Grape	0	0		S5	G5				X		x
x	GYMNOSPERMS	Pinaceae	Pinus strobus	Eastern White Pine	4	3		S5	G5				X	x	x
x	GYMNOSPERMS	Pinaceae	Tsuga canadensis	Eastern Hemlock	7	3		S5	G5				X	x	x
x	MONOCOTYLEDONS	Amaryllidaceae	Allium tricoccum var. tricoccum	Wild Leek	7	3		S4	G5				X	x	
x	MONOCOTYLEDONS	Araceae	Arisaema triphyllum ssp. triphyllum	Jack-In-The-Pulpit	5	-3		S5	G5				X	x	x
x	MONOCOTYLEDONS	Asparagaceae	Convallaria majalis var. majalis	European Lily-Of-The-Valley		5	-2	SNA	G5				X		x
x	MONOCOTYLEDONS	Asparagaceae	Maianthemum canadense ssp. canaden	Wild Lily-Of-The-Valley (ssp. canadense)	5	3		S5	G5T5				X	x	x
x	MONOCOTYLEDONS	Asparagaceae	Maianthemum racemosum	Large False Solomon's Seal	4	3		S5	G5T				X	x	x
x	MONOCOTYLEDONS	Asparagaceae	Polygonatum biflorum var. commutatun	Giant Solomon's Seal	8	3		S4	G5					x	x
x	MONOCOTYLEDONS	Asparagaceae	Polygonatum pubescens	Hairy Solomon's Seal	5	5		S5	G5				X	x	

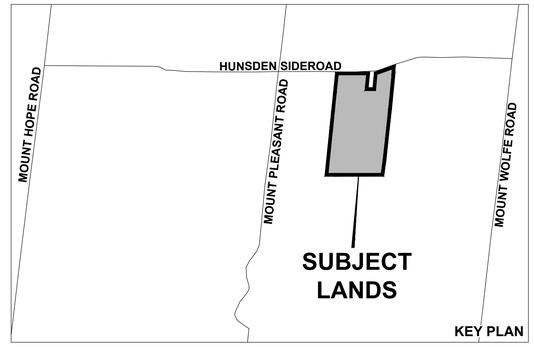
	ORDER	FAMILY	LATIN NAME	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS (S-RANK)	GLOBAL STATUS (G-RANK)	COSSARO (MNRF)	COSEWIC STATUS		PEEL (Varga 2005)	FOD6-1	FOD6-5
x	MONOCOTYLEDONS	Cyperaceae	Carex albursina	White Bear Sedge	7	5		S5	G5				R10	x	x
x	MONOCOTYLEDONS	Cyperaceae	Carex arcta	Northern Clustered Sedge	8	-5		S4S5	G5					x	x
x	MONOCOTYLEDONS	Cyperaceae	Carex communis var. communis	Fibrous-Root Sedge	6	5		S5	G5				X	x	x
x	MONOCOTYLEDONS	Cyperaceae	Carex interior	Inland Sedge	6	-5		S5	G5				X	x	
x	MONOCOTYLEDONS	Cyperaceae	Carex intumescens	Bladder Sedge	6	-3		S5	G5				X		x
x	MONOCOTYLEDONS	Cyperaceae	Carex laxiflora	Loose-Flowered Sedge	5	0		S5	G5				R7	x	
x	MONOCOTYLEDONS	Cyperaceae	Carex leptalea	Bristle-Stalked Sedge	8	-5		S5	G5				U	x	x
x	MONOCOTYLEDONS	Cyperaceae	Carex sprengelii	Sprengel's Sedge	6	0		S5	G5				R1		x
x	MONOCOTYLEDONS	Cyperaceae	Carex sylvatica	European Woodland Sedge		3	-1	SNA	GNR					x	x
x	MONOCOTYLEDONS	Liliaceae	Erythronium americanum ssp. american	Yellow Trout Lily	5	5		S5	G5T5				X	x	x
x	MONOCOTYLEDONS	Melanthiaceae	Trillium erectum	Red Trillium	6	3		S5	G5				X	x	x
x	MONOCOTYLEDONS	Melanthiaceae	Trillium grandiflorum	White Trillium	5	3		S5	G5				X	x	x
x	MONOCOTYLEDONS	Smilacaceae	Smilax herbacea	Herbaceous Carrionflower	5	0		S4?	G5				X	x	x
x	MONOCOTYLEDONS	Xanthorrhoeaceae	Hemerocallis fulva	Orange Daylily		5	-3	SNA	GNR				X		x
x	PTERIDOPHYTES	Athyriaceae	Athyrium filix-femina var. angustum	Northeastern Lady Fern	4	0		S5	G5T5				X		x
x	PTERIDOPHYTES	Dennstaedtiaceae	Pteridium aquilinum var. latiusculum	Eastern Bracken Fern	2	3		S5	G5T				X	x	
x	PTERIDOPHYTES	Dryopteridaceae	Dryopteris intermedia	Evergreen Wood Fern	5	0		S5	G5				X	x	x
x	PTERIDOPHYTES	Dryopteridaceae	Polystichum acrostichoides	Christmas Fern	5	3		S5	G5				X	x	
x	PTERIDOPHYTES	Onocleaceae	Matteuccia struthiopteris var. pensylvan	Ostrich Fern	5	0		S5	G5				X	x	x
x	PTERIDOPHYTES	Osmundaceae	Osmunda claytoniana	Interrupted Fern	7	0		S5	G5				R7	x	x
x	PTERIDOPHYTES	Pteridaceae	Adiantum pedatum	Northern Maidenhair Fern	7	3		S5	G5				X	x	x

STATISTICS		
Species Diversity		
Total Number of Species:	86	
Native Species:	72	84%
Exotic Species:	14	16%
S1-S3 Species:	1	1%
S4 Species:	8	11%
S5 Species:	63	88%
Floristic Quality Assessment (FQA)		
Mean Co-efficient of Conservatism (CC)	4.8	
CC 0 - 3 = lowest sensitivity	14	19%
CC 4 - 6 = moderate sensitivity	47	65%
CC 7 - 8 = high sensitivity	11	15%
CC 9 - 10 = highest sensitivity	0	0%
Floristic Quality Index (FQI)	41	
Weedy & Invasive Species		
Mean Weediness Index (Oldham et al):	-2.0	
-1 = low potential invasiveness	4	29%
-2 = moderate potential invasiveness	7	50%
-3 = high potential invasivenss	4	29%
Mean Exotic Rank (Urban Forest Associates):	2	
Category 1	4	29%
Category 2	1	7%
Category 3	2	14%
Category 4	3	21%
Potentially Invasive (P)	1	7%
Wetland Species		
Mean Wetness Index	2.0	
Upland	18	21%
Facultative upland	40	47%
Facultative	19	22%
Facultative wetland	5	6%
Obligate wetland	4	5%

Appendix C

Draft Plan

P:\554-002\4. Drawings\2022 06 June\DP June 27 22.dwg



DRAFT PLAN OF SUBDIVISION
SUSAN WILSON

FILE # 22T-

PART OF LOTS 25 AND 26,
CONCESSION 9
TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL

OWNERS CERTIFICATE

I HEREBY AUTHORIZE GLEN SCHNARR & ASSOCIATES INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE TOWN OF CALEDON FOR APPROVAL.

SIGNED: _____ DATE: _____
SUSAN WILSON

SURVEYORS CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED: _____ DATE: _____
GRANT T. STIDWILL, O.L.S.
J.D. BARNES LIMITED
401 WHEELABRATOR WAY, SUITE A
MILTON, ON
TEL.: (905) 875-9955
WEB: www.jdbarnes.com

ADDITIONAL INFORMATION

(UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G,J & L ARE SHOWN ON THE DRAFT AND KEY PLANS.

H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
I) SANDY LOAM AND CLAY LOAM
K) SERVICED BY SEPTIC SYSTEMS.

LAND USE SCHEDULE

LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS	DENSITY (UPHA)
ESTATE LOTS	1-19	10.01	24.74	19	1.90
NHS	20	7.02	17.35		
NHS BUFFER	21	1.85	4.57		
OPEN SPACE	22	0.47	1.16		
0.3m RESERVE	23	0.00	0.00		
18.0m LOCAL R.O.W. (LENGTH: 547m)		1.02	2.52		
TOTAL	**23**	**20.37**	**50.34**	**19**	

NOTES

- PAVEMENT ILLUSTRATION IS DIAGRAMMATIC
-EXISTING RESIDENCE TO REMAIN
-DAYLIGHT ROUNDINGS 5m UNLESS OTHERWISE NOTED

SCALE 1:1500
(24 x 36)
JUNE 27, 2022

GSAI
Glen Schnarr & Associates Inc.