

TOWN OF CALEDON
PLANNING
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Environmental Impact Statement

13290 NUNNVILLE ROAD, BOLTON ON

Prepared for

Bolton Summit Developments Inc.

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Mississauga ON
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March 22, 2023
Project No. P2022-612

Prepared by



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Table of Contents

List of Figures.....	iii
List of Tables	iv
List of Maps	iv
1. Introduction.....	5
1.1. Site Description	5
2. Policy Context.....	5
2.1. Provincial Policy Statement.....	5
2.2. Endangered Species Act (2007)	7
2.3. Region of Peel Official Plan (2022)	8
2.4. Town of Caledon Official Plan.....	10
2.5. Toronto and Region Conservation Authority.....	11
2.6. Greenbelt Plan	11
2.7. Oak Ridges Moraine Conservation Plan.....	12
3. Methodology	12
3.1. Background Studies	12
3.2. Field Work	12
3.2.1. Floristic Studies	13
3.2.2. Leaf-off Snag Surveys	13
3.2.3. Tree Inventory.....	13
3.2.4. Breeding Bird Surveys.....	13
3.2.5. Species at Risk Screening and Assessment.....	14
3.2.6. Significant Wildlife Habitat Screening and Assessment.....	14
4. Existing Conditions.....	14
4.1. General Landscape Position	14
4.2. Natural Heritage Systems	14
4.2.1. Woodland.....	15
4.3. Tree Inventory.....	15
4.4. Snag Surveys	16
4.5. Vegetation Communities	16
4.6. Breeding Bird Surveys.....	17
4.6.1. Breeding Bird Survey Results.....	17

4.6.2. Species of Conservation Concern	19
4.7. Incidental Wildlife	20
5. Species at Risk Screening.....	20
5.1. Screening.....	20
5.2. Assessment.....	21
5.3. SAR Assessment Discussion	24
6. Significant Wildlife Habitat Screening.....	24
6.1. SWH Assessment.....	25
7. Proposed Development.....	25
7.1. Natural Heritage System Buffers.....	26
8. Environmental Impact Assessment	26
8.1. Impact Summary Table	26
8.2. Direct Impact Assessment.....	28
8.2.1. Encroachments	28
8.3. Indirect Impact Assessment	28
8.4. Cumulative Impacts.....	29
9. Mitigation Measures.....	29
9.1. Ecological Enhancements.....	29
9.1.1. Snake Hibernacula	29
9.1.2. Bat Hibernacula.....	30
9.1.3. Invasive Species Removal.....	31
9.1.4. Other Mitigation Measures	31
9.2. Construction Measures	31
10. Policy Conformity.....	32
11. Closing.....	32
12. References.....	33
Maps and Figures.....	35
Appendix A OBBA Full Species List	39
Appendix B Species at Risk Screening Sources.....	44
Appendix C SWH Full Assessment (6E).....	46
Appendix D Tree Inventory	75

List of Figures

Figure 1. Concept Plan	38
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List of Tables

Table 1. Applicable Policies of the Provincial Policy Statement.....	6
Table 2. Criteria and Thresholds for the Identification of Natural Area and Corridors for Woodlands (Table 1 of the Region of Peel Official Plan, 2022).	9
Table 3 Ecological Land Classification Communities.....	16
Table 4. Breeding Bird Survey Conditions	17
Table 5. Breeding Bird Survey Results Summary	18
Table 6. Incidental Wildlife Summary.....	20
Table 7. Screening Results.....	20
Table 8. Impact Assessment Table.....	26

List of Maps

Map 1. Key Map.....	36
Map 2 Existing Conditions.....	37

1. Introduction



GeoProcess Research Associates Inc. (GRA) been retained by Bolton Summit Developments Inc. to complete an Environmental Impact Statement (EIS) for a property located at 13290 Nunnville Road in Bolton, Ontario. This is herein referred to as the "Subject Property". The "Study Area" refers to the Subject Property plus 120 metres of adjacent lands. It is GeoProcess' understanding that the Subject Property is the proposed site of a residential development that includes fifteen (15) townhouse units. An EIS is required prior to approval of any proposed development to determine the significance and functions of natural heritage features associated with the Subject Property. The Subject Property contains and is adjacent to designated Environmental Policy Areas and as such, triggered the requirement for an EIS. Refer to Map 1 for review of these boundaries and property location.

1.1. Site Description

The Subject Property is approximately 0.86 hectares and is located at the end of the cul-de-sac on Nunnville Road in Bolton, ON. The Subject Property currently contains a residential dwelling, landscape trees, a hedgerow, manicured lawn and a European Buckthorn and Scots Pine thicket within and bordering the Subject Property limits. The landscape slopes down in several areas throughout the property (TRCA Crest of Slope) but especially within the aforementioned thicket to the north and west of the property. The Subject Property also contains a second structure just southwest of the homestead. The Study Area consists primarily of forest, thickets, and residential homes. The Humber River is located approximately 200 metres north from the Subject Property limits.

2. Policy Context

2.1. Provincial Policy Statement

The Provincial Policy Statement (PPS), 2020 is administered under Section 3 of the *Planning Act*. It became effective May 1, 2020 and replaces the 2014 PPS. The PPS applies to planning decisions made on or after that date. It provides policy direction for land use and development within the Province of Ontario and provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. The policies of the PPS may be complemented by provincial and municipal plans and policies.

The PPS defines eight natural heritage features and provides planning policies for each, listed below. The function of Natural Heritage Features and Areas is further clarified by the definition of a Natural Heritage System, which is "*a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems.*"

1. Significant wetlands;
2. Coastal wetlands;
3. Fish habitat;
4. Significant woodlands;



5. Significant valleylands;
6. Habitat of endangered species and threatened species;
7. Significant Wildlife Habitat; and,
8. Significant Areas of Natural and Scientific Interest (ANSIs).

Section 2.0 and 3.0 of the PPS deal with development and site alteration, and where these activities shall not be permitted. Section 2.0 policies surround the conservation of biodiversity, and protection of the health of the Great Lakes, natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits. Section 3.0 directs development away from areas of natural or human-made hazards to mitigate risks to public health or safety, and property damage from natural hazards, including the risks that may be associated with the impacts of a changing climate.

Policies in Section 2.1 are particularly relevant as they surround development and site alteration in and adjacent to *natural heritage features*. These policies and select others are outlined below, in Table 1.

Table 1. Applicable Policies of the Provincial Policy Statement

Policy Number	Policy
(2.1 - Natural Heritage)	
2.1.2	The diversity and connectivity of natural features in an area and the long-term <i>ecological function</i> and biodiversity of <i>natural heritage systems</i> , should be maintained, restored or where possible, improved, recognizing linkages between and among <i>natural heritage features and areas, surface water features and ground water features</i> .
2.1.3	<i>Natural heritage systems</i> shall be identified in Ecoregions 6E & 7E, recognizing that <i>natural heritage systems</i> will vary in size and form in <i>settlement areas, rural areas, and prime agricultural areas</i> .
2.1.4	<i>Development</i> and site alteration shall not be permitted in: a) <i>significant wetlands</i> in Ecoregions 5E, 6E and 7E; and, b) <i>significant coastal wetlands</i> .
2.1.5	Development and site alteration shall not be permitted in: a) <i>significant wetlands</i> in the Canadian Shield north of Ecoregions 5E, 6E and 7E; b) <i>significant woodlands</i> in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River); c) <i>significant valleylands</i> in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River); d) <i>significant wildlife habitat</i> ; e) <i>significant areas of natural and scientific interest</i> ; and f) <i>coastal wetlands</i> in Ecoregions 5E, 6E and 7E that are not subject to policy 2.1.4(b) unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.
2.1.6	<i>Development</i> and <i>site alteration</i> shall not be permitted in <i>fish habitat</i> except in accordance with <i>provincial and federal requirements</i> .
2.1.7	<i>Development</i> and <i>site alteration</i> shall not be permitted in <i>habitat of endangered species and threatened species</i> , except in accordance with <i>provincial and federal requirements</i> .
2.1.8	<i>Development</i> and <i>site alteration</i> shall not be permitted on <i>adjacent lands</i> to the <i>natural heritage features and areas</i> identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the <i>ecological function</i> of the <i>adjacent lands</i> has been evaluated and it has been demonstrated that there will be no <i>negative impacts</i> on the natural features or on their <i>ecological functions</i> .

Policy Number	Policy
(2.2 - Water) 2.2.2	<i>Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.</i> Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore <i>sensitive surface water features, sensitive ground water features, and their hydrologic functions.</i>
(3.1 - Natural Hazards) 3.1.1	Development shall generally be directed, in accordance with guidance developed by the Province (as amended from time to time), to areas outside of: a) <i>hazardous lands</i> adjacent to the shorelines of the <i>Great Lakes - St. Lawrence River System</i> and <i>large inland lakes</i> which are impacted by <i>flooding hazards, erosion hazards</i> and/or <i>dynamic beach hazards</i> ; b) <i>hazardous lands</i> adjacent to <i>river, stream</i> and <i>small inland lake systems</i> which are impacted by <i>flooding hazards</i> and/or <i>erosion hazards</i> ; and c) <i>hazardous sites</i> .
3.1.3	Planning authorities shall prepare for the impacts of a changing climate that may increase the risk associated with natural hazards

2.2. Endangered Species Act (2007)

The Endangered Species Act (ESA) (2007) protects habitat and individuals of wildlife species designated as Endangered, Threatened or Extirpated in Ontario. These designations are defined as:

- Endangered: A species shall be classified as an endangered species if it lives in the wild in Ontario but is facing imminent extinction or extirpation.
- Threatened: A species shall be classified as a threatened species if it lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening to lead to its extinction or extirpation.
- Extirpated: A species shall be classified an extirpated species if it lives somewhere in the world, lived at one time in the wild in Ontario, but no longer lives in the wild in Ontario.

Activities that relate to SAR are regulated through the following subsections:

9 (1) No person shall,

kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species;

10 (1) No person shall damage or destroy the habitat of,

- a) a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species;

Or

- a species that is listed on the Species at Risk in Ontario List as an extirpated species, if the species is prescribed by the regulations for the purpose of this clause. 2007, c. 6, s. 10 (1).

Provincial Species at Risk are identified and assessed by the Committee on the Status of Species at Risk in Ontario (COSSARO). The ESA protects species listed by COSSARO as Endangered, Threatened or Extirpated in Ontario and their habitats by prohibiting anyone from killing, harming, harassing or possessing protected species, as well as prohibiting any damage or destruction to the habitat of the listed species. All listed species are provided with general habitat protection under the ESA aimed at protecting areas that species depend on to carry out their life processes, such as reproduction, rearing, hibernation, migration or feeding. In addition, specific habitat regulations for some species have been developed that specifically define the extent and character of their protected habitat beyond what is stated in the general habitat regulation.

Activities that may impact a protected species or its habitat require the prior issuance of a Permit from the Ministry of Environment, Conservation and Parks (MECP), unless the activities are exempted under Regulation. The current (June 29, 2020) Ontario Regulation 242/08 identifies activities which are exempt from the permitting requirements of the Act, these activities are subject to rigorous controls outside the permit process including registration of the activity and preparation of mitigation plans. Activities that are not exempted under O. Reg. 242/08 require a complete permit application process.

2.3. Region of Peel Official Plan (2022)

The Subject Property is subject to policies and regulations detailed within the Region of Peel Official Plan (ROP), which provides descriptions and permitted uses for the property and surrounding area. Per Schedule C-1, the Subject Property contains Greenlands System designation, but does not contain Core Areas identified on Schedule C-2.

As per Section 2.14.5 of the *Greenlands System* in the ROP, the Greenlands System includes:

- a) Core Areas, which are designated and shown generally on Schedule C-2, which are protected, restored and enhanced in this Plan and in the local municipal official plans;
- b) Natural Areas and Corridors, which will be interpreted, protected, restored, and enhanced and shown, as appropriate, in the local municipal official plans;
- c) Potential Natural Areas and Corridors, which will be interpreted, protected, restored, and enhanced and shown, as appropriate, in the local municipal official plans. Potential Natural Areas and Corridors will be analyzed to determine their functional role in supporting and enhancing the ecological integrity of the Greenlands System;
- d) The Natural Heritage System overlay of the Growth Plan and the key natural heritage features and key hydrologic features, which will be protected in accordance with the Plan;
- e) The Natural Heritage System overlay of the Greenbelt Plan and the key natural heritage features and key hydrologic features, which will be protected in accordance with the Plan;
- f) Urban River Valleys of the Greenbelt Plan, which will be protected and, where appropriate, restored, in accordance with the policies of this Plan;
- g) The Natural Core Areas and Natural Linkage Areas land use designations of the Oak Ridges Moraine Conservation Plan and the key natural heritage features and key hydrologic features, which will be protected in accordance with the Plan; and,
- h) The Escarpment Natural Area and Escarpment Protection Area land use designations of the Niagara Escarpment Plan and the key natural heritage features and key hydrologic features, which will be protected in accordance with the Plan.

Figure 7 (Regional Greenlands System) of the ROP, the Subject Property is designated as Natural Areas and Corridors (NAC). Per Section 2.14.18 of the ROP, woodlands that are defined as Natural Areas and Corridors meet one or more of the criteria for NAC woodland in Table 1 of the ROP, noted below:

Table 2. Criteria and Thresholds for the Identification of Natural Area and Corridors for Woodlands (Table 1 of the Region of Peel Official Plan, 2022).

ROP Category	Size	Age	Linkage	Proximity	Surface Water Quality	Significant Species and Communities
NAC Supports Integrity of the System	Urban System: Any woodland \geq 2 ha up to 4 ha	Any woodland \geq 0.5 ha and less than 4 ha and containing at least 0.5 ha of woodland in native trees older than 100 years and having late successional characteristic (excludes plantations)	Any woodland \geq 0.5 ha supporting a significant linkage function, as determined through a natural heritage study approved by the Region or local municipality	Any woodland \geq 0.5 ha within 100 m of another significant feature supporting a significant ecological relationship between the features	Any woodland \geq 0.5 ha within 30 m if a watercourse, surface water features or any wetland that is or can be identified as a wetland in accordance with Ontario Wetland Evaluation System.	Any woodland \geq 0.5 ha up to 4 ha that supports any of the following: i. any G1, G2, G3, S1, S2, or S3 plant or animal species, or community as designated by NHIC; or ii. any species designated by COSEWIC or COSSARO as Threatened, Endangered or Special Concern; or iii. The following forest communities: FOC 1-2, FOM 2-1, FOM 2-2, FOM 6-1, FOD 1-1, FOD 1-2, FOD 1-4, FOD 2-2, FOD 2-3, or FOD 6-2

Based on the criteria outlined in the ROP, the woodland within the Subject Property meets the criteria for NAC due to its size and potential to supports both Endangered and Special Concern species at risk (refer to Species at Risk Screening).

Section 2.14.20 of the ROP states that for Natural Areas and Corridors, the Region of Peel will 'direct the local municipalities, in consultation with the conservation authorities, appropriate federal and provincial agencies and the Niagara Escarpment Commission to include objectives, enhancement, proper management and *Stewardship* of the Natural Areas and Corridors and Potential Natural Areas and Corridors which conform to the intent of this Plan, consistent with provincial policy, the Growth Plan, the Niagara Escarpment Plan, the Oak Ridges Moraine Plan, the Greenbelt Plan, and local considerations, where applicable.

As per Section 5.4 *Growth Management* of the ROP, the Growth Plan sets out requirements for ensuring that intensification occurs within the Greater Golden Horseshoe. The plan directs a *significant portion of growth to the Delineated Built-up Areas through intensification, particularly Strategic Growth Areas such as the Urban Growth Centres, intensification corridors and Major Transit Station Areas*. As per Schedule E-3, *The Growth Plan Policy Areas in Peel (2022)*, the Subject Property is designated Built-up Area.

The limits of the woodland were delineated with the Toronto and Region Conservation Authority and appropriate protection and enhancement are proposed in this EIS.

2.4. Town of Caledon Official Plan

The Town of Caledon's Official Plan (OP) contains principals, goals, objectives, and policies which help guide future land use within the municipality, which may be developed and used in the future. Environmental Policy Areas (EPA) includes all Natural Core Areas and Natural Corridors as listed in Table 3.1 – Ecosystem Framework in Chapter 3 of the OP. Ecosystem components that make up the EPA include the following:

- Woodlands
- Wetlands
- Niagara Escarpment Natural Areas
- Niagara Escarpment Protection Areas
- Areas of Natural and Scientific Interest (ANSIs)
- Environmentally Significant Areas (ESAs)
- Threatened and Endangered Species
- Significant Wildlife Habitat
- Fisheries
- Valley and Stream Corridors
- Groundwater Systems
- Native soils including erosion prone soils
- Natural Slopes (> 15%)
- Oak Ridges Moraine Key Natural Heritage Features
- Oak Ridges Moraine Hydrologically Sensitive Features
- Greenbelt Key Natural Heritage Features
- Greenbelt Key Hydrologic Features

Section 3.2.3.1 states that the Ecosystem Framework *incorporates and refines the components of the Regional Greenlands System, as defined in the Region of Peel Official Plan, in a manner which conforms with the*

environmental policy directions contained in the Region of Peel Official Plan. As such, per the Region of Peel Official Plan and Table 3.1 in the Town of Caledon Official Plan, the Subject Property contains Supportive Natural Systems in the form of "all other woodlands". Section 3.2.5.3.2 of Caledon's Official Plan states that new development will not be permitted in Other Woodlands unless it can be demonstrated that such development will not result in the degradation of ecosystem integrity, to the satisfaction of the Town and Ministry of Natural Resources and Forestry, or other delegated approval authority.

As per Schedule C-2 *Bolton South Hill Land Use Plan (2018)*, the Subject Property is designated as Low Density Residential land use. The Subject Property has designated Environmental Policy Areas (EPA) to the northeast portion of the property. Adjacent lands to the north and west of the Subject Property is also designated as EPA. Section 5.7.3.1.4 of the OP states '*as more detailed environmental information becomes available, such as information derived from approved studies or site investigations/inspections, minor refinements to the limits of lands designated EPA on the Schedules to this Plan, including minor additions or deletions, may be permitted without an amendment to this Plan, provided such a minor refinement is satisfactory to the Town and other relevant agencies.*'

2.5. Toronto and Region Conservation Authority

The Toronto and Region Conservation Authority (TRCA) is responsible for O. Reg 166/06 – *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*, a regulation made under the Conservation Authorities Act, 1990. This regulation prohibits development in or on the areas within jurisdiction of the Authority and applies to shorelines, rivers, stream valleys, hazardous lands, wetlands or areas adjacent to a wetland. A permit will need to be issued to develop in the Regulated Areas. As per the TRCA *Regulation Mapping* tool, the Subject Property contains a Crest of a Slope which exists on the northern, western, and eastern areas of the Subject Property. The TRCA designated Regulated Area (2020) occurs to the northern, western, and eastern portions of the Subject Property.

As per the TRCA *Erosion Risk Management* document (2022), The Conservation Authorities Act gives the Conservation Authorities the power to establish and undertake initiative on private and public land to help achieve its objectives and can include:

- Monitoring of areas affected by flooding, erosion, and or slope instability;
- Study and investigation of the watershed; and,
- Remediation of erosion and/or slope stability standards.

2.6. Greenbelt Plan

The Greenbelt Plan was originally enacted in 2005 and has since been updated (2017). It provides policies to protect the agriculture land base and the associated ecological and hydrological features and functions within the Greater Golden Horseshoe. Lands included in the Greenbelt Area are defined by O.Reg 59/05. The Subject Property is not within the Greenbelt Plan boundaries. The Subject Property limits are approximately 114 metres from the Greenbelt Area boundary (attributed to Humber River) to the north and approximately 273 metres from the Greenbelt Area boundary to the east.

2.7. Oak Ridges Moraine Conservation Plan

The updated Oak Ridges Moraine Conservation Plan [ORMCP] (O. Reg 140/02), 2017, made under the Oak Ridges Moraine Conservation Act (2001) came into effect on July 31, 2017. The plan provides land use and resource management planning direction for all land and features located within the Moraine, one of Southern Ontario's most significant landform features. The Subject Property is not located near the Oak Ridges Moraine Boundary.

3. Methodology

3.1. Background Studies

Literature and data pertaining to the Subject Property were reviewed and evaluated to obtain natural heritage data and background planning policy information. A list of documents and information sources consulted for the purpose of this study are provided below:

- Region of Peel Official Plan (September 2021)
- Town of Caledon Official Plan (April 2017)
- Toronto and Region Conservation Authority
- *Endangered Species Act (2007)* and Species at Risk in Ontario list (O. Reg 230/08)
- Natural Heritage Information Center (NHIC) database information
- iNaturalist
- Ontario Breeding Bird Atlas & eBird
- Ontario Moth & Butterfly Atlases
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Map
- Tree Inventory and Preservation Plan (March 30, 2022)

3.2. Field Work

GeoProcess Research Associates conducted field studies to characterize and inventory the natural heritage features and wildlife activity of the Subject Property and surrounding landscape. A summary of the field work details is provided below.

Activity	Timing	Date	Staff
Floristic Studies	Spring	May 26, 2022	Brittany Quesnel
	Summer	July 6, 2022	Gillian Leava
Breeding Bird Survey	Visit 1	May 26, 2022	Brittany Quesnel
	Visit 2	July 6, 2022	Gillian Leava
Snag Survey	Leaf-off	March 18, 2022	Gillian Leava
Feature Staking	Summer	August 31, 2022	Ian Roul
Incidentals	In tandem with all field surveys		Brittany Quesnel
			Gillian Leava

3.2.1. Floristic Studies

A spring and summer inventory of all floristic species were completed on May 26, 2022 and July 6, 2022. Species nomenclature and ranking was determined provincially by the Ministry of Natural Resources Natural Heritage Information Database (S_Ranks).

Vegetation communities were mapped and described according to the Ecological Land Classification (ELC) system for Southern Ontario (Lee et al., 2008). Vegetation community boundaries were determined using desktop analysis and further refined in the field. The results of this assessment are found in Section 4.5 and Map 2.

3.2.2. Leaf-off Snag Surveys

Snag surveys were conducted for the Subject Property during the leaf-off season following the Ministry of Natural Resources and Forestry current bat habitat survey protocol for Species at Risk Bats within Treed Habitats (MNR 2017). The survey included an assessment of all trees with a Diameter at Breast Height (DBH) of 10 cm or greater, live, or dead, with loose or naturally exfoliating bark, cavities, hollows or cracks that provide suitable bat maternity roosting habitat.

3.2.3. Tree Inventory

Kuntz Forestry Consulting Inc. completed a tree inventory on March 11, 2022 to identify and assess the existing trees for the Study Area. An assessment of individual trees included all trees 10 cm Diameter at Breast Height (DBH) or greater for the Subject Property and included 6 metres of adjacent lands. Trees were assessed for condition utilizing the following parameters:

- a) Tree # - number assigned to trees that corresponds to Figure 1.
- b) Species - common and botanical names provided in the inventory table.
- c) DBH - diameter (centimeters) at breast height, measured at 1.4 m above the ground.
- d) Condition - condition of tree considering trunk integrity (TI), crown structure (CS) and crown vigor (CV). Condition ratings include poor (P), fair (F), and good (G);
- e) Crown Die Back – Percentage of dead branches within the crown.
- f) Drip Line - Crown radius; and
- g) Comments – Any other relevant tree condition information.

Refer to Appendix E for the full Tree Inventory and Preservation Plan completed by Kuntz Forestry Consulting Inc. on March 6, 2023.

3.2.4. Breeding Bird Surveys

Breeding bird surveys were undertaken on 2 separate dates by a breeding bird expert under appropriate weather conditions. Point count methodology was based on protocols set by the Ontario Breeding Bird Atlas (OBBA, 2001). Bird species were observed for 5 minutes at each breeding bird plot after a 5-minute period of silence upon arriving at the plot. Breeding bird plots were based on broad habitat characteristics, Subject Property size and a 100 m radius from plot centre. Only species observed within the 100 m radius were recorded, flyovers did not count towards the total but were noted. Additional incidental observations were

also noted. The level of breeding evidence (using *Ontario Breeding Bird Atlas* [OBBA] protocols) was determined after both surveys. The results are found in Section 4.6.

3.2.5. Species at Risk Screening and Assessment

An assessment and screening of potential Species at Risk was conducted for the Property based on Federal and Provincial status. Following the MECP (2019) Client's Guide to Preliminary SAR Screening, this screening was based on a review of the Natural Heritage Information Centre, the regional species list, Ontario Breeding Bird Atlas (OBBA), Ontario Moth Atlas, Ontario Butterfly Atlas, citizen science databases (i.e. iNaturalist), eBird, the Department of Fisheries and Oceans (DFO) Species at Risk Distribution Mapping, and any additional lists provided by the MECP. The preliminary screening was submitted as a memo to sar@ontario.ca for assignment to a management biologist for review. The Species at Risk assessment results are found in Section 5. The results of the preliminary screening are found in Appendix B.

3.2.6. Significant Wildlife Habitat Screening and Assessment

A screening for Significant Wildlife Habitat following the Ministry of Natural Resources and Forestry Significant Wildlife Habitat Technical Guide (2000) and Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E (January 2015) was conducted for the Subject Property. Potential SWH identified was assessed during the complementary field studies. The results of this assessment are found in Section 6.

4. Existing Conditions

4.1. General Landscape Position

The Subject Property is located within a residential neighbourhood consisting of single unit homes. Based on aerial imagery and a review of the provincial NHIC *Make a Map tool*, the Subject Property contains designated Woodlands to the west, north, and east portions of the property and adjacent lands.

The Humber River is located approximately 200 m north of the Subject Property. As a tributary of Lake Ontario, the Humber River is within the Great Lakes Basin and was officially designated as a Canadian Heritage River in 1999 (The Canadian Heritage Rivers System, 2011). It encompasses 911 km² and is the largest watershed within the TRCA's jurisdiction (TRCA, 2022). The West Humber branch begins in Caledon and flows 45 km over the Peel Plain in Brampton before joining the Main branch of the Humber River in Toronto. According the TRCA, the entirety of the area of the Humber River includes 1,800 kilometers of waterway and 600 bodies of water, and is home to 755 species of plants, 42 species of fish, and over 185 animal species (2022).

4.2. Natural Heritage Systems

The province defines Natural Heritage Systems (NHS) as *a system made up of natural heritage features and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include natural heritage features and areas, federal and provincial parks and conservation reserves, other natural heritage features, lands that have been restored or*

have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue (PPS, 2020). The proposed development supports the PPS' definition of NHS by protecting its features by virtue of providing linkages and areas of restoration between the development and the limits of the natural heritage features.

Natural Heritage Systems associated with the Subject Property can be attributed to the presence of the provincially designated Woodland on and adjacent to the property and Environmental Policy Area that overlaps the property surrounding adjacent lands. Additionally, the Subject Property contains TRCA Regulated Areas and Crest of Slope.

4.2.1. Woodland

As per NHIC's *Make a Map* tool, the Subject Property and surrounding adjacent areas contain designated woodland. Upon GRA's field investigation, this feature is primarily dominant in invasive/non-native species, such as European Buckthorn (*Rhamnus cathartica*) and Scot's Pine (*Pinus sylvestris*). Woodlands are defined in the PPS as *treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and the long-term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities, and the sustainable harvest of a wide range of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels. Woodlands may be delineated according to the Forestry Act definition or the Province's Ecological Land Classification system definition for "forest".*

The identified woodland does not generally meet the criteria of woodland set out by the PPS. Ecological Land Classification will be completed in the appropriate seasons to further define this feature; however, the feature appears to meet the criteria more so of a Buckthorn Deciduous Shrub Thicket Type (THDM2-6). Due to the invasive nature of this species, ecological function and environmental benefits are limited. Further, the Forestry Act (1990) criteria for defining woodlands as having at least:

- 1,000 trees, of any size, per hectare,
- 750 trees, measuring over five centimetres in diameter, per hectare,
- 500 trees, measuring over 12 centimetres in diameter, per hectare, or
- 250 trees, measuring over 20 centimetres in diameter, per hectare.

Detailed surveys for density will be completed as part of the spring and summer field surveys. A dripline staking exercise was completed with the TRCA on August 31, 2022 and is shown in Figure 1.

4.3. Tree Inventory

The tree inventory completed by Kuntz Forestry Consulting Inc. documented a total of 74 trees located on and within 6 metres of the Subject Property. Trees species identified in the inventory included Freeman Maple (*Acer x freemanii*), Manitoba Maple (*Acer negundo*), Norway Maple (*Acer platanoides*), Shademaster Honey Locust (*Gleditsia triacanthos 'inermis'*), Black Walnut (*Juglans nigra*), Apple Species (*Malus spp.*), White Mulberry (*Morus alba*), White Spruce (*Picea glauca*), Blue Spruce (*Picea pungens*), Red Pine (*Pinus resinosa*), Scots Pine (*Pinus sylvestris*), Bur Oak (*Quercus macrocarpa*), Red Oak (*Quercus rubra*), Ivory Silk Lilac (*Syringa*

reticulata 'Ivory Silk'), and Eastern White Cedar (*Thuja occidentalis*). Refer to Appendix D for the full Tree Inventory and Preservation Plan.

4.4. Snag Surveys

One (1) suitable snag tree was identified on the Subject Property (Tree ID 457 as per the tree inventory prepared by Kuntz Forestry Consulting Inc., Figure 1). The tree was identified as a Norway Maple (*Acer platanoides*) with a DBH of 46 cm and contained a split in the trunk, cracks, and small cavities.

4.5. Vegetation Communities

Table 3 Ecological Land Classification Communities

ELC Code and Classification		Vegetation
Cultural Black Walnut Deciduous Plantation (FODM12)	Ground	Oxeye Daisy (<i>Leucanthemum vulgare</i>), Common Bedstraw (<i>Galium aparine</i>), Tufted Vetch (<i>Vicia cracca</i>), Bentgrass (<i>Agrostis</i>), Common Yarrow (<i>Achillea millefolium</i>), Sweet Pea (<i>Lathyrus odoratus</i>)
	Sub-canopy	Common Teasel (<i>Dipsacus fullonum</i>), Timothy Grass (<i>Phleum pratense</i>), Tatarian Honeysuckle (<i>Lonicera tatarica</i>), Black Walnut (<i>Juglans nigra</i>), Thicket Creeper (<i>Parthenocissus vitacea</i>), European Buckthorn (<i>Rhamnus cathartica</i>), Hawthorn (<i>Crataegus</i> sp.), Wayfaring Tree (<i>Viburnum lantana</i>)
	Canopy	Black Walnut (<i>Juglans nigra</i>)
Cultural Sumac Thicket (THDM2-1)	Ground	Joe Pye Weed (<i>Eutrochium</i> sp.), Common Burdock (<i>Arctium minus</i>), Bird's-foot Trefoil (<i>Lotus corniculatus</i>), Oxeye Daisy (<i>Leucanthemum vulgare</i>), New-England Aster (<i>Symphytotrichum novae-angliae</i>)
	Sub-canopy	Riverbank Grape (<i>Vitis riparia</i>), European Buckthorn (<i>Rhamnus cathartica</i>), Eastern White Cedar (<i>Thuja occidentalis</i>), Philadelphia Fleabane, White Sweet Clover, Broad Thistle, Wild Carrot (<i>Daucus carota</i>), Staghorn Sumac, Amur Corktree, Wayfaring Tree, Manitoba Maple (<i>Acer negundo</i>), White Mulberry, Norway Maple, Scot's Pine, Choke Cherry, American Plum, Goldenrod sp

Buckthorn Deciduous Shrub Thicket (THDM2-6)	Canopy	Eastern White Cedar (<i>Thuja occidentalis</i>), Red Maple, Manitoba Maple (<i>Acer negundo</i>)
	Ground	Black Medic, Strawberry, Forget-me-not, Oxeye Daisy (<i>Leucanthemum vulgare</i>), Dog-strangling Vine
	Sub-canopy	European Buckthorn (<i>Rhamnus cathartica</i>), Multiflora Rose, Tatarian Honeysuckle (<i>Lonicera tatarica</i>), Alternate-leaved Dogwood, American Elm, Milkweed, Eastern White Cedar (<i>Thuja occidentalis</i>), Hawthorn
	Canopy	European Buckthorn (<i>Rhamnus cathartica</i>), White Pine, Manitoba Maple (<i>Acer negundo</i>), Norway Spruce

4.6. Breeding Bird Surveys

Breeding bird surveys were undertaken on 2 separate dates by a breeding bird expert under appropriate weather conditions. A point count methodology, based on certain protocols set by the Ontario Breeding Bird Atlas (OBBA, 2001) was used to acquire breeding data. Bird species were observed for 5 minutes at each breeding bird plot after a 5-minute period of silence upon arriving at the plot. Breeding bird plots were based on broad habitat characteristics, Subject Property size and a 100 m radius from a plot centre. Only species observed within the 100 m radius were recorded, flyovers did not count towards the total but were noted. Additional incidental observations were also noted. The level of breeding evidence (using *Ontario Breeding Bird Atlas* [OBBA] protocols) was determined after both surveys. The results of this assessment are found in Table 5.

4.6.1. Breeding Bird Survey Results

One breeding bird plot was established for the Subject Property. Refer to Map 2 for the location. Birds heard and observed outside of the allotted survey time were recorded as incidental observations. The surveys were conducted under suitable conditions between 6-10 am (Table 4).

Table 4. Breeding Bird Survey Conditions

Visit Date	Visit Time	Temp. Range [°C]	Cloud Cover [%]	Wind Speed [Beaufort scale]
May 26 2022	06:41	17	100	3
July 6 2022	07:38	22	35	2

Species heard and or observed within the 100 m plot were recorded and the level of breeding evidence (using Ontario Breeding Bird Atlas [OBBA] protocols) was determined after completion of both surveys (Table 5).

Table 5. Breeding Bird Survey Results Summary

Species Common	Species Scientific	612-1	BE Level	S_Rank	Comment
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1		S5	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	2	S	S5B	
Northern Cardinal	<i>Cardinalis cardinalis</i>	1	S/T	S5	
American Robin	<i>Turdus migratorius</i>	2	S/A/T	S5	
Chipping Sparrow	<i>Spizella passerina</i>	1	S/T	S5B, S3N	
Baltimore Oriole	<i>Icterus galbula</i>	1	S/T	S4B	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	1	S	S5B	
Eastern Wood-pewee	<i>Contopus virens</i>	1	S/T	S4B	Heard outside of plot radius only on the first visit.
Red-eyed Vireo	<i>Vireo olivaceus</i>	1	S/T	S5B	
American Crow	<i>Corvus brachyrhynchos</i>	1	S	S5	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	1	S/T	S5B	Male territorial song
European Starling	<i>Sturnus vulgaris</i>	2	S/T	SNA	
Eastern Phoebe	<i>Sayornis phoebe</i>	1	S	S5B	
Indigo Bunting	<i>Passerina cyanea</i>	1	S	S5B	Heard on outside of the plot radius
American Goldfinch	<i>Spinus tristis</i>	2	S/T	S5	
Mourning Dove	<i>Zenaida macroura</i>	2	S/T	S5	
Song Sparrow	<i>Melospiza melodia</i>	1	S/T	S5	
Blue Jay	<i>Cyanocitta cristata</i>	2	S/A	S5	
Common Grackle	<i>Quiscalus quiscula</i>	2	S/T	S5	
Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	S/T	S5	

In the species columns, each species is assigned a breeding level, based on the highest level of breeding evidence observed, by plot. A species observed, showing no breeding evidence or where no suitable habitat is present, is marked 'X'. The number recorded represents the highest one-day total for that species.

OBBA Breeding Evidence Codes

POSSIBLE

H- species observed in breeding season in suitable nesting habitat

S- singing male present or breeding calls heard in breeding season in suitable habitat

PROBABLE

P- pair observed in their breeding season in suitable habitat

T- permanent territory presumed through registration of territorial song or presence of adult bird in breeding habitat on at least 2 days, one week or more apart at the same place.

D -courtship or display between a male and female, or two males including courtship feeding and copulation.

V-visiting probable nest site.

A-agitated behavior or anxiety calls of adults

B-brood patch on adult female or cloacal protuberance on adult male

N-nest building or excavation of nest hole

CONFIRMED

DD-distraction display or injury feigning

NU-used nest or eggshell found [occupied/laid during atlas period]

FY-recently fledged young or downy young.

AE-adults leaving or entering nest site in circumstances indicating occupied nest

FS-adult carrying faecal sac

CF-adult carrying food for young

NE-nest containing eggs

NY-nest with young seen or heard

4.6.2. Species of Conservation Concern

Species status for all fauna was evaluated using the following sources:

- The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) list for national status designations (current list at time of report preparation).

The Species at Risk Act (SARA) for federally listed species (current at time of report preparation);

- The Committee on the Status of Species at Risk in Ontario (COSSARO) list for provincial status designations (current list at time of report preparation);
- The NHIC / Biodiversity Explorer website for provincial rarity ranks (i.e. S-Ranks);
- The Significant Wildlife Habitat Technical Guide (OMNR 2000) – list of 'Area Sensitive' bird species.

Of the 20 spring/summer resident bird species (most with some breeding evidence), there was one (1) species of conservation concern for its status of Special Concern in Ontario:

- Eastern Wood-pewee

4.7. Incidental Wildlife

Table 6. Incidental Wildlife Summary

Scientific Name	Common Name	Evidence	Abundance
<i>Anaxyrus americanus</i>	American Toad	Visual	1
<i>Sylvilagus floridanus</i>	Eastern Cottontail	Auditory	1
<i>Tamiasciurus hudsonicus</i>	Eastern Red Squirrel	Visual and Auditory	
<i>Falconiformes sp.</i>	Falcon sp.	Visual	

5. Species at Risk Screening

The Endangered Species Act, 2007, S.O. 2007 was passed to protect the biodiversity of Ontario by using the best available scientific, community and indigenous traditional knowledge and the precautionary principle as its doctrine. The purpose of the Act is to identify species at risk, protect species at risk and their habitats, and to promote the recovery of species at risk and stewardship activities which assist in these goals. The Committee on the Status of Species at Risk in Ontario (COSSARO) functions to maintain an up-to-date database of information pertaining to species in Ontario and their classification. COSSARO advises the Minister of Natural Resources and Forestry, who makes and files a regulation that lists all plant and animal species classified by COSSARO as extirpated, endangered, threatened, or of special concern. This regulation is the Species at Risk in Ontario List, O. Reg 831/21. Ontario Regulation 831/21 provides general policies concerning exemptions and habitat specifications for those listed species, Species at Risk (SAR).

5.1. Screening

Screening for the possible occurrence of Species at Risk was conducted using the various sources including the NHIC Make-a-Map feature, that screens for potential Species at Risk on or within a 1-kilometer grid of the Subject Property (17PJ0259). The following screening results (Table 7) include the NHIC report and additional sources and databases detailed in Appendix C.

Table 7. Screening Results

Common Name	Scientific Name	S Rank	SARO Status	COSEWIC Status	Database
Birds					
Acadian Flycatcher	<i>Empidonax virescens</i>	S2S3B	Endangered	Endangered	OBBA
Common Nighthawk	<i>Chordeiles minor</i>	S4B	Special Concern	Special Concern	OBBA
Eastern Wood-pewee	<i>Contopus virens</i>	S4B	Special Concern	Special Concern	OBBA

Common Name	Scientific Name	S Rank	SARO Status	COSEWIC Status	Database
Bank Swallow	<i>Riparia riparia</i>	S4B	Threatened	Threatened	OBBA
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	Special Concern	Threatened	OBBA
Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	Threatened	Threatened	NHIC, OBBA
Eastern Meadowlark	<i>Sturnella magna</i>	S4B	Threatened	Threatened	NHIC, OBBA
Chimney Swift	<i>Chaetura pelagica</i>	S4B,S4N	Threatened	Threatened	OBBA
Barn Swallow	<i>Hirundo rustica</i>	S5B	Threatened	Threatened	OBBA
Fish					
Redside Dace	<i>Clinostomus elongatus</i>	S1	Endangered	Endangered	NHIC, DFO
Reptiles					
Snapping Turtle	<i>Chelydra serpentina</i>	S4	Special Concern	Special Concern	NHIC
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	S4	Special Concern	Special Concern	NHIC
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	S4	Special Concern	Special Concern	NHIC
Eastern Milksnake	<i>Lampropeltis Triangulum</i>	S4	NAR	Special Concern	NHIC
Insects					
Monarch	<i>Danaus plexippus</i>	S2N,S4B	Special Concern	Endangered	Butterfly Atlas

5.2. Assessment

Based on the results of the SAR screening and the habitat potential on the Subject Property to host SAR identified through field reconnaissance, the following species were brought forward for a species assessment:

- Little Brown Myotis (*Myotis lucifugus*) – **Endangered** [Habitat]
- Tri-coloured Bat (*Perimyotis subflavus*) – **Endangered** [Habitat]
- Northern Myotis (*Myotis septentrionalis*) – **Endangered** [Habitat]

- Eastern Wood-pewee (*Contopus virens*) – **Special Concern** [Occurrence]
- Eastern Milksnake (*Lampropeltis Triangulum*) – **Special Concern** [Habitat]
- Eastern Ribbonsnake (*Thamnophis sauritus*) – **Special Concern** [Occurrence]

SAR Bats:

Little Brown Myotis

The little brown myotis was designated Endangered under Ontario's *Endangered Species Act* on January 23, 2013. Its population is widespread across Ontario and most of North America. It is nocturnal and hibernates from fall until spring, most often in caves or abandoned mines which are humid. In the active half of the year they roost in trees and buildings where they colonize to raise young. They have glossy brown fur and weigh between 4 -11 grams with a wingspan of 22-27 centimeters. A fleshy projection that covers the entrance to the ear which is long, thin and rounded at the tip distinguishes them from other bat species. They feed at night on insects and are most active in the hours just after sunset. White nose syndrome, caused by a fungus of European origination, threatens this species. It propagates in environments very similar to the hibernating environments use by these bats (humid and cold). Mass dies offs are possible at more than 75% of Ontario's hibernation sites due to the fungus' affect on hibernation cycles, metabolism and fat storage.

Northern Myotis

The northern myotis was designated Endangered under Ontario's *Endangered Species Act* in January 2013, impacted by the white nose syndrome. Prior to the spread of the fungal disease across North America, the North Myotis was found throughout forested areas across southern and northern Ontario, and throughout all Canadian provinces. This species, previously known as northern long-eared bats, had long, rounded ears with dull yellow-brown fur and pale grey bellies. They are approximately eight centimeters in length and have a wingspan of approximately 25 centimeters. This Myotis species is similar in looks to the little brown bat (*Myotis lucifugus*) save for the pointed tip at the northern myotis ear. Distinct from the little brown bat, this species prefers to roost under loose, exfoliating bark more often than within tree cavities during the summer rearing months. Hibernation throughout the winter occurs in obscure caves far from the summer foraging grounds and is the root location for the spread of the white nose syndrome. Mass die-offs of up to 90 percent of overwinter populations occur in infected hibernacula. This emphasizes the importance of successful reproduction of remaining individuals at summer maternity roosting habitat.

Tri-coloured Bat

The Tri-coloured bat was designated Endangered under Ontario's *Endangered Species Act* on June 15, 2016, due to the impacts of white nose syndrome on the population. This species is very rare and their population is more scattered across the province as such. The species is similar in size to the myotis, but orange-red colouring in the muzzle, ears and forearms distinctly mark it. Tri-colouring on its back in black, yellow and brown, is indicated by its name. Similar to the myotis, this species is an aerial insectivore with

summer roosting locations in forests and buildings and overwinter hibernation in caves. Unlike myotis, they typically hibernate by themselves rather than in a larger unit.

The Subject Property contains mature trees that have the potential to host SAR bats. A leaf-off snag survey determined one suitable tree for roosting bats on the Subject property. Buildings/structures on the property may also support SAR roosting bats. Removal of the structures should undergo an assessment to determine suitable habitat. If suitable maternity roosting habitat is determined, structures should be removed outside of the roosting bat window to minimize potential impacts to SAR bats. Additionally, the restoration plan includes artificial bat habitat to offset the removal of the single landscape tree.

Eastern Wood-pewee:

The Eastern Wood-pewee was designated as Special Concern on the Species at Risk in Ontario List on June 27, 2014. An aerial insectivore forest bird, it is identified by its distinct "pee-ah-wee" song and is difficult to distinguish from related species by morphology. Individuals reach only 15 cm in length and colouring is adapted to provide camouflage within the forest setting. It is one of many forest flycatchers which partition the forest canopy into different niches of foraging habitat. The most common habitat is intermediate-age to mature forest with limited understory vegetation, though it is also found along forest edges and within clearings of forests. The species is found throughout the eastern half of the continent with its northern limit located north of the Great Lakes system. Threats to the species survival are relatively unclear but may include overall land use conversion and loss of forest, a decrease in available prey, an increase in predators (urbanized squirrels and jays), and impacts related to the over-browsing of forests by White-Tailed Deer. Threats specific to migration and overwinter habitat in the south must also be considered.

The Eastern Wood-pewee was heard in the forested area on the edge or outside the boundaries of the Subject Property. This species habitat is not being impacted by the proposed development, therefore no negative impacts are anticipated.

Eastern Milksnake:

The Eastern Milksnake was designated as Special Concern under COSEWIC in 2002 and reconfirmed in May 2014. It is a non-venomous constrictor with brightly coloured, glossy smooth scales and a single anal plate. There are currently 25 recognized subspecies of Milksnake, only the northernmost subspecies, the Eastern Milksnake (*L. t. triangulum*), occurs in Canada. This subspecies generally grows to be 60-90 cm in length. It has large red or reddish-brown oval blotches outlined in black along its back, and one or two rows of smaller blotches along each side. The blotches are bright red in young Eastern Milksnakes but fade as the snake ages. There is usually a light-coloured Y- or V-shaped pattern on the back of the head and neck. The belly has a black checkerboard pattern on a tan, gray or whitish background, which may be obscured by dark pigment in older individuals.

In Canada, the Eastern Milksnake ranges throughout the Carolinian and the Great Lakes/St. Lawrence zones. In Ontario, some records have occurred as far north as Sault Ste Marie, the north shore of Lake Huron, and Lake Nipissing. The current distribution of the Eastern Milksnake in Ontario stretches from the extreme southwest up to Echo Lake in Algoma District and as far east as Ottawa and Brockville.

The Eastern Milksnake inhabits a wide variety of natural and human-modified habitats including prairies, meadows, pastures, hayfields, rocky outcrops, rocky hillsides and forests (deciduous, coniferous, and mixed). In addition, an analysis of Ontario's Reptile Atlas identifies the Eastern Milksnake within the 10km grid square (17PJ05) of the Subject Property in 2012. Due to the composition of the site and surrounding area (Section 1.1), there is suitable habitat for the Eastern Milksnake. As such, the Subject Property has the potential to provide habitat for this species at risk. Development of the property should consider ecological enhancements for this species to prevent any net negative impacts.

Eastern Ribbonsnake

The Eastern Ribbonsnake was already assessed as a species of special concern when the *Endangered Species Act* took effect in 2008 and was re-assessed as special concern in 2013. The Eastern Ribbonsnake is a slender snake with three bright yellow stripes running down its back and sides, contrasting sharply with its black back. Eastern Ribbonsnakes have a white chin, whitish-yellow belly and a distinct white crescent in front of each eye that can be used to distinguish it from a Gartersnake. The Eastern Ribbonsnake is usually found close to water, especially in marshes, where it hunts for frogs and small fish.

Although there is little historical data on the occurrence of this species in Ontario, it is likely that the Eastern Ribbonsnake has declined or even disappeared from many parts of southwestern Ontario due to the extensive loss of wetland and shoreline habitat in that region. The ongoing conversion of wetland to agricultural and urban uses, shoreline development and other habitat loss continues to be the main threat to this species in Ontario.

Ontario's Reptile Atlas' most recent observation for this species was in 1984. In addition, their habitat is restricted to areas within the valley. No net negative impacts to this species are expected.

5.3. SAR Assessment Discussion

A number of species at risk were brought forward as potentially occurring within the Study Area. Based on a review of available online resources and observations made in the field, the Subject Property has the potential to provide suitable habitat for the following species:

- Little Brown Myotis (*Myotis lucifugus*)
- Tri-coloured Bat (*Perimyotis subflavus*)
- Northern Myotis (*Myotis septentrionalis*)
- Eastern Milksnake (*Lampropeltis Triangulum*)

Based on this assessment, development at the site allows opportunity to provide ecological enhancements for these species, to provide an overall net gain to the area (refer to Section 9.1).

6. Significant Wildlife Habitat Screening

Significant Wildlife Habitat (SWH) is considered natural heritage and is protected as per Section 2.1 of the Provincial Policy Statement, 2020. The Significant Wildlife Habitat Technical Guide (OMNRF, 2000) aids in land use planning by providing the identification, description, and prioritisation of significant wildlife habitat in Ontario. The associated Ecoregion Criteria Schedules are used to further provide detailed criteria for

assessing and confirming SWH within Ontario. This section will provide a screening in the form of a summary table followed and an assessment of the potentially or confirmed occurring SWH.

Significant (and/or sensitive) Wildlife Habitat features and functions as described within the OMNRF Significant Wildlife Habitat Ecoregion Criteria Schedule for Region 6E (OMNRF, 2015) were reviewed and evaluated for the Study Area. The documented groups wildlife habitat into five main categories:

- a) Seasonal concentration areas of animals;
- b) Rare vegetation communities or specialized habitats for wildlife;
- c) Specialized Habitat for Wildlife
- d) Habitat for species of conservation concern; and,
- e) Animal movement corridors.

The full screening found in Table A 3 in Appendix D consisted of a review of the habitat criteria for candidate SWH. Any SWH on the Subject Property or adjacent lands was noted in Column 4 and a rationale was provided in Column 5. In the case of potential SWH, Confirmed Defining Criteria Studies were reviewed, and applicable mitigation measures (in summary form) were also provided in Column 5.

6.1. SWH Assessment

Based on a review of background information and accompanying field studies, there is one habitat of seasonal concentration areas of animals:

- a) Bat Maternal Colonies

Bat Maternity Colonies are designated as seasonal concentration areas of animals as per the Criteria for SWH in Ecoregion 6E (MNR, 2015). One snag tree was identified for the Subject Property that may be suitable habitat for bat maternity roosting. The Subject Property contains mature landscape trees that may be suitable for roosting bats. The woodland within and adjacent to the property may also contain suitable bat habitat.

No candidate or confirmed SWH was found in the categories of specialized habitat for wildlife, habitat for species of conservation concern (SCC), rare vegetation communities or animal movement corridors.

7. Proposed Development

The Subject Property is approximately 0.86 ha with the proposed development occupying approximately 0.14 ha. The proposed development will include the construction of fifteen (15) townhouse units and associated parking and backyard areas. The proposed Site Plan (Figure 1) indicates that some trees will be removed within EPA lands to accommodate the widening of Nunnville Road as per the Town of Caledon's urban design requirements. As per Figure 1 from the TPP (see Appendix D), the trees proposed to be removed for the purpose of widening Nunnville Road are primarily small non-native/hybrid species such as Scots Pine and Freeman Maple.

7.1. Natural Heritage System Buffers

As per the provincial NHIC *Make a Map* tool, the Subject Property contains designated woodlands on and adjacent to the property. It is proposed that the Development Limit is based on Dripline and Long-term Stable Top-of-Slope.

- Buffer from the Dripline: **average 8.8 metres**
- Buffer from the Long-term Stable Top-of-Slope: **average 9.5 metres.**

As per the proposed site plan, marginal portions of lots 6 -12 encroach within the designated dripline buffer. The approximate area of the dripline buffer that is being encroached upon by these units is 226.9 m². Approximately 258.5 m² of a compensatory buffer is proposed north of units 2-5 (Figure 1).

8. Environmental Impact Assessment

The following section presents potential impacts of the proposed development based on the existing conditions of the natural heritage features located on or adjacent to the Subject Property as identified to date. This section also identifies mitigation measures and compensation opportunities that will be used to minimize impacts of the proposed development. The proposed development will result in a slight intensification of land use; however, this is not expected to result in any additional impacts to the adjacent natural heritage features.

8.1. Impact Summary Table

Impacts to the various natural heritage features associated with and adjacent to the Subject Property were considered in the impact analysis. Table 8 presents the natural heritage components which were considered in this assessment, the proposed activity associated with that component, potential short term and long-term impacts and recommended mitigation measures and if any residual effects are anticipated. Potential impacts were assessed using field collected data and secondary source information, including an overlay of the proposed site plan.

Table 8. Impact Assessment Table

Impact	Impact Assessment	Mitigation Measures	Residual Effects
Short-term Impacts			
Noise from construction activity	Excessive noise could displace or interfere with breeding birds within surrounding wooded areas. Noise may result in the avoidance of the adjacent areas during construction, however as the majority of the wildlife found within the local landscape is tolerant to disturbances, they are anticipated to return to the area once construction activities end.	Since construction noise is very difficult to mitigate, the most effective measure is to limit construction activities during the breeding bird season (April to August) during dawn and dusk periods, as these are the birds most active calling periods.	Noise impacts to wildlife may occur when construction is active. It is anticipated that if wildlife avoids the area during construction, they will likely return once these activities cease. No long-term residual effects expected.

Impact	Impact Assessment	Mitigation Measures	Residual Effects
Dust from construction activities	Dust from construction activities can drift to natural areas and impact nesting birds, visibility, fill voids in gravels used by insects and coat plants.	Water suppression of dust should occur for all construction activities including, but not limited to site grading, haul roads and concrete cutting.	Residual effects are anticipated to be minor and short termed given appropriate dust suppression mitigation measures are incorporated to reduce levels of dust due to construction.
Tree cutting	Disruption or destruction of active nests. Damage to trees on adjacent properties.	Vegetation clearing should not occur between March 31 st and August 31 st as per the Migratory Birds Convention Act (1994). If clearing is to occur during this time, a nest survey should be completed by a qualified bird biologist to identify nests that are not to be disturbed until the young have fledged.	Residual effects from tree removal are assumed to be relatively minor with proper implementation of tree protection zones for trees located off property. Bat boxes could be erected to offset the removal of potential bat roosting habitat.
Long-term Impacts			
Encroachment	Encroachment into the dripline of the forested area could displace the species that inhabit the edge of the forest. Potential of encroachment in the Environmental Policy Area and provincial woodland. Increase in human disturbance.	Incorporation of native plantings within the offset area is recommended. Maintain tree vegetation protection zones where applicable.	Proposed Encroachment areas are proposed primarily for backyards which will likely result in minimal disturbance. The feature is dominant in invasive/non-native species and therefore minimal impacts are expected.
Light pollution	Light penetration can disrupt nocturnal wildlife by attracting insects to places they may not normally be and making it more difficult for prey to hide in the dark, it may force some animals away from habitats they would otherwise occupy and can alter day/night patterns.	Direct outdoor lighting downward and away from the vegetated communities located east of the Study Area. Reduce the number of outdoor lights that remain on throughout the night. Use long wavelength (ambers and reds) lighting for outdoors, as this colour is perceived as being lower intensity to wildlife (most mammals).	If lighting options are carefully considered during the building design, residual effects and impacts can be limited.

8.2. Direct Impact Assessment

Construction activity that includes grading, servicing, and development can cause short-term direct impacts to surrounding habitats and possible local and migrating wildlife. In particular, the release of dust from construction activities and the increased noise from construction equipment. GRA has recommended construction measures to ensure minimal impact to the surrounding landscape, therefore no residual effects are expected.

Eight landscape trees are proposed to be removed for the widening of Nunnville Road. As mentioned in Section 7, the trees proposed to be removed are primarily small non-native/hybrid species such as Scots Pine and Freeman Maple no greater than 14 DBH, with the exception of one Scots Pine with a DBH of 20.

The removal of landscape trees identified for removal could have an impact on breeding bird habitat if timing restrictions are not observed. As per the Migratory Bird Convention Act (MBCA), vegetation should not be cleared during the breeding bird season (April 1 – August 31) to mitigate these impacts. Should tree clearing proceed during this time, a nest survey must be completed by a qualified avian biologist to identify any nests that may require a species and disturbance specific protective buffer. The protective buffer is to remain until the young have fledged the nest, or if the nest is deemed inactive. Nest surveys should be completed within 48 hours of the proposed works. Tree removal should also occur outside of the maternal bat roosting window. Recommended mitigation measures include planting of native vegetation within the offset areas and in the streetscape, where feasible. Bat boxes are recommended to offset loss of potential bat roosting habitat. With the proposed offsetting measures, impacts are expected to be minimal.

8.2.1. Encroachments

Direct impacts associated with the proposed development includes the encroachment into the proposed dripline buffer. Impacts of encroachment into the dripline buffer are expected to be minimal due to the species composition of the woodland/thicket, which is dominant in invasive/non-native trees and shrubs including European Buckthorn and Scot's Pine. Encroachments are proposed at several locations on the site plan (Lots 6 -12) but are expected to be offset by more larger buffers from the dripline in other areas (Lots 2-5) of the proposed plan as seen on Map 3. The approximate area of the dripline buffer that is being encroached upon by these units is 227 m². Approximately 259 m² of a compensatory buffer is proposed north of units 2-5 (Figure 1). It is expected that the proposed encroachments into the dripline buffer will have minimal impacts to the Natural Heritage Systems associated with the Subject Property as most encroachments will occur within backyards in the proposed plan. The property currently has a manicured lawn currently in the buffer, and therefore changes to the landscape will be minimal.

8.3. Indirect Impact Assessment

Indirect impacts are those which occur as a secondary result of the proposed activity, and not necessarily as a direct result of the activity. These are usually associated with effects such a population growth or density changes or alterations or additions to road networks. In the case of this proposed development, induced impacts are likely minor as there are no proposed changes to road networks (increase road density or alignments), and a small change to population densities. Indirect impacts include an increase in population density near the Environmental Policy Area and Woodland, which could result in pet and wildlife interactions

and informal trail use. Impacts are expected to be minimal as the woodland/thicket within the EPA is comprised dominantly of invasive plant species (European Buckthorn and Scot's Pine).

8.4. Cumulative Impacts

Cumulative impacts are changes to the environment due to past, present and the reasonably foreseeable future impacts. The Study Area and surrounding landscape have experienced on-going disturbance from historical and current residential land use.

Since the Study Area and adjacent natural heritage features have been part of an anthropogenic-dominated matrix for some time, large cumulative impacts are not anticipated as a result of the proposed development. It is possible that there will be an additional shift in wildlife, insect and plant communities to those that are more resilient to anthropogenic influences as a result of the proposed development. These changes are expected to be very minimal, as the property will remain residential land use.

9. Mitigation Measures

The following mitigation measures are recommended to avoid and minimize impacts. The measures have two distinct intended outcomes: mitigation to reduce the impact on the NHS and mitigation to reduce the impact of active construction.

9.1. Ecological Enhancements

As per Section 7.3.1.4 of the TRCA's policy document The Living City Policies (2014), a 10 m buffer is required from the dripline of woodlands. As per the Site Plan, an average 9.5 m buffer was applied to the development from the LTSTOS and an 8.8 m buffer was applied to the dripline. To offset the 0.5 m of buffer that could not be achieved, the following ecological enhancements are recommended to provide an overall net gain to the area.

9.1.1. Snake Hibernacula

Under COSEWIC, the Eastern Milksnake was designated as Special Concern in 2002 and reconfirmed in 2014. As per Ontario's Reptile Atlas (Section 0), the Eastern Milksnake was observed within the 10km grid square (17PJ05) of the Subject Property in 2012. As per the Species at Risk Act Management Plan for the Eastern Milksnake (2015), this species inhabits a wide variety of natural and human-modified habitats including prairies, meadows, pastures, hayfields, rocky outcrops, rocky hillsides, and forests (deciduous, coniferous, and mixed). Based on the Site Description (Section 1.1), the Study Area consists primarily of forest, thickets, and residential homes, while the Subject Property consists of a residential dwelling, landscape trees, a hedgerow, manicured lawn and a European Buckthorn and Scots Pine thicket within and bordering the Subject Property limits. Due to the overlap of preferred Eastern Milksnake habitat and the site description, it is possible that the Subject Property may contain suitable habitat for the Eastern Milksnake. As such, the development allows opportunity to provide ecological enhancements for this species.

The Eastern Milksnake requires a variety of habitats for their various life stages:

- Egg-laying sites: rotting logs, stumps, mammal burrows, piles of manure, leaf mounds, sawdust piles, compost, sand, under boards, or in loose soil;
- Hibernation habitat: natural sites such as old burrows and rock crevices human-made structures such as the foundations of old buildings and other human debris (e.g., car parts, old pipes) (Rowell, 2013);
- Basking sites: open and edge habitat. Within these areas, at a micro-habitat scale, Eastern Milksnakes most frequently bask under objects (e.g., planks, stumps, rock piles, rubbish, metal) that are in direct sunlight and provide some protection from predators and are less frequently found basking in the open (COSEWIC 2002).

Based on the aforementioned information, the implementation of artificial planks, rock piles, stumps, leaf and sand mounds, brush piles to be incorporated into the development plan for snake hibernacula enhancements are included in the restoration plan.

9.1.2. Bat Hibernacula

As per Section 0, the Subject Property has the potential to contain suitable habitat for SAR bats. Any tree removal is recommended to take place between November and March to avoid the bat maternity roosting window. In addition, GeoProcess recommends installing the following:

- Bat boxes: there are several options when considering bat houses for your project. Canadian Bat Houses offers a 4-chamber Motel which holds up to 600 bats. This multi-chamber has received the bat approved certification through Bat Conservation International (BCI), a program that was established in 1998 to help guide proponents on what bat box works best for individual projects. The program outlines the specifications in accordance with published standards to allow certain boxes to become BCI certified. Although it is uncertain how many bats would initially use the box, the Motel allows for expansion as the bats begin to colonize, so they won't need to find a new roost in later years.
- Simulated loose bark: another effective option is installing simulated loose bark on standing structures such as tree snags and utility poles. BrandenBark has been noted amongst literature to have a high success rate as it was designed to mimic natural bark both visually as well as its microclimate conditions of natural roosts (Gumbert et al., n.d). BrandenBark offers a variety of patterns which mimic many different tree species, allowing the proponent to target which bat species is in the area of their project. A study conducted in 2012 placed six BrandenBark structures and found that all six of them were in use by bats within 85 days of installation. Moreover, the study conducted exit count surveys and concluded that 1,892 days were occupied by bats over the four-year study (Gumbert et al., n.d). The study also found that several bat species utilized the BrandenBark structures, such as the endangered species' Little Brown (*Myotis lucifugus*) and Northern Long-eared Bat (*Myotis septentrionalis*). Literature suggests that BrandenBark structures should be installed either in forest openings or along edge habitats grouped in clusters of 3-5 roost structures. The research and development behind the BrandenBark structures have been conducted in close coordination with, and approved by the United States Fish and Wildlife Service as a successful mitigation tool (Gumbert et al., n.d).

9.1.3. Invasive Species Removal

As per Section 1.1, a European Buckthorn and Scots Pine thicket is located within and bordering the northwestern Subject Property limits. It is recommended that a removal and restoration plan be developed as it will provide an overall net benefit to the area. It is also recommended that the restoration plan incorporate fruit and nut producing native species in replace of the buckthorn to allow for more species diversity and provide foraging opportunities to wildlife. Natural Heritage System Measures

9.1.4. Other Mitigation Measures

- Minimize outdoor lighting and direct it down and away from natural areas.
- Inspection by a qualified person(s) to conduct regular monitoring of all sediment and erosion measures implemented to ensure they are in working order. Any deficiencies observed are to be recorded and immediately reported to the site contractor.
- Provision of appropriate buffers to the NHS and compensation requirements.
- Incorporate native plantings within the offset areas to compensate for the loss to the NHS.

9.2. Construction Measures

General construction related mitigation measures include the following:

- Tree protection barriers and fencing should be erected at locations as prescribed in the Tree Protection Plan. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail;
- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified in the Tree Protection Plan as a tree protection zone (TPZ) at any time during or after construction;
- The limits of construction are to be delineated and tree protection fencing installed alongside prior to the arrival of heavy equipment on site;
- Site visits, pre, during and post construction is recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented;
- Heavy machinery on site should be washed prior to entering the Subject Property to prevent the spread of invasive species.
- No heavy machinery is to be used or parked beyond the limits of construction within the tree protection zones
- All trees should be felled into the work zone;
- Clearing of vegetation within the Subject Property as part of site preparation should be conducted in late summer or winter months (September-March) so as not to coincide with breeding bird season. If clearing is to proceed within the breeding bird window, the Subject Property should be screened by a qualified bird biologist to determine if any migratory song birds are nesting within work zone;
- Top-soil removed during stripping is recommended to be stockpiled for reapplication post-construction;

- The limits of construction are to be delineated and tree protection fencing installed alongside prior to the arrival of heavy equipment on site;
- Heavy machinery on site should be washed prior to entering the Subject Property to prevent the spread of invasive species;
- A construction work plan should designate specific locations for stockpiling of soils and other material;
- Implementation of the erosion and sediment control plan is recommended to prevent releases of sediment into the adjacent natural areas; and,
- Implementation of dust control measures is recommended to reduce dust impacts on the adjacent lands.

10. Policy Conformity

An outline of the applicable policies, including federal, provincial, and municipal protection and planning policies and regulations, relative to the Study Area was provided in Section 2 of this report. In conformity with the policies identified within the Town of Caledon, Peel Region, and TRCA regulations, an evaluation of how the Study Area complied with these policies concludes that the proposed development meets the requirements of mitigating impacts on wildlife habitat and natural functions of the Study Area. It should be noted that the proposed development encroaches within TRCA's regulated areas and, as such, a permit will be required in order to develop within these limits. Potential impacts associated with the proposed development can be mitigated through the appropriate measures mentioned in Section 8. Planning, design, offsetting, and construction measures identified for the Study Area will promote the protection of natural features outlined in this preliminary EIS.

11. Closing



This preliminary EIS has reviewed the proposed development as it relates to the surrounding natural heritage system. Based on the proposed use, the existing site conditions, and surrounding land uses, this preliminary EIS finds that with mitigation and ecological enhancements such as snake hibernaculum, artificial bat roosts and invasive species removal, the proposed development is anticipated to have minimal impacts on the surrounding woodland and the ecological system that it supports, and the overall natural heritage system of the Town of Caledon.

12. References

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Preliminary EIS for 13290 Nunnville Road, Bolton

Prepared for Bolton Summit Developments Inc.

March 22, 2023

Prepared by:



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Reviewed by:



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Senior Ecologist

Disclaimer

We certify that the services performed by GeoProcess Research Associates were conducted in a manner consistent with the level of care, skill and diligence to be reasonably exercised by members of the engineering and science professions.

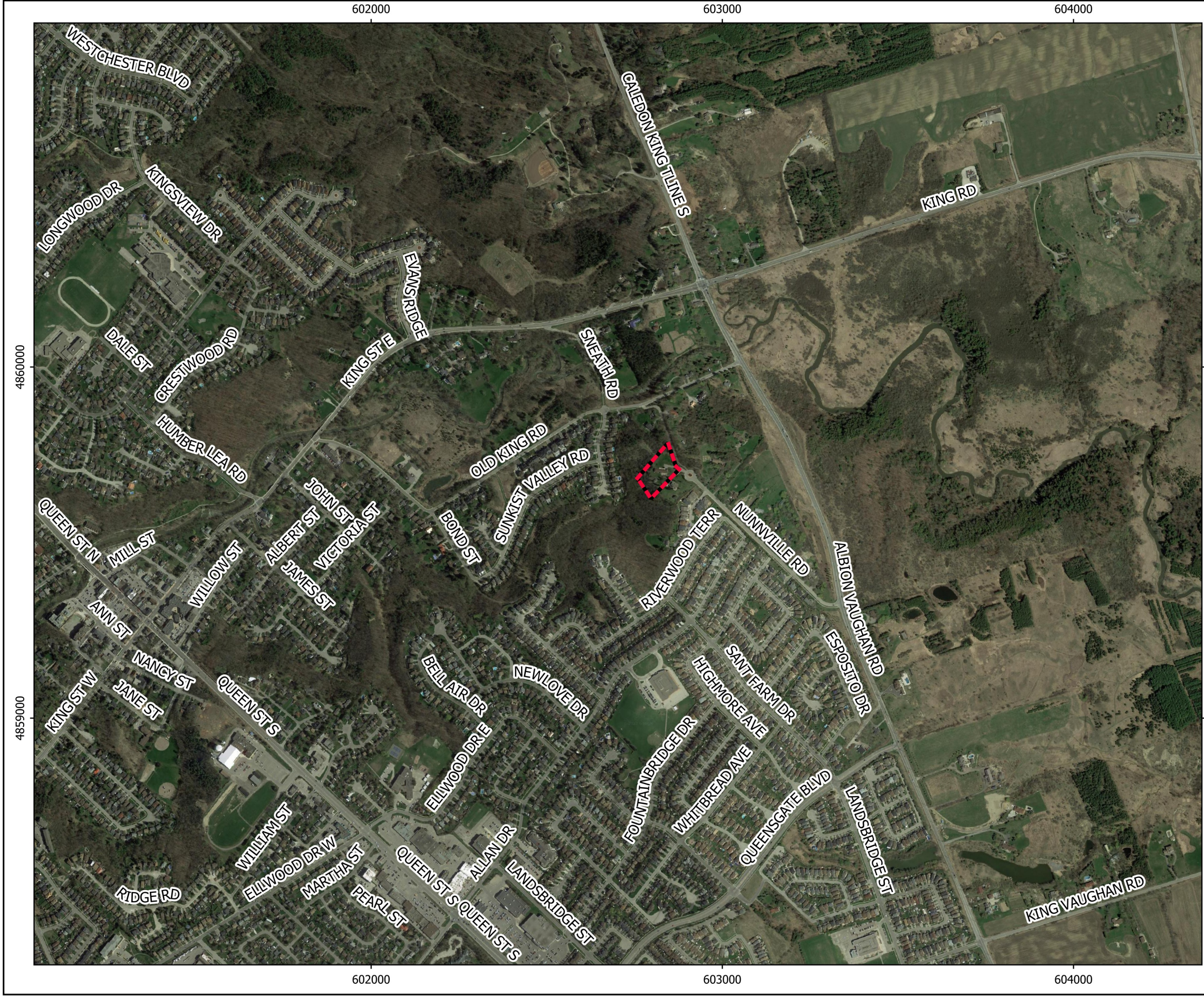
Information obtained during the site investigations or received from third parties does not exhaustively cover all possible environmental conditions or circumstances that may exist in the study area. If a service is not expressly indicated, it should not be assumed that it was provided. Any discussion of the environmental conditions is based upon information provided and available at the time the conclusions were formulated.

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Project Number P2022-612



Maps and Figures



Legend

 Subject Property



Prepared using QGIS and Google Satellite Imagery



GeoProcess
RESEARCH ASSOCIATES

CREATED BY: DH
CHECKED BY: IR

PROJECT NO.: P2022-612
DATE: Mar 29, 2022

Map 1.

Key Map

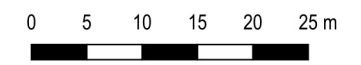
Preliminary Environmental Impact Statement
13290 Nunnville Road, Bolton ON
Bolton Summit Developments Inc.





Legend

- Subject Property
- TRCA Regulated Area
- Environmental Policy Area
Caledon OP Schedule C-2
- Dripline
- 10m Dripline Buffer
- Proposed Site Plan



Prepared using QGIS and Google Satellite Imagery



GeoProcess
RESEARCH ASSOCIATES

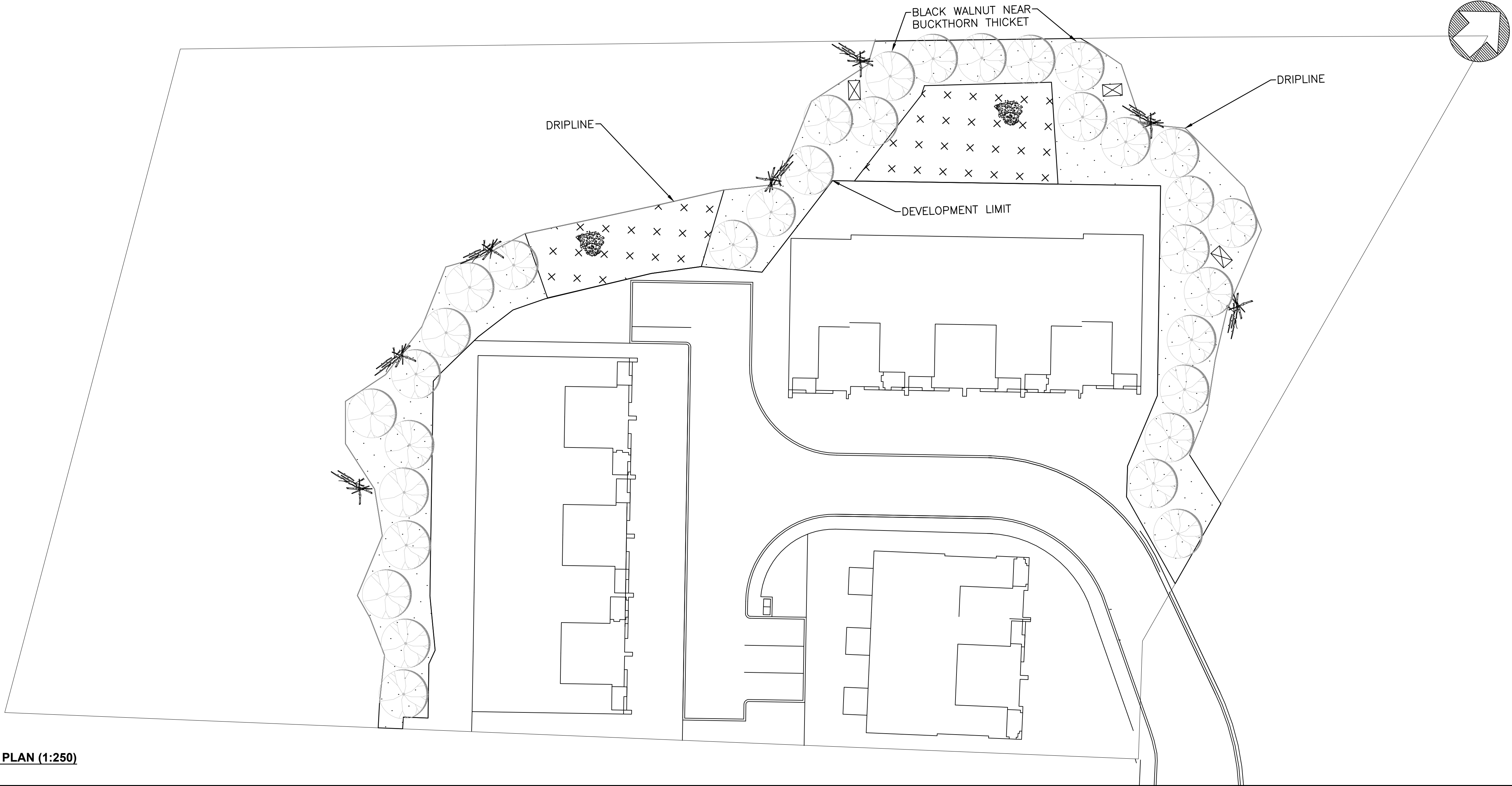
CREATED BY: DH
CHECKED BY: IR

PROJECT NO.: P2022-612
DATE: Mar 08, 2023

Map 3.

Proposed Site Plan

Preliminary Environmental Impact Statement
13290 Nunnville Road, Bolton ON
Bolton Summit Developments Inc.



PLAN (1:250)

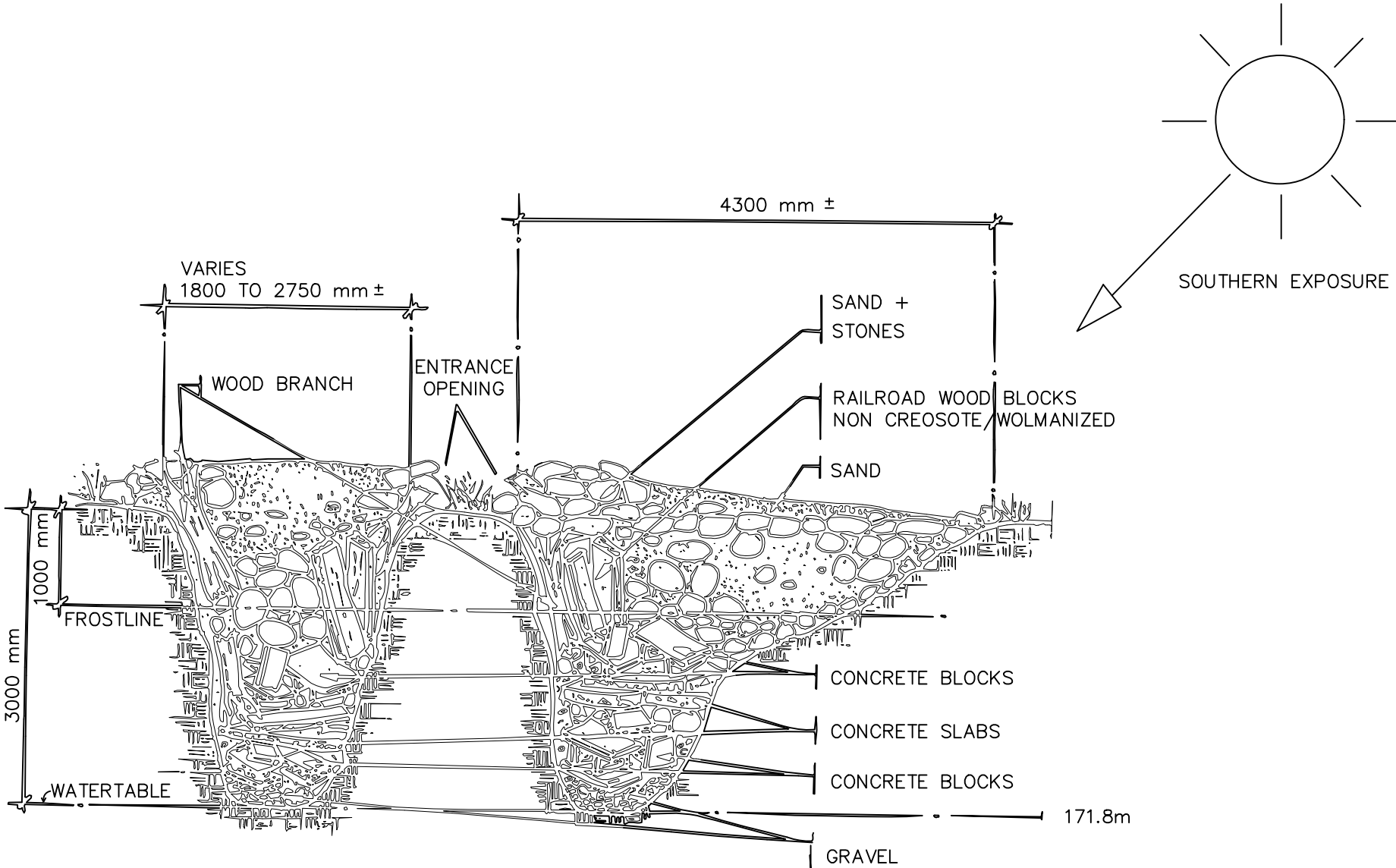
- Planting Notes:**
- General Planting Notes:** Planting stock should be installed during the growing season to ensure survivorship of plant material. Planting locations specified are general locations, plant according to micro-site selection based on existing natural competition. Plantings will be installed within the restoration areas in natural groupings under the supervision of the project restoration specialist. Planting holes may be either dug by hand or augured with a handheld auger to avoid any impacts to the existing environment. Holes will equal the depth of the root ball and be 1.5 times the width.
 - Site Preparation:** Prior to planting installation, invasive species removal and refuse removal is highly recommended. Where soil compaction is present, soil should be mechanically loosened and aerated prior to planting and receive a layer of topsoil and organic matter to improve growing conditions for plantings. Organic matter will consist of decayed organic material (humus) such as compost; composted woody debris and leaf litter; forest product residuals placed at a depth ranging from 2 to 4 inches. Areas where gravel is present spilling from the adjacent truck yard should have the gravel removed and replaced with soil prior to planting.
 - Composition & Spacing:** Caliper size material for all tree planting is recommended to expedite the development of canopy cover. Shrub material will include 1 to 2 gallon potted material. Planting should follow standard densities of 5.0 metre on centre for trees, 1.0 metre on centre for shrubs.
 - Replacement Planting Material:** In the event of plant mortality following restoration initiatives, replacement plant material should be replaced by species provided in the planting schedule. Cultivars of native species are NOT acceptable. If species are no longer available, plant selection should be made by a qualified individual as approved by TRCA's native species list.
 - Mulch Placement:** Newly planted trees and shrub species should receive a suitable layer of mulch following planting to help retain moisture in the plant's root zone and deter competition. Replacement mulch should be provided over the first three years throughout the growing season as necessary. Mulch should be restricted to the tree and shrub base to alleviate any impacts to adjacent growth and regeneration.
 - Shrub Protection:** Plastic rodent and mammal guards should be installed on newly planted trees and shrubs to provide protection from herbivory until established.
 - Watering:** All trees and shrubs to be maintained by regular watering throughout plant warranty period. Watering of planted stock should occur for three years during dry periods and weed mats or brush blankets should be installed where abundant herbaceous competition arises to ensure the survivorship of planted species.
 - Invasive Species Removal:** Prior to establishing native plantings, removal of non-native invasive species identified within the riparian area, including Common Buckthorn, is recommended. Removal and control of invasive species should be addressed during monitoring events to prevent invasive species from becoming well established and completed yearly for a period of no less than 3 years.
 - Monitoring:** A monitoring schedule involving yearly site inspections by a qualified biologist or other environmental professional is recommended. Monitoring events should occur twice during the growing season for a minimum of three years following the installation of restoration plantings. Due to the size of the area, permanent plots or sample quadrants are not necessary for successful monitoring. Visual analysis incorporating detailed notes to address survivorship of plant species, individual plant health and potential growth of invasive species is recommended. Mortality of all planted individuals should be determined, and the causes of mortality identified (shade/sun intolerance, herbivory, drought, etc.). Removal and control of invasive species should be addressed during monitoring events and completed yearly for a period of no less than 3 years.
 - Individual Plantings:** Recommended tree, shrub and herbaceous species should be planted following invasive species and refuse removal, where applicable. Species should be planted based on specific site conditions, i.e., species are suitable to light conditions of planting area. Early successional species should be used alone or in concert with late-seral species. Shade-tolerant species can be used if conditions are favourable and in areas where a source of late-seral seed does not exist in order to promote succession.
 - Black Walnut trees** should be planted along the edges of the planting area adjacent to European Buckthorn thickets to help reduce the spread of European Buckthorn into the restoration zone.
 - Planting Zone 1** should be planted with a mix of trees and shrubs from the plant list. **Planting Zone 2** should be planted with shrubs only. Tree placement on this plan is conceptual. Trees should be planted based on site conditions at time of planting.

PLANT LIST

Shrubs			
Common Name	Scientific Name	Quantity	Stock Size:
Common Winterberry	Ilex verticillata	30	≥ 1-gallon pot
Purple-flowering Raspberry	Rubus odoratus	30	≥ 1-gallon pot
Speckled Alder	Alnus incana	30	≥ 1-gallon pot
Common Elderberry	Sambucus Canadensis	30	≥ 1-gallon pot
Nannyberry	Viburnum lentago	30	≥ 1-gallon pot
Black Raspberry	Rubus occidentalis	30	≥ 1-gallon pot
Smooth Rose	Rosa Blanda	30	≥ 1-gallon pot
Staghorn Sumac	Rhus typhina	30	≥ 1-gallon pot
Trees			
Common Name	Scientific Name	Quantity	Stock Size:
Black Walnut	Juglans nigra	10	≥ 60 mm caliper
American Basswood	Tilia americana	2	≥ 60 mm caliper
Red Maple	Acer rubrum	4	≥ 60 mm caliper
American Hornbeam	Carpinus carolina	2	≥ 60 mm caliper
White Birch	Betula papyrifera	4	≥ 60 mm caliper
Silver Maple	Acer Saccharinum	2	≥ 60 mm caliper
White Cedar	Thuja occidentalis	4	≥ 60 mm caliper
Trembling Aspen	Populus tremuloides	4	≥ 60 mm caliper

Habitat Feature Notes

- BrandenBark Bat Habitat :** it is recommended that BrandenBark-equipped poles be installed in the periphery of the planting area to provide habitat for bats. This product can be purchased online at www.copperheadconsulting.com/brandenbark/.
- Brush piles** should be placed just inside the drip line of the existing woodland. The piles should consist of branches and other brush collected on site. Piles should be loosely placed at least 1 metre high.



TYPICAL DETAIL 1: SNAKE HIBERNACULA



Knowledge
Research
Consulting

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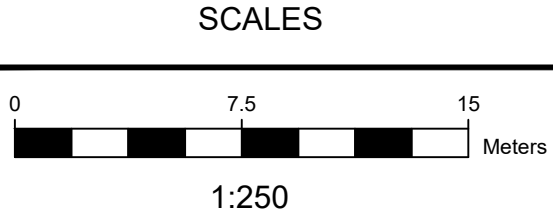
LEGEND

- PLANTING ZONE 1: TREES & SHRUBS
- PLANTING ZONE 2: SHRUBS ONLY

- BRANDEBARK BAT HABITAT STRUCTURE
- TREE LOCATION
- BRUSH PILE
- HIBERNACULA

SURFACE DATA:
DATA SOURCE
DATE

VERTICAL DATUM:
NAD83 (CSRS)



No.	REVISIONS	DATE	INITIAL
01	FOR CLIENT REVIEW	02/06/2023	IR

13290 Nunnville Road, Caledon
Vegetation Protection Zone Restoration Plan

Scale: 1:250	Drawn By: DH	Drawing No. 01
Date Issued: 02/07/2023	Checked By: IR	



Appendix A

OBBA Full Species List

Table A 1. Ontario Breeding Bird Atlas Summary

Scientific Name	Common Name	S RANK	Category
<i>Empidonax virescens</i>	Acadian Flycatcher	S2S3B	POSS
<i>Chordeiles minor</i>	Common Nighthawk	S4B	PROB
<i>Contopus virens</i>	Eastern Wood-pewee	S4B	PROB
<i>Riparia riparia</i>	Bank Swallow	S4B	CONF
<i>Hylocichla mustelina</i>	Wood Thrush	S4B	PROB
<i>Dolichonyx oryzivorus</i>	Bobolink	S4B	CONF
<i>Sturnella magna</i>	Eastern Meadowlark	S4B	CONF
<i>Chaetura pelagica</i>	Chimney Swift	S4B, S4N	POSS
<i>Hirundo rustica</i>	Barn Swallow	S5B	CONF
<i>Branta canadensis</i>	Canada Goose	-	PROB
<i>Aix sponsa</i>	Wood Duck	-	CONF
<i>Anas platyrhynchos</i>	Mallard	-	CONF
<i>Bonasa umbellus</i>	Ruffed Grouse	-	CONF
<i>Meleagris gallopavo</i>	Wild Turkey	-	CONF
<i>Butorides virescens</i>	Green Heron	-	PROB
<i>Cathartes aura</i>	Turkey Vulture	-	PROB
<i>Circus cyaneus</i>	Northern Harrier	-	POSS
<i>Accipiter striatus</i>	Sharp-shinned Hawk	-	CONF
<i>Accipiter cooperii</i>	Cooper's Hawk	-	PROB
<i>Buteo jamaicensis</i>	Red-tailed Hawk	-	CONF
<i>Falco sparverius</i>	American Kestrel	-	PROB
<i>Rallus limicola</i>	Virginia Rail	-	PROB
<i>Porzana carolina</i>	Sora Rail	-	POSS
<i>Charadrius vociferus</i>	Killdeer	-	CONF
<i>Columba livia</i>	Rock Pigeon	-	CONF
<i>Actitis macularius</i>	Spotted Sandpiper	-	CONF
<i>Bartramia longicauda</i>	Upland Sandpiper	-	CONF
<i>Gallinago gallinago</i>	Common Snipe	-	PROB
<i>Scolopax minor</i>	American Woodcock	-	POSS
<i>Zenaida macroura</i>	Mourning Dove	-	CONF
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	-	CONF

Scientific Name	Common Name	S RANK	Category
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	-	CONF
<i>Megascops asio</i>	Eastern Screech Owl	-	CONF
<i>Bubo virginianus</i>	Great Horned Owl	-	CONF
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	-	PROB
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	-	PROB
<i>Megaceryle alcyon</i>	Belted Kingfisher	-	CONF
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	-	POSS
<i>Picoides pubescens</i>	Downy Woodpecker	-	CONF
<i>Leuconotopicus villosus</i>	Hairy Woodpecker	-	CONF
<i>Colaptes auratus</i>	Northern Flicker	-	CONF
<i>Dryocopus pileatus</i>	Pileated Woodpecker	-	CONF
<i>Empidonax alnorum</i>	Alder Flycatcher	-	PROB
<i>Empidonax traillii</i>	Willow Flycatcher	-	PROB
<i>Empidonax minimus</i>	Least Flycatcher	-	PROB
<i>Sayornis phoebe</i>	Eastern Phoebe	-	CONF
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	-	CONF
<i>Tyrannus tyrannus</i>	Eastern Kingbird	-	CONF
<i>Vireo gilvus</i>	Warbling Vireo	-	POSS
<i>Vireo olivaceus</i>	Red-eyed Vireo	-	CONF
<i>Cyanocitta cristata</i>	Blue Jay	-	CONF
<i>Corvus brachyrhynchos</i>	American Crow	-	CONF
<i>Eremophila alpestris</i>	Horned Lark	-	CONF
<i>Tachycineta bicolor</i>	Tree Swallow	-	CONF
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	-	PROB
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	-	CONF
<i>Poecile atricapillus</i>	Black-capped Chickadee	-	CONF
<i>Sitta carolinensis</i>	White-breasted Nuthatch	-	CONF
<i>Certhia americana</i>	Brown Creeper	-	POSS
<i>Troglodytes aedon</i>	House Wren	-	CONF
<i>Troglodytes hiemalis</i>	Winter Wren	-	POSS

Scientific Name	Common Name	S RANK	Category
<i>Regulus satrapa</i>	Golden-crowned Kinglet	-	POSS
<i>Sialia sialis</i>	Eastern Bluebird	-	CONF
<i>Catharus fuscescens</i>	Veery	-	PROB
<i>Turdus migratorius</i>	American Robin	-	CONF
<i>Dumetella carolinensis</i>	Gray Catbird	-	CONF
<i>Mimus polyglottos</i>	Northern Mockingbird	-	CONF
<i>Toxostoma rufum</i>	Brown Thrasher	-	CONF
<i>Sturnus vulgaris</i>	European Starling	-	CONF
<i>Bombycilla cedrorum</i>	Cedar Waxwing	-	CONF
<i>Vermivora cyanoptera</i>	Blue-winged Warbler	-	POSS
<i>Leiothlypis ruficapilla</i>	Nashville Warbler	-	POSS
<i>Setophaga petechia</i>	Yellow Warbler	-	CONF
<i>Setophaga virens</i>	Black-throated Green Warbler	-	CONF
<i>Setophaga pinus</i>	Pine Warbler	-	PROB
<i>Mniotilta varia</i>	Black-and-white Warbler	-	POSS
<i>Setophaga ruticilla</i>	American Redstart	-	CONF
<i>Seiurus aurocapilla</i>	Ovenbird	-	PROB
<i>Parkesia noveboracensis</i>	Northern Waterthrush	-	PROB
<i>Geothlypis philadelphia</i>	Mourning Warbler	-	CONF
<i>Geothlypis trichas</i>	Common Yellowthroat	-	CONF
<i>Pipilo erythrophthalmus</i>	Eastern Towhee	-	PROB
<i>Spizella passerina</i>	Chipping Sparrow	-	CONF
<i>Spizella pallida</i>	Clay-colored Sparrow	-	CONF
<i>Spizella pusilla</i>	Field Sparrow	-	PROB
<i>Pooecetes gramineus</i>	Vesper Sparrow	-	PROB
<i>Passerculus sandwichensis</i>	Savannah Sparrow	-	CONF
<i>Melospiza melodia</i>	Song Sparrow	-	CONF
<i>Piranga olivacea</i>	Scarlet Tanager	-	POSS
<i>Cardinalis cardinalis</i>	Northern Cardinal	-	CONF
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	-	CONF
<i>Passerina cyanea</i>	Indigo Bunting	-	CONF

Scientific Name	Common Name	S RANK	Category
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	-	CONF
<i>Quiscalus quiscula</i>	Common Grackle	-	CONF
<i>Molothrus ater</i>	Brown-headed Cowbird	-	CONF
<i>Icterus spurius</i>	Orchard Oriole	-	CONF
<i>Icterus galbula</i>	Baltimore Oriole	-	CONF
<i>Haemorhous mexicanus</i>	House Finch	-	PROB
<i>Spinus tristis</i>	American Goldfinch	-	CONF
<i>Passer domesticus</i>	House Sparrow	-	CONF



Appendix B

Species at Risk Screening Sources

Table A 2. SAR screening resources

Screening Resource	Description
Natural Heritage Information Center (NHIC)	The Natural Heritage Information Center (NHIC), operated by the Ontario Ministry of Natural Resources and Forestry, collects, reviews, manages and distributes information on Ontario's biodiversity. Data distributed by the NHIC is used in conservation and natural resource management decision making and was a primary resource for this report. Through the NHIC Make-a-Map tool, data on species, plant communities, wildlife concentration areas and natural areas is made accessible to the public and professionals using generalized 1-kilometer grid units to protect sensitive information. The mapping interface provides current and historical occurrences of SAR within the specified grid unit. The database also identifies environmental designations which provide insight into habitat potential including wetland, areas of natural and scientific interests and woodlands.
Breeding Bird Atlas	The atlas divides the province into 10×10 km squares and then birders find as many breeding species as possible in each square. Atlasers who know birds well by song complete 5-minute "Point Counts", 25 of which are required to provide an index of the abundance of each species in a square. Data from every square are mapped to show the distribution of each species. Point count data from each square show how the relative abundance of each species varies across the province.
eBird	eBird data document bird distribution, abundance, habitat use, and trends through checklist data collected within a simple, scientific framework. Birders enter when, where, and how they went birding, and then fill out a checklist of all the birds seen and heard during the outing. eBird's free mobile app allows offline data collection anywhere in the world, and the website provides many ways to explore and summarize your data and other observations from the global eBird community. eBird hotspots that are within 1 km of the Study Area are selected for species review.
Ontario Moth Atlas	The Ontario Moth Atlas is a project of the Toronto Entomologists' Association. The atlas currently covers about 250 species from 7 of the best-known families. The atlas presently includes 62,000 records. The last update of the atlas was in April 2020. The atlas is updated at least every 3 months. Most atlas data come from iNaturalist records. However, there is some data from Chris Schmidt of Agriculture Canada, the BOLD (Barcode of Life Datasystems) project of the University of Guelph, and from other records submitted directly to the TEA. The atlas uses the same 10×10 km squares at the Breeding Bird Atlas.
Ontario Butterfly Atlas	The Ontario Butterfly Atlas is a project of the Toronto Entomologists' Association (TEA). The TEA has been accumulating records and publishing annual seasonal summaries (Ontario Lepidoptera) for 50 years, with the first edition appearing in 1969. Atlas data comes from eButterfly records, iNaturalist records, BAMONA records, and records submitted directly to the TEA. The atlas uses the same 10×10 km squares at the Breeding Bird Atlas.
i-Naturalist	i-Naturalist is a nature app that helps public identify plants and animals. Using algorithms as well as scientists and taxonomic experts' multiple observations can be identified at a research scale. This data generated by the iNat community can be used in science and conservation. The program actively distributes the data in venues where scientists and land managers can find it. I-Naturalist has a project group for (NHIC) Rare species of Ontario. GRA only records observations with-in 1 km of the Study Area.
Fisheries and Ocean Aquatic Species at Risk Maps	The DFO has compiled critical habitat and distribution data for aquatic species listed under the Species at Risk Act (SARA). The interactive map is intended to provide an overview of the distribution of aquatic species at risk and the presence of their critical habitat within Canadian waters. The official source of information is the Species at Risk Public Registry. Using this map, a 1 km radius circle is outlined around aquatic features located within the Study Area.



Appendix C

SWH Full Assessment (6E)

Table A 3. Significant Wildlife Habitat Screening (6E)

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Seasonal Concentration Areas of Animal					
Waterfowl Stopover and Staging Areas (Terrestrial)	CUM, CUT1 - plus evidence of annual spring flooding within these ecosites *Fields with seasonal flooding and waste grains in certain areas are specific to Tundra Swan	Fields with sheet water during Spring (mid-March to May) •agricultural fields with waste grain are not SWH unless they have spring sheet water available.	No	No habitat features on site or species aggregation.	•Any mixed species aggregations of 100+ individuals • the flooded field plus 100-300m radius, dependant on localized site and adjacent land us • Annual Use of Habitat is documented from information sources or field studies •Specific evaluation methods required
Waterfowl Stopover and Staging Areas (Aquatic)	MAS1,MAS2,MAS3,SAS1,SAM1,S AF1,SWD1,SWD2,SWD3,SWD4,S WD5,SWD6,SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. • Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify.	No	No habitat features on site.	•Aggregations of 100 + of species listred for 7 days, results in > 700 waterfowl use days. •Areas with annual staging for ruddyducks, canvasbacks and redheads. •The combined area of the ELC ecosites and a 100m radius area. •Wetland area and shorelines associated with sites identified within the SWHTG, Appendix

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					<p>K, are significant wildlife habitat.</p> <ul style="list-style-type: none"> • Annual Use of Habitat is documented from information sources or field studies • Specific evaluation methods required
Shorebird Migratory Stopover Area	BBO1,BBO2,BBS1,BBS2,BBT1,BBT2,SDO1,SDS2,SDT1,MAM1,MAM2,MAM3,MAM4,MAM5	<ul style="list-style-type: none"> • Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores in May to mid-June and early July to October. • No sewage treatment or storm water management ponds. 	No	<p>No habitat features on site.</p>	<ul style="list-style-type: none"> • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. • Annual Use of Habitat is documented from information sources or field studies • Specific evaluation methods required
Raptor Wintering Area	Combo of one of each Community Series from one of each: Forest (FOD,FOM,FOC) and Upland (CUM,CUT,CUS,CUW). Bald Eagle: Forest on shoreline area adjacent to large rivers and lakes.	<p>A combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</p> <ul style="list-style-type: none"> • Need to be > 20 ha. 	No	<p>No habitat features on site.</p>	<ul style="list-style-type: none"> • One or more Short-eared Owls or; • One of more Bald Eagles or; • At least 10 individuals and two of the listed hawk/owl species.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> •Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water and large trees and snags available for roosting . 			<ul style="list-style-type: none"> •To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. •for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. • Specific evaluation methods required
Bat Hibernacula	CCR1,CCR2,CCA1,CCA2. * buildings are not to be considered SWH	May be found in caves, mine shafts, underground foundations and Karsts. •Active mine sites are not considered SWH.	No	No habitat features on site.	<ul style="list-style-type: none"> •All sites with confirmed hibernating bats are SWH. • area includes 200m radius around the entrance of the hibernaculum for most development types and 1000m for wind farms. •Studies are to be conducted during the peak swarming period (Aug. – Sept.). • Specific survey methods required
Bat Maternity Colonies	All Ecosites in: FOD,FOM,SWD,SWM.	Maternity colonies can be found in tree cavities, vegetation and often in building. *Buildings are not considered SWH.	Yes	Tree snags observed on site	<ul style="list-style-type: none"> •Confirmed use by: >10 Big Brown Bats >5 Adult female Silver Haired Bats. •The area of the habitat includes the entire woodland or a forest stand ELC Ecosite

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> • Not found in caves or mines in ON. • Located in Mature Deciduous or mixed forest stands with > 10/ha large diameter (>25cm dbh) wildlife trees. • Prefer snags in early stages of decay (class 1-3 or class 1 or class 2). • Silver-haired Bats prefer older mixed or deciduous forests with at least 21 snags/ha. 			<p>or an Ecoelement containing the maternity colonies.</p> <ul style="list-style-type: none"> • Specific evaluation methods required
Turtle Wintering Areas	Snapping and Midland Painted: SW,MA,OA,SA and FEO/BOO Series. Northern Map: Open water areas such as deeper rivers or streams and lakes.	<p>Wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates.</p> <ul style="list-style-type: none"> • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. <p>*Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</p>	No	No habitat features on site.	<ul style="list-style-type: none"> • Presence of 5 over-wintering Midland Painted Turtles is significant • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant • The mapped ELC ecosite area with the over wintering turtles is the SWH. • If the hibernation site is within a stream or river, the deepwater pool where the turtles are over wintering is the SWH.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					<ul style="list-style-type: none"> • Search for congregations in Basking Areas in spring and fall.
Reptile Hibernaculum	<p>Any ecosite other than very wet.</p> <ul style="list-style-type: none"> • Talus, Rock Barren, Crevice, Cave, Alvar may be directly related. • Observations of congregations in spring or fall is good indicator. 	<p>Sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.</p> <ul style="list-style-type: none"> • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. 	No	No habitat features on site.	<ul style="list-style-type: none"> • Presence of snake hibernacula used by <ul style="list-style-type: none"> - a minimum of five individuals of a snake sp. or; - individuals of two or more snake spp.. • Congregations of <ul style="list-style-type: none"> - a minimum of five individuals of a snake sp. or; - individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct). • If there are Special Concern Species present, then site is SWH. • The feature in which the hibernacula is located plus a 30 m radius area is the SWH. • Hibernacula are used annually, often by the same individuals (strong site fidelity) and other life processes often take place near by

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> •Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures 			
Colonially-Nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns. CUM1,CUS1,BLS1,CLO1,CLT1,CUT1,BLO1,BLT1,CLS1.	Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area *does not include man-made structures, recently (2 years) disturbed soil areas or licenced Mineral Aggregate Operation.	No	No habitat features on site.	<ul style="list-style-type: none"> •Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. •Field surveys to observe and count swallow nests are to be completed during the breeding season. • Specific evaluation methods required
Colonially-Nesting Bird Breeding Habitat (Tree/Shrub)	SWM2,SWM3,SWM5,SWM6,SWD1,SWD2,SWD3,SWD4,SWD5,SWD6,SWD7,FET1	Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. <ul style="list-style-type: none"> •Most nests in trees are 11 to 15 m from ground, near the top of the tree. 	No	No habitat features on site.	<ul style="list-style-type: none"> •Presence of 5 or more active nests of Great Blue Heron or other listed species. •The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. •Confirmation of active heronries are to be

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells.
Colonially-Nesting Bird Breeding Habitat (Ground)	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6; MAS1 – 3; CUM,CUT,CUS	Nesting colonies on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands.	No	No habitat features on site.	<ul style="list-style-type: none"> • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. • Studies would be done during May/June when actively nesting. • Specific evaluation methods required

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Migratory Butterfly Stopover Areas	Combo of one of each Field (CUM, CUT, CUS) and Forest (FOC, FOD,FOM,CUP).	<p>Minimum 10 ha in size with combo of field and forest located within 5km of Lake Erie or Lake Ontario.</p> <ul style="list-style-type: none"> •Should not be disturbed. • Field/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. •Should provide protection from the elements, often spits of land or areas with the shortest distance to cross the Great Lakes. 	No	No habitat features on site.	<ul style="list-style-type: none"> •Presence of Monarch Use Days (MUD) during Fall migration (Aug/Oct) •Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. •MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.
Landbird Migratory Stopover Areas	All Ecosites within: FOC,FOM,FOD,SWC,SWM,SWD	<p>Woodlots >10ha in size and within 5km of Lake Erie and Lake Ontario.</p> <ul style="list-style-type: none"> • If woodlands are rare in area, smaller size can be considered. • If multiple woodlands located along shore line, those <2km from shoreline are more significant. • Sites have a variety of habitats; forest, grassland and wetland complexes. 	No	No habitat features on site.	<ul style="list-style-type: none"> •Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. •Studies should be completed during spring (Mar to May) and fall (Aug to Oct) migration using standardized assessment techniques. • Specific evaluation methods required

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> •The largest sites are more significant. •Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Erie and Lake Ontario are Candidate SWH. 			
Deer Yarding Areas	<p>Note: OMNRF to determine this habitat.</p> <p>ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC.</p> <p>Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT</p>	<p>Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow</p>	No	<p>Based on a review of Land Information Ontario (LIO) mapping, no Deer Yards exist on the Subject Property</p>	<p>No Studies Required:</p> <ul style="list-style-type: none"> • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via LIO. • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<p>depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter.</p> <ul style="list-style-type: none"> • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. • OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual. • Woodlots with high densities of deer due to artificial feeding are not significant 			<p>the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations.</p> <ul style="list-style-type: none"> • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Deer Winter Congregation Areas	All forested ecosites within: FOC,FOM,FOD,SWC,SWM,SWD + conifer plantations much smaller than 50 ha may be used.	Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. *Woodlots with high densities of deer due to artificial feeding are not significant.	No	No habitat features on site.	<ul style="list-style-type: none"> • Will be mapped by MNRF. • All woodlots exceeding the criteria are significant unless determined to be not by the MNRF. • Studies to be completed during winter when >20 cm of snow is on the ground, using aerial survey or pellet count.
Rare Vegetation Communities					
Cliffs and Talus Slopes	Any Ecosite within: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky	No	No habitat features on site.	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		debris. Most cliff and talus slopes occur along the Niagara Escarpment.			
Sand Barren	SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicketlike (SBS1), or more closed and treed (SBT1). Tree cover always < or equal to 60%	A sand barren area >0.5ha in size. • Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. • Vegetation can vary from patchy and barren to tree covered, but less than 60%.	No	No habitat features on site.	<ul style="list-style-type: none"> •Confirm any ELC Vegetation Type for Sand Barrens. •Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.
Alvar	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2, Five Alvar Indicator Species: 1) Carex crawei 2) Panicum philadelphicum 3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema brachiatum	An Alvar site > 0.5 ha in size, only known sites are found in the western islands of Lake Erie. • An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with	No	No habitat features on site.	<ul style="list-style-type: none"> •Studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). •The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		alternating periods of inundation and drought. • Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. • Vegetation cover varies from patchy to barren with a less than 60% tree cover.			
Old Growth Forest	FOD FOC FOM SWD SWC SWM	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. • Characterized by heavy mortality or turnover of overstorey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	No	No habitat features on site.	• If dominant trees species of the area are >140 years old, then the area containing these trees is Significant Wildlife Habitat. • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities • The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					<ul style="list-style-type: none"> Determine ELC vegetation types for the forest forest area containing the old growth characteristics
Savannah	TPS1 TPS2 TPW1 TPW2 CUS2	<p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.</p> <ul style="list-style-type: none"> No minimum size to site. Site must be restored or a natural site. <p>*Remnant sites such as railway right of ways are not considered to be SWH.</p>	No	<p>No habitat features on site.</p>	<ul style="list-style-type: none"> Field studies confirm one or more of the Savannah indicator species found in Appendix N, Ecoregion 6E of the SWHTG, OMNR (2000). Entire area of the ELC Ecosite is SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic species).
Tallgrass Prairie	TPO1 TPO2	<p>A Tallgrass Prairie has ground cover dominated by prairie grasses.</p> <ul style="list-style-type: none"> An open Tallgrass Prairie habitat has < 25% tree cover. No minimum size to site. Site must be restored or a natural site. <p>*Remnant sites such as railway right of ways are not considered to be SWH.</p>	No	<p>No habitat features on site.</p>	<ul style="list-style-type: none"> Field studies confirm one or more of the Prairie indicator species in Appendix N, Ecoregion 6E of The SWHTG, OMNR (2000). Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.)
Other Rare Vegetation Communities	See the Significant Wildlife Habitat Technical Guide (OMNR, 200), Appendix M for Provincially Rare S1,S2 and S3 ELC Vegetation Types.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M.	No	<p>No habitat features on site.</p>	<ul style="list-style-type: none"> Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> •May include beaches, fens, forest, marsh, barrens, dunes and swamps. See OMNRF/NHIC for up to date list of rare vegetation communities. 			<p>Appendix M of SWHTG, OMNR (2000).</p> <ul style="list-style-type: none"> •Area of the ELC Vegetation Type polygon is the SWH.
Specialized Habitat for Wildlife					
Waterfowl Nesting Area	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4. * Note: includes adjacency to Provincially Significant Wetlands</p>	<p>A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur.</p> <ul style="list-style-type: none"> •Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. 	No	<p>No habitat features on site.</p>	<ul style="list-style-type: none"> •Presence of 3 or more nesting pairs for listed species excluding Mallards OR •Presence of 10 or more nesting pairs for listed species including Mallards. •Any active nesting site of an American Black Duck is considered significant. •Nesting studies should be completed during the spring breeding season (April - June). •Specific evaluation methods required •A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <p>*Nests located on man-made objects are not to be included as SWH.</p> <p>•Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy.</p>	No	<p>No habitat features on site.</p>	<p>One or more active Osprey or Bald Eagle nests in an area.</p> <ul style="list-style-type: none"> •Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. •For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH. *with additional requirements •For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. * with additional requirements •To be significant a site must be used annually. •When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. •Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid August. • Specific evaluation methods required

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Woodland Raptor Nesting Habitat	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	<p>All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat.</p> <ul style="list-style-type: none"> • Interior habitat determined with a 200m buffer. • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. 	No	<p>No habitat features on site.</p>	<p>Presence of 1 or more active nests from species list is considered significant.</p> <ul style="list-style-type: none"> • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest) • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk, – A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Turtle Nesting Areas	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. •For an area to function as a turtlenesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. *Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.	No	No habitat features on site.	Presence of: - 5 or more nesting Midland Painted Turtles OR - One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. •The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. •Field investigations should be conducted in prime nesting season typically late spring to early summer. •Observational studies observing the turtles nesting is a recommended method.
Seeps and Springs	Where ground water comes to the surface. Often they are found within headwater areas within forested habitats. •Any forested Ecosite within the	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.	No	No habitat features on site.	Presence of a site with 2 or more seeps/springs should be considered SWH. •The area of a ELC forest ecosite or an ecoelement

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
	headwater areas of a stream could have seeps/springs.				within ecosite containing the seeps/springs is the SWH. •The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.
Amphibian Breeding Habitat (Woodland)	<p>All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD</p> <p>•Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.</p>	<p>Presence of a wetland, pond or woodland pool (including vernal pools) >500m² (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size).</p> <p>• Some small wetlands may not be mapped and may be important breeding pools for amphibians.</p> <p>•Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.</p>	No	No habitat features on site.	<p>Presence of breeding population of:</p> <ul style="list-style-type: none"> - 1 or more of the listed newt/salamander species or - 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or - 2 or more of the listed frog species with Call Level Codes of 3. <p>•A combo fo observational and call count surveys required during the spring (March-June) .</p> <p>•The habitat is the wetland area plus a 230m radius of woodland area.</p> <p>• If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.</p>

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Amphibian Beeding Habitat (Wetlands)	ELC Community Classes SW, MA, FE, BO, OA and SA. •Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	Wetlands >500m ² (about 25m diameter), supporting high species diversity are significant; •some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. •Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation.	No	No habitat features on site.	Presence of breeding population of: -1 or more of the listed newt/salamander species or -2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or -2 or more of the listed frog/toad species with Call Level Codes of 3. or; -Wetland with confirmed breeding Bullfrogs are significant. •The ELC ecosite wetland area and the shoreline are the SWH. •A combo of observational and call count surveys will be required during the spring (March-June). •If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered.
Woodland Area-Sensitive Bird Breeding Habitat	All Ecosites withing: FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha.	No	No habitat features on site.	Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. *any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> •Interior forest habitat is at least 200 m from forest edge habitat. 			<ul style="list-style-type: none"> • Conduct field investigations in spring and early summer. • Specific evaluation methods required
Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)					
Marsh Bird Breeding Habitat	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites	Nesting occurs in wetlands. All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. •For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water..	No	No habitat features on site.	Presence of: - 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes or; -breeding by any combination of 5 or more of the listed species. •any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. •Area of the ELC ecosite is the SWH. •Breeding surveys should be done in May/June. • Specific evaluation methods required
Open Country Bird Breeding Habitat	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha. •Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay	No	No habitat features on site.	Presence of nesting or breeding of: -2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<p>or livestock pasturing in the last 5 years).</p> <ul style="list-style-type: none"> •Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. •The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. 			<ul style="list-style-type: none"> •The area of SWH is the contiguous ELC ecosite field areas. •Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Specific evaluation methods required.
Shrub/Early Successional Bird Breeding Habitat	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <ul style="list-style-type: none"> •Patches of shrub ecosites can be complexed into a larger habitat for some bird species. 	<p>Large field areas succeeding to shrub and thicket habitats > 10ha in size.</p> <ul style="list-style-type: none"> •Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no rowcropping, haying or livestock pasturing in the last 5 years). •Shrub thicket habitats (> 10 ha) are most likely to support and sustain a diversity of these species. 	No	<p>No habitat features on site.</p>	<p>Presence of nesting or breeding of</p> <ul style="list-style-type: none"> - 1 of the indicator species and at least 2 of the common species. •A habitat with breeding Yellowbreasted Chat or Golden-winged Warbler is to be considered as SWH. •The area of the SWH is the contiguous ELC ecosite field/thicket area. •Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. 			<ul style="list-style-type: none"> • Specific evaluation methods required
Terrestrial Crayfish	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1- with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish.	<p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> • Usually the soil is not too moist so that the tunnel is well formed. • Can often be found far from water. 	No	No habitat features on site.	<p>Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites.</p> <ul style="list-style-type: none"> • Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. • Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult.
Special Concern and Rare Wildlife Species	All plant and animal element occurrences (EO) within a 1 or 10km grid. All Special Concern and Provincially Rare plant and animal species.	identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites	N/A	See SAR Screening Section	<p>Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable.</p> <ul style="list-style-type: none"> • The area of the habitat to the finest ELC scale that protects

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.
Animal Movement Corridors					
Amphibian Movement Corridors	Corridors may be found in all ecosites associated with water.	Corridors will be determined based on identifying the significant breeding habitat for these species. Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from this Schedule.	No	No habitat features on site.	Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Deer Movement Corridors	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	<p>Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH.</p> <p>A deer wintering habitat identified by the OMNRF as SWH will have corridors that the deer use during fall migration and spring dispersion</p> <ul style="list-style-type: none"> Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). 	No	<p>No habitat features on site.</p>	<ul style="list-style-type: none"> Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway Shorter corridors are more significant than longer corridors.
Exceptions for EcoRegion 6E					
<p>Mast Producing Areas (Black Bear)</p> <ul style="list-style-type: none"> EcoDistrict 6E-14 	All Forested habitat represented by ELC Community Series: FOM FOD	<p>Black bears require forested habitat that provides cover, winter hibernation sites, and mastproducing tree species.</p> <ul style="list-style-type: none"> Forested habitats need to be large enough to provide cover and protection for black bears <p>Criteria</p>	No	<p>Site not located within EcoDistrict 6E-14</p>	<ul style="list-style-type: none"> All woodlands >30 ha with a 50% composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		<ul style="list-style-type: none"> •Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech) 			
Lek (Sharp-tailed grouse) •EcoDistrict 6E-17	CUM CUS CUT	The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. • Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated. Criteria •Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) • Leks will be used annually if not destroyed	No	Site not located within EcoDistrict 6E-17	Studies confirming lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		by cultivation or invasion by woody plants or tree planting			

Appendix D

Tree Inventory



**Tree Inventory and Preservation Plan Report
13290 Nunnville Road
Caledon, Ontario**

prepared for

**Bolton Summit Developments Inc.
6198 Tremaine Court
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KUNTZ FORESTRY CONSULTING Inc. Project P3110

Introduction

Kuntz Forestry Consulting Inc. was retained by Bolton Summit Developments Inc. to complete a Tree Inventory and Preservation Plan Report in support of a development application for the property at 13290 Nunnville Road in the Town of Caledon, Ontario. The subject property is located on the north end of Nunnville Road, within a residential area

The work plan for this study included the following:

- Prepare inventory of the tree resources over 10cm on and within six metres of the proposed development;
- Evaluate tree saving opportunities based on proposed site plans and grading; and,
- Document the findings in a Tree Inventory and Preservation Plan report.

Trees included were visually assessed for condition utilizing the following parameters:

Tree # - number assigned to trees that corresponds to Figure 1.

Species - common and botanical names provided in the inventory table.

DBH - diameter (centimeters) at breast height, measured at 1.4 m above the ground.

Condition - condition of tree considering trunk integrity (TI), crown structure (CS) and crown vigor (CV). Condition ratings include poor (P), fair (F), and good (G);

Crown Die Back – Percentage of dead branches within the crown.

Drip Line - Crown radius; and

Comments – Any other relevant tree condition information.

The results of the evaluation are provided below.

Methodology

Trees measuring over 10cm DBH on and within six metres of the proposed development were identified included in the tree inventory. Trees were located using a handheld GPS unit (Trimble GeoExplorer® 6000 series) accurate to ±1m. Trees included in the inventory were identified with numbers 289-300 and 401-459. Trees located on the neighbouring properties are identified with letters A-C. Tree locations are shown on Figure 1. See Table 1 for the results of the inventory.

Existing Site Conditions

The subject property is currently occupied by one residential dwelling, a shed, and an asphalt driveway. There is a woodlot on the west and east side of the subject property regulated by the Toronto and Region Conservation Authority (TRCA). Tree resources exist in the form of landscape trees and natural generations. Refer to Figure 1 for the existing site conditions.

Individual Tree Resources

The tree inventory was conducted on 11 March 2022. The inventory documented 74 trees on and within six metres of the proposed development. Refer to Table 1 for the full tree inventory and Figure 1 for the location of tree reported in the tree inventory.

Tree resources included in the inventory are Freeman Maple (*Acer x freemanii*), Manitoba Maple (*Acer negundo*), Norway Maple (*Acer platanoides*), Shademaster Honey Locust (*Gleditsia triacanthos 'inermis'*), Black Walnut (*Juglans nigra*), Apple Species (*Malus spp.*), White Mulberry (*Morus alba*), White Spruce (*Picea glauca*), Blue Spruce (*Picea pungens*), Red Pine (*Pinus*

resinosa), Scots Pine (*Pinus sylvestris*), Bur Oak (*Quercus macrocarpa*), Red Oak (*Quercus rubra*), Ivory Silk Lilac (*Syringa reticulata* 'Ivory Silk'), and Eastern White Cedar (*Thuja occidentalis*).

The woodlot located on the west side of the subject property is dominated by invasive European Buckthorn (*Rhamnus cathartica*) with scattered Hawthorns (*Crataegus spp.*). This woodlot can be a candidate for restoration opportunities.

Proposed Development

The proposed development includes the demolition of the existing dwelling and the construction of 15 townhouses and associated driveway. Refer to Figure 1 for the proposed development.

Discussion

The following sections provide a discussion and analysis of development impacts, tree removal requirements and tree preservation relative to the proposed development.

Development Impacts/Tree Removals

The removal of 39 trees is required to accommodate the proposed development. Required tree removals include Trees 290-300, 401-408, 426, 442, 444-459, B and C. Trees 295-300, 401-406 and C are located within the Town road right-of-way; the remaining trees for removal are located within the subject property. Refer to Figure 1 for the location of the proposed tree removals.

During the construction and prior to the final approval by the Town of Caledon, KFCI staff along with appropriate Town staff shall inspect the entire site. Any noted hazardous trees must be identified and removed prior to final approval. No additional hazard tree monitoring will be required as all hazard trees should be removed prior to the proposed development. All tree removals must be conducted outside of the bird breeding season (April 1st – August 1st).

The owner must retain the same Certified Arborist to carry out the recommendations in TIPP report to the satisfaction of the Town. A certification letter will be provided by a Certified Arborist that tree removals have been completed as per the approved TIPP report. An additional certification letter from the same Arborist that confirms any long-term requirements and recommendations in the report have been carried out.

The owner is solely responsible for ongoing maintenance and repairs to tree protection fencing throughout the proposed development.

Tree Preservation

The preservation of the remaining 35 trees will be possible with appropriate tree protection measures. Recommended tree preservation includes Trees 289, 409-425, 427-441, 443, and A. Sediment and erosion control fencing should be sufficient as tree protection fencing. Refer to Figure 1 for the location of prescribed tree preservation fencing, further tree preservation plan notes and the tree protection fencing detail.

Areas within the tree protection zone shall remain undisturbed for the duration of site construction and shall not be used for the storage of excavated fill, building/construction materials, or equipment.

The limit of tree protection hoarding shall be confirmed in the field by the consulting arborist, Town staff, and conservation authority (if applicable). The Owner/Applicant shall be responsible for ongoing maintenance and repairs to the tree protection fencing to the satisfaction of the Town, until final approval by the Town and conservation authority (if applicable). The Owner/Applicant shall not remove and not cause or permit any tree preservation fencing to be removed without the approval of the Town and conservation authority (if applicable).

Tree Compensation

The Town of Caledon requires tree compensation for any healthy tree removal. The compensation ratio is below:

Diameter at Breast Height (DBH)	Compensation Ratio
<10cm	Not applicable
10-20cm	1:1
21-35cm	2:1
36-50cm	3:1
51-65cm	4:1
>65cm	5:1

The removal of 22 private trees is proposed to accommodate the proposed site plan. Trees 455 and 457 are in poor condition and not applicable to compensation requirements. As such, a total of 38 replacement plantings is required on the subject property. Refer to Landscape Plan for the planting plan.

Summary and Recommendations

Kuntz Forestry Consulting Inc. was retained by Bolton Summit Developments Inc. to complete a Tree Inventory and Preservation Plan in support of a development application for the property located at 13290 Nunnville Road in Caledon, Ontario. A tree inventory was conducted and reviewed in the context of the proposed development plan.

The findings of the study indicate a total of 74 trees on and within six metres of the proposed development. The removal of 39 trees is required to accommodate the proposed development. The preservation of the remaining 35 trees will be possible with appropriate tree protection measures.

The following recommendations are suggested to minimize impacts to trees identified for preservation. Refer to Figure 1 for additional Tree Protection Plan Notes and tree preservation fence detail.

- Tree protection barriers and fencing should be erected at locations as prescribed on Figure 1. All tree protection measures should follow the guidelines as set out in the tree preservation plan notes and the tree preservation fencing detail.
- No construction activity including surface treatments, excavations of any kind, storage of materials or vehicles, unless specifically outlined above, is permitted within the area identified on Figure 1 as a tree protection zone (TPZ) at any time during or after construction.
- Site visits, pre, during and post construction is recommended by either a certified consulting arborist (I.S.A.) or registered professional forester (R.P.F.) to ensure proper utilization of tree

protection barriers. Trees should also be inspected for damage incurred during construction to ensure appropriate pruning or other measures are implemented.

**Respectfully Submitted,
Kuntz Forestry Consulting Inc.**

Kaho Hayashi

Kaho Hayashi, B.Sc., M.Sc.F.
Associate Forest Ecologist
ISA Certified Arborist #ON-2153A

Table 1. Tree InventoryLocation: 13290 Nunnville Road, CaledonDate: 11 March 2022Surveyors: KH

Tree #	Common Name	Scientific Name	DBH	TI	CS	CV	CDB	DL	Comments	Owner	Action	Comp.
289	Red Oak	<i>Quercus rubra</i>	11.0	FG	G	G		1.5	Seam (L)	Town	Preserve	
290	Red Pine	<i>Pinus resinosa</i>	5.5	G	G	G		1.0		Town	Remove	-
291	Freeman Maple	<i>Acer x freemanii</i>	4, 3.5	FG	G	G		1.0	Union at base	Town	Remove	-
292	Scots Pine	<i>Pinus sylvestris</i>	8.0	G	G	G		1.0		Town	Remove	-
293	Freeman Maple	<i>Acer x freemanii</i>	8, 7.5	FG	G	G		1.5	Co-dominance at 0.1m	Town	Remove	-
294	Freeman Maple	<i>Acer x freemanii</i>	8.0	G	G	G		1.0		Town	Remove	-
295	Freeman Maple	<i>Acer x freemanii</i>	6.5	G	G	G		1.0		Town	Remove	-
296	White Spruce	<i>Picea glauca</i>	10.5	G	G	G		1.0	Crook (L)	Town	Remove	-
297	Freeman Maple	<i>Acer x freemanii</i>	6.5	G	G	G		1.0		Town	Remove	-
298	Scots Pine	<i>Pinus sylvestris</i>	7.5	G	G	G		1.0		Town	Remove	-
299	Freeman Maple	<i>Acer x freemanii</i>	5.5	G	G	G		1.0		Town	Remove	-
300	White Spruce	<i>Picea glauca</i>	13.0	G	G	G		1.5		Town	Remove	-
401	Freeman Maple	<i>Acer x freemanii</i>	5.0	G	G	G		1.0		Town	Remove	-
402	Scots Pine	<i>Pinus sylvestris</i>	11.0	G	G	G		1.0		Town	Remove	-
403	White Spruce	<i>Picea glauca</i>	13.5	FG	G	FG		1.5	Co-dominance at 1.6m	Town	Remove	-
404	Scots Pine	<i>Pinus sylvestris</i>	14.0	G	G	G		1.5		Town	Remove	-
405	White Spruce	<i>Picea glauca</i>	13.5	G	G	G		1.5		Town	Remove	-
406	White Spruce	<i>Picea glauca</i>	14.0	G	G	G		1.5		Town	Remove	-
407	Bur Oak	<i>Quercus macrocarpa</i>	12.0	G	G	G		2.0		Private	Remove	1
408	Scots Pine	<i>Pinus sylvestris</i>	20.0	G	G	F		1.5		Private	Remove	1
409	Manitoba Maple	<i>Acer negundo</i>	24, 18	P	PF	F	20	4.0	Union at base, lean (L-M), deadwood, crook (M), broken branches (M), epicormic branches (H)	Private	Preserve	
410	Scots Pine	<i>Pinus sylvestris</i>	12.0	G	G	FG		1.5		Private	Preserve	
411	Scots Pine	<i>Pinus sylvestris</i>	10.5	G	G	G		1.0		Private	Preserve	
412	Scots Pine	<i>Pinus sylvestris</i>	12.0	G	G	FG		1.5		Private	Preserve	
413	Norway Maple	<i>Acer platanoides</i>	11.5	FG	G	G		2.0	Co-dominance at 1.6m, crook (M)	Private	Preserve	
414	White Mulberry	<i>Morus alba</i>	11, 10	FG	G	G		2.0	Co-dominance at 1.5m	Private	Preserve	
415	Eastern White Cedar	<i>Thuja occidentalis</i>	15, 14	FG	G	FG		1.5	Co-dominance at 0.3m	Private	Preserve	
416	Eastern White Cedar	<i>Thuja occidentalis</i>	20.0	G	FG	G		1.5	Asymmetrical crown (M)	Private	Preserve	
417	Eastern White Cedar	<i>Thuja occidentalis</i>	18.5	FG	FG	FG		1.5	Co-dominance in crown, asymmetrical crown (M)	Private	Preserve	
418	Eastern White Cedar	<i>Thuja occidentalis</i>	15.0	G	G	FG		1.0		Private	Preserve	
419	Eastern White Cedar	<i>Thuja occidentalis</i>	15.0	G	G	F		1.0		Private	Preserve	
420	Eastern White Cedar	<i>Thuja occidentalis</i>	18.0	FG	G	F		1.0	Co-dominance at 3m	Private	Preserve	
421	Eastern White Cedar	<i>Thuja occidentalis</i>	15.5	G	FG	F		1.0	Asymmetrical crown (M)	Private	Preserve	
422	Eastern White Cedar	<i>Thuja occidentalis</i>	17.5	G	G	G		1.0		Private	Preserve	
423	Eastern White Cedar	<i>Thuja occidentalis</i>	16.5	G	G	F		1.0		Private	Preserve	
424	Eastern White Cedar	<i>Thuja occidentalis</i>	16.0	G	G	G		1.5		Town	Preserve	
425	Eastern White Cedar	<i>Thuja occidentalis</i>	11.0	G	G	F	15	1.0	Dead leader	Private	Preserve	
426	Honey Locust (shademaster)	<i>Gleditsia triacanthos inermis</i>	50.5	F	FG	FG		4.5	Co-dominance at 2.5m with 4 stems, pruning wounds (H) with rot, crook (M), epicormic branches (M)	Private	Remove	3
427	Black Walnut	<i>Juglans nigra</i>	17.0	G	G	G		2.0		Town	Preserve	
428	Apple Species	<i>Malus spp.</i>	10-18 (avg. 14)	F	FG	FG		3.0	Union at 0.5m with 5 stems, crook (M)	Town	Preserve	
429	Apple Species	<i>Malus spp.</i>	22, 10-15 (avg. 12)	FG	FG	FG		3.5	Union at base with 7 stems, crook (M)	Town	Preserve	
430	Manitoba Maple	<i>Acer negundo</i>	21.0	FG	G	FG		3.0	Co-dominance at 3.5m, crook (M), sweep (L)	Private	Preserve	
431	Manitoba Maple	<i>Acer negundo</i>	24, 21	FG	G	FG		3.5	Co-dominance at 1m with included bark (M), crook (M)	Private	Preserve	
432	Manitoba Maple	<i>Acer negundo</i>	23, 17.5	PF	FG	FG		5.0	Union at base, lean (H) to east, sweep (M)	Private	Preserve	
433	Scots Pine	<i>Pinus sylvestris</i>	24.0	G	G	G		2.5		Private	Preserve	
434	Scots Pine	<i>Pinus sylvestris</i>	27.5	G	G	G		3.0		Private	Preserve	
435	Scots Pine	<i>Pinus sylvestris</i>	23.0	G	G	G		3.0		Private	Preserve	
436	Scots Pine	<i>Pinus sylvestris</i>	25.0	G	G	G		3.0		Private	Preserve	
437	Scots Pine	<i>Pinus sylvestris</i>	22.0	G	G	G		3.0		Private	Preserve	
438	Scots Pine	<i>Pinus sylvestris</i>	28.5	G	G	G		3.5		Private	Preserve	
439	Scots Pine	<i>Pinus sylvestris</i>	24.0	FG	G	FG		3.0	Crook (M)	Private	Preserve	
440	Scots Pine	<i>Pinus sylvestris</i>	21.5	G	G	FG		3.0		Private	Preserve	
441	Scots Pine	<i>Pinus sylvestris</i>	19.5	G	G	FG		2.5		Private	Preserve	
442	Honey Locust (shademaster)	<i>Gleditsia triacanthos inermis</i>	59.0	FG	FG	FG		6.0	Co-dominance at 2m with 3 stems, asymmetrical crown (M)	Private	Remove	4
443	Manitoba Maple	<i>Acer negundo</i>	26.5	F	F	F	20	3.0	Co-dominance at 1.6m with included bark (M), lean (L), epicormic branches (M)	Private	Preserve	2
444	White Spruce	<i>Picea glauca</i>	45.5	FG	G	F	20	4.0	Lean (L), sparse crown (M)	Private	Remove	3
445	White Spruce	<i>Picea glauca</i>	47.5	G	G	F		3.0		Private	Remove	3
446	White Spruce	<i>Picea glauca</i>	35.5	G	G	F		2.5	Sparse crown (L)	Private	Remove	2
447	Blue Spruce	<i>Picea pungens</i>	25.0	G	G	F		1.5	Sparse crown (L)	Private	Remove	2
448	Blue Spruce	<i>Picea pungens</i>	23.5	FG	G	F	10	1.0	Crook (M), sparse crown (L)	Private	Remove	2
449	Blue Spruce	<i>Picea pungens</i>	23.0	G	G	F		1.0	Sparse crown (L)	Private	Remove	2
450	Honey Locust (shademaster)	<i>Gleditsia triacanthos inermis</i>	36.0	FG	G	FG		1.0	Co-dominance at 1.8m, pruning wounds (M), epicormic branches (M)	Private	Remove	3
451	Ivory Silk Lilac	<i>Syringa reticulata 'Ivory Silk'</i>	20.5	G	G	G		1.0		Private	Remove	1
452	Ivory Silk Lilac	<i>Syringa reticulata 'Ivory Silk'</i>	18.5	G	G	G		1.0		Private	Remove	1

453	Blue Spruce	<i>Picea pungens</i>	21.5	G	G	G		1.0		Private	Remove	2
454	White Spruce	<i>Picea glauca</i>	23.0	G	G	G		1.0		Private	Remove	2
455	Norway Maple	<i>Acer platanoides</i>	26.5	F	PF	F	25	1.0	Seam (L), lost leader	Private	Remove	0
456	Blue Spruce	<i>Picea pungens</i>	~13, 12, 10	FG	G	G		1.0	Union at base	Private	Remove	1
457	Norway Maple	<i>Acer platanoides</i>	46.0	P	PF	PF	40	1.0	Union at 1.6m and 2.5m with 3 stems, vertical crack at union, 1 stem lost leader, stem wound (H), broken branches (M)	Private	Remove	0
458	Norway Maple	<i>Acer platanoides</i>	11.0	G	G	G		1.0		Private	Remove	1
459	Blue Spruce	<i>Picea pungens</i>	17.5	G	G	F	10	1.0	Sparse crown (M)	Private	Remove	1
A	Black Walnut	<i>Juglans nigra</i>	17.0	G	G	G		2.0		Neighbour	Preserve	
B	Blue Spruce	<i>Picea pungens</i>	18.0	G	G	G		1.5		Private/ Neighbour	Remove	1
C	Red Oak	<i>Quercus rubra</i>	~30	G	G	G		4.0		Town	Remove	0
											TOTAL	38

Codes		
DBH	Diameter at Breast	(cm)
TI	Trunk Integrity	(G, F, P)
CS	Crown Structure	(G, F, P)
CV	Crown Vigor	(G, F, P)
CDB	Crown Die Back	(%)
DL	Dripline in radius	(m)
~ = estimate; (VL) - very light; (L) = light; (M) = moderate; (H) = heavy		

Appendix A. Photographs of Trees and Property



Image 1. Driveway – view from Nunnville Road (Tree C on left)



Image 2. Trees 289-300 along driveway



Image 3. Trees 300 and 401-408 on left and Trees 458-459 and N on right



Image 4. Trees 406-414



Image 5. Trees 415-425 (right), 427, 428



Image 6. Trees 426 (front), 428, 429



Image 7. Trees 430-438



Image 8. Trees 439-442



Image 9. Trees 443-444



Image 10. Trees 445-446



Image 11. Hedge along fence line on the southwest corner



Image 12. Trees 447-450



Image 13. Trees 451-454



Image 14. Trees 454-455



Image 15. Tree 456



Image 16. Tree 457



Image 17. Trees 458-459 and B

LEGEND

Tree Inventory

Refer to Table 1 or report dated 6 April 2022, last revised 6 March 2023.
Trees greater than 10cm DBH on and within 6 metres of the subject property,
and trees of all sizes within the road right-of-way were included in the
inventory.

Tree Removals

The removal of 39 trees is required to accommodate the proposed development as indicated with RED Labels.

Tree Preservation

Preservation of remaining 35 trees will be possible with appropriate tree protection measures. Trees identified for preservation are indicated with GREEN labels. Tree protection measures will have to be implemented prior to the construction phase (earth works). Minimum tree preservation zones and required tree preservation fencing is indicated in MAGENTA. Refer to Tree Protection Plan Notes for preservation details.

Tree Label (GREEN), preservation recommended

Tree Label (RED), removal required for development

Dripline (GREEN circle)

Estimated Tree Location by KFC

Location of required Tree Preservation Fence (thick
MAGENTA)

123

123



©

No.	Issue/Revisions	Date	By
1	Report Submission	6 Apr, '22	KH
2	Report Revision	10 Jan, '23	KH
3	Report Revision	14 Feb, '23	KH
4	Report Revision	6 Mar, '23	KH

Base Data: R-PE Surveying Ltd. (topo); WSP (site plan)



Client
Bolton Summit Developments Inc.
6198 Tremaine Court
Mississauga, Ontario L5V 4B5

Property
13290 Nunnville Road
Caledon, Ontario

Existing Conditions, Proposed Site Plan Tree Inventory and Preservation Plan

Project P3110

Figure

Date 6 April 2022

1

Scale 1:200