Preliminary Environmental Impact Statement

13290 NUNNVILLE ROAD, BOLTON ON

Prepared for

Bolton Summit Developments Inc.

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Mississauga ON
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Project No. P2022-612

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1. Introduction

GeoProcess Research Associates Inc. (GRA) been retained by Bolton Summit Developments Inc. to complete a preliminary 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" will refer to the Subject Property plus 120 metres of adjacent lands. It is GRA's 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 of 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 forementioned 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 polices 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 *ecological functi*on and biodiversity of *natural heritage systems*, should be maintained, restored or where possible, improved, recognizing linkages between and among *natural heritage features and areas*, *surface water features* and *ground water features*.
2.1.3	*Natural heritage systems* shall be identified in Ecoregions 6E & 7E, recognizing that *natural heritage systems* will vary in size and form in *settlement areas, rural areas*, and *prime agricultural areas*.
2.1.4	*Development* and site alteration shall not be permitted in: a) *significant wetlands* in Ecoregions 5E, 6E and 7E; and, b) *significant coastal wetlands*.
2.1.5	Development and site alteration shall not be permitted in: a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E and 7E; b) *significant woodlan*ds in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River); c) *significant valleylands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River); d) *significant wildlife habitat*; e) *significant areas of natural and scientific interest*; and f) *coastal wetlands* in Ecoregions 5E, 6E and 7E that are not subject to policy 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	*Development* and *site alteration* shall not be permitted in *fish habitat* except in accordance with *provincial and federal requirements*.
2.1.7	*Development and site alteration* shall not be permitted in *habitat of endangered species and threatened species*, except in accordance with *provincial and federal requirements*.
2.1.8	*Development* and *site alteration* shall not be permitted on *adjacent lands* to the *natural heritage features and areas* identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions*.

Policy Number	Policy
(2.2 - Water) 2.2.2	*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. Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore *sensitive surface water features*, *sensitive ground water features*, and their *hydrologic functions*.
(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) *hazardous lands* adjacent to the shorelines of the *Great Lakes - St. Lawrence River System* and *large inland lakes* which are impacted by *flooding hazards, erosion hazards* and/or *dynamic beach hazards*; b) *hazardous lands* adjacent to *river, stream* and *small inland lake systems* which are impacted by *flooding hazards* and/or *erosion hazards*; and c) *hazardous sites.*
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

b) 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

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. As per Section 2.3 *of the Greenlands System in Peel* in the ROP, the Greenlands System in Peel consists of Core Areas, Natural Areas and Corridors, and Potential Natural Areas and Cooridors. It is also stated in Section 2.3 that *Core Areas represent provincially and regionally significant features and areas and are considered a sub-set of what would be significant under the PPS.* The Greenlands System includes:

a) Areas of Natural and Scientific Interest (ANSIs)
b) Environmentally Sensitive or Significant Areas (ESAs)
c) Escarpment Natural Areas;
d) Escarpment Protection Areas;
e) Fish and Wildlife Habitat;
f) Habitat of threatened and endangered species;
g) Wetlands;
h) Woodlands;
i) Valley and stream corridors;
j) Shorelines;
k) Natural lakes;
l) Natural corridors;
m) Groundwater recharge and discharge areas;
n) Open space portions of the Parkway Belt West Plan; and,
o) Other natural features and functional areas.

As per *Schedule A Core Areas of The Greenlands Systems in Peel*, the Subject Property does not contain any Core Areas.

As per Section 5.5 *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 new growth to built-up areas, and promotes compact urban form, intensification, and redevelopment*. As per Schedule D4, *The Growth Plan Policy Areas in Peel (2021)*, the Subject Property is designated Built-up Area.

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. 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 side of the property. Adjacent lands to the north and west of the Subject Property is also designated as EPA.

Section 5.7.3.1 of the OP represents the policies regarding the components, permitted uses and development policies within Core Natural Areas and Natural Corridors. Policy 5.7.3.1.1 states that *New development is prohibited within areas designated EPA on the Land Use Schedules to this Plan, with the exception of the permitted uses as specified in policy 5.7.3.1.2.* Section 5.7.3.1.2 outlines such permitted uses as *legally existing residential and agricultural uses; a building permit on a vacant existing lot of record; portions of new lots; activities permitted through approved Forest Management and Environmental Management Plans; limited extractive industrial; non-intensive recreation; and, essential infrastructure*.

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 may 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

Field work completed to date includes leaf-off snag surveys and a tree inventory completed in March 2022.

3.2.1. 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 (MNRF 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.

3.2.2. 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
    a. 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 April 6, 2022.

3.2.3. 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.

3.2.4. 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 7.

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. 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 km^2 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 it's 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 the provincial *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.

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 E 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.

5. Ontario Breeding Bird Atlas

A review of the Ontario Breeding Bird Atlas (OBBA) identified bird species with potential to inhabit the Study Area. The full OBBA species list can be found in Appendix A. Table 2 includes a list of species that have the potential to occur on the Subject Property.

Table 2. OBBA Screening of Potential Bird Species on the Subject Property.

Scientific Name	Common Name	S RANK	Category
Contopus virens	Eastern Wood-pewee	S4B	PROB
Hylocichla mustelina	Wood Thrush	S4B	PROB
Chaetura pelagica	Chimney Swift	S4B, S4N	POSS
Hirundo rustica	Barn Swallow	S5B	CONF
Branta canadensis	Canada Goose	-	PROB
Meleagris gallopavo	Wild Turkey	-	CONF
Accipiter cooperii	Cooper's Hawk	-	PROB
Buteo jamaicensis	Red-tailed Hawk	-	CONF
Falco sparverius	American Kestrel	-	PROB
Columba livia	Rock Pigeon	-	CONF

Scientific Name	Common Name	S RANK	Category
Zenaida macroura	Mourning Dove	-	CONF
Coccyzus americanus	Yellow-billed Cuckoo	-	CONF
Coccyzus erythropthalmus	Black-billed Cuckoo	-	CONF
Megascops asio	Eastern Screech Owl	-	CONF
Bubo virginianus	Great Horned Owl	-	CONF
Aegolius acadicus	Northern Saw-whet Owl	-	PROB
Archilochus colubris	Ruby-throated Hummingbird	-	PROB
Sphyrapicus varius	Yellow-bellied Sapsucker	-	POSS
Picoides pubescens	Downy Woodpecker	-	CONF
Leuconotopicus villosus	Hairy Woodpecker	-	CONF
Colaptes auratus	Northern Flicker	-	CONF
Dryocopus pileatus	Pileated Woodpecker	-	CONF
Empidonax minimus	Least Flycatcher	-	PROB
Sayornis phoebe	Eastern Phoebe	-	CONF
Myiarchus crinitus	Great Crested Flycatcher	-	CONF
Tyrannus tyrannus	Eastern Kingbird	-	CONF
Vireo gilvus	Warbling Vireo	-	POSS
Vireo olivaceus	Red-eyed Vireo	-	CONF
Cyanocitta cristata	Blue Jay	-	CONF
Corvus brachyrhynchos	American Crow	-	CONF
Tachycineta bicolor	Tree Swallow	-	CONF
Poecile atricapillus	Black-capped Chickadee	-	CONF
Sitta carolinensis	White-breasted Nuthatch	-	CONF
Certhia americana	Brown Creeper	-	POSS
Troglodytes aedon	House Wren	-	CONF
Regulus satrapa	Golden-crowned Kinglet	-	POSS
Sialia sialis	Eastern Bluebird	-	CONF
Turdus migratorius	American Robin	-	CONF
Dumetella carolinensis	Gray Catbird	-	CONF
Mimus polyglottos	Northern Mockingbird	-	CONF
Toxostoma rufum	Brown Thrasher	-	CONF

Scientific Name	Common Name	S RANK	Category
Sturnus vulgaris	European Starling	-	CONF
Bombycilla cedrorum	Cedar Waxwing	-	CONF
Setophaga petechia	Yellow Warbler	-	CONF
Setophaga ruticilla	American Redstart	-	CONF
Seiurus aurocapilla	Ovenbird	-	PROB
Geothlypis trichas	Common Yellowthroat	-	CONF
Pipilo erythrophthalmus	Eastern Towhee	-	PROB
Spizella passerina	Chipping Sparrow	-	CONF
Melospiza melodia	Song Sparrow	-	CONF
Piranga olivacea	Scarlet Tanager	-	POSS
Cardinalis cardinalis	Northern Cardinal	-	CONF
Pheucticus ludovicianus	Rose-breasted Grosbeak	-	CONF
Passerina cyanea	Indigo Bunting	-	CONF
Agelaius phoeniceus	Red-winged Blackbird	-	CONF
Quiscalus quiscula	Common Grackle	-	CONF
Molothrus ater	Brown-headed Cowbird	-	CONF
Icterus galbula	Baltimore Oriole	-	CONF
Haemorhous mexicanus	House Finch	-	PROB
Spinus tristis	American Goldfinch	-	CONF
Passer domesticus	House Sparrow	-	CONF

6. 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 230/08. Ontario Regulation 242/08 provides general policies concerning exemptions and habitat specifications for those listed species, Species at Risk (SAR).

6.1. Screening

Screening for the possible occurrence of Species at Risk was conducted using the various sources detailed in Appendix C. Using the Make-a-Map: Natural Heritage Areas application, a screening for potential Species at Risk on or within a 1-kilometer grid of the Subject Property (17PJ0259) was completed. The results are provided in Table 3.

Table 3. Screening Results

Common Name	Scientific Name	S Rank	SARO Status	COSEWIC Status	Database
		Birds			
Acadian Flycatcher	*Empidonax virescens*	S2S3B	Endangered	Endangered	OBBA
Common Nighthawk	*Chordeiles minor*	S4B	Special Concern	Special Concern	OBBA
Eastern Wood-pewee	*Contopus virens*	S4B	Special Concern	Special Concern	OBBA
Bank Swallow	*Riparia riparia*	S4B	Threatened	Threatened	OBBA
Wood Thrush	*Hylocichla mustelina*	S4B	Special Concern	Threatened	OBBA
Bobolink	*Dolichonyx oryzivorus*	S4B	Threatened	Threatened	NHIC, OBBA
Eastern Meadowlark	*Sturnella magna*	S4B	Threatened	Threatened	NHIC, OBBA
Chimney Swift	*Chaetura pelagica*	S4B,S4N	Threatened	Threatened	OBBA
Barn Swallow	*Hirundo rustica*	S5B	Threatened	Threatened	OBBA
		Fish			
Redside Dace	*Clinostomus elongatus*	S1	Endangered	Endangered	NHIC, DFO
		Reptiles			
Snapping Turtle	*Chelydra serpentina*	S4	Special Concern	Special Concern	NHIC
		Butterflies			
Monarch	*Danaus plexippus*	S2N,S4B	Special Concern	Endangered	Butterfly Atlas

6.2. 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]

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 lucigufus*) 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.

7. 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, 2014. 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.

7.1. 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 (MNRF, 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.

8. 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. Refer to Figure 1 for the proposed Site Plan.

8.1. 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: **5 metres**
- Buffer from the Long-term Stable Top-of-Slope: **6 metres.**

As per the proposed site plan, marginal portions of lots 6 and 8-15 encroach within the designated dripline buffer. The approximate area of the dripline buffer that is being encroached upon by these units is 226.9 m^2. Approximately 258.5 m^2 of a compensatory buffer is proposed north of units 2-5 (Figure 1).

9. 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.

9.1. 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 4 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 4. 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.
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 31st and August 31st 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	Incorporation of native plantings within the offset area is recommended.	Proposed Encroachment areas are proposed primarily for backyards which will likely result in minimal disturbance. The feature is dominant in

Impact	Impact Assessment	Mitigation Measures	Residual Effects
	provincial woodland. Increase in human disturbance.	Maintain tree vegetation protection zones where applicable.	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.

9.2. 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.

The removal of 26 landscape trees identified for removal will likely have an impact on breeding bird habitat. 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.

9.2.1. Encroachments

Direct impacts associated with the proposed development includes the encroachment into the proposed 5 metre 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. Further assessment of the feature is required in defining the feature and its ecological function; however, this feature does not generally meet the requirements of a woodland as outlined in the PPS or the Forestry Act. Encroachments are proposed at several locations on the

site plan (Lots 8-15) 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 m^2. Approximately 256 m^2 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 encroaching into the buffer, and therefore changes to the landscape will be minimal.

9.3. 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).

9.4. 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.

10. 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.

10.1. Natural Heritage System 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.

10.2. 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.

11. Policy Conformity

An outline of the applicable policies, including federal, provincial, and municipal protection and planning policies and regulations, relative to the Study Area were 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 will have no impact 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. Any potential impacts associated with the proposed development can be mitigated through the appropriate measures mentioned in Section 9. Planning, design, offsetting, and construction measures identified for the Study Area will promote the protection of natural features outlined in this preliminary EIS.

12. 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, the proposed development is unlikely to have significant effects on the surrounding woodland and the ecological system that it supports. Further field studies to provide a more comprehensive assessment of the Subject Property natural heritage characteristics are proposed.

13. References

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Preliminary EIS for 13290 Nunnville Road, Bolton

Prepared for Bolton Summit Developments Inc.

April 21, 2022

Prepared by:

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Reviewed by:

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Disclaimer

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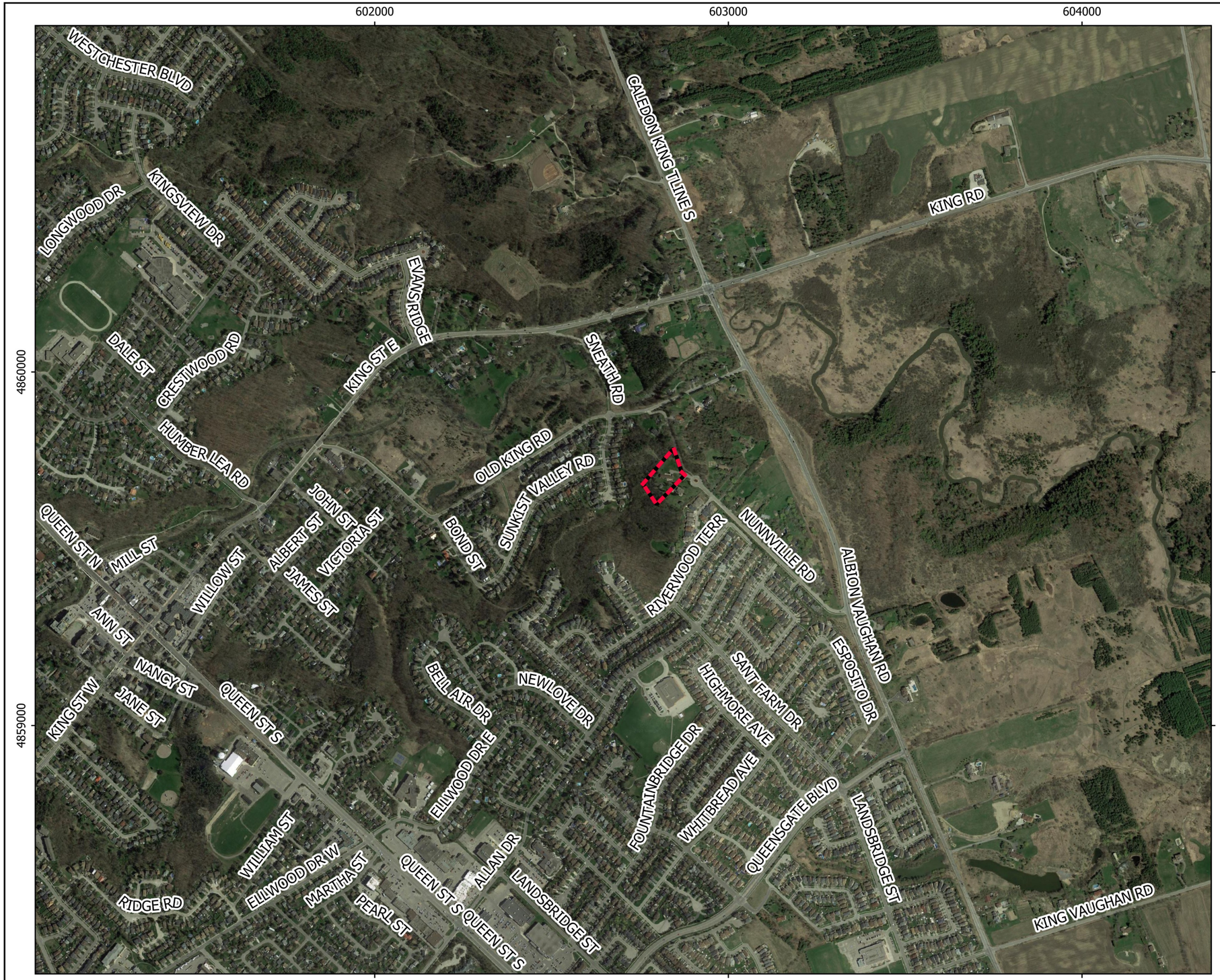
Project Number P2022-612

Maps and Figures



Legend

Subject Property

N

0 100 200 300 400 500 m

Prepared using QGIS and Google Satellite Imagery

GeoProcess RESEARCH ASSOCIATES

CREATED BY:	DH	PROJECT NO.:	P2022-612
CHECKED BY:	IR	DATE:	Mar 29, 2022

Map 1.

Key Map

Preliminary Environmental Impact Statement
13290 Nunnville Road, Bolton ON

Bolton Summit Developments Inc.

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602750 602800 602850 602900 602950

4859750 4859700 4859650 4859600

NUNNVILLE RD

BATEMAN LANE

Legend

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

N

0 5 10 15 20 25 m

Prepared using QGIS and Google Satellite Imagery

GeoProcess
RESEARCH ASSOCIATES

CREATED BY:	DH	PROJECT NO.:	P2022-612
CHECKED BY:	IR	DATE:	Mar 29, 2022

Map 2.

Existing Conditions

Preliminary Environmental Impact Statement
13290 Nunnville Road, Bolton ON

Bolton Summit Developments Inc.

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13290 Nunnville Road
Bolton (Caledon)

Concept

15 Townhouse Units
28.0m+ x 6.1m Lots

Lot Area = 0.86ha (8,553m²)
Lot Area per unit = 94.2m²
Lot Frontage = 82.5m
Min. Unit Width = 6.1m
Building Area = 1,431m² (16.8%)
Min. Backyard Amenity Space = 30.5m²
Min. Front Yard (to garage) = 6.0m
Min. Front Yard (to main wall) = 4.5m
Min.Rear Yard = 7.5m
Min. Interior Side Yard = 1.71m
Min. Exterior Side Yard = 0.75m
Max. Height = 12.0m
Landscaped Area = 1,302m² (15.2%)
(includes Amenity Area, Sidewalks and Front Yards)
Natural Area = 4,753m² (55.6%)
(includes Buffer and Woodlot)
Hard Paved Area = 1,035m² (12.1%)
(includes Roads and Driveways)

Note: the Development Limit is based on Dripline and Long-term Stable Top-of-Slope (LTSTOS) lines. The Buffer Line is based on 5.0m to the Dripline or 6.0m to the LTSTOS lines.

Prepared by:

wsp

Checked	Drawn
Date: April 4, 2022	Proj. No.: 211-09988-01
Scale: 1 : 500 (11x17)	Aerial Image

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Appendix A

OBBA Full Species List

Table A 1. Ontario Breeding Bird Atlas Summary

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

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

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

Scientific Name	Common Name	S RANK	Category
Agelaius phoeniceus	Red-winged Blackbird	-	CONF
Quiscalus quiscula	Common Grackle	-	CONF
Molothrus ater	Brown-headed Cowbird	-	CONF
Icterus spurius	Orchard Oriole	-	CONF
Icterus galbula	Baltimore Oriole	-	CONF
Haemorhous mexicanus	House Finch	-	PROB
Spinus tristis	American Goldfinch	-	CONF
Passer domesticus	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. Atlassers 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,SAS 1,SAM1,SAF1,SWD1,SW D2,SWD3,SWD4,SWD5, 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 K, are significant wildlife habitat. •Annual Use of Habitat is

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					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	•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	No habitat features on site.	•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.	A combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Need to be > 20 ha. •Least disturbed sites, idle/fallow or lightly grazed field/meadow	No	No habitat features on site.	•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. •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.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		(>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 .			•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.	•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. • Not found in caves or mines in ON. •Located in Mature Deciduous or mixed forest**	**Yes**	**Tree snags observed on site**	**•Confimed 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 or an Ecoelement containing the maternity colonies. • 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			
		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.			
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.	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. •Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. *Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.	No	No habitat features on site.	•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. • Search for congregations in Basking Areas in spring and fall.
Reptile Hibernaculum	Any ecosite other that very wet. •Talus, Rock Barren, Crevice, Cave, Alvar may be directly related.	Sites located below frost lines in burrows, rock crevices and other natural or	No	No habitat features on site.	•Presence of snake hibernacula used by - a minimum of five individuals of a snake sp. or;

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
	•Observations of congregations in spring or fall is good indicator.	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. • 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. •Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures			- individuals of two or more snake spp.. •Congregations of -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			
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.	•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. •Most nests in trees are 11 to 15 m from ground, near the top of the tree.	No	No habitat features on site.	•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 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.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
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.	•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. • Specfic evaluation methods required
Migratory Butterfly Stopover Areas	Combo of one of each Field (CUM, CUT, CUS) and Forest (FOC, FOD,FOM,CUP).	Minimum 10 ha in size with combo of field and forest located within 5km of Lake Erie or Lake Ontario. •Should not be disturbed. • Field/meadows with an abundance of preferred nectar plants and woodland edge	No	No habitat features on site.	•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

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		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.			Ladies or Red Admiral's is to be considered significant.
Landbird Migratory Stopover Areas	All Ecosites within: FOC,FOM,FOD,SWC,SWM,SWD	Woodlots >10ha in size and within 5km of Lake Erie and Lake Ontario. • 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. •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	No	No habitat features on site.	•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			
		Ontario are Candidate SWH.			
Deer Yarding Areas	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT	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 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	No	Based on a review of Land Information Ontario (LIO) mapping, no Deer Yards exist on the Subject Property	No Studies Required: • 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 the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations. • If a SWH is determined for Deer

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • 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			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.
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.	No	No habitat features on site.	•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

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		• 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.			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 debris. Most cliff and talus slopes occur along the Niagara Escarpment.	No	No habitat features on site.	•Confirm any ELC Vegetation Type for Cliffs or Talus Slopes
Sand Barren	SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicketlike	A sand barren area >0.5ha in size. • Sand Barrens typically are exposed sand,	No	No habitat features on site.	•Confirm any ELC Vegetation Type for Sand Barrens. •Site must not be dominated by exotic

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
	(SBS1), or more closed and treed (SBT1). Tree cover always < or equal to 60%	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%.			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 alternating periods of inundation and drought. • Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a	No	No habitat features on site.	•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			
		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. • Determine ELC vegetation types for the forest forest area containing the old growth characteristics

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
Savannah	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. • No minimum size to site. • Site must be restored or a natural site. *Remnant sites such as railway right of ways are not considered to be SWH.	No	No habitat features on site.	•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	A Tallgrass Prairie has ground cover dominated by prairie grasses. •An open Tallgrass Prairie habitat has < 25% tree cover. •No minimum size to site. •Site must be restored or a natural site. *Remnant sites such as railway right of ways are not considered to be SWH.	No	No habitat features on site.	•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 Techinical 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. •May include beaches, fens, forest, marsh, barrens, dunes and	No	No habitat features on site.	•Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG, OMNR (2000).

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		swamps. See OMNRF/NHIC for up to date list of rare vegetation communities.			•Area of the ELC Vegetation Type polygon is the SWH.
Specialized Habitat for Wildlife					
Waterfowl Nesting Area	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	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. •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	No habitat features on site.	•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	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. *Nests located on man-made objects are not to be included as SWH. •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.	No	No habitat features on site.	One or more active Osprey or Bald Eagle nests in an area. •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.

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					• Specific evaluation methods required
Woodland Raptor Nesting Habitat	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. • 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	No habitat features on site.	Presence of 1 or more active nests from species list is considered significant. •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	Any forested area (with <25% meadow/field/pasture) within the headwaters of a	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

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	within the headwater areas of a stream could have seeps/springs.	stream or river system.			ecoelement 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)	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD •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.	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). • Some small wetlands may not be mapped and may be important breeding pools for amphibians. •Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	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 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. •A combo fo observational and call count surveys required during the spring (March-June) . •The habitat is the wetland area plus a 230m radius of woodland area. • If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					woodland is to be included in the habitat.
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 >500m2 (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	All Ecosites withing: FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically	No	No habitat features on site.	Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.

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	ELC Ecosite Codes	ELC Ecosite Codes			
Breeding Habitat		large mature (>60 yrs old) forest stands or woodlots >30 ha. •Interior forest habitat is at least 200 m from forest edge habitat.			*any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • 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,	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.

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	ELC Ecosite Codes	ELC Ecosite Codes			
		and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). •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.			•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	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 •Patches of shrub ecosites can be complexed into a larger habitat for some bird species.	Large field areas succeeding to shrub and thicket habitats>10ha in size. •Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no rowcropping, haying or livestock pasturing in the last 5 years). •Shrub thicket habitats (>10 ha) are most likely to	No	No habitat features on site.	Presence of nesting or breeding of - 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

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		support and sustain a diversity of these species. •Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.			spring and early summer when birds are singing and defending their territories. • 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.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. •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.	Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. • 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	N/A	See SAR Screening Section	Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
		to be completed to ELC Ecosites			species is present or easily identifiable. •The area of the habitat to the finest ELC scale that protects 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

Wildlife Habitat	Candidate SWH Habitat Criteria		Potential on Site	Rationale	Confirmed Defining Criteria= Studies to confirm...
	ELC Ecosite Codes	ELC Ecosite Codes			
					more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat.
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.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH. A deer wintering habitat identified by the OMNRF as SWH will have corridors that the deer use during fall migration and spring dispersion •Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges).	No	No habitat features on site.	• 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					
Mast Producing Areas (Black Bear) •EcoDistrict 6E-14	All Forested habitat represented by ELC Community Series: FOM FOD	Black bears require forested habitat that provides cover, winter hibernation sites, and mastproducing tree species. • Forested habitats need to be large enough to provide cover and protection for black bears	No	Site not located within EcoDistrict 6E-14	•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

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	ELC Ecosite Codes	ELC Ecosite Codes			
		Criteria •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)	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			
		• Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting			