BEACON ENVIRONMENTAL

GUIDING SOLUTIONS IN THE NATURAL ENVIRONMENT

Natural Heritage Evaluation
5113 Old Brock Road
Hamlet of Claremont, City of Pickering

Prepared For:

Claremont Developments Inc.

Prepared By:

Beacon Environmental Limited

Date: *Project:*

July 2021 **221308**

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1. Introduction

Beacon Environmental Limited (Beacon) has been retained by Claremont Developments Inc. to undertake a Natural Heritage Evaluation (NHE) which serves as an update to previously completed and submitted work in respect of the proposed zoning and subdivision applications of 5113 Old Brock Road, as fully described in the Planning Report prepared by Malone Given Parsons Ltd. (MGP) dated July, 2021.

The municipal address of the subject property is 5113 Old Brock Road, located north of Concession Road 9 (Central Street), east of Old Brock Road, and west of Brock Road in the Hamlet of Claremont, City of Pickering, Regional Municipality of Durham, hereinafter referred to as the "subject property" (**Figure 1**).

The subject property is primarily comprised of agricultural fields, with an existing residence and several associated outbuildings situated along Old Brock Road on its western edge. Natural features are primarily concentrated in the north and include a part of a Provincially Significant Wetland Complex, and watercourse surrounded by mature woodland. The subject property is approximately 38.18 ha (94.34 acres) in area.

As described in the companion Planning Report (MGP 2021a), these applications are subject to the transitional policies of the Oak Ridges Moraine Conservation Plan (ORMCP) and Act. A NHE is required under sections 22 of the ORMCP and the requirements of a NHE are prescribed in section 23. A NHE is required for any application for development or site alteration proposed within the minimum area of influence associated with a Key Natural Heritage Feature (KNHF), as discussed in section 23. Key Hydrological Features (KHFs) are addressed in section 26.

The objectives of this NHE are to:

- Identify any KNHFs or KHFs on and within the area of influence (i.e., within 120 m) of the subject property;
- Determine appropriate Minimum Vegetation Protection Zones (MVPZs) to protect the features and their ecological functions, if required;
- Demonstrate how connectivity within and between KNHFs and KHFs will be maintained; and
- Identify planning, design and construction mitigation measures, as required, consistent with the requirements of the ORMCP, the Region of Durham, the City of Pickering, and the Toronto Region Conservation Authority (TRCA).

This NHE was completed using a review of background documents and field investigations that were undertaken in the spring and early summer of 2012 (Beacon, 2012) and have been supplemented by more recent field investigations in 2014, 2017 and 2018, where appropriate. These field investigations included the determination of the boundaries of natural heritage features and investigations into the potential presence of Species at Risk (SAR) or their habitats on or adjacent to the subject property. These data were used in an analysis of KNHF and KHFs and their functions and confirmed against the existing policy framework.

2. Policy Framework

As set out in the accompanying Planning Justification Report (July 2021) by MGP, (these applications are subject to the transitional policies of the ORMCP and Act.) This application will therefore address the required transitional policies of the ORMCP, as set out in section 48. In addition, the current natural heritage policies, regulations, and guidelines were reviewed in the context of the proposed development on the subject property.

2.1 Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) was issued under Section 3 of the *Planning Act*, RSO 1990, c P.13 and all decisions affecting land use planning matters "shall be consistent with" the PPS. The 2020 PPS published by the Ministry of Municipal Affairs and Housing (MMAH), came into effect on May 1, 2020.

Policy 2.1 of the PPS provides direction to regional and local municipalities regarding planning policies specifically for the protection and management of natural heritage features and resources.

Part III – Relationship with Provincial Plans of the PPS notes that provincial plans (e.g., ORMCP, Greenbelt Plan) shall be read in conjunction with the PPS and take precedence over policies in the PPS to the extent of any conflict, except where legislation establishing provincial plans provides otherwise. In this case, the subject property is within the ORMCP area which is the overriding provincial plan.

2.2 Oak Ridges Moraine Conservation Plan (2017)

The ORMCP is an ecologically based plan established by the Ontario government to provide land use and resource management direction for the 190,000 hectares of land and water within the Moraine – one of Ontario's most significant landforms.

As per Section 15 (2) of the *Oak Ridges Moraine Conservation Act*, Transitional Provisions for an application will be applied if the application was commenced before November 17, 2001 and no decision has been made since that time. An application for a zoning bylaw or draft plan of subdivision is deemed to have commenced the day the application is made. This is the case with respect to Draft Plan of Subdivision 18T-90016 and zoning by-law amendment application A 9/90, which were made in February 1990, and zoning by-law amendment application A 17/90, made in June 1990, before the ORMCP came into effect.

The applicable subsections (20, 22, 23 and 26 of the ORMCP) contain policies applicable to provisions for development proposed in proximity to KNHFs and/or KHFs of the ORMCP.

Site Location

Figure 1

Claremont Developments Inc.

UTM Zone 17 N, NAD 83

First Base Solutions
Web Mapping Service 2020

0 100 200 400 Meters

1:8,000

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2.2.1 Supporting Connectivity

Section 20 of the ORMCP requires that every application for development or site alteration identify planning, design and construction practices that ensure that no buildings or other site alterations impede any hydrological functions or the movement of plants and animals among key natural heritage features, key hydrologic features, and adjacent land within Natural Core Areas and Natural Linkage Areas.

2.2.2 Key Natural Heritage Features and Key Hydrologic Features

Section 22 of the ORMCP prohibits development and site alteration within KNHFs, which consist of the following:

- Wetlands;
- Habitat of endangered and threatened species;
- Fish habitat;
- Areas of natural and scientific interest (life science);
- Significant valleylands;
- Significant woodlands;
- Significant wildlife habitat; and
- Sand barrens, savannahs and tallgrass prairies.

As per section 22(2), site development and alteration is prohibited within KNHF or the Minimum Vegetation Protection Zones (MVPZs) with the exception of wildlife management, flood or erosion control projects, infrastructure, low-intensity recreation, habitat of endangered or threatened species provided it complies with the *Endangered Species Act* (ESA; 2007), and limited forms of agriculture.

As per section 22(3):

> *An application for development or site alteration with respect to land within the minimum area of influence that relates to a key natural heritage feature, but outside the key natural heritage feature itself and the related minimum vegetation protection zone, shall be accompanied by a natural heritage evaluation*.

Under Section 23 (1) of the ORMCP, a NHE evaluation shall:

> *a) demonstrate that the development or site alteration applied for will have no adverse effects on the key natural heritage feature or on the related ecological functions;*
> *b) identify planning, design and construction practices that will maintain and, where possible, improve or restore the health, diversity and size of the key natural heritage feature and its connectivity with other key natural heritage features and with key hydrologic features;*
> *c) in the case of an application relating to land in a Natural Core Area, Natural Linkage Area or Countryside Area, demonstrate how connectivity within and between key natural heritage features and key hydrologic features will be maintained and, where possible, improved or restored before, during and after construction;*
> *d) if the Table to this Part specifies the dimensions of a minimum vegetation protection zone, determine whether it is sufficient, and if it is not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the*

maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it;

e) *if the Table to this Part does not specify the dimensions of a minimum vegetation protection zone, determine whether one is required, and if one is required, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it; and*

f) *in the case of a key natural heritage feature that is fish habitat, ensure compliance with the requirements of the Department of Fisheries and Oceans (Canada).*

The Table to Part III of the ORMCP requires that MVPZs be applied to the limits of KNHFs and KHFs and that the width of these can either be a 30 m minimum or in Settlement Areas the MVPZs can be determined through an environmental study as detailed in Section 21 (3) & (4), provided that an environmental study is undertaken. The completion of a site specific study will determine the appropriate vegetation protection zone or buffer.

Section 26 (1) of the ORMCP identifies Key Hydrologic Features (KHF). These include:

1. *Permanent and intermittent streams;*
2. *Wetlands;*
3. *Kettles lakes; and*
4. *Seepage areas and springs.*

As per Section 26 (2), site development and alteration is prohibited within KHF or the MVPZs with the exception of wildlife management, flood or erosion control projects, infrastructure, low-intensity recreation and limited forms of agriculture. Flood or erosion control projects may be approved if they are determined to be necessary in the public interest after all alternatives have been considered.

A Hydrological Evaluation is required under section 26(3) for any development proposed within the Area of Influence to KHFs, as per Table III. This NHE addresses these features from an ecological perspective. The Preliminary Hydrogeological Investigation (July 2021a) and Water Level Data Assessment (July 2021) provided by Golder Associates Ltd. addresses these features from a hydrology perspective in order to determine if KHF criteria are met by the wetland features.

Under Section 26(4) of the ORMCP, a Hydrological Evaluation shall:

a) *Demonstrate that the development or site alteration will have no adverse effects on the key hydrologic feature or on the related hydrological functions;*

b) *Identify planning, design and construction practices that will maintain and, where possible, improve or restore the health, diversity and size of the key hydrologic feature and its connectivity with other key hydrologic features and with key natural heritage features;*

c) *Determine whether the minimum vegetation protection zone whose dimensions are specified in the Table to this Part is sufficient, and if it is not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it, and*

d) *In the case of an application relating to land in a Natural Core Area, Natural Linkage Area or Countryside Area, demonstrate how connectivity within and between key natural heritage features and key hydrologic features will be maintained and, where possible, improved or restored before, during and after construction.*

There is a significant woodland, watercourse, wetland and a portion of a Provincially Significant Wetland (PSW) on the northernmost portion of the property. As development is proposed within the minimum area of influence (120 m) to these features a NHE is required as per Section 23 (1) of the ORMCP.

Significant Woodland

On the Oak Ridges Moraine, Significant Woodland status is addressed through the application of the criteria outlined in Technical Paper #7. A woodland is defined as a treed area, woodlot or forested area, other than a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees. A MVPZ is to be applied from the outermost dripline. A forest feature can receive Significant Woodland status based on size, land use designation, or if it intersects another KNHF or KHF as noted in the Technical Paper #7.

Wetlands

The technical criteria to be applied in the identification of Key Natural Heritage Features on the Oak Ridges Moraine are addressed in Technical Paper #1. As per Section 4.1, wetlands are defined as lands such as a swamp, marsh bog, and fen and excludes lands currently used for agriculture that no longer exhibit wetland characteristics. The ORMCP defines wetland as an area which is seasonally or permanently covered by shallow water or has the water table close to or at the surface; has hydric soils and has vegetation dominated by hydrophytic vegetation; or be further identified by the Ministry of Natural Resources and Forestry (MNRF) or qualified person.

For wetlands smaller than 0.5 ha (i.e., the roadside wetland in the southeast portion of the subject property), additional information beyond size is required to determine if the feature can be considered a KNHF or KHF. One or more of six listed characteristics must be met, including if there is a permanent or intermittent surface water connection between the wetland and an adjacent KHF, or if the wetland is a significant recharge area, or has direct hydraulic connections to the underlying aquifer.

2.3 Durham Regional Official Plan (2020 Office Consolidation)

The following maps and schedules were reviewed from the Durham Regional Official Plan to determine the applicable natural heritage policies:

- Schedule A – “Regional Structure”, as an area within the Oak Ridges Moraine Planning Area; and
- Schedule B – “Greenbelt Natural Heritage System & Key Natural Heritage and Hydrologic Features” identifies Key Natural Heritage and Hydrologic Features in the north and south of the subject property along with scattered hedgerows.

Section 2.3.14 of the Durham Region Official Plan states that the precise location and extent of these features can be confirmed through an Environmental Impact Study (EIS), or, in this case, through a NHE which will address all EIS requirements.

Section 2.3.15 states that development is not permitted within KNHF or KHF or their MVPZs unless it is noted as an exception in 2.3.15 (a-f). These exceptions include wildlife management, flood or erosion

control projects, infrastructure, low-intensity recreation, limited forms of agriculture, and aggregate extraction.

Section 10B.2.2 states that applications in the Natural Core, Natural Linkage and Countryside Areas of the Oak Ridges Moraine that were commenced but were not decided upon prior to November 17, 2001 are required to conform to the list of prescribed provisions under Section 48 of the ORMCP (see Section 2.2 above).

Any proposal for development or site alteration in proximity to a key natural heritage or hydrologic feature shall be required to include an EIS (or NHE) as part of a complete application, as per Section 2.3.43. The requirements of this study are listed under 2.3.43.

2.4 City of Pickering Official Plan – Edition 8 (Office Consolidation 2018)

The City of Pickering published its latest Official Consolidated Plan (Edition 8) dated October 2018. It builds on the framework presented in the Region of Durham's Official Plan and protects natural heritage features through the Open Space System, which incorporates three types of natural areas: core areas, corridors and linkages. Schedule I (Sheet 2)– Land Use Structure identifies the subject property as within the Oak Ridges Moraine Countryside Areas with Natural Core Areas in the north.

Section 16.42 states that within the Oak Ridges Moraine, City Council shall:

a) *Recognize that key natural heritage features relate to wetlands, significant portions of the habitat of endangered, rare and threatened species, fish habitat, areas of natural and scientific interest (life science), significant valleylands, significant woodlands, and significant wildlife habitat;*
b) *Recognize that key hydrologic features relate to permanent and intermittent streams, wetlands, seepage areas and springs;*
c) *Recognize that Table 17 identifies minimum areas of influence and minimum vegetation protection zones related to the key natural heritage features and key:*
    i. *Hydrologic features, and where features are not identified on Schedules IIIB to IIID, such as seepage areas and springs, these features shall be identified using criteria identified by the Province either on a site-by-site basis or through the appropriate study prior to undertaking any development or site alteration;*
d) *For lands within the minimum area of influence that relates to a key natural heritage feature but outside the key natural feature itself and the related minimum vegetation protection zone, require a natural heritage evaluation for an application for development or site alteration that shall:*
    i. *Demonstrate that the development or site alteration applied for will have no adverse effects on the key natural heritage feature or on the related ecological functions;*
    ii. *Identify planning, design and construction practices that will maintain and, where possible, improve or restore the health, diversity and size of the key natural heritage feature and its connectivity with other key natural heritage features;*
    iii. *In the case of an application relating to land in Natural Core Areas, Natural Linkage Areas or Countryside Areas, demonstrate how connectivity within*

and between key natural heritage features will be maintained and, where possible, improved or restored before, during and after construction;

iv. *If Table 17 specifies the dimensions of a minimum vegetation protection zone, determine whether it is sufficient, and if it is not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it;*

v. *If Table 17 does not specify the dimensions of a minimum vegetation protection zone, determine whether one is required, and if one is required, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it, including, without limitation, an analysis of land use, soil type, slope class and vegetation type, using criteria established by the Province, as amended from time to time;*

vi. *In the case of a key natural heritage feature that is fish habitat, ensure compliance with the requirements of the Department of Fisheries and Oceans (Canada);*

e) *For lands within the minimum area of influence that relate to a key hydrologic feature, but outside the key hydrologic feature itself and the related minimum vegetation protection zone, require a hydrological evaluation for an application for development or site alteration that shall:*

i. *Demonstrate that the development or site alteration will have no adverse effects on the key hydrologic features or on the related hydrological functions;*

ii. *Identify planning, design and construction practices that will maintain, and where possible improve or restore the health, diversity and size of the key hydrologic feature;*

iii. *Determine whether the minimum vegetation protection zone dimensions specified in Table 17 are sufficient, and if not sufficient, specify the dimensions of the required minimum vegetation protection zone and provide for the maintenance and, where possible, improvement or restoration of natural self-sustaining vegetation within it;*

iv. *In the case of permanent and intermittent streams, seepage areas and springs, determine whether the minimum vegetation protection zone dimensions specified in Table 17 are sufficient, and if not sufficient, require, without limitation, an analysis of land use, soil type and slope class, using criteria established by the Province, as amended from time to time; and*

f) *For minor changes and refinements to Schedules IIIA to IIID, based on updated information from the Province or as a result of detailed studies, such as those noted above, not require an amendment to this Plan, and where the feature is a wetland, an area of natural and scientific interest and/or significant portions of the habitat of endangered, rare and threatened species, or their related minimum vegetation protection zones, proposed refinements to the boundary or the extent of the feature requires formal confirmation from the Province prior to any development.*

Table 17 generally requires a 30 m MVPZ for all identified KHNF and KHF including significant woodlands, significant valleylands, wetlands, significant habitat of threatened and endangered species and permanent and intermittent watercourses.

2.5 Toronto Region Conservation Authority Regulations and Guidelines

2.5.1 Conservation Authorities Act – Ontario Regulation 166/06 (2006)

The TRCA regulates hazard lands including creeks, valleylands, shorelines, and wetlands.

With respect to wetlands, the regulated area extends to within 30 m of an unevaluated wetland and within 120 m of a PSW (or any Oak Ridges Moraine wetland). The regulation requires the issuance of a permit from the Conservation Authority to allow "interference" with a wetland. With respect to rivers and stream valleys, the regulation extends 15 m from the top of slope, long term stable slope, floodplain or meander belt, whichever is the greater level of applicable constraint.

In the case of a proposed development (or interference in the case of wetlands) the presence of any regulated features may trigger the need for a permit and consequentially a supporting NHE. Once requested studies have been completed there may be a requirement for features to be maintained and/or for protective buffers to be placed on features or hazard lands within the study area.

The TRCA will generally require that all watercourses stay in their natural state with respect to development proposals. Development within the flood limit of a watercourse is generally not allowed. However, subject to conformity with the applicable Official Plan, and completion of appropriate studies and completion of the Conservation Authority permit process, development *may* be permitted within the regulated area.

The subject property is regulated by the TRCA as the property is within the 120 m regulated area from wetlands on the Oak Ridges Moraine including portions of the Glen Major Provincially Significant Wetland Complex and the southern wetland pocket. The north portion of the property is also regulated due to the presence of a permanent/intermittent stream (i.e., stream valley) north and west of the property.

2.5.2 TRCA Living City Policies for Planning and Development (2014)

The Living City Policies (LCP) for Planning and Development in the watersheds of the TRCA was approved by the Authority Board on November 28, 2014.

The LCP contains policies related to terrestrial resources, water resources, natural features and areas, natural hazards, and potential natural cover and buffers. Section 7.3 contains TRCA's policies for how to define, protect, enhance, and secure a Natural Heritage System. The policies described in Section 7.3.1.4 have been identified with the goal of protecting lands that have the potential to be restored in order to enhance existing natural cover and manage natural hazards. The LCP do not permit new development (including lot creation) within hazard lands (i.e., within the floodplain) where no development previously existed.

As per Section 7.3.1.4 of the LCP, the TRCA prescribes the following buffer to natural features and hazards as it relates to the subject property:

> ***Valley or Stream Corridors*** *– a 10-metre buffer from the greater of the long term stable top of slope/bank, stable toe of slope, regulatory flood plain, meander belt, and any contiguous natural features or areas;*

Wetlands *– a 30-metre buffer from PSWs and a 10-metre buffer for all other wetlands and any contiguous natural features or areas; and*

Woodlands *– a 10-metre buffer from the dripline and any contiguous natural features or areas.*

2.6 *Endangered Species Act* (2007)

Ontario's ESA came into effect on June 30, 2008. The ESA protects species listed as Threatened or Endangered by the Committee on the Status of Species at Risk in Ontario (COSSARO).

Section 9 of the ESA generally prohibits the killing or harming of a Threatened or Endangered species, as well as the destruction of its habitat. Section 10 of the ESA prohibits the damage or destruction of the habitat of all Endangered and Threatened species.

A permit from MNRF is required under Section 17(2)I of the ESA for any works proposed within the habitat of a threatened or endangered species. Searches for these species require seasonal field work and in some cases even if the species are found to be present certain permit exemptions may be available.

2.7 *Species at Risk Act* (2002)

The federal *Species at Risk Act* (SARA; 2002) is intended to prevent federally Endangered or Threatened wildlife (including plants) from becoming extinct in the wild, and to help in the recovery of these species. SARA is also intended to help prevent species listed as Special Concern from becoming Endangered or Threatened. To ensure the protection of SAR, SARA contains prohibitions that make it an offence to kill, harm, harass, capture, take, possess, collect, buy, sell or trade an individual of a species listed in Schedule 1 of SARA as Endangered, Threatened or Extirpated.

The federal SARA applies primarily to lands under federal jurisdiction, and relies on provincial laws to protect federal SAR habitat. On private land, SARA prohibitions apply only to aquatic species and migratory birds that are also listed in the *Migratory Birds Convention Act* (1994). The intent of SARA is to protect critical habitat as much as possible through voluntary actions and stewardship measures.

Redside Dace (*Clinostomus elongatus*) was uplisted in May 2017 to Schedule 1 of SARA meaning its status is confirmed as federally Endangered. Regulations of SARA also apply to the subject property in relation to the *Migratory Birds Convention Act* (1994).

3. Methodology

3.1 Background Review

Background information pertaining to the natural and physical setting of the subject property and environs was gathered and reviewed at the outset of the project. These information sources included:

- MNRF and TRCA resource information (e.g., evaluated wetlands, forest cover, fisheries data, regulation limits);
- Ministry of Natural Resources' Natural Heritage Information Centre (NHIC) rare species database;
- ORMCP;
- Durham Regional Official Plan; and
- City of Pickering Official Plan.

Other sources of information, such as aerial photography and topographic maps, were also consulted prior to commencing field assessments.

3.2 Field Investigations

Field investigations to document the existing natural heritage resources on the subject property were undertaken on the following dates (**Table 1**). It is noted that confirmatory surveys are being conducted in the 2021 field season and upon completion an addendum letter to this report will be submitted.

Table 1. Timing of Field Investigations

Breeding Amphibian Surveys	May 15, 2012; April 21 and May 9, 2014
Vegetation Communities and Flora	June 7, 2012; September 24, 2013; September 19, 2017
Breeding Bird Surveys	May 28 and June 5, 2014
Butternut Health Assessment	July 18, 2012
Feature Staking (TRCA – dripline)	November 2, 2017
Bat Snag Survey	March 5, 2018
Bat Acoustic Monitoring	June 1 and June 11, 2018

Breeding Amphibian Surveys

Amphibian breeding surveys were completed on May 15, 2012 and April 21 and May 9, 2014 following Environment Canada's Marsh Monitoring Program protocol (Gartshore *et al*. 2004). Species, calling locations and approximate numbers of calling individuals were recorded and mapped. This survey method provides an indication of amphibian presence during the breeding season.

Vegetation Communities and Flora

Detailed vegetation investigations of the site were undertaken on June 7, 2012 and September 24, 2013 and were verified on September 19, 2017. During these visits, vegetation units on the subject property were described using standard Ecological Land Classification (ELC; Lee *et al.* 1998) techniques. Investigations included an inventory of vascular plant species encountered.

Breeding Bird Survey

Two visits to the subject property were made in the early mornings (between 5:30 am and 9:00 am) of May 28 and June 4, 2014 to survey the breeding bird community. On both occasions the conditions were clear and calm with low winds (Beaufort Scale 1-2), and the temperatures (15 ^{o}C and 24^{o}C, respectively) did not deviate >5°C above or below the average temperature for the time of year. All observations of birds were recorded. All birds in suitable habitat and showing some propensity to breed (e.g., territorial behaviour) were assumed to be breeding and were tallied by "assumed pair". All parts of the subject property were approached to within 50 m, such that all singing birds could be heard and recorded.

Generally, a third breeding bird survey is performed when potential habitat for grassland avian SAR is present. This was determined not to be the case as the majority of the subject property was observed to be active agricultural lands for row crops. Thus, there is no potential breeding habitat for Bobolink (*Dolichonyx oryzivorus*) or Eastern Meadowlark (*Sturnella magna*), the two species for which three surveys are required by MNRF to confirm presence/absence.

Feature Staking

A feature staking exercise took place on November 2, 2017 to delineate the dripline of the significant woodland in the northern portion of the subject property. The PSW within the woodland was not staked as the dripline of the woodland was determined to be the edge of the KNHF. Vanessa Aubrey (Planner) and Elyssa Elton (Ecologist) from the TRCA conducted the exercise along with Beacon and representatives from Claremont Developments Inc. and the City of Pickering.

At this time the TRCA elected not to stake the limit of the wetland community in the southeast portion of the subject property. Alternatively, it was agreed that Beacon would provide ELC line work for the wetland and an assessment of the feature and its functions would be completed by the consulting team for TRCA to review. TRCA indicated that a wetland staking may be requested within the seasonal timing window (i.e., growing season, typically June through September) following review of this material.

Butternut Survey

A search for Butternut (*Juglans cinerea*) trees and health assessment took place in July of 2012.

A re-assessment of known Butternut locations and comprehensive search of the remainder of the subject property (within 50 m of proposed development) occurred in Summer 2018. A health assessment was performed during the 2018 survey

Bat Snag Surveys

To assess the habitat suitability for potential SAR bat maternity roost sites, a bat snag survey was conducted in March 2018. Candidate maternity roost habitat has been identified on site and surveys were completed in accordance with Step 1 and 2 of the MNRF Guelph District's "Bat and Bat Habitat Surveys of Treed Habitats" guideline (April 2017).

Acoustic monitoring was conducted from June 1- June 11, 2018 in areas where snag tree densities met MECP criteria for additional monitoring.

Tree Inventory

A tree inventory and preservation plan will be completed by Beacon and will be submitted when the project moves to detailed design.

Other Wildlife

Incidental observations of wildlife species, including mammals, were made and recorded during the above field investigations.

4. Existing Natural Heritage Conditions

4.1 Aquatic Resources

The subject property is located within the East Duffins Creek subwatershed. There are no well-defined watercourses on site; however drainage from the swamp community in the northern portion of the site flows through a culvert under Brock Road and continues off site in a relatively defined channel to a large (1.5 ha) online pond approximately 250 m downstream of Brock Road. This watercourse appears to flow through various ponds and wetlands downstream of the online pond before converging with East Duffins Creek.

Mitchell Creek and associated wetland communities occur approximately 70 m to the west of the site (**Figure 2**). The floodplain for this watercourse does not extend onto the subject property as per the TRCA's online Floodplain Mapping tool (TRCA 2020).

The southern portion of the subject property, including flow from the ditch on the west side of Brock Road, drains south through a culvert under Concession Road 9 (Central Street) where it continues in the Brock Road roadside ditch.

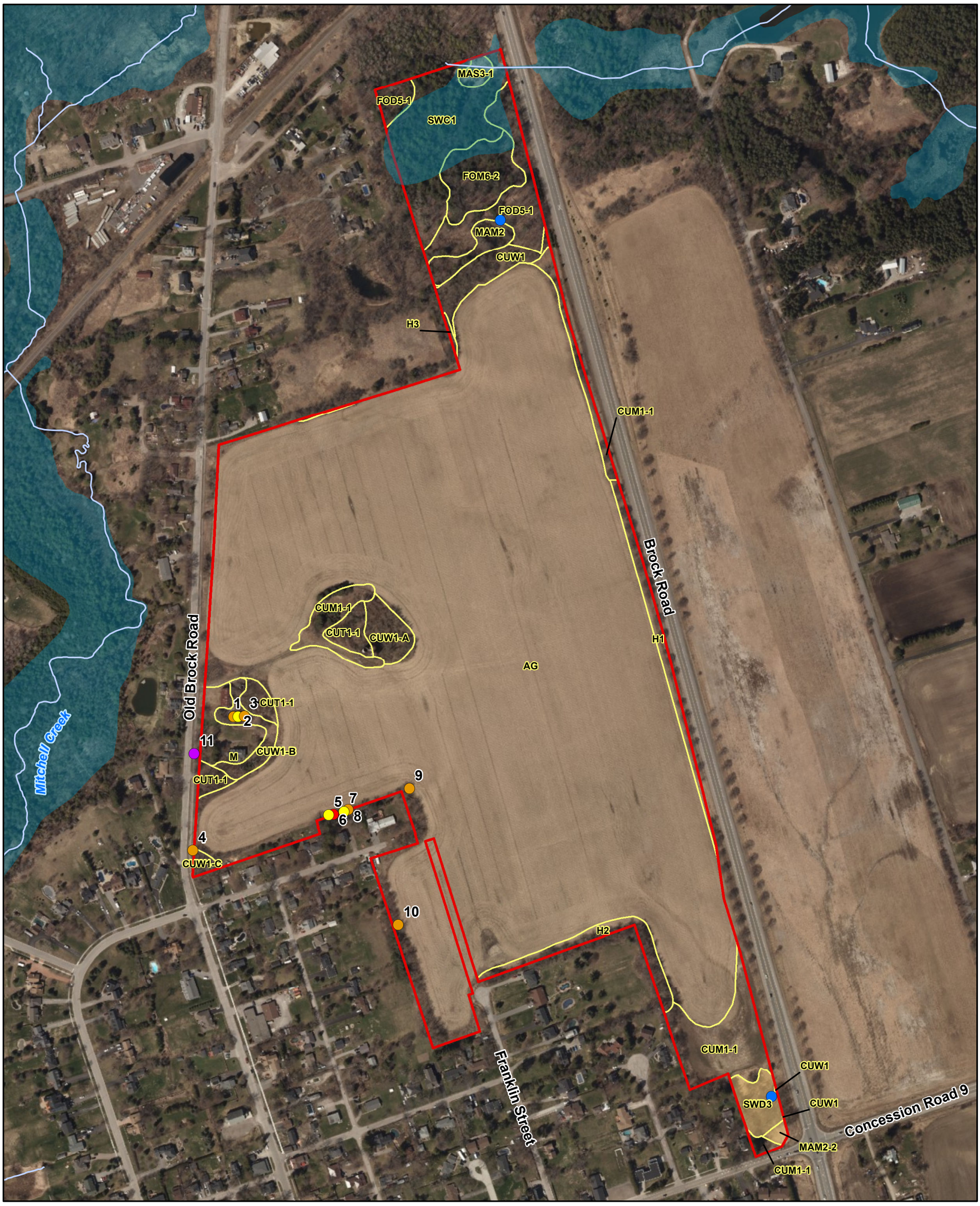
4.1.1 Redside Dace

MNRF confirmed via email that Mitchell Creek is occupied Redside Dace habitat, approximately 1.5 km south of the proposed development west of Old Brock Road, and west of the subject property, north to the rail line. Redside Dace are further discussed in Section 4.4.

4.2 Terrestrial Resources

4.2.1 Vegetation Communities

Vegetation communities were mapped and described according to the ELC System for Southern Ontario (Lee *et al*. 1998). All plants observed on the property were recorded (**Appendix A**).



Legend

- Subject Property
- ELC Communities
- Amphibian Survey Locations
- Watercourse (MNRF 2021)
- Provincially Significant Wetland (MNRF 2021)
- Unevaluated Wetland

Butternut (2018)

- Non-Retainable (Category 1)
- Retainable (Category 2)
- Potentially Archivable (Category 3)
- Cultivated

ELC Code	ELC Vegetation Type
AG	Agriculture – Row Crops
CUM1-1	Dry-Moist Old Field Meadow
CUT1-1	Sumac Cultural Thicket
CUW1	Cultural Woodland
H	Hedgerow
FOD5-1	Dry-Fresh Sugar Maple Deciduous Forest
FOM6-2	Fresh-Moist Hemlock-Hardwood Mixed Forest
SWD3	Maple Mineral Deciduous Swamp
SWC1	White Cedar Mineral Coniferous Swamp
M	Manicured
MAM2-2	Reed Canary Grass Mineral Meadow Marsh
MAM2	Mineral Meadow Marsh
MAS3-1	Cattail Organic Shallow Marsh

Existing Conditions

Figure 2

Claremont Developments Inc.

UTM Zone 17 N, NAD 83

First Base Solutions
Web Mapping Service 2020

N W E S

0 50 100 200 Meters

1:4,500

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The majority of the subject property consists of active agricultural lands, which generally slope downward to the north and south. There are a number of small cultural/successional communities associated with the agricultural lands, including small pockets of cultural woodland, thickets, and hedgerows that occur around the perimeter of the site, generally at the interface with existing residential development on Old Brock Road, Lane Street and Franklin Street. Larger blocks of higher quality natural vegetation (woodland and wetland) extend northward bounded by a rail line, and occur well off-site to the west and east of the property (**Figure 1**). Vegetation communities are shown on **Figure 2** and described below in greater detail.

Cultural Communities

Cultural communities are those arising from human disturbance or anthropogenic influences. The majority of the subject property was occupied by active agricultural fields planted with corn row crops at the time of survey.

Cultural Meadow - Dry-Moist Old Field Meadow (CUM1-1)

There are several small areas of old field meadow found at the perimeter of the property (**Photograph 1**).These units are comprised of typical old field species such as Smooth Brome Grass (*Bromus inermis*), Tall Goldenrod (*Solidago canadensis* var. *scabra*), Tufted Vetch (*Vicia cracca*), Creeping Thistle (*Cirsium arvense*), Ragweed (*Ambrosia artemesifolia*) and Ox-eye Daisy (*Leucanthemum vulgare*). A small number of saplings and shrubs were scattered throughout including Black Walnut (*Juglans nigra*), Tatarian Honeysuckle (*Lonicera tatarica*) and European Buckthorn (*Rhamnus cathartica*).

Photograph 1. Typical Cultural Meadow (CUM1-1) Composition along Brock Road

Staghorn Sumac Cultural Thicket (CUT1-1)

Several successional thicket communities dominated by Staghorn Sumac (*Rhus hirta*) occur in patches along Old Brock Road and in association with the existing farmstead (**Photograph 2**). Regenerating sumac, grasses and Dog-strangling Vine (*Cynanchum rossicum*) dominate the ground vegetation.

Cultural Woodlands (CUW1)

There are several small cultural woodlands on the subject property. These are disturbed features dominated by Manitoba Maple (*Acer negundo*). These small patches of scattered tree growth are associated with old building foundations and the existing farm buildings. Other small CUW1 units were identified elsewhere on the property such as the transition between agriculture and woodland in the north and a small roadside patch in the south. The understory consists of weedy, mostly exotic species typical of disturbed environments such as Garlic Mustard (*Alliaria petiolata*), Cloverroot (*Geum urbanum*), Dame's Rocket (*Hesperis matronalis*), Creeping Charlie (*Glechoma hederacea*) and Herb Robert (*Geranium robertianum*). Other species include Stinging Nettle (*Urtica dioica*), Ragweed, Motherwort (*Leonuris cardiaca*) and Chicory (*Cicchorum intybus*).

Manicured (M)

A farmhouse and barn exist along Old Brock Road in the northwest corner of the subject property. This area contains a manicured lawn area and an existing laneway.

Hedgerows (H)

There is a hedgerow that extends along the eastern and southwestern boundaries of the subject property that were dominated by Manitoba Maple in association with Black Walnut, Sugar Maple (*Acer saccharum*), Norway Maple (*Acer platanoides*) and other deciduous trees. Butternut trees, a provincially endangered species, were identified in the southwestern hedgerow.

Photograph 2. Cultural Thicket (CUT1-1) Dominated by Staghorn Sumac

Woodland Communities

Dry-Fresh Sugar Maple Deciduous Forest (FOD5-1)

Two FOD5-1 units have been identified in the northernmost portion of the subject property and were dominated by Sugar Maple (**Photograph 3**). A number of other deciduous tree species were growing here including American Beech (*Fagus grandifolia*), Black Cherry (*Prunus serotina*) and Ironwood (*Ostrya virginiana*). These communities contained relatively sparse ground cover and where present was composed of native wildflowers and forbs such as Jack-in-the-Pulpit (*Arisaema triphyllum*), White Baneberry (*Actaea pachypoda*) and Canada Mayflower (*Maianthemum canadense*). Ground cover is often patchy under maple dominated woodlands as these trees form a dense canopy in the summer which does not permit much light entry to the forest floor.

Photograph 3. Deciduous Forest (FOD5-1) Dominated by Sugar Maple

Fresh-Moist Hemlock-Hardwood Mixed Forest (FOM6-2)

A Fresh-Moist Hemlock Hardwood Mixed Forest (FOM6-2) was characterized in the northern portion of the subject property between the upland FOD5-1 and Provincially Significant Wetland to the north. Canopy cover was fairly dense here and included Eastern Hemlock (*Tsuga canadensis*), Sugar Maple, Eastern White Cedar (*Thuja occidentalis*) and Yellow Birch. Shrubs observed in this community included Pagoda Dogwood (*Cornus alternifolia*) and Serviceberry (*Amelanchier* sp.). The watercourse traversed the subject property partially through this community with a number of branches and low lying areas. The moisture regime of the fresh-moist woodland supports a plentiful diversity of ferns including Ostrich Fern (*Matteuccia struthiopteris*), Cinnamon Fern (*Osmundastrum cinnamomeum*), Wood Fern (*Dryopteris* spp.), Sensitive Fern (*Onoclea sensibilis*), Oak Fern (*Gymnocarpium dryopteris*) and Bulbet Fern (*Cystopteris bulbifera*). Jewelweed (*Impatiens canadensis*), Dwarf Scouring Rush (*Equisetum scirpoides*) and Canada Yew (*Taxus canadensis*) were also abundant.

Wetland Communities

Reed Canary Grass Mineral Meadow Marsh (MAM2-2)

One unit dominated by Reed Canary Grass (*Phalaris arundinacae*) occurred in the southern portion of the property and is described as MAM2-2. This unit is situated adjacent to the intersection of Brock Road and Concession 9 and was almost entirely dominated by Reed Canary Grass.

Maple Mineral Deciduous Swamp (SWD3)

A SWD3 roadside wetland community was delineated on the southeastern portion of the property adjacent to Concession Road 9 and Brock Road. This community was almost entirely composed of Freeman's Maple (*Acer x freemanii;* **Photograph 4**). Though dry at the time of survey, it appears this community may flood seasonally during the spring freshet or following heavy rain events. Anthropogenic activity was also evident from the neighbouring residences in the form of forts and a trail. A small inclusion dominated by Narrow-leaved Cattail (*Typha angustifolia*) was present along the northern limit of this community and also contained a small number of willow trees (*Salix* spp.) and Red-osier Dogwood (*Cornus stolonifera*) shrubs.

Photograph 4. Deciduous Swamp Dominated by Freeman's Maple

White Cedar Mineral Coniferous Swamp (SWC1)

The majority of the natural habitat in the north has been characterized as White Cedar Mineral Coniferous Swamp (**Photograph 5**). This community represents the Glen Major Provincially Significant Wetland Complex and extends off site to the east and west. The canopy was dominated by Eastern White Cedar and also included Eastern Hemlock and Black Ash (*Fraxinus nigra*) in lesser quantities.

Photograph 5. Coniferous Swamp

Mineral Meadow Marsh (MAM2)

A Mineral Meadow Marsh (MAM2) was delineated in the north and contained a variety of both facultative and obligate wetland plants. Reed Canary Grass, Devil's Beggar Ticks (*Bidens frondosa*), Rice Cutgrass, Canada Nettle (*Laportea canadensis*), sedges (*Carex* spp.), bedstraws (*Galium* spp.), Jewelweed and Field Horsetail (*Equiestum arvense*) were all abundant. A thicket element was present as well with Red-osier Dogwood and willow (*Salix* spp.) shrubs particularly in the eastern limits of this community.

Cattail Organic Shallow Marsh (MAS3-1)

A relatively small MAS3-1 pocket dominated by cattails was present in the northeastern portion of the subject property and is within the Glen Major Provincially Significant Wetland Complex. Watercress (*Nasturtium officinale*), Field Horsetail and a number of fern species were present here along with a small number of Eastern White Cedar and Black Ash trees.

4.2.2 Flora

A total of one hundred and seventeen plant taxa were observed on the subject property (**Appendix A**) with approximately one-third being non-native plant species (ranked L+ or L+? by the TRCA). Butternut was the only floral SAR recorded on the subject property and is discussed in greater detail in Section 4.4.

The majority of native plant species are ranked provincially as S5 (Secure) with the exception of Butternut that is ranked provincially as S3 (Vulnerable) and Black Walnut that is ranked provincially as S4 (Apparently Secure).

Oak Fern, Dwarf Scouring Rush, Butternut, Cinnamon Fern and Two-leaf Bishop's-cap (*Mitella diphylla*) are all listed L3 by the TRCA. L3 species are able to withstand minor disturbance, are generally secure in the natural matrix but are of regional concern. These species observations were all confined to the northernmost woodland and will be retained.

4.2.3 Wetlands

Wetlands are evaluated by the province according to the Ontario Wetland Evaluation System (OWES), where significance is determined based on biological, social, hydrological, and other special features.

The northern wetlands at this location were assessed for provincial significance in March 2016 and are part of the larger Glen Major Provincially Significant Wetland Complex (**Figure 2**). The majority of this PSW occurs off site.

The roadside wetland in the southeastern portion of the subject property has been delineated using ELC data and has not been staked in the field with the agencies, although a site visit with TRCA was conducted. Field investigations did not identify a watercourse that connects the PSW units to this roadside wetland area on the property and the unit appeared to be fed from overland flow, as indications of groundwater were absent from a natural heritage perspective. Water also likely collects here given the proximity of the roadway and intersection and as such, the wetland represents an overall low quality wetland fragment less than 0.5 ha in size.

A pre-development drainage plan prepared by SCS Consulting (July 2021), indicates that the approximate drainage area to the roadside wetland in the southeast corner of the site is 6.7 ha. The drainage from that corner crosses under Concession Road 9 (Central Street) and runs along the west side of Brock Road in a roadside ditch.

A preliminary Hydrogeological Investigation (July 2021a) and a Water Level Data Assessment (July 2021b) have been prepared by Golder Associates Ltd. These reports provide an understanding of potential groundwater interactions with this wetland. From a hydrogeological perspective, the available water level monitoring data from piezometer/staff gauge pair within the southern wetland do not indicate that the southern wetland exhibits any of the three features or functions that would qualify it as a wetland under the Oak Ridges Moraine Conservation Plan.

Therefore, the natural heritage data and the hydrogeological data indicate that this small wetland community does not meet the criteria to be a KNHF/KHF as defined by the ORMCP. However, a 30 m MVPZ has been illustrated for this submission until such time as agency technical review comments are received and 2021 seasonal data (i.e. breeding birds, amphibians, vegetation and hydrogeological monitoring) is collected and analysed to reaffirm the conclusions of the previously prepared reports, after which the application of a 10 m buffer and/or compensation for its removal may be discussed with the TRCA.

4.3 Wildlife

4.3.1 Amphibians

Amphibian surveys of the subject property were conducted both in 2012 and 2014.

The 2012 survey was confined to the southwestern portion of the subject property. No potential breeding habitat was identified and no amphibians were present.

Two surveys were conducted in 2014 for the early and mid-season breeding species and were concentrated in the wetland communities occurring in the south and northern portion of the property (**Figure 2**). A full chorus of Spring Peeper (*Pseudacris crucifer*) and five Wood Frog (*Lithobates sylvaticus*) were present from the northern survey station. One American Toad (*Bufo americanus*), two Spring Peepers and two Wood Frogs were recorded from the southernmost station capturing the roadside wetland community.

American Toads are widespread through a variety of habitat types and are one of the few amphibians species encountered in disturbed habitats. These animals are highly mobile and hence may be encountered far from their breeding locations. Spring Peepers and Wood Frogs on the other hand are far more sensitive and are typically found in close association with woodland communities. Both of these frogs overwinter terrestrially and do not require a permanent source or pool of water to fulfill their life cycles.

4.3.2 Breeding Birds

A total of 31 species of breeding birds were recorded on the subject property (**Appendix B**). The site is dominated by agriculture. Beyond this, a large portion of the natural habitat has been described as cultural communities or those arising from disturbance. Woodland and wetland habitat are present in the north.

Breeding birds recorded generally represented common species regularly found in disturbed urban areas including: Red-winged Blackbird (*Agelaius phoeniceus*), American Robin (*Turdus migratorius*), American Goldfinch (*Spinus tristus)*, and Brown-headed Cowbird (*Molothrus ater*). The only species that was noted breeding in the agricultural fields was Horned Lark (*Eremophila alpestris*), a fairly common species found in larger agricultural fields. Birds that are more closely associated with woodlands were also noted breeding here, primarily concentrated in the north, including Red-tailed Hawk (*Buteo jamaicensis*), Great Crested Flycatcher (*Myiarchus crinitus*), Northern Waterthrush (*Parkesia noveboracensis*) and Red-bellied Woodpecker (*Melanerpes carolinus*).

Birds that require larger tracts of suitable habitat in which to breed, or those that have a higher breeding success in larger areas of suitable habitat, are considered area-sensitive species. Two area-sensitive species were recorded on the subject property. White-breasted Nuthatch (*Sitta carolensis*) are considered to be forest-sensitive species, requiring woodland habitat in which to breed successfully. One pair of this species was present and given that only a small portion of woodland extends onto the subject property, it is likely the majority of this breeding territory falls outside of the property boundaries. The second area-sensitive species, Savannah Sparrow (*Passerculus sandwichensis*) is a grassland-sensitive species that requires large areas of open habitat in which to breed. It is, however, a common breeder in a wide variety of such open habitats, including old-field and agricultural edge habitat. Four Savannah Sparrows were recorded on the subject property.

The TRCA ranks species of regional conservation concern as L1 (highest concern) through L5 (least concern). Two species of bird ranked as a species of regional concern (L1 to L3) was recorded breeding on the subject property, the Northern Waterthrush and Mourning Warbler (*Geothlypis philadelphia*).

No species ranked as S1 through S3 (Critically Imperiled through Vulnerable) by the Province, or species included in the Oak Ridges Moraine Rare Breeding Bird List were observed. No bird species listed provincially as Threatened or Endangered were recorded during seasonal surveys. One recorded species, Eastern Wood-Pewee (*Contopus virens*), is a species of Special Concern both provincially and nationally. The Eastern Wood-Pewee is an aerial insectivore, a group of birds that has been declining rapidly in the past few decades. Like many other aerial insectivores, populations of this species have decreased due to a variety of factors including potential changes in insect populations and loss of habitat on their wintering grounds in Latin America. Though pewee numbers have declined by about 25% in the past decade, they are still common in forests throughout eastern North America and seem to be able to breed in relatively small forest patches and woodlots. A single Eastern Wood-Pewee was recorded in the northern woodland (discussed under Section 4.4). The woodland where this bird was observed will be retained and will receive a 30 m buffer to insulate the feature from the development.

4.3.3 Other Wildlife

Due to the dominance of active agricultural activity, the surrounding residential environment and the proximity of the site to Old Brock Road to the west and Brock Road to the east, the wildlife associated with the property is well adapted to suburban and urban environments.

Wildlife observed on the subject property during field investigations and site visits was recorded. This includes the following species:

- Gray Squirrel (*Sciurus carolinensis)*;
- Red Squirrel (*Tamiasciurus hudsonicus*);
- Eastern Cottontail (*Sylvilagus floridanus*);
- White-tailed Deer (*Odocoileus virginianus*); and
- Coyote (*Canis latrans*).

These species are commonly observed in the rural and urbanizing landscapes of southern Ontario. None of these species are Endangered or Threatened or of Special Concern. Other common mammals, especially urban tolerant ones, are also likely to occur.

No snakes were observed during the field surveys, however, it is expected that the common Eastern Garter Snake (*Thamnophis sirtalis*) occurs in the area.

4.4 Endangered and Threatened Species

The MNRF was contacted to obtain existing records for threatened and endangered species on the subject property (via email November 7, 2017). A response was received on April 9, 2018; the information provided below is based on the species identified in the MNRF letter and, assessment of potential habitat on the subject property and an updated background review (2021).

4.4.1 Avian Species

Avian SAR that have the potential to occur on the site include Barn Swallow (*Hirundo rustica*) and Chimney Swift (*Chaetura pelagica*). Both of these are threatened aerial insectivores, a group of birds that has been declining rapidly in the past few decades. Barn Swallow are typically found closely associated to human habitation as structures such as barns and bridges provide nesting opportunities for this species. Chimney Swift are also closely tied to urban environments as they almost exclusively nest within vertical chimney columns. The structures on site were searched for breeding evidence of these SAR and did not reveal any indication of their presence. Seasonal surveys did not record these species on the property.

Eastern Meadowlark and Bobolink have the potential to occur on the subject property. These are threatened songbirds and require larger hayfields, old fields, and other similar grassland habitats to complete nesting. Eastern Meadowlark are known to tolerate some shrub cover, however otherwise require very similar habitat to Bobolink. The patches of meadow vegetation on the subject property are too small to support breeding of either species, and both these birds were absent throughout breeding bird surveys.

Breeding bird surveys did not reveal the presence of any other avian SAR on the subject property.

4.4.2 Butternut

This species is a provincially and nationally endangered tree species that, while still relatively common in southern Ontario, has been listed because the population has been declining due to the presence of Butternut Canker disease. Butternut is protected under the provincial *Endangered Species Act* and associated Regulation 242/08, Section 23.7. The species can be damaged or removed if the requirements under the Regulation are followed (including using the MECP Registry) or if an ESA permit is acquired. Requirements typically involve planting, tending and monitoring replacement Butternut trees and associated companion trees.

When found, the species is assessed with a Butternut Health Assessment (by a qualified Butternut Health Assessor) as either:

- Category 1 – Non-retainable and therefore no protection is given;
- Category 2 – Retainable; or
- Category 3 – Potentially Archivable (may be useful in determining sources of resistance to Butternut canker).

A total of 11 trees were identified on the subject property, eight trees were assessed to be Category 2 and one tree was assessed to be Category 3. The Butternut Health Assessment results were submitted to MNRF and accepted in 2018.

Hybridity testing was completed by the Ontario Forest Research Institute in 2018 on all trees assessed to be Category 2 or 3 and one tree (Tree No. 10) assessed as a Category 2 tree was confirmed to be a hybrid. One tree (Tree No. 11) was assessed to be cultivated as agreed upon by the MNRF.

Therefore, a total of six trees (Trees No. 1, 3, 4, 6, 8, and 9) are subject to the ESA. The Category status of these Butternut trees is also shown on **Figure 2**.

The species can be damaged or removed if the criteria under the Regulation are achieved (i.e., removal of ten or fewer Category 2 trees, which includes using the MECP Registry). If the criteria are not achieved, then an Overall Benefit Permit is required under the ESA. Compensation for the removal of trees is required under both the Registry and ESA permit process, which typically involves planting, tending and monitoring of replacement Butternut trees and associated companion trees.

4.4.3 Bats

Several species of bat are now listed as provincially Endangered. Bat species listed as Endangered under the ESA are: Little Brown Myotis (*Myotis lucifugus*), Tri-colored Bat (*Perimyotis subflavus*), Eastern Small-footed Myotis (*Myotis leibii*) and Northern Myotis (*Myotis septentrionalis*). During the spring and summer, these species are known to roost in trees (under loose bark or in cavities), under rocks or in buildings.

Many bat species in Ontario have recently experienced marked population declines attributed to a rampant fungal disease, known as White-nose Syndrome. Bats affected by this syndrome experience mortality in part due to a disruption in their overwintering behaviour, causing individuals to emerge from their hibernation sites early and cold winter conditions cause increased mortality.

Beacon conducted bat snag surveys within appropriate ELC communities during leaf off conditions. Beacon contacted the Ministry of Natural Resources Forestry (MNRF) as they administered the ESA at that time, to obtain existing records for threatened and endangered species on the subject property (November 7, 2017). In their response dated April 9, 2018, the MNRF noted the potential for endangered bats to occur on the subject property. Prior to receiving a response and in anticipation of this, Beacon undertook snag surveys on three Cultural Woodland (CUW1) units slated for removal to proactively assess the potential for these species to occur on the subject property given the seasonal restrictions of when this study could occur.

Snag trees were identified within these units and acoustic monitoring took place in the areas proposed for removal between June 1 and June 11, 2018. No endangered bats protected under the *Endangered Species Act* were recorded during the acoustic monitoring period and therefore no further action is required to address endangered bats on the property.

4.4.4 Redside Dace

Redside Dace is a small colourful minnow that reaches a maximum length of about 12 cm. It prefers clear, coolwater habitats and is susceptible to habitat disturbance caused siltation, removal of riparian vegetation, channelization, agricultural run-off, and pollution. Redside Dace is listed as Endangered by COSSARO and is therefore protected under the Ontario ESA (2007). It has an S-rank of S2 indicating that it is imperiled and vulnerable to extirpation (NHIC 2012). Recently (2017), it was listed as Endangered in the federal SARA.

MNRF confirmed via email that Mitchell Creek is occupied Redside Dace habitat, approximately 1.7km south of the proposed development west of Brock Road, and west of the subject property, north to the CN rail line.

Section 29.1.1 of *Ontario Regulation 242/08* defines the habitat of Redside Dace as 30 m from the meander belt of an occupied reach. Given the proximity of Mitchell Creek to the subject property MNRF was consulted to determine if a meander belt study for Mitchell Creek in this location would be required.

MNRF has confirmed that regulated habitat does not extend on to the property, therefore, a meander belt study is not required.

4.5 Landscape Connectivity

Landscape connectivity, including the concept of wildlife corridors, has become recognized as an important part of natural heritage planning. A wide range of benefits can be attributed to maintaining connectivity within the natural landscape. In the fragmented landscape of southern Ontario, connectivity functions range from low, where major development features (e.g., highways, railways) fragment a pathway, to high, where natural features dominate the landscape and are more or less contiguous.

The subject property occurs within the community of Claremont, which is surrounded primarily by agriculture. The Mitchell Creek valley corridor located off-site to the west and a large woodland/wetland complex to the north that extends in an easterly direction provide habitat connectivity in a local and regional context. There are no natural heritage features on the subject property that provide connectivity to other off-site features or which provide linkages in the local or regional context.

4.6 Summary of Significant Natural Features

Table 2 provides a summary of the significant natural heritage features that have been identified and which need to be addressed with respect to potential development impacts. The limits of these features have been confirmed with the agencies and are depicted on **Figure 2.**

Table 2. Summary of Key Natural Heritage Features

Feature	Key Functions and Attributes
Provincially Significant Wetland (PSW)	• A portion of *Glen Major PSW Complex* is located in the northern portion of the subject property and is comprised of ELC units MAS3-1, SWC1 and the transition from FOM6-2. • Provides habitat for Wood Frog and Spring Peeper, common avian species, and wetland plants relatively intolerant to disturbance. • Likely receives groundwater input as indicated by seeps, iron staining and watercress growth. • Characterized as KNHF/KHF under ORMCP.
Other Wetlands (TRCA regulated)	• Roadside wetland unit at NW corner of Central Street and Brock Road comprised of ELC units SWD3 and MAM2-2. • Combined area of these units is 0.33ha. • Provides habitat for Wood Frog, Spring Peeper and American Toad. Avian and botanical species here were common and tolerant to disturbance. • Limited in function based on roadside location, noise and light pollution as well as inputs from roadside runoff. • Likely floods seasonally and receives overland flow from agricultural field to north.
Woodlands	• Woodlands in north portion of subject property characterized as FOM6-2, FOD5-1 and CUW1 are contiguous with watercourse and PSW. • Provides upland habitat for terrestrial amphibians and tree cover for forest sensitive bird species (i.e., White-breasted Nuthatch) and spring ephemeral plants. • Outermost dripline of woodland staked with TRCA on November 2, 2017.

Feature	Key Functions and Attributes
	• Characterized as Significant Woodland (i.e., KNHF) per ORMCP, Durham OP and City of Pickering OP.
Watercourses	• Poorly defined tributary traverses property in northern woodland/wetland contributing flow to PSW and converges with East Duffins Creek downstream. • Mitchell Creek occurs off site to west (70 m) and is occupied Redside Dace habitat.
Threatened and Endangered Species Habitat	• A total of 6 naturally occurring Butternut were recorded on the subject property. A snag survey for bats was conducted in leaf-off conditions in 2018 which was followed by acoustic monitoring in June 2018 within the CUW units proposed for removal. No bat species protected under the ESA were recorded during this monitoring period. • No threatened or endangered birds were encountered. • MNRF has confirmed that Redside Dace habitat associated with Mitchell Creek does not extend onto the subject property.

5. Proposed Development

The proposed development envisions a residential plan of subdivision on the east side of Old Brock Road, immediately adjacent to existing residential development within the Hamlet of Claremont (**Figure 3**). Development of the site, excluding the woodland/wetland area in the northernmost portion of the site and the roadside wetland in the southeast, is proposed and respects a 30 m MVPZ to the staked dripline in the north, and a 30 m MVPZ to the wetland in the south, based on the current plan. The development form consists of 70 lots with one existing residential lot remaining along Old Brock Road (0.58 ha).

The proposed subdivision will be accessed from the existing Old Brock Road by Street A and Street C which are connected in a north-south orientation by Street D. Street B is represented by an extension of the existing roadway, Franklin Street, and will provide access to lots in the southwest.

A total of 0.33 ha of the development plan lands will be conveyed to three existing adjacent lots on Lane Street, to address septic requirements.

Two blocks are included along Brock Road; a 0.89 ha block for noise attenuation and a 0.08 ha and a 0.01 ha block for future road widening. Three Open Space blocks are included within the plan which total 4.24 ha. One of these occurs along the northernmost portion of the proposed development and is composed of a woodland/wetland feature, and one is in the southeastern corner of the subject property at the intersection of Brock Road and Central Street, where the existing wetland is located. A linear Open Space block is proposed at the southern property boundary between Street A and Street B. Open Space Buffer blocks totalling 0.84 ha are adjacent to the woodland/wetland feature in the north, and the wetland in the southeast. A proposed Park Block (1.7 ha) is situated at the termination of Street B.

5.1 Servicing and Stormwater Management

5.1.1 Servicing and Stormwater Management

A Functional Servicing and Stormwater Management Report (FSSR) has been prepared as a companion document by SCS Consulting Group (July 2021). Stormwater and servicing details can be found in the FSSR and are summarized below.

Two stormwater management (SWM) pond facilities are proposed in conjunction with this development proposal. One pond is proposed to be situated along Old Brock Road, between Street A and Street C and the second pond is located at the southernmost termination of Street A, near the intersection of Brock Road and Central Street (**Figure 3**).

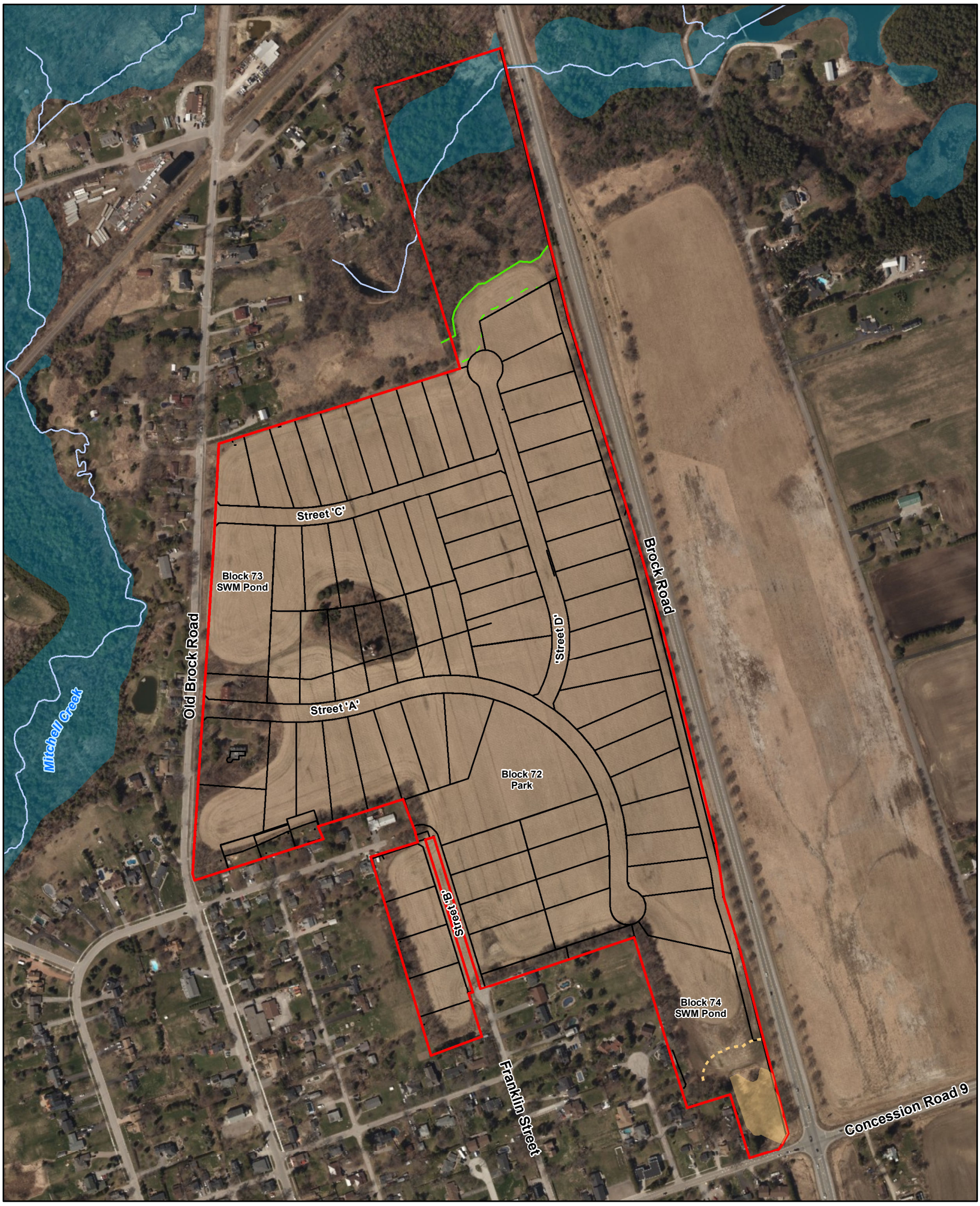
The combination of the SWM ponds will provide MECP Enhanced (Level 1) quality control for the runoff from the majority of the proposed development, and will control post-development release rates during the 2 through 100 year storm events to required unit release rates, to the extent feasible. The majority of the site (12.49 ha) is proposed to drain to the West (dry) SWM pond which will outlet via a storm sewer on Street A and be conveyed to Street B, and ultimately to the Southeast SWM pond. Runoff from rear lots (0.40 ha) and the western boundary of the West SWM pond block (0.24 ha) is proposed to drain uncontrolled to the east ditch at Old Brock Road and be conveyed southerly and westerly toward Mitchell Creek via an existing box culvert under Old Brock Road, ultimately entering Mitchell Creek, approximately 130 m west of Old Brock Road.

Drainage to the low point at Street C and Old Brock Road (0.58 ha) and Street A and Old Brock Road (0.31 ha) will be too low to be conveyed to the West SWM Pond; therefore, oil-grit separators are proposed to provide quality controls for each of these small areas before the flows are discharged to the easterly Old Brock Road ditch.

In order to reduce the flows draining to Franklin Street and alleviate the existing flooding south of the subject property, the remaining lands (10.87 ha) as well as existing lot drainage (0.33 ha) will drain to the Southeast SWM pond. The southeast SWM pond outlet will be piped south (approximately 640 m), and will discharge to the westerly Brock Road ditch, via a proposed storm sewer, approximately 430 m south of Concession Road 9 (Central Street). This ditch ultimately discharges to Mitchell Creek located approximately 1.7 km further downstream.

Due to the sloped topography and associated grading constraints, runoff from a 2.49 ha area (including the area of the existing residence, proposed rear yards and one proposed lot fronting Old Brock Road) will drain uncontrolled via the Old Brock Road ditch toward an existing culvert under Brock Road, approximately 50 m north of Lane Street. This drainage will be ultimately conveyed westerly to Mitchell Creek. Also due to the sloped topography and associated grading constraints, runoff from approximately 2.08 ha of rear yard and roof areas along the north subject property boundary will continue to drain north.

To maintain wetland hydrology, a portion of runoff from rear yards backing onto Brock Road (up to approximately 1.32 ha) will be directed to the existing wetland to the south and runoff from approximately 0.69 ha of rear yard areas in the northeast corner will be directed to the existing wetland to the north.



Legend

- Subject Property
- Proposed Development
- Provincially Significant Wetland (MNRF March 2016)
- Watercourse (MNRF 2017)
- Unevaluated Wetland
- Unevaluated Wetland + 30 m
- Staked Dripline TRCA, November 2, 2017
- Staked Dripline + 30 m

Proposed Development

Figure 3

Claremont Developments Inc.

UTM Zone 17 N, NAD 83

First Base Solutions
Web Mapping Service 2020

N W E S

0 50 100 200 Meters

1:4,500

BEACON ENVIRONMENTAL

Project 221308
July 2021

To achieve TRCA's erosion control criteria, runoff from the 5 mm storm event will be retained on-site through low-impact development (LID) measures, specifically soakaway pits. The runoff volume from a 25 mm rainfall event will be detained over a minimum of 48 hours by the SWM ponds.

5.1.2 Sanitary Servicing and Water Supply

No sanitary servicing allocation will be required from the Region of Durham or the City of Pickering since the subject lands are proposed to be serviced by private septic systems.

There are no existing municipal watermains or water treatment plants available to service the site. The existing residences adjacent to the site are currently serviced by private wells.

6. Potential Impacts

The following subsections discuss potential impacts of the proposed residential development. Mitigation measures are discussed in Section 7.

6.1 Aquatic Resources

6.1.1 Stormwater Runoff

An effective SWM Plan will mitigate the increase in impervious surfaces, which can potentially impact the natural environment in the following ways:

- Increased risk of flooding to downstream areas;
- Erosion of watercourses from un-controlled surface water runoff and flows;
- Impaired water quality and increased turbidity leading to impacts to fisheries, macroinvertebrates and aquatic vegetation; and
- Inability to maintain pre-development hydrology of wetlands and watercourses.

Also, with the presence of habitat occupied by Redside Dace, the SWM plan must be designed to protect for this species. With this in mind, the pond has been designed, where feasible, according to MNRF recommendations for SWM ponds ultimately discharging to Redside Dace streams. The design must include best efforts to maintain a discharge temperature below 24°C; dissolved oxygen concentration at discharge of at least seven mg/L; and TSS of <25 mg/L above stream background (MNRF 2016).

6.1.2 Dewatering

Any necessary site dewatering requirements, where required, and as determined through the ongoing hydrogeological investigations, will need to be addressed during subsequent design stages to ensure potential impacts to aquatic resources which are influenced by groundwater are minimized during construction. Dewatering discharge should not be directed toward wetlands, and should it be directed toward Mitchell Creek, water quality must meet MNRF guidelines.

6.2 Terrestrial Impacts

Background review and field investigations on the subject property identified that the subject property was dominated by agricultural uses and hosts a variety of cultural and natural features including cultural meadows, cultural thicket, wetlands, woodlands, and part of a PSW.

6.2.1 Vegetation Removal

As noted, the subject property consists primarily of active agricultural land with a single family dwelling and associated structures along Old Brock Road at the western limit. The proposed residential development will require the removal of a total of approximately 1.75 ha of cumulative vegetation, represented by small discrete areas of cultural meadow, cultural thicket and cultural woodland communities, as well as narrow linear hedgerows.

None of these vegetation communities is considered to be ecologically significant as they are dominated by either commonly occurring, readily establishing and disturbance tolerant species, or non-native vegetation as discussed in Section 4.2 and 4.2.1. All native plant species on the subject property are provincially secure.

A Tree Inventory and Preservation Plan will be prepared for the subject property at the detailed design stage.

6.2.2 Butternut

Six Butternut trees have been identified on the subject property that are subject to the requirements of the ESA. Efforts are being made to retain these trees and consultation will be undertaken with the MECP upon completion of detailed grading to confirm impacts to these trees.

6.2.3 MVPZ Encroachment

A small (37 m^2) amount of grading will be required within the 30 m MVPZ to the Significant Woodland in the north to accommodate the cul-de-sac. This minor grading encroachment to allow for a 3:1 slope is proposed in order to minimize disturbance and prevent the use of unnecessary retaining walls, while tying in proposed grades to existing grades. Further, the impact of this encroachment on the buffer is reversible as the disturbed area will be tilled or loosened and topped with sufficient topsoil in order to support the establishment and long-term growth of proposed plantings.

6.2.4 Wetlands

The redevelopment of the subject property into a residential subdivision comprised of single family dwellings with internal roads and driveways will result in an increase of impermeable surface. Mitigation techniques such as the installation of LID measures and directing roof top drainage to the ground and generally minimizing impermeable surfaces will help to maintain hydrological conditions.

6.3 Wildlife

The current breeding bird community is generally that associated with a suburban landscape, and the amphibians utilizing the wetland areas are abundant and common.

The proposed redevelopment will likely result in a reduction in the overall number of birds that utilize the subject property for foraging, given that the current agricultural habitat will be converted to residential development. However, it is likely that the current diversity of species will be retained post-development, as the existing higher quality habitat (e.g., the adjacent woodland/wetland in the northern portion of the property) will be preserved and protected with a 30 m-wide naturalized (vegetated) buffer.

It is anticipated that the amphibian communities present on the subject property will continue to exist, given the protections afforded to their wetland habitats.

The agricultural lands to be removed are used by wildlife, however, the fact that these lands are primarily farmed as row crops reduces the current usefulness of the area for wildlife. Post-development there will be a loss of habitat for wildlife species that use agricultural lands, however, all of these species are common and do not require protection under the ESA (2007).

6.4 General Impacts

Rear Yard Waste Dumping

Generally speaking and without any mitigative measures, dumping into natural areas, particularly of yard waste could have a negative effect on the natural system. This can smother native species, encourage non-native plants and disturb wildlife habitat.

Human Disturbance

Uncontrolled access into natural areas will result in trampling, a proliferation of informal trails and direct effects on flora and fauna. Non-native invasive plant species are also spread in this manner, and overuse can result in physical damage and degradation of the natural system that is being protected from development.

7. Recommended Mitigation Measures

Potential impacts can be minimized and mitigated through the implementation of mitigation measures. Some mitigation measures are general, while others are site or location specific, which will be described more fully through detailed design.

7.1 MVPZs

The TRCA was on site to stake the vegetative dripline of the northernmost natural features on November 2, 2017. This woodland unit meets the criteria of Significant Woodland (ORMCP Technical Paper #7) on the ORMCP based on size and continuity with the Glen Major Provincially Significant Wetland Complex. Per the ORMCP, City of Pickering and TRCA's LCP, a 30 m MVPZ has been applied. The 30 m MVPZ will be planted with native species in order to protect the edge of the feature from the proposed residential development.

The roadside wetland including the Maple Mineral Deciduous Swamp (SWD3) and Reed Canary Grass Mineral Meadow Marsh (MAM2-2) communities in the southeastern portion of the site has been illustrated as an unevaluated wetland (**Figure 2**). These two units together total 0.33 ha. Seasonal field studies conducted to date by Beacon and Golder (July 2021) indicate that this wetland does not meet the criteria to be considered a KHF/KNHF; however a a 30 m MVPZ has been applied to the northernmost limit of the SWD in the direction of the development until such time as all field surveys are complete and technical review comments have been received.

Where grading is proposed within the buffer area to the northern woodland in order to accommodate the cul-de-sac, the disturbed area will be tilled or loosened and topped with sufficient topsoil in order to support the establishment and long-term growth of proposed plantings.

To provide additional protection to adjacent natural heritage features and to enhance the subject property, a naturalization/restoration plan will be prepared to identify these areas and to determine suitable native species.

7.2 Stormwater Management Plan

To ensure that vegetation communities, watercourses and their ecological functions continue, the amount of water reaching these communities must be maintained post-development. The FSSR (SCS July 2021) has considered changes between pre- and post-development conditions and provides detail on the delivery of water to the wetlands post-development. The Preliminary Hydrogeological Investigation prepared by Golder Associates Ltd. (July 2021a) provides water balance parameters which will be refined as the project moves to detailed design.

The FSSR (SCS July 2021) has been developed in accordance with the standards and requirements of the City of Pickering, TRCA and MECP. This report addresses the management of stormwater through LID measures, and also the management of stormwater during construction to ensure that impacts to receiving watercourses are avoided or minimized.

The SWM ponds are proposed to provide MECP Enhanced (Level 1) quality control for the proposed development, and to control post-development release rates during the 2 through 100-year storm events to unit release rates.

7.3 General Mitigation Measures

Timing – Breeding Birds

The federal *Migratory Bird Convention Act* (1994) protects the nests, eggs and young of most bird species from harm or destruction. Environment Canada considers the general nesting period of breeding birds in southern Ontario to be between late March and the end of August. This includes times at the beginning and end of the season when only a few species might be nesting. In light of this we recommend that during the peak period of bird nesting, no vegetation clearing or disturbance to nesting bird habitat occur between May 01 and mid-July. This includes trees, shrubs, and grassed habitats where nests are typically constructed. In the "shoulder" seasons of April 1 to 30, and July 16 to August 31, vegetation clearing may occur, but only after an ecologist with appropriate avian knowledge has surveyed the area to confirm nesting is absent. If nesting is found, then vegetation clearing (in an area around the nest) has to wait until nesting has concluded. Likelihood of nesting birds being present in the "shoulder" seasons also depends on the habitat type. From September 1 through to March 31, of any year, vegetation clearing can occur without nest surveys, but the law for nest protection still holds (i.e., if an active nest is known it should be protected).

Erosion and Sediment Control

During the detailed design stage, erosion and sediment control measures will be designed with a focus on erosion control practices (such as stabilization, track walking, staged earthworks, etc.) as well as sediment controls (such as fencing, mud mats, catchbasin sediment control devices, rock check dams and temporary sediment control ponds). These measures will be designed and constructed as per the "Erosion and Sediment Control Guide for Urban Construction" document published by the Greater Golden Horseshoe Area Conservation Authorities (December 2019). A detailed erosion and sediment control plan will be prepared for review and approval by the City of Pickering and TRCA prior to any site grading being undertaken. This plan will address phasing, inspection and monitoring aspects of erosion and sediment control. All reasonable measures will be taken to ensure sediment loading to the adjacent watercourses and properties are minimized both during and following construction.

Low Impact Development (LIDs) Techniques

LIDs have been incorporated on site in order to retain the first 5 mm of stormwater on-site as detailed in the FSSR (SCS July 2021). Soak-away pits are proposed in front yards on lots where depth to groundwater is sufficient, with a minimum setback of 5 m to the house. Roof leaders from the front half of roofs will be directly connected to the soak-away pits and overflow connections to the storm sewer system will be provided.

Soak-away pits are proposed to provide on-site retention of the 5 mm runoff volume, for the purpose of providing erosion control. Based on the preliminary sizing, a total soak-away pit storage volume of 400

m3 is required. Soak-away pits are proposed on approximately 36 lots, with a depth of 0.50 m, width of 1.5 m and a length of 15 m.

General Tree Protection

A Tree Inventory and Preservation Plan will be prepared for the subject property at the detailed design stage.

Tree Protection Zones (TPZs) should be established on the ground to protect trees identified for preservation prior to the start of construction and shall remain in good condition throughout the duration of all site work. No grading, soil disturbance or surface treatments shall occur within the TPZ. No equipment or materials shall be stored inside the TPZ. If grading or site alteration is required within the TPZs an ISA certified arborist should be consulted. Where trees have been identified for retention, tree protection fencing will be erected and maintained throughout the duration of all construction activity. There shall be no disturbance within the tree protection zone.

Disturbance

Residential development may bring disturbance from people and pets, noise and light disturbance, and often, dumping of garden clippings into adjacent natural areas. The impact of these disturbances can be mitigated through rear lot fencing and screening plantings to reduce accessibility to the natural area. Lighting should not be permitted to shine directly into natural and naturalizing areas.

8. Policy Conformity

8.1 Provincial Policy Plan

This NHE has identified and delineated natural features on and adjacent to the subject property. Development is not proposed within natural heritage features as identified by the PPS.

As the subject property is entirely within the ORMCP provincial plan area, Section 8.2 outlines conformity with the ORMCP which is the provincial plan which provides detailed policies and technical guidance with respect to the protection of Key Natural Heritage and Key Hydrologic Features. This is consistent with the PPS, which notes that provincial plans (e.g., ORMCP, Greenbelt Plan) shall be read in conjunction with the PPS and take precedence over policies in the PPS to the extent of any conflict, except where legislation establishing provincial plans provides otherwise.

8.2 Oak Ridges Moraine Conservation Plan

As the proposed development is part of an open application (February and June 1990) for subdivision and zoning by-law amendments that commenced prior to November 17, 2001, this application is subject to the transition policies of the ORMCP.

As required by section 20 of the ORMCP, landscape connectivity has been reviewed in this NHE. The subject property occurs in an area where the local landscape is dominated by agricultural uses. The Mitchell Creek valley corridor located off-site to the west and a large woodland/wetland complex to the north that extends in an easterly direction provide habitat connectivity in a local and regional context. The connectivity associated with the valley corridor and woodland/wetland complex will be maintained and a 30 m MVPZ has been provided where it extends on to the subject property. Therefore, connectivity between natural core features will be maintained.

This NHE has demonstrated that there are KNHFs and KHFs on and immediately adjacent to the subject property. MVPZs have been applied to the identified features and development is not proposed within the KNHFs or their MVPZs per section 22(2).

As per Technical Paper #7, the northernmost treed feature on site qualifies as a Significant Woodland based on size, as it exceeds the 0.5 ha area threshold in Natural Core or Natural Linkage and additionally is contiguous with both a PSW and watercourse. A 30 m MVPZ will be applied to the outermost edge of this feature as staked by the TRCA, thus exceeding a buffer that would be applied to the watercourse or PSW within the woodland unit.

The treed area centrally located within the agricultural area is not large enough (i.e., 4.0 ha or greater) to qualify as a Significant Woodland within an ORMCP Countryside Area (ORMCP Technical Paper #7).

A wetland and woodland (swamp forest) associated with Mitchell Creek is situated off site to the west within the 120 m area of influence of the proposed development. However, at its closest point this KNHF is located approximately 70 m from the subject property and this intervening area contains existing residential development and Old Brock Road. Development of the proposed subdivision will not have any impact on this off-site feature and no additional buffer is required.

For wetlands smaller than 0.5 ha (i.e., the roadside wetland in the southeastern portion of the subject property), additional information beyond size is required to determine if the feature can be considered a KNHF or KHF. Hydrogeological investigations conducted by Golder Associates (July 2021) conclude that from a hydrogeological standpoint this wetland does not meet the criteria to be a KHF.

The roadside wetland has been delineated using ELC data and has not been staked in the field with the agencies, although a site visit with TRCA was conducted to review the feature. Field investigations did not identify a watercourse that connects the PSW units to this roadside wetland area on the property and the unit appeared to be fed from overland flow, as indications of groundwater were absent from a natural heritage perspective. Water also likely collects here given the proximity of the roadway and intersection and as such, the wetland represents an overall low-quality wetland fragment that is approximately 0.33 ha in size. Based on the field investigations and preliminary information available this feature has not been included as a KNHF or a KHF from an ecological perspective. However, a precautionary approach has been taken and a 30 m MVPZ has been applied to this feature.

This NHE has addressed the requirements of section 23 (1) through the identification of KNHFs and demonstration that there will be no adverse effects on the features or their ecological function. The development plan has been designed to direct development outside of these features and their MVPZs. The MVPZs will be planted with native vegetation which will provide enhancement to the edge of the existing feature limit. As noted above, connectivity between features on and off the property will be maintained.

The requirements of Hydrological Evaluation as required by section 26(4) due to the presence of KHFs (i.e. wetlands) are addressed in companion reports prepared by SCS (July 2021) and Golder Associates Ltd. (July 2021a and July 2021b).

Therefore, the proposed development has addressed the transition policies of the ORMCP for the protection of KNHFs and KHFs.

8.3 Durham Region Official Plan

Subject to the provisions of Section 2.3.14 the location and extent of the natural heritage features shown on Schedule B have been confirmed through this NHE.

Seasonally appropriate field investigations revealed that the features identified on the OP Schedule B are either hedgerows or small cultural woodland/thicket/meadow patches. Consequently, these features have not been treated as significant and a buffer has not been applied.

The features in the north were confirmed to be KNHFs and will be buffered by 30 m as discussed in Section 8.2.

The proposed development is in conformity with the natural heritage policies of the Durham Region Official Plan.

8.4 City of Pickering Official Plan

Schedule 3 of the Pickering Official Plan identifies three small treed areas abutting the subject property as Significant Woodland. However, detailed field investigations have confirmed that these features are either cultural woodland, meadow, thicket or small portions of a hedgerow. The three treed areas identified as Significant Woodlands on Schedule 3 of the City of Pickering Official Plan are all of insufficient size to be considered Significant Woodland. The two areas at the southern end of the property are hedgerows that range in size from 0.27 ha to 0.34 ha.

The woodland and wetland complex in the north was also indicated on Schedule 3 of the Pickering Official Plan. As discussed, this feature collectively satisfies the criteria to be considered both a Significant Woodland and KNHF. These features will be retained and will be insulated from the development by a 30 m buffer from the outermost feature limit (i.e., staked dripline).

The proposed development is in conformity with the natural heritage policies of the City of Pickering Official Plan.

8.5 Toronto Region Conservation Authority Policies and Regulations

Portions of the subject property are regulated by the TRCA due to the presence of the Glen Major PSW Complex and a permanent/intermittent stream at the northern extent of the property. There is also a small (<0.5 ha) roadside wetland in the southeastern portion of the property that is regulated by TRCA. TRCA regulates the area within 120 m of all wetlands on the Oak Ridges Moraine. A permit from TRCA will be required for any development or site alteration within the regulated area on the subject property.

The limit of the PSW was mapped by MNRF in 2016. The PSW is entirely within a Significant Woodland feature as staked by the TRCA in November 2017. A 30 m MVPZ has been applied to the staked feature limit of the outermost feature. The MVPZ will be restored and these lands will be dedicated to a public authority.

TRCA did not stake the limit of the roadside wetland and per discussions in the field with TRCA, ELC mapping is provided to delineate this feature as well as an analysis of function as part of this NHE. This feature is regulated by TRCA and the LCP generally require a 10 m buffer from wetlands, with some exceptions. However , a 30 m MVPZ has been provided for this submission until such time as technical review comments are received and 2021 seasonal data (i.e. breeding birds, amphibians, vegetation and hydrogeological monitoring) is collected and analysed after which a 10 m buffer/ compensation for its removal may be discussed with the TRCA. The 30 m MVPZ exceeds the 10 m buffer required by TRCA policies.

8.6 *Endangered Species Act* (ESA)

Eleven Butternut trees have been identified on the subject property, of which five trees were assessed to be Category 2 and one tree was assessed as Category 3. The remaining 5 Butternut were determined not to be subject to the ESA as they were either assessed as no retainable or confirmed to be hybrid trees. The Category 3 tree is located within 25 m of the proposed development and consultation with MECP is required to address impacts to Butternut.

Consultation with the MNRF has been undertaken and it has been confirmed that the regulated habitat associated with Mitchell Creek to the west does not extend onto the subject property. As such, there will not be a requirement for a meander belt study.

Snag surveys were conducted within the cultural woodland pockets on the subject property and informed the acoustic monitoring program which was completed in June 2018. No endangered bats were recorded during the ten-day monitoring period and therefore no further action will be required with respect to these species.

No other threatened or endangered species were recorded on or adjacent to the property during seasonally appropriate field investigations.

9. Summary

Beacon has conducted a background review and seasonal field investigations in order to prepare this NHE as part of this development application for 71 residential lots in the Hamlet of Claremont, City of Pickering. An analysis of significant ecological features and functions was undertaken, and potential impacts were identified.

Natural features are present in the northernmost portion of the property including the Glen Major PSW, a watercourse and Significant Woodlands which will be preserved and protected with a 30 m vegetated MVPZ consistent with ORMCP and TRCA policies. The 0.33 ha roadside wetland in the southeast portion of the site does not meet the criteria to be considered a KHNF/KHF based on studies completed to date, but is a TRCA regulated feature, the 30 m MVPZ exceeds the TRCA required 10 m buffer for

this feature. Impacts of the proposed development on the natural environment are limited to the removal of common cultural communities and the conversion of agricultural lands to residential uses. Standard best practice and mitigation measures, as discussed in Section 7, should be applied.

The proposed development plan is in conformity with the transitional policies of the ORMCP, with the current natural heritage policies of the PPS, Region of Durham Official Plan, the City of Pickering Official Plan, and with the regulations of the TRCA. There are TRCA regulated features on the subject property and therefore a permit will be required prior to commencing works for the proposed development. Additional field investigations will be undertaken in 2021 to confirm the findings of previously completed field work and to address requirements of the ESA (2007).

We trust that this information meets the needs of the City of Pickering at this time. Should you have any questions or require additional information please contact Kristi Quinn at (905) 201-7622 ext. 226.

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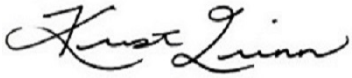

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Appendix A

Inventory of Vascular Plant Species

Appendix A

Inventory of Vascular Plant Species

Family Name	Scientific Name	Common Name	Cosewic[1]	Cossaro[2]	S-Rank[3]	Durham[4]	6e7[4]	L-Rank[5]
Aceraceae	*Acer Negundo*	Manitoba Maple			S5			L+?
Aceraceae	*Acer Platanoides*	Norway Maple			Se5			L+
Aceraceae	*Acer Rubrum*	Red Maple			S5			L4
Aceraceae	*Acer Saccharinum*	Silver Maple			S5			L4
Aceraceae	*Acer Saccharum* Var. *Saccharum*	Sugar Maple			S5			L5
Anacardiaceae	*Rhus Hirta*	Staghorn Sumac			S5			L5
Apiaceae	*Aegopodium Podagraria*	Goutweed			Se5			L+
Apocynaceae	*Vinca Minor*	Periwinkle			Se5			L+
Araceae	*Arisaema Triphyllum* Ssp. T*riphyllum*	Jack-In-The-Pulpit			S5			L5
Araliaceae	*Aralia Nudicaulis*	Wild Sarsaparilla			S5			L5
Asclepiadaceae	*Asclepias Syriaca*	Common Milkweed			S5			L5
Asteraceae	*Arctium Lappa*	Greater Burdock			Se5			L+
Asteraceae	*Aster Puniceus* Var. *Puniceus*	Purple-Stemmed Aster			S5			L5
Asteraceae	*Erigeron Philadelphicus* Var. *Philadelphicus*	Philadelphia Fleabane			S5			L5
Asteraceae	*Hieracium Caespitosum*	Field Hawkweed			Se5			L+
Asteraceae	*Leucanthemum Vulgare*	Oxeye Daisy			Se5			L+
Asteraceae	*Prenanthes Altissima*	Tall Rattlesnake-Root			S5			L5
Asteraceae	*Solidago Canadensis* Var. *Scabra*	Tall Goldenrod			S5			L5
Asteraceae	*Solidago Flexicaulis*	Broad-Leaved Goldenrod			S5			L5
Asteraceae	*Symphyotrichum Lanceolatum Ssp. Lanceolatum*	Panicled Aster			S5			L5
Asteraceae	*Symphyotrichum Novae-Angliae*	New England Aster			S5			L5
Asteraceae	*Taraxacum Officinale*	Common Dandelion			Se5			L+

Family Name	Scientific Name	Common Name	Cosewic[1]	Cossaro[2]	S-Rank[3]	Durham[4]	6e7[4]	L-Rank[5]
Asteraceae	*Tussilago Farfara*	Colt's Foot			Se5			L+
Balsaminaceae	*Impatiens Capensis*	Spotted Jewel-Weed			S5			L5
Betulaceae	*Betula Alleghaniensis*	Yellow Birch			S5			L4
Betulaceae	*Betula Papyrifera*	Paper Birch			S5			L4
Boraginaceae	*Cynoglossum Officinale*	Hound's-Tongue			Se5			L+
Brassicaceae	*Cardamine Diphylla*	Broad-Leaved Toothwort			S5			L4
Brassicaceae	*Hesperis Matronalis*	Dame's Rocket			Se5			L+
Caprifoliaceae	*Lonicera Tatarica*	Tartarian Honeysuckle			Se5			L+
Caprifoliaceae	*Sambucus Nigra* Ssp. *Canadensis*	Common Elderberry			S5			L5
Cornaceae	*Cornus Alternifolia*	Alternate-Leaf Dogwood			S5			L5
Cornaceae	*Cornus Sericea* Ssp. *Sericea*	Red-Osier Dogwood			S5			L5
Crassulaceae	*Sedum Acre*	Mossy Stonecrop			Se5			L+
Cucurbitaceae	*Echinocystis Lobata*	Wild Mock-Cucumber			S5			L5
Cupressaceae	*Thuja Occidentalis*	Northern White Cedar			S5			L4
Cyperaceae	*Carex Bebbii*	Bebb's Sedge			S5			L5
Cyperaceae	*Carex Gracillima*	Graceful Sedge			S5			L4
Cyperaceae	*Carex Pedunculata*	Longstalk Sedge			S5			L4
Dryopteridaceae	*Athyrium Filix-Femina* Var. *Angustum*	Lady-Fern			S5			L5
Dryopteridaceae	*Cystopteris Bulbifera*	Bulblet Fern			S5			L4
Dryopteridaceae	*Dryopteris Carthusiana*	Spinulose Wood Fern			S5			L5
Dryopteridaceae	*Gymnocarpium Dryopteris*	Oak Fern			S5			L3
Dryopteridaceae	*Onoclea Sensibilis*	Sensitive Fern			S5			L5
Equisetaceae	*Equisetum Scirpoides*	Dwarf Scouring Rush			S5	U	U	L3
Fabaceae	*Medicago Lupulina*	Black Medic			Se5			L+
Fabaceae	*Robinia Pseudo-Acacia*	Black Locust			Se5			L+
Fabaceae	*Trifolium Hybridum* Ssp. *Elegans*	Alsike Clover			Se5			L+
Fabaceae	*Trifolium Pratense*	Red Clover			Se5			L+
Fabaceae	*Trifolium Repens*	White Clover			Se5			L+
Fabaceae	*Vicia Cracca*	Tufted Vetch			Se5			L+

Family Name	Scientific Name	Common Name	Cosewic[1]	Cossaro[2]	S-Rank[3]	Durham[4]	6e7[4]	L-Rank[5]
Fagaceae	*Fagus Grandifolia*	American Beech			S5			L4
Geraniaceae	*Geranium Robertianum*	Herb-Robert			Se5			L+?
Grossulariaceae	*Ribes Cynosbati*	Prickly Gooseberry			S5			L5
Grossulariaceae	*Ribes Rubrum*	Northern Red Currant			Se5			L+
Hydrophyllaceae	*Hydrophyllum Virginianum*	Virginia Waterleaf			S5			L5
Juglandaceae	*Juglans Cinerea*	Butternut	End	End	S3			L3
Juglandaceae	*Juglans Nigra*	Black Walnut			S4	U		L5
Lamiaceae	*Glechoma Hederacea*	Ground Ivy			Se5			L+
Lamiaceae	*Leonurus Cardiaca* Ssp. *Cardiaca*	Common Motherwort			Se5			L+
Lamiaceae	*Lycopus Uniflorus*	Northern Bugleweed			S5			L4
Liliaceae	*Maianthemum Canadense*	Wild-Lily-Of-The-Valley			S5			L4
Liliaceae	*Maianthemum Racemosum Ssp. Racemosum*	False Solomon's Seal			S5			L5
Oleaceae	*Fraxinus Nigra*	Black Ash			S5			L4
Oleaceae	*Fraxinus Pennsylvanica*	Green Ash			S5			L5
Onagraceae	*Circaea Lutetiana* Ssp. *Canadensis*	Enchanter's Nightshade			S5			L5
Osmundaceae	*Osmunda Cinnamomea*	Cinnamon Fern			S5			L3
Pinaceae	*Picea Abies*	Norway Spruce			Se3			L+
Pinaceae	*Tsuga Canadensis*	Eastern Hemlock			S5			L4
Poaceae	*Bromus Inermis* Ssp. *Inermis*	Smooth Brome			Se5			L+
Poaceae	*Dactylis Glomerata*	Orchard Grass			Se5			L+
Poaceae	*Glyceria Striata*	Fowl Manna Grass			S5			L5
Poaceae	*Leersia Oryzoides*	Rice Cutgrass			S5			L5
Poaceae	*Phalaris Arundinacea*	Reed Canary Grass			S5			L+?
Poaceae	*Phleum Pratense*	Timothy			Se5			L+
Poaceae	*Poa Palustris*	Fowl Bluegrass			S5			L5
Poaceae	*Poa Pratensis* Ssp. *Pratensis*	Kentucky Bluegrass			S5			L+
Primulaceae	*Lysimachia Ciliata*	Fringed Loosestrife			S5			L5
Primulaceae	*Lysimachia Nummularia*	Moneywort			Se5			L+
Ranunculaceae	*Actaea Pachypoda*	White Baneberry			S5			L4

Family Name	Scientific Name	Common Name	Cosewic[1]	Cossaro[2]	S-Rank[3]	Durham[4]	6e7[4]	L-Rank[5]
Ranunculaceae	*Ranunculus Hispidus Var. Caricetorum*	Swamp Buttercup			S5			L4
Ranunculaceae	*Ranunculus Repens*	Creeping Buttercup			Se5			L+
Rhamnaceae	*Rhamnus Cathartica*	Buckthorn			Se5			L+
Rosaceae	*Crataegus* Sp	Hawthorn Species						
Rosaceae	*Fragaria Virginiana*	Virginia Stawberry			S5			L5
Rosaceae	*Geum Urbanum*	Clover-Root			Se2			L+
Rosaceae	*Potentilla Norvegica* Ssp. *Monspeliensis*	Norwegian Cinquefoil			S5			L+?
Rosaceae	*Prunus Serotina*	Wild Black Cherry			S5			L5
Rosaceae	*Prunus Virginiana* Var. *Virginiana*	Choke Cherry			S5			L5
Rosaceae	*Rubus Idaeus* Ssp. *Strigosus*	Wild Red Raspberry			S5			L5
Rosaceae	*Rubus Pubescens*	Dwarf Raspberry			S5			L4
Rubiaceae	*Galium Mollugo*	White Bedstraw			Se5			L+
Rubiaceae	*Galium Palustre*	Marsh Bedstraw			S5			L5
Salicaceae	*Populus Deltoides* Ssp. *Deltoides*	Eastern Cottonwood			Su	U		L5
Salicaceae	*Populus Grandidentata*	Large-Tooth Aspen			S5			L4
Salicaceae	*Populus Tremuloides*	Quaking Aspen			S5			L5
Salicaceae	*Salix* X *Rubens*	Reddish Willow			Se4			L+
Saxifragaceae	*Mitella Diphylla*	Two-Leaf Bishop's-Cap			S5			L3
Saxifragaceae	*Tiarella Cordifolia*	Heart-Leaved Foam-Flower			S5			L4
Solanaceae	*Solanum Dulcamara*	Climbing Nightshade			Se5			L+
Tiliaceae	*Tilia Americana*	American Basswood			S5			L5
Typhaceae	*Typha Angustifolia*	Narrow-Leaved Cattail			S5			L+
Typhaceae	*Typha Latifolia*	Broad-Leaf Cattail			S5			L4
Ulmaceae	*Ulmus Americana*	American Elm			S5			L5
Urticaceae	*Laportea Canadensis*	Wood Nettle			S5			L5
Urticaceae	*Urtica Dioica* Ssp. *Gracilis*	Slender Stinging Nettle			S5			L5
Vitaceae	*Parthenocissus Vitacea*	Thicket Creeper			S5			L5
Vitaceae	*Vitis Riparia*	Riverbank Grape			S5			L5

Legend

[1]Committee on the Status of Endangered Wildlife in Canada). END = Endangered
[2]Committee on the Status Species at Risk in Ontario). END = Endangered
[3]Provincial Status (NHIC). **S1** = critically imperilled; **S2** = imperilled; **S3** = vulnerable; **S4** = apparently secure; **S5** = secure; **SE** = exotic/introduced.
[4]Durham/6E7**:** Local Status (Varga et al, 2005). **U** = Uncommon; **R** = Rare (no. of records indicated when less than 20).
[5]Local Status (TRCA). **L5** = Able to withstand high levels of disturbance; generally secure in urban matrix. **L4** = Able to withstand some disturbance; generally secure in rural matrix; of local concern in urban matrix.
L3 = Able to withstand minor disturbance; generally secure in natural matrix; of concern regionally. **L+** = Exotic/introduced

Appendix B

List of Breeding Bird Species

Appendix B

List of Breeding Bird Species

Common Name	Scientific Name	Status						Breeding Pairs/ Territories
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK [b]	TRCA Status d	Regional Status	Area-sensitive (OMNR)c	
Red-tailed Hawk	*Buteo jamaicensis*			S5	L5			1
Killdeer	*Charadrius vociferus*			S5	L5			1
Mourning Dove	*Zenaida macroura*			S5	L5			2
Red-bellied Woodpecker	*Melanerpes carolinus*			S4	L4			1
Downy Woodpecker	*Picoides pubescens*			S5	L5			1
Northern Flicker	*Colaptes auratus*			S4	L4			1
Eastern Wood-Pewee	*Contopus virens*	SC	SC	S4	L4			2
Great Crested Flycatcher	*Myiarchus crinitus*			S4	L4			1
Horned Lark	*Eremophila alpestris*			S5	L4			1
Blue Jay	*Cyanocitta cristata*			S5	L5			2
American Crow	*Corvus brachyrhynchos*			S5	L5			2
Black-capped Chickadee	*Poecile atricapillus*			S5	L5			2
White-breasted Nuthatch	*Sitta carolinensis*			S5	L4		A	1
American Robin	*Turdus migratorius*			S5	L5			3
Gray Catbird	*Dumetella carolinensis*			S4	L4			2
Cedar Waxwing	*Bombycilla cedrorum*			S5	L5			1
European Starling	*Sturnus vulgaris*			SE	L+			1
Red-eyed Vireo	*Vireo olivaceus*			S5	L4			3
Northern Waterthrush	*Parkesia noveboracensis*			S5	L3			1
Mourning Warbler	*Geothlypis philadelphia*			S4	L3			2
Common Yellowthroat	*Geothlyphis trichas*			S5	L4			2
Northern Cardinal	*Cardinalis cardinalis*			S5	L5			1
Indigo Bunting	*Passerina cyanea*			S4	L4			1
Chipping Sparrow	*Spizella passerina*			S5	L5			1
Savannah Sparrow	*Passerculus sandwichensis*			S4	L4		A	4
Song Sparrow	*Melospiza melodia*			S5	L5			8

Common Name	Scientific Name	Status						Breeding Pairs/ Territories
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK [b]	TRCA Status d	Regional Status	Area-sensitive (OMNR)c	
Red-winged Blackbird	*Agelaius phoeniceus*			S4	L5			4
Common Grackle	*Quiscalus quiscula*			S5	L5			2
Brown-headed Cowbird	*Molothrus ater*			S4	L5			1
Baltimore Oriole	*Icterus galbula*			S4	L5			2
American Goldfinch	*Spinus tristis*			S5	L5			4

Field Work Conducted On: May 28th & June 5th, 2014

Number of Species: 31
Number of (provincial and national) Species at Risk: 1
Number of S1 to S3 Species: 0
Number of TRCA L1, L2 and L3 Species (Species of Concern): 2
Number of Area-sensitive Species: 2

KEY
a COSEWIC = Committee on the Status of Endangered Wildlife in Canada
a Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario)
END = Endangered, THR = Threatened, SC = Special Concern

[b] SRANK (from Natural Heritage Information Centre) for breeding status if:
S1 (Critically Imperiled), S2 (Imperiled),S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure)
SNA (Not applicable…'because the species is not a suitable target for conservation activities'; includes non-native species)

c Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendices.

d Toronto and Region Conservation Authority L rank (Dec 2010):
L1 to L3 Regional species of concern from highest to lowest; L4 Urban concern; L5 Secure through region; L+ Non-native