BEACON ENVIRONMENTAL

GUIDING SOLUTIONS IN THE NATURAL ENVIRONMENT

Environmental Impact Study

44 – 45 Longview Place

City of Mississauga

Prepared For:

Harvinder Babra c/o Harper Dell & Associates Inc.

Prepared By:

Beacon Environmental Limited

Date:	*Project:*
April 2021	**219567**

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1. Introduction

Beacon Environmental Limited (Beacon) has been retained by Harper Dell and Associates Incorporated on behalf of Mr. Harvinder Babra to undertake a scoped Environmental Impact Study (EIS) for the study area identified as Part of Lot 10, Concession 1 West of Centre Road or Hurontario Street, south of Derry Road West, in the City of Mississauga (**Figure 1**). The property is legally identified as 44 – 45 Longview Place (formerly 0 Derry Road West) and comprises approximately 0.5 ha (1.24 acres) on land east of a cul-de-sac at the south terminus of Longview Place. The proposed development of the property includes the construction of three (3) single-family dwellings along with a shared driveway, and underground servicing. The subject lands are currently undeveloped and front unto the Fletcher's Creek valleylands to the east.

The City of Mississauga Official Plan, Region of Peel Official Plan, and the Credit Valley Conservation Authority's (CVC) regulations and policies require the preparation of an EIS as part of the approvals process. The purpose of this report is to identify existing conditions on the subject property and adjacent lands and assess the interaction between the proposed development and the existing conditions ensuring consistency with the Provincial Policy Statement, municipal Official Plans, the CVC regulations and policies, and any other relevant legislation. This document identifies opportunities and constraints for development of the subject property, with recommendations for appropriate mitigation requirements for the adjacent natural features that may be impacted.

The EIS was completed through review of background documents, as well as feature staking with the Conservation Authority and seasonally appropriate field investigations in July 2020. The field investigations included an assessment of existing conditions with respect to terrestrial and aquatic features, and investigations into the potential presence of Species at Risk on the subject property. Review of natural features on the property and historic aerial photography, enable an accurate determination of the boundaries of natural heritage features and proposed development setbacks as tested against the existing policy framework.

2. Policy Review

The following section provides the provincial, regional, and local policy context for this assessment.

2.1 Provincial Policy Statement (2020)

The PPS (Ministry of Municipal Affairs and Housing [MMAH] 2020) provides policy direction to municipalities on matters of provincial interest as they relate to land use planning and development. The PPS provides for appropriate land use planning and development while protecting Ontario's natural heritage. Development governed by the *Planning Act* must be consistent with the policy statements issued under the PPS. These are outlined in Section 2.1 - Natural Heritage, Section 2.2 – Water, and Section 3.1 - Natural Hazards, and relevant items from each Section are provided below.

2.1.1 Natural Heritage

The PPS includes policies that speak to the identification and protection of natural heritage systems, as well as levels of protection for the various components that comprise such systems. With regards to the subject property the natural heritage system associated with the Fletcher's Creek valleylands and its adjacent lands are designated for long-term protection under Section 2.1 of the PPS. Proposed development and site alteration is not permitted in significant valleylands in Ecoregions 6E and 7E, or within adjacent lands unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

In terms of implementation, identification of the various natural heritage features is a responsibility shared by MNRF and the municipal planning authority. MNRF is responsible for the identification of Provincially Significant Wetlands (PSWs) and Areas of Natural and Scientific Interest (ANSIs), while MECP is responsible for the confirmation of habitat of endangered species and threatened species, and for its regulation (under the ESA).

Local and regional planning authorities are responsible for the identification of Significant Woodlands, Significant Valleylands, and Significant Wildlife Habitat (SWH), with support from applicable guidance documents (i.e., *Natural Heritage Reference Manual* [MNR 2010]; *Significant Wildlife Habitat Technical Guidelines* [MNR 2000]; and *Significant Wildlife Habitat Criteria for Ecoregion 6E*, [MNRF 2015]). Local and regional planning authorities in southern Ontario also typically work with their local conservation authority to identify and confirm significant natural heritage features that may have significance at the local or regional level. Identification and verification of fish habitat is now self-regulated although enforcement of the related policies and regulations is still managed by MNRF and regulated by the Department of Fisheries and Oceans (DFO).

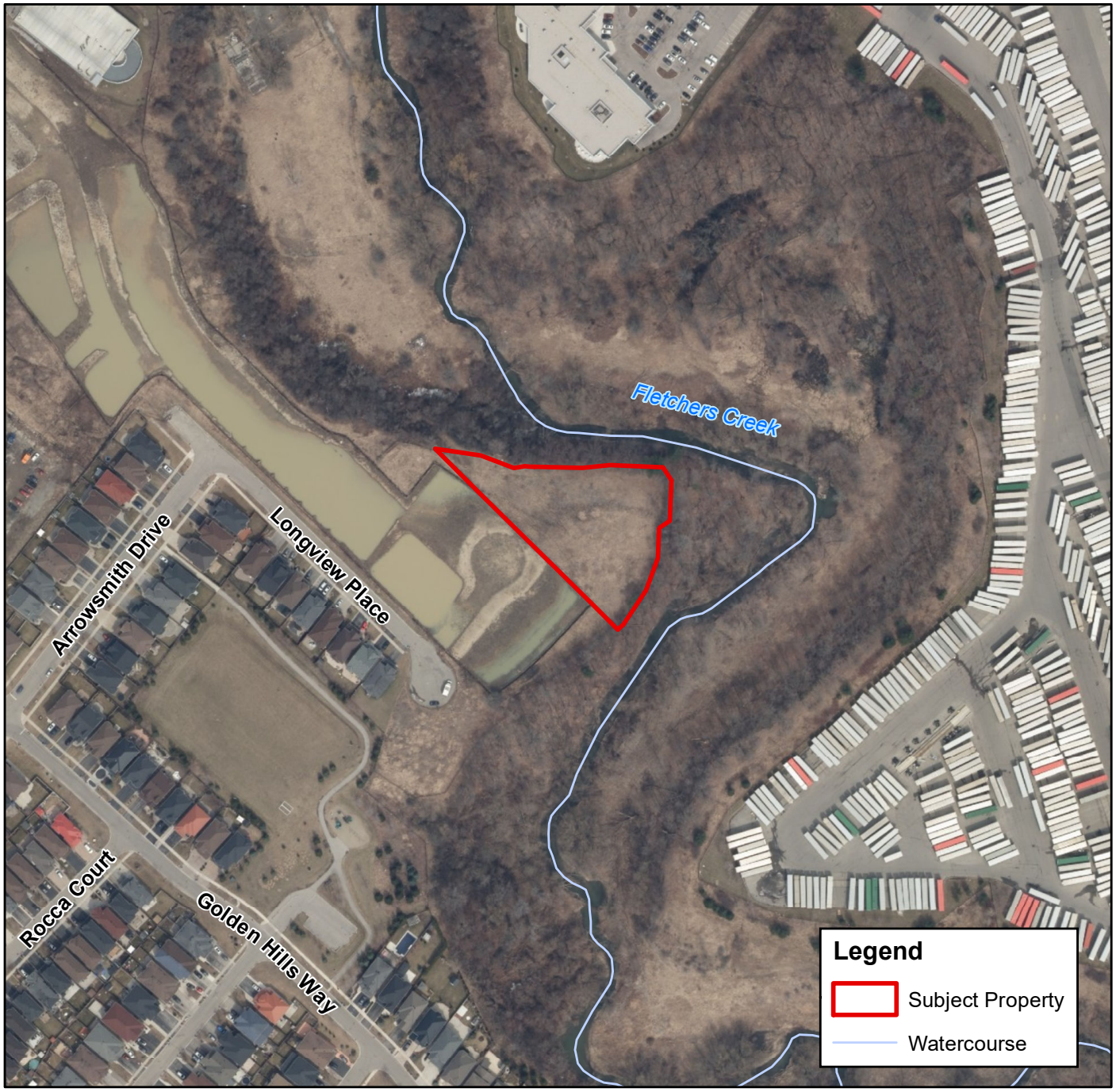
In areas where significant natural heritage features are present, the boundaries of natural heritage features are further refined through site-specific studies undertaken as part of the planning process and in accordance with the requirements of municipal policies.

2.1.2 Water

The PPS also protects the Province's water resources by utilizing watershed scale measures, and minimizing negative, cross-watershed impacts. Within Section 2.2 of the PPS, restrictions to development and site alteration are imposed in order to protect, improve or restore vulnerable surface water and groundwater sources and their hydrologic functions through appropriate stormwater management practices. Such practices are aimed at minimizing stormwater volumes and contaminant loads to natural surface water or groundwater systems and maintaining or increasing the extent of vegetative or pervious surfaces.

2.1.3 Natural Hazards

In addition to balanced protection of natural heritage resources and water resources, the PPS also includes policy direction regarding reducing the potential risk to Ontario's residents from natural or human-made hazards. Section 3.1 of the PPS generally discourages development within identified natural hazards (i.e., areas that are at risk of flooding and/or erosion).



Site Location	Figure 1
Scoped Environmental Impact Study 44 – 45 Longview Place, City of Mississauga	
BEACON ENVIRONMENTAL	Project: 219567 Last Revised: February 2021
Client: Harvinder Babra c/o Harper Dell & Associates Inc.	Prepared by: BD Checked by: JM
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Contains information licensed under the Open Government License– Ontario Orthoimagery Baselayer: FBS Peel 2019	

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Notwithstanding the that development is generally discouraged within natural hazards, Policy 3.1.7 within the PPS states:

> *Further to policy 3.1.6, and except as prohibited in policies 3.1.2 and 3.1.5, development and site alteration may be permitted in those portions of hazardous lands and hazardous sites where the effects and risk to public safety are minor, could be mitigated in accordance with provincial standards, and where all of the following are demonstrated and achieved:*
>
> *a) development and site alteration is carried out in accordance with floodproofing standards, protection works standards, and access standards;*
> *b) vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;*
> *c) new hazards are not created and existing hazards are not aggravated; and*
> *d) no adverse environmental impacts will result.*

2.2 Regional Municipality of Peel Official Plan (2018 Office Consolidation)

The Peel Region Official Plan contains policies aimed at protecting, maintaining, and restoring a Regional Greenlands System consisting of "Core Areas", "Natural Areas and Corridors (NACs)", and "Potential Natural Areas and Corridors (PNACs)". Key elements of the Region's Greenlands System include the following:

- Areas of Natural and Scientific Interest (ANSIs);
- Environmentally Sensitive or Significant Areas (ESAs);
- Escarpment Natural Areas;
- Escarpment Protection Areas;
- Fish and wildlife habitat;
- Habitats of threatened and endangered species;
- Wetlands;
- Woodlands;
- Valley and stream corridors;
- Shorelines;
- Natural lakes;
- Natural corridors;
- Groundwater recharge and discharge areas;
- Open space portions of the Parkway Belt West Plan; and
- Other natural features and functional areas.

The above key elements are to be interpreted, identified and protected in accordance with the policies of the Regional Official Plan.

2.2.1 Core Areas

Core Areas represent those features and areas that are considered to be significant at the provincial and regional levels. They generally correspond with significant features and areas listed in the PPS and include:

- PSWs;
- Significant Coastal Wetlands;
- Core Woodlands;
- ESAs;
- Provincial Life Science ANSIs;
- Significant Habitat of Threatened and Endangered Species;
- Escarpment Natural Areas of the Niagara Escarpment Plan; and
- Core Valley and Stream Corridors.

Core Areas of the Greenlands System are mapped on Schedule A of the Regional Official Plan. Based on this mapping the Fletcher's Creek valleylands are identified as a Core Area.

Policy 2.3.2.6 prohibits development and site alteration within the Core Areas of the Greenlands System in Peel except for:

- Forest, fish and wildlife management;
- Conservation and flood or erosion control projects, but only if they have been demonstrated to be necessary in the public interest and after all reasonable alternatives have been considered;
- Essential infrastructure exempted, pre-approved or authorized under an environmental assessment process;
- Passive recreation;
- Minor development and minor site alteration;
- Existing uses, buildings or structures;
- Expansions to existing buildings or structures;
- Accessory uses, buildings or structures; and
- A new single residential dwelling on an existing lot of record.

Area municipalities are directed to adopt appropriate policies to allow the above exceptions when it can be demonstrated that there is no reasonable alternative location outside of the Core Area and the use, development or site alteration is directed away from the Core Area feature to the greatest extent possible; and the impact to the Core Area feature is minimized and any impact to the feature or its functions that cannot be avoided is mitigated through restoration or enhancement to the greatest extent possible.

2.2.2 Natural Areas and Corridors (NAC) and Potential Natural Areas and Corridors (PNAC)

Natural Areas and Corridors (NAC) include:

- Evaluated non-PSWs;
- Woodlands meeting one or more of the criteria in Table 1 of the ROP;
- Significant wildlife habitat;
- Fish habitat;
- Regionally significant life science ANSIs;
- Provincially significant earth science ANSIs;
- Escarpment Protection Areas of the Niagara Escarpment Plan; and
- The Lake Ontario shoreline and littoral zone and other natural lakes and their shorelines.

Potential Natural Areas and Corridors (PNAC) include:

- Unevaluated wetlands;
- Cultural woodlands and cultural savannahs meeting one or more of the criteria in Table 1 of the ROP;
- Any other woodlands greater than 0.5 hectares (1.24 acres);
- Regionally significant earth science ANSIs;
- Sensitive groundwater recharge areas;
- Portions of historic shorelines;
- Open space portions of the Parkway Belt West Plan Area;
- Potential ESA's identified as such by the conservation authorities; and
- Any other natural features and functional areas interpreted as part of the Greenlands System Potential Natural Areas and Corridors, by the individual area municipalities in consultation with the conservation authorities.

NAC's and PNAC's represent natural features and areas that are considered locally significant. Regional policies pertaining to NAC's and PNAC's defer their interpretation, protection, restoration, enhancement, proper management and stewardship to local municipalities.

2.3 City of Mississauga Official Plan (2020 Office Consolidation)

The City of Mississauga Official Plan Office Consolidation includes Local Planning Appeal Tribunal (LPAT) decisions and City Council approved Official Plan Amendments as of September 3, 2020. The Official Plan outlines goals and objectives related to environmental protection within the city. It promotes an ecosystem approach to planning and aims to be proactive in the management and protection of its natural features and areas. Additionally, the plan aims to maintain significant natural heritage systems; ensure land use compatibility; protect people and property from hazards; and conserve and re-use natural resources.

Schedule 1 of the Official Plan identifies the tableland of the subject property as Neighborhood, and the area along Fletcher's Creek as Green System. Lands designated as Green System are typically associated with natural hazards or natural areas where development is restricted to protect people and property from damage and to conserve natural heritage features and areas. Development adjacent to Greenbelt lands is subject to the delineation of the natural features, buffers, and setbacks by the City and Conservation Authority.

Schedule 10 – Land Use Designations identifies the subject property within the Greenlands and Natural Hazards areas associated with the Fletcher's Creek valleylands.

The City of Mississauga has created neighbourhood areas throughout the city and has adopted policies that are specific to development within each area. The subject lands are identified within the Meadowvale Village neighbourhood, with applicable policies regarding urban design, as outlined in Section 16.17. There are no policies regarding natural heritage or land use related to adjacent natural features, nor is the subject property identified as a Special Site.

2.3.1 City of Mississauga Zoning By-law

Map 44E of Schedule 'B' to the Zoning By-law No. 0225-2007 identifies the majority of the property within the zoning designation 'D' for Development. Lands immediately adjacent to Fletcher's Creek are identified within Greenbelt, with a zoning designation 'D-4', with permitted uses including (1) Outdoor place of religious assembly; or (2) Accessory buildings and structures legally existing on the date of passing of this By-law. As such, any development proposed within this zoning designation will require a Zoning By-law amendment.

2.4 Credit Valley Conservation Authority Policies and Regulations

Credit Valley Conservation (CVC) plays several roles in overseeing development applications.

Under Section 28 of the *Conservation Authorities Act*, CVC regulates activities within and adjacent to wetlands, watercourses and hazard lands under Ontario Regulation 160/06 - *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*. A permit must be obtained from CVC for development or site alteration within regulated areas.

CVC provides planning and technical advice to local and regional municipalities to assist them in fulfilling their responsibilities regarding natural hazards, natural heritage and other relevant policy areas pursuant to the *Planning Act*. CVC participates in the review of *Planning Act* applications to ensure the applicant and planning authority are aware of the Section 28 regulations and requirements and assist in coordinating those applications to avoid any conflicts.

CVC policies are outlined in a report entitled *Watershed Planning and Regulation Policies* (CVC 2010). Policies pertaining to the proposed development application are contained in Section 6.2 (Lot Creation Policies) and general policies pertaining to implementation of Ont. Reg. 160/06 are contained in Section 7.0.

6.2.1 Development Limits

a) CVC will not support the creation of new lots through plan of subdivision or consent that extend into, or fragment ownership of, the natural heritage system, including natural heritage features and areas, significant natural areas, hazardous land and erosion access allowances, in consideration of the long term management concerns related to risks to life and property and natural heritage protection.

b) In addition to policy 6.2.1 a), CVC will recommend that lots created through plan of subdivision or consent are set back a minimum of whichever is the greatest of the following buffers:

- *i. 10 metres from the limit of flood hazards;*
- *ii. 10 metres from the limit of erosion hazards;*
- *iii. 10 metres from the limit of dynamic beach hazard;*
- *iv. 10 metres from the drip line of significant woodlands;*
- *v. 10 metres from the limit of other wetlands;*
- *vi. 30 metres from the limit of provincially significant wetlands;*
- *vii. 30 metres from the bankfull flow location of watercourses; and/or*
- *viii. A distance to be determined through the completion of a comprehensive environmental study or technical report, to the satisfaction of CVC, from the limit of the following:*
  - *a. Significant wildlife habitat;*
  - *b. Significant habitat of threatened species and endangered species;*

c. *Regionally and provincially significant life science ANSIs;*
d. *ESAs; and/or*
e. *Significant habitat of species of conservation concern*.

c) Notwithstanding policy 6.2.1 b), CVC may recommend lots be set back a distance other than those identified in 6.2.1 b) based on the results of a comprehensive environmental study or site specific technical report completed to the satisfaction of CVC, and consistent with provincial and municipal policy.

2.5 *Endangered Species Act* (2007)

The Ontario *Endangered Species Act,* (2007, ESA) provides legal protection to endangered and threatened species and their habitats in Ontario. Specifically, Section 9 of the ESA prohibits the killing, harming, harassing, possession, collection, buying and selling of extirpated, endangered, and threatened species on the Species at Risk in Ontario (SARO) List; and Section 10 prohibits the damage or destruction of protected habitat of species listed as extirpated, endangered or threatened on the SARO List.

The Ministry of the Environment Conservation and Parks (MECP) provides oversight of the ESA for the regulation of Species-at-Risk (SAR) in Ontario. Under the ESA, species that are in danger of becoming extinct or extirpated from the province are identified as being extirpated, endangered, threatened and special concern.

When a species is listed as endangered or threatened, its general habitat is automatically protected. General habitat includes areas or features that the species requires to carry out its life processes. A specific habitat regulation may be developed based on an approved Recovery Strategy for a species. The specific habitat regulation replaces the general habitat protection and is then regulated under the *Endangered Species Act*.

Where threatened or endangered species occur, development or site alteration must comply with the requirements of the ESA and Ontario Regulation 242/08. If an activity will impact a threatened or endangered species or its habitat, then the activity must be authorized by MECP. In some cases, a permit may be required to undertake an activity, while in other cases a Notice of Activity may be registered with the MECP. The regulation provides exemptions for some species and certain types of activities.

3. Methodology

The following sections describe the details of the work that was completed and explain how the project was undertaken.

3.1 Background Review

Background information was gathered and reviewed at the outset of the project. This involved existing documentation for the subject lands, including:

- Credit Valley Conservation Authority (CVC) regulations and policies;

- Provincial Policy Statement (2020);
- Region of Peel Official Plan (2018 Office Consolidation); and
- City of Mississauga Official Plan (2020 Office Consolidation).

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

3.1.1 Desktop Species at Risk Assessment

In preparation for on-site investigations Beacon conducted a desktop Species at Risk assessment and the following information sources were reviewed as part of the desktop screening:

- Provincially Tracked Species Layer (1 km grid) from LIO;
- Ontario Reptile and Amphibian Atlas (ORAA);
- Ontario Breeding Bird Atlas (OBBA);
- Natural Heritage Information Centre (NHIC) Data via the Make-A-Map application;
- Species at risk range maps https://www.ontario.ca/environment-and-energy/species-risk-ontario-list;
- High Resolution aerial photography of the property; and
- Natural heritage and physical feature layers from Land Information Ontario (LIO), including wetlands (provincially significant and un-evaluated wetlands), watercourses with thermal regime, as well as other geospatial layers.

The information sources referenced above were reviewed in a Geographic Information System (GIS) mapping environment that Beacon uses to assess the likelihood that species at risk and other significant natural heritage features and functions are present in an area of interest. This system allows Beacon to combine the most current information provided by MNRF through the LIO portal with GIS layers from provincial floral and faunal atlases. All relevant layers can then be overlaid on the most recent high resolution ortho-imagery. The screening process helps identify areas that can then be targeted (for example, potential habitat) during field assessment to maximize the efficiency and effectiveness of on-site investigations.

During field study, staff assessed the potential for protected species of flora and fauna to occur on the subject property.

3.2 Field Investigations

A reconnaissance field visit and staking of the feature with CVC and City of Mississauga Staff was undertaken in 2020 by Beacon staff and existing conditions with respect to natural habitats within the subject property were reviewed. In addition to the staking survey, field surveys of the subject property to document the existing natural history associated with the property were undertaken on the following dates:

Table 1. Summary of Field Investigations

Field Investigation	Dates
Headwater Drainage Feature Assessment	May 29, June 11 and July 8, 2020

Field Investigation	Dates
Breeding Bird Surveys	May 29, 2020 and June 11, 2020
Ecological Land Classification and Flora	May 29, 2020 and June 11, 2020
Incidental Wildlife Observations	May 29, 2020 and June 11, 2020

Specific details regarding survey methods and assessments undertaken by Beacon are described in the following sections.

Aquatic Assessment

The subject property is located adjacent to Fletcher's Creek, which is identified as Subwatershed 5 of the Credit River. This watercourse has been identified as regulated habitat for the Provincially Endangered species Redside Dace (*Clinostomus elongatus*), and is subject to an applicable buffer, identified as the meanderbelt + 30 m for the watercourse.

For the assessment of aquatic resources, the subject property was walked to identify the presence of watercourses (permanent, intermittent, or ephemeral), ponds, water flow regimes and the presence/absence of fish. One headwater drainage feature was identified on the subject property as a notable area of scouring and erosion was observed at the top of the valley slope. Further discussion is provided in **Section 4.1.1** below.

Vegetation Community Mapping

Vegetation communities within the study area were described and mapped on current colour ortho-photography of the lands using the Ecological Land Classification (ELC) system for southern Ontario (Lee *et al*. 1998). This is the standard method used for describing vegetation communities in southern Ontario. A comprehensive botanical inventory was undertaken, and a full flora list was compiled.

Breeding Bird Surveys

Breeding bird surveys commenced between 6:30 am and 7:00 am, on days with low to moderate winds (0-3 on the Beaufort Scale), no precipitation, and temperatures within 5°C of the normal average temperature. The entire site was walked such that all singing birds could be heard or observed and recorded. That is, the surveyor was within 50 to 100 m of all parts of the site depending on habitat. All birds heard and seen were recorded in the location observed on an aerial photograph of the site.

Other Wildlife

Incidental observations of wildlife species made during field investigations were recorded for the purposes of the EIS.

4. Existing Conditions

4.1 Aquatic Resources

As mentioned, the subject property is located adjacent to Fletcher's Creek, which is identified as Subwatershed 5 of the Credit River. The watercourse is conveyed through a forested valley system that lies to the east and south of the subject property. A field investigation was completed through visual inspection, with no evidence of groundwater seepage identified on or immediately adjacent to the subject property.

Studies completed by CVC identify Fletcher's Creek as an urbanized tributary with fair to poor degraded macroinvertebrate communities and poor water quality (MNRF and CVC, 2002). Fletchers Creek adjacent to the subject property is managed by CVC as a small warmwater fish community based on existing fish communities, thermal regime and underlying environmental controls.

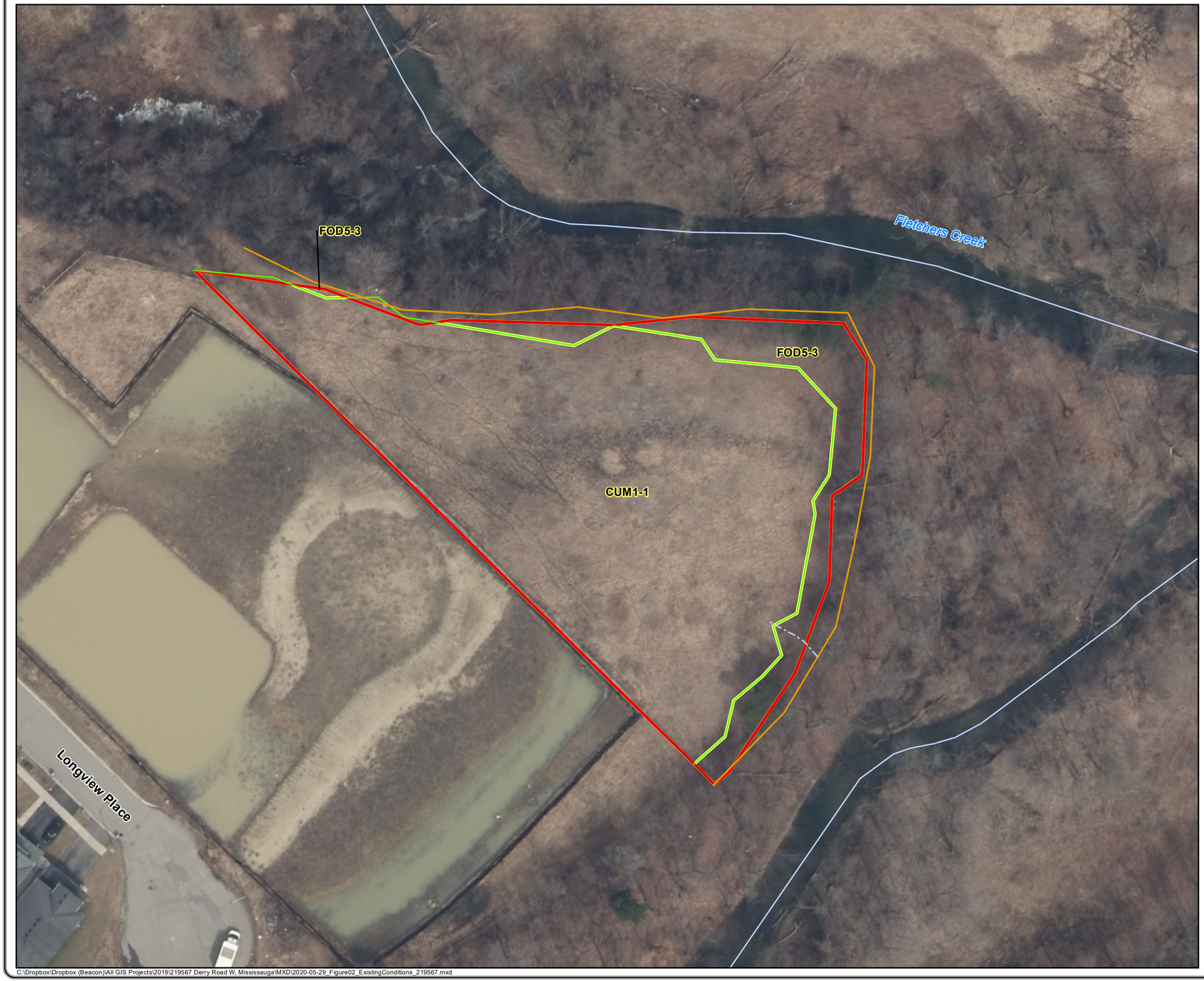
Fletcher's Creek has been identified as subject to regulation for the provincially endangered Redside Dace. This species is a small insectivorous fish that is a specialized feeder, consuming primarily terrestrial insects. It is sensitive to turbidity in the water, as well as instream barriers to migration, and prefers systems with temperatures less than 24°C and overhanging vegetation (MECP 2017). The Redside Dace and its habitat are subject to the provisions of the provincial *ESA* and the federal Species at Risk Act (Environment Canada 2002). An applicable buffer, identified as the meanderbelt + 30 m for the watercourse applies, as is consistent with Section 29.1 of Ontario Regulation 291/11.

Delineation of the meanderbelt width was completed by Beacon on August 10, 2020 through background review and site investigation. A draft summary of meanderbelt findings was presented by Beacon in October 2020 under the title *0 Derry Road West Geomorphic Assessment* (Beacon 2020).

4.1.1 Headwater Drainage Feature Assessment

An ephemeral drainage feature was identified on the subject property at the top of the valley slope along the southern limit of the property. Assessment of the feature was undertaken using protocols outlined in the *Evaluation, Classification and Management of Headwater Drainage Features Guidelines* ("Guidelines"; TRCA and Credit Valley Conservation 2014) (HDFA).

Visual assessment was completed to assess riparian vegetation, channel form and potential connectivity to reaches upstream and downstream of the subject site. The feature was identified by past erosion or scouring noted from a topographical depression at the top of bank. No evidence of surface or subsurface (i.e. groundwater) flow was observed during the field investigation. It is likely that the area is subject to infrequent concentrated flow during large storm events, as there is no notable channel definition on the tablelands of the subject property. The location and extent of the feature is depicted on **Figure 2**.



Existing Conditions

Figure 2

Scoped Environmental Impact Study 44 – 45
Longview Place, City of Mississauga

Legend

- Subject Property
- Top of Bank (Staked July 8, 2020)
- Dripline (Staked July 8, 2020)
- Ecological Communities
- Watercourse
- Drainage Feature

Code	Community Description
CUM1-1	Dry - Moist Old Field Meadow
FOD5-3	Dry - Fresh Sugar Maple - Oak Deciduous Forest

BEACON ENVIRONMENTAL

Project: 219567
Last Revised: February 2021

Client: Harvinder Babra c/o Harper Dell & Associates

Prepared by: BD
Checked by: CS

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Photograph 1. Topographical Depression Noted Along the Valley Wall South of the Subject Property (July 8, 2020)

The feature is identified as providing *Limited Function*, with the value largely attributed to its association with the terrestrial connection to the forested corridor of Fletcher's Creek. The feature is not presently regulated as habitat for Redside Dace. The result of the assessment and applicable management recommendation are provided in **Table 2** below.

Table 2. Summary of Drainage Feature Management Recommendations

Feature	Hydrology Classification	Habitat Classification and Description	Output from HDFA Guidelines	Management Recommendation/Rationale
South Drainage Feature	Contributing Functions	***Contributing Function*** • No surface flows observed, likely ephemeral drainage following high volume precipitation events • Channel definition at concentrated points (i.e., top of bank). Riparian area defined as meadow habitat. • No fish or fish habitat • Provides Contributing Function for Terrestrial Habitat Classification	***Management – Mitigation*** ***Recommendations*** • Replicate or enhance functions	***Management – Maintain Terrestrial Linkage*** ***Rationale*** • Scoured area located at the crest of valley slope within the MBW + 30 buffer area. Overland flow may be directed following freshet thaw or storm events. Direction of development storm flows may increase erosion of valley wall. Recommend maintaining terrestrial linkage from tableland meadow (within proposed buffer area) to valleyland.

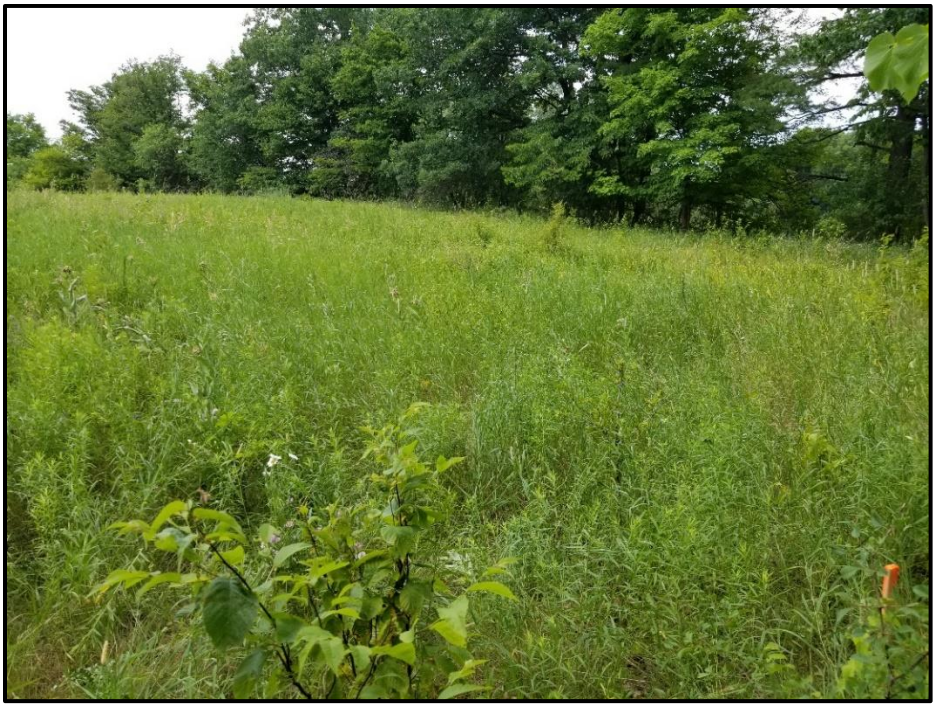
4.2 Terrestrial Resources

4.2.1 Vegetation Communities

General vegetation communities were mapped and described according to the Ecological Land Classification (ELC) system for southern Ontario (Lee *et al*. 1998) and are illustrated on **Figure 2.**

The bulk of the subject property was characterized as a *Dry-Moist Old Field Cultural Meadow (CUM1-1)* based on the dominance of meadow vegetation. Cultural communities are defined as areas either arising from or maintained by human activity and generally have an element of disturbance as is the case at this location with the surrounding development. Typically, a high proportion of non-native species are found in cultural areas.

The CUM1-1 unit was dominated by densely growing forbs and cool season grasses (**Photograph 2**) including Smooth Brome (*Bromus inermis*), Timothy (*Phleum pratense*) and Orchard Grass (*Dactylis glomerata*). At the time of survey, much of the meadow unit was overrun with the non-native and invasively spreading Dog-strangling Vine (*Cynanchum rossicum*). Other abundant species included Canada Goldenrod (*Solidago canadensis*) and asters (*Symphyotrichum ericoides, S. lateriflorum, S. novae-angliae*), Common Milkweed (*Asclepias syriaca*), Black Medic (*Medicago lupulina*), Queen Anne's Lace (*Daucus carota*) and Cow Vetch (*Viccia cracca*).



Photograph 2. View of Meadow Community Dominating Subject Property (July 8, 2020)

The fringes of the subject property were lined with a woodland that was delineated during the feature staking exercise. This community was characterized as a *Dry-Fresh Sugar Maple – Oak Deciduous Forest (FOD5-3)* based on the presence of Sugar Maple (*Acer saccharum*) and Red Oak (*Quercus rubra*). These two canopy species dominated however Ironwood (*Ostrya virginiana*) was noted to be abundant as well. The lower vegetation layers were fairly sparse and included young European

Buckthorn (*Rhamnus cathartica*) along with Enchanter's Nightshade (*Circaea lutetiana*), Choke Cherry (*Prunus virginiana*) and Canada Goldenrod along the woodland edges.

4.2.2 Breeding Birds

A total of 13 species of breeding birds were recorded on the subject property and in the surrounding area (**Appendix A**).

The majority of breeding records were common species regularly found in urban and urbanizing areas, with Song Sparrow (*Melodia melospiza*) being the most abundant bird with two separate territories encountered within the CUM1-1. Other than the Song Sparrow, all of the avian observations were from within the woodland community. Given that a relatively small portion of the greater woodland area extends onto the subject property, it is likely that these birds territories predominantly occur beyond the property limits. These species included House Wren (*Troglodytes aedon*), Blue Jay (*Cyanocitta cristata*), Red-bellied Woodpecker (*Melanerpes carolinus*), Black-capped Chickadee (*Poecile atricapillus*) and Northern Cardinal (*Cardinalis cardinalis*).

Area-sensitive birds require larger tracts of suitable habitat in which to breed or are those that have a higher breeding success in larger areas of suitable habitat. One such species was present during the 2020 breeding bird season, the Red-breasted Nuthatch (*Sitta canadensis*). This bird is considered to be a forest-sensitive species, requiring woodland habitat in which to breed successfully. Given that only a small portion of woodland extends onto the subject property relative to the surrounding matrix, it is likely the majority of these birds' territories fall outside of the property boundaries.

No species ranked as S1 through S3 (Critically Imperiled through Vulnerable) by the province, or species protected under the ESA were encountered. A single Eastern Wood-pewee (*Contopus virens*) was observed vocalizing from the woodland edge This species is Special Concern provincially and federally based on a declining trend over their range, however these birds remain relatively common in both urban and urbanizing woodlands.

4.2.3 Other Incidental Wildlife

Any wildlife species observed on the subject property during field investigations not considered within the preceding sections of this report were recorded as incidental observations.

Mammal species documented from the property include White-tailed Deer (*Odocoileus virginianus*), Eastern Cottontail (*Sylvilagus flordinaus*) and Gray Squirrel (*Sciurus carolinensis).* Evidence of Eastern Coyote (*Canis latrans*) was also observed. Other common mammal species that are likely present on and adjacent to the subject property include Raccoon (*Proycon lotor*), Striped Skunk (*Mephitis mephitis*) and/or Red Fox (*Vulpes vulpes*).

5. Threatened and Endangered Wildlife

As described in the preceding sections, Beacon staff conducted both desktop and on-site investigations to assess whether any endangered or threatened species were likely to occur on or adjacent to the subject property. **Table 3** provides Beacon's assessment based on the results of field investigations

combined with knowledge of the habitat preferences and natural history of the species being considered.

Table 3. Endangered and Threatened Species (Provincial)

Species	Status on SARO List	Were Species and/or Habitat Documented during on-site Assessment?
Vascular Plants (Dicots)		
Butternut, *Juglans cinerea*	END	**No**, a targeted search for Butternut trees (*Juglans cinerea*) was conducted. 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 a Butternut Canker disease. No Butternut were present on the subject property.
Reptiles and Amphibians		
Blanding's Turtle, *Emydoidea blandingii*	END	**No**, the closest known occurrences of Blanding's Turtle are greater than 2 km from the subject property and are south of the 401.
Jefferson Salamander *Ambystoma jeffersonium*	END	**No,** although there is a low likelihood that Jefferson Salamander might occur along the wooded corridor that abuts the subject property given its historical occurrence in the area, there is no potential habitat on the subject property.
Birds		
Bank Swallow, *Riparia riparia*	THR	**No**, vertical exposed banks (suitable habitat) are not present at this location. These birds were not encountered during breeding bird surveys.
Barn Swallow, *Hirundo rustica*	THR	**No**, a comprehensive habitat assessment was undertaken for this species. These birds construct conspicuous mud-based nests on the exterior of structures. Structures were absent and these birds were not encountered during breeding bird surveys.
Chimney Swift, *Chaetura pelagica*	THR	**No**, these birds nest in vertical chimney columns and buildings were absent on the subject property. These birds were not encountered during breeding bird surveys.
Bobolink, *Dolichonyx oryzivorus*	THR	**No**, extensive grassland habitat is absent at this location and therefore suitable habitat is absent. Meadow habitat is present however totals approximately 0.4 ha which is generally too small to support the species, in addition to a large amount of surrounding site disturbance. These birds were not encountered during breeding bird surveys.
Eastern Meadowlark, *Sturnella magna*	THR	**No**, extensive grassland habitat is absent at this location and therefore suitable habitat is absent. Meadow habitat is present however totals approximately 0.4 ha which is generally too small to support the species, in addition to a large amount of surrounding site disturbance. These birds were not encountered during breeding bird surveys.
Eastern Whip-poor-will *Androstomus vociferus*	THR	**No**, these birds require extensive and semi-open woodlands which are absent at this location. The subject property is generally outside of the breeding range for these birds.
Aquatic Species		

Species	Status on SARO List	Were Species and/or Habitat Documented during on-site Assessment?
Redside Dace, *Clinostomus elongatus*	END	**Yes**, the adjacent reach of Fletcher's Creek is identified by MECP and DFO as regulated habitat for Redside Dace due to historical records and suitable habitat which includes small (1-10m in width), slow-moving streams having a mixture of overhanging streamside vegetation and pool and riffle habitat.
Mammals		
Endangered Bats Little Brown Myotis, *Myotis lucifugus* Northern Myotis, *Myotis septentrionalis* Tri-colored Bat, *Perimyotis subflavus* Eastern Small-footed Myotis, *Myotis leibii*	END	**Yes**, the methodology of the MNRF Guelph District's 'Bat and Bat Habitat Surveys of Treed Habitats' guideline, (April 2017) was implemented to determine the potential for suitable bat habitat to occur within the study area. Wooded communities are identified as potential suitable habitat and were present on the subject property and therefore the FOD3-5 community may provide potential habitat to these species. Seasonal fieldwork would be required to confirm the presence or absence of endangered bats in the woodland, however no development within the woodland is proposed and buffers have been applied to the feature.

SARO: Species at Risk in Ontario List
END: Endangered
THR: Threatened
ORAA: Ontario Reptile and Amphibian Atlas

Based on the above assessment in **Table 3**, potential suitable habitat is present within the adjacent Fletcher's Creek corridor for four species of endangered bats, and within Fletcher's Creek watercourse for Redside Dace.

6. Summary of Key Natural Heritage Features and Functions

The following table is a summary of the key functions and attributes, their sensitivities and general location within the subject property.

Table 4. Key Functions and Attributes

Feature or Function	Sensitivity Level	Assessment of Sensitivity	Location(s)
Fletcher's Creek – riparian corridor	Moderate	• Provides corridor for urban-tolerant wildlife and breeding birds • Varying amounts of disturbance (more in the north, less in the south) and quality of riparian woodland (higher quality in south)	Offsite, to the east and south of subject property

Feature or Function	Sensitivity Level	Assessment of Sensitivity	Location(s)
Fletcher's Creek – permanent watercourse provides direct fish habitat	Moderate/ High	• Supports fish habitat • Anthropogenic use identified through past grading of banks and slope • Already subject to urban effects of noise, light, dust and physical use	Offsite, to the east and south of subject property
Redside Dace Habitat	High	• Sensitive to thermal changes and turbidity • Regulated habitat comprised of the meander belt + 30 m • Potential impact from stormwater management, site grading, adjacent land use, etc.	Fletcher's Creek and riparian corridor

As the majority of the subject property is represented by tableland with existing vegetative communities are dominated by non-native species, the only key natural heritage feature associated with the property is the adjacent Fletcher's Creek corridor.

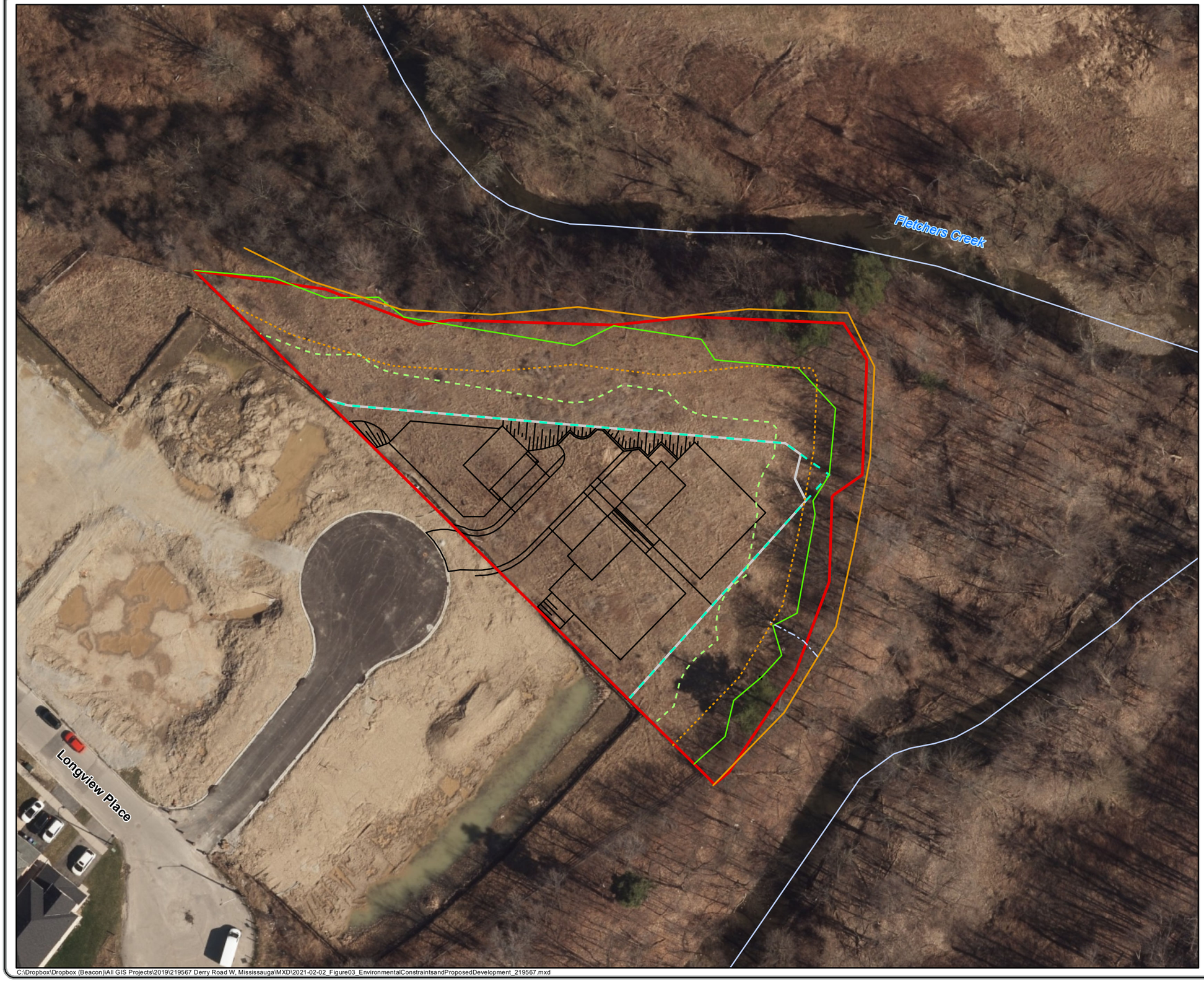
7. Proposed Development

The proposed development consists of three (3) single-family (detached) dwellings, along with a shared driveway, and underground services. The shared driveway will consist of a short extension to Longview Place to accommodate the access and connect the separate dwellings to the existing residential community located immediately to the west.

Stormwater management within the site is proposed to be split, with front yard drainage being directed to the shared driveway and the back yards directed through yard swales to Fletcher's Creek (SKIRA 2021). Stormwater from the shared driveway and basement weeping tile system will be connected to the existing 300mm diameter storm sewer situated beneath Longview Place.

As prescribed in CVC's *Slope Stability Definition and Determination Guideline* and defined in Section 7.4 of the *Watershed Planning and Regulation Policy* the proposed development respects a 10 m setback from the approved top of bank as walked by Beacon and CVC on July 8, 2020, as shown on **Figure 3**.

A total buffer area has been provided to the greater of the CVC features limits (dripline, staked top of bank, and long-term stable slope) that is equivalent to the application of a 10m buffer, with a reduced buffer to the dripline proposed, but an overall average buffer area exceeding 10 m. Furthermore, the proposed development limit respects the regulated habitat of Redside Dace (meanderbelt + 30 m). This buffer is derived from an evaluation of existing condition of the natural feature and the anticipated disturbance from the proposed development and is consistent with Policy 6.2.1c) of the CVC *Watershed Planning and Regulation Policies* document (2010).



Environmental Constraints and Proposed Development

Figure 3

Scoped Environmental Impact Study 44 – 45
Longview Place, City of Mississauga

Legend

- Subject Property
- Proposed Development
- Top of Bank (Staked July 8, 2020)
- Top of Bank + 10 m
- Dripline (Staked July 8, 2020)
- Dripline + 10 m
- Watercourse
- Drainage Feature
- Development Setback
- Meander Belt + 30 m

BEACON ENVIRONMENTAL

Project: 219567
Last Revised: March 2021

Client: Harvinder Babra c/o Harper Dell & Associates

Prepared by: BD
Checked by: CS

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8. Impact Assessment and Mitigation

8.1 Assessment of Impact

The study area is subject to disturbance from surrounding land development and its support of natural heritage features is limited to the corridor of Fletcher's Creek. Therefore, along with its relatively small area, the subject property is considered a minimal constraint to development. It is anticipated that the development of the subject property will result in localized ecological disturbance, and a loss of habitat for the urban tolerant species found on the site.

Consideration was given to the endangered Redside Dace, in the determination of appropriate buffers from watercourses within the proposed development area. The reach of Fletcher's Creek that occurs adjacent to the subject property has been identified as regulated for the species. Application of an appropriate buffer of meanderbelt plus 30 m is indicated on **Figure 3**, with no works proposed within this regulated area.

The summary below provides an overview of anticipated impacts associated with this development during construction and upon occupancy, on the adjacent valleylands.

Without mitigation, potential impacts of the development on the adjacent watercourse and associated vegetation of the property could include:

- Soil mobilization during site grading and stockpiling of material;
- Temporary displacement of wildlife, resulting from site preparation and disturbance during construction works; and
- Tree and shrub removal on the tableland.

Potential impacts following completion of construction and upon occupancy could include:

- Domestic pets venturing into the natural area, with potential predation on wildlife;
- Garbage/composting in natural areas;
- Effects of light and noise;
- Run-off from parking lots and streets entering the valleyland; and
- Trampling and cutting of valleyland vegetation by residents.

As the proposed development plan will be serviced by an offsite stormwater management pond and does not include any encroachment into the regulated habitat or crossing of the watercourse feature, impacts on the natural corridor and habitat of the Redside Dace are considered to be limited.

8.2 Mitigation

The natural heritage attributes and functions of the adjacent Fletcher's Creek feature are important, are of high sensitivity due to the presence of the endangered Redside Dace but have been subject to the effects of surrounding urbanization. However, buffers are required to ensure the protection of habitat for Redside Dace and other wildlife utilizing the riparian habitat.

The following provides recommended elements of environmental protection and enhancement measures that the proposed development should incorporate into the development design and approvals, including:

- Protection of Redside Dace habitat through application of a buffer consisting of meander belt + 30 m from Fletcher's Creek;
- Application of a 10m buffer from the approved top-of-bank that respects development setback conditions in the CVC's *Slope Stability Definition and Determination Guideline* and Section 7.4 of the *Watershed Planning and Regulation Policy*;
- Application of an average buffer area exceeding that of the area of a 10 m buffer applied from the greater of the CVC feature limits (dripline, stable top of bank); and
- Retention of native woody vegetation within identified buffers and riparian area associated with the valley corridor.

The following recommendations are also provided:

- Develop and implement a comprehensive erosion and sediment control (ESC) plan to the satisfaction of the City and CVC to ensure adequate protection to retained features;
    - To maintain slope stability, ensure the ESC plan maintains vegetative cover within the buffer area, and roof downspout drainage is discharged onto appropriate splash pads and directed through side yard swales (SKIRA 2021; pg. 6);
- Utilize standard Best Management Practices (BMPs) during the construction process;
- Conduct vegetation removal from the tablelands in accordance with the *Migratory Birds Convention Act*, with the removal of vegetation completed outside of the period April to mid-July. For any proposed clearing of vegetation within these dates, or where birds may be suspected of nesting outside of typical dates, an ecologist should undertake detailed nest searches immediately prior to site alteration to ensure that no active nests are present;
- Implement a restoration design with native species to enhance the existing buffers; and
- Install permanent fencing along the rear lot line to manage access to the adjacent natural features.

9. Policy Conformity

A summary of federal, provincial and municipal environmental protection and planning policies and regulations applicable to the subject property were discussed in **Section 2**. An evaluation of how the proposed re-development complies with the applicable environmental policies and legislation is summarized below in **Table 5**.

Table 5. Environmental Policies and Legislation

Applicable Policy / Legislation	Relevant EIS Findings And Recommendations	Policy Compliance
Provincial Policy Statement (2020) Section 2.1 – Natural Heritage		
1. Habitat for Threatened and Endangered Species	Regulated habitat for Redside Dace and potentially suitable maternity roost habitat for endangered bats is within the aquatic and forested portions of the valleyland, respectively. These habitats will not be impacted by the development.	Yes.
2. Significant Valleylands	The valleyland of the Fletcher's Creek qualifies as a Significant Valleyland. The valley feature will be protected by applying a 10 m buffer to the greater of the staked top of bank, long term stable top of bank, or staked dripline of the woodland.	Yes.
3. Significant Wetlands	N/A – There are no wetlands on or adjacent to the subject property.	Yes.
4. Significant Woodlands	A total buffer area has been provided to the approved dripline limit that is equivalent in area to the application of a 10m buffer.	Yes.
5. Significant Wildlife Habitat	The valleyland portions of the subject property has been identified as candidate SWH for several habitat types. No direct impacts to SWH are anticipated as buffers and setbacks have been applied to the features.	Yes.
6. Significant Areas of Natural and Scientific Interest	N/A – There are no Areas of Natural and Scientific Interest on or adjacent to the subject property.	Yes.
7. Fish Habitat	Fletcher's Creek is fish habitat. Fish habitat will not be impacted by the proposed development provided that the mitigation measure recommended in this report and the FSR are implemented.	Yes.
Provincial Policy Statement (2020) Section 2.2 – Water	No impacts to sensitive water features are anticipated. This EIS has identified mitigation measures to be implemented to reduce impacts to water features and their hydrologic functions.	Yes.
Provincial Policy Statement (2020) Section 2.3 – Natural Hazards	Development of the subject property will be limited to areas outside natural hazards (i.e. slopes, floodplains). A setback has been applied to the greater of the staked top of bank of the adjacent valleylands.	Yes.
Region of Peel OP	There are no Core Areas within the area of proposed development. The lands adjacent to the development are considered Core Areas due to the presence of Core Woodlands. Significant Habitat of Threatened and Endangered Species and Core Valley and Stream Corridors. This Core Area will be protected by buffers described in Section 7 and shown on Figure 3 of this EIS.	Yes.
Mississauga OP (2020) – Green System	Setbacks and buffers have been applied to the Green System area in accordance with the relevant polices and guidelines. No impacts to these features are anticipated provided that the mitigation recommendations in this report are implemented.	Yes.
CVC Regulations and Policies		
Ontario Regulation 160/06	Development of the subject property will be limited to areas outside features that are regulated by CVC including watercourses and natural hazards (i.e. valley slopes). Setbacks have been applied to natural heritage and hazard features in accordance with CVC polices. A 10 m	Yes.

Applicable Policy / Legislation	Relevant EIS Findings And Recommendations	Policy Compliance
Watershed Planning and Regulation Policies (CVC, 2010)	buffer has been applied to the approved top of bank, and a total buffer area has been provided to the greater of the CVC features limits (dripline, staked top of bank, and long-term stable slope) that is equivalent to the application of a 10m buffer.	
***Endangered Species Act* (2007)**	The subject property does not provide habitat for endangered or threatened species. Regulated habitat for Redside Dace and potentially suitable maternity roost habitat for endangered bats is within the aquatic and forested portions of the valleyland, respectively. These habitats will not be impacted by the development.	Yes.

10. Summary and Conclusions

A background review, detailed field investigations and the staking of natural features with the Credit Valley Conservation Authority were undertaken as part of a development application for the subject lands. A constraint analysis was performed to identify sensitive and significant natural heritage features and functions on the site. The results of this analysis were used to confirm the limits of the natural features. These limits were used to establish the proposed buffer to the natural feature.

The EIS has identified that the subject property supports natural heritage features that are confined to the Fletcher's Creek valleylands. The property is dominated by non-native flora and provides habitat for a very few urban-associated wildlife species comprised of habitat generalists. A combined compensatory and mitigative approach was designed and applied that relies on protection and improvements to the corridor of Fletcher's Creek and the disturbed area of the floodplain and buffer. No significant impacts to valleyland features and functions, or habitat of the Endangered Redside Dace are anticipated under the current proposal. Local connectivity within the subject property is therefore maintained through the protection and preservation of the Fletcher's Creek corridor and will not be impaired by the proposed development.

Determination of an appropriate buffer considers assessment of the existing natural heritage features on and adjacent to the subject property. Consistent with Policy 6.2.1c) of the CVC *Watershed Planning and Regulation Policies* document (2010), following feature staking with CVC and assessment of existing natural heritage features relative to the proposed land use, the EIS has identified a development limit that provides adequate protection of the natural features and environmental constraints. This buffer also complies with the required buffer to Redside Dace habitat.

In our opinion, an appropriate distance has been maintained between the development and the feature that when combined with restoration plantings will minimize impacts resulting from development.

It is our opinion that the development application is consistent with the intent and spirit of applicable policies and regulations.

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Appendix A

Breeding Bird Survey

Appendix A

Breeding Bird Survey

Common Name	Scientific Name	Status					# Breeding Birds
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK [b]	Regional Status	Area-sensitive (OMNR)c	
Red-bellied Woodpecker	*Melanerpes carolinus*			S4			1
Eastern Wood-Pewee	*Contopus virens*	SC	SC	S4			1
Blue Jay	*Cyanocitta cristata*			S5			1
Black-capped Chickadee	*Poecile atricapillus*			S5			1
Red-breasted Nuthatch	*Sitta canadensis*			S5		A	1
House Wren	*Troglodytes aedon*			S5			1
American Robin	*Turdus migratorius*			S5			1
European Starling	*Sturnus vulgaris*			SE			1
Red-eyed Vireo	*Vireo olivaceus*			S5			1
Northern Cardinal	*Cardinalis cardinalis*			S5			1
Song Sparrow	*Melospiza melodia*			S5			2
Brown-headed Cowbird	*Molothrus ater*			S4			1
American Goldfinch	*Spinus tristis*			S5			1

Field Work Conducted On: May 29 and June 11, 2020

Number of Species: 13
Number of (provincial and national) Species at Risk: Eastern Wood-Pewee
Number of S1 to S3 Species: 0
Number of Area-sensitive Species: 1 - Red-breasted Nuthatch

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.