BEACON ENVIRONMENTAL

GUIDING SOLUTIONS IN THE NATURAL ENVIRONMENT

Scoped Environmental Impact Study
2570-2590 Argyle Road

Prepared For:

Ranee Management

Prepared By:

Beacon Environmental Limited

Date: *Project:*

April 2022 **221188**

Table of Contents

page

Figures

Tables

Appendices

1. Introduction

Beacon Environmental Limited (Beacon) was retained by Ranee Management to prepare a Scoped Environmental Impact Study (EIS) in support of a Site Plan application to construct an apartment building at 2570-2590 Argyle Road in the City of Mississauga, herein referred as the subject site (**Figure 1**).

The subject site is located just south of Dundas Street West and is bound by Argyle Road to the northeast, Mary Fix Creek to the southwest and existing high density residential to the southeast.

The subject site is approximately 4.0 ha in area and is occupied by two existing high rise apartment buildings and associated parking and landscaped areas. The study area includes the subject site and Mary Fix Creek corridor.

The Mary Fix Creek corridor is identified as a Linkage and forms part of the City's Natural Heritage System and has been designated as Greenlands. Due to the proximity of the proposed redevelopment to the Mary Fix Creek corridors, both the City of Mississauga and the Credit Valley Conservation (CVC) Authority require that an EIS be prepared in support the Site Plan application. The purpose of the EIS is to demonstrate that the proposed redevelopment and site alteration will not adversely impact upon the Linkage functions associated with the Mary Fix Creek corridor.

Policy 19.4.5 of the City of Mississauga Plan lists an EIS as one of the types of studies that may be required a part of a complete application submission for an official plan amendment, rezoning, draft plan of subdivision or condominium or consent application.

A site visit with City and CVC staff was completed on April 28th, 2021 to determine the scope of the EIS. While Terms of Reference have not been provided or prepared, it was agreed that the EIS would be limited to characterization of the vegetation resources in the valleylands and a screening of the site for potential habitats of Species at Risk. Additionally, it was agreed that the EIS would include a Ravine Stewardship Plan to manage and enhance the condition of vegetation along the Mary Fix Creek corridor on the subject site.

This EIS includes the following:

- A policy overview highlighting natural heritage protection policies and regulations that apply to the site plan application;
- A summary of methods and findings of the ecological investigation and assessment;
- A constraints and opportunities analysis;
- A description of the redevelopment proposal; and
- An impact assessment and recommended mitigation.

2. Policy Framework

This section includes an overview of key federal, provincial, and local environmental policies, legislation, and regulations that may be relevant to this to redevelopment proposal. Key legislation,

policies and regulations that have been reviewed and considered in preparing the EIS include the following:

- Federal *Fisheries Act*;
- Federal *Migratory Birds Convention Act*;
- Ontario *Endangered Species Act*;
- Provincial Policy Statement;
- Region of Peel Official Plan;
- City of Mississauga Official Plan;
- *Conservation Authorities Act* – Ont. Reg. 160/06; and
- Credit Valley Conservation – Watershed Planning and Regulation Policies.

2.1 Federal *Fisheries Act*

Fish and fish habitat are protected under the federal *Fisheries Act* (1985) which was last amended on August 28, 2019. The protection provisions of the *Fisheries Act* apply to all fish and fish habitat throughout Canada and are the authorities for the regulation of works, undertakings or activities that risk harming fish and fish habitat. Specifically, the protection provisions include two core prohibitions. One is against persons carrying on works, undertakings or activities that result in the "death of fish by means other than fishing" (subsection 34.4(1)), and the other is "harmful alteration, disruption or destruction of fish habitat" (subsection 35(1)). The protection provisions are applied in conjunction with other applicable federal laws and regulations related to aquatic ecosystems, including the *Species at Risk Act*.

Under subsection 35(1) a person may carry on such works, undertakings or activities without contravening this prohibition, provided that they are carried on under the authority of one of the exceptions listed in subsection 35(2), and in accordance with the requirements of the appropriate exception. In most cases, this exception would be Ministerial authorizations granted to proponents in accordance with the *Authorizations Concerning Fish and Fish Habitat Protection Regulations.*

Proponents are responsible for planning and implementing works, undertakings or activities in a manner that avoids harmful impacts, specifically the death of fish and the harmful alteration, disruption, or destruction of fish habitat. Where proponents believe that their work, undertaking or activity will result in harmful impacts to fish and fish habitat, DFO will work with proponents to assess the risk of their proposed work, undertaking or activity resulting in the death of fish or the harmful alteration, disruption or destruction of fish habitat and provide advice and guidance on how to comply with the *Fisheries Act*.

2.2 *Endangered Species Act* (2007)

The *Endangered Species Act* (ESA) protects species listed as threatened or endangered by the Committee on the Status of Species at Risk in Ontario (COSSARO). Under the ESA over 200 species in Ontario are identified as extirpated, endangered, threatened, or of special concern.

Site Location	Figure 1
2570-2590 Argyle Road, Mississauga EIS	
BEACON ENVIRONMENTAL	Project: 221188 Last Revised: July 2021
Client: Ranee Management	Prepared by: DU Checked by: DK
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The purposes of the ESA are:

- To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge;
- To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk; and
- To promote stewardship activities to assist in the protection and recovery of species that is at risk.

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 MECP is required under Section 17(2)(c) of the ESA for any works proposed within the regulated habitat of a threatened or endangered species, identified during appropriate field study.

2.3 Provincial Policy Statement (2020)

The 2020 version of the Provincial Policy Statement (PPS) replaced the 2014 PPS as of May 1, 2020

The Provincial Policy Statement (PPS) (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 of the PPS, and relevant sections from each are provided in the following pages.

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. Some of these features are present in the Study Area and must be assessed in the context of these policies.

The policies specific to natural heritage are found in Section 2.1 of the PPS and are provided in their entirety below:

2.1.1 Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

2.1.3 Natural heritage systems shall be identified in Ecoregions 6E & 7E, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.

2.1.4. Development and site alteration shall not be permitted in:

a. Significant wetlands in Ecoregions 5E, 6E and 7E; and

b. Significant coastal wetlands.

2.1.5 Development and site alteration shall not be permitted in:

a. Significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
b. Significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
c. Significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);
d. Significant wildlife habitat;
e. Significant areas of natural and scientific interest; and
f. Coastal wetlands in Ecoregions 5E, 6E and 7E that are not subject to policy 2.1.4(b).

Unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

2.1.9 Nothing in policy 2.1 is intended to limit the ability of agricultural uses to continue.

In terms of implementation, identification of the various natural heritage features noted above is a responsibility shared by the Ministry of the Environment, Conservation, and Park (MECP), Ministry of Natural Resources and Forestry (MNRF) and the municipal planning authority. The MECP is responsible for the confirmation of habitat of endangered species and threatened species, and for its regulation (under the Act as described above). The MNRF is responsible for the identification of Provincially Significant Wetlands (PSWs) and Areas of Natural and Scientific Interest (ANSIs). Local and regional planning authorities are responsible for the identification of Significant Woodlands, Significant Valleylands, and Significant Wildlife Habitat, with support from applicable guidance documents (i.e., Natural Heritage Reference Manual, OMNR 2010; Significant Wildlife Habitat Technical Guidelines, OMNR 2000; Significant Wildlife Habitat Criteria for Ecoregion 6E or 7E, MNRF 2015). Local and regional planning authorities in southern Ontario also typically work with their local conservation authority to identify and confirm non-PSWs that may have significance at the local or regional level. As described in **Section 2.1** above, 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 DFO.

In areas where significant natural heritage features have been identified by the appropriate agency or planning authority, the boundaries of such features can typically be refined through site-specific studies undertaken as part of the planning process, with input from the responsible agency and/or planning authority.

2.4 Regional Municipality of Peel Official Plan (2018, Office Consolidation)

The Region of Peel Official Plan is intended to provide a strategic and holistic framework for regional planning through sustainable development and the integration of environmental, social, economic and cultural imperatives. The Peel Region Official Plan contains policies aimed at protecting, maintaining, and restoring a Greenlands System consisting of "Core Areas", "Natural Areas and Corridors (NAC's)", "Natural Linkage Areas", and "Potential Natural Areas and Corridors (PNAC's)". Key elements of the Region's Greenlands System include the following:

- Areas of Natural and Scientific Interest (ANSI);
- Environmentally Sensitive or Significant Areas (ESA);
- 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.

The following schedules and figures were reviewed to determine which sections of the Official Plan pertain to the subject site:

- Schedule D – Regional Structure illustrates that the subject site is within the Conceptual Urban Growth Centre;
- Schedule D3 - Greenbelt Plan Area Land Use Designations demonstrates the subject site is outside of the Greenbelt Plan Area without any river valley connections outside of the Greenbelt; and
- Schedule D4 - The Growth Plan Policy Areas in Peel depicts the subject site as within the Urban Growth Centre (as defined by Mississauga and Brampton).

2.4.1 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.

Core Areas of the Greenlands System are mapped on Schedule A of the ROP. No Core Areas are depicted on or in proximity to the subject site.

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

Natural Areas and Corridors (NAC) include:

- Evaluated non-provincially significant wetlands;
- Woodlands meeting one or more of the criteria in Table 1 of the ROP;
- Significant wildlife habitat;
- Fish habitat;
- Regionally significant life science Areas of Natural and Scientific Interest;
- Provincially significant earth science Areas of Natural and Scientific Interest;
- 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 within the Urban System and Rural Service Centres 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 Areas of Natural and Scientific Interest;
- 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 important. Table 1 of the Region's Official Plan lists criteria and thresholds for the identification of Core, Natural Areas and Corridors, and Potential Natural Areas and Corridors woodlands. Table 2 of the Region's Official Plan lists criteria and thresholds for the identification of core valley and stream corridors.

Regional policies pertaining to NAC's and PNAC's defer their interpretation, protection, restoration, enhancement, proper management and stewardship to local municipalities. Section 2.3.2.16 is the Region's policy to direct the area municipalities, in consultation with the conservation authorities, to continue to refine the boundaries of valley and stream corridors; establish setbacks and buffers for watercourses, and valley and stream corridors:

"It is the policy of Regional Council to: Define the Greenlands System in Peel as being made up of:" …. NACs and PNACs "which will be interpreted, protected and shown as appropriate in the area municipal plans" and, "reference should be made to the area municipal official plans and related documents for a detailed interpretation of the location and extent of Core Areas", NACs and PNACs. For this reason, the Region does not map NACs or PNACs in the Regional OP.

2.5 City of Mississauga Official Plan (2019)

The City of Mississauga Official Plan has undergone several consolidations to include amendments and Ontario Municipal Board (OMB)/Local Planning Appeal Tribunal (LPAT) decisions. The current OP in effect includes amendments as of November 22, 2019, however until all original appeals are resolved, both the Mississauga Plan (2003) and Mississauga Official Plan (2019) will be considered as they are both partially in effect.

The following schedules and figures of the Official Plan were reviewed to determine the sections that pertain to the subject site including the following:

- Schedule 1 – Urban System depicts the subject site as within the Urban boundary and Downtown Intensification Corridor;
- Schedule 1a – Green System depicts the subject site as within and adjacent to the City's Green System;
- Schedule 2 – Intensification Areas presents the subject lands within the corridor and within 500 m of two major transit station areas;
- Schedule 3 – Natural Heritage System identifies the subject site as containing a Linkage; and
- Schedule 10 - Land Use Designations identifies the property as Residential High Density and Greenlands.

Section 6.3 of the Mississauga Official Plan contains policies pertaining to the protection of the Green System. The Green System is composed of 1) the Natural Heritage System, 2) the Urban Forest, 3) Natural Hazard Lands; and 4) Parks and Open Spaces.

Components of the Green System that overlap with the subject site are limited to the Mary Fix Creek corridor and include Natural Heritage System (Linkage) and Natural Hazard Lands (Floodplain and Long-Term Stable Top of Slope).

As per policy 6.3.1, the City will give priority to actions that protect, enhance, restore and expand the Green System. Policy 6.3.7 states that buffers are intended to perform functions such as woodland interior enhancement via native species plantings, attenuate stormwater runoff and reduce the erosion of valley slopes.

As per Policy 6.3.8, buffers will be determined on a site-specific basis as part of an EIS to the satisfaction of the City and appropriate conservation authority. Per 6.3.10, the exact limit of components of the Natural Heritage System will be determined through site specific studies/EIS. Minor refinements to the boundaries of the Natural Heritage System may occur through an EIS or other appropriate studies accepted by the City without an official plan amendment. Natural Heritage System Policies are applicable to the Urban Forest (6.3.39).

2.5.1 Natural Heritage System

The City's Natural Heritage System consists of 1) Significant Natural Areas, 2) Natural Green Spaces, 3) Special Management Areas, 4) Residential Woodlands, and 5) Linkages.

The City has identified the Mary Fix Creek corridor as a Linkage. While the Mary Fix Creek corridor has not been mapped as Residential Woodland, Natural Green Space, Special Management Area or

Significant Natural Area, the creek corridor does support fish habitat and meet the criteria for significant valleyland, therefore could technically be considered a Significant Natural Area. While NHS components are mapped exclusively of each other, this EIS has provided consideration to the protection of fish habitat and valleylands.

> *The exact limit of components of the Natural Heritage System will be determined through site specific studies such as an Environmental Impact Study. Minor refinements to the boundaries of the Natural Heritage System may occur through Environmental Impact Studies or other appropriate studies accepted by the City without and official plan amendment.*

The limits of the NHS were reviewed in the field with City and CVC staff on April 28, 2021 and it was determined that the current extent of the NHS (Linkage) corresponds with the edge of the existing parking area and that staking of the dripline was not warranted as natural hazard constraints (i.e., stable top of slope and floodline) represented greater constraint to development.

2.5.2 Natural Hazard Lands

> *Natural Hazard Lands are generally associated with valley and watercourse corridors and the Lake Ontario shoreline. These areas are generally unsafe for development due to naturally occurring processes such as flooding and erosion.*
>
> Policy 6.3.47 states that: *development and site alteration will not be permitted within erosion hazards associated with valleyland and watercourse features. Where development or site alteration is proposed adjacent to erosion hazards, an appropriate buffer must be applied to the satisfaction of the City and conservation authority.*

Mary Fix Creek has natural hazards associated with it. There is a floodplain that extends onto the site and overlaps with the existing parking area. There is also a shallow confined valley slope along the creek. Regulatory flood elevation was provided by CVC on November 5, 2019 at an elevation 111.91 masl. The top of slope was staked by CVC on October 7, 2019. It is our understanding that natural hazard matters have previously been addressed with CVC staff and that the proposed Site Plan will be located outside the requisite setbacks.

2.5.3 City of Mississauga Natural Areas Survey

The City's Natural Areas Survey (NAS) was a study undertaken to identify and inventory the natural areas within the City of Mississauga and included reviewing existing reports, site visits, public survey and database updates (North South Environmental Inc. (NSEI) and City of Mississauga. 2013). The intention of this is to maintain the long-term ecological integrity of the remaining natural areas and that this shall have primacy over all other considerations to the extent that is feasible. Several recommendations of the NAS are incorporated into the City's OP.

The segment of Mary Fix Creek that traverses the western side of the subject site is identified as a "Linkage". There is no corresponding fact sheet for this area included in the NAS, however, the subject site is located between CV2, FV3, CV1 and CV10. According to CV2, household dumping is prevalent and numerous invasive plant species which aligns with field observations.

2.6 Credit Valley Conservation (CVC) Authority Policies and Regulations

Under *Ontario Regulation 160/06* of the *Conservation Authorities Act*, Credit Valley Conservation Authority (CVC) regulates development in and adjacent to natural hazard lands including creeks, valleylands, shorelines, and wetlands. The subject site is regulated due to the presence of the valley slope associated with the Credit River.

Development within the flood limit of a watercourse is not allowed. CVC will generally require that all watercourses remain in their natural state with respect to development proposals. Any development proposed within the "regulated" area adjacent to a watercourse or wetland (evaluated or unevaluated) would trigger the need for an EIS that must demonstrate that the no interference to the feature will occur before a permit is issued. The definition of a watercourse generally captures any feature that is "an identifiable depression in the ground in which a flow of water regularly or continuously occurs", regardless of the drainage area (CAA 1990).

As identified in Section 6.2.1 - Development Limits of the CVC *Watershed Planning and Regulation Policies* document (2010), the following applies.

> *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.*

CVC may recommend setbacks other than those identified [above] 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.

3. Methodology

In addition to the policy review that is presented in the preceding sections, several field investigations were conducted by Beacon ecologists in the spring of 2021 to characterize flora and fauna as well as opportunities for enhancement of the Mary Fix Creek corridor.

3.1 Vegetation Community Mapping

Ecological communities on the subject site were mapped and described following the protocols of 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, which involved delineating vegetation communities on aerial photos of the property and recording pertinent information on the community structure and composition. A checklist of all vascular plant species observed on subject site as well as their status in the watershed was compiled. As the condition of the ecological communities and species assemblages observed in the Mary Fix Creek corridor are highly degraded, floristic surveys were limited to spring survey only on May 14, 2021.

3.2 Breeding Bird Surveys

Two breeding bird surveys were conducted for the subject property during the early mornings of June 11th and June 23rd, 2021, under ideal weather conditions (i.e., while the temperature was within 5° C of normal and it was not raining or excessively windy). The breeding bird community was surveyed using a roving type survey, in which all parts of the subject property were walked to within 50 m and all birds heard or observed and showing evidence of breeding were recorded as potential breeders. The location of species observations was documented on an aerial photograph.

3.3 Assessment of Potential Habitat of Endangered & Threatened Species

A review of the Natural Heritage Information Centre data for the 1 km^2 area (square 1017349) revealed that records exist for the following endangered and threatened species:

- Henslow's Sparrow (endangered); and
- Eastern Meadowlark (threatened).

Both of these records are historical as the habitat for this species corresponds with agricultural lands that have long since been urbanized.

During field surveys, consideration was given to species that are most likely to occur in urbanized environments which generally includes:

- Butternut (endangered);
- Barn Swallow(threatened);
- Chimney Swift (threatened); and
- Bats (endangered).

4. Existing Conditions

4.1 Watercourses and Fish Habitat

The subject site is located within the Credit River watershed. Mary Fix Creek is a tributary of the Credit River. Mary Fix Creek formerly flowed into Lake Ontario but now drains into the Credit River just upstream of Lake Ontario (CVC 2014).

Mary Fix Creek is classified as having a warm thermal regime (ARA watercourse layer by MNRF (2010). The MNRF ARA layer also includes the following fish species for Mary Fix Creek: Brown Bullhead (*Ameiurus Nebulosus*) and Goldfish (*Carassius auratus*). Brown Bullhead is a native species in Ontario. Goldfish is an invasive species in Ontario. Both species thrive in slow warmer water. These species were most likely captured close to the confluence with the Credit River. During the site visit on May 14th, 2021, Beacon ecologists several schools of fishes were observed however, species could not be confirmed.

4.2 Ecological Communities & Flora

4.2.1 Ecological communities

Ecological communities associated with the subject site are summarized below and illustrated on **Figure 2**.

Anthropogenic (ANT)

The majority of the subject site contains buildings, paved surfaces, lawn and landscaped areas. These areas were mapped as anthropogenic based on their origin.

Cultural Plantation (CUP)

There are several clusters of planted trees at the front of the property adjacent to Argyle Road. These include mid-sized specimens of Norway Maple (*Acer platanoides*), Colorado Spruce (*Picea pungens)*, Siberian Elm (*Ulmus pumila*), Honey Locust (*Gledetsia tricanthos*), Douglas Fir (*Pseudotsuga menziesii*). Details regarding the specific trees are provided in the Arborist Report (Ferris & Associates 2019).

Cultural Woodland (CUW)

This community corresponds with the Mary Fix Creek corridor. Species composition is variable and not reflective of any natural ecological communities. Overstory is relatively open and comprised of scattered deciduous trees such as Red Oak (*Quercus rubra*), Norway Maple, Manitoba Maple (*Acer negundo*), Siberian Elm (*Ulmus pumila*), Apple (*Malus sp.),* Basswood (*Tilia americana*), Common Pear (*Pyrus communis)* and Sweet Cherry (*Prunus avium*) along with numerous dead ash (*Fraxinus spp.*). The understorey is dominated by Common Buckthorn (*Rhamnus cathartica*) with lesser associate of

Hawthorn (Crataegus spp.), Tatarian Honeysuckle (*Lonicera tatarica*), and Choke Cherry (*Prunus virginiana*). Ground layer is bare ground and dominated by Garlic Mustard (*Alliaria petiolata*) and other non-native species.

Hedgerow (HE)

There are linear strips of trees along the northern and southern property limits. These are generally comprised of the Siberian Elm, Colorado Spruce, Douglas Fir, Austrian Pine, Manitoba Maple, American Elm, and Basswood. Details regarding the specific trees are provided in the Arborist Report (Ferris & Associates 2019).

4.2.2 Floristics

A total of 40 species of vascular plants were documented from the subject site. A checklist is provided in **Appendix A**. Of these, 15 species or 37.5% are native. The remaining 25 species or 62.5% are non-native. None of the species observed have been assigned a conservation status in the watershed and none are provincially rare (i.e., S1-S3)

4.3 Birds

A total of 10 species of birds were observed on or adjacent to the subject property during the 2021 breeding bird season (**Appendix B**). The suite of species was composed of birds that are tolerant of urban and urbanizing environments, many of which with generalist life cycle requirements.

The most abundant species was the House Sparrow (*Passer domesticus*), along with a number of other species common to urban landscapes such as Rock Pigeon (*Columba livia*), European Starling (*Sturnus vulgaris*), House Finch (*Haemorhous mexicanus*) and Brown-headed Cowbird (*Molothrus ater*). Multiple individuals of these species were noted. Other avian observations included Northern Cardinal (*Cardinalis cardinalis*), Black-capped Chickadee (*Poecile atricapillus*) and American Robin (*Turdus migratorius*). Breeding bird observations were well distributed through the property including atop the existing buildings where many of these species will nest.

Area-sensitive birds are those that 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 recorded which is considered to be forest-sensitive species requiring woodland habitat in which to breed successfully. One Red-breasted Nuthatch (*Sitta canadensis*) adult was observed and based on the nesting requirements of the species, this bird was likely breeding in one of the nearby treed areas and foraging within the study area.

No species ranked as S1 through S3 (Critically Imperiled through Vulnerable) by the province, or species protected under the ESA were encountered.

Legend

- Subject Property
- Ecological Communities

Code	Ecological Communities
ANT	Anthropogenic
HR	Hedgerow
CUW1	Mineral Cultural Woodland
CUP1	Mineral Cultural Plantation

Existing Conditions | **Figure 2**

2570-2590 Argyle Road, Mississauga EIS

BEACON ENVIRONMENTAL

Project: 221188
Last Revised: July 2021

Client: Ranee Management

Prepared by: DU
Checked by: DK

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4.4 Endangered and Threatened Species

Based on a review of background information as well as observations of habitat suitability, Beacon has confirmed that the subject site does not support habitat for endangered and threatened species. No butternut was observed and the existing apartment buildings (to be retained) do not support potential habitat for Barn Swallow or Chimney Swift. With respect to endangered bats, MECP generally regulates habitat through guidance for protection of potential maternity roosts and these generally correspond with house attics, forest and swamp environments, none of which are associated with the subject site.

5. Summary of Natural Heritage Features

The findings of the background review and field investigations have been relied upon to determine if the subject site supports any of the natural heritage components recognized under the PPS, as well as the Region's and City's Official Plans.

Habitat for Threatened or Endangered Species

As discussed in the **Section 4.4**, the subject site does not support habitat for endangered and threatened species.

Significant Wetlands

There are no wetlands on the subject property.

Significant Woodlands

There are no significant woodlands associated with the subject site. While the Mary Fix Creek corridor is mapped as a cultural woodland, the corridor is less than 40 m in width and therefore does no satisfy the definition of a woodland, as defined in the Mississauga Official Plan.

Significant Wildlife Habitat

A review of the Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E suggests that Mary Fix Creek could potentially be considered significant wildlife habitat based on its linkage functions. No other SWH are considered to apply.

Significant Valleyland

The City of Mississauga Official Plan criteria for significant valleylands reads as follows:

> *6.3.12 g significant valleylands are associated with the main branches, major tributaries and other tributaries and watercourse corridors draining directly to Lake Ontario including the Credit River, Etobicoke Creek, Mimico Creek and Sixteen Mile Creek.*

Mary Fix Creek is associated with a natural valley landform in this location and is tributary to the Credit River, therefore meets the City's definition of a Significant Valleyland.

Fish Habitat

Mary Fix Creek is confirmed warmwater Fish Habitat (either direct or indirect).

Summary

In summary, the riparian area associated with Mary Fix Creek adjacent to the property supports the following natural heritage features:

- Significant Valleyland; and
- Fish Habitat.

6. Constraints & Opportunities

The Mary Fix Creek corridor supports natural heritage features as described in the preceding sections. In addition to the creek corridor has natural hazards associated with it including the long term stable top slope and floodplain as determined by Terraprobe 2020 and the CVC Regulatory Floodline respectively.

The existing Mary Fix Creek floodplain overlaps part of the existing apartment parking lot grounds. The limits of development for the Site Plan were generally established by applying a 10 m setback to the long-term stable top of slope and floodline. It should be noted that while the setbacks have been used to guide the limits of development as it relates to the future building, these are areas where future parking will remain with the floodplain and that is other areas there will be a minor encroachment into the 10 m setback from the long-term stable top of slope. These encroachments do not have any effect on the protection of the NHS or its functions. Under CVC lot creation policies, a reduction to setbacks from natural hazards is permitted provided it can be demonstrated through studies, to the satisfaction of the CVC, that watershed protection objectives can be maintained. These setbacks are illustrated on the Site Plan which is included as **Figure 3** in **Section 7**.

With respect to the cultural woodland community associated with Mary Fix Creek, no separate buffers have been recommended as the 10 m setback to Long Term Stable Top of Slope capture the adjacent lands where impacts to ecological functions (i.e., fish habitat, wildlife movement) are most likely to occur. Furthermore, because the condition and quality of the cultural woodland is poor and has been severely impaired by the predominance of litter, debris and harmful invasive species that application of an ecological buffer would not provide for greater protection. It is however recognized that the 10 m setbacks that have been applied to natural hazards will be naturalized in part and function as an ecological buffer as well.

DEVELOPMENT STATISTICS

m - Denotes Meters   *min - Denotes Minimum*
sm - Denotes Square Meters   *max - Denotes Maximum*

PROJECT DATA

Municipal Address of Subject Lands:	**2570 -2590 Argyle Road** Mississauga, Ontario			
Legal Description:	**Part of Block A Registered Plan E-23**			
Zoning By-law:	Zoning By-law 0225-2007, Enacting Bylaw BL-0225/07, BL-0131/18 Exception Zone Map # 15 By-law: 0174-2017 RA4-18			
Zoning : (Apartment)	**RA4-18**	Proposed Use :	**Apartment**	
(Greenlands)	**G1**			
		Lot Area:	**21,533.82**	sm
Permitted F.S.I. : By-law: 0225-207	**1.50**	Proposed F.S.I. :	**1.85**	
		Proposed GFA COMBINED :	**39,945.04**	sm
Mississauga Official Plan, Cookville NHD (West) FSI ranges 0.5 - 1.2		*Total NEW Building C*	18,755.44	sm
		Total EXISTING Building A & B	21,189.60	sm
		Existing F.S.I.	0.98	
Permitted Lot Coverage:	**40%**	Proposed Lot Coverage:	**25%**	
Lot Frontage:	142.56 m	No of Frontages:	1	
Lot Depth:	174.02 m			
Established Grade:	**113.27** m	*CDG (Canadian Geodetic Datum)*		
Published Elevation	115.617 m			

BUILDING HEIGHT

STANDARD		*PROPOSED*	
Highest point of the roof surface of a flat roof:		Highest point of the roof surface of a flat roof:	
Height to Top of MPH Roof	N/A m	Height to Top of MPH Roof C	47.30 m
No. of Storeys Permitted:	13 storeys	No. of Storeys Proposed C:	14 storeys

BUILDING SETBACKS

STANDARD	*m*		*PROPOSED*	*m*
Front Yard Setback E	7.50	min	Front Yard Setback E	111.00
Side Yard Setback S	4.50	min	Side Yard Setback S	32.00
Side Yard Setback N	4.50	min	Side Yard Setback N	4.50
Rear Yard Setback W *	4.50	min	Rear Yard Setback W *	7.50
*to Greenlands zone (easement)				

PROPOSED LANDSCAPED SOFT AREAS

	sm	%	
Lot Area:	21,533.82		
Ground Floor Area*	5,371.2	25%	** Building Footprint New + Existing*
Landscaped Open Space**	9,259.5	43%	*** Soft Landscaping + Hard Landscaping areas*
Paved Surface Area***	6,903.2	32%	**** Driveway, Parking lots and loading areas*

PROPOSED RESIDENTIAL UNITS

TOTAL Number of Residential Units Building A, B, + C: **508**

EXISTING:	*Unit Count*	NEW:	*Unit Count*
Rental Building A:	127	Rental Building C:	255
Rental Building B:	126		
Total Building A + B:	**253**	Total Rental Building C :	**255**

PROPOSED AMENITY

STANDARD	*sm*	*PROVIDED*	*sm*
the greater of 5.6 m2 per dwelling unit or 10% of the site area			
10% of Site Area:	2,153.38	TOTAL Indoor Amenity Provided:	466.88
5.6 SM / Building C units +		TOTAL Outdoor (other) Provided:	698.18
Playground Replacement:	1,583.00	TOTAL Outdoor (at grade) Provided:	2,744.60
Required amenity:	**1,583.00**	TOTAL Amenity:	**3,909.66**
50% in one contiguous area	*791.50*		

PROPOSED PARKING SPACE

STANDARD	Prk.Spaces	*PROVIDED*	Prk.Spaces
Total Parking Spaces Required A, B + C:	**678**	Total Parking Spaces Provided:	**589**
New Building C		Breakdown of parking space by location:	
Breakdown of parking space by ratio:		Open Surface Spaces	180
Studio (1.00)	0	Above Grade Parking	254
1 Bedroom (1.18)	152	Below Grade Parking	155
2 Bedroom (1.36)	139	TOTAL	589
3 Bedroom (1.50)	38		
Residential TOTAL:	**325**		
Visitor TOTAL (0.20/unit)	**65**		
		Building A + B Replacement	**294**
TOTAL:	391	RATIO PROPOSED	1.15
Building A and B Existing :	287	***Building C***	**295**
		RATIO PROPOSED	1.15
TOTAL:	678		

PROPOSED LOADING SPACE

STANDARD		*PROVIDED*	
	1 / Building		
Type of Loading Space Required:	3.5m x 9.0m	Type of Loading Space Provided:	3.5m x 9.0m
Building C	1	Building C	1
Building A Retain existing Loading Area			
Building B Retain existing Loading Area			

BREAKDOWN OF PROJECT DATA BY COMPONENTS - PROPOSED NEW BUILDING C

PROPOSED RESIDENTIAL UNIT MIX

PROVIDED TOTAL BUILDING C

Unit Type	*Unit Count*	Typical Unit Size	Percent
Studio	0	0.0sm	0%
1 Bedroom	128	0.0sm	50%
2 Bedroom	102	0.0sm	40%
3 Bedroom	25	0.0sm	10%
TOTAL C:	**255**		

PROPOSED AREAS

Zoning GFA	*sm*			
NEW C Residential GFA****	**18,755.44**	***** GFA as defined by Zoning By-law*		
		Max GFA for each Storey above 12 Storeys	1,000.00	sm
		Proposed GFA (envelope) for 13th floor	1,418.58	sm
		Proposed GFA (envelope) for 14th floor	1,210.83	sm

BREAKDOWN OF PROJECT DATA BY COMPONENTS - EXISTING BUILDIGNS A & B

RESIDENTIAL UNIT MIX - EXISTING

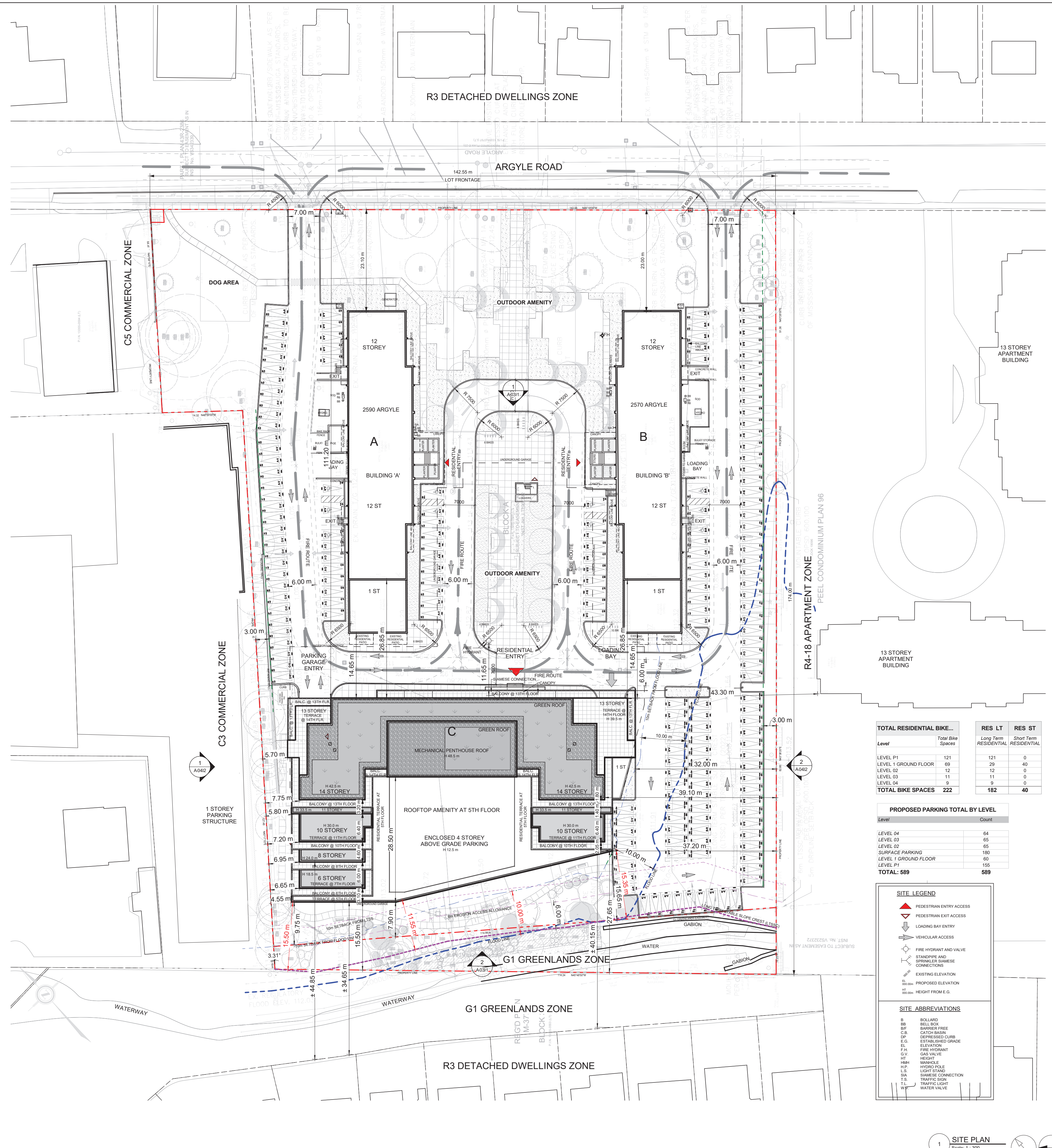
Existing BUILDING A - 2590 Argyle			Existing BUILDING B - 2570 Argyle		
Unit Type	*Unit Count*	%	Unit Type	*Unit Count*	%
Studio	0	0%	Studio	0	0%
1 Bedroom	60	47%	1 Bedroom	59	47%
2 Bedroom	67	53%	2 Bedroom	67	53%
3 Bedroom	0	0%	3 Bedroom	0	0%
TOTAL:	127		TOTAL:	126	

Existing TOTAL BUILDING A & B

Unit Type	*Unit Count*	Percent
Studio	0	0%
1 Bedroom	119	47%
2 Bedroom	134	53%
3 Bedroom	0	0%
TOTAL C & D:	**253**	

AREAS - EXISTING

Existing GFA	*sm*	
1840 EXISTING A Residential GFA [1]	10,594.80	*[1] As per Mississauga Data WITH NO DEDUCTIONS*
1850 EXISTING B Residential GFA [1]	10,594.80	
TOTAL:	**21,189.60**	



TOTAL RESIDENTIAL BIKE...		RES LT	RES ST
Level	*Total Bike Spaces*	*Long Term RESIDENTIAL*	*Short Term RESIDENTIAL*
LEVEL P1	121	121	0
LEVEL 1 GROUND FLOOR	69	29	40
LEVEL 02	12	12	0
LEVEL 03	11	11	0
LEVEL 04	9	9	0
TOTAL BIKE SPACES	**222**	**182**	**40**

PROPOSED PARKING TOTAL BY LEVEL

Level	Count
LEVEL 04	64
LEVEL 03	65
LEVEL 02	65
SURFACE PARKING	180
LEVEL 1 GROUND FLOOR	60
LEVEL P1	155
TOTAL: 589	**589**

SITE LEGEND

- PEDESTRIAN ENTRY ACCESS
- PEDESTRIAN EXIT ACCESS
- LOADING BAY ENTRY
- VEHICULAR ACCESS
- FIRE HYDRANT AND VALVE
- STANDPIPE AND SPRINKLER SIAMESE CONNECTIONS
- 000.00 EXISTING ELEVATION
- EL 000.00m PROPOSED ELEVATION
- HT 000.00m HEIGHT FROM E.G.

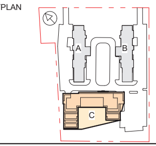
SITE ABBREVIATIONS

B	BOLLARD
BB	BELL BOX
B/F	BARRIER FREE
C.B.	CATCH BASIN
DP	DEPRESSED CURB
E.G.	ESTABLISHED GRADE
EL	ELEVATION
F.H.	FIRE HYDRANT
G.V.	GAS VALVE
HT	HEIGHT
HMH	MANHOLE
H.P.	HYDRO POLE
L.S.	LIGHT STAND
SIA	SIAMESE CONNECTION
T.S.	TRAFFIC SIGN
T.L.	TRAFFIC LIGHT
W.V.	WATER VALVE

CLIENT

RANEE MANAGEMENT
4122 Bathurst St., Toronto, ON M3H 3P2
TEL: 416-756-3962

KEYPLAN



ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR RE-ZONING/OPA	2020-08-31
2	ISSUED FOR RE-ZONING/OPA	2022-04-08

SEAL

IBI GROUP
55 St. Clair Avenue West, 7th Floor,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930 fax 416 596 0644
ibigroup.com

PROJECT
ARGYLE
2570 - 2590 Argyle Rd.
CITY OF MISSISSAUGA, ON
PART OF BLOCK A
REGISTERED PLAN E - 23

PROJECT NO: 120325

DRAWN BY:	CHECKED BY:
-	-
PROJECT MGR:	APPROVED BY:
-	-

SHEET TITLE
CONCEPT SITE PLAN & OVERALL PROJECT STATISTICS

SHEET NUMBER A-003 ISSUE 2

Through discussions with City and CVC staff at the April 28th, 2021 site visit, it was agreed that the condition of the Mary Fix Creek corridor is poor and that an opportunity exists to restore and enhance ethe corridor an its functions by preparing a Ravine Stewardship & Buffer Plan that aims to replace the non-native vegetation in the corridor with native vegetation. This approach compliments some of the City's planned rehabilitation works for a portion of the corridor on the southern part of the subject site where failing gabion baskets are to be replaced and the affected areas landscaped with native vegetation.

It is recommended that a Ravine Stewardship Plan and Buffer Planting Plan be prepared to achieve a net gain in ecosystem functions within the creek corridor. This is further discussed in the following section.

7. Description of Proposed Redevelopment

The proposed redevelopment of the subject site will see the retention of the two existing apartment buildings and the addition of a new 14-storey apartment building immediately to the west but setback from the creek corridor. The proposed development will consist of:

- 255 dwelling units;
- An enclosed 4 storey above grade parking lot directly attached on the west to the new building;
- 180 open surface spaces, 254 above grade parking and 155 below grade parking: total of 589 total parking spaces provided; and
- Building footprint of 3184 m^2.

Gross Floor Area is proposed to be 39,945 m^2 (4,299,64 ft^2). The new building (C) has a total proposed area of 18,755 m^2. The existing buildings (A&B) have and occupied area of 21,190 m^2. Current driveway way to the building will remain the same with access from Argyle Road.

The key design principles behind the proposed development include:

- Creating additional dwelling units for residents;
- Enhancing and naturalizing the floodplain area associated with Mary Fix Creek;
- Creating soft landscaping and hard landscaping areas;
- A 1804 m^2 outdoor amenity available to residents from Buildings A, B and C, located in between Building A and B; and
- Storm sewer and sanitary sewer expansion (no stormwater management assessment completed).

A copy of the Site Plan, prepared by IBI Group (January, 2022) is included as **Figure 3.**

As described in the Functional Servicing and Stormwater Management Report prepared by C.F. Crozier & Associates Inc. (August 2020), the proposed development will be serviced by establishing connections to existing water and sanitary services along Argyle Road. None of these services are located within or adjacent to the natural heritage system.

As the catchment areas for the existing development will remain unchanged, no new stormwater management controls are proposed for those area. With respect to the new development, stormwater runoff is proposed to discharge to the watercourse via an existing 300 mm diameter storm sewer outlet. The existing outlet will be connected to an oil-grit separator (OGS) and a new 300 mm diameter sewer will tie the OGS into the proposed underground for Building C to manage peak flows in accordance with City requirements. On site storage will be required during the 100-year post-development storm event to meet the pre-development release rate. Storage volume of 258.30m^3 will be provided by an underground stormwater tank. In terms of stormwater quality, treatment of surface runoff to enhanced levels will be provided using an OGS and treatment of roof drainage will be provided by discharging to a proposed bioswale. The proposed SWM strategy also provides storage for maintaining the site water balance. Additional details are provided in the FSSWM report (C.F. Crozier & Associates Inc. (August 2020).

8. Potential Impacts and Mitigation

Background review and field investigations confirm that the subject site consists of a predominantly anthropogenic features associated with the existing apartment buildings and parking areas that cover the entire the site except for the Mary Fix Creek valleylands. Natural heritage and hazard features associated with Mary Fix Creek include the watercourse, fish habitat, cultural woodland, meander belt, and floodplain. The following section provides an assessment of potential direct and indirect impacts that the proposed redevelopment may have on the natural heritage features and ecological functions and recommendations for mitigation measures that can be implemented to avoid, minimize, or off-set potential impacts.

9. Impact Assessment

The proposed redevelopment has been designed to avoid the Mary Fix Creek corridor. The future development limits are based on application of setbacks to natural hazards (floodplain and long-term stable slope) and will see the future development limits set back much further from the creek corridor than the existing development. The proposed redevelopment will be confined to the existing parking lot which, by design, will avoid direct impacts to natural heritage features and ecological functions.

While the proposed redevelopment will introduce an additional apartment building and a greater number of occupants to the site, it is not anticipated that this will result in additional sources of stressors on the corridor as there are no trails or parklands associated with the corridor that would attract potential use or activities (i.e., dog walking, etc.). Furthermore, the creek corridor will be protected by implementing a 10 m setback to the floodplain adjacent to the building. This setback will be naturalized with dense tree and shrub plantings, fenced, and placed in public ownership which will effectively discourage human encroachment.

In conjunction with the proposed redevelopment, it is proposed that ecological condition of the creek corridor be restored and enhanced by managing invasive species and replacing them with native species to promote biodiversity.

In terms of short-term impacts, the proposed redevelopment has the potential to indirectly impact fish habitat in Mary Fix Creek during construction if sediment is released to the watercourse. Such impacts can be avoided by implementing erosion and sediment control measures as outlined in the Functional Servicing Report (C.F. Crozier & Associated Inc, 2021). Any grading or site alteration related activities should be confined to the established limit of development. Fencing at the development limit should be regularly inspected and maintained in good working order throughout the construction period. Fencing should be removed upon completion of construction after exposed soils have been stabilized. Standard Best Management Practices, including the provision of sediment control measures, should also be employed during the construction process.

The removal of vegetation from the site as part of the re-development proposal has the potential to affect breeding birds if nests are harmed. Such impacts can be avoided by restricting vegetation removals to the fall and winter. The federal *Migratory Birds Convention Act* (1994) and provincial *Fish and Wildlife Conservation Act* protect the nests, eggs and young of most bird species from harm or destruction. As the breeding bird season in southern Ontario is generally from April to August, the clearing of vegetation (including grasses and shrubs) should ideally occur outside of these periods. Where not possible, 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.

Other potential impacts could be related to lighting. All lighting installed in relation to the redevelopment should be shielded and directed away from the Mary Fix Creek corridor to the extent feasible.

There are a number of tees identified for preservation adjacent to the Mary Fix Creek corridor. The potential exists for damage to occur to those trees identified for retention. Trees can be negatively impacted through grade changes, soil compaction, root cutting, and mechanical damage to trunks and branches resulting from the operation of construction equipment. Where trees have been identified for retention, tree protection zones (TPZs) should be established on the ground consistent with tree protection fencing as outlined in the accompanying Arborist Report (Ferris + Associates, 2019). 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, then an ISA certified arborist should be consulted.

10. Ravine Stewardship & Buffer Planting Plans

The purpose of this section is to provide guidance for the restoration and enhancement of the Mary Fix Creek corridor. As was noted in **Section 6**, the corridor is highly degraded and there are existing parking areas abutting the valleylands that will need to be removed to provide for the future natural hazard setbacks, and for these reasons, the proposed development provides an opportunity enhance the condition and quality of the corridor and its ecological functions.

Enhancements can be achieved through 1) removal of remaining debris/garbage from the valleylands, 2) targeted removals of invasive species from the valleylands, and 3) restoration of native diversity to the valley land and the 10 m setback zone. Beacon has developed strategies and actions that should be implemented to achieve the desired enhancements. Beacon has worked with Studio TLA to develop the Ravine Stewardship and Buffer Planting Plan. **These plans will be submitted separately as part of the landscaping package submission**.

Outlined below are the key issues that are currently affecting the quality and function of the Mary Fix Creek corridor on the subject site.

10.1 Issue No. 1. Litter, Debris and Fill

Wil undertaking field investigations of the creek corridor, it was noted that there is considerable litter and waste within the corridor that has been either dumped or just blown in. There is no fencing to prevent dumping of waste, so there has been considerable accumulation over the years. The waste is comprised of windblown litter, plastics, construction waste, and fill. Removal of the foreign debris from the corridor will improve the aesthetic appearance and also provide for opportunities to encourage revegetation of the bare ground, as well as enhance the ecological quality of the ravine.

Objective:

- To improve the quality and condition of the ravine and increase opportunities for vegetation establishment.

Strategy:

- Remove all foreign surface and sub-surface foreign waste from the valley slopes.

Actions:

- Inventory all surface and buried foreign debris and waste.
- Extract all foreign debris and waste by hand.
- Remove waste from site and dispose of appropriately.
- Repair any excavated areas using soils comparable in texture to the native soil.
- Revegetate with native species (also ref. Issue 2).
- Establish fencing at the future development limits and restrict future access.
- Inspect and monitor.

10.2 Issue No. 2. Invasive Species

Vegetation on the site is dominated by non-native species, including highly invasive species that threaten populations of native vegetation in the valley corridor. Once established, these typically aggressive species can displace native species and reduce overall biodiversity. On the subject property, the most problematic invasive species includes Manitoba Maple, Common Buckthorn, Garlic Mustard and Tartarian Honeysuckle. These species are present throughout the corridor. The presence of these species contributes to the degradation of the valley system by acting as a perpetual seed source.

Eradication of all non-native and invasive species from the site would require removal of the majority of vegetation cover from the valley slope and floodplain. Removal of vegetation from the valley slope would require an extensive program of phased management to successively replace the undesirable species while retaining slope stability. To fully restore native cover in both the valleyland as well as the future setback area, it is recommended that these invasive species be removed from the valley corridor on the subject lands and replace with sit appropriate native species.

Objectives:

- To reduce the impact of non-native invasive species on the creek corridor ecosystem.
- To provide opportunities for establishment of native species.

Strategy:

- Remove all non-native vegetation from the valleyland portion of the subject site.
- Implement a long-term strategy (5 years) to control and suppress of invasive species.

Actions:

- Obtain required permit for any tree removals.
- Cut down all non-native invasive trees and large shrubs from the valleyland.
- Cut larger tree stems (> 20 cm in diameter) into 1 m segments and retain on site for reuse in setback area following site preparation.
- Remove from the site and dispose of any shrubs, small branches or diseased woody material.
- Chip remaining woody debris and retain on site for future mulching following site preparation.
- Apply herbicide (glyphosate) to any cut tree and shrub stumps and populations of garlic mustard.
- Inspect the area to determine effectiveness of the control treatments.
- Apply a 30 cm layer of woodchips to the treated areas to suppress invasives in the soil seed bank.
- Monitor annually for five years.

10.3 Issue No. 3. Low Native Cover & Diversity

The predominance of invasive trees, shrubs and groundcovers in the creek corridor has prevented the establishment of native vegetation on this site which has impaired the ecological health of the system. The health and diversity of the creek corridor can be restored by removing the detrimental invasive species and replacing them with native vegetation, both on the valley slope and in the future 10 m setback zone. Native vegetation should include as mixture of trees, shrubs and ground covers that are compatible with the Mary Fix Creek / Credit River watershed

Objectives:

- To restore native vegetation to the valley slope and restore the tableland portions of the site. (10 m setback).
- To reintroduce a seed source of quality native species that can expand naturally to the creek corridor.
- To enhance native species diversity in the valley corridor.
- To restore wildlife habitat by creating structure and food plant sources.

Strategy:

- Naturalize the 10 m setback on the tableland by converting the existing parking space to natural woodland flourishing with native vegetation.
- Naturalize the valleylands by planting native species following the removal of invasive species.

Actions:

- Implement plantings as per the Ravine Stewardship and Buffer Planting Plans prepared by Studio TLA.
- All tree whip/sapling stock to be protected from rodents using collar guards.
- Planting beds to be maintained (watered and weeded) for a period of two years following initial installation.
- Inspect & monitor annually for 5 years.

11. Policy Conformity

A summary of federal, provincial and municipal environmental protection and planning policies and regulations applicable to the Subject site were discussed in **Section 2**. An evaluation of how the proposed re-development complies with the applicable policies and legislation is summarized in **Table 1**.

Table 1. Policy Compliance Assessment

Applicable Policy / Legislation	Relevant EIS Findings and Recommendations	Policy Compliance
***Federal Fisheries Act* (1985)**	Mary Fix Creek supports fish habitat.	Yes. Fish habitat will be protected, maintained and enhanced.
***Endangered Species Act* (2007)**	No endangered or threatened species present.	Yes. No habitat for endangered or threatened species will be impacted.
Provincial Policy Statement (2020) Section 2.1 – Natural Heritage		
1. Habitat for Threatened and Endangered Species	No endangered or threatened species present.	Yes. No impacts to habitats of endangered or threatened species.
2. Significant Valleylands	Mary Fix Creek is a significant valleyland.	Yes. No development is being proposed within the valleyland.
3. Significant Wetlands	There are no wetlands in the study area.	Yes. No wetlands will be impacted
4. Significant Woodlands	There are no significant woodlands associated with the subject site.	Yes. No significant woodlands will be impacted.
5. Significant Wildlife Habitat	Mary Fix Creek corridor functions as a wildlife linkage.	Yes. Linkage functions will be protected, maintained, and enhanced.
6. Significant Areas of Natural and Scientific Interest	There are no Areas of Natural or Scientific Interest in the study area.	Yes. No ANSIs will be impacted.

Applicable Policy / Legislation	Relevant EIS Findings and Recommendations	Policy Compliance
7. Fish Habitat	Mary Fix Creek supports fish habitat.	Yes. Fish habitat will be protected, maintained and enhanced.
Region of Peel Official Plan (2018)	There are no Core Areas on or adjacent to the site. For NACs and PNACs the Region defers to the City and CVC.	Yes. The Mary Fix Creek corridor may quality as an NAC or PNAC. The creek corridor is being protected, maintained and enhanced.
Mississauga Official Plan (2019)		
1. Natural Heritage System	The Mary Fix Creek is identified as a Linkage. As it supports fish habitat and valleyland, it also qualifies as a Significant Natural Area, although the City maps NHS components as exclusive of one another.	Yes. No development is proposed within the NHS. The Mary Fix Creek corridor will be protected and enhanced.
2. Natural Hazard Lands	Natural Hazards associated with the subject site include the floodplain and erosion (slope) hazards associated with Mary Fix Creek. No new development is proposed within these hazards.	Yes. All hazards are being avoided.
CVC Regulations and Policies	See above	See above.

12. Conclusion

Ranee Management is proposing to redevelop the existing parking lot space and grounds located at 2570-2590 Argyle Road in Mississauga. The proposed redevelopment proposal consists of a 14-storey apartment to accompany the existing 2 apartment buildings, an enclosed 4-storey parking lot, and a shared outdoor amenity.

The subject site currently contains residential buildings (2) surface parking, and other associated facilities. The Mary Fix Creek corridor is identified as a Linkage and part of the City's Natural Heritage System (NHS). The proximity of the NHS requires that an Environmental Impact Study (EIS) be prepared in support of the redevelopment proposal.

This EIS describes the natural heritage features and ecological functions associated with the subject site, evaluates their significance, identifies constraints and opportunities to redevelopment, assesses the direct and indirect impacts on the NHS components, and recommends mitigation and enhancement measures to avoid or minimize impacts.

The EIS has confirmed that significant natural heritage features are limited to the Mary Fix Creek corridor which is being protected through application of natural heritage setbacks. Significant natural heritage features associated with the subject site include fish habitat, significant valleylands and significant wildlife habitat for animal movement. Natural hazards include floodplain and slope/erosion hazards.

The condition of the Mary Fix Creek is poor due to former modifications (i.e., gabions) which are failing and are subject to repair by the City. Additionally, the riparian vegetation along the corridor is dominated by non-native invasive species which have are negatively impacting fish and wildlife habitat and preventing the recruitment and establishment of beneficial native vegetation. As the creek corridor has been ecologically compromised for some time now, the risk of the redevelopment proposal impacting corridor functions is low. The EIS recommends that the corridor be restored and enhanced through implementation of a Ravine Stewardship and Buffer Planting Plan. The Ravine Stewardship Plan includes recommendation for cleaning up the corridor by removing waste and debris and restoring native biodiversity by removing invasive species and planting appropriate native species of trees, shrubs and groundcovers. The Buffer Planting Plan includes recommendations for converting the former parking areas adjacent to the proposed building to a naturalized buffer strip that will be planted with native trees, shrubs and groundcovers. Implementation of both these plans as well as fencing at the development limits will serve to enhance the ecological functions of the corridor and provide for long term protection.

In summary, the proposed redevelopment is not expected to result in negative impacts on the NHS provided the mitigation and enhancement recommendations identified in this report and companion studies are implemented.

Report prepared by:
Beacon Environmental

Dan Krivenko, B.Sc.
Ecologist

Report reviewed by:
Beacon Environmental

Ken Ursic, B.Sc., M.Sc.
Principal, Senior Ecologist

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Provincial Policy Statement. Toronto, Ontario.

Appendix A

Plant List

Appendix A

Plant List

Scientific Name	Common Name	Family	SRank[a]	PEEL[b]
Acer negundo	Manitoba Maple	Aceraceae	S5	
Acer platanoides	Norway Maple	Aceraceae	SE5	
Acer saccharum	Sugar Maple	Aceraceae	S5	
Alliaria petiolata	Garlic Mustard	Brassicaceae	SE5	
Amelanchier laevis	Smooth Serviceberry	Rosaceae	S5	U
Arctium minus	Common Burdock	Asteraceae	SE5	
Artemisia vulgaris	Common Wormwood	Asteraceae	SE5	
Avena sativa	Cultivated Oats	Poaceae	SE2	
Cornus racemosa	Grey Dogwood	Cornaceae	S5	
Eurybia macrophylla	Large-leaved Aster	Asteraceae	S5	
Fraxinus americana	White Ash	Oleaceae	S4	
Fraxinus pennsylvanica	Red Ash	Oleaceae	S4	
Galium aparine	Common Bedstraw	Rubiaceae	S5	R4
Geum aleppicum	Yellow Avens	Rosaceae	S5	
Glechoma hederacea	Ground-ivy	Lamiaceae	SE5	
Juniperus virginiana	Eastern Red Cedar	Cupressaceae	S5	
Leonurus cardiaca	Common Motherwort	Lamiaceae	SE5	
Lonicera tatarica	Tatarian Honeysuckle	Caprifoliaceae	SE5	
Malus pumila	Common Apple	Rosaceae	SE4	
Morus alba	White Mulberry	Moraceae	SE5	
Nepeta cataria	Catnip	Lamiaceae	SE5	
Picea abies	Norway Spruce	Pinaceae	SE3	
Picea pungens	Blue Spruce	Pinaceae	SE1	
Pinus nigra	Austrian Pine	Pinaceae	SE3	
Plantago major	Common Plantain	Plantaginaceae	SE5	
Potentilla recta	Sulphur Cinquefoil	Rosaceae	SE5	
Prunus avium	Sweet Cherry	Rosaceae	SE4	
Prunus virginiana	Chokecherry	Rosaceae	S5	
Quercus macrocarpa	Bur Oak	Fagaceae	S5	

Scientific Name	Common Name	Family	SRank[a]	PEEL[b]
Rhamnus cathartica	European Buckthorn	Rhamnaceae	SE5	
Rosa multiflora	Multiflora Rose	Rosaceae	SE5	
Solidago canadensis	Canada Goldenrod	Asteraceae	S5	
Sorbus aucuparia	European Mountain-ash	Rosaceae	SE4	
Thlaspi arvense	Field Pennycress	Brassicaceae	SE5	
Tilia americana	Basswood	Tiliaceae	S5	
Toxicodendron radicans	Poison Ivy	Anacardiaceae	S5	

a - SRANK (from Natural Heritage Information Centre) for breeding status if: S4 (Apparently Secure), S5 (Secure) SNA (Not applicable…'because the species is not a suitable target for conservation activities'; includes non-native species)
b - Varga, 2005 (Distribution and Status of the Vascular Plants of the Greater Toronto Area): R^x, where x is the number of stations for a rare native specie

Appendix B

Bird List

Appendix B

Bird List

Common Name	Scientific Name	Status				# Breeding Pairs
		National Species at Risk COSEWICa	Species at Risk in Ontario Listing a	Provincial breeding season SRANK [b]	Area-sensitive (OMNR)c	
Rock Pigeon	*Columba livia*			SNA		2
Black-capped Chickadee	*Poecile atricapillus*			S5		2
Red-breasted Nuthatch	*Sitta canadensis*			S5	A	1
American Robin	*Turdus migratorius*			S5		6
Gray Catbird	*Dumetella carolinensis*			S4		1
European Starling	*Sturnus vulgaris*			SE		5
Northern Cardinal	*Cardinalis cardinalis*			S5		1
Brown-headed Cowbird	*Molothrus ater*			S4		1
House Finch	*Haemorhous mexicanus*			SNA		2
House Sparrow	*Passer domesticus*			SNA		12

Field Work Conducted On: *June 11 and 23, 2021*
Number of Species: 10
Number of (provincial and national) Species at Risk: 0
Number of S1 to S3 Species: 0
Number of TRCA L1, L2 and L3 Species (Species of Concern): 0
Number of Area-sensitive Species: 1

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.