



GUIDING SOLUTIONS IN THE  
NATURAL ENVIRONMENT

# Natural Heritage Evaluation

## 12434 Dixie Road

### Town of Caledon, Regional Municipality of Peel

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*Prepared For:*

**Nishan Transport Inc.**

*Prepared By:*

**Beacon Environmental Limited**

*Date: Project:*

**March 2021 220196**

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# 1. Introduction

Beacon Environmental Limited (Beacon) has been retained by Nishan Transport Inc. to prepare a Scoped Natural Heritage Evaluation (NHE) as a requirement of a Temporary Use Zoning By-Law for 12434 Dixie Road in the Town of Caledon, Regional Municipality of Peel (hereafter referred to as the “subject property”; **Figure 1**) to permit commercial vehicle parking for three years. The subject property is an irregular shaped parcel of land encompassing an area of approximately 10.7 ha (26.4 ac) located on the west side of Dixie Road, just north of Regional Road 14 (Mayfield Road) in the Town of Caledon, Ontario.

The subject property is currently comprised by a residence, barn and associated outbuildings on the eastern portion of the property, with the remainder in active agricultural uses. Wetlands are present north of the existing buildings. A tributary associated with the West Humber River, known as Kilmanagh Creek traverses the subject property at the north-east end, while woodland is present adjacent (south and west) of the subject property.

A portion of the subject property falls within the Greenbelt Planning Area which is subject to the policies of the Greenbelt Plan. The remaining portion is split with the southern area within Settlement Area and the northern piece within a Prime Agricultural Area (and outside the urban area).

Both the Town of Caledon Official Plan (2018) and the Region of Peel Official Plan (2018) include policies that require an NHE be prepared to assess the potential impacts of a development proposal within proximity to natural heritage features.

The property falls within the jurisdiction of the Toronto and Region Conservation Authority (TRCA).

The purpose of this NHE is to:

- Determine the location of any Key Natural Heritage Features (KNHFs) and Key Hydrologic Features (KHF) on and within the 120 m of the subject property;
- Review project conformity with the applicable natural heritage policies of the Greenbelt Plan, Town of Caledon and Peel Region Official Plans as well the TRCA and the *Endangered Species Act* (ESA); and
- Provide recommendations for appropriate mitigation measures to reduce or eliminate potential impacts on KNHFs and KHF.

Comments were received from the TRCA (May 26, 2020). The Terms of Reference for this NHE was discussed with and approved by the TRCA.

## 2. Methodology

Beacon completed a review of background information and visited the subject property to characterize the natural heritage resources and functions on and adjacent to the subject property. The information sources reviewed, and surveys undertaken are summarized below.

## 2.1 Background Review

Background information was gathered and reviewed at the outset of the project. This involved consideration of the following documents and information sources, as relevant to the subject properties:

- Provincial Policy Statement (2020);
- The Growth Plan for the Greater Golden Horseshoe (May 2019);
- The Greenbelt Plan (2017);
- Region of Peel Official Plan (2018);
- Town of Caledon Official Plan (2018);
- Toronto and Region Conservation Authority (TRCA) policies and regulations;
- Land Information Ontario (LIO) and Ministry of Natural Resources and Forestry (MNRF) resource information; and
- *Endangered Species Act* (2007).

Other sources of information such as current and historical aerial photographs, local topographic survey data, soil geology and physiography mapping were also reviewed prior to commencing field investigations.

Beacon's background review also includes analysis of numerous information sources in a Geographic Information System (GIS) environment that facilitates an assessment of the likelihood that species at risk and other natural heritage features are present in an area of interest. This system allows Beacon to combine the most current information provided by the Ministry of Natural Resources and Forestry (MNRF) through the Land Information Ontario (LIO) portal with GIS layers from other provincial and local datasets, including but not limited to, floral and faunal atlas data. This system enables the creation of a list of Species at Risk for which there are records or which might be expected to occur within 5 km of a location. All relevant layers can then be overlaid on the most recent high resolution orthoimagery.



Information sources reviewed, included:

- Provincially tracked species layer (1 km grid LIO dataset);
- 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 (Government of Ontario);
- High resolution aerial photography of the property;
- Natural and physical feature layers (e.g. topographic, wetland, waterbody, watercourse data), LIO and Aquatic Resource Area (ARA) datasets; and
- Ontario Geological Survey (OGS) and soil physiography (Chapman and Putnam) datasets.

## 2.2 Field Investigations

Field investigations on the subject property were undertaken by Beacon staff throughout 2020. Seasonal surveys included vegetation inventories, as well as wildlife and species at risk habitat assessments. **Table 1** below lists the dates on which visits occurred.



<b>Site Location</b>		<b>Figure 1</b>
12434 Dixie Road, Caledon		
		Project: 220196 Last Revised: February 2021
Client: Nishan Transport Inc.		Prepared by: BD Checked by: CG
	1:10,000	Inset Map: 1:70,000
Contains information licensed under the Open Government License—Ontario Orthoimagery Baselayer: 2019 (FBS)		

**Table 1. Summary of Field Investigations**

Surveys Undertaken	Dates
Headwater Drainage Feature Assessment (HDFA)	June 16, June 30 and November 15, 2020
Vegetation Community and Floral Survey	June 30, 2020
Breeding Bird Surveys	June 9, June 18, and June 30, 2020
Geomorphic Assessment	August 12, 2020
Feature Staking with the TRCA	November 12, 2020

### 2.2.1 Vegetation Communities

General vegetation community mapping took place on June 30, 2020. Vegetation communities on the subject property were described and mapped on orthophotography 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.

### 2.2.2 Headwater Drainage Feature Assessment (HDFA)

Headwater Drainage Features (HDFs) within the subject property were assessed following the *Ontario Stream Assessment Protocol Headwater Drainage Feature Module* (“OSAP”; Stanfield *et al.* 2017) and followed the requirements as set out in the *Evaluation, Classification and Management of Headwater Drainage Features Guidelines* (“Guidelines”; TRCA and Credit Valley Conservation 2014).

The Guidelines use an integrated approach for the evaluation of key attributes of drainage features including flow and feature form, riparian vegetation, fish and fish habitat and terrestrial habitat. The evaluation divides headwater drainage features into segments, with breaks between segments occurring where key attributes change.

The locations and extent of any drainage features identified through the background review and ortho-imagery interpretation were verified throughout the field investigation. Site investigations were conducted on June 16 and November 15, 2020.

### 2.2.3 Feature Staking

TRCA participated in a staking exercise on the subject property on November 12, 2020. The limits of the natural feature were staked, which was a combination of top of bank for the valleyland associated with the Kilmanagh Creek and the dripline of the contiguous woody vegetation.

### 2.2.4 Breeding Birds

Breeding bird surveys were completed for the subject property on June 9, 18 and 30, 2020. These surveys were completed in the mornings (start times of 08:30, 05:30, and 07:55 respectively), under appropriate weather conditions.

The breeding bird community was surveyed using a roving survey, in which all parts of the subject property were walked to within 50 to 100 m and all birds heard or observed and showing some

inclination toward breeding were recorded as breeding species. All birds heard and seen were recorded in the location observed on an aerial photograph of the site.

### **2.2.5 Endangered or Threatened Species Habitat Assessment**

Potential habitat for species of plants and wildlife subject to the ESA and associated regulations was determined and assessed during the visit conducted on June 30, 2020.

### **2.2.6 Incidental Wildlife**

Wildlife observations and any evidence observed of wildlife presence or breeding or foraging habitat, were noted during all field activities throughout the field program, including visual observations of species, tracks, or scat as well as auditory observations.

## **3. Policy Review**

A policy review was undertaken to identify environmental planning considerations and requirements, as applicable to the subject property.

### **3.1 Provincial Policy Statement**

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

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

The *Natural Heritage Reference Manual* (MNR 2010) is a technical document used to help assess the natural environment to identify natural heritage or significant features and areas, as defined by the PPS. The natural heritage policies outlined in Section 2.1 of the PPS relate to the following features:

- Natural heritage systems;
- Natural heritage features and areas;
- Significant wetlands;
- Significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat;
- Significant Areas of Natural and Scientific Interest (ANSIs);
- Fish habitat; and
- Habitat of endangered and threatened species.



Each of these features or defined areas are afforded varying levels of protection subject to guidelines, and in some cases, regulations. Of these features, significant wetlands and coastal wetlands are designated by the Ministry of Natural Resources and Forestry (MNR), while significant woodlands can be designated by the municipality. Habitat of endangered or threatened species is regulated by Ministry of Environment, Conservation and Parks (MECP) through the ESA. Fish habitat is governed by Fisheries and Oceans Canada (DFO). There are both provincial and local ANSIs, which have been identified by the MNR and municipalities respectively. Ensuring the identification and regulation of the remaining features is the responsibility of the municipality.

Provincial plans, such as the Greenbelt Plan and the Growth Plan for the Greater Golden Horseshoe build upon the policy foundation provided by the PPS and provide additional land use planning policies for these specific geographic areas in Ontario. Provincial plans are to be read in conjunction with the PPS. They take precedence over the policies of the PPS to the extent of any conflict, except where the relevant legislation provides otherwise.

### 3.2 A Place to Grow – Growth Plan for the Greater Golden Horseshoe

The provincial Growth Plan is issued under the *Places to Grow Act*, 2005, SO 2005, c. 13. The Growth Plan titled: “*A Place to Grow – Growth Plan for the Greater Golden Horseshoe*” came into effect on May 16, 2019 (the “Growth Plan”). The subject property is located within the Greater Golden Horseshoe Growth Plan Area.

The Growth Plan, together with the Greenbelt Plan, Oak Ridges Moraine Conservation Plan (ORMCP), and the Niagara Escarpment Plan (NEP), builds on the PPS to establish a land use planning framework for the Greater Golden Horseshoe (GGH) that supports the achievement of complete communities, a thriving economy, a clean and healthy environment, and social equity.

The Growth Plan provides for the identification and protection of a *Natural Heritage System for the Growth Plan* outside of the *Greenbelt Area* and *settlement areas* and applies protections similar to those in the Greenbelt Plan to provide consistent and long-term protection throughout the GGH.

A review of the Growth Plan schedules has identified that the subject property, in its entirety, is located within the *Greater Golden Horseshoe Growth Plan Area*. A portion of the subject property at the north-east end, is located within the *Greenbelt Area*. No portion of the subject property is located within the defined *Natural Heritage System for the Growth Plan* outside of the Greenbelt Planning Area.

Growth Plan Policy 4.2.4.6 states that:

*Beyond the Natural Heritage System for the Growth Plan, including within settlement areas, the municipality:*

- *Will continue to protect any other natural heritage features and areas in a manner that is consistent with the PPS; and*
- *May continue to protect any other natural heritage system or identify new systems in a manner that is consistent with the PPS.*

Lands within the Greenbelt planning area are subject to the policies of the Greenbelt Plan.

### 3.3 The Greenbelt Plan

The Greenbelt Plan is issued under the *Greenbelt Act*, 2005, SO 2005, c. 1. The Greenbelt Plan (2017) was approved by the Lieutenant Governor in Council and came into effect on July 1, 2017.

The Greenbelt Plan includes lands within, and builds upon the ecological protections provided by, the NEP and the ORMCP and together with the Growth Plan, builds on the PPS to establish a land use planning framework for the GGH that supports a thriving economy, a clean and healthy environment and social equity.

Under Section 2:

*The Greenbelt Area, as defined by Ontario Regulation 59/05, is governed by the Greenbelt Plan. It includes lands within the NEP Area, the Oak Ridges Moraine Area, the Parkway Belt West Plan Area and lands designated as Protected Countryside and as Urban River Valley by this Plan.*

A review of Greenbelt Plan schedules has identified the following relevant designations concerning the subject property:

- Schedule 1 (*Greenbelt Area*) confirms that portions of the subject property (at the east end) are located within the Greenbelt Plan; and
- Schedule 4 (*Natural Heritage System*) shows those portions of the subject property that are within the Greenbelt are also within the *Natural Heritage System*.

#### **Greenbelt Natural Heritage System Policies**

The Natural Heritage System (NHS) includes core areas and linkage areas of the Protected Countryside with the highest concentration of the most sensitive and/or significant natural features and functions. The Greenbelt Plan notes that these areas are to be managed as a connected and integrated natural heritage system due to the functional inter-relationships between them. The Natural Heritage System builds upon the natural systems outlined in the NEP, the ORMCP and the Growth Plan. It is the Province's objective, that together, these systems will comprise and function as a connected natural heritage system.

*For lands within the Natural Heritage System of the Protected Countryside Section 3.2.2.3 requires that new development or site alteration in the Natural Heritage System demonstrate that there will be no negative impacts on KNHFs or KHF's or their functions; connectivity between features will be maintained and/or enhanced; and the removal of other natural features are avoided. There are also some limits on the proportion of a property that new development and impervious surfaces can occupy (section 3.2.2.3 d)).*

Section 3.2.5 outlines policies related to Key Natural Heritage Features (KNHFs) and Key Hydrologic Features (KHF's).

## **Key Natural Heritage Features and Key Hydrologic Features Policies**

Section 3.2.5 states that KNHFs include the following:

- *Habitat of endangered species and threatened species;*
- *Fish habitat;*
- *Wetlands;*
- *Life science areas of natural and scientific interest (ANSIs);*
- *Significant valleylands;*
- *Significant woodlands;*
- *Significant wildlife habitat (including habitat of special concern species);*
- *Sand barrens, savannahs and tallgrass prairies; and*
- *Alvars.*

Section 3.2.5 states that Key Hydrologic Features (KHF) include the following:

- *Permanent and intermittent streams;*
- *Lakes (and their littoral zones);*
- *Seepage areas and springs; and*
- *Wetlands.*

Section 3.2.5.1, prohibits development or site alteration within KHF and KNHFs within the NHS, including any associated vegetation protection zone (VPZ) with limited exceptions.

For lands within a key natural heritage feature or a key hydrologic feature in the Protected Countryside, section 3.2.5.4 requires a minimum vegetation protection zone for wetlands, seepage areas and springs, fish habitat, permanent and intermittent streams, lakes and significant woodlands of 30 m.

Section 5.4.2 of the Greenbelt Plan notes that the detailed delineation of the boundaries of KNHFs and KHF and their minimum vegetation protection zones can be undertaken by municipalities and/or conservation authorities when dealing with applications for development under the *Planning Act* or *Condominium Act*, 1998 or *via* a municipal zoning by-law update.

### **Aquatic Features**

Kilmanagh Creek provides coldwater fish habitat. Further, populations of Redside Dace (*Clinostomus elongatus*), a provincially endangered fish species, have been recorded in Kilmanagh Creek, and it is considered occupied Redside Dace habitat by MECP. Environmental constraints associated with this species are described in Section 4.

Notwithstanding additional regulatory requirements (for example ESA, the federal *Fisheries Act* or conservation authority permitting), in accordance with Greenbelt Policy 3.2.5.5 a NHE or Hydrological Evaluation is required to be completed and may be used to establish appropriate VPZs, as applicable. A meander belt study has been completed and prepared under separate cover: 12434 Dixie Road Geomorphic Assessment (Beacon February 2021).

**Wetlands**

Wetlands are present on the subject property. Wetlands connected to the NHS at the east end of the subject property are subject to the Greenbelt Plan policies surrounding KNHF and KHF. In accordance with Policy 3.2.5.4, a 30 m MVPZ applies to these features.

**Woodlands**

According to the Technical Definitions and Criteria for Key Natural Heritage Features in the Natural Heritage System of the Protected Countryside Area (OMNR 2012) for the purposes of applying Greenbelt Plan policies within the NHS of the Protected Countryside, under Section 7.6:

*Woodlands are further defined as having either:*

- a) *A tree crown cover of over 60% of the ground, determinable from aerial photography; or*
- b) *A tree crown cover of over 10% of the ground, determinable from aerial photography, together with on-ground stem estimates of:*
  - *1,000 trees of any size per hectare, or*
  - *750 trees measuring over five centimetres in diameter, per hectare, or*
  - *500 trees measuring over 12 centimetres in diameter, per hectare, or*
  - *250 trees measuring over 20 centimetres in diameter, per hectare (based on Forestry Act of Ontario 1998).*

*For the purposes of (a) and (b), the tree amount is based on the average per hectare across the entire treed area. Woodlands experiencing changes such as harvesting, blowdown or other tree mortality are still considered woodlands. Such changes are considered temporary whereby the forest still retains its long-term ecological value.*

**Significant Woodlands**

The determination of significant woodlands within the NHS of the Protected Countryside is based on the criteria below.

<b>Criteria</b>	<b>Description</b>	<b>South Area*</b>
Size	Any woodlands of this size or greater are significant; or	4 ha more
Natural Composition	Any woodlands containing this area of naturally occurring (not planted) trees that meet the definition of woodland; or	1 ha or more
Age or Tree Size	Any woodlands of this size with either: a) 10 or more trees per ha that are either greater than 100 years old or 50 cm or more in diameter; or b) containing a basal area of at least 8 m <sup>2</sup> per ha in native trees that are 40 cm or more in diameter; or	1 ha or more
Proximity	Any woodlands of this size wholly or partially within 30 m of a: significant wetland; significant habitat of an endangered or threatened species; significant woodland; or	1 ha or more
Rarity	Any woodlands of this size containing: a provincially rare treed vegetation community with an S1, S2 or S3 in its ranking by the MNR's NHIC; or habitat of a woodland plant species with an S1, S2 or S3 in its ranking or an 8, 9, or 10 in its Southern Ontario Coefficient of Conservatism by the NHIC, consisting of 10 or more individual stems or 100 m <sup>2</sup> or more of leaf coverage.	0.5 ha or more

\* South Area refers to the portion of the Greenbelt that is south of the Oak Ridges Moraine, which is where the subject property is located.

If a lower/single tier municipality in the “South Area” has less than 5% woodland cover on average across its entire jurisdiction, the 4 ha or more size criterion becomes 2 ha or more, and the 1 ha or more criteria become 0.5 ha or more for that municipality.

As the treed areas within the Greenbelt on the subject property are not greater than 1 ha and do not meet the criteria for average minimum width, the woodland is not considered significant. This treed area does however constitute part of the valleylands.

Woodland is present west of the subject property, outside of the Greenbelt Plan Area. This woodland is not subject to the natural heritage policies of the Greenbelt Plan but is subject to the policies of the Regional Official Plan.

### 3.4 Regional Municipality of Peel Official Plan

The Region of Peel Official Plan (2018) provides direction on land use within the Region. The Region of Peel Official Plan (OP) Office Consolidation December 2018 is the most current version of the Region’s OP.

The Region’s OP identifies a Greenlands System consisting of Core Areas, Natural Areas and Corridors (NAC’s), and Potential Natural Areas and Corridors (PNAC’s) and includes policies aimed at protecting, maintaining, and restoring this system.

Key elements of the Region’s Greenlands System include the following:

- *Areas of Natural and Scientific Interest;*
- *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 various components of the Regional Greenlands System are to be interpreted, identified and protected in accordance with Regional OP policies.

The following maps and schedules were reviewed to determine the applicable policy framework for this application:

- *Schedule A - Core Areas of the Greenlands Systems in Peel* – shows Core Areas of the Greenland System on the subject property corresponding to the area associated with Kilmanagh Creek and woodland on the western portion;
- *Schedule B - Prime Agricultural Area* – shows that a portion of the subject property falls within the Prime Agricultural Area;
- *Schedule D – Regional Structure* – shows that the subject property entirely within the Rural Service Centre of Mayfield West; and
- *Schedule D3 - Greenbelt Land Use Designations* – shows that portions of the subject property as within Settlement Area, Prime Agriculture (outside of urban) and Greenbelt Natural Heritage.

Policy 2.3.2.6 prohibits development and site alteration within the Core Areas of the Greenlands System in Peel except for limited uses such as, but not limited to: conservation and erosion control projects, passive recreation, minor development, and existing uses.

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.

The area associated with the Kilmanagh Creek is considered part of the NAC of the Greenlands Systems designated under Policy 2.3.2.9 of the Regional OP. 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.

### 3.5 Town of Caledon Official Plan

The *Town of Caledon Official Plan (2018)* provides direction as to the land use within the Town and must be consistent with the Regional Official Plan and other provincial Plans (e.g., Greenbelt Plan).

*Schedule A - Town of Caledon Land Use Plan* shows that the northern portion of the subject property is designated as a Prime Agricultural Area, while the southern portion is within Settlement Area. It also shows the western half of the subject property being within the Greenbelt Plan Area and identifies watercourse and Environmental Policy Area within this area.

Section 7.13.3.2.3.7 of the *Town of Caledon Official Plan* requires an NHE be prepared to assess the potential impacts of a development proposal that occurs within the minimum areas of influence (120 m) of environmental features.

#### **Environmental Policy Area**

New development is generally prohibited within areas designated Environmental Policy Area (EPA) with limited exceptions described in Section 5.7.3.1.2.

Major expansions of existing uses are generally not permitted within the EPA (Section 5.7.3.2.3), unless demonstrated through an Environmental Impact Study (EIS) that the form and function of the EPA will be protected.

Proposed new development adjacent to an EPA will require an EIS and Management Plan (MP) to the satisfaction of the Town and other relevant agencies (Section 5.7.3.7). Given the occurrence of EPA across the northeastern portion of the site, consistent with the Greenbelt NHS, an EIS is required.

## 3.6 Toronto and Region Conservation Authority Regulations and Policies

### 3.6.1 Ontario Regulation 166/06

The TRCA regulates hazard lands including floodplains, watercourses, valleylands, shorelines, and wetlands under *Ontario Regulation 166/06* (TRCA 2006). TRCA also regulates other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 m of all Provincially Significant Wetlands (PSWs), and within 30 m of all other wetlands.

Development or site alteration proposed within the regulated area requires a permit from the TRCA. The TRCA may require an EIS/NHE to issue the permit.

Generally, development within the flood limit of a watercourse is not allowed. However, subject to conformity with the Official Plan and completion of appropriate studies and Conservation Authority permits, development may be permitted within other regulated areas. The Authority may grant permission for development in or on the areas regulated if, in its opinion, the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. The permission of the Authority shall be given in writing, with or without conditions.

The subject property is located within the Humber River Watershed and Kilmanagh Creek flows through the easternmost portion of the subject property. Areas regulated by the TRCA on the subject property are associated with this watercourse and its associated valley corridor and floodplain and Provincially Significant Wetlands that are present on or adjacent to the subject property and lands adjacent to each of those features.

In accordance with *Ontario Regulation 166/06*, a permit is required from the TRCA if the proposed development will interfere with regulated areas.

### 3.6.2 Toronto and Region Conservation Authority Living City Policies

The *Living City Policies for Planning and Development in the Watersheds of the TRCA* (LCP) was approved by its Board on November 28, 2014. The LCP contains policies related to terrestrial resources, water resources, natural features and areas, natural hazards, and potential natural cover and buffers. Section 7.3 contains TRCA's policies for how to define, protect, enhance, and secure a Natural Heritage System. The policies described in Section 7.3.1.4 have been identified with the goal of protecting lands that have the potential to be restored in order to enhance existing natural cover and manage natural hazards. The LCP does not permit new development (including lot creation) within hazard lands (i.e., within the floodplain) where no development previously existed.

As per Section 7.3.1.4 of the LCP, the TRCA prescribes the following buffers to natural features and hazards as it may relate to the subject properties:

- **Valley or Stream Corridors** – a 10 m buffer from the greater of the long-term stable top of slope/bank, the stable toe of slope, Regulatory flood plain, meander belt, and any contiguous natural features or areas;
- **Wetlands** – a 30 m buffer from PSWs and a 10 m buffer for all other wetlands and any contiguous natural features or areas;
- **Woodlands** – a 10 m buffer from the dripline and any contiguous natural features or areas;
- Any additional distances prescribed by federal, provincial, or municipal requirements or standards (e.g., Greenbelt); and
- Any additional distances demonstrated as necessary through technical reports.

The valley and stream corridor, wetlands and woodlands on the subject property are subject to the LCP policies.

### 3.7 Endangered Species Act

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

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 are 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.

In most cases, seasonal and species-specific surveys are required to confirm the presence/absence of habitat for endangered and threatened species. MECP designates watercourses with respect to Redside Dace habitat based on physical characteristics and historical records.

Kilmanagh Creek is occupied Redside Dace habitat.



## 4. Existing Conditions

This rural property is subject to existing anthropogenic uses. The subject property is within a rural landscape and is in a matrix of agricultural lands. Lands to the south have undergone residential development.

The results of field investigations are depicted in **Figure 2** and are described in greater detail below.

### 4.1 Vegetation

#### 4.1.1 Ecological Communities and Land Use

Ecological communities were mapped and described according to the Ecological Land Classification (ELC) system for southern Ontario (Lee *et al.* 1998) and are illustrated in **Figure 2**. A description of these communities is provided below. The top of bank and dripline as staked by the TRCA are also shown on **Figure 2**.

#### **Anthropogenic (ANT)**

Most of the tableland is being utilized for anthropogenic purposes associated with the agricultural activity that occurs on the subject property.

#### **Hedgerow (HE)**

A hedgerow (HE) is located along a southwestern and northwestern borders of the subject property. The most common species in this hedgerow is Norway Maple (*Acer platanoides*) with Black Locust (*Robinia pseudo-acacia*) and Black Walnut (*Juglans nigra*). The dense ground layer of the hedgerow is made up of Smooth Brome (*Bromus inermis ssp. inermis*) and Tall Goldenrod.

#### **Dry-moist Old Field Meadow (CUM1-1)**

Two Dry-moist Old Field Meadow (CUM1-1) communities are located on the south eastern and north western portions of the subject property. These pioneer communities are dominated by non-native grasses with some Field Thistle (*Cirsium discolor*) and Tall Goldenrod (*Solidago altissima*) associates and show evidence of being ploughed in the past five years.

#### **Shallow Aquatic (SAF1-3)**

Two off-line ponds occur either side of the watercourse. These ponds exhibited floating aquatic vegetation, predominantly duckweed (*Lemna spp.*) during the field investigation and are likely less than 2 m in depth and able to facilitate aquatic plant growth (**Photograph 1**).



**Photograph 1. View of the Smaller Wetland Pond within the EPA (June 30, 2020)**

### **Open Water (OAO)**

A large off-line pond adjacent to Dixie Road did not have floating vegetation and may be deeper than the other two ponds.

### **Meadow Marsh (MAM1-1)**

A narrow band of cattail (*Typha* spp.) surrounds the larger wetland (SAF1-3) pond on the south side of the watercourse.

### **Mineral Cultural Woodland (CUW)**

A Mineral Cultural Woodland community occurs on the south tip of the west side of the subject property. This young to mid-age community has a canopy dominated by Crack Willow (*Salix x fragilis*) with Black Locust and Black Walnut associates. Similar to the nearby hedgerow and cultural meadow, the ground cover consists of Smooth Brome and Tall Goldenrod. Kilmanagh Creek transverses this unit.

A second Cultural Woodland community is located on the southeastern portion of the subject property. This mid-age community is planted with a mix of trees, the most common being White Spruce (*Picea glauca*) and Norway Maple. The understory of this feature contains planted Lilac species (*Syringa* sp.) and Juniper species (*Juniperus* sp.), within a mown lawn. Kilmanagh Creek is also found in this unit.



<b>Existing Conditions</b>	<b>Figure 2</b>
12434 Dixie Road, Caledon	
<b>Legend</b>	
<span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span>	Subject Property
<span style="border: 1px solid yellow; display: inline-block; width: 15px; height: 10px;"></span>	Ecological Communities
<span style="border-bottom: 1px dashed blue; width: 15px; display: inline-block;"></span>	Wetlands + 30 m
<span style="border-bottom: 1px solid orange; width: 15px; display: inline-block;"></span>	Staked Feature Limit (Valleyland/Contiguous Woody Veg) (TRCA Nov. 2020)
<span style="border-bottom: 1px dashed orange; width: 15px; display: inline-block;"></span>	Staked Feature Limit + 10 m
<span style="border-bottom: 1px solid green; width: 15px; display: inline-block;"></span>	Woodlands Dripline (TRCA Nov. 12 2020)
<span style="border-bottom: 1px dashed green; width: 15px; display: inline-block;"></span>	Woodlands Dripline + 10 m
<span style="border-bottom: 1px solid cyan; width: 15px; display: inline-block;"></span>	Meander Belt
<span style="border-bottom: 1px dashed cyan; width: 15px; display: inline-block;"></span>	Limit of Redside Dace Regulated Area
<span style="background-color: #FFDAB9; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Unevaluated Wetland (MNRF 2020)
<span style="background-color: #ADD8E6; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Provincially Significant Wetland (MNRF 2020)
<span style="background-color: #90EE90; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	Greenbelt Protected Countryside
<span style="border-bottom: 1px solid blue; width: 15px; display: inline-block;"></span>	Watercourse (MNRF 2019)
<span style="border-bottom: 1px dashed blue; width: 15px; display: inline-block;"></span>	Drainage features
<b>Code</b>	<b>Wetland Communities</b>
MAM1-1	Reed-canary Grass Bedrock Meadow Marsh
OAO	Open Aquatic
SAF1-3	Duckweed Floating-leaved Shallow Aquatic
	<b>Forest Communities</b>
FOD5-4	Dry - Fresh Sugar Maple - Ironwood Deciduous Forest
	<b>Cultural Communities</b>
CUM1-1	Dry - Moist Old Field Meadow
	<b>Other Communities</b>
AG	Agricultural Crop
ANT	Anthropogenic
HE	Hedgerow
<span style="float: right;">Project: 220196 Last Revised: February 2021</span>	
Client: Nishan Transport Inc.	
Prepared by: BD Checked by: CG	
N	1:3,000
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### 4.1.2 Flora

A total of 67 vascular plant species was recorded on the subject property. Of these, 63 were identified to the species level. An annotated list of vascular plants recorded on the subject property is provided in **Appendix A**.

Of 63 species identified, 31 (49.2%) are native to Ontario, while the remainder are non-native. All native species have been assessed by the MNRF as common to very common in Ontario. The high number of non-native species is indicative of the anthropogenic disturbance on the subject property.

The majority of species inventoried have a high range of habitat tolerances, as evident by the high proportion of species with a low coefficient of conservatism (CC) values. None of the species recorded during surveys are of global, national, or provincial significance. One species is considered uncommon in Peel (*Varga et al. 2005*): Michigan Lily (*Lilium michiganense*). This species was associated with the Cultural Woodland and is likely an escape from planted garden beds.

## 4.2 Breeding Birds

Twenty-eight breeding season birds were observed during bird surveys (**Appendix B**)— all but one of these was thought to be breeding in the study area. Almost all of the species observed are widespread and common species that are frequently found in rural contexts and are disturbance-tolerant species. A small portion of the property adjacent to Dixie Road, which contained buildings, ponds and scattered trees, held the majority of species, although none were found in large numbers.

The two most abundant species were Song Sparrow (*Melospiza melodia*) and Savannah Sparrow (*Passerculus sandwichensis*). The breeding bird community found in the field consisted almost entirely of these two species, with small numbers of a few other species occurring in the hedgerows. The Savannah Sparrow is considered a field/grassland area-sensitive species. Area-sensitive species are those which either require a larger area in which to nest, or which are more productive in larger area. The Savannah Sparrow, is nonetheless, a very common and widespread species in south and central Ontario. No other area-sensitive species were observed.

One avian Species at Risk was observed. Four pairs of Barn Swallow (*Hirundo rustica*), a threatened species, were observed nesting on two buildings on the subject property. Two active nests and seven inactive nests were observed in the largest warehouse building, and two active and five inactive nests were observed in the south garage. This provincially threatened species usually nests on artificial structures and is an aerial insectivore which forages over fields, grasslands, wetlands and other open areas. While still relatively common, its populations are declining.

No species listed provincially as S1 through S3 (Critically Imperiled, Imperiled or Vulnerable) were observed.

The TRCA provides local ranks for bird species indicating how common species are within the TRCA jurisdiction. Species ranked as L4 are those that are '*widespread regionally but are vulnerable to long-term declines in urban areas*', while L5 species are '*not of conservation concern*'. Species listed as L1 to L3 are of '*regional concern; restricted in occurrence and/or requires specific site conditions; generally occurs in natural rather than cultural areas*'. One pair of Vesper Sparrow was recorded, which is ranked as L3 and is often found in association with large cultivated fields.

### 4.3 Incidental Wildlife

Other wildlife likely to occur on the subject property includes those that are commonly associated with rural and urban fringe such as: Gray Squirrel (*Sciurus carolinensis*), Raccoon (*Procyon lotor*), White-tailed Deer (*Odocoileus virginianus*), Skunk (*Mephitis mephitis*), Red Fox (*Vulpes vulpes*) and Coywolf (*Canis X latrans*).

### 4.4 Endangered or Threatened Species

To determine what endangered or threatened species have previously been recorded in the vicinity of the subject property, records from the resources identified in **Section 3.1** were reviewed. Through this review, 13 species are identified as endangered or threatened under the provincial ESA were identified as having previously been recorded in the vicinity of the subject property. The full list of species is provided in **Appendix C**.

An assessment of the existing conditions of the subject property and the presence of potentially suitable habitat for these species was completed. Through this assessment, it was determined that potentially suitable habitat for three of species was present: Butternut (*Juglans cinerea*), Barn Swallow (*Hirundo rustica*), and Redside Dace.

The site, including hedgerows was searched for Butternut and none were found.

During the breeding bird survey four pairs of Barn Swallow were recorded along with several nests within buildings that are to be retained.

Correspondence with the MECP confirmed the presence of occupied habitat for Redside Dace within Kilmanagh Creek. In light of this, a geomorphic assessment was completed in order to determine the extent of the regulated habitat for the species (i.e., meander belt with plus 30 m). This Geomorphic Assessment was prepared by Beacon (2021).

No other evidence of any other endangered or threatened species was documented on the subject property.

### 4.5 Aquatic Resources

The subject property includes two HDFs, a series of small swales within the agricultural lands, and a reach of Kilmanagh Creek in the easternmost portion, within a shallow valleyland. An aquatic assessment was not conducted on Kilmanagh Creek given its distance from the proposed development and the necessary protections provided to the watercourse (i.e., valleyland setback and meander belt plus 30 m). The subsection below focusses on the HDFs, as agreed to with TRCA. The HDFs and Kilmanagh Creek are illustrated on **Figure 2**.

#### 4.5.1 Headwater Drainage Feature Assessment

The western half of the subject property drains southwards where overland flow appears to be predominantly captured by existing catch basins located within the adjacent commercial development.

The central drainage is directed through a series of small, undefined swales which exist within a portion of the cultivated lands on the property. These smaller drainage swales were not included within the detailed assessment as they individually exhibited drainage catchments less than 2.5 ha; the minimum catchment threshold required by the OSAP protocol (2017).

On the far west side of the subject property a small, defined swale (identified as **HDF-1**) directs water to the south through a partially crushed 350 mm corrugated steel pipe (CSP) culvert and into a wooded area to the southwest of the subject property. Through background review it appears that the western overland drainage contributes to the West Humber River watershed by way of a tributary located between the subject property and Abbotside Way.

The eastern half of the property drains northwards directly into Kilmanagh Creek, a coldwater system that is managed for the key target species, endangered Redside Dace and Brook Trout (*Salvelinus fontinalis*) (OMNR and TRCA 2005). An undefined grass swale (identified as **HDF-2**) located immediately to the west of the existing farm pond empties directly into Kilmanagh Creek at the northern limit of the property.

As mentioned in **Section 2.2.2** HDFAs were conducted twice in June 2020, and once in November 2020 within the subject property. A summary is included in the following subsections detailing features HDF-1 and HDF-2.

Neither HDF is considered contributing Redside Dace habitat, as they do not meet the definition in Ontario Regulation 242/08, that is:

*A stream, permanent or intermittent headwater drainage feature, groundwater discharge area or wetland that augments or maintains the baseflow, coarse sediment supply or surface water quality of a part of a stream or other watercourse described in subparagraph i or ii, provided the part of the stream or watercourse has an average bankfull width of 7.5 metres or less.*

### **HDF-1**

The HDF-1 feature originates at the western property corner and drains along the entirety of the western site boundary (**Photograph 2**). Flow contributions to the feature appear to be sourced from lands to the north and west of the subject property, as well as from a portion of the western cultivated lands within the subject property. No flow or standing water was observed within the HDF-1 feature during the 2020 site investigations, despite the November field visit being completed following significant rainfall (10.4 mm per Environment Canada). Riparian vegetation consisted of scrubland communities upstream of the culvert on the subject property and forest communities downstream of the culvert on adjacent lands. Channel substrates were gravel, sand, and silts overlain by thick detritus deposited from surrounding mature trees. Channel banks were uniformed, and no significant signs of erosion were noted. No indications of groundwater seepage were noted for HDF-1 during 2020.



**Photograph 2. View of HDF -1 Along Southern Property Boundary (November 15, 2020)**

## **HDF-2**

The HDF-2 feature is located to the north of the existing barn structures in the eastern portion of the site, immediately to the west of one of the off-line ponds (**Figure 2**). The feature is an undefined, grassy swale which is entirely straightened (**Photograph 3**). Flow contributions to the feature appear to be from an approximately 3 ha area of the property's cultivated lands that slope east. The feature terminates into Kilmanagh Creek through a small gully. A disconnected portion of an old culvert pipe can be observed within the gully depression, which may indicate historical piping of the feature. No evidence of groundwater contributions was noted within or in proximity to the swale.

Riparian vegetation exists entirely as thick grasses and compose a portion of the meadow (CUM1-1) community as identified in **Figure 2**. Along its length within the subject property HDF-2 maintains a relatively gentle gradient. During the November 2020 site visit which was conducted immediately following a rain event no flows were observed along the HDF-2 feature's length or within its terminal gully.

The average bankfull width was recorded at approximately 1,800 mm with an average bankfull depth recorded at approximately 100 mm.



Photograph 3. View of HDF-2 Feature within EPA (November 15, 2020)

#### 4.6 Assessment of Significant Natural Heritage Features

The findings of this study have been used to determine if the subject property support any natural heritage components that are recognized under the PPS, the Peel Region Official Plan and the Town of Caledon Official Plan (**Table 2**).

**Table 2. Assessment of Significant Natural Heritage Features**

Natural Heritage Feature	Assessment	Present on property?
Significant Wetlands	No wetlands occur on or directly adjacent to the subject property. The closest Provincially Significant Wetland is approximately 1.5 km to the south west.	No
Significant Woodlands	The woodland on the subject property is less than 2 ha in area, classifying it as a PNAC under the Peel Region <i>Official Plan</i> .	No
Significant Valleylands	Kilmanagh Creek and its associated valleyland satisfy the criteria to be considered a Core Valley and Stream Corridor based on the criteria provided in Table 2 of the Peel Region Official Plan. The limit of the natural feature which included top of bank was staked on November 12, 2020.	Yes
Significant Wildlife Habitat	There is no designated Significant Wildlife Habitat (SWH) on the subject property. Candidate SWH in the form of potential animal movement corridor could potentially occur as per the criteria provided by the MNRF (2015) and Peel Region (North South Environmental Inc. 2009). However, this function would be restricted to the Greenbelt NHS portion of the property and is limited due to the presence of Mayfield Road to the south and Dixie to the north of the subject property, which are both high traffic roads.	No



Natural Heritage Feature	Assessment	Present on property?
Fish Habitat	Fish habitat is present within Kilmanagh Creek, which flows and along the eastern boundary of the subject property. Mapping provided by the MNRF identifies the watercourse as a coldwater watercourse.	Yes
Habitat for Endangered or Threatened Species	Kilmanagh Creek has been identified as occupied habitat for Redside Dace by MECP. Barn Swallow are also nesting on site.	Yes
Significant Area of Natural and Scientific Interest	The Brampton Buried Esker Earth Science ANSI is located approximately 2.5 km to the south west of the subject property.	No

## 5. Proposed Development Plan

The Temporary Use proposal is to permit a gravel parking area for transport trucks and trailers on the subject property. There will be no new structures or buildings constructed as part of this application; all existing structures will be retained unaltered. The parking area will be constructed in the existing agricultural area (**Figure 3**).

To facilitate this use, a private stormwater management (SWM) system is required. A Stormwater Management Report (Masongsong Associates Engineering Limited [MAEL] February 2021) has been prepared which outlines the proposed servicing infrastructure. The system will be refined subsequent to conversations with associated regulatory agencies: MECP for Redside Dace considerations; and TRCA for regulated hazard lands (i.e., wetlands, watercourse, top of slope). The SWM system must be designed to ensure compliance with the *Guidance for Development Activities in Redside Dace Protected Habitat* (MNRF 2016) document pursuant to the ESA and Ontario Regulation 242/08.

In general quantity control will have two aspects: peak volume control will be provided by a site storm sewer system, while Low Intensity Development (LID) measures in the form of enhanced grass swales will further reduce peak post development runoff. Quality control will be achieved through the use of an offline Jellyfish oil-grit separator (OGS) system to treat water prior to discharge. Enhanced grass swales will provide additional quality treatment. The Water Balance found that there will not be a significant change from the existing conditions to post development, given the pervious nature of the proposed gravel parking lot. However, the enhanced grass swales do provide an opportunity for infiltration to offset loss of infiltration (MAEL 2021).

The enhanced grassed swales will be located at the periphery of the site, along the property boundary. In the southwest corner, the LID will be located at the outer most limit of the 10 m buffer to the woodland. Under the current plan, the HDF-1 feature is located within this 10 m buffer and is not proposed to be altered from its current state.

The SWM outfall and a portion of the rip rap emergency spillway will be located within the valley, discharging at the toe of slope upstream of one of the off-line farm ponds (refer to Drawing SGR-1; MAEL 2021). No structures or grading are proposed within Redside Dace habitat.



**Proposed Development** **Figure 3**

12434 Dixie Road, Caledon

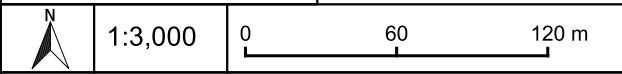
**Legend**

- Subject Property
- Proposed Development
- Ecological Communities
- Wetlands + 30 m
- Valleyland Feature Limit (TRCA Nov. 12 2020)
- Valleyland Feature Limit + 10 m
- Woodlands Dripline (TRCA Nov. 12 2020)
- Woodlands Dripline + 10 m
- Meander Belt
- Limit of Redside Dace Regulated Area
- Watercourse (MNR 2019)
- Unevaluated Wetland (MNR 2020)
- Provincially Significant Wetland (MNR 2020)
- Greenbelt Protected Countryside

Code	Wetland Communities
MAM1-1	Reed-canary Grass Bedrock Meadow Marsh
OAO	Open Aquatic
SAF1-3	Duckweed Floating-leaved Shallow Aquatic
Forest Communities	
FOD5-4	Dry - Fresh Sugar Maple - Ironwood Deciduous Forest
Cultural Communities	
CUM1-1	Dry - Moist Old Field Meadow
CUW	Cultural Woodland
Other Communities	
AG	Agricultural Crop
ANT	Anthropogenic
HE	Hedgerow

**BEACON ENVIRONMENTAL** Project: 220196  
 Last Revised: February 2021

Client: Nishan Transport Inc. Prepared by: BD  
 Checked by: CG



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## 6. Impact Assessment

The proposed development of the subject property will consist of the construction of a gravel parking area and storm system in the agricultural area. There are only two locations on the subject property with natural heritage features: the northeast and southwest. In the north the features (watercourse, habitat for Redside Dace, wetland) and their respective buffers and regulated areas are within the Greenbelt Natural Heritage System and are zoned Environmental Protection Area. The woodland that is adjacent to the south is not within an Environmental Protection Area.

### **Noise and Light Effects on Wildlife**

Acute and cumulative effects associated with noise and light are very difficult to quantify on a lot by lot basis. The effects of these stressors can be significant in previously undeveloped areas. The natural features associated with Kilmanagh Creek are currently influenced to some extent by the light and noise of Dixie Road and the existing structures. However, the woodland at the south has until recently likely not been affected by noise and light, except for the recent construction of the industrial building.

### **Risk of Increased Encroachment into the Natural Features**

Encroachment can have negative effects on the natural heritage feature and/or its ecological functions such as vegetation trampling, dumping, and/or increased wildlife disturbance and stress. However, as this development is industrial (rather than residential) there are fewer disturbances associated with people.

### **Potential Impacts to Endangered or Threatened Species**

The only endangered or threatened species confirmed on the subject property (Redside Dace and Barn Swallow) are both confined to the in the northwestern portion of the site.

No structures or grading are proposed within Redside Dace habitat. The SWM design must include best efforts to maintain the following conditions:

- Discharge temperature below 24°C;
- Dissolved oxygen concentration at discharge of at least seven milligrams per litre; and
- TSS of <25 mg/L above stream background (MNRF 2016).

Discussions with MECP to address these criteria are ongoing.

### **Headwater Drainage Feature Direct Impacts**

As shown on **Figure 3** the proposed development plan would result in the development of the western portion of the subject property, resulting in a partial alteration of the HDF-1 drainage catchment, but not the feature itself. No seasonal or permanent fish or terrestrial habitat would be directly impacted by the alteration of this portion of the HDF-1 catchment. The primary function of this segment of the HDF-1

catchment is to convey ephemeral flows and limited allochthonous material and nutrients downstream to aquatic habitats associated within the West Humber River tributary located north of Abbotside Way.

As for the HDF-2 channel, the current development plan proposes to overlay the upper portion of the feature with the emergency spillway. Through detailed investigation, this feature appears to provide limited hydrologic function and does not exhibit groundwater or coarse material contributions to Kilmanagh Creek. As a result, it is anticipated that the current placement of the emergency spillway will not alter the receiving reach of Kilmanagh Creek or associated Redside Dace habitat.

## 6.1 Recommended Mitigation Measures

The following mitigation measures are intended to lessen or eliminate potential impacts of the proposed development on the natural heritage system.

### **Removal of Habitat**

The removal of vegetation associated with the agricultural area, the federal *Migratory Birds Convention Act* (1994) as well as other provincial legislation protects the nests, eggs and young of most bird species from harassment, harm or destruction. Environment Canada considers the “risk period” for breeding birds in southern Ontario to be from the end of March to late August, and so the most cautious approach is to confine approved vegetation removal from September 1 to March 31.

However, should vegetation removal be required outside of this window, a qualified avian biologist can conduct a survey to determine whether there are nesting birds in the vegetation (trees, shrubs or grasses) approved for removal up to two days prior to the activity; such surveys typically find nesting birds.

### **Feature Buffer**

The prescribed minimum buffers have been applied to the various features within the EPA. Given the extent of the Greenbelt NHS and the exclusion of development and site alteration from this area, the minimum buffers are exceeded. There will be some temporary and limited disturbance through this area as the stormwater outlet is installed, which will be restored. Otherwise there will be no grading or site alteration within this area.

At the south end, a naturalized buffer of 10 m from the dripline of the woodland is recommended.

### **Noise and Light Effects on Wildlife**

It is recommended that lighting along the western edge of the subject property be directed away from the Environmental Protection Area in the north and the woodland in the south.

**HDF Management Recommendations**

With respect to management of existing functions through the replication of primary functions for the HDF-1 and HDF-2 features the **Table 3** below provides an assessment following the TRCA and CVC (2014) Guidelines. A detailed classification table is provided in **Appendix D**.

**Table 3. Headwater Drainage Feature Recommendations**

<b>Drainage Feature Segment</b>	<b>Final Management Recommendations</b>	<b>Comments/Rationale</b>
<b>HDF-1</b>	No Management Required	Defined farm swale with limited cover and ephemeral flow regime.
<b>HDF-2</b>	No Management Required	Undefined grass swale with limited hydrologic function.

For HDF-1, a final management recommendation of “No Management Required” is recommended as the feature itself is not proposed to be altered. Furthermore, only a small portion of its drainage catchment is proposed to be developed as most overland contributions are sourced from lands outside of the subject property.

Similarly, for HDF-2 a final management recommendation of “No Management Required” is recommended as the feature is not proposed to be altered. The proposed development does intend to develop a portion of the HDF-2 catchment area; however, water is still anticipated to be delivered to Kilmanagh Creek, but through a treatment-train system that meets Redside Dace water quality requirements and reduces potential peak flow quantities (as prepared by MAEL 2021).

**Lot conveyance and Stormwater Management**

As discussed in Section 6, the SWM plan for the subject property incorporates LID measures to provide control at the lot level and conveyance (to the extent feasible) to infiltration-based controls.

**Sedimentation and Erosion Control**

For SWM works and/or construction, an erosion and sediment control (ESC) plan must be prepared for the construction phase of the development prior to the start of construction works that is consistent with TRCA’s Erosion and Sediment Control Guideline for Urban Construction (December 2006).

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.

## 7. Policy Conformity

A summary of applicable federal, provincial and municipal policies as they pertain 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 are summarized below in **Table 4**.

**Table 4. Policy Compliance Assessment**

Applicable Policy / Legislation	Relevant EIS Findings And Recommendations	Policy Compliance
<b>Endangered Species Act (2007)</b>	Regulated habitat for Redside Dace is present on the subject property. There is no development proposed within this habitat. Stormwater discharge must comply with Redside Dace requirements.  Existing structures providing nesting habitat for Barn Swallow will not be altered as a result of the proposed development.	Yes
<b>Green Belt Plan (2017)</b>	The Greenbelt Natural Heritage System occurs in the northern corner of the subject property. The majority of the natural features on the subject property fall within this area. Their respective buffers are within the Greenbelt Area, within which no development is proposed. Temporary disturbance will be required to install the stormwater system.	Yes
<b>Provincial Policy Statement (2014) Section 2.1 – Natural Heritage</b>		
<b>Habitat for Threatened and Endangered Species</b>	Kilmanagh Creek provides occupied Redside Dace habitat. There will be no development within the regulated area, with the exception of stormwater discharge, which will be designed in accordance with Redside Dace requirements.  Nesting Barn Swallows are present within existing structures that will not be altered.	Yes
<b>Significant Valleylands</b>	The valleyland feature associated with Kilmanagh Creek satisfy the criteria to be considered a Core Valley and Stream Corridor based on the criteria provided in Table 2 of the Region of Peel Official Plan and has been staked by the TRCA. There will be no development or site alteration within or adjacent to the valleyland or its buffer.	Yes
<b>Significant Wetlands</b>	There are no Provincially Significant Wetlands on or adjacent to the subject property.	Yes
<b>Significant Woodlands</b>	There are no significant woodlands on the subject property. The woodland adjacent to the property at the southern corner are significant. A 10 m buffer to that woodland is recommended.	Yes
<b>Significant Wildlife Habitat</b>	Significant Wildlife Habitat has not been designated on the subject property and no wildlife functions have been identified that meet the test of significant wildlife habitat.	Yes
<b>Significant Areas of Natural and Scientific Interest</b>	There are no Significant Areas of Natural and Scientific Interest on or adjacent to the subject property.	Yes
<b>Fish Habitat</b>	There is habitat for fish associated with Kilmanagh Creek. There is no proposed development or site alteration near this feature or its buffer.	Yes
<b>Provincial Policy Statement (2014) Section 2.3 – Natural Hazards</b>	The development of the subject property will be limited to areas outside natural hazards (i.e., slopes, floodplains).	Yes

Applicable Policy / Legislation	Relevant EIS Findings And Recommendations	Policy Compliance
<b>Region of Peel OP</b>		
<b>Greenlands System</b>	The area associated with the northern portion of the property consists of Core Natural Areas including Kilmanagh Creek and the adjacent wetlands, which are part of the Regional Greenlands System. There will be no development within this area with the exception of some temporary disturbance associated with the installation of the stormwater outlet.	Yes
<b>Town of Caledon OP</b>		
<b>Environmental Protection Area</b>	The northern portion of the subject property is designated as Environmental Protection Area. There will be no development or site alteration within this area with the exception of some temporary disturbance associated with the installation of the stormwater outlet.	Yes
<b>TRCA Regulations and Policies</b>		
Ontario Regulation 160/06	Development of the subject property will occur outside features and lands that are regulated by the TRCA including wetlands, watercourses and natural hazards (i.e., valley slopes) with the exception of some temporary disturbance associated with the installation of the stormwater outlet.	Yes
Living City Policies (TRCA 2014)	Buffers have been applied to features as per the Living City Policies.	Yes

## 8. Summary

Beacon has reviewed the existing natural heritage policies as they pertain to the subject property. Seasonal field investigations and species-specific surveys were undertaken to understand the site conditions, context and function with respect to natural heritage features. The proposed development of the subject property demonstrates compliance with the relevant policies.

We trust that this information is sufficient at this time. Should you have any questions or require any additional information please contact the undersigned at (905) 201-7622 x 233.

Report prepared by:  
**Beacon Environmental**



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Report prepared by:  
**Beacon Environmental**



Joel Davey, B.BRM, MES  
Aquatic Ecologist, Environmental Inspector

Report reviewed by:  
**Beacon Environmental**



Brian E. Henshaw  
CEO, Senior Ecologist



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# Appendix A

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## Floral Inventory

# Appendix A

## Floral Inventory

Plant List				
Scientific Name	Common Name	COSEWIC	SARO	SRank
<i>Acer negundo</i>	Manitoba Maple			S5
<i>Acer platanoides</i>	Norway Maple			SE5
<i>Acer rubrum</i>	Red Maple			S5
<i>Acer saccharum</i>	Sugar Maple			S5
<i>Achillea millefolium</i>	Common Yarrow			SE5?
<i>Aegopodium podagraria</i>	Goutweed			SE5
<i>Aesculus hippocastanum</i>	Horse Chestnut			SE2
<i>Agrostis gigantea</i>	Redtop			SE5
<i>Agrostis stolonifera</i>	Creeping Bentgrass			SE5
<i>Alliaria petiolata</i>	Garlic Mustard			SE5
<i>Alopecurus pratensis</i>	Meadow Foxtail			SE5
<i>Ambrosia artemisiifolia</i>	Common Ragweed			S5
<i>Anemonastrum canadense</i>	Canada Anemone			S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla			S5
<i>Arctium minus</i>	Common Burdock			SE5
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit			S5
<i>Asclepias syriaca</i>	Common Milkweed			S5
<i>Barbarea vulgaris</i>	Bitter Wintercress			SE5
<i>Bromus inermis</i>	Smooth Brome			SE5
<i>Caragana arborescens</i>	Siberian Pea Shrub			SE1
<i>Carya ovata</i>	Shagbark Hickory			S5
<i>Chelidonium majus</i>	Greater Celandine			SE5
<i>Cirsium arvense</i>	Canada Thistle			SE5
<i>Cirsium vulgare</i>	Bull Thistle			SE5
<i>Convolvulus arvensis</i>	Field Bindweed			SE5
<i>Cornus racemosa</i>	Grey Dogwood			S5
<i>Dactylis glomerata</i>	Orchard Grass			SE5
<i>Daucus carota</i>	Wild Carrot			SE5
<i>Erigeron strigosus</i>	Rough Fleabane			S5
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed			S5
<i>Fraxinus pennsylvanica</i>	Red Ash			S4
<i>Hypericum perforatum</i>	Common St. John's-wort			SE5
<i>Impatiens capensis</i>	Spotted Jewelweed			S5

Plant List				
Scientific Name	Common Name	COSEWIC	SARO	SRank
<i>Juglans nigra</i>	Black Walnut			S4?
<i>Lemna minor</i>	Small Duckweed			S5?
<i>Leonurus cardiaca</i>	Common Motherwort			SE5
<i>Leucanthemum vulgare</i>	Oxeye Daisy			SE5
<i>Lolium arundinaceum</i>	Tall Ryegrass			SE5
<i>Lolium perenne</i>	Perennial Ryegrass			SE4
<i>Lonicera tatarica</i>	Tatarian Honeysuckle			SE5
<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil			SE5
<i>Malus prunifolia</i>	Pear-leaved Crabapple			SE1
<i>Malus pumila</i>	Common Apple			SE4
<i>Medicago lupulina</i>	Black Medick			SE5
<i>Mentha canadensis</i>	Canada Mint			S5
<i>Phalaris arundinacea</i>	Reed Canarygrass			S5
<i>Phleum pratense</i>	Common Timothy			SE5
<i>Picea glauca</i>	White Spruce			S5
<i>Picea pungens</i>	Blue Spruce			SE1
<i>Pinus strobus</i>	Eastern White Pine			S5
<i>Plantago lanceolata</i>	English Plantain			SE5
<i>Plantago major</i>	Common Plantain			SE5
<i>Poa pratensis</i>	Kentucky Bluegrass			S5
<i>Populus alba</i>	White Poplar			SE5
<i>Populus tremuloides</i>	Trembling Aspen			S5
<i>Potentilla anserina</i>	Silverweed			S5
<i>Potentilla recta</i>	Sulphur Cinquefoil			SE5
<i>Quercus bicolor</i>	Swamp White Oak			S4
<i>Rhamnus cathartica</i>	European Buckthorn			SE5
<i>Rhus glabra</i>	Smooth Sumac			S5
<i>Rhus typhina</i>	Staghorn Sumac			S5
<i>Rubus idaeus</i>	Red Raspberry			S5
<i>Salix alba</i>	White Willow			SE4
<i>Salix discolor</i>	Pussy Willow			S5
<i>Salix euxina</i>	Crack Willow			SE
<i>Salix x pendulina</i>	( <i>Salix babylonica</i> X <i>Salix euxina</i> )			SNA
<i>Salix x sepulcralis</i>	( <i>Salix alba</i> X <i>Salix babylonica</i> )			SNA
<i>Securigera varia</i>	Purple Crown-vetch			SE5
<i>Solidago altissima</i>	Tall Goldenrod			S5
<i>Solidago canadensis</i>	Canada Goldenrod			S5
<i>Solidago flexicaulis</i>	Zigzag Goldenrod			S5

Plant List				
Scientific Name	Common Name	COSEWIC	SARO	SRank
<i>Sonchus oleraceus</i>	Common Sow-thistle			SE5
<i>Tanacetum vulgare</i>	Common Tansy			SE5
<i>Taraxacum officinale</i>	Common Dandelion			SE5
<i>Thuja occidentalis</i>	Eastern White Cedar			S5
<i>Tilia americana</i>	Basswood			S5
<i>Trifolium pratense</i>	Red Clover			SE5
<i>Trifolium repens</i>	White Clover			SE5
<i>Typha latifolia</i>	Broad-leaved Cattail			S5
<i>Ulmus americana</i>	White Elm			S5
<i>Urtica dioica</i>	Stinging Nettle			S5
<i>Verbascum thapsus</i>	Common Mullein			SE5
<i>Vitis riparia</i>	Riverbank Grape			S5

**RANK**

**DEFINITION**

**EXP**

**Extirpated** - A wildlife species that no longer exists in the wild in Canada, but exists elsewhere.

**END**

**Endangered** - A wildlife species facing imminent extirpation or extinction.

**THR**

**Threatened** - A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

**SC**

**Special Concern** - A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

**RANK**

**DEFINITION**

**EXP**

**Extirpated** - A species that no longer exists in the wild in Ontario but still occurs elsewhere.

**END**

**Endangered** - A species facing imminent extinction or extirpation in Ontario.

**THR**

**Threatened** - A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

**SC**

**Special Concern** - A species with characteristics that make it sensitive to human activities or natural events.

**RANK**

**DEFINITION**

**NX**

**SX**

**Presumed Extirpated** - Species or ecosystem is believed to be extirpated from the jurisdiction (i.e., nation, or state/province). Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. [equivalent to "Regionally Extinct" in IUCN Red List terminology]

**NH**

**SH**

**Possibly Extirpated** - Known from only historical records but still some hope of rediscovery. There is evidence that the species or ecosystem may no longer be present in the jurisdiction, but not enough to state this with certainty. Examples of such evidence include (1) that a species has not been documented in approximately 20-40 years despite some searching

and/or some evidence of significant habitat loss or degradation; (2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in the jurisdiction.

**N1**

**S1**

**Critically Imperiled** - At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.

**N2**

**S2**

**Imperiled** - At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.

**N3**

**S3**

**Vulnerable**— At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

**N4**

**S4**

**Apparently Secure** - At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

**N5**

**S5**

**Secure** - At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

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# Appendix B

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## Breeding Birds



# Appendix B

## Breeding Bird List

Common Name	Scientific Name	Status		Provincial breeding season SRANK <sup>b</sup>	TRCA Status <sup>d</sup>	Area- sensitive (OMNR) <sup>c</sup>	Number of Pairs/Territories
		National Species at Risk COSEWIC <sup>a</sup>	Species at Risk in Ontario Listing <sup>a</sup>				
American Kestrel	<i>Falco sparverius</i>			S4	L4		1F
Killdeer	<i>Charadrius vociferus</i>			S5	L5		1
Rock Pigeon	<i>Columba livia</i>			SNA	L+		1
Mourning Dove	<i>Zenaida macroura</i>			S5	L5		1 (23F)
Downy Woodpecker	<i>Picoides pubescens</i>			S5	L5		1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>			S4	L4		1
Eastern Kingbird	<i>Tyrannus tyrannus</i>			S4	L4		2
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>			S4	L4		1
Barn Swallow	<i>Hirundo rustica</i>	THR	THR	S4	L4		4
Blue Jay	<i>Cyanocitta cristata</i>			S5	L5		1
House Wren	<i>Troglodytes aedon</i>			S5	L5		2
American Robin	<i>Turdus migratorius</i>			S5	L5		3
Gray Catbird	<i>Dumetella carolinensis</i>			S4	L4		1
Cedar Waxwing	<i>Bombycilla cedrorum</i>			S5	L5		1
European Starling	<i>Sturnus vulgaris</i>			SE	L+		3
Warbling Vireo	<i>Vireo gilvus</i>			S5	L5		1
Yellow Warbler	<i>Setophaga petechia</i>			S5	L5		1
Vesper Sparrow	<i>Pooecetes gramineus</i>			S4	L3		1
Savannah Sparrow	<i>Passerculus sandwichensis</i>			S4	L4	A	7
Song Sparrow	<i>Melospiza melodia</i>			S5	L5		12

Common Name	Scientific Name	Status		Provincial breeding season SRANK <sup>b</sup>	TRCA Status <sup>d</sup>	Area-sensitive (OMNR) <sup>c</sup>	Number of Pairs/Territories
		National Species at Risk COSEWIC <sup>a</sup>	Species at Risk in Ontario Listing <sup>a</sup>				
Red-winged Blackbird	<i>Agelaius phoeniceus</i>			S4	L5		5
Common Grackle	<i>Quiscalus quiscula</i>			S5	L5		2
Brown-headed Cowbird	<i>Molothrus ater</i>			S4	L5		1
Orchard Oriole	<i>Icterus spurius</i>			S4	L5		1
Baltimore Oriole	<i>Icterus galbula</i>			S4	L5		1
House Finch	<i>Haemorhous mexicanus</i>			SNA	L+		1
American Goldfinch	<i>Spinus tristis</i>			S5	L5		3
House Sparrow	<i>Passer domesticus</i>			SNA	L+		1

Field Work Conducted On: June 8, June 18, and June 30, 2020 F = foraging only

Number of Species: 28 (27 breeding)

Number of (provincial and national) Species at Risk: 1 (Barn Swallow)

Number of S1 to S3 Species: 0

Number of TRCA L1, L2 and L3 Species (Species of Concern): 1 (Vesper Sparrow)

Number of Grassland Area-sensitive Species: 1 (Savannah Sparrow)

#### 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

<sup>b</sup> 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)

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

<sup>d</sup> Toronto and Region Conservation Authority L rank (Dec 2010):

L1 to L3 Regional species of concern from highest to lowest; L4 Urban concern; L5 Secure through region; L+ Non-native

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# Appendix C

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## Endangered and Threatened Species Screening

## Appendix C

### Endangered and Threatened Species Screening List (Accessed May 7, 2020)

Common Name	Scientific Name	Group	SARO Status	COSEWIC Status	SARA Schedule	SARA Status	S Rank	Beacon Comments on Status
Acadian Flycatcher	<i>Empidonax vireescens</i>	Birds	END	END	Schedule 1	END	S2S3B	
Prothonotary Warbler	<i>Protonotaria citrea</i>	Birds	END	END	Schedule 1	END	S1B	
Chimney Swift	<i>Chaetura pelagica</i>	Birds	THR	THR	Schedule 1	THR	S4B,S4N	
<b>Barn Swallow</b>	<b><i>Hirundo rustica</i></b>	Birds	THR	THR	Schedule 1	THR	S4B	Date added to the SARO List Jan 13, 2012
Eastern Meadowlark	<i>Sturnella magna</i>	Birds	THR	THR	Schedule 1	THR	S4B	
Bank Swallow	<i>Riparia riparia</i>	Birds	THR	THR	Schedule 1	THR	S4B	added to SARO List: June 27, 2014
Bobolink	<i>Dolichonyx oryzivorus</i>	Birds	THR	THR	Schedule 1	THR	S4B	
Butternut	<i>Juglans cinerea</i>	Dicots	END	END	END	END	S2?	COSEWIC Status re-examined and confirmed in April 2017
Little Brown Myotis	<i>Myotis lucifugus</i>	Mammals	END	END	Schedule 1	END	S3	Last COSEWIC Assessment: November 2013; Date added to the Species at Risk in Ontario List January 24, 2013
Northern Myotis	<i>Myotis septentrionalis</i>	Mammals	END	END	Schedule 1	END	S3	Date added to the SARO List January 24, 2013
Eastern Small-footed Myotis	<i>Myotis leibii</i>	Mammals	END				S2S3	Date added to the SARO List June 27, 2014
Tri-colored Bat	<i>Perimyotis subflavus</i>	Mammals	END	END	Schedule 1	END	S3?	Date added to the SARO List June 15, 2016
<b>Redside Dace</b>	<b><i>Clinostomus elongatus</i></b>	Ray-finned fishes	END	END		END	S2	

Note: Highlighted species or their habitat are present on site.

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# Appendix D

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## HDF A Supporting Documents

## Appendix D

**Table 1. Headwater Drainage Feature Assessment Classification – 12434 Dixie Road**

Drainage Feature Segment	Step 1		Step 2	Step 3	Step 4	Output from HDFA	Final Management Recommendations	Comments/Rationale
	Hydrology	Modifiers	Riparian	Fish Habitat	Terrestrial Habitat			
2020 Assessments								
<b>HDF-1</b>	Contributing	Agriculture	Important	Contributing	Contributing	Conservation	No Management Required	Defined farm swale with limited cover and ephemeral flow regime
<b>HDF-2</b>	Contributing	Agriculture	Valued	Contributing	Limited	Mitigation	No Management Required	Undefined grass swale with limited hydrologic function.