Comprehensive Environmental Impact Study and Management Plan

12489 & 12861 Dixie Road, Caledon, Ontario

Final Report

July 24, 2025

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Limitations and Sign-off

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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by QuadReal Property Group to prepare a Comprehensive Environmental Impact Study and Management Plan (CEISMP) in support of the proposed redevelopment of municipal addresses 12489 & 12861 Dixie Road in the Town of Caledon, herein referred to as the "Primary Study Area (PSA)".

The Due Diligence Assessment completed by Stantec in 2022, and supplemental secondary source data review guided the CEISMP field program which took place in 2023 and 2025. Field surveys focused on the buildings, wildlife, vegetation communities, wetland, and aquatic features where developments are proposed or where potential impacts to features on the Secondary Study Area (SSA) (lands within 120m of the PSA) are anticipated.

Significant Valleylands are present in the PSA in two locations: (1) surrounding a tributary of the West Humber River which is located in the central portion of the PSA and (2) surrounding Kilamanagh Creek located at the southwest corner of the PSA. The valleylands are designated provincially as Natural Heritage System (NHS) within the Greenbelt Protected Countryside and regionally as part of the Region of Peel's Core Areas of the Greenlands System. The NHS features limits (dripline and top of bank) were staked with the Toronto and Region Conservation Authority (TRCA) on August 24, 2023.

Redside Dace, an aquatic species at risk (SAR) is known to occur in the area. Stantec consulted with the Ministry of Environment, Conservation and Parks (MECP) to determine the extent of Redside Dace habitat on or adjacent to the PSA. The watercourse associated with Kilamanagh Creek located at the south end of the Study Area was confirmed to be occupied Redside Dace habitat. The main branch and connected permanent and intermittent watercourses associated with the Tributary of the West Humber River located in the central portion of the PSA were confirmed by MECP to be contributing habitat. A meanderbelt study completed by Geomorphix (Geomorphix 2024) was reviewed and included in the assessment.

Field surveys were completed for vegetation communities, headwater drainage features (HDF), as well as wildlife and SAR habitat including bat community surveys, breeding bird surveys, and floral inventories. Several HDFs are present on the PSA. Significant Woodlands, Significant Wildlife Habitat, and Candidate SAR Habitat has been identified on lands within the existing NHS. In addition to occupied and contributing Redside Dace habitat on the PSA, two SAR (Bobolink and Eastern Meadowlark), four SAR mammals (Little Brown Myotis, Eastern Red Bat, Hoary Bat, and Silver-haired Bat), and two Species of Conservation Concern (SOCC) (Eastern Wood-pewee and Barn Swallow) bird species were observed during the field program.

The CEISMP assessed impacts from the proposed development including permanent and temporary (grading limit) footprints. Environmental protection, habitat compensation and impact mitigation measures are recommended to support the Project. A 30 m setback is recommended from the staked feature limits for lands located within the Greenbelt NHS and Regional Greenlands System. A 10m setback is proposed for valleyland present in the PSA outside of the Greenbelt NHS (within the current cattle range and

meadows). The proposed setbacks are in general conformance with provincial, municipal and conservation authority policies and guidelines. With the exception of some minor encroachment required to support stormwater and functional servicing infrastructure, all permanent surface level developments, including retaining walls, are located outside of significant natural heritage features and associated 10 and 30 m setbacks.

Permitting or other authorization under the Endangered Species Act (ESA) with the MECP is required to move forward with the proposed development associated with Redside Dace, SAR Bats, Bobolink and Eastern Meadowlark habitat observed in the PSA. Permitting under the Conservation Authorities Act (CAA) with the TRCA is required to support works within regulated areas in accordance with Ontario Regulation 41/24.

With the implementation of recommended environmental protection (setbacks), environmental mitigation (construction timing windows and erosion and sediment control measures), edge management/ ecological restoration and habitat compensation measures, the development proposal meets the natural heritage policy objectives outlined in the PPS, and upper and lower tier Official Plans. This CEISMP is in support of the proposed development as the benefits outweigh the potential impacts to the local environment and residents.

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Acronyms / Abbreviations

ANSI	Areas of Natural and Scientific Interest
ARU	Autonomous Recording Unit
CA	Conservation Authority
CAA	*Conservation Authorities Act*, 1990
CAMP	Comprehensive Adaptive Management Plan
CC	Coefficient of Conservatism
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CVC	Credit Valley Conservation Authority
DBH	Diameter at Breast Height
DD	Due Diligence
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
CEISMP	Comprehensive Environmental Impact Study and Management Plan
ELC	Ecological Land Classification
ESA	*Endangered Species Act,* 2007
FSSMR	Functional Servicing and Stormwater Management Report
GI	Green Infrastructure
GIS	Geographic Information System
ha	Hectares
HDF	Headwater Drainage Feature
HR	Hydrogeological Report
KHF	Key Hydrologic Feature
km	Kilometres
KNHF	Key Natural Heritage Feature
LIO	Land Information Ontario
LTEMP	Long Term Environmental Monitoring Plan
m	Metres
masl	Metres above sea level

MBCA	*Migratory Birds Convention Act*, 1994
MECP	Ministry of the Environment, Conservation and Parks
MMP	Marsh Monitoring Program (Bird Studies Canada 2009)
MNRF	Ministry of Natural Resources and Forestry
MOECC	Ministry of the Environment and Climate Change Canada
NHIC	Natural Heritage Information Centre
OLS	Ontario Land Surveyor
OP	Official Plan
OPA	Official Plan Amendment
PSA	Primary Study Area
PSW	Provincially Significant Wetland
PPS	Provincial Planning Statement, 2024
Region	Regional Municipality of Peel
ROW	Right-of-Way
SAR	Species at Risk
SARA	*Species at Risk Act*, 2002
SARO	Species at Risk in Ontario (List)
SOCC	Species of Conservation Concern
SPA	Site Plan Application
SSA	Secondary Study Area
SWH	Significant Wildlife Habitat
Town	The Town of Caledon
TOR	Terms of Reference
TRCA	Toronto and Region Conservation Authority
ZBA	Zoning By-law Amendment

Glossary

Term	Definition
Primary Study Area (PSA)	Lands associated with municipal addresses 12489 & 12861 Dixie Road in Caledon Ontario (as depicted in Figure A-1, Appendix A).
Secondary Study Area (SSA)	Lands adjacent to the PSA that will be evaluated to support Local SWS objectives. Specifically, the Functional Servicing and Stormwater Report (FSSMR) includes external drainage catchments north of Old School Rd that drain through developable land, and the adjacent lands west of Dixie Road (12892 and 12668 Dixie Road), see FSSMR Study Areas figure located in Appendix H for details. The Comprehensive Environmental Impact Statement and Management Plan (CEISMP) includes lands within 120m of the PSA and will summarize the results of the Functional Servicing and Stormwater Management Report (FSSMR) and Hydrogeological Report as relevant to natural heritage assessment and for planning purposes.
Study Area	The area used to consider potential impacts to natural heritage features, including the PSA and SSA.
The Project	The proposed development in the PSA that have the potential to impact the natural heritage features within the Study Area.

Version Table

Version #	Authors	Reviewers	Date
1	Lauren Cymbaly, Taco Den Haas	Sean Spisani, Sean Geddes	December 2023
2	Jennifer Randall, Taco Den Haas	Lauren Cymbaly, Sean Geddes	December 2024
3	Jordan Brooks, Jennifer Randall, Matthew Chung	Lauren Cymbaly, Taco Den Haas	February 2025
4	Lauren Cymbaly, Taco Den Haas	Sean Spisani	July 2025

1 Introduction

Stantec Consulting Ltd. (Stantec) was retained by QuadReal Property Group (QuadReal) to prepare a Comprehensive Environmental Impact Study and Management Plan (CEISMP) in support of a development application including an Official Plan Amendment (OPA) Application, Zoning By-law Amendment (ZBA) and Site Plan Application (SPA) for the properties with municipal addresses 12489 & 12861 Dixie Road in the Town of Caledon, herein referred to as the "Primary Subject Area (PSA)".

The PSA is generally located west of Bramalea Road, north of Mayfield Road, east of Dixie Road and south of Old School Road, in the Town of Caledon as shown on Figure A-1 (Appendix A). The PSA is bound by Old School Road to the north, Dixie Road to the west, a golf course to the east, and agricultural lands to the south. The PSA includes two connected parcels of land, which encompass a total area of approximately 116.4 ha. The PSA is currently used for agricultural purposes and are established with two residential dwellings, several barns, and outbuildings. The majority of undeveloped lands are under active management including an active cattle range and approximately eight crop fields planted with Soybean or Corn.

There are 2 permanent watercourses on the PSA: (1) a tributary of the West Humber River, which is located in the central portion of the PSA and (2) Kilamanagh Creek located at the southwest corner of the PSA. Valleylands surround both watercourses. The core valleyland features are designated provincially as Natural Heritage System (NHS) within the Greenbelt Protected Countryside and regionally as part of the Region of Peel's Core Areas of the Greenlands System.

The proposed developments include the erection of five industrial warehouse buildings and the development of associated parking areas and private roads. To service the development, two stormwater ponds and associated subsurface infrastructure are also proposed (Project).

Given this geographical setting, development applications concerning the PSA are subject to policies including, but not limited to, those outlined in: the Provincial Planning Statement (PPS) (Ministry of Municipal Affairs and Housing [MMAH], 2024), the Region of Peel Official Plan (OP) (Peel Region, 2024), the Town of Caledon OP (Town of Caledon, 2024), and the *Endangered Species Act* (2007) (ESA).

A CEISMP has been requested as part of the application package to support the Project. The purpose of this CEISMP is to describe existing conditions and evaluate Project conformance with the PPS and other applicable natural heritage legislation and municipal policy requirements (e.g., ESA). This CEISMP also identifies permitting requirements and provides recommendations for mitigation measures.

This CEISMP should be read in conjunction with the Functional Servicing and Stormwater Management Report (FSSMR), dated December 5, 2024, and the Hydrogeological Assessment Report (HR), dated December 5, 2024, both prepared by Stantec. These reports will describe the location, extent, sensitivity and significance of natural features and functions within the PSA, evaluate the factors and influences important to their sustainability, establish goals and objectives for terrestrial and aquatic systems (i.e., natural heritage) and water resource systems in accordance with the PPS, the Region's OP, Caledon's OP, the applicable Watershed Plans and Subwatershed Studies, and the Settlement Area Boundary Expansion Subwatershed Study (SABE SWS).

2 Methodology

2.1 Study Area

The Primary Study Area (PSA) is defined as the lands associated with municipal addresses 12489 and 12861 Dixie Road. Stantec completed a review of background information and visited the PSA to characterize the natural heritage resources and functions on and adjacent to the PSA. The Secondary Study Area (SSA) includes lands within a 120 m radius of the PSA (Figure A-1, Appendix A). The information sources reviewed, and field program undertaken in the Study Area are summarized below in Sections 3.2 and 3.3.

2.2 Background Review

Background information was gathered and reviewed as part of the assessment process and prior to completing the field program to inform targeted field surveys. The following sections outline the methodology for completing the various components of the background review.

2.2.1 Policy Review

Given the geographic location of the Study Area, the following documents including associated maps and schedules were reviewed to determine the legislative and policy context of the Project as well as ascertain the presence and location of previously identified natural heritage features and areas within the Study Area:

- Species at Risk Act (2002) (SARA)
- Fisheries Act (1985)
- Migratory Birds Convention Act (1994) (MBCA)
- Canada Wildlife Act (1985) (CWA)
- Endangered Species Act (2007) (ESA)
- Conservation Authorities Act (1990) (CAA)
- TRCA policies and regulations
- Ontario Fish and Wildlife Conservation Act (1997) (FWCA)
- Provincial Planning Statement (2024) (PPS)
- Region of Peel Official Plan (Region of Peel 2024, administered by the Town of Caledon)
- Town of Caledon Official Plan (Town of Caledon 2024)

2.2.2 Previous Site Documentation

Stantec reviewed previous site documentation at the outset of the CEISMP. Two Due Diligence (DD) assessments were completed by WSP Canada Inc. (WSP) for the PSA in early spring of 2022 (WSP 2022a, 2022b). Site reconnaissance work was completed as part of the 2022 DD assessments on April 20 and April 26, 2022. Stantec was retained by QuadReal to review the DD assessments for the PSA in 2022 (Stantec 2022). Data collected during the due diligence phase of the Project was reviewed and included in this CEISMP. In addition, a CEISMP was conducted by WSP for two adjacent properties (WSP 2024a), which was reviewed by Stantec.

2.2.3 Geo-Mapping and Database Reviews

Additional sources of information such as soil geology and physiography mapping, wildlife atlas data, watercourse and natural resource mapping were reviewed prior to commencing the field program.

In addition to mapping resources associated with the documents listed in Section 2.2.1, the following databases and information sources were reviewed as part of the background review:

- The Natural Heritage Information Centre (NHIC) database available through the MNRF's Make a Map: Natural Heritage Areas, including review of Provincially Tracked Species Layer and provincial Aquatic Resource Area (ARA) data (MNRF 2023a)
- Natural heritage and physical feature layers from the Land Information Ontario (LIO) database which includes Ministry of Natural Resources and Forestry (MNRF) resource information (MNRF 2023b)
- Species at Risk in Ontario List, including provincial range maps, (Ministry of the Environment, Conservation and Parks [MECP] 2023)
- Atlas of the Breeding Birds of Ontario (Second Atlas, 10 km grid), (Cadman et al., 2007)
- Ontario Reptile and Amphibian Atlas (10 km grid), (Ontario Nature 2023)
- eBird Canada Database (eBird Hotspots within the Study Area as defined in Figure A-1, Appendix A), (eBird Canada 2023)
- Insect/Butterfly Atlas (10 km grid), (Toronto Entomologists' Association 2023)
- Mammalian observation database (Town of Caledon area search), (iNaturalist 2023)
- Atlas of the Mammals of Ontario (Dobbyn 1994)
- Fisheries and Oceans Canada's (DFO) Aquatic Species at Risk Map (DFO 2023)
- TRCA technical reports including applicable watershed plans databases and geo-cortex mapping resources
- Constructed Drains digital dataset (OMAFRA, 2023)
- High resolution satellite imagery of the Study Area (Google Earth Pro 2023, LIO 2023)

The results of these reviews were used to guide field investigations and to identify potential Species at Risk (SAR) and species of conservation concern (SOCC) habitat, aquatic habitats, and other natural

heritage features and areas that have the potential to overlap with the Study Area. With exception of some hotspots (e.g., eBird), many of the wildlife record database resources generally do not provide the exact locations of a species occurrence record; accuracy generally ranges from 1 km² (e.g., NHIC) to 10 km² for most wildlife atlases. As such, the results of the range map and atlas reviews were used to support the SAR and SOCC habitat screening assessments and identify additional target areas for assessment.

2.3 Field Program

The field program was carried out in 2023 and 2024 and included surveys for vegetation, wildlife and wildlife habitat, and aquatic habitat. For the purposes of this report, species are described using the NHIC common name, the associated species family and scientific names are provided in Appendix D respectively. Lands outside of the legal boundaries of the PSA but within the Study Area were evaluated based on secondary sources (as outlined in Section 2.2), from the edge of the PSA and/or from publicly accessible areas (e.g., right-of-way [ROW]) due to access restrictions on privately owned lands. Due to health and safety concerns, some areas within the NHS located in the central portion of the PSA were not accessible (steep slopes). Field investigations completed for the Project are summarized in Table 2-1.

Table 2-1 Field Program Summary

Type of Field Work	Date(s) of Field Work	Stantec Personnel
Aquatic Investigations[1]		
Headwater Drainage Feature Assessment (HDFA)	14-Apr-23	J. Brooks
	24-May-23	J. Brooks
	2-Aug-23	J. Brooks
Vegetation Surveys		
Floral inventory and Ecological Land Classification	30-May-23	M. Razzouk
	15-Aug-23	L. Cymbaly
	23-Aug-23	L. Cymbaly
Feature Delineation[2]		
Wetland and Valleyland Delineation	24-Aug-23	L. Cymbaly
Wildlife Surveys		
Breeding Bird Surveys	30-May-23	J. Randall
	22-Jun-23	J. Randall
	5-Jul-23	J. Randall
Bat Acoustic Survey	22-Jun-23	J. Randall
	5-Jul-23	J. Randall
	19-Jun-25	J. Randall

Type of Field Work	Date(s) of Field Work	Stantec Personnel
	14-Jul-25	J. Randall
Amphibian Call Surveys	29-Apr-24	M. Razzouk, E. Padvaiskas
	22-May-24	M. Razzouk, E. Padvaiskas
	24-May-24	M. Razzouk, E. Padvaiskas
	6-Jun-24	M. Razzouk, E. Padvaiskas
Wildlife Habitat and Incidental Wildlife Observations	During all field visits	All Staff

[1] D. Van de Coevering (GeoMorphix) was on site with Stantec May 24 and August 2, 2023.

[2] Persons present: Lauren Cymbaly from Stantec (ELC and OWES certified), Aravinda Basnayaka from JD Barns (Ontario Land Surveyor [OLS]), Maria Parish from TRCA and Nick Cascone from TRCA.

2.3.1 Aquatic Habitat and Headwater Drainage Features

Aquatic habitat and headwater drainage features (HDF) were studied during three separate site visits, as noted in Table 2-1. A summary of the dates, times, weather conditions and personnel in 2023 is provided in Table 2-2 below.

Table 2-2 Summary of Aquatic Habitat and HDF Assessment Field Studies

Date	Air Temperature (°C)	Wind (km/hr)	Precipitation (mm)	Precipitation 72hr Prior (mm)
April 14, 2023	25	24	None	None
May 24, 2023	15	20	None	None
August 2, 2023	17	8	None	None

2.3.1.1 Aquatic Habitat Assessment

Aquatic habitat in the two main watercourses on the PSA (the Tributary of the West Humber River and Kilamanagh Creek) were not studied in detail. These watercourses are mapped as permanently flowing and fish bearing (MNRF 2023a) systems. These watercourses and associated valleylands are regulated by TRCA. No encroachment onto these watercourses is proposed and as such, detailed investigations on these features were not conducted as part of the assessment. A photographic record of aquatic habitat conditions is provided in Appendix DG. General notes were taken on aquatic habitat conditions including visual observations of fish or opportunities for fish habitat improvements such as watercourse crossings.

2.3.1.2 Headwater Drainage Feature Assessment

Several features were identified for HDF assessments through review of available desktop sources as described in Section 2.2. Field surveys were completed in accordance with the *Evaluation, Classification and Management of Headwater Drainage Features Guidelines* (TRCA & CVC 2014) to document conditions and characterize these features. The guidelines prescribe up to three site visits, as described

below (TRCA & CVC 2014). The field program also included a search in the field for additional HDF on the PSA that were not identified through desktop review.

The TRCA/CVC identify three site visits that can make up the HDFA process. Visits subsequent to the First Visit are predicated on conditions observed during the previous visit, as follows:

First Visit: Determine the feature type and flow condition of drainage features. If no water is present, or only standing water is found, no further site visits are required. Completed immediately following freshet (typically late March or early April).

Second Visit: Assessment of fish presence, habitat potential, and flow condition. Fish presence determined using backpack electrofishing techniques, as applicable. If no water is present a third visit is not required. Completed late April to early May, ideally following several days with no precipitation events and before vegetation growth potentially obscures the appearance of features.

Third Visit: Determine upstream limit to water presence and flow condition for the feature. If standing pools of water are present, fish presence will again be determined using backpack electrofishing techniques. Completed from July to mid-September, ideally following several days with no precipitation events.

2.3.2 Vegetation Survey and Ecological Land Classification

Vegetation community mapping for the Study Area was completed in accordance with the Ecological Land Classification (ELC) system for southern Ontario (Lee et al., 1998) using the updated 2008 coding system to describe community vegetation types. Vegetation communities were delineated based on satellite imagery prior to field surveys and subsequently verified in the field.

A list of vascular plant species observed in the Study Area was compiled during vegetation surveys. The nomenclature and provincial status of all plant species was based on NHIC (MNRF 2023a). For the purposes of this report, species are described using the NHIC common name. The species family and scientific names are provided in Appendix C.

Provincial status of vegetation communities was based on the rankings assigned by the NHIC (MNRF 2023). Identification of potentially sensitive native plant species was determined from their assigned coefficient of conservatism (CC) value (Oldham et al 1995). The CC value ranges from 0 (low) to 10 (high) and is based on a species' tolerance of disturbance and fidelity to a specific natural habitat. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

The TRCA local rankings were also reviewed as part of the assessment (TRCA, 2017). Flora ranks are based on four equally weighted criteria: (1) local occurrence, (2) population trend, (3) habitat dependence, and (4) sensitivity to development. Species and communities ranked L1 to L3 are considered to be of regional conservation concern whereby they are flagged as being of risk within TRCA jurisdiction over the long term (TRCA, 2017).

2.3.3 Feature Delineation/TRCA Consultation

Natural hazards including floodplains, valleylands and wetlands are present on the PSA. These features are regulated by the TRCA under Ontario Regulation 41/24. A site visit with TRCA staff took place on August 24, 2023. The purpose of the meeting was to review natural heritage features on and directly adjacent to the PSA and discuss any permitting requirements and potential natural heritage constraints to the proposed development / Preliminary Site Plan. It was also the purpose of the meeting to review the property and stake the limits of any wetland or valleyland features. The feature limits were staked and surveyed by J.D. Barnes Limited (J.D. Barnes) surveyors the same day (August 24, 2023).

Shortly after the site visit, the OLS survey was circulated to TRCA. The survey and related agency correspondence are provided in Appendix FB.

2.3.4 Amphibian Call Surveys

Amphibian call surveys were completed in accordance with the Marsh Monitoring Program (MMP) protocols established by Bird Studies Canada (2008). Surveys took place from April to June 2024 under suitable weather conditions with low winds. An additional site visit was conducted on May 24, 2024, due to unsuitable weather conditions during the survey on May 22, 2024 (high winds and thunder leading to an anticipated storm/acute precipitation event).

Each survey station included a 100-m radius semicircle with the observer located at the center and listening for a three-minute period. Given the size of the Subject Properties, fourteen stations were chosen (Figure A-4, Appendix A).

At each station for each survey, all calling toads and frogs identified over the three-minute time period were recorded. Call levels were described using values of 1, 2, or 3, and, where possible, an estimate of the number of individuals calling. Level 1 indicates that individuals could be counted, and calls were not simultaneous. Level 2 indicates that individual calls were distinguishable with some simultaneous calling, and a reasonable estimate of the number of calling individuals was made. Level 3 indicates a full chorus with continuous and overlapping calls and no estimate of the number of individuals was possible. Toads and frogs calling from outside of the survey station were also noted. A summary of call survey dates, times and weather is provided in Table 2-3.

Table 2-3 Amphibian Call Count Survey Dates, Times, and Weather Conditions

Date	Time	Temp. (°C)	Wind (Beaufort)	Cloud (%)	Precipitation
April 29, 2024	20:53 – 23:21	8	4	99	None
May 22, 2024	21:33 – 22:10	23	5	80	None
May 24, 2024	21:17 – 23:23	16	3	20	None
June 6, 2024	21:28 – 23:46	20	0	80	None

2.3.5 Breeding Bird Surveys

Three breeding bird surveys were completed for the PSA on May 30, June 22, and July 5, 2023, in general accordance with the methods described in the North American Breeding Bird Survey Instructions and Safety Guidelines (ECCC 2017) under appropriate weather conditions. Six-point counts (breeding bird stations [BBS]) were completed across the PSA. Each point count was 10-minutes in length, and all birds that were seen or heard within a 100 m radius were recorded. In addition, incidental observations were recorded while walking between point count locations. For the purposes of this report, species are described using the NHIC common name, the associated species family and scientific names are provided in Appendix D.

A summary of morning breeding bird survey dates, times and weather is provided in Table 2-4.

Table 2-4 Breeding Bird Survey Dates, Times, and Weather Conditions

Date	Time	Temp. (°C)	Wind (Beaufort)	Cloud (%)	Precipitation
May 30, 2023	6:28 – 9:26 am	14	2	0	None
June 22, 2023	6:29 – 8:51 am	17	0	10	None
July 5, 2023	6:38 – 9:04 am	20	2	15	None

2.3.6 Bat Assessment

For the purposes of this report, species are described using the NHIC common name, the associated species family and scientific names are provided in Appendix D.

Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis, Tricolored Bat, Hoary Bat, Silver-haired Bat and Eastern Red Bat are listed as endangered under the provincial ESA. These species generally use maternity roosting habitat in spring/summer and hibernate in caves or other underground structures in the winter. Maternity roosts are typically located in poorly ventilated, dark sites with high temperatures. Maternity roosts may be found in anthropogenic habitats (i.e., buildings, attics) or natural habitats (trees within woodlands). In natural settings, these bats may roost in tree cavities or under loose bark. Maternity roosts are most likely to occur in cavity trees, which are typically defined as tall, large diameter trees with heart rot, which creates cavities that are large enough to house colonies and provide suitable temperatures for roosting. The seven endangered species are collectively referred to as SAR Bats.

Four acoustic recording devices (ARUs) were deployed in the vicinity of potential roost trees and the house at 12861 Dixie Road. An additional four ARUs were deployed in the vicinity of potential roost trees at 12489 Dixie Road in 2025, where SWM infrastructure was proposed to support the Project (see Figure 4, Appendix A for details. At the time of publishing this report, the 2025 bat acoustic data analysis was ongoing and is not included in this report. The results will be included in an updated version of this report or prepared as an addendum to this document.

Wildlife Acoustics Song Meter SM4BAT detectors were programmed to record bat calls from 30 minutes before sunset to 30 minutes after sunrise. The ARU survey occurred over about 2 weeks. All ARUS were deployed on June 22, 2023, and were retrieved July 5, 2023) to capture up to 10 warm/mild nights (i.e., ambient temperature >10°C) with low wind and no precipitation as required by MNRF (2017b) protocols.

Data were analyzed using Kaleidoscope Pro software by Wildlife Acoustics. The data processing through Kaleidoscope Pro involves running the software's automatic identification, which screens out noise files and provides a suggested species for each bat call file. Calls for each species group were spot-checked by a qualified biologist to determine accuracy of the identification. For high-frequency calls that were identified as a *Myotis* or *Perimyotis* bat species, each call was reviewed by a qualified biologist to confirm the identification by visually assessing the call file spectrographs to identify if the frequency range and shape were consistent with the species assigned by the software. In addition, calls that were identified as 'No ID' by Kaleidoscope Pro with a minimum frequency of 35 kHz or above were reviewed. Where calls were not of sufficient quality to identify to species, they were classified as high frequency unknown (where the minimum frequency was 35 kHz or above) or low frequency unknown (where minimum frequency is less than 35 kHz).

Bat detectors cannot distinguish the number of bats flying within the area, as multiple calls often come from the same individual, as they pass the microphone multiple times, however number of calls can be used as an index of bat activity in a given area.

2.3.7 Endangered And Threatened Species Habitat Assessment

SAR habitat assessments were completed concurrently with vegetation surveys and focused on identifying potential SAR habitat (e.g., SAR snake hibernacula, SAR bat maternity roost trees) or occurrences (e.g., Butternut). SAR habitat assessments were completed for species protected under the ESA that may occur in the area, including species identified in the NHIC database and Ontario wildlife atlases during the background review. If encountered, these features were identified, recorded, and assessed for potential use by SAR. Wildlife species observed by sight, sound and/or through distinctive signs (e.g., tracks, scat) were also recorded.

The presence of SAR was determined using targeted surveys for vegetation and wildlife (including breeding birds and bats). For other species, habitat assessments were completed to determine their likelihood of occurrence. Habitat suitability assessments were conducted during all site visits, as detailed in Table 2-1.

2.3.8 Incidental Wildlife

Wildlife observations and evidence of wildlife were noted during all site visits as detailed in Table 2-1, including visual observations of species, tracks, or scat as well as auditory observations.

2.4 Species and Habitat Screening

The methods for screening terrestrial and aquatic species and their habitats within the Study Area incorporated the results of the background review, habitat characterizations, and species or species group specific surveys using standardized protocols for determining presence/absence as described in Sections 2.1 to 2.3. The background and site-specific data were used to identify species and features that may be affected by the Project.

2.4.1 Species at Risk and Species of Conservation Concern Habitat Screening

For the purposes of this report, SAR include species that are listed as Extirpated (EXT), Endangered (END) or Threatened (THR) on the Species at Risk in Ontario list as published in Ontario Regulation 230/08, under the ESA. Species with these statuses receive both individual and habitat protection under the ESA. Aquatic SAR also include those that are identified as EXT, END or THR and are afforded protection under both the provincial ESA and the federal SARA.

The Natural Heritage Reference Manual (NHRM) was developed to provide technical guidance for implementing the natural heritage policies of the PPS (MNR, 2010). SWH includes the habitat of SOCC. Species with provincial ranks (Subnational Rank [S-Rank]) of S1 to S3 are tracked by the MNRF and are considered SOCC. S-Ranks are defined as follows:

- S1: Critically imperiled; usually fewer than 5 occurrences
- S2: Imperiled; usually fewer than 20 occurrences
- S3: Vulnerable; usually fewer than 100 occurrences
- S4: Apparently secure; uncommon but not rare, usually more than 100 occurrences
- S5: Secure, common, widespread, and abundant

Regionally rare species, species listed as Special Concern (SC) under the ESA, and species identified as nationally END or THR by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which are not protected under the ESA, are also considered SOCC.

Although SOCC do not receive legal protection under the ESA, their habitat is protected under the PPS (e.g., if it qualifies as SWH), and they may also be afforded protection under the MBCA or Ontario *Fish and Wildlife Conservation Act* (1997).

SAR and SOCC with recent occurrence records (i.e., within the last 20 years) or with overlapping habitat ranges within the Study Area, were considered in the assessment utilizing the data sources described in Section 2.2. Species with recorded observations of greater than 20 years old were considered historical in accordance with the standard Conservation Status Assessment Methodology (NatureServe 2019). This standard is consistent with what the NHIC uses to evaluate a species' S-Rank.

The potential for SAR and SOCC to occur within the Study Area was assessed by comparing species habitat requirements to the habitat conditions observed on-site during the field program. The following probability assessment criteria was applied to the SAR and SOCC habitat screenings:

Low Probability: Suitable habitat was not observed throughout the field program but there is a known species record in the general area, or potentially suitable habitat was observed during the field program but the results of a wildlife survey (e.g., breeding bird survey) did not determine species presence.

Medium Probability: The species not observed during the field program, however potentially suitable habitat has been identified, and the species has been recorded in the general area.

High Probability: Good quality habitat was identified (e.g., sufficiently large areas of suitable vegetation and presence of key features such as nesting sites) and the species has been recorded in the general area.

Confirmed: The species was observed in suitable habitat during the 2023 field program.

Absent: Habitat criteria are specialized (e.g., watercourse, caves, alvars, habitat greater than a certain acreage, etc.) and has been confirmed as not present through habitat assessment or wildlife survey.

2.4.2 Significant Wildlife Habitat Screening Assessment

The Study Area was assessed for the presence of candidate SWH features following the Significant Wildlife Habitat Technical Guide (MNR 2000) and in accordance with the evaluation criteria described in the Significant Wildlife Habitat Criteria Schedules appropriate for the Study Area's Ecoregion.

The Study Area is located within the Lake Simcoe-Rideau Ecoregion (Ecoregion 6E). The Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015) contain information and criteria for identifying SWH. SWH is defined by the province as areas that have important ecological features and functions, and which support sustainable populations of plants, wildlife, and other organisms within a particular Ecoregion. The MNRF generally categorizes SWH into the following five categories:

- Seasonal Wildlife Concentration Areas
- Rare Vegetation Communities
- Specialized Habitat for Wildlife
- Habitats of SOCC
- Animal Movement Corridors

Wildlife occurrence records as described in Section 2.2.3 as well as field data collected throughout the field program as described in Section 2.3 were assessed to inform the presence of SWH within the Study Area based on the habitat criteria identified in the Ecoregion 6E schedules. The following probability assessment criteria was applied to the SWH habitat screenings:

Low Probability: Suitable SWH habitat was not observed throughout the field program but there are known wildlife records in the general area, or potentially suitable SWH habitat was observed during the

field program but there are no wildlife records or field observations through survey (e.g., breeding bird survey) for the SWH species group of interest.

Medium Probability: Potential SWH habitat is present in the Study Area and there are known wildlife records in the general area.

High Probability: Good quality SWH habitat has been identified (e.g., sufficiently large areas of suitable vegetation and presence of key features such as nesting sites) and there are known wildlife records in the general area.

Confirmed: The species (or wildlife group) was observed in suitable habitat during the 2023 field program.

Absent: SWH habitat criteria is specialized (e.g., caves, alvars, habitat greater than a certain acreage, etc.) and has been confirmed as not present.

Where a medium or high probably has been determined, the SWH is considered ‘Candidate SWH’. Specifically, Candidate SWH refers to potential habitats that may meet the habitat criteria but have not been confirmed through additional detailed studies.

3 Results

3.1 Legislation and Policy Context

Stantec completed a review of relevant legislation and natural heritage policies across tiers of government that are applicable to the PSA in the context of the proposed development. The results of the review are outlined below.

3.1.1 Federal

3.1.1.1 Species at Risk Act, 2002

The federal SARA protects and provides recovery strategies for SAR listed as EXT, END or THR under Schedule 1. This legislation applies to species residing on federal lands, federally regulated projects, species with critical habitat on non-federal lands in specific circumstances, or aquatic species and migratory birds listed on Schedule 1 of the SARA.

The results of the background review and field program have determined that the Project does not occur on federal lands, further, habitat for migratory birds listed on Schedule 1 were not observed in the PSA where developments or temporary impacts are proposed. As such, the Project is not subject to the SARA regulations with the exception of aquatic species (Redside Dace).

3.1.1.2 Fisheries Act, 1985

The federal *Fisheries Act* is the primary legislation governing fish and fish habitat in Canada. The Fisheries Act defines fish habitat as *"…waters frequented by fish and any other areas on which fish depend directly or indirectly in order to carry out their life processes including spawning grounds and nursery, rearing, food supply and migration areas."* The fish and fish habitat protection provisions of the Fisheries Act apply to all fish and fish habitat in Canada. The Act prohibits activities that result in the death of fish or the harmful alteration, disruption, or destruction (HADD) of fish habitat unless authorized by the Minister of Fisheries, Oceans, and the Canadian Coast Guard. If it is determined that the death of fish or HADD of fish habitat is unavoidable as part of the Project, an authorization under the Fisheries Act may be required.

The results of the background review and field program have determined that fish habitat is present in the PSA.

3.1.1.3 Migratory Birds Convention Act, 1994

The federal MBCA is intended to protect migratory birds, their eggs and their active nests. The MBCA prohibits the possession, destruction and harm of migratory birds and/or their active nests and prohibits the release of harmful substances in areas frequented by migratory birds. Under the MBCA, the nesting period for most migratory birds for Nesting Zone C1 that encompasses the Project Study Area is from

April 1 to August 31, during which time vegetation removal is strongly discouraged to avoid contravention of the MBCA (Government of Canada 2022). However, if vegetation clearing must occur during this timing window, active nest searches may be conducted prior to vegetation clearing during this window in simple habitats defined by Environment and Climate Change Canada (2019) as “often man-made settings with only a few likely nesting spots or small community of migratory birds”.

3.1.1.3.1 Migratory Birds Regulation, 2022

The objective of the Migratory Birds Regulations is the conservation of migratory birds, including their eggs and nests, in Canada. Implemented in 1918, the regulations were first developed to address the overharvesting and unregulated commerce of migratory birds. The regulation was last amended on August 18, 2024.

The nests of all migratory bird species are protected when they contain a live bird or a viable egg (so generally during the nesting period). The nests of 18 species (listed in Schedule 1 of the regulations, seven of which occur in Ontario), whose nests are reused by migratory birds, continue to have year-round nest protection for a prescribed length of time ranging from 24-36 months, unless they have been shown to be abandoned. To be considered abandoned:

- The Minister must be notified, via an online registration system (the Abandoned Nest Registry), that the nest does not contain a live bird or viable egg, and
- The nest is to remain unused by migratory birds during the designated wait time for that species

3.1.2 Provincial

3.1.2.1 Provincial Planning Statement, 2024

The PPS was issued under Section 3 of the Ontario *Planning Act, 1990*, R.S.O. 1990, c. P.13 and first came into effect on May 22, 1996. The PPS has been updated several times since 1993. The 2024 PPS came into effect on October 20, 2024. Decisions made by municipal planning authorities shall be consistent with the policy statements issued under the Planning Act, such as the PPS, which includes policies on development and land use patterns, resources and public health and safety.

Section 4.1 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 NHRM (MNR 2010) is a technical document used to help assess the natural environment to identify natural heritage or significant features and areas. The natural heritage policies outlined in Section 4.1 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
- Habitat of END and THR species

Each of the aforementioned features or defined areas are afforded varying levels of protection subject to municipal policies, guidelines, and in some cases, regulations. Habitat of END or THR species are regulated by the MECP if a species is identified on a property through site specific investigation or in some cases, through existing habitat information. Fish habitat is governed by DFO. The remaining features are generally governed by the municipality or other planning authority.

The Study Area falls within Ecoregion 6E. Section 4.1.4 of the PPS (2024), states that development and site alteration shall not be permitted in the following features in Ecoregion 6E:

- Significant wetlands
- Significant coastal wetlands

Section 4.1.5 of the PPS states that development and site alteration shall not be permitted in the following features, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions:

- Significant woodlands
- Significant valleylands
- Significant wildlife habitat
- Significant areas of natural and scientific interest
- Coastal wetlands that are not subject to policy 4.1.4.b)

Further, Sections 4.1.6 and 4.1.7 state that development and site alteration shall not be permitted in the following features, except in accordance with provincial and federal requirements:

- Habitat of END or THR species
- Fish habitat

The Study Area encompasses undeveloped lands which may support natural features and areas covered under Section 4.1 of the PPS. Given the above, the natural heritage policies outlined in the PPS require consideration in the CEISMP to move forward with development or site alteration activities in the PSA.

3.1.2.2 Greenbelt Plan (2017)

The Greenbelt Plan is issued under the Greenbelt Act, 2005, S.O. 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 Niagara Escarpment Protection Plan (NEP) and the Oak Ridges Moraine Conservation Plan (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.

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

- Schedule 1 (*Greenbelt Area*) identifies portions of lands on, and directly adjacent to, the PSA as within the Greenbelt Area. Within the Greenbelt Area, lands within the Study Area are mapped under the Protected Countryside designation.
- Schedule 4 (*Natural Heritage System*) identifies two subcategories of Protected Countryside: (1) Natural Heritage System and (2) Towns / Villages. Lands on and directly adjacent to the PSA are designated as Natural Heritage System within the Protected Countryside.

Greenbelt Protected Countryside

There are four types of geographic-specific policies that apply to specific lands within the Protected Countryside: Agricultural System, Natural System, Parkland, Open Space and Trails and Settlement Areas. As relevant to the PSA, Section 3.2 of the Greenbelt Plan outlines policies relevant to the Natural System.

Under Section 3.2.1, the NHS is made up of core areas and linkage areas of the Protected Countryside that include the highest concentration of the most sensitive and/or *significant* natural features and functions. Section 3.2.2 outlines policies for lands within the NHS.

Natural Heritage System of the Greenbelt Protected Countryside Policies

Under Policy 3.2.2.3:

- *New development or site alteration in the Natural Heritage System (as permitted by the policies of this Plan) shall demonstrate that:*
    - *a) There will be no negative impacts on key natural heritage features or key hydrologic features or their functions,*
    - *b) Connectivity along the system and between key natural heritage features and key hydrologic features located within 240 meters of each other will be maintained or, where possible, enhanced for the movement of native plants and animals across the landscape,*
    - *c) The removal of other natural features not identified as key natural heritage features and key hydrologic features should be avoided. Such features should be incorporated into the planning and design of the proposed use wherever possible,*

In accordance with Policy 3.2.5.3, lands outside of the Greenbelt NHS, “key natural heritage features are not subject to the policies of Section 3.2.5, but are to be defined pursuant to, and subject to the policies of, the PPS.”

Key Natural Heritage Features and Key Hydrologic Features Policies

Section **Error! Reference source not found.** outline features that are considered Key Natural Heritage Features (KNHF) and Key Hydrologic Features (KHF). Specifically, KNHFs include:

- 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
- Alvars

KHFs include:

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

As relevant to the Project, Policy 3.2.5.1 states:

> *Development or site alteration is not permitted in key hydrologic features and key natural heritage features within the Natural Heritage System, including any associated vegetation protection zone, with the exception of … c) Infrastructure, aggregate, recreational, shoreline and existing uses, as described by and subject to the policies of section 4.*

In accordance with the Greebelt Plan's definitions, *Infrastructure* includes stormwater management systems. Section 4 outlines the general policies for lands within the Protected Countryside designation. As relevant to the Project and natural heritage impacts, Section 4.2 speaks specifically to infrastructure.

Policy 4.2.2 a) states:

> *The location and construction of infrastructure and expansions, extensions, operations, and maintenance of infrastructure in the Protected Countryside are subject to the following:*
>
> *d) Planning, design and construction practices shall minimize, wherever possible, the amount of the Greenbelt, and particularly the Natural Heritage System and Water Resource System, traversed and/or occupied by such infrastructure,*

e) *New or expanding infrastructure shall avoid key natural heritage features, key hydrologic features or key hydrologic areas unless need has been demonstrated and it has been established that there is no reasonable alternative,*

f) *Where infrastructure does cross the Natural Heritage System or intrude into or result in the loss of a key natural heritage feature, key hydrologic feature or key hydrologic areas, including related landform features, planning, design and construction practices shall minimize negative impacts on and disturbance of the features or their related functions and, where reasonable, maintain or improve connectivity,*

Policy 4.2.3.3 states:

> *Stormwater management systems are prohibited in key natural heritage features, key hydrologic features, and their associated vegetation protection zones. The determination of appropriate vegetation protection zones shall be defined in accordance with sections 3.2.5.4 and 3.2.5.5 of this Plan, which consider the area and nature of the feature being protected and the nature of the proposed stormwater management system.*
>
> *Within those portions of the Protected Countryside that define the major river valleys that connect the Niagara Escarpment and Oak Ridges Moraine to Lake Ontario, naturalized stormwater management systems may be permitted within the vegetation protection zone of a significant valleyland, provided they are located a minimum of 30 metres from the river or stream, and they are located outside of the vegetation protection zone of any other key natural heritage feature or key hydrologic feature.*
>
> *Policy 4.2.3.5. The objectives of a stormwater management plan are to avoid, or if avoidance is not possible, minimize and mitigate stormwater volume, contaminant loads and impacts to receiving water courses in order to:*
>
> a) Maintain groundwater quality and flow and stream baseflow,
> b) Protect water quality,
> c) Minimize the disruption of pre-existing (natural) drainage patterns wherever possible,
> d) Prevent increases in stream channel erosion,
> e) Prevent any increase in flood risk, and
> f) Protect aquatic species and their habitat.

Two watercourse corridors (Tributary of the West Humber River and Kilamanagh Creek) are present within the Study Area. These features also support fish habitat. Permanent and intermittent streams associated with the West Humber River and the Kilamanagh Creek are also present on lands within and directly adjacent to the PSA. Suitable habitat for endangered and threatened species may be present within the Greenbelt NHS in the PSA. Given the above, the natural heritage policies outlined in the Greenbelt Plan concerning KNHF and KHF apply.

3.1.2.3 Endangered Species Act, 2007

The provincial ESA came into effect on June 30, 2008, and replaced the former 1971 Act. The ESA protects those species listed on the Species at Risk in Ontario List (O. Reg. 230/08) as EXT, END or THR on provincial, crown, or private lands. Sections 9 and 10 of the ESA prohibit the killing, harassment, capture or taking of living individuals of SAR or damaging or destroying their habitat. Therefore, where a proposed activity will impact protected species or habitat, changes to timing, location and methods of the proposed activity should be considered, wherever feasible, to avoid impacts to SAR. Where impacts cannot be avoided or mitigated, a permit process can be initiated.

SAR Bats, Bobolink, Eastern Meadowlark and Redside Dace habitat was observed in the PSA. Permitting under the ESA is required to move forward with the Project.

3.1.2.4 Conservation Authority Act, 1998

The Ontario Conservation Authorities Act, 1990 (CAA) (as amended on June 6, 2024) provides for “the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources” in Ontario. Conservation Authorities are established under the CAA and have jurisdiction over a designated watershed or watersheds. The TRCA is the responsible authority for the Study Area.

Ontario Regulation (O.Reg.) 41/24 of the CAA identifies prohibited activities, exemptions and permits for development activities within regulated areas which include hazardous lands (areas associated with flooding, erosion, dynamic beaches or unstable soil or bedrock), watercourses, and wetlands. Development activities are defined in the regulation, and include construction, site grading, and temporary and permanent stock piling of material. Wetlands, watercourses and valleylands are present on and/or adjacent to the PSA.

O.Reg 41/24 defines watercourses as: “a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs”.

TRCA visited the PSA on August 24, 2023. The purpose of the meeting was to review natural heritage features on and directly adjacent to the PSA and discuss any permitting requirements and potential natural heritage constraints to the proposed development/Preliminary Site Plan. It was also the purpose of the meeting to review the property and stake the limits of any wetland or valleyland features. Wetlands outside of those located within the existing NHS valleyland systems were observed or staked. The limits valleylands observed in the PSA were staked and surveyed on August 24, 2023. Agency correspondence is provided in Appendix F.

Where development activities are proposed within a TRCA Regulated Area, a permit pursuant to Section 28.1 of the CAA and O.Reg. 41/24 is required from the TRCA prior to any development activity taking place within a regulated area.

3.1.2.5 Fish and Wildlife Conservation Act, 1997

The provincial FWCA provides protection of wildlife in Ontario including fish, furbearing mammals, game wildlife and specially protected wildlife through regulations for hunting, trapping, and fishing practices. Game and specially protected mammals, birds, reptiles, amphibians, and invertebrates are listed on Schedules 1-11 of the FWCA. Definitions provided for hunting including capturing or harassing wildlife (Section 5) include activities that collect or handle wildlife for inventories or other scientific purposes, or to relocate wildlife out of harm's way (e.g., during construction activities), including individuals and eggs. Sections 7 and 8 also provide protection for nest and eggs of specified bird species including raptors, and dens of bears and furbearing animals, and beaver damns. Under the FWCA, the Minister has the authority to authorize activities that would otherwise be prohibited such as the safe capture of wildlife and removal of nests, dens, and dams, and impose conditions on an authorization.

3.1.3 Municipal

3.1.3.1 Region of Peel Official Plan (2024)

The OP for the Region of Peel provides direction on land use within the Region. On July 1, 2024, the Town became responsible for the interpretation and implementation of the Region of Peel Official Plan as it applies to Caledon.

The Region's OP was approved by the Ministry of Municipal Affairs and Housing on November 4, 2022. The Region of Peel Official Plan was approved by Regional Council on April 28, 2022. On December 6, 2023, the Minister of Municipal Affairs and Housing enacted Bill 150, the *Planning Statute Law Amendment Act, 2023*, and subsequently, on May 16, 2024, enacted Bill 162 the *Get It Done Act, 2024*. The 2024 Consolidation of the Region of Peel Official Plan reflects the amendments made to the November 4, 2022, Minister of Municipal Affairs and Housing modifications due to the forementioned Bills.

The following schedules were consulted to determine the applicable policy framework:

- Schedule A-1 (*Water Resource Systems and Areas*) identifies two watercourses including *Permanent and Intermittent Streams* intersecting the Study Area.
- Schedule A-3 (*Significant Groundwater Recharge Areas*) identifies Significant Groundwater Recharge Area east of the PSA, within the Study Area.
- Schedule B-5 (*Greenbelt Plan Area Land Use Designations*) identifies Natural Heritage System (NHS) under the Protected Countryside land use designation on and adjacent to the PSA, surrounding the Kilamanagh Creek and Tributary of the West Humber River valleylands.
- Schedule C-1 (*Greenlands Systems*) identifies Greenlands Systems Overlay intersecting the Study Area, coinciding with the Greenbelt Area mapped. Greenlands System includes all Provincial Natural Heritage designations such as Core Areas of Greenlands Systems, Natural Areas and Corridors, and Potential Areas and Corridors.

- Schedule C-2 (*Core Areas of the Greenlands System in Peel*) and Figure 7 (*Regional Greenlands System – Core Area, Natural Areas and Corridors and Potential Natural Areas and Corridors*) identifies (1) Areas Subject to Provincial Plans in the PSA and in the Study Area, (2) Core Areas of the Greenlands System surrounding a portion of the Greenbelt NHS in the PSA, and (3) Natural Areas and Corridors (NAC) surrounding the connecting creek / valleylands located outside of the Greenbelt NHS; associated with lands 12861 Dixie Road (north parcel).
- Schedule D-1 (*Rural System*) identifies Prime Agricultural Area within the Study Area, coinciding with the Greenbelt Area mapped.
- Schedule E-1 (*Regional Structure*) identifies the PSA and Study Area as generally within the Urban System and 20251 New Urban Area. Lands surrounding the NHS (valleylands) are mapped as Rural System.
- Schedule E-3 (*The Growth Plan Policy Areas in Peel*) identifies the PSA and Study Area as generally within the Regional Urban Boundary and Designated Greenfield Area. Lands surrounding the NHS (valleylands) are mapped outside of the Regional Urban Boundary.
- Schedule E-4 (*Employment Areas*) identifies the PSA and Study Area as generally within the Employment Area. Lands surrounding the NHS (valleylands) are not designated as Employment Area.

Chapter 2 of the Region's OP speaks to the Region's goals and policies with respect to the natural environment.

Water Resource Systems and Areas

As relevant to lands associated with the PSA, the Region's OP Policies state:

- *2.6.9 Require the use of low impact development and green infrastructure approaches, as appropriate, to mitigate and adapt to climate change impacts, mitigate the impacts of development on natural heritage features, support the efficient and sustainable use of water resources and to manage stormwater.*
- *2.6.11 Restrict development and site alteration to protect municipal drinking water supplies in accordance with the policies in this Plan, and to protect, improve or restore vulnerable surface and ground water, sensitive surface water features, sensitive ground water features, key hydrologic features and key hydrologic areas, and their functions.*
- *2.6.12 Require that development and site alteration that may have an immediate or cumulative impact on water resources be supported by appropriate hydrological and hydrogeological studies in accordance with provincial policy and the policies of this Plan. Study requirements, as appropriate, shall be confirmed when applications for development or site alteration are proposed within designated vulnerable areas or key hydrologic areas, or on lands within 120 metres of a sensitive surface water feature, sensitive ground water feature or key hydrologic feature.*
- *2.6.13 Exempt new or expansions to buildings or structures for agricultural uses, agriculture related uses or on-farm diversified uses from the requirement of a hydrological or hydrogeological study where the total impervious surface does not exceed 10 percent of the lot in key hydrologic*

areas or on lands within 120 metres of a Key hydrologic feature if a minimum 30 metre vegetation protection zone is provided from the key hydrologic feature.

- *2.6.14 Prohibit development and site alteration in key hydrologic features or any associated vegetation protection zone outside of settlement areas in accordance with any policies of this Plan and applicable provincial plan.*

Significant Groundwater Recharge Areas

As relevant to lands associated with the PSA, the Region's OP Policies state:

- *2.7.48 Direct the local municipalities to require development in significant groundwater recharge areas to implement low impact development and green infrastructure stormwater practices to maintain pre-development recharge rates to the greatest extent feasible in accordance with applicable provincial and municipal requirements.*
- *2.7.49 Encourage the local municipalities to consider requiring a salt management plan to reduce the future use of salt as a condition of development in significant groundwater recharge areas in accordance with the applicable source protection plan.*

Greenlands Systems

The Region defines the Core Areas of the Greenlands System as:

a) significant wetlands,

b) significant coastal wetlands,

c) woodlands meeting one or more of the criteria for Core Area woodland in Table 1,

d) Environmentally Sensitive or Significant Areas,

e) Provincial Life Science Areas of Natural and Scientific Interest,

f) Escarpment Natural Areas of the Niagara Escarpment Plan, and

g) Valley and stream corridors

Policy 2.14.15 (e) prohibits development and site alteration within the Core Areas of the Greenlands System in Peel, except for "minor development and minor site alteration". Policy 2.14.16 outlines exceptions to Policy 2.14.15, including (b) "any development and site alteration will not be permitted unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions and that:

i) 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 to the greatest extent possible,

ii) If avoidance of the Core Area is not possible, the impact to the Core Area feature is minimized,

iii) Any impact to the Core Area or its functions is mitigated through restoration or enhancement to the greatest extent possible, and

iv) Where ecosystem compensation is determined to be appropriate and feasible, including for essential infrastructure, it may be considered in accordance with local municipal or conservation authority ecosystem compensation guidelines, and

c) Within significant wetlands and significant coastal wetlands, the above exceptions may only be considered in accordance with federal and provincial legislation, regulations and policies (e.g. Conservation Authorities Act), and

d) *When developing policies to allow the exceptions, the local municipalities may consider appropriate implementation tools including existing approval requirements and tools of other agencies*.

The Region defines NAC of the Greenlands System as:

- *d) fish habitat;*
- *e) habitat of aquatic species at risk;*
- *f) habitat of endangered and threatened species defined in accordance with the Endangered Species Act;*
- *g) regionally significant life science Areas of Natural and Scientific Interest;*
- *h) provincially significant earth science Areas of Natural and Scientific Interest;*
- *i) Escarpment Protection Areas of the Niagara Escarpment Plan;*
- *j) the Lake Ontario shoreline and littoral zone and other natural lakes and their shorelines;*
- *k) any other valley and stream corridors that have not been defined as part of the Core Areas;*
- *l) sensitive headwater areas and sensitive ground water discharge areas; and*
- *m) any other natural features and functional areas interpreted as part of the Greenlands System Natural Areas and Corridors by the local municipalities, in consultation with the conservation authorities and the Ministry of Northern Development, Mines, Natural Resources and Forestry, including, as appropriate, elements of the Potential Natural Areas and Corridors.*

As relevant to lands associated with the PSA, the Region's OP Policies state:

- *2.14.20 Direct the local municipalities, in consultation with the conservation authorities, appropriate federal and provincial agencies and the Niagara Escarpment Commission, to include objectives and policies in their official plans for the interpretation, protection, restoration, enhancement, proper management and stewardship of the Natural Areas and Corridors and Potential Natural Areas and Corridors which conform to the intent of this Plan, consistent with provincial policy, the Growth Plan, the Niagara Escarpment Plan, the Oak Ridges Moraine Conservation Plan, the Greenbelt Plan, and local considerations, where applicable.*

3.1.3.2 Town of Caledon Official Plan (2024)

The OP for the Town of Caledon (Town) provides direction on land use within the Town. The Town of Caledon Official Plan – Consolidated in March 2024 is the most current version of the OP and was

reviewed as part of this assessment. The following schedules were consulted to determine the applicable policy framework:

- Schedule A (*Land Use Plan*) identifies Prime Agricultural Area, Greenbelt Planning Area and Environmental Policy Area on and directly adjacent to the PSA.
- Schedule O (*Wellhead Protection Areas*) identifies the PSA is not within mapped Wellhead Protection Areas. Surrounding areas are not designated Protections Areas.
- Schedule S (The *Greenbelt in Caledon*) identifies the PSA is within the Greenbelt Plan Natural Heritage System and Boundary of Greenbelt Plan Area.
- Figure 1 (*Growth Plan Policy Areas in Caledon*) identifies the PSA is within Agricultural and Rural Area. Surrounding growth plans include Designated Greenfield Area, Settlement with Undelineated Built-Up Area, and Delineated Built-Up Area.

Section 5 of the Town's OP outlines the Town's Land Use Policies. The following sections outlines policies relevant to the Project.

Policy 5.7.3.7 outline EIS&MP requirement to support proposed development projects:

- *Proposed new development adjacent to EPA will be required to complete an Environmental Impact Study and Management Plan (EIS&MP) to the satisfaction of the Town and other relevant agencies.*

In general, the CEISMP shall:

a) Identify existing ecosystem forms, functions and integrity within EPA, and further refine the limits of EPA, if appropriate, at a more detailed scale,

b) Identify and assess the existing and potential function and integrity of Supportive Natural Systems and Natural Linkages and existing and potential ecological linkages between EPA lands, adjacent lands, and broader ecological systems,

c) Assess the anticipated immediate and longer-term environmental impacts of the proposal and to identify all mitigation measures necessary to satisfy the Town's environmental policies and performance measures,

d) Demonstrate how the proposed development satisfies the environmental policies and performance measures contained in this Plan,

e) Recommend site-specific protection, enhancement, restoration, and management programs necessary to satisfy the Town's environmental policies and performance measures, and to recommend appropriate mechanisms for implementing such programs; and,

f) To provide base line environmental data which will support environmental monitoring programs.

3.2 Designated Natural Features

The results of the policy review and background review as outlined in Sections 2.2.1 to 2.2.3 have identified portions of the Greenbelt Protected Countryside Natural Heritage System and Regional Greenlands System in the PSA. A hydrogeological assessment and congruent functional servicing and

storm water management report have been prepared by others under separate cover to address groundwater discharge and infiltration and potential impacts to KHFs associated with the PSA.

3.3 Local Site Context – Biophysical Environment

The Study Area encompasses approximately 180 ha located within the Peel Plain physiographic region. This region is characterized as an area of dense clay soils that were deposited when glacial meltwater ponded on top of the low permeability Halton Till plain (underlain by shale and some limestone). This area exhibits almost-flat topography (Chapman and Putman 1984). Historically, parts of the Peel Plain were poorly drained, and other parts were well-drained. Well-drained areas had high-quality hardwood forests (e.g., Sugar Maple, American Beech, White Oak, Hickories, American Basswood, and some White Pine. Poorly drained areas had forests of American Elm, White Ash and White Cedar as well as wetlands (Chapman and Putman 1984; TRCA 2002). Today, this physiographic region has been greatly altered by development and watercourse alteration (re-alignment and engineering).

The Study Area is located within the Humber River watershed. The drainage area of the Humber River Watershed is approximately 91,100 ha whereby the Humber River includes 1,800 km of waterway. The main branch of the river flows 126 km from its source on the Niagara Escarpment to Lake Ontario. The East Humber is 63 km and originates in the kettle lakes region of Richmond Hill and King Township. The West Humber begins in Caledon, in the rolling hills of the South Slope, and flows 45 kilometres over the Peel Plain in Brampton before joining the Main Humber in Toronto (TRCA 2023). The Lower Humber River is located south of the three aforementioned branches and carries water off the Peel Plain through the Iroquois Sand Plain to Lake Ontario. This subwatershed is entirely developed, with several large pockets of older industrial lands.

The Study Area encompasses watercourses associated within the West Humber subwatershed which is 20,362 ha in size and makes up approximately 22.6% of the Humber River watershed. There is a drainage split in the PSA with the majority of the PSA (29.56 ha) draining south towards Kilamanagh Creek and the remainder (12.69 ha) draining north towards the Tributary of West Humber River (Stantec 2024a). Based on a review of the available information for the PSA, including record drawings and the existing servicing drawings, there are no stormwater management controls in place. Based on record drawings from 1997 (Appendix A), a tile drainage system is located throughout the agricultural fields and designed to follow the existing surface drainage pattern of the Site, with the tile drains installed approximately 0.6m below existing ground. Based on the record drawings of the tile drainage system, there are 5 tile drainage outlets to the Tributary of West Humber River and 2 tile drainage outlets to Kilamanagh Creek (Stantec 2024a). With the tile drainage system designed to mimic the existing surface drainage pattern, all runoff (both the piped and overland) flows ultimately discharge to either the Tributary of West Humber River or Kilamanagh Creek.

Outside of the valleyland features, which surround the existing watercourses (see Figure A-3 to Figure A-4 for details), the majority of the PSA are relatively flat which is anticipated to be resultant form active agricultural operations and associated tilling practices. To address slope stability associated with the valleyland features present in the PSA, a scoped Long Term Stable Slope analysis has been prepared by Stantec under separate cover.

The February 2025 Hydrogeological Report prepared by Stantec Consulting indicates that the existing seasonal high groundwater elevations on PSA range between 252 m and 265.35 m. The groundwater elevations follow the general topography of the PSA, with the higher groundwater elevation occurring near the drainage split bisecting the Site and sloping towards the Tributary of West Humber River and Kilamanagh Creek. The existing tile drainage system may impact the groundwater recharge and infiltration occurring on the PSA. As per the Hydrogeological Report the infiltration rate for the PSA is estimated to be 17 mm/hr or less (Stantec 2025b).

3.4 Aquatic Resources

Fish and fish habitat conditions are described in Section 3.4.1. Conditions in the headwater drainage features is described in Section 3.4.2.

3.4.1 Fish Habitat and Fish Communities

The Study Area includes two mapped watercourses and their tributaries. The conditions in the Tributary of the West Humber River are described in Section 3.4.1.1. The conditions in the Kilamanagh Creek are described in Section 3.4.1.2. A photographic record of conditions in the watercourses is included in Appendix G, Photo Log G-1.

3.4.1.1 Tributary of the West Humber River

A tributary of the West Humber River traverses the Study Area. The main branch of this tributary is a permanent, warmwater feature (MNRF 2023a; MNRF 2023b). The main branch of the tributary of the West Humber River is located within a defined valley. Vegetation communities include forest, scrubland, wetland, and cultural meadow. The channel has a diverse morphology. No apparent barriers to fish passage were observed. On April 14, 2023, White Sucker (*Catostomus commersonii*) were observed. Photos 1 to 12 (Appendix G, Photo Log G-1) show the conditions in this tributary observed during the field investigations.

3.4.1.2 Kilamanagh Creek

Kilamanagh Creek traverses through the southern portion of the Site (MNRF 2023b). Kilamanagh Creek is a permanent, cold-water feature (MNRF 2023a; MNRF 2023b). A constructed pond is also present on the north side of Kilamanagh Creek.

On April 14, 2023, Kilamanagh Creek exhibited primarily run morphology, with small sections of riffles and pools. Wetted widths ranged from 2.0 m (run) to 3.0 m (pool), and average depth ranged from 0.1 m (riffle) to 0.4 m (pool). Substrates were primarily cobbles, with small amounts of silt, boulders, gravel, and clay. Banks were described as primarily vulnerable to erosion, with some sections of active erosion. Fish cover was abundant and provided by cobbles, undercut banks, boulders, and woody debris. Riparian vegetation consisted of grasses, with some mixed trees and shrubs.

Photos 13 to 18 (Appendix G) show the conditions in Kilamanagh Creek in April 2023. A trail crosses the creek approximately 70 m east of Dixie Road over a culvert. This steel pipe culvert is approximately 1 m in diameter and 2 m long (Photo 18 in Appendix G). A pond with a surface area of approximately 1600 m^2 is located in the valley in close proximity to the Creek.

Watercourse layers prepared by LIO shows on small watercourses that connect to Kilamanagh Creek. These watercourses are discussed as HDF in Section 5.3.

3.4.1.3 Fish Community

The two main watercourses in the Study Area support diverse fish communities (MNRF 2023a; MNRF 2023b). Fish species recorded in the Study Area are listed in Table D-1 included in Appendix D. The two watercourses in the Study Area are documented as separate aquatic resource areas but have the same 30 fish species listed.

NHIC Subnational Ranking

Most (21) fishes recorded in the Study Area have a subnational rank S5 which indicates they are considered 'Secure' or 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.

Some (8) fishes recorded in the Study Area have a subnational rank S4 which indicates they are considered 'Apparently Secure' or 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 due to local recent declines, threats, or other factors.

One (1) fish recorded in the Study Area, Redside Dace, has a subnational rank S1 which indicates it is considered Critically Imperiled or at very high risk of extirpation in the jurisdiction due to a very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors. Redside Dace is discussed further in Section 3.4.1.4 Aquatic Species at Risk.

Thermal Preference

Most (21) fishes recorded in the Study Area have a warm water thermal preference. Some (8) fishes recorded in the Study Area have a cool water thermal preference. One (1) fish, the Slimy Sculpin (*Cottus cognatus*), has a coldwater preference.

3.4.1.4 Aquatic Species at Risk

The tributary of the West Humber River or its branches within the Study Area are not mapped critical habitat or (potential) presence of aquatic species at risk by DFO (2023). However, Redside Dace (*Clinostomus elongatus*) are present (or potentially present) less than one kilometre (km) downstream of the Study Area (DFO 2023). Correspondence with MECP (2023) (Appendix B) confirms that the tributary of the West Humber River and its branches within the Study Area are regulated under the ESA as contributing habitat for Redside Dace.

Redside Dace are present, or potentially present, in Kilamanagh Creek according to the DFO SAR map (DFO 2025). Kilamanagh Creek is not mapped as critical habitat (DFO 2025). Correspondence with MECP (2023 & 2025) (Appendix B) confirms that the Kilamanagh Creek within the Study Area is considered Occupied habitat for Redside Dace. The NHIC database also has records of Redside Dace within the grid squares that include the Study Area. Redside Dace are listed as endangered federally by COSEWIC and provincially by COSSARO.

Redside Dace are protected under the Federal Fisheries and Species at Risk Acts. Redside Dace are also protected by the Provincial ESA which was amended through Bill 5 in June 2025. Bill 5 also enacts the *Species Conservation Act, 2025* (SCA). The changes to ESA and the SCA will come into force at a later date to be determined by the Province.

Redside Dace have a small and declining range in Ontario that is severely fragmented (COSSARO 2020). The population appears to have declined by over 50% in the last decade based on a reduction in its range and the number of sites where it has been found, including likely extirpation in the Don River and Grand River watersheds (COSSARO 2020).

There are no other records of other federally or provincially regulated aquatic SAR in the Study Area (DFO 2023a; MNRF 2023b).

3.4.2 Headwater Drainage Features

Following review of the available desktop sources potential HDF were identified for further study in the field. Field studies were completed to confirm the presence of the HDF identified during the desktop study and to identify other HDF if present. Conditions in the HDF were documented in the spring and summer of 2023. No additional HDF were identified during the field studies.

The following subsections describe the conditions in each HDF in the Study Area following the characterizing components of the HDF Guidelines which are:

- Hydrology
- Riparian vegetation
- Fish and fish habitat
- Terrestrial habitat

A classification was assigned to each as per the HDF Guidelines. Figure A-4 shows the HDF identified on the Site with the assigned classification. A photographic log showing the conditions in the HDF is included in Appendix G, Photo Log G-2.

3.4.2.1 Hydrology

Hydrology condition and modifiers observed are summarized in the table below as well as the classification assigned to each reach for the Hydrology component.

Table 3-1 HDF Hydrologic Conditions, Modifiers, and Classification

Reach Name	Feature Type/ Modifiers	Hydrologic Condition April 14, 2023,	Hydrologic Condition May 24, 2023	Hydrologic Condition August 2 2023	Classification
WHR-H1	Defined Natural Channel	Trickle Flow	Trickle Flow	Trickle Flow	Important
WHR-H2A	Defined Natural Channel	Trickle Flow	Trickle Flow	Dry	Valued
WHR-H2B	No visible channel; Tiled Drainage	Dry	Dry	Dry	Limited
WHR-H3A	Defined Natural Channel	Standing water	Standing water	Standing water	Important
WHR-H3B	Defined Natural Channel	Pools of standing water	Pools of standing water	Pools of standing water	Important
WHR-H3C	Swale without defined banks	Trickle Flow	Trickle Flow	Trickle Flow	Important
WHR-H3D	Defined Natural Channel (cattle pasture)	Trickle Flow	Pools of standing water	Pools of standing water	Valued or Contributing
WHR-H3E	Swale without defined banks	No flow observed, damp Soil	Damp Soil	Damp Soil	Limited
WHR-H3F	No visible channel; Tiled Drainage	Surface water documented using hydrogeology instrumentation	Surface water documented using hydrogeology instrumentation	Dry	Valued or Contributing
WHR-H4	Defined Natural Channel	Trickle Flow	Trickle Flow	Trickle Flow	Important
WHR-H5	Defined Natural Channel	Trickle Flow	Trickle Flow	Trickle Flow	Important
WHR-H6A	Swale without defined banks	Trickle Flow	Trickle Flow	Trickle Flow	Important
WHR-H6B	Channelized	Trickle Flow	Trickle Flow	Trickle Flow	Important
KCR-H1	Defined Natural Channel	Pools of standing water	Pools of standing water	Pools of standing water	Valued or Contributing

3.4.2.2 Riparian Vegetation

Riparian vegetation observed at each reach are summarized in the table below as well as the classification assigned to each reach for the Riparian Vegetation component.

Table 3-2 HDF Riparian Vegetation and Classification

Reach Name	Riparian Vegetation 0-1.5m	Riparian Vegetation 1.5-10m	Riparian Vegetation 10-30m	Classification
WHR-H1	Forest	Forest	Forest	Important
WHR-H2A	Forest	Forest	Forest	Important
WHR-H2B	Cropped	Cropped	Cropped	Limited
WHR-H3A	Scrubland	Scrubland	Scrubland	Important
WHR-H3B	Cultural Meadow	Cultural Meadow	Cultural Meadow	Valued
WHR-H3C	Cultural Meadow	Cultural Meadow	Cultural Meadow	Valued
WHR-H3D	Cultural Meadow	Cultural Meadow	Cultural Meadow	Valued
WHR-H3E	Cultural Meadow	Cultural Meadow	Cultural Meadow	Valued
WHR-H3F	Cropped	Cropped	Cropped	Limited
WHR-H4	Scrubland	Scrubland	Scrubland	Important
WHR-H5	Cultural Meadow	Cultural Meadow	Cultural Meadow	Valued
WHR-H6A	Mixed Forest	Mixed Forest	Cultural Meadow	Valued
WHR-H6B	Cultural Meadow	Cultural Meadow	Cultural Meadow	Valued
KCR-H1	Cultural Meadow	Cultural Meadow	Cultural Meadow	Valued

3.4.2.3 Fish and Fish Habitat

Fish and fish habitat condition observed at each reach are summarized in the table below as well as the classification assigned to each reach for the fish and fish habitat component.

Table 3-3 HDF Fish and Fish Habitat Condition and Classification

Reach Name	Fish and Fish Habitat Condition	Classification
WHR-H1	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H2A	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H2B	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H3A	Fish may be present in the spring; allochthonous transport through feature to contributing habitat for Redside Dace	Important
WHR-H3B	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H3C	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H3D	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H3E	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H3F	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued

Reach Name	Fish and Fish Habitat Condition	Classification
WHR-H4	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H5	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H6A	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
WHR-H6B	Allochthonous transport through feature to contributing habitat for Redside Dace	Valued
KCR-H1	Allochthonous transport through feature to occupied habitat for Redside Dace	Valued

3.4.2.4 Terrestrial Habitat

Terrestrial habitat conditions observed at each reach are summarized in the table below as well as the classification assigned to each reach for the Terrestrial Habitat component.

Table 3-4 HDF Terrestrial Habitat Condition and Classification

Reach Name	Terrestrial Habitat	Classification
WHR-H1	No terrestrial habitat present	Limited
WHR-H2A	No terrestrial habitat present	Limited
WHR-H2B	No terrestrial habitat present	Limited
WHR-H3A	No terrestrial habitat present	Limited
WHR-H3B	No terrestrial habitat present	Limited
WHR-H3C	No terrestrial habitat present	Limited
WHR-H3D	No terrestrial habitat present	Limited
WHR-H3E	No terrestrial habitat present	Limited
WHR-H3F	No terrestrial habitat present	Limited
WHR-H4	No terrestrial habitat present	Limited
WHR-H5	No terrestrial habitat present	Limited
WHR-H6	No terrestrial habitat present	Limited
KCR-H1	No terrestrial habitat present	Limited

3.4.2.5 Summary and Recommendations

Using the classifications applied above to each criterion and the flowchart on page 21 in the HDF Guidelines, the HDF features were all linked with management options that are determined by running through the components in a decision flowchart. Table 3-5 below summarizes the classifications and the management of each HDF. We also classified each reach as a either watercourse or not using the new definition of watercourse under O.Reg. 41/24 which defines watercourses as: “a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs”.

Table 3-5 HDF Summary of Classifications and Management Recommendations

Reach Name	Step 1 Hydrology (Modifiers)	Step 2 Riparian	Step 3 Fish Habitat	Step 4 Terrestrial Habitat	Recommended Management	Watercourse as per O. Reg 41/24
WHR-H1	Important (tile outlet into valley)	Important	Valued	Limited	Protection	Yes
WHR-H2A	Valued or Contributing (tile outlet into valley)	Important	Valued	Limited	Protection	Yes
WHR-H2B	Limited (tiled)	Limited	Valued	Limited	Conservation	No
WHR-H3A	Important (none)	Important	Important	Limited	Protection	Yes
WHR-H3B	Important (none)	Valued	Valued	Limited	Protection	Yes
WHR-H3C	Important (none)	Valued	Valued	Limited	Protection	No
WHR-H3D	Valued or Contributing (active cattle pasture)	Valued	Valued	Limited	Conservation	Yes
WHR-H3E	Limited (channelized, active cattle pasture)	Valued	Valued	Limited	Conservation	No
WHR-H3F	Valued or Contributing (tiled)	Limited	Valued	Limited	Conservation	No
WHR-H4	Important (tile outlet into valley lands)	Important	Valued	Limited	Protection	Yes
WHR-H5	Important (tile outlet into valley lands)	Valued	Valued	Limited	Protection	Yes
WHR-H6A	Important (swale and *culvert*)	Valued	Valued	Limited	Protection	No
WHR-H6B	Important (cattle pasture)	Valued	Valued	Limited	Protection	Yes
KCR-H1	Valued or Contributing (cattle pad drainage)	Valued	Valued	Limited	Conservation	Yes

The HDF Guidelines include recommended actions for each management option.

The recommended action for features classified as ‘Protected’ are as follows (TRCA & CVC 2014):

- Protect and/or enhance the existing feature and its riparian zone corridor, and groundwater discharge or wetland in-situ
- Maintain hydroperiod
- Incorporate shallow groundwater and base flow protection techniques such as infiltration treatment
- Use natural channel design techniques or wetland design to restore and enhance existing habitat features, if necessary; realignment not generally permitted

- Design and locate the stormwater management system (e.g., extended detention outfalls) are to be designed and located to avoid impacts (i.e., sediment, temperature) to the feature

The recommended action for features classified as 'Conservation' are as follows (TRCA & CVC 2014):

- Maintain, relocate, and/or enhance drainage feature and its riparian zone corridor
- If catchment drainage has been previously removed or will be removed due to diversion of stormwater flows, restore lost functions through enhanced lot level controls (i.e. restore original catchment using clean roof drainage), as feasible
- Maintain or replace on-site flows using mitigation measures and/or wetland creation, if necessary
- Maintain or replace external flows
- Use natural channel design techniques to maintain or enhance overall productivity of the reach
- Drainage feature must connect to downstream.

3.5 Terrestrial Resources

3.5.1 Ecological Land Classification

The Study Area encompasses approximately 180 ha of land. Forest, wetland, and meadow habitat was identified in the Study Area. Vegetation communities observed in the Study Area are described in Table 3-6 and mapped on Figure A-4, Appendix A. No rare vegetation community types were observed. All vegetation communities documented are common and widespread in southern Ontario.

Table 3-6 Vegetation Communities Recorded for Study Area

Type	ELC Code	Community Name	Description/Notes	Area (ha) in Study Area
Terrestrial	**Forest Communities**			
	FOD (includes inclusion communities)	Deciduous Forest	The FOD ELC code is a high-level classification used to assign a generic vegetation community description for forest communities located on Adjacent Lands where property access was not granted. The FOD forest communities are comprised of a canopy of deciduous tree cover of greater than 60%. Tree species composition is variable between the individual FOD communities but were observed where accessible to include the following species: Manitoba Maple, Sugar Maple, White Elm, Trembling Aspen, Common Buckthorn, American Basswood, Common Apple, and Red Ash.	3.292
	FODM6-4	Fresh – Moist Sugar Maple – White Elm Deciduous Forest	Located in the NHS at the northeast end of the Study Area along the southern border of the NHS. This community's canopy was dominated by Sugar Maple and White Elm intermixed with Common Buckthorn, Common Apple, Little-leaved Linden, American Basswood, and occasional scattered Red Ash, Red Maple and Crack Willow. The sub-canopy and understory species included honeysuckles, Red Raspberry, Riverbank Grape and Thicket Creeper.	0.620
	FODM5-1	Dry - Fresh Sugar Maple Deciduous Forest	Located in the NHS at the north end of the Study Area, this community's canopy was dominated by Sugar Maple with associates of White Elm, Red Ash, American Basswood, Northern Red Oak, American Beech, Black Cherry, and Eastern Hop-hornbeam. The sub-canopy and understory were established with Common Buckthorn, Chokecherry, Red Raspberry, Riverbank Grape and Thicket Creeper, White Trillium, Trout-Lily, Early Meadow-rue, Red Baneberry, Zigzag Goldenrod, Small Enchanter's Nightshade, Poison Ivy, Thicket Creeper, Wild Strawberry, and nettles.	4.207
	FODM4-5	Dry - Fresh Manitoba Maple Deciduous Forest	Located in the NHS in the central portion of the Study Area, this community's canopy was dominated by Manitoba Maple, followed by American Basswood and Common Buckthorn. English Hawthorn, apple species, and occasional meadowsweet were also observed in this unit.	0.655
	FODM4-9 (inclusion community)	Dry - Fresh Basswood Deciduous Forest	Located in the NHS in the central portion of the Study Area, this community's canopy was dominated by American Basswood with associates of Manitoba Maple and Common Buckthorn, hawthorn and apple species.	0.042

Type	ELC Code	Community Name	Description/Notes	Area (ha) in Study Area
	FODM7-7	Fresh - Moist Manitoba Maple Lowland Deciduous Forest	There are two FODM7-7 units on the Subject Lands. The larger community is located at the southwest end of the NHS in the central portion of the Study Area. Trees present in this community are comprised of species that are tolerant of wetter soil conditions including Manitoba Maple, Trembling Aspen, White Birch, Black Walnut and American Basswood. An FODM7-7 inclusion community is also present at the southwest end of the study area surrounding the pond. This inclusion community is dominated almost exclusively by Manitoba Maple and Common Buckthorn.	0.944
	FODM7-4	Fresh - Moist Black Walnut Lowland Deciduous Forest	The FODM7-4 forest community is located at the northwest end of the NHS in the central portion of the Study Area. Trees present in this community include species that are tolerant of wetter soil conditions including Black Walnut, American Basswood, Red Ash, Common Buckthorn, and occasional Manitoba Maple, and Crack Willow.	0.569
	FOM-a	Sugar Maple - Balsam Fir Mixed Forest	The FOM-a community is located at the northwest end of the Study Area just south of the residence at municipal address 12861 Dixie Road. The canopy is dominated by Sugar Maple and Balsam Fir, with associates of Norway Maple, Common Buckthorn, Eastern White Cedar, Horse Chestnut, and Red Maple. The subcanopy and groundcover was dominated by Thicket Creeper, Garlic Mustard and Yellow Avens.	0.638
	FOCM1 (inclusion community)	Dry - Fresh Pine Coniferous Forest	The FOCM1 community is located at the northeast end of the Study Area, south of the golf course. This community is dominated by Eastern White Pine with associates of Common Buckthorn, Tatarian Honeysuckle, Siberian Crabapple, and occasional Black Cherry and Black Walnut.	0.248
	Woodland Communities			
	CUW (inclusion communities)	Cultural Woodlands	The CUW1 woodland communities are comprised of a canopy of tree cover of 35% to ≤60%. These communities occur throughout the Study Area and encompassed inclusions that form part of the transition zone from meadow habitat to forest habitat. Dominant species observed in the CUW communities in the Study Area included Staghorn Sumac, Common Buckthorn, Manitoba Maple, dead Red or White Ash, Tatarian Honeysuckle and Common Apple.	0.195
	Thicket Communities			

Type	ELC Code	Community Name	Description/Notes	Area (ha) in Study Area
	THDM2	Dry - Fresh Deciduous Shrub Thicket	The THDM2 communities occur predominantly in the NHS located in the central portion of the Study Area. Dominant species observed in the THDM2 communities in the Study Area included Common Buckthorn, hawthorns, honeysuckles, red Raspberry, Siberian Crabapple and meadowsweet species. Occasional Manitoba Maple, dead ash and Common Apple were also observed in these units.	0.792
	Meadow Communities			
	MEG	Graminoid Meadow	The MEG community is present at the southwest end of the NHS located in the central portion of the Study Area. This unit was dominated by grass species including Creeping Bentgrass, Reed Canarygrass and Smooth Brome. Some forb-dominated meadow patches (inclusions) were also observed in this unit and were dominated by various members of the asteraceae family (asters and goldenrods) with scattered Common Teasel and Common Milkweed.	0.519
	MEMM3	Dry - Fresh Mixed Meadow	Dominant species observed in the terrestrial mixed meadow communities in the Study Area included Kentucky Bluegrass, Creeping Bentgrass, Reed Canarygrass, Smooth Brome, Orchard Grass, Canada Thistle, Bull Thistle, Smooth Bedstraw, Wild Carrot, Common Plantain, White Clover, Annual Fleabane, Oxeye Daisy and various members of the asteraceae family (asters and goldenrods).	6.277
	MEMM4	Fresh - Moist Mixed Meadow	Dominant species observed in this terrestrial mixed meadow community in the Study Area included Creeping Bentgrass, Tall Goldenrod, New England Aster, Panicled Aster, Kentucky Bluegrass, Reed Canarygrass and Canada Thistle	5.581
	Agricultural			
	OAGM1	Annual Row Crop	The agricultural fields were established with Soybean or Corn.	100.64
	OAGM4	Open Pasture	The OAGM4 was enclosed in by an electric fence. The graminoide-forb mixed meadow in this unit was similar to the MEMM3 community described above but had been heavily grazed by cattle.	7.197
	Anthropogenic			

Type	ELC Code	Community Name	Description/Notes	Area (ha) in Study Area
	CVI_1	Transportation	The "C - " level codes refer to contructured landscapes. These units are dominated by anthropogenically altered lands. CVI_1 represents lands that have been developed for transportation (road infrastructure).	4.734
	CGL_1	Golf Course	The "C - " level codes refer to contructured landscapes. These units are dominated by anthropogenically altered lands. CGL_1 represents lands associated with the Banty's Roost Golf club and include manicured greens, sand swales, constructred ponds and altered watercourses and ornamental landscaping features.	10.779
	CVR_1	Low Density Residential	The "C - " level codes refer to contructured landscapes. These units are dominated by anthropogenically altered lands. CVR_1 represents lands associated with single family dwellings and associated access roads and outbuildings. Undeveloped lands include manicured lawn and landscaping features.	10.495
	CVR_4	Rural Property	The "C - " level codes refer to contructured landscapes. These units are dominated by anthropogenically altered lands. CVR_4 represents lands associated with rural residences and associated access roads, barns and outbuildings. Undeveloped lands include manicured lawn and landscaping features. Natural vegetation occurs on some of the properties (trees and mixed meadows).	9.758
	CVC_2	Light Industry	The "C - " level codes refer to contructured landscapes. These units are dominated by anthropogenically altered lands. CVC_2 represents lands associated with light industrial properties and associated access roads and buildings. Undeveloped lands include manicured lawn, landscaping features and several naturally occurring trees.	1.041
	CVC	Commercial and Institutional	The "C - " level codes refer to contructured landscapes. These units are dominated by anthropogenically altered lands. The CVC unit in the Study is established with the Mayfield United Church building and associated access road and parking area. Undeveloped lands include manicured lawn, landscaping features and several naturally occurring trees.	0.452
Wetland	**Swamp Communities**			
	SWDM4-2 (inlcsion community)	White Elm Mineral Deciduous Swamp	The SWDM4-2 swamp community is located on the south side of the NHS at the north end. This community was dominated by White Elm, with White	0.144

Type	ELC Code	Community Name	Description/Notes	Area (ha) in Study Area
			Willow, Crack Willow with associates of Red Maple, Bitternut Hickory and Red Ash.	
	SWDM4-1	Willow Mineral Deciduous Swamp	The SWDM4-1 communities are located along the Tributary of the West Humber River in the central portion of the main NHS that transects the Subject Lands. Dominant species in these units include White Willow, Crack Willow, and a hybrid willow (Salix x penduline) intermixed with various other terrestrial or co-dominant species such as meadowsweet species, Red Maple, Manitoba Maple, Red Ash, Trembling Aspen, Common Buckthorn and American Basswood.	2.057
	SWT (inclusion communities)	Thicket Swamp	There are several SWT communities located along the Tributary of the West Humber River in the central portion of the main NHS that transects the Subject Lands. Dominant shrub species observed include dogwoods, meadowsweets, honeysuckles and Common Buckthorn. The SWT groundcover is dominated by Creeping Bentgrass, Reed Canarygrass, Common Reed and occasional inclusion of Broad-leaved Cattail.	0.259
	Marsh Communities			
	MAMM1-3	Reed-canary Grass Graminoid Mineral Meadow Marsh	Several MAMM1-3 communities were observed throughout the Study Area. These communities were observed adjacent to watercourses or HDFs. These communities were dominated by Reed Canarygrass with associates of Broad-leaved Cattail, Common Reed, Spotted Joe Pye Weed, Wild Cucumber and various members of the asteraceae family (asters and goldenrods).	4.246
	MAM (inclusion community)	Meadow Marsh	The MAM ELC code is a high-level classification used to assign a generic vegetation community description for meadow marsh communities located on Adjacent Lands where property access was not granted. This community was assigned based on air photo interpretation including review of watercourse secondary and primary source data.	0.157
	MAMM3-1	Mixed Mineral Meadow Marsh	The MAMM3-1 unit was observed to be dominated by Reed Canarygrass, Creeping Bentgrass, Broad-leaved Cattail, Common Reed, Spotted Joe Pye Weed, Common Fleabane, Tall Goldenrod and various members of the asteraceae family (asters and goldenrods).	2.773
	MAMM2-a (inclusion community)	Smartweed Mineral Meadow Marsh	The MAMM2-a community was dominated by smartweeds, predominantly Nodding Smartweed. Species diversity in the meadowmarsh was limited.	0.074

Type	ELC Code	Community Name	Description/Notes	Area (ha) in Study Area
	Aquatic Communities			
	OAO	Open Aquatic	The OAO communities were open aquatic. Very few aquatic macrophytes were observed in these communities outside of patches of Small Duckweed and occasional water plantain.	1.391

3.5.2 Flora

The following is a floristic summary for the PSA based on botanical assessments carried out in 2023. A detailed list with all scientific plant names and species statuses is provided in Appendix C.

- A total of 164 species of vascular plants were recorded. This total includes taxa identified to species, subspecies (ssp.) and variation (var.) levels.
- 71 of the 164 species recorded are native to Ontario.
- 57 native species have a provincial rank of S5, indicating they are common with a secure population in Ontario.
- 11 native species have a provincial rank of S4 and 1 native species with a provincial rank of S4S5, indicating they are uncommon to common, but not rare in the province and populations are apparently secure.
- One provincially rare plant species, the Honey Locust (S2?), was observed in the PSA. This species is commonly planted for ornamental landscaping. Natural populations of this species are not known to occur in the Region (University of Guelph 2023). Given its location and surrounding habitat features, this individual is not anticipated to be naturally occurring.
- Frosted Hawthorn, White Spruce, and Balsam Fir are of regional conservation concern whereby they are flagged as being of risk within TRCA jurisdiction over the long term (TRCA, 2017). With the exception of Balsam Fir, these species were observed in the Greenbelt NHS. No other regionally rare species (L1-L3) species were observed in the PSA.
- No SAR plant species were observed in the PSA.

3.5.3 Herpetofauna

A total of 21 herpetofauna species were recorded within or near the Study Area based on the results of the background review (Section 2.2) and Stantec's field program (Section 2.3). Species recorded and associated conservation status are provided in Appendix D, Table D-2. All species are native to Ontario. One SAR and five SOCC species were recorded for the area. These species were included in the SAR and SOCC Habitat Screening Assessments, see Appendix E and Section 3.6.1 for details.

Six amphibian species were recorded during Stantec's 2024 amphibian call surveys. No SAR or SOCC species were detected during the 2024 field program. Fourteen amphibian call count stations were established for the Subject Properties (AMP01 to AMP14) as shown on Figure A-4, Appendix A. Results of the survey are summarized below in Table 3-7.

Table 3-7 Amphibian Species and Call Level Identified during 2024 Amphibian Call Survey

Station	Date	Species and Call Level						Notes
		AMTO	GRTR	GRFR	MIFR	NLFR	WOFR	
AMP01	April 29, 2024	1	0	0	0	0	0	-
	May 22, 2024	0	2	1	0	0	0	-
	May 24, 2024	0	0	1	0	0	0	-
	June 6, 2024	0	0	1	0	0	0	-
AMP02	April 29, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	0	0	1	0	1	0	-
	June 6, 2024	0	0	0	0	1	0	-
AMP03	April 29, 2024	1	0	0	0	0	0	-
	May 24, 2024	0	0	0	0	1	0	-
	June 6, 2024	0	0	0	0	0	0	No calls
AMP04	April 29, 2024	1	0	0	0	0	0	-
	May 22, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	0	1	0	0	0	0	-
	June 6, 2024	0	0	0	0	0	0	No calls
AMP05	April 29, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	0	0	0	0	0	1	-
	June 6, 2024	0	0	0	0	0	0	No calls
AMP06	April 29, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	2	0	0	0	0	0	-
	June 6, 2024	0	0	0	0	0	0	No calls
AMP07	April 29, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	2	0	0	0	0	0	-
	June 6, 2024	0	0	0	0	0	0	No calls
AMP08	April 29, 2024	1	0	0	0	0	0	-
	May 22, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	0	0	1	0	0	0	-
	June 6, 2024	0	0	1-2	0	0	0	-
AMP09	April 29, 2024	1	0	0	0	0	0	-
	May 22, 2024	1	1	0	0	0	0	-
	May 24, 2024	0	0	1	0	0	0	-

Station	Date	Species and Call Level						Notes
		AMTO	GRTR	GRFR	MIFR	NLFR	WOFR	
	June 6, 2024	0	0	1	0	0	0	-
AMP10	April 29, 2024	1	0	0	0	0	0	-
	May 22, 2024	0	1	0	0	0	0	-
	May 24, 2024	2	0	0	0	0	0	-
	June 6, 2024	0	0	1	1	0	0	-
AMP11	April 29, 2024	1	0	0	0	0	0	-
	May 24, 2024	1	0	0	0	0	0	-
	June 6, 2024	0	0	0	0	0	0	No calls
AMP12	April 29, 2024	1	0	0	0	0	0	-
	May 24, 2024	0	0	0	0	0	0	No calls
	June 6, 2024	0	0	0	0	0	0	No calls
AMP13	April 29, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	0	0	0	0	0	0	No calls
	June 6, 2024	0	0	0	0	0	0	No calls
AMP14	April 29, 2024	0	0	0	0	0	0	No calls
	May 22, 2024	0	0	0	0	0	0	No calls
	May 24, 2024	0	0	0	0	0	0	No calls
	June 6, 2024	0	0	0	0	0	0	No calls

AMTO: American Toad *Anaxyrus americanus*
GRTR: Gray Treefrog *Hyla versicolor*
GRFR: Green Frog *Lithobates clamitans*
MIFR: Mink Frog *Lithobates septentrionalis*
NLFR: Northern Leopard Frog *Lithobates pipiens*
WOFR: Wood Frog *Lithobates sylvaticus*

The vegetation communities where calling amphibians were recorded are listed in Table 3-8.

Table 3-8 Vegetation Communities with Calling Amphibians

ELC Vegetation Community	Location in PSA/Study Area
OAO- Open Aquatic	Pond within woodland community in the Greenbelt NHS valleylands on the south side of PSA Pond within meadow community on west side of PSA Pond within anthropogenic community on south side of the SSA
MAMM1-3- Reed-canary Grass Graminoid Mineral Meadow Marsh	Along watercourse in the Greenbelt NHS valleylands on the south/southeast side of PSA

ELC Vegetation Community	Location in PSA/Study Area
MAMM1-3/MEMM3 - Reed-canary Grass Graminoid Mineral Meadow Marsh/Dry Fresh Mixed Meadow	Along watercourse on in the Greenbelt NHS valleylands on the south/southeast side of Study Area
MEMM4- Fresh - Moist Mixed Meadow	On west side of PSA
SWDM4-1- Willow Mineral Deciduous Swamp	Within Greenbelt NHS valleylands in the center of PSA
MEG- Graminoid Meadow	Within Greenbelt NHS valleylands in the center of PSA
FODM7-7- Fresh - Moist Manitoba Maple Lowland Deciduous Forest	Within Greenbelt NHS valleylands in the center of PSA
THDM2- Dry - Fresh Deciduous Shrub Thicket	Within Greenbelt NHS valleylands in the center of PSA
FODM5-1- Dry – Fresh Sugar Maple Deciduous Forest	Within Greenbelt NHS valleylands in the center of PSA
MAMM1-3/THDM2- Reed canary Grass Graminoid Mineral Meadow Marsh/Dry Fresh Deciduous Shrub Thicket	Within Greenbelt NHS valleylands in the center of PSA
FODM4-5- Dry - Fresh Manitoba Maple Deciduous Forest	Within Greenbelt NHS valleylands in the center of PSA
MAM- Meadow Marsh	Along watercourse on south side of the SSA
OAGM1- Annual Row Crops	On south/southeast side of Study Area

3.5.3.1 Summary

Within the Greenbelt NHS valleylands amphibians were recorded in nine naturalized community types, and observed habitat included a combination of deciduous forest, thicket, meadow, deciduous swamp, and meadow marsh communities.

Amphibians were not heard calling in the Smartweed Mineral Meadow Marsh (MAMM2-a) community during any of the amphibian call surveys.

The results of the surveys did not identify amphibian breeding habitat SWH for woodlands or wetlands in or directly adjacent to the PSA.

3.5.4 Avifauna

A total of 69 avifauna species were recorded within or near the Study Area based on the results of the background review (Section 2.2) and Stantec's 2023 field program (Section 2.3). Species recorded and associated conservation status are provided in Appendix C. Of these species, 65 (94%) were native and 4 (6%) were non-native species. Three SAR and three SOCC species were recorded for the area. These species were included in the SAR and SOCC Habitat Screening Assessments, see Appendix E and Section 3.6.1 for details.

3.5.4.1 Breeding Bird Surveys

A total of 50 species of birds were recorded during the breeding bird surveys. This included two SAR (Bobolink and Eastern Meadowlark), and two SOCC (Eastern Wood-pewee and Barn Swallow).

Bobolink was observed at BBS3 on May 30 and June 22 in the agricultural field (OAGM4) at the southern portion of 12861 Dixie Road (see Figure A-4 for details). Bobolink typically nest in grasslands, including hayfields, which are present on the PSA. Given that this species was observed singing and remained on the PSA through June, it is anticipated that Bobolink are breeding on site. Bobolink is listed as Threatened under the Ontario ESA.

Eastern Meadowlark was also observed at BBS3 on May 30 and July 5. In both instances, one individual was observed singing in the pasture at the southern portion of 12861 Dixie Road. Another individual was observed singing outside the PSA, approximately 80 m east of the property boundary of 12489 Dixie Road. Eastern Meadowlark typically nest in grasslands and was observed singing in suitable nesting habitat. As such, it is anticipated that this species was breeding on site. Eastern Meadowlark is listed as Threatened under the Ontario ESA.

Eastern Wood-pewee were observed on May 30 and June 22 in the woodlot at the northwest end of 12489 Dixie Road, adjacent to BBS5. This woodlot provides suitable nesting habitat, and it is anticipated that this species is breeding here.

Barn Swallow were observed at various locations on both properties, and individuals were observed during all three bird surveys. An active Barn Swallow nest was observed in a barn at 12861 Dixie Road. The nest was located in the rafters inside the barn.

All other species recorded during the breeding bird survey are either considered secure (S5) or apparently secure (S4) breeders in Ontario or are non-native (SNA). All birds recorded during the breeding bird surveys are provided in Table 3-9. For the purposes of this report, species are described using the NHIC common name, the associated species family, scientific names and conservation status are provided in Appendix D.

Table 3-9 Breeding Bird Survey Results by Point Count Station

Common Name	S-Rank	Point Count Station						
		BBS2	BBS3	BBS4	BBS5	BBS6	BBS7	Incidental
Great blue heron	S4	x				x		
Green heron	S4B		x					
Green heron	S4B		x					
Canada goose	S5							x
Mallard	S5							x
Turkey vulture	S5B, S3N		x				x	
American kestrel	S4							x
Wild turkey	S5							x
Killdeer	S4B	x	x	x	x	x	x	
Ring-billed gull	S5	x	x	x	x	x	x	
Rock pigeon	SNA	x	x			x	x	
Mourning dove	S5	x		x		x	x	
Belted kingfisher	S5B, S4N							x
Red-bellied woodpecker	S5						x	
Downy woodpecker	S5	x					x	
Northern flicker	S5	x		x		x		
Eastern wood-pewee	S4B				x			
Willow flycatcher	S4B					x		
Eastern kingbird	S4B		x	x				
Horned lark	S4							x
Tree swallow	S4S5B		x			x		
Barn swallow	S4B	x	x	x	x			

Common Name	S-Rank	Point Count Station						
		BBS2	BBS3	BBS4	BBS5	BBS6	BBS7	Incidental
Blue jay	S5		x	x	x	x	x	
American crow	S5		x	x				
Black-capped chickadee	S5	x		x	x		x	
House wren	S5B			x			x	
American robin	S5	x	x	x	x	x	x	
Gray catbird	S5B, S3N	x			x			
Brown thrasher	S4B							x
Cedar waxwing	S5	x				x	x	
European starling	SNA	x	x	x		x	x	
Warbling vireo	S5B			x		x		
Red-eyed vireo	S5B			x	x		x	
Yellow warbler	S5B					x		
Common yellowthroat	S5B, S3N	x	x			x	x	
Northern cardinal	S5			x	x			
Indigo bunting	S5B				x			
Chipping sparrow	S5B, S3N	x		x			x	
Field sparrow	S4B, S3N							x
Savannah sparrow	S5B, S3N	x	x	x	x	x		
Song sparrow	S5	x		x	x	x	x	
Bobolink	S4B		x					
Red-winged blackbird	S5	x	x	x	x	x	x	
Eastern meadowlark	S4B, S3N		x					
Common grackle	S5			x	x		x	

Common Name	S-Rank	Point Count Station						
		BBS2	BBS3	BBS4	BBS5	BBS6	BBS7	Incidental
Brown-headed cowbird	S5			x	x		x	
Baltimore oriole	S4B			x	x	x		
House finch	SNA		x				x	
American goldfinch	S5	x	x	x	x	x	x	
House sparrow	SNA	x	x			x		

3.5.5 Mammals

Thirty-four mammalian species were recorded within or near the Study Area based on the results of the background review (Section 2.2) and Stantec's 2023 and 2024 field program (Section 2.3). Species recorded and associated conservation status are provided in Appendix D, Table D-4. All species are native to Ontario. Four SAR and three SOCC species were recorded for the area, all of which were bat species. These species were included in the SAR and SOCC Habitat Screening Assessments, see Appendix E and Section 3.6.1 for details for details.

3.5.5.1 Bat Surveys

Four ARUs were deployed in the vicinity of potential roost trees at 12489 Dixie Road in 2025 (BMS5, BMS6, BMS7, BMS8), where SWM infrastructure was proposed to support the Project (Figure A-4). At the time of publishing this report, the 2025 bat acoustic data analysis was ongoing and is not included in this report. The results will be included in an updated version of this report or prepared as an addendum to this document.

Four acoustic detectors (BMS1, BMS2, BMS3 and BMS4) were deployed from June 22 to July 5, 2023, under appropriate weather conditions. Weather conditions were verified for the nights of recording using the closest weather station (King City North). Nightly weather conditions are presented in Table 3-10.

Table 3-10 Nightly Weather Conditions during Bat Survey

Date	Weather Summary (from 9pm to 6am)		
	Average Temperature (°C)	Average Wind Speed (km/h)	Total Precipitation (mm)
22-Jun-23	17.90	5.1	0
23-Jun-23	18.01	2.7	2
24-Jun-23	18.08	4.5	0
25-Jun-23	18.80	9.7	5.4
26-Jun-23	17.99	4.5	5.2
27-Jun-23	13.43	10.9	0
28-Jun-23	13.32	4.6	0
29-Jun-23	17.29	4	0
30-Jun-23	18.41	5.3	0
1-Jul-23	20.43	2.4	0
2-Jul-23	18.34	3	0
3-Jul-23	19.12	3.3	0
4-Jul-23	21.34	2.5	0

Five species of bat were identified in the acoustic data (Table 3-11), including Big Brown Bat, Eastern Red Bat, Hoary Bat, Silver-haired Bat, and Little Brown Myotis.

Table 3-11 Bat Acoustic Results

ARU ID	Start Date	End Date	Number of Recorded Nights	Number of Recorded Call Files										
				Big Brown	Eastern Red Bat	Hoary Bat	Silver-haired Bat	Little Brown Myotis	Myotis Species	High Frequency Unknown	Low Frequency Unknown	Tri-Coloured Bat/Little Brown Myotis	No ID	Total
BMS1	22-Jun-23	3-Jul-23	11	3036	5	377	160	20	64	52	296	5	1079	5094
BMS2	22-Jun-23	4-Jul-23	12	2655	-	605	126	3	20	18	282	-	1058	4767
BMS3	22-Jun-23	5-Jul-23	13	2683	10	588	127	28	162	81	264	-	1274	5217
BMS4	22-Jun-23	3-Jul-23	11	1345	2	279	142	55	68	40	1159	-	1344	4434

3.5.6 Insects

A total of 77 insect (Lepidoptera and Odonata) species were recorded within or near the Study Area based on the results of the background review (Section 2.2) and Stantec's 2023 field program (Section 2.3). Species recorded and associated conservation status are provided in Appendix D, Table D-5. Of these species, 74 (96%) were native and 3 (4%) were non-native species. One SOCC species were recorded for the area. No SAR species were observed or recorded within or near the Study Area. These species were included in the SAR and SOCC Habitat Screening Assessments, see Appendix E for details.

3.5.7 Incidental Wildlife

Coyote, Beaver and Eastern Gartersnake were observed on the PSA. The remainder of incidental observations of wildlife included bird species already captured in the breeding bird surveys and fish species observed during the fish habitat assessment.

3.6 Species at Risk and Species of Conservation Concern Habitat Screening Assessments

Habitat screenings for SAR and SOCC were completed for the Study Area using the methodology detailed in Section 2.1. The full results of the assessment are provided in Appendix E, Table E-1.

3.6.1 Species at Risk

Confirmed habitat for the following SAR have been identified on the PSA:

- Redside Dace
- Bobolink
- Eastern Meadowlark
- Little Brown Myotis
- Hoary Bat
- Silver-haired Bat
- Eastern Red Bat

Kilamanagh Creek has been confirmed by the MECP as occupied Redside Dace habitat. The results of the fish habitat assessment identified suitable habitat associated with this watercourse. The Tributary of the West Humber River is considered contributing habitat.

Both Bobolink and Eastern Meadowlark were observed singing in the agricultural fields (OAGM4 and MEMM4) located at the southern portion of 12861 Dixie Road (see Figure A-4 for details). Both species were observed in suitable habitat.

Little Brown Myotis, Hoary Bat, Silver-haired Bat and Hoary Bat were recorded in the FOM-a habitat during the bat survey. Suitable habitat associated with the mixed forest community and the adjacent building was observed.

The results of the assessment determined that the following SAR have a medium probability of occurring in the Study Area:

- Jefferson Salamander
- Eastern Small-footed Myotis
- Northern Myotis
- Tri-colored Bat
- Black Ash

Salamander habitat may be present associated with the woodlands and swamp habitat present in the Greenbelt NHS valleylands located in the central portion of the PSA. Potential habitat for bats (Eastern Small-footed Myotis, Northern Myotis, and Tri-colored Bat) was observed associated with the residential building located at municipal address 12861 Dixie Road and associated with the woodlands located Greenbelt NHS valleylands located in the central portion of the PSA. Black Suitable Habitat for Black Ash was observed in the Study Area associated with the Greenbelt NHS forest and swamp communities.

The results of the assessment concluded that the remainder of the SAR species previously documented in or near the Study Area had a low probability of occurring on the PSA and Study Area.

3.6.2 Species of Conservation Concern

Confirmed habitat for the following SOCC have been identified in the PSA:

- Barn Swallow
- Eastern Wood-pewee

Barn Swallow were observed at various locations on both properties, and individuals were observed during all three bird surveys. An active Barn Swallow nest was observed in a barn at 12861 Dixie Road. Eastern Wood-pewee was observed on May 30 and June 22 in the woodlot at the northwest end of 12489 Dixie Road, adjacent to BBS5. This woodlot provides suitable nesting habitat, and it is anticipated that this species is breeding here.

The results of the assessment determined that the following SOCC have a high probability of occurring in the Study Area:

- Monarch
- Eastern Milksnake

Potential habitat to support Monarchs was observed in the Study Area. Populations of Milkweed observations were limited to scattered individuals in various meadows in the PSA. The species was

observed in the meadow directly adjacent to the Greenbelt NHS located on the southern property (12489 Dixie Road). Milksnake habitat was observed associated with the barns and farm outbuildings at both properties.

The results of the assessment determined that the following SOCC have a medium probability of occurring in the Study Area:

- Wood Thrush
- Midland Painted Turtle
- Eastern Musk Turtle
- Black Dash

Potential habitat to support Wood Thrush and Black Dash was observed associated with the valleylands located in the central portion of the PSA. Potential habitat for Midland Painted Turtle and Eastern Musk Turtle was observed associated with the pond features in the PSA.

The results of the assessment concluded that the remainder of the SOCC species previously documented in or near the Study Area had a low probability of occurring in the PSA and Study Area.

3.7 Significance Assessments

3.7.1 Woodlands

The woodlands associated with the Greenbelt NHS located in the central portion of the site meet provincial and municipal criteria for significance.

The FOM-a community located at 12861 Dixie Road is not greater than 4 hectares and as such, does not meet provincial criteria for significance. The FOM-a community located at 12861 Dixie Road is not located within the Region of Peel's Core and Natural Area and Corridor, and as such, does not meet the Region's criteria for significance. The Town of Caledon does not provide additional significance criteria.

3.7.2 Significant Wildlife Screening Assessment

The following sub-sections identify candidate and confirmed SWH within the Study Area. SWH, including habitats for SOCC receive protection under the PPS. SOCC may also be afforded protection under the MBCA or Ontario *Fish and Wildlife Conservation Act* (1997).

A SWH screening assessment for the Study Area is provided in Appendix F. A habitat screening for SOCC was completed for the Study Area and is provided in Appendix E. The results of the assessment are outlined below. Where a medium or high probably for SWH in the Study Area has been concluded, the SWH is considered Candidate SWH. Specifically, Candidate SWH refers to potential habitats that may meet the habitat criteria but have not been confirmed through additional detailed studies.

Confirmed SWH includes the following features:

Special Concern and Rare Wildlife Species

Seven SOCC were observed in the PSA, see Section 3.6.2 for details.

Where a medium or high probably has been determined, the SWH is considered ‘Candidate SWH’. Specifically, Candidate SWH refers to potential habitats that may meet the habitat criteria but have not been confirmed through additional detailed studies.

Candidate SWH includes the following features:

Waterfowl Stopover and Staging Area (Aquatic)

- Potential waterfowl stopover and staging habitat has been identified associated with the Greenbelt NHS valleylands and associated wetlands and watercourses.

Raptor Wintering Area

- Potential raptor wintering area has been identified in the PSA.

Turtle Wintering Area

- Potential turtle wintering area habitat has been identified associated with the Greenbelt NHS valleylands and associated wetlands and watercourses.

Bat Maternity Colonies

- Potential bat maternity colonies habitat was identified in the PSA associated with the treed area (woodlands and swamp) located in the Greenbelt NHS located in the approximate centre of the PSA.

Snake Hibernacula

- Good quality habitat was observed surrounding the buildings at both properties and there are known records for several snake species in the area.

Waterfowl Nesting Area

- Potential waterfowl nesting area habitat has been identified associated with the Greenbelt NHS valleylands and associated wetlands and watercourses.

Terrestrial Crayfish

- Terrestrial crayfish habitat was observed in the PSA associated with the wetland communities located in or directly adjacent to the Greenbelt NHS located in the approximate centre of the PSA.

4 Proposed Developments

The proposed developments include the erection of five industrial warehouse buildings and the development of associated parking areas and private roads. To service the development, two stormwater ponds and associated subsurface infrastructure are also proposed, see Figure A-5 and Appendix H for details.

Functional servicing and stormwater management design report (FSSMR) has been prepared for the PSA (Stantec 2025b). The following sections summarize the stormwater management plan and the design of the stormwater ponds and storm trap systems.

4.1 Stormwater Management Plan

The stormwater management plans for the PSA include measures to satisfy the water balance criterion, water quantity control, water quality control.

4.1.1 Water Balance

The stormwater treatment system has been designed to achieve water balance through on-site retention of 5 mm of runoff through the implementation of LID measures as described in the FSSMR (Stantec 2025b). On site retention will be achieved through:

- Roof areas directing clean runoff to underground stormwater tanks for infiltration
- Tree cells within paved areas to be investigated further during detailed design

4.1.2 Water Quantity Control

As described in the FSSMR (Stantec 2025b), post development storm runoff for all events up to and including the 100-year design storm will be controlled to the target flows, calculated using the unit flow relationships for the Humber River Watershed established by the TRCA for 2-to-100-year storm events, and to the existing Regional peak flow from the PSA.

Existing external surface water entering the PSA from SSA lands west of Dixie Road will be conveyed through the existing NHS systems within the PSA. Existing external surface water entering the PSA from SSA lands north of Old School Road will be captured in two locations along Old School Road and piped through the North Site. Discharge will be directed towards the tributary of the West Humber River on the Site and towards a tributary of the West Humber River east of the PSA.

4.1.3 Water Quality Control

As described in the FSSMR (Stantec 2025b), long-term average removal of 80% of Total Suspended Solids (TSS) on an annual loading basis, referred to as an Enhanced level of quality, is required. Quality

control will be provided to reduce the sediment loading and minimize impacts on receiving fish habitat in general and Reside Dace habitat specifically.

A treatment train approach has been considered as part of the design of the proposed quality control methods. The following measures are proposed to achieve the water quality control requirements:

- Clean roof flows are routed to Isolation rows within stormwater tanks
- Clean roof flow is routed to stormwater tanks for Infiltration and attenuation
- Two separate, private SWM Ponds are provided, one on the North Site and one and the South Site. On the North Site the Pond is combined with an underground Storm Trap tank system. These stormwater facilities are sized to provide quality and quantity control

4.1.4 Stormwater Pond and Storm Trap System

As described in the FSSMR (Stantec 2025b), two private stormwater management facilities are proposed within the PSA, the Pond on the North Site is combined with an underground Storm Trap tank system. The preliminary pond grading designs have been completed to meet the requirements MOE requirements (MOE 2003). Typical criteria for the design of SWM facility includes:

- A pond will be graded with side slopes of 3:1 from the pond bottom to 0.6m below the normal water level, a 5:1 safety shelf centered at the normal water level with a horizontal distance of 6 m, and 3:1 slopes above the shelf to the top of the pond
- Permanent pool volume and OGS unit will provide MOECC Enhanced Level Protection, and pond will include a 2 m forebay and at least 3m deep main bay (as receiving watercourse is Redside Dace habitat)
- Extended detention storage with a maximum depth of 1.0 m as per the MOE guidelines
- Extended detention storage and flood control storage up to and including the Regional storm event will be provided
- Emergency spillway will be sized to convey the Regional Flow

5 Impact Assessment

The development proposal includes direct loss of vegetation, which has the potential to provide habitat for wildlife as documented in Section 3.4 and 3.5. Potential direct and indirect effects to vegetation and wildlife are discussed below, including recommendations for protection, site-specific mitigation, and habitat compensation.

5.1 Terrestrial Resources

5.1.1 Vegetation Communities

The Project will result in a permanent direct loss of 64.2 ha of habitat including agricultural lands (63.914), mixed meadow (0.184 ha), and mixed forest (0.102) in the PSA. The Project requires grading and site servicing and will result in the temporary loss of agricultural fields (8.371 ha), cultural woodland (0.029 ha), coniferous forest (0.021), deciduous forest (0.001 ha), mixed forest (0.154 ha), mixed meadow (0.414 ha), mixed meadow/mixed mineral meadow marsh (0.005), and cultural woodland/swamp thicket (0.003) in the PSA.

The areas of permanent and temporary loss are shown on Figure A-5 and Figure A-6, Appendix A.

Table 5-1 Permanent and Temporary Impacts

Type	ELC Code	Community Name	Permanent Impacts in PSA (Area in ha)	Temporary Impacts in PSA (Area in ha)
Terrestrial	**Forest Communities**			
	FOD (includes inclusion communities)	Deciduous Forest	-	-
	FODM6-4	Fresh – Moist Sugar Maple – White Elm Deciduous Forest	-	-
	FODM5-1	Dry - Fresh Sugar Maple Deciduous Forest	-	-
	FODM4-5	Dry - Fresh Manitoba Maple Deciduous Forest	-	0.001
	FODM4-9 (inclusion community)	Dry - Fresh Basswood Deciduous Forest	-	-
	FODM7-7	Fresh - Moist Manitoba Maple Lowland Deciduous Forest	-	-
	FODM7-4	Fresh - Moist Black Walnut Lowland Deciduous Forest	-	-
	FOM-a	Sugar Maple - Balsam Fir Mixed Forest	0.102	0.154
	FOCM1 (inclusion community)	Dry - Fresh Pine Coniferous Forest	-	0.021
	Woodland Communities			
	CUW (inclusion communities)	Cultural Woodlands	-	0.029
	Thicket Communities			
	THDM2	Dry - Fresh Deciduous Shrub Thicket	-	-
	Meadow Communities			
	MEG	Graminoid Meadow	-	-
	MEMM3	Dry - Fresh Mixed Meadow	0.180	0.263
	MEMM4	Fresh - Moist Mixed Meadow	0.004	0.151

Type	ELC Code	Community Name	Permanent Impacts in PSA (Area in ha)	Temporary Impacts in PSA (Area in ha)
	Agricultural			
	OAGM1	Annual Row Crop	60.697	7.390
	OAGM4	Open Pasture	3.217	0.981
	Anthropogenic			
	CVI_1	Transportation	0.002	0.118
	CGL_1	Golf Course	-	-
	CVR_1	Low Density Residential	0.036	0.271
	CVR_4	Rural Property	5.764	0.936
	CVC_2	Light Industry	-	-
	CVC	Commercial and Institutional	-	-
Wetland	**Swamp Communities**			
	SWDM4-2 (inclusion community)	White Elm Mineral Deciduous Swamp	-	-
	SWDM4-1	Willow Mineral Deciduous Swamp	-	-
	SWT/CUW1 (inclusion communities)	Thicket Swamp / Cultural Woodland	-	0.003
	Marsh Communities			
	MAMM1-3	Reed-canary Grass Graminoid Mineral Meadow Marsh	-	-
	MAM (inclusion community)	Meadow Marsh	-	-
	MAMM3-1	Mixed Mineral Meadow Marsh	-	0.005
	MAMM2-a (inclusion community)	Smartweed Mineral Meadow Marsh	-	-
	Aquatic Communities			
	OAO	Open Aquatic	-	-

5.1.2 Bird and Bat Species at Risk

The Project will impact grassland SAR bird habitat (Bobolink and Eastern Meadowlark). Specifically, the Project will result in a permanent loss of 3.221 ha of SAR bird habitat and will result in the temporary loss of 1.132 ha of habitat.

The Project will also impact SAR bat habitat (Little Brown Myotis, Hoary Bat, Silver-haired and Easter Red Bat). Specifically, the Project will result in a permanent loss of 0.102 ha of SAR bat habitat and will result in the temporary loss of 0.154 ha of habitat.

5.1.3 Significant Features

The Project will not result in the permanent loss of Significant Woodlands or Significant Valleylands. The Project will temporarily impact approximately 0.082 ha of land within the Significant Valleylands feature related to required site servicing.

The Project will impact confirmed SOCC habitat (Barn Swallow). The Project also has the potential to impact potential SOCC snake (Eastern Milksnake) habitat and Candidate SWH (Snake Hibernacula). Recommendations for confirming habitat and mitigation are discussed in Section 6.

5.2 Fish and Fish Habitat

5.2.1 Fish and Fish Habitat

The limit of the proposed development is set back from the top of valley bank of the tributary of the West Humber River and Kilamanagh Creek, both of which support direct fish habitat. There are no new watercourse crossings proposed for this development.

The proposed development is located outside of the valleylands and will not require a footprint or any infrastructure in or in proximity of the watercourses in the Study Area that provide direct fish habitat and that are protected under the Fisheries Act.

Potential impacts resulting from the proposed development of the tablelands which will require removal of HDF and result in changes to groundwater and surface water patterns are discussed in Section 5.3.

5.2.2 Fish Species at Risk

The limit of the proposed development is mostly outside the regulated habitat for Redside Dace associated with Kilamanagh Creek which includes the meanderbelt and areas 30 m from the meander belt. The only exception is a headwall outlet structure towards Kilamanagh Creek. This outlet structure is placed as far from the creek as technically feasible. Positioning this headwall outlet outside of the 30 m area from the meanderbelt would result in extensive grading. The headwall is proposed outside the regional floodplain.

Proposed stormwater management facilities that discharge towards Kilamanagh Creek should be design in accordance with the Guidance for Development Activities in Redside Dace Protected Habitat (MNRF 2016). Best management practices for stormwater management recommended by the Guidance document include:

- Discharge of water from urban development stormwater management facilities into Redside Dace habitat should not exceed 25 mg/L of TSS above the background stream level of total suspended solids.
- Discharge temperatures for stormwater management facilities connected to Redside Dace streams should be below 24°C and have dissolved oxygen concentrations of at least 7 mg/l.
- Post development water balance (i.e., the hydrological cycle of the water including the flow and levels of surface and ground water) should match predevelopment water balance to protect the natural hydrological functions of Redside Dace streams. Therefore, there should be no storm run-off from rainfall events in the range of 5 – 15 mm.

Some sections of HDF that contribute to the tributary of the West Humber River will be removed. These HDF provide allochthonous transport of water and nutrients to contributing habitat for Redside Dace. Consultation with DFO is recommended to determine the requirement for an Authorization for the removal of these HDF. The impacts resulting from the removal of HDF is discussed below in Section 5.3.

5.3 Headwater Drainage Features

The proposed development will result in the removal of sections of HDF from the tablelands. As a result, the functions these HDF provide to downstream fish habitat may be impacted. For example, HDFs deliver water, nutrients, and coarse substrates to downstream fish habitat. Sections of the following HDFs will be removed:

- WHR-H3E – Management Recommendation: Conservation
- WHR-H3F - Management Recommendation: Conservation
- WHR-H6B - Management Recommendation: Protection

The removal of HDF the development may also result in changes to surface water runoff towards the watercourses and changes to groundwater infiltration which may impact watercourses in the Study Area. Stormwater management system has been designed to match groundwater infiltration and surface water runoff patterns between pre-existing site conditions and expected post development conditions. The design includes:

- Directing water from upstream catch areas around the Site towards the tributary of the West Humber River
- Permeable surfaces to achieve on-site retention in the order of 5 mm
- Rooftop collection and piping system to direct clean water to the watercourses

The HDF on the tablelands that are identified for removal do not provide any wildlife functions. No mitigation or compensation is proposed for wildlife functions of these HDF.

6 Recommendations

Mitigation measures have been identified to protect natural heritage features including urban tolerant wildlife, migratory birds, bats, fish, and fish habitat due to vegetation removals or other activities. Compensatory and benefit measures have also been considered that can be applied to offset any impact or create a net benefit if required. Guidelines for ecological restoration in proposed naturalization areas are also highlighted.

6.1 Protection of Significant Woodlands, Wetlands, and Significant Valleylands

Wetland and Significant Woodland features on the PSA are located within the existing valleylands. A 30 m setback is recommended from the staked feature limits for lands located within the Greenbelt NHS and Regional Greenlands System. A 10m setback is proposed for valleyland present within the current cattle range and meadows. These proposed setbacks are in conformance with provincial, municipal and conservation authority policies and guidelines. With the exception of required stormwater and functional servicing infrastructure, all permanent surface level developments, including retaining walls, are located outside of significant natural heritage features and their associated 10 and 30 m setbacks.

Upon review of the FSSMR and HR studies, impacts to the wetland communities, including the Meadow Marsh communities are not anticipated.

6.2 Ecological Restoration and Habitat Compensation

The Project will result in temporary impacts to vegetation communities as described in Section 5.1.1. It is recommended that all site disturbance areas be revegetated using native species and the landscape design account for the replacement of or provide for an improvement to existing habitat that will be temporarily lost due to construction activities.

The Project will result in impacts to terrestrial SAR and SOCC/SWH habitat for bats, snakes, and birds. Permitting or authorizations under the ESA are required for Eastern Meadowlark, Bobolink and Little Brown Myotis. There are existing opportunities on the PSA within and adjacent to the buffers for habitat compensation for SAR and SOCC. It is recommended that an edge management and habitat restoration/compensation plan be prepared to support SAR grassland birds as well as SAR bat habitat compensation structures/location details. There are also opportunities provide for butterfly habitat (Monarch) and snake habitat.

6.3 Protection of Bird Nests

The MBCA provides legal protection of migratory birds and their active nests in Canada. The loss of migratory bird nests, eggs and or nestlings due to tree cutting or other vegetation clearing can be avoided by clearing vegetation outside of the general nesting period for forest nesting migratory birds in this region

(C2) as identified by Environment and Climate Change Canada (ECCC) (i.e., between April 1 and August 31) (ECCC 2018). If work must be performed within this window, a survey for active nests or breeding must be conducted by a qualified biologist before work commences and additional mitigation measures (e.g., implementation of avoidance distances during construction) implemented, if required.

6.4 Protection of Bats

The results of the bat acoustic surveys for natural habitat identified Big Brown Bat, Hoary Bat, Eastern Red Bat, and Silver-haired Bat associated with the FOM-a woodlands. The 2025 acoustic monitoring results for BMS5-8 are outstanding. For the purposes of this report, it is assumed SAR Bats and Bat Maternity Roosting SWH is present associated with the greenbelt NHS woodlands.

An MECP permit/authorization under the Endangered Species Act is currently being sought to support the appropriate mitigation for permanent and temporary SAR Bat habitat removal. In addition, it is recommended that in general, tree removals on site occur outside of the bat active season (the period from April 1 until September 30).

6.5 Protection of Fish and Fish Habitat

6.5.1 Fish and Fish Habitat

The development of the tablelands avoids all areas below the top of the valleys associated with the watercourses and associated fish habitat in the PSA. No new watercourse crossings are required. A potential opportunity to achieve a benefit to fish habitat has been identified in the PSA which is the existing watercourse crossing of Kilamanagh Creek by a trail which will become defunct following the development of the Site.

HDF on the tablelands provide contributing functions to fish and fish habitat. Mitigation and compensation required for the removal of HDF are discussed in Section 6.4.

Sensitive fish habitats depend on groundwater input and surface water runoff from tablelands. On-site retention and surface water patterns are maintained through stormwater management measures including LID as described in Section 4.1 and in the FSRs (Stantec 2023a & 2023b).

Prior to any ground disturbance erosion and sediment control measures should be installed as per an approved sediment and erosion control plan to protect fish habitat from sediment laden runoff from the tablelands. ESC measures should be maintained and repaired as required in accordance with the approved ESC Plan. Some approaches are discussed in Section 6.2.

6.5.2 Aquatic Species at Risk

The development has been designed to avoid a footprint within regulated habitat for protected species at risk including the regulated area for Redside Dace which includes the meanderbelt for Kilamanagh Creek

and all vegetated lands within 30 m for the meanderbelt. The only exception is a headwall outlet structure for a stormwater management pond.

No new watercourse crossings are required. An existing watercourse crossing of Kilamanagh Creek could be decommissioned during the development of the Site as a measure to benefit fish habitat quality. Removal of the steel pipe culvert and restoration of the watercourse could be used as a net benefit measure to satisfy conditions for a permit to destroy Redside Dace habitat if required.

Standard erosion and sediment control measures will be required to protect receiving watercourses from sediment laden runoff from the tablelands including a double row of sediment fence with straw bales in between to protect Redside Dace regulated habitat from sediment laden runoff as prescribed in the ESA in Section 23.1 of Ontario Regulation 242/08.

HDF provide contributing functions to aquatic species in the receiving watercourses which are considered contributing habitat for Redside Dace (tributary of the West Humber River) and occupied habitat for Redside Dace (Kilamanagh Creek). Mitigation and compensation required for the removal of HDF is discussed in Section 6.6.

6.6 Protection of Headwater Drainage Features

The Site plan has been designed to avoid all sections of HDF that are within the valleylands. Some sections of HDF that are located on the tablelands are proposed for removal. These HDF contribute to fish habitat and habitat for fish species at risk in the receiving watercourses by supplying water to downstream habitat areas. These functions will be maintained through mitigation measures such as lot level and conveyance controls which are also referred to as low impact development (LID) measures or green infrastructure (GI) and discussed in Section 4.1.

HDF that meet the definition of watercourse under O.Reg 41/24 are regulated by TRCA. O.Reg 41/24 defines watercourses as: “a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs”. Consultation with TRCA is recommended and a permit under the Conservation Authorities Act O. Reg. 41/24 may be required for the removal of HDF that meet the definition of a watercourse.

The HDF on the tablelands that are identified for removal do not provide any wildlife functions. No mitigation or compensation is proposed for wildlife functions of these HDF.

6.7 Erosion and Sediment Control

Standard erosion and sediment control measures will be required to protect receiving wetlands and watercourses from sediment laden runoff from the tablelands including but not limited to:

- Installing effective erosion and sediment control measures to stabilize all erodible and exposed areas

- Regularly inspecting and maintaining the erosion and sediment control measures during all phases of the project
- Keeping the erosion and sediment control measures in place until all disturbed ground has been permanently stabilized

A detailed Sediment and Erosion Control Plan will need to be prepared for the proposed development of the PSA. The ESC Plan will need to be reviewed and approved by the TRCA. The ESC plan should follow the recommendations in the ‘Erosion and Sediment Control Guide for Urban Construction’ by TRCA (2019).

7 Long Term Environmental Management Plan and Comprehensive Adaptive Management Plan

A detailed Long Term Environmental Monitoring Plan (LTEMP) and Comprehensive Adaptive Management Plan (CAMP) is being developed for this Project and will be issued under separate cover. The purpose of the LTEMP is to monitor changes to various environmental parameters through the pre-development, development and pos-development stages. The purpose of the CAMP is to monitor the effectiveness of mitigation measures and environmental strategies throughout the Project.

Monitoring programs detailed in the LTEMP and CAMP will include the monitoring of wildlife (e.g., birds, herpetofauna, mammals, etc.), natural heritage features (including wetlands), surface water features (including HDFs), geomorphological and hydrogeological monitoring, as required. Environmental parameters and triggers will be chosen to focus the monitoring activities. Triggers for assessment and potential adaptive management strategies may include inadequate vegetation cover within enhancement areas, inadequate establishment of woody vegetation, or changes in channel cross-section dimensions. These triggers would have quantitative thresholds and will be developed in consultation with the TRCA and the Town of Caledon. The monitoring programs are recommended to continue for a minimum of five years and should coincide with the years of construction and buildout. These monitoring programs are intended to be undertaken in addition to the typical construction monitoring.

8 Summary and Conclusion

Stantec Consulting Ltd. (Stantec) was retained by QuadReal Property Group to prepare a Comprehensive Environmental Impact Study and Management Plan (CEISMP) in support of the proposed redevelopment of municipal addresses 12489 & 12861 Dixie Road in the Town of Caledon.

The Due Diligence Assessment completed by Stantec in 2022, and supplemental secondary source data review guided the CEISMP field program which took place in spring and summer of 2023. Field surveys focused on the buildings, wildlife, vegetation communities, wetland, and aquatic features where developments are proposed or where potential impacts to features on the SSA are anticipated.

Significant Valleylands are present in the Study Area in two locations: (1) surrounding a tributary of the West Humber River which is located in the central portion of the Study Area and (2) surrounding Kilamanagh Creek located at the southwest corner of the Study Area. The valleylands are designated provincially as Natural Heritage System (NHS) within the Greenbelt Protected Countryside and regionally as part of the Region of Peel's Core Areas of the Greenlands System. The NHS features limits (dripline and top of bank) were staked with the TRCA on August 24, 2023.

Redside Dace, an aquatic species at risk (SAR) is known to occur in the area. Stantec consulted with the MECP to determine the extent of Redside Dace habitat on or adjacent to the PSA. The watercourse associated with Kilamanagh Creek located at the south end of the Study Area was confirmed to be occupied Redside Dace habitat. The main branch and connected permanent and intermittent watercourses associated with the Tributary of the West Humber River located in the central portion of the PSA were confirmed by MECP to be contributing habitat. A meanderbelt study completed by Geomorphix (Geomorphix 2024) was reviewed and included in the assessment.

Field surveys were completed for vegetation communities, headwater drainage features (HDF), as well as wildlife and species at risk (SAR) habitat including bat community surveys, breeding bird surveys, and floral inventories. Several headwater drainage features are present in the PSA. Significant Woodlands, Significant Wildlife Habitat, and Candidate SAR Habitat has been identified on lands within the existing NHS. In addition to occupied and contributing Redside Dace habitat in the PSA, two SAR (Bobolink and Eastern Meadowlark) birds, four SAR mammals (Little Brown Myotis, Hoary Bat, Silver-haired Bat and Eastern Red Bat) and two SOCC (Eastern Wood-pewee and Barn Swallow) bird species were observed during the field program.

The CEISMP assessed impacts from the proposed development including permanent and temporary (grading limit) footprints. Environmental protection and mitigation measures are recommended to support the project. A 30 m setback is recommended from the staked feature limits for lands located within the Greenbelt NHS and Regional Greenlands System. A 10m setback is proposed for valleyland present within the current cattle range and meadows. The proposed setbacks are in conformance with provincial, municipal and conservation authority policies and guidelines. With the exception of required stormwater and functional servicing infrastructure, all permanent surface level developments, including retaining

walls, are located outside of the NHS including Significant Woodlands and Significant Valleylands and their associated 10 and 30 m setbacks.

We recommend consultation with DFO to inquire about the need for an Authorization under the Fisheries Act / Permit under the Species at Risk Act for activities that may impact Redside Dace and its habitat. Consultation will be facilitated by the submission of a Request for Review to DFO.

Consultation with MECP that may lead to permitting or other authorization under the Endangered Species Act is required to address Redside Dace, Little Brown Myotis, Hoary Bat, Silver-haired Bat, Eastern Red Bat, Bobolink and Eastern Meadowlark habitat observed in the PSA. Authorization and mitigation requirements under the ESA will be determined through preparation and submission of an Information Gathering Form to the MECP. Permitting under the Conservation Authorities Act with the TRCA is required for works within regulated areas, including HDF.

With the implementation of recommended environmental protection (setbacks), environmental mitigation (including construction timing windows and erosion and sediment control measures), edge management / ecological restoration (re-vegetation / restoration of temporary disturbance areas) and habitat compensation measures, the development proposal meets the natural heritage policy objectives outlined in the 2024 PPS, and upper and lower tier Official Plans. This CEISMP is in support of the proposed development as the benefits outweigh the potential impacts to the local environment.

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Appendices

Appendix A Figures

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Stantec

Legend
- Primary Study Area (PSA)
- Secondary Study Area (SSA)

0 250 500 m

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Notes
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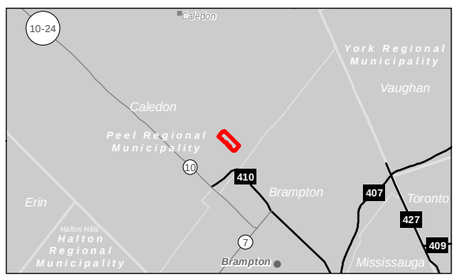

Project Location
Town of Caledon

160623115 REV1
Prepared by BF on 2024-12-16
Technical Review by DH on 2023-10-30

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
1

Title
Study Area

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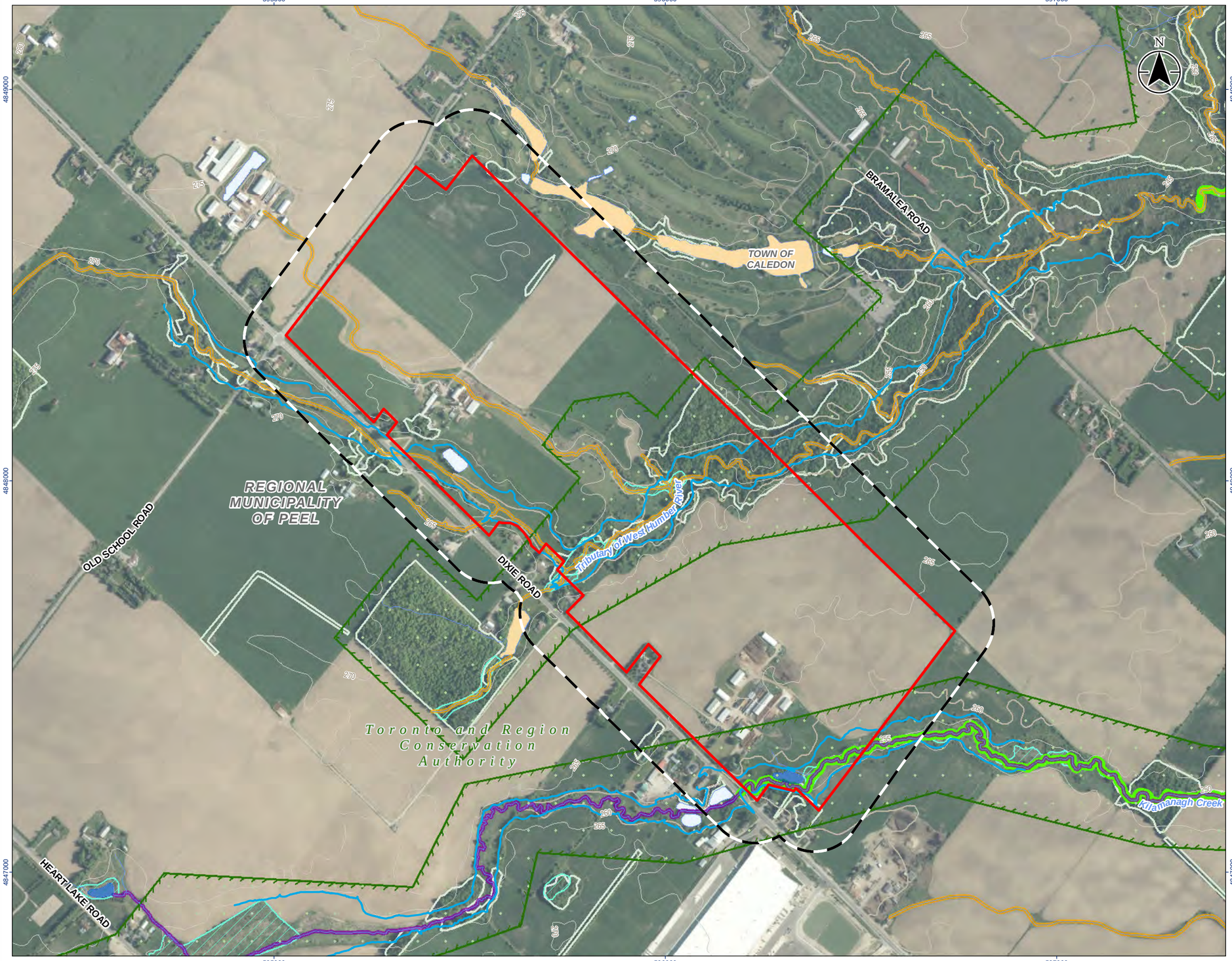

Stantec

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Floodplain (TRCA)
- Permanent Watercourse (LIO/MNRF 2023)
- Thermal Regime, Cold (LIO/MNRF 2023)
- Thermal Regime, Warm (LIO/MNRF 2023)
- Topographic Contour (m AMSL)
- Aquatic Species at Risk Distribution (DFO 2023)
- Greenbelt Natural Heritage System (LIO/MNRF 2023)
- Waterbody (LIO/MNRF 2023)
- Wetland, Not evaluated per OWES (LIO/MNRF 2023)
- Wooded Area (LIO/MNRF 2023)

0 200 400 Metres

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Notes

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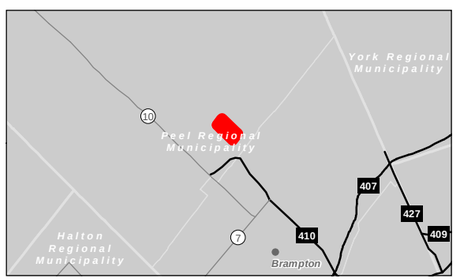
4. Both the site boundary and study area were derived from Lot Fabric Improved LIO data. Both boundaries should be considered as estimates.
5. TRCA Data from First Base TRCA Flood Plain Mapping Vector.



Project Location
Town of Caledon

160623115 REV1
Prepared by BF on 2024-11-26
Technical Review by DH on 2022-04-28

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
2

Title
Natural Heritage Designated Areas

595000

596000

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4848000

N

OLD SCHOOL ROAD

DIXIE ROAD

WHR-H3F

WHR-H6B

WHR-H6A

WHR-H3E

WHR-H2B

WHR-H3D

WHR-H2A

WHR-H3C

WHR-H3A

WHR-H3B

WHR-H4

WHR-H5

Tributary of West Humber River

Stantec

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Dripline (as staked by TRCA, August 24, 2023)
- Floodplain (TRCA)
- HDF Transition Area
- Meanderbelt Width (Geomorphix, October 2023)
- Meanderbelt Width Truncated at Toe of Slope (Geomorphix, October 2023)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Valleyland Feature Limit (Stantec 2023)
- Watercourse (Permanent)
- Greenbelt Natural Heritage System

Headwater Drainage Features (HDF) Management Recommendations

- Conservation
- Protection

0 100 200 m

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Notes

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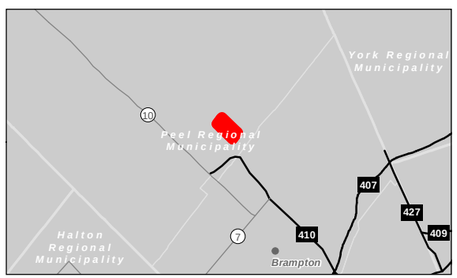
4. The proposed development plan was designed by others and should be considered approximate.



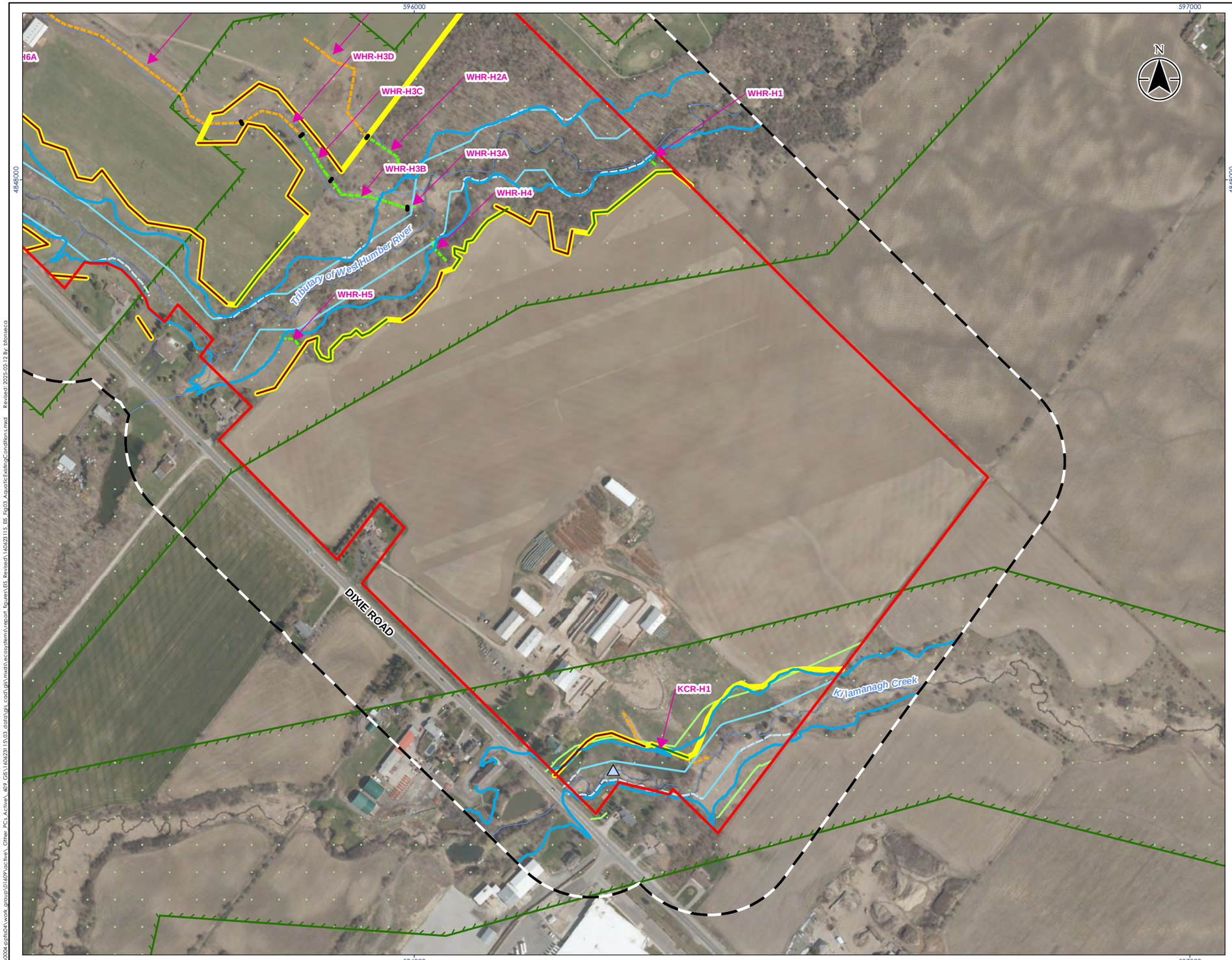
Project Location
Town of Caledon

160623115 REV6
Prepared by BF on 2025-02-12

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
3.1

Title
Aquatic Existing Conditions



Stantec

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Culvert
- Dripline (as staked by TRCA, August 24, 2023)
- Floodplain (TRCA)
- HDF Transition Area
- Meanderbelt Width (Geomorphix, October 2023)
- Meanderbelt Width Truncated at Toe of Slope (Geomorphix, October 2023)
- Regulated Redside Dace Habitat (Meanderbelt + 30m)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Valleyland Feature Limit (Stantec 2023)
- Watercourse (Permanent)
- Greenbelt Natural Heritage System

Headwater Drainage Features (HDF) Management Recommendations

- Conservation
- Protection

0 100 200 m

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Notes

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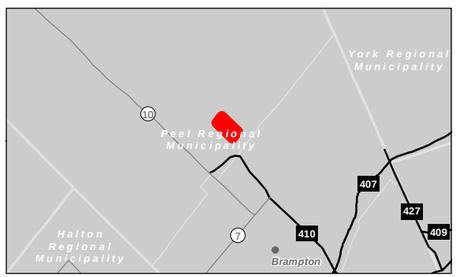

Project Location
Town of Caledon

160623115 REV6
Prepared by BF on 2025-02-12

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
3.2

Title
Aquatic Existing Conditions

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Amphibian Call Survey Station
- BMS - Bat Monitoring Station
- BBS - Breeding Bird Station
- ELC Boundary
- Dripline (as staked by TRCA, August 24, 2023)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Valleyland Feature Limit (Stantec 2023)
- Watercourse (Permanent)
- Greenbelt Natural Heritage System

ELC Description

- CGL_1 - Golf Course
- CUW - Cultural Woodland
- CVI_1 - Transportation
- CVR_1 - Low Density Residential
- CVR_4 - Rural Property
- FOCM1 - Dry - Fresh Pine Coniferous Forest
- FOD - Deciduous Forest
- FODM4-5 - Dry - Fresh Manitoba Maple Deciduous Forest
- FODM4-9 - Dry - Fresh Basswood Deciduous Forest
- FODM5-1 - Dry – Fresh Sugar Maple Deciduous Forest
- FODM6-4 - Fresh - Moist Sugar Maple - White Elm Deciduous Forest
- FODM7-4 - Fresh – Moist Black Walnut Lowland Deciduous Forest
- FODM7-7 - Fresh - Moist Manitoba Maple Lowland Deciduous Forest
- FOM-a - Sugar Maple - Balsam Fir Mixed Forest
- MAM - Meadow Marsh
- MAMM1-3/THDM2 - Reed-canary Grass Graminoid Mineral Meadow Marsh/Dry - Fresh Deciduous Shrub Thicket
- MAMM1-3 - Reed-canary Grass Graminoid Mineral Meadow Marsh
- MAMM2-a - Smartweed Mineral Meadow Marsh
- MEG - Graminoid Meadow
- MEMM3/MAMM3-1 - Dry - Fresh Mixed Meadow/Mixed Mineral Meadow Marsh
- MEMM3 - Dry - Fresh Mixed Meadow
- MEMM4 - Fresh - Moist Mixed Meadow
- OAGM1 - Annual Row Crops
- OAGM4 - Open Pasture
- OAO - Open Aquatic
- SWDM4-1 - Willow Mineral Deciduous Swamp
- SWDM4-2 - White Elm Mineral Deciduous Swamp
- SWT/CUW1 - Thicket Swamp/Mineral Cultural Woodland
- THDM2 - Dry - Fresh Deciduous Shrub Thicket

0 100 200 m

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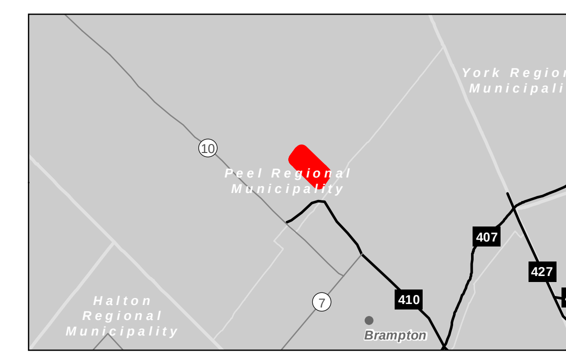

Project Location
Town of Caledon

160623115 REV6
Prepared by BF on 2025-07-23

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
4.1

Title
Terrestrial Existing Conditions

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Stantec

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Amphibian Call Survey Station
- BMS - Bat Monitoring Station
- BBS - Breeding Bird Station
- Culvert
- ELC Boundary
- Dripline (as staked by TRCA, August 24, 2023)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Valleyland Feature Limit (Stantec 2023)
- Watercourse (Permanent)
- Greenbelt Natural Heritage System

ELC Description

- CGL_1 - Golf Course
- CVC - Commercial and Institutional
- CVC_2 - Light Industry
- CVI_1 - Transportation
- CVR_1 - Low Density Residential
- CVR_4 - Rural Property
- FOD - Deciduous Forest
- FODM4-5 - Dry - Fresh Manitoba Maple Deciduous Forest
- FODM4-9 - Dry - Fresh Basswood Deciduous Forest
- FODM5-1 - Dry – Fresh Sugar Maple Deciduous Forest
- FODM6-4 - Fresh - Moist Sugar Maple - White Elm Deciduous Forest
- FODM7-4 - Fresh – Moist Black Walnut Lowland Deciduous Forest
- FODM7-7 - Fresh - Moist Manitoba Maple Lowland Deciduous Forest
- MAMM1-3/MEMM3 - Reed-canary Grass Graminoid Mineral Meadow Marsh/Dry - Fresh Mixed Meadow
- MAMM1-3/THDM2 - Reed-canary Grass Graminoid Mineral Meadow Marsh/Dry - Fresh Deciduous Shrub Thicket
- MAMM1-3 - Reed-canary Grass Graminoid Mineral Meadow Marsh
- MAMM2-a - Smartweed Mineral Meadow Marsh
- MEG - Graminoid Meadow
- MEMM3 - Dry - Fresh Mixed Meadow
- MEMM4 - Fresh - Moist Mixed Meadow
- OAGM1 - Annual Row Crops
- OAGM4 - Open Pasture
- OAO - Open Aquatic
- SWDM4-1 - Willow Mineral Deciduous Swamp
- SWDM4-2 - White Elm Mineral Deciduous Swamp
- SWT/CUW1 - Thicket Swamp/Mineral Cultural Woodland
- THDM2 - Dry - Fresh Deciduous Shrub Thicket

0 100 200 m

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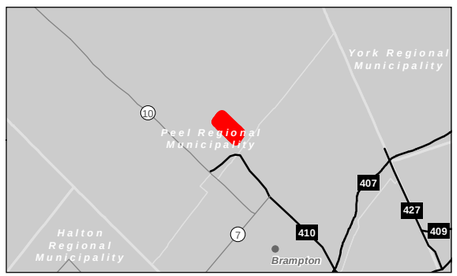

Project Location
Town of Caledon

160623115 REV6
Prepared by BF on 2025-07-23

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
4.2

Title
Terrestrial Existing Conditions

595000
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4848000

DIXIE ROAD
OLD SCHOOL ROAD
Toronto and Region Conservation Authority
Tributary of West Humber River

N

Stantec

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Permanent Footprint (Stantec 2023)
- Temporary Footprint - Grading Limits (Stantec 2025)
- Proposed Development (Overall Site Plan, Ware Malcomb, 2025-01-09)
- Dripline (as staked by TRCA, August 24, 2023)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Floodplain (TRCA)
- 10 m Setback from Regional Floodline (Stantec 2023)
- Valleyland Feature Limit (Stantec 2023)
- 10 m Setback from Valleyland Feature Limit (Stantec 2023)
- 30 m Setback from Valleyland Feature Limit (Stantec 2023)
- Meanderbelt Width (Geomorphix, October 2023)
- Meanderbelt Width Truncated at Toe of Slope (Geomorphix, October 2023)
- Watercourse (Permanent)

0 100 200 m

1:5,000 (At original document size of 11x17)

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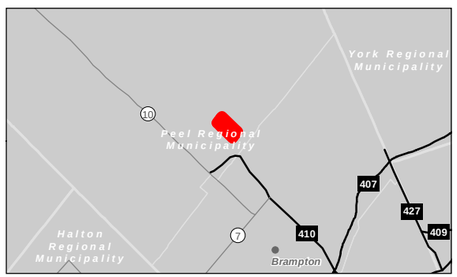


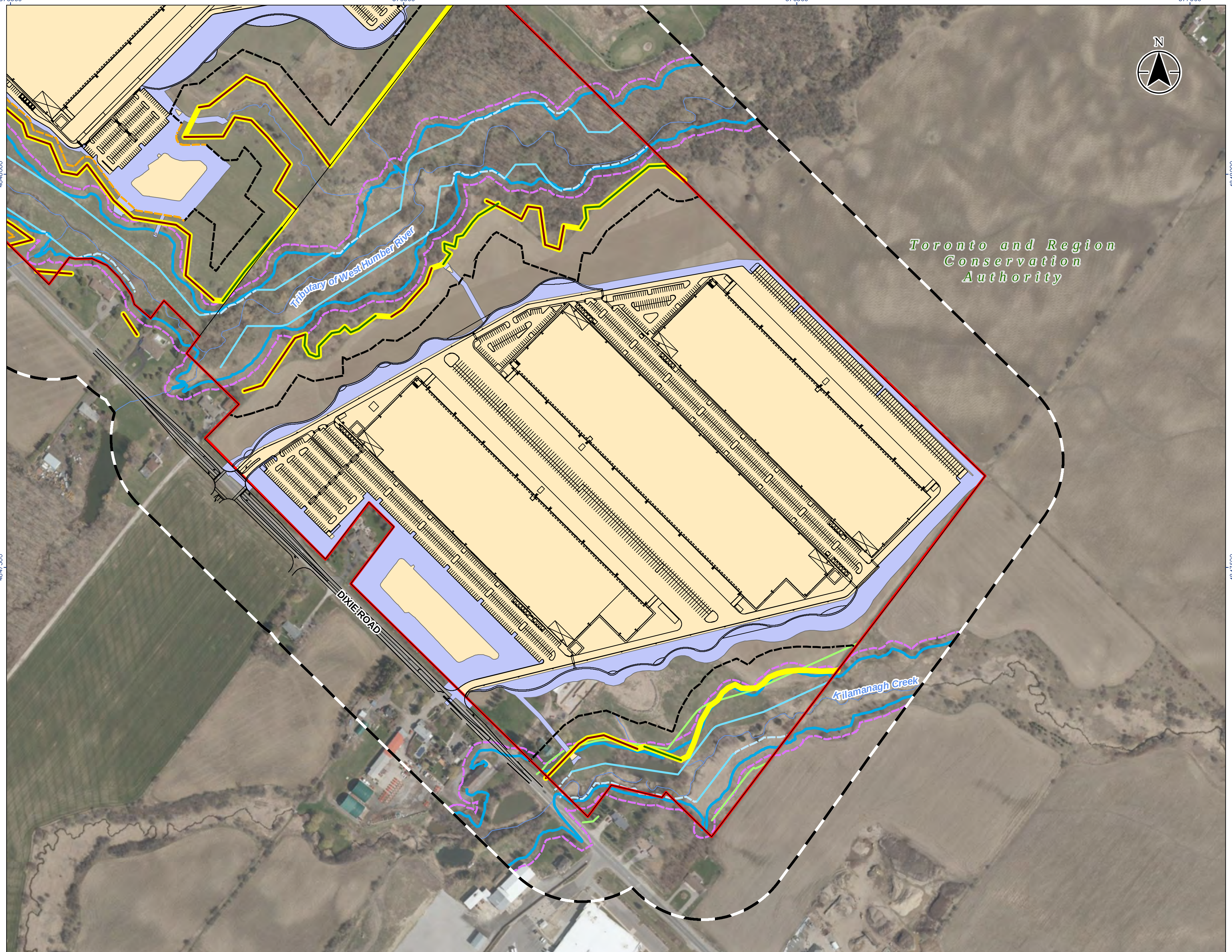
Project Location
Town of Caledon

160623115 REV7
Prepared by BF on 2025-02-12

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
5.1

Title
Proposed Developments – Permanent (Surface-level) and Temporary (Grading/Construction Limit) Footprints



Stantec

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Permanent Footprint (Stantec 2023)
- Temporary Footprint - Grading Limits (Stantec 2025)
- Proposed Development (Overall Site Plan, Ware Malcomb, 2025-01-09)
- Dripline (as staked by TRCA, August 24, 2023)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Floodplain (TRCA)
- 10 m Setback from Regional Floodline (Stantec 2023)
- Valleyland Feature Limit (Stantec 2023)
- 10 m Setback from Valleyland Feature Limit (Stantec 2023)
- 30 m Setback from Valleyland Feature Limit (Stantec 2023)
- Meanderbelt Width (Geomorphix, October 2023)
- Meanderbelt Width Truncated at Toe of Slope (Geomorphix, October 2023)
- Regulated Redside Dace Habitat (Meanderbelt + 30m)
- Watercourse (Permanent)

0 100 200 m

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Notes

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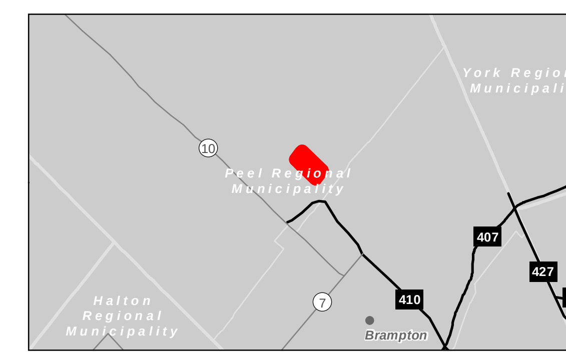

Project Location
Town of Caledon

160623115 REV7
Prepared by BF on 2025-02-12

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
5.2

Title
Proposed Developments – Permanent (Surface-level) and Temporary (Grading/Construction Limit) Footprints

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Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Permanent Footprint (Stantec 2023)
- Temporary Footprint - Grading Limits (Stantec 2025)
- ELC Boundary
- Dripline (as staked by TRCA, August 24, 2023)
- Meanderbelt Width (Geomorphix, October 2023)
- Meanderbelt Width Truncated at Toe of Slope (Geomorphix, October 2023)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Valleyland Feature Limit (Stantec 2023)
- 10 m Setback from Valleyland Feature Limit (Stantec 2023)
- 30 m Setback from Valleyland Feature Limit (Stantec 2023)
- Watercourse (Permanent)
- Greenbelt Natural Heritage System

ELC Description

- CGL_1 - Golf Course
- CUW - Cultural Woodland
- CVI_1 - Transportation
- CVR_1 - Low Density Residential
- CVR_4 - Rural Property
- FOCM1 - Dry - Fresh Pine Coniferous Forest
- FOD - Deciduous Forest
- FODM4-5 - Dry - Fresh Manitoba Maple Deciduous Forest
- FODM4-9 - Dry - Fresh Basswood Deciduous Forest
- FODM5-1 - Dry – Fresh Sugar Maple Deciduous Forest
- FODM6-4 - Fresh - Moist Sugar Maple - White Elm Deciduous Forest
- FODM7-4 - Fresh – Moist Black Walnut Lowland Deciduous Forest
- FODM7-7 - Fresh - Moist Manitoba Maple Lowland Deciduous Forest
- FOM-a - Sugar Maple - Balsam Fir Mixed Forest
- MAM - Meadow Marsh
- MAMM1-3/THDM2 - Reed-canary Grass Graminoid Mineral Meadow Marsh/Dry - Fresh Deciduous Shrub Thicket
- MAMM1-3 - Reed-canary Grass Graminoid Mineral Meadow Marsh
- MAMM2-a - Smartweed Mineral Meadow Marsh
- MEG - Graminoid Meadow
- MEMM3/MAMM3-1 - Dry - Fresh Mixed Meadow/Mixed Mineral Meadow Marsh
- MEMM3 - Dry - Fresh Mixed Meadow
- MEMM4 - Fresh - Moist Mixed Meadow
- OAGM1 - Annual Row Crops
- OAGM4 - Open Pasture
- OAO - Open Aquatic
- SWDM4-1 - Willow Mineral Deciduous Swamp
- SWDM4-2 - White Elm Mineral Deciduous Swamp
- SWT/CUW1 - Thicket Swamp/Mineral Cultural Woodland
- THDM2 - Dry - Fresh Deciduous Shrub Thicket

0 100 200 m

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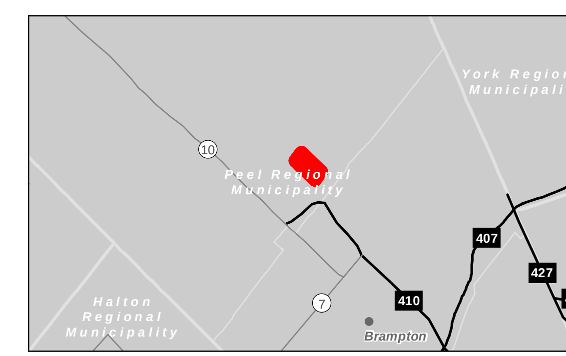
3. Orthoimagery © First Base Solutions, 2025. Imagery Date, 2022.
4. The proposed development plan was designed by others and should be considered approximate.



Project Location
Town of Caledon

160623115 REV6
Prepared by BF on 2025-02-20

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
6.1

Title
Natural Heritage Impact Areas

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Stantec

Legend

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Permanent Footprint (Stantec 2023)
- Temporary Footprint - Grading Limits (Stantec 2025)
- ELC Boundary
- Dripline (as staked by TRCA, August 24, 2023)
- Meanderbelt Width (Geomorphix, October 2023)
- Meanderbelt Width Truncated at Toe of Slope (Geomorphix, October 2023)
- Regulated Redside Dace Habitat (Meanderbelt + 30m)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Valleyland Feature Limit (Stantec 2023)
- 10 m Setback from Valleyland Feature Limit (Stantec 2023)
- 30 m Setback from Valleyland Feature Limit (Stantec 2023)
- Watercourse (Permanent)
- Greenbelt Natural Heritage System

ELC Description

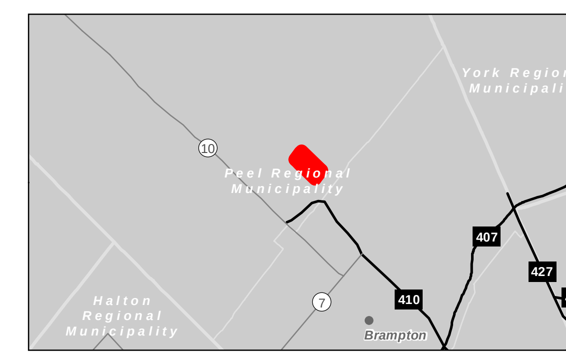
- **CGL_1** - Golf Course
- **CVC** - Commercial and Institutional
- **CVC_2** - Light Industry
- **CVI_1** - Transportation
- **CVR_1** - Low Density Residential
- **CVR_4** - Rural Property
- **FOD** - Deciduous Forest
- **FODM4-5** - Dry - Fresh Manitoba Maple Deciduous Forest
- **FODM4-9** - Dry - Fresh Basswood Deciduous Forest
- **FODM5-1** - Dry – Fresh Sugar Maple Deciduous Forest
- **FODM6-4** - Fresh - Moist Sugar Maple - White Elm Deciduous Forest
- **FODM7-4** - Fresh – Moist Black Walnut Lowland Deciduous Forest
- **FODM7-7** - Fresh - Moist Manitoba Maple Lowland Deciduous Forest
- **MAMM1-3/MEMM3** - Reed-canary Grass Graminoid Mineral Meadow Marsh/Dry - Fresh Mixed Meadow
- **MAMM1-3/THDM2** - Reed-canary Grass Graminoid Mineral Meadow Marsh/Dry - Fresh Deciduous Shrub Thicket
- **MAMM1-3** - Reed-canary Grass Graminoid Mineral Meadow Marsh
- **MAMM2-a** - Smartweed Mineral Meadow Marsh
- **MEG** - Graminoid Meadow
- **MEMM3** - Dry - Fresh Mixed Meadow
- **MEMM4** - Fresh - Moist Mixed Meadow
- **OAGM1** - Annual Row Crops
- **OAGM4** - Open Pasture
- **OAO** - Open Aquatic
- **SWDM4-1** - Willow Mineral Deciduous Swamp
- **SWDM4-2** - White Elm Mineral Deciduous Swamp
- **SWT/CUW1** - Thicket Swamp/Mineral Cultural Woodland
- **THDM2** - Dry - Fresh Deciduous Shrub Thicket

0 100 200 m

1:5,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Contains information licensed under the Open Government Licence – Ontario, and the Open Government Licence - Canada, accessed 2025.
3. Orthoimagery © First Base Solutions, 2025. Imagery Date, 2022.
4. The proposed development plan was designed by others and should be considered approximate.



Project Location
Town of Caledon

160623115 REV6
Prepared by BF on 2025-02-20

Client/Project
QUADREAL PROPERTY GROUP
DIXIE ROAD ENVIRONMENTAL IMPACT STUDY

Figure No.
6.2

Title
Natural Heritage Impact Areas

Appendix B Records of Correspondence

Cymbaly, Lauren

From: Cymbaly, Lauren
Sent: Thursday, September 21, 2023 12:14 PM
To: Nick Cascone
Cc: Akhtar, Riz; Spisani, Sean; Den Haas, Taco
Subject: 12489 & 12861 Dixie Road, Caledon - Natural Heritage Feature Staking August 24 - TRCA review of OLS survey
Attachments: 160623115_Fig01_Topo_20230921.pdf; 22-30-852-01-SKETCH(31AUG2023).pdf; 22-30-852-01-SKETCH(31AUG2023).dwg; 22-30-852-00-3D(2022Apr28).dwg

Hi Nick,

Welcome back, I hope you had a great vacation.

As discussed on site on August 24 2023 (persons present: Lauren Cymbaly from Stantec, Aravinda Basnayaka from JD Barns, Maria Parish from TRCA and Nick Cascone from TRCA), please see attached OLS survey and requested figures including topographic overlay for TRCA review and sign off.

It is our understanding that this linework is valid for 5 years upon approval.

As discussed in the field, for the EIS we are connecting the staked dripline and top of bank lines for one continuous feature limit and have extended them where discussed due to site access / health and safety concerns.

I am copying Riz (project PM), and my colleagues Sean and Taco who will be looking after this file while I am on vacation.

Please let us know if you have any questions or comments regarding the attached.

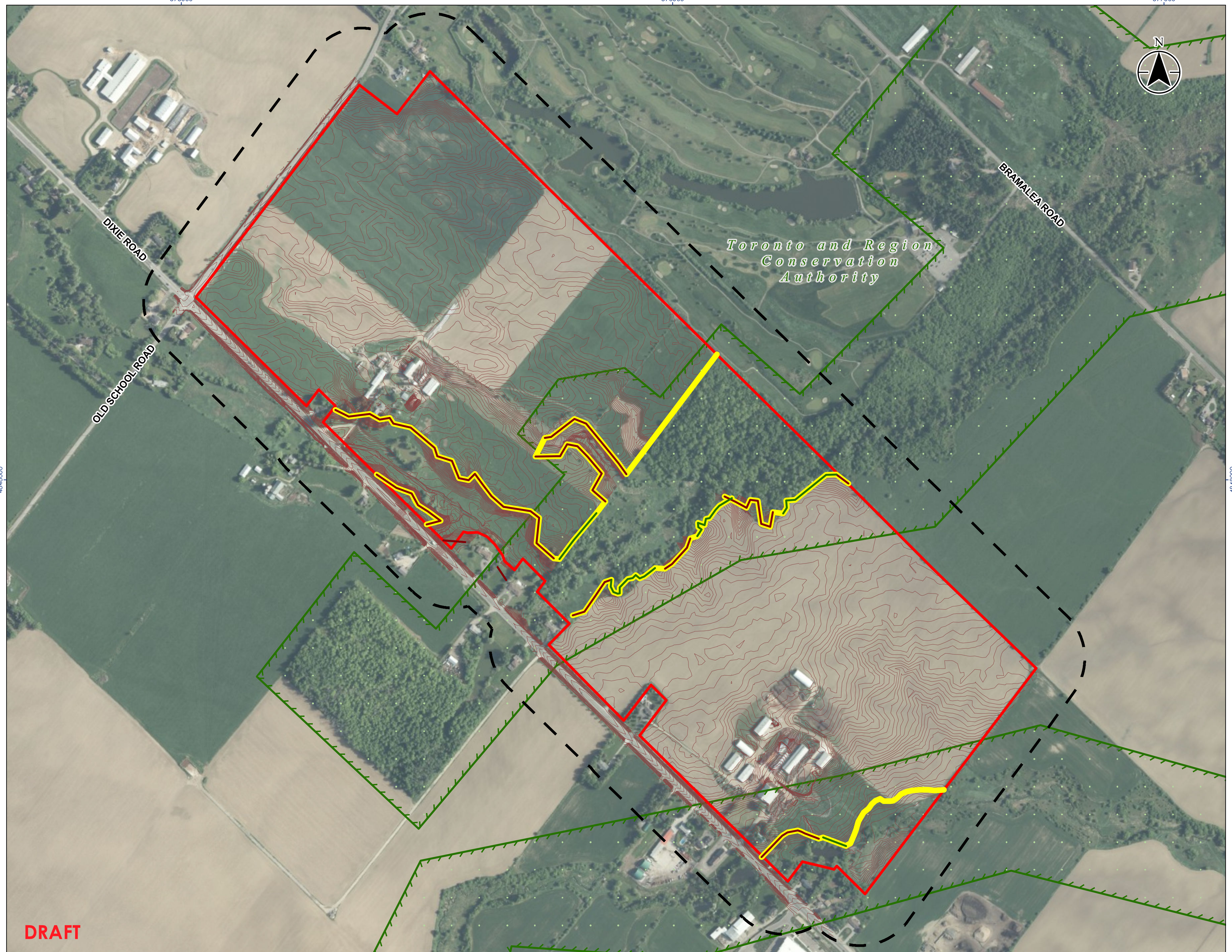
Thanks,

Kind Regards,

Lauren Cymbaly, M.E.S.
Senior Ecologist
Stantec
100 – 401 Wellington Street West, Toronto ON M5V 1E7
Phone: (416) 786-1302
Fax: (416) 596-6680
Lauren.Cymbaly@stantec.com

VACATION ALERT – September 22nd – October 6th

Stantec



Stantec

Legend

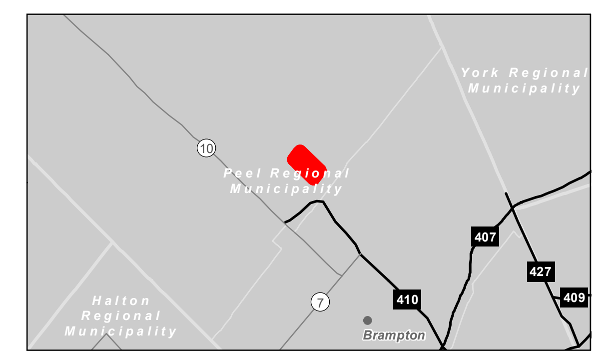
- Site Boundary (Approx.)
- Study Area (120 m)
- Contours
- Dripline (as staked by TRCA, August 24, 2023)
- Top of Bank (as staked by TRCA, August 24, 2023)
- Valleyland Feature Limit (Stantec 2023)
- Greenbelt Natural Heritage System

0 200 400 m

1:8,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2022.
3. Orthoimagery © First Base Solutions, 2022. Imagery Date, 2020.



Project Location
Inglewood, ON

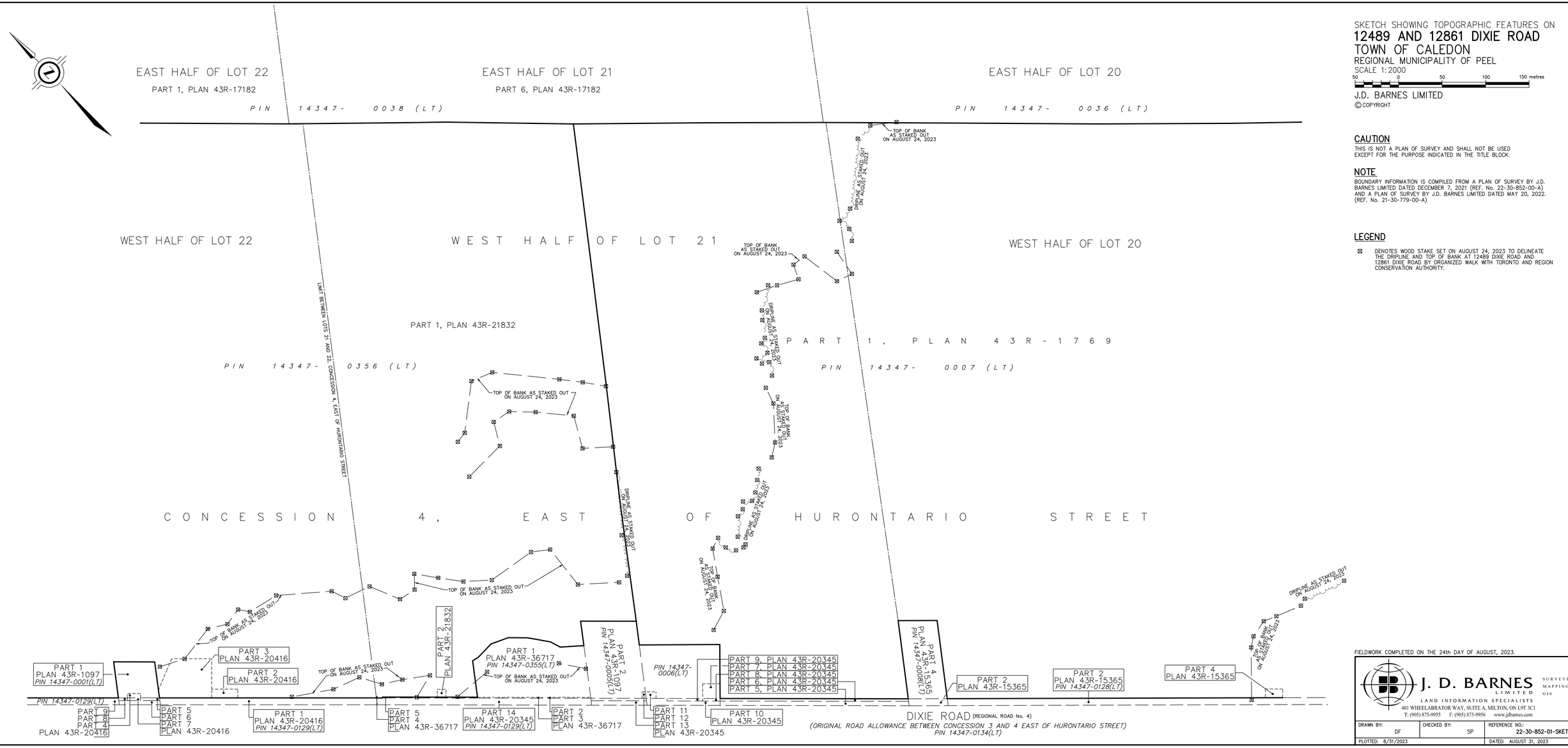
160623115 REV4
Prepared by BF on 2023-09-21
Technical Review by DH on 2022-04-28

Client/Project
QUADREAL PROPERTY GROUP
INGLEWOOD, ON

Figure No.
1

DRAFT

Title
Staked TOB and Dripline / Feature Limits - Dixie Road EIS



SKETCH SHOWING TOPOGRAPHIC FEATURES ON

12489 AND 12861 DIXIE ROAD

TOWN OF CALEDON

REGIONAL MUNICIPALITY OF PEEL

SCALE 1:2000

50 0 50 100 150 metres

J.D. BARNES LIMITED

CAUTION

THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK.

NOTE

BOUNDARY INFORMATION IS COMPILED FROM A PLAN OF SURVEY BY J.D. BARNES LIMITED DATED DECEMBER 7, 2021 (REF. No. 22-30-852-00-A) AND A PLAN OF SURVEY BY J.D. BARNES LIMITED DATED MAY 20, 2022. (REF. No. 21-30-779-00-A)

LEGEND

⊠ DENOTES WOOD STAKE SET ON AUGUST 24, 2023 TO DELINEATE THE DRIPLINE AND TOP OF BANK AT 12489 DIXIE ROAD AND 12861 DIXIE ROAD BY ORGANIZED WALK WITH TORONTO AND REGION CONSERVATION AUTHORITY.

FIELDWORK COMPLETED ON THE 24th DAY OF AUGUST, 2023.

J. D. BARNES LIMITED
SURVEYING MAPPING GIS
LAND INFORMATION SPECIALISTS
401 WHEELABRATOR WAY, SUITE A, MILTON, ON L9T 3C1
T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
DF	SP	22-30-852-01-SKETCH
PLOTTED: 8/31/2023		DATED: AUGUST 31, 2023

FILE: G:\22-30-852\01\Drawing\22-30-852-01-SKETCH.dgn

Toronto and Region Conservation Authority

October 19, 2023 CFN 68375.06

By Email: lauren.cymbaly@stantec.com
Lauren Cymbaly
Stantec
100-401 Wellington Street West
Toronto, ON M5V 1E7

Re: Staking of Natural Features – Survey Confirmation
12489 and 12861 Dixie Road
Town of Caledon, Region of Peel

Dear Lauren Cymbaly,

This letter confirms that the survey (prepared by J.D. Barnes, dated August 31, 2023) and accompanying topographic map (Figure No. 1, prepared by Stantec, dated October 17, 2023) provided for 12489 and 12861 Dixie Road in Caledon accurately reflects the limit of features staked in the field with Toronto and Region Conservation Authority (TRCA) staff on August 24, 2023.

TRCA staff note that the staked limit as depicted on the submitted survey/map is subject to the following conditions:

- TRCA's staked limit for the feature traversing the southern corner of 12489 Dixie Road terminated with the dripline (as depicted on the survey). However, on the topographic map submitted in support of the survey, Stantec has extended the limit of the feature from the end of the dripline, around the 258 metre contour, before tying into the eastern property boundary. It is noted that TRCA staff are in agreement with this extension.

- The topographic map prepared by Stantec identifies a feature limit for the woodland located at the northeast portion of both 12861 and 12489 Dixie Road. As a point of clarification, it is noted that this limit was not staked by TRCA staff in the field.

Please note that the survey is valid for a period of 5 years, after which time, if the proposed development is not substantially underway, a new staking and/or confirmatory site visit may be required.

I trust these comments are of assistance. Should you have any questions, please contact me at nick.cascone@trca.ca.

Sincerely,

Nick Cascone, M.Sc.Pl
Senior Planner
Development Planning and Permits | Development and Engineering Services

NC/

Den Haas, Taco

From: McAllister, Aurora (MECP) <Aurora.McAllister@ontario.ca>
Sent: Wednesday, October 18, 2023 11:46 AM
To: Den Haas, Taco
Cc: Cymbaly, Lauren
Subject: RE: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hi Taco,

I can confirm that Kilmanagh Creek is considered to be an occupied reach of stream for Redside Dace.

The features mapped as 'contributing' Redside Dace habitat on the figure provided in the letter were identified with support from MNRF based on the best available data, and the map was reviewed and approved by MNRF. These features are considered to be regulated habitat for this species.

The Ministry has records of several other species at risk on and adjacent to the property that should also be considered in the impact assessment.

Kind regards,

Aurora McAllister (she/her) | Management Biologist – Species at Risk | Permissions | Species at Risk Branch | Ministry of the Environment, Conservation & Parks |

From: Den Haas, Taco <Taco.DenHaas@stantec.com>
Sent: October 18, 2023 6:24 AM
To: McAllister, Aurora (MECP) <Aurora.McAllister@ontario.ca>; Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Cymbaly, Lauren <Lauren.Cymbaly@stantec.com>
Subject: FW: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hello Aurora:

Could you please look into our request attached? Don't hesitate to call me directly (647 205 5738) if you want to discuss, thank you.

Taco

Taco Den Haas / Senior Fisheries Biologist / Stantec / 647-205-5738 / taco.denhaas@stantec.com

---

From: Den Haas, Taco
Sent: Thursday, September 28, 2023 2:02 PM
To: Aurora McAllister (aurora.mcallister@ontario.ca) <aurora.mcallister@ontario.ca>; SAROntario@ontario.ca.
Cc: Cymbaly, Lauren <Lauren.Cymbaly@stantec.com>
Subject: FW: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hi Aurora:

Resending this email because I copied an email address that is no longer monitored. Copied @'SAROntario@ontario.ca' now.
Sorry for the double submission.

Thanks,
Taco

Taco Den Haas / Senior Fisheries Biologist / Stantec / 647-205-5738 / taco.denhaas@stantec.com

---

From: Den Haas, Taco
Sent: Thursday, September 28, 2023 1:56 PM
To: Aurora McAllister (aurora.mcallister@ontario.ca) <aurora.mcallister@ontario.ca>
Cc: esa.aurora@ontario.ca; Cymbaly, Lauren <Lauren.Cymbaly@stantec.com>
Subject: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hello Aurora

Stantec was retained by Quadreal Property Group to complete an Environmental Impact Study (EIS) for 12489 & 12861 Dixie Road in the Town of Caledon. We would like to consult with you about the tributary of the West Humber River that traverses the Site and potential presence of Redside Dace and their habitat. Please see attached letter with our request and details on the aquatic conditions on the Site. Please reach out to me directly (647-205-5738) if you have any trouble opening the attachment or if you have any questions about this request.

Thanks
Taco

Taco Den Haas M.Sc. CAN-CISEC
Senior Fisheries Biologist

Mobile: 647-205-5738
Phone: 905-474-7777
taco.denhaas@stantec.com

Stantec
300W-675 Cochrane Drive
Markham ON L3R 0B8

Den Haas, Taco

From: McAllister, Aurora (MECP) <Aurora.McAllister@ontario.ca>
Sent: Tuesday, July 8, 2025 3:17 PM
To: Den Haas, Taco
Cc: Cymbaly, Lauren
Subject: RE: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hi Taco,

Confirming that the tributary of the West Humber River in the study area is not occupied – it is upstream of an occupied Redside Dace reach of stream.

Kilmanagh Creek (on the south end of the study area) is an occupied reach of stream.

Kind regards,

Aurora

Aurora McAllister (she/her) | Management Biologist – Species at Risk | Permissions | Species at Risk Branch | Ministry of the Environment, Conservation & Parks |

From: Den Haas, Taco <Taco.DenHaas@stantec.com>
Sent: Wednesday, June 18, 2025 11:59 AM
To: McAllister, Aurora (MECP) <Aurora.McAllister@ontario.ca>
Cc: Cymbaly, Lauren <Lauren.Cymbaly@stantec.com>
Subject: RE: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hello Aurora:

Stantec was retained by QuadReal Property Group to complete an Environmental Impact Study (EIS) for 12489 & 12861 Dixie Road in the Town of Caledon. Site Location Figure attached. In 2023 we communicated on this Project and MECP informed us that that reach is considered 'contributing' habitat for Redside Dace. Now a couple years have passed since then so we would like to confirm MECP's assessment of this reach again. Could you please confirm the status of the tributary of the West Humber River within this Site when you have a chance?

Please reach out to me directly (647-205-5738) if you have any trouble opening the Site Location Figure attached or if you have any questions about this request.

Thanks
Taco

Taco den Haas, M.Sc.
Senior Fisheries Biologist, Associate

Stantec

From: McAllister, Aurora (MECP) <Aurora.McAllister@ontario.ca>
Sent: Wednesday, October 18, 2023 11:46 AM

To: Den Haas, Taco <Taco.DenHaas@stantec.com>
Cc: Cymbaly, Lauren <Lauren.Cymbaly@stantec.com>
Subject: RE: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hi Taco,

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The features mapped as 'contributing' Redside Dace habitat on the figure provided in the letter were identified with support from MNRF based on the best available data, and the map was reviewed and approved by MNRF. These features are considered to be regulated habitat for this species.

The Ministry has records of several other species at risk on and adjacent to the property that should also be considered in the impact assessment.

Kind regards,

Aurora McAllister (she/her) | Management Biologist – Species at Risk | Permissions | Species at Risk Branch | Ministry of the Environment, Conservation & Parks |

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Subject: FW: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hi Aurora:

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Sorry for the double submission.

Thanks,
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Sent: Thursday, September 28, 2023 1:56 PM
To: Aurora McAllister (aurora.mcallister@ontario.ca) <aurora.mcallister@ontario.ca>
Cc: esa.aurora@ontario.ca; Cymbaly, Lauren <Lauren.Cymbaly@stantec.com>
Subject: Requesting Information re: Redside Dace for Tributary of the West Humber - 12489 & 12861 Dixie Road (Site) in the Town of Caledon, Ontario.

Hello Aurora

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Thanks
Taco

Taco Den Haas M.Sc. CAN-CISEC
Senior Fisheries Biologist

Mobile: 647-205-5738
Phone: 905-474-7777
taco.denhaas@stantec.com

Stantec
300W-675 Cochrane Drive
Markham ON L3R 0B8

Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

Appendix C Plant Observations

Appendix C: Vascular Plant Observations

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	TRCA Status[7]	Coefficient of Conservatism[8]	Coefficient of Wetness[9]
Alismataceae	*Alisma subcordatum*	Southern Water-plantain	S4?	-	-	L4	1	-5
Alismataceae	*Alisma triviale*	Northern Water-plantain	S5	-	-	L5	1	-5
Anacardiaceae	*Rhus copallinum*	Winged Sumac	S4	-	-	-	7	5
Anacardiaceae	*Rhus glabra*	Smooth Sumac	S5	-	-	L+	7	5
Anacardiaceae	*Rhus typhina*	Staghorn Sumac	S5	-	-	L5	1	3
Apiaceae	*Daucus carota*	Wild Carrot	SE5	-	-	L+	-	5
Apocynaceae	*Asclepias syriaca*	Common Milkweed	S5	-	-	L5	0	5
Araceae	*Lemna minor*	Small Duckweed	S5	-	-	L5	5	-5
Araliaceae	*Hydrocotyle americana*	American Water Pennywort	S4S5	-	-	L4	7	-5
Asteraceae	*Achillea millefolium*	Common Yarrow	SE5?	-	-	L+	-	3
Asteraceae	*Ambrosia artemisiifolia*	Common Ragweed	S5	-	-	L5	0	3
Asteraceae	*Arctium minus*	Common Burdock	SE5	-	-	L+	-	3
Asteraceae	*Arctium tomentosum*	Woolly Burdock	SE1	-	-	L+	-	3
Asteraceae	*Bidens frondosa*	Devil's Beggarticks	S5	-	-	L5	3	-3
Asteraceae	*Bidens polylepis*	Awnless Beggarticks	SEH	-	-	-	-	-3
Asteraceae	*Carduus nutans*	Nodding Thistle	SE5	-	-	-	-	3
Asteraceae	*Cichorium intybus*	Wild Chicory	SE5	-	-	L+	-	5
Asteraceae	*Cirsium arvense*	Canada Thistle	SE5	-	-	L+	-	3
Asteraceae	*Cirsium palustre*	Marsh Thistle	SE2?	-	-	-	-	-3
Asteraceae	*Cirsium vulgare*	Bull Thistle	SE5	-	-	L+	-	3
Asteraceae	*Erigeron annuus*	Annual Fleabane	S5	-	-	L5	0	3
Asteraceae	*Eutrochium maculatum*	Spotted Joe Pye Weed	S5	-	-	-	3	-5
Asteraceae	*Hieracium lachenalii*	Common Hawkweed	SE2?	-	-	L+	-	5
Asteraceae	*Lactuca biennis*	Tall Blue Lettuce	S5	-	-	L4	6	0

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	TRCA Status[7]	Coefficient of Conservatism[8]	Coefficient of Wetness[9]
Asteraceae	*Lactuca serriola*	Prickly Lettuce	SE5	-	-	L+	-	3
Asteraceae	*Leucanthemum vulgare*	Oxeye Daisy	SE5	-	-	L+	-	5
Asteraceae	*Matricaria chamomilla*	Wild Chamomile	SE3	-	-	L+	-	5
Asteraceae	*Pilosella aurantiaca*	Orange Hawkweed	SE5	-	-	L+	-	5
Asteraceae	*Solidago altissima*	Tall Goldenrod	S5	-	-	-	1	3
Asteraceae	*Solidago canadensis var. canadensis*	Canada Goldenrod	S5	-	-	L5	1	3
Asteraceae	*Sonchus arvensis*	Field Sow-thistle	SE5	-	-	-	-	3
Asteraceae	*Sonchus asper*	Prickly Sow-thistle	SE5	-	-	L+	-	3
Asteraceae	*Symphyotrichum lanceolatum*	Panicled Aster	S5	-	-	-	3	-3
Asteraceae	*Symphyotrichum lateriflorum var. lateriflorum*	Calico Aster	S5	-	-	L5	3	0
Asteraceae	*Symphyotrichum novae-angliae*	New England Aster	S5	-	-	L5	2	-3
Asteraceae	*Taraxacum officinale*	Common Dandelion	SE5	-	-	L+	-	3
Asteraceae	*Tragopogon dubius*	Yellow Goatsbeard	SE5	-	-	L+	-	5
Asteraceae	*Tussilago farfara*	Coltsfoot	SE5	-	-	L+	-	3
Balsaminaceae	*Impatiens capensis*	Spotted Jewelweed	S5	-	-	L5	4	-3
Balsaminaceae	*Impatiens glandulifera*	Purple Jewelweed	SE4	-	-	L+	-	-3
Brassicaceae	*Barbarea vulgaris*	Bitter Wintercress	SE5	-	-	L+	-	0
Brassicaceae	*Hesperis matronalis*	Dame's Rocket	SE5	-	-	L+	-	3
Cannabaceae	*Celtis occidentalis*	Common Hackberry	S4	-	-	L+	8	0
Caprifoliaceae	*Dipsacus fullonum*	Common Teasel	SE5	-	-	L+	-	3
Caprifoliaceae	*Lonicera morrowii*	Morrow's Honeysuckle	SE3	-	-	L+	-	3
Caprifoliaceae	*Lonicera tatarica*	Tatarian Honeysuckle	SE5	-	-	L+	-	3
Caprifoliaceae	*Lonicera x bella*	(Lonicera morrowii X Lonicera tatarica)	SNA	-	-	L+	-	3
Convolvulaceae	*Convolvulus arvensis*	Field Bindweed	SE5	-	-	L+	-	5
Cornaceae	*Cornus sericea*	Red-osier Dogwood	S5	-	-	L5	2	-3
Cucurbitaceae	*Echinocystis lobata*	Wild Cucumber	S5	-	-	L5	3	-3
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar	S5	-	-	L5	4	-3

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	TRCA Status[7]	Coefficient of Conservatism[8]	Coefficient of Wetness[9]
Fabaceae	*Gleditsia triacanthos*	Honey Locust	S2?	-	-	L+	8	0
Fabaceae	*Glycine max*	Soybean	SE2	-	-	-	-	5
Fabaceae	*Lotus corniculatus*	Garden Bird's-foot Trefoil	SE5	-	-	L+	-	3
Fabaceae	*Medicago lupulina*	Black Medick	SE5	-	-	L+	-	3
Fabaceae	*Medicago sativa*	Alfalfa	SE5	-	-	-	-	5
Fabaceae	*Melilotus albus*	White Sweet-clover	SE5	-	-	L+	-	3
Fabaceae	*Melilotus officinalis*	Yellow Sweet-clover	SE5	-	-	L+	-	3
Fabaceae	*Trifolium aureum*	Yellow Clover	SE5	-	-	L+	-	5
Fabaceae	*Trifolium pratense*	Red Clover	SE5	-	-	L+	-	3
Fabaceae	*Trifolium repens*	White Clover	SE5	-	-	L+	-	3
Fabaceae	*Vicia cracca*	Tufted Vetch	SE5	-	-	L+	-	5
Fagaceae	*Quercus bicolor*	Swamp White Oak	S4	-	-	-	8	-3
Fagaceae	*Quercus macrocarpa*	Bur Oak	S5	-	-	L4	5	3
Fagaceae	*Quercus rubra*	Northern Red Oak	S5	-	-	L4	6	3
Gentianaceae	*Gentiana andrewsii*	Andrews' Bottle Gentian	S4	-	-	-	6	-3
Hypericaceae	*Hypericum perforatum*	Common St. John's-wort	SE5	-	-	-	-	5
Juglandaceae	*Carya cordiformis*	Bitternut Hickory	S5	-	-	L4	6	0
Juglandaceae	*Carya ovata*	Shagbark Hickory	S5	-	-	-	6	3
Juglandaceae	*Juglans nigra*	Black Walnut	S4?	-	-	L5	5	3
Lamiaceae	*Glechoma hederacea*	Ground-ivy	SE5	-	-	L+	-	3
Lamiaceae	*Leonurus cardiaca*	Common Motherwort	SE5	-	-	-	-	5
Lamiaceae	*Mentha canadensis*	Canada Mint	S5	-	-	L5	3	-3
Lamiaceae	*Mentha x villosa var. alopecuroides*	Woolly Mint	SE1	-	-	-	-	-
Lythraceae	*Lythrum salicaria*	Purple Loosestrife	SE5	-	-	L+	-	-5
Magnoliaceae	*Liriodendron tulipifera*	Tulip Tree	S4	-	-	-	8	3
Malvaceae	*Malva neglecta*	Common Mallow	SE5	-	-	L+	-	5
Malvaceae	*Tilia americana*	Basswood	S5	-	-	L5	4	3

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	TRCA Status[7]	Coefficient of Conservatism[8]	Coefficient of Wetness[9]
Malvaceae	*Tilia cordata*	Little-leaved Linden	SE1	-	-	L+	-	5
Oleaceae	*Fraxinus pennsylvanica*	Red Ash	S4	-	-	L5	3	-3
Oleaceae	*Syringa vulgaris*	Common Lilac	SE5	-	-	L+	-	5
Onagraceae	*Circaea alpina*	Small Enchanter's Nightshade	S5	-	-	-	6	-3
Onagraceae	*Circaea canadensis*	Broad-leaved Enchanter's Nightshade	S5	-	-	-	2	3
Onagraceae	*Oenothera biennis*	Common Evening-primrose	S5	-	-	L5	0	3
Oxalidaceae	*Oxalis stricta*	Upright Yellow Wood-sorrel	SE5	-	-	L5	-	3
Papaveraceae	*Chelidonium majus*	Greater Celandine	SE5	-	-	L+	-	5
Pinaceae	*Abies balsamea*	Balsam Fir	S5	-	-	L3	5	-3
Pinaceae	*Picea abies*	Norway Spruce	SE3	-	-	L+	-	5
Pinaceae	*Picea glauca*	White Spruce	S5	-	-	L3	6	3
Pinaceae	*Picea pungens*	Blue Spruce	SE1	-	-	L+	-	3
Pinaceae	*Pinus nigra*	Austrian Pine	SE3	-	-	L+	-	5
Pinaceae	*Pinus strobus*	Eastern White Pine	S5	-	-	L4	4	3
Pinaceae	*Pinus sylvestris*	Scots Pine	SE5	-	-	L+	-	3
Plantaginaceae	*Linaria vulgaris*	Butter-and-eggs	SE5	-	-	L+	-	5
Plantaginaceae	*Plantago lanceolata*	English Plantain	SE5	-	-	L+	-	3
Plantaginaceae	*Plantago major*	Common Plantain	SE5	-	-	L+	-	3
Plantaginaceae	*Plantago media*	Hoary Plantain	SE3	-	-	L+	-	5
Poaceae	*Agrostis stolonifera*	Creeping Bentgrass	SE5	-	-	L+?	-	-3
Poaceae	*Bromus inermis*	Smooth Brome	SE5	-	-	L+	-	5
Poaceae	*Dactylis glomerata*	Orchard Grass	SE5	-	-	L+	-	3
Poaceae	*Echinochloa crus-galli*	Large Barnyard Grass	SE5	-	-	L+	-	-3
Poaceae	*Elymus canadensis*	Canada Wildrye	S5	-	-	-	8	3
Poaceae	*Elymus repens*	Quackgrass	SE5	-	-	L+	-	3
Poaceae	*Lolium perenne*	Perennial Ryegrass	SE4	-	-	L+	-	3
Poaceae	*Phalaris arundinacea*	Reed Canarygrass	S5	-	-	L+?	0	-3

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	TRCA Status[7]	Coefficient of Conservatism[8]	Coefficient of Wetness[9]
Poaceae	*Phleum pratense*	Common Timothy	SE5	-	-	-	-	3
Poaceae	*Phragmites australis*	Common Reed	SU	-	-	-	0	-3
Poaceae	*Poa pratensis*	Kentucky Bluegrass	S5	-	-	-	0	3
Poaceae	*Zea mays*	Corn	SE1	-	-	L+	-	5
Polygonaceae	*Persicaria hydropiper*	Marshpepper Smartweed	SE5	-	-	L+?	-	-5
Polygonaceae	*Persicaria lapathifolia*	Pale Smartweed	S5	-	-	L5	2	-3
Polygonaceae	*Persicaria longiseta*	Long-bristled Smartweed	SE1	-	-	L+	-	0
Polygonaceae	*Persicaria maculosa*	Spotted Lady's-thumb	SE5	-	-	L+	-	-3
Polygonaceae	*Rumex acetosella*	Sheep Sorrel	SE5	-	-	L+	-	3
Polygonaceae	*Rumex crispus*	Curled Dock	SE5	-	-	L+	-	0
Ranunculaceae	*Ranunculus acris*	Common Buttercup	SE5	-	-	L+	-	0
Ranunculaceae	*Ranunculus repens*	Creeping Buttercup	SE5	-	-	L+	-	0
Rhamnaceae	*Rhamnus cathartica*	European Buckthorn	SE5	-	-	L+	-	0
Rosaceae	*Crataegus monogyna*	English Hawthorn	SE4	-	-	-	-	3
Rosaceae	*Crataegus phaenopyrum*	Washington Hawthorn	SE1	-	-	L+	-	-
Rosaceae	*Crataegus pruinosa*	Frosted Hawthorn	S5	-	-	L3	4	5
Rosaceae	*Geum aleppicum*	Yellow Avens	S5	-	-	L5	2	0
Rosaceae	*Geum canadense*	Canada Avens	S5	-	-	L5	3	0
Rosaceae	*Malus baccata*	Siberian Crabapple	SE1	-	-	L+	-	5
Rosaceae	*Malus pumila*	Common Apple	SE4	-	-	L+	-	5
Rosaceae	*Prunus serotina*	Black Cherry	S5	-	-	-	3	3
Rosaceae	*Prunus virginiana*	Chokecherry	S5	-	-	-	2	3
Rosaceae	*Rubus idaeus*	Red Raspberry	S5	-	-	-	2	3
Rosaceae	*Rubus occidentalis*	Black Raspberry	S5	-	-	L5	2	5
Rosaceae	*Spiraea alba*	White Meadowsweet	S5	-	-	-	3	-3
Rosaceae	*Spiraea alba var. latifolia*	Broad-leaved Meadowsweet	S5	-	-	-	3	-3
Rosaceae	*Spiraea japonica*	Japanese Meadowsweet	SE1	-	-	L+	-	5

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	TRCA Status[7]	Coefficient of Conservatism[8]	Coefficient of Wetness[9]
Rosaceae	*Spiraea salicifolia*	Willow-leaved Meadowsweet	SE1	-	-	-	-	5
Rubiaceae	*Galium mollugo*	Smooth Bedstraw	SE5	-	-	L+	-	5
Salicaceae	*Populus balsamifera*	Balsam Poplar	S5	-	-	L5	4	-3
Salicaceae	*Populus deltoides*	Eastern Cottonwood	S5	-	-	-	4	0
Salicaceae	*Populus sp.*	Poplar sp.	-	-	-	-	-	-
Salicaceae	*Populus tremuloides*	Trembling Aspen	S5	-	-	L5	2	0
Salicaceae	*Populus x canadensis*	(Populus deltoides X Populus nigra)	SNA	-	-	L+	-	-
Salicaceae	*Salix alba*	White Willow	SE4	-	-	L+	-	-3
Salicaceae	*Salix bebbiana*	Bebb's Willow	S5	-	-	L4	4	-3
Salicaceae	*Salix discolor*	Pussy Willow	S5	-	-	L4	3	-3
Salicaceae	*Salix euxina*	Crack Willow	SE	-	-	-	-	0
Salicaceae	*Salix interior*	Sandbar Willow	S5	-	-	L5	1	-3
Salicaceae	*Salix sp.*	Willow sp.	-	-	-	-	-	-
Salicaceae	*Salix viminalis*	Basket Willow	SE2	-	-	L+	-	-3
Salicaceae	*Salix x sepulcralis*	(Salix alba X Salix babylonica)	SNA	-	-	L+	-	-
Sapindaceae	*Acer ginnala*	Amur Maple	SE1	-	-	L+	-	5
Sapindaceae	*Acer negundo*	Manitoba Maple	S5	-	-	L+?	0	0
Sapindaceae	*Acer platanoides*	Norway Maple	SE5	-	-	L+	-	5
Sapindaceae	*Acer rubrum*	Red Maple	S5	-	-	-	4	0
Sapindaceae	*Acer saccharinum*	Silver Maple	S5	-	-	L4	5	-3
Sapindaceae	*Acer saccharum*	Sugar Maple	S5	-	-	L5	4	3
Sapindaceae	*Acer x freemanii*	(Acer rubrum X Acer saccharinum)	SNA	-	-	L4	6	-5
Sapindaceae	*Aesculus hippocastanum*	Horse Chestnut	SE2	-	-	L+	-	5
Scrophulariaceae	*Verbascum thapsus*	Common Mullein	SE5	-	-	-	-	5
Solanaceae	*Solanum dulcamara*	Bittersweet Nightshade	SE5	-	-	L+	-	0
Typhaceae	*Typha latifolia*	Broad-leaved Cattail	S5	-	-	L4	1	-5
Ulmaceae	*Ulmus americana*	White Elm	S5	-	-	L5	3	-3

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	TRCA Status[7]	Coefficient of Conservatism[8]	Coefficient of Wetness[9]
Ulmaceae	*Ulmus pumila*	Siberian Elm	SE3	-	-	L+	-	3
Vitaceae	*Parthenocissus vitacea*	Thicket Creeper	S5	-	-	L5	4	3
Vitaceae	*Vitis aestivalis*	Summer Grape	S4	-	-	LU	7	3
Vitaceae	*Vitis riparia*	Riverbank Grape	S5	-	-	L5	0	0

Notes:

[1]Family Name: The scientific name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Natural Resources and Forestry / Land Information Ontario.

[2]Scientific Name: The scientific name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Natural Resources and Forestry / Land Information Ontario.

[3]Common Name: The common English name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Natural Resources and Forestry / Land Information Ontario.

[4]S-Rank: Subnational Rank is the conservation status of a species within a particular province, territory or state. In this scenario, it is the provincial level ranking system as published by the Natural Heritage Information Centre hosted by hosted by the Ministry of Natural Resources and Forestry / Land Information Ontario.

[5]SARO Status: Species at Risk in Ontario (Provincial Status as defined by the Endangered Species Act, 2007 as amended).

[6]COSEWIC Status: Status as defined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

[7]LOCAL STATUS (TRCA): Local rank assigned by the Toronto and Region Conservation Authority (TRCA) updated for 2023. Based on the methodology of: Toronto and Region Conservation Authority. 2017. Annual Local Occurrence Score and Local Rank Update, Terrestrial Fauna and Flora Species, and Vegetation Communities. Environmental Monitoring and Data Management Section, July 2017.

[8]Coefficient of Conservatism: This value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific habitat integrity. The Coefficient of Conservatism is listed as published by the Natural Heritage Information (Oldham, M.J., Bakowsky, W.d., Surtherland, D.A. 1995. Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario. 69 pp.)

[9]Coefficient of Wetness: This value, ranging from -5 (obligate wetland) to 5 (upland) provides the probability of a species occurring in wetland or upland habitats.The Coefficient of Wetness reflects a species' affinity for wet soil conditions as published by the Natural Heritage Information hosted by the Ministry of Natural Resources and Forestry / Land Information Ontario.

Species at Risk Act and COSEWIC Acronyms

END: Endangered

THR: Threatened

SC: Special Concern

EXT: Extirpated

NAR: Not at Risk

Subnational Rankings (S RANK)

SNR: Unranked

SU: Unrankable – Currently unrankable due to lack of information

SNA: Not applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities

S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species

?: Indicates uncertainty in the assigned rank

S1: Critically Imperiled – Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled – Imperiled in the province, very few populations (often 20 or fewer),

S3: Vulnerable – Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure – Uncommon but not rare

S5: Secure – Common, widespread, and abundant in the province

SX: Presumed extirpated

SH: Possibly Extirpated (Historical)

SE: if an element is known to occur as an exotic in Ontario, the status value assigned is SE. A ? qualifier added to that value indicates uncertainty about whether it is exotic or native. Numeric ranks of 1 through 5 added to the exotic status indicates the element's abundance in Ontario, with 1 indicating the least abundant and 5 the most.

Local TRCA Rankings

L1: Species of Regional Conservation Concern – regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts

L2: Species of Regional Conservation Concern – somewhat more abundant and generally slightly less sensitive than L1 species

L3: Species of Regional Conservation Concern – generally less sensitive and more abundant than L1 and L2 ranked species

L4: Species of Urban Concern – occur throughout the region but could show declines if urban impacts are not mitigated effectively

L5: Species that are considered secure throughout the region

L+: Introduced species – not native to the Toronto region

LX: Extirpated species – species not recorded in the region in the past 10 years

L+?: Species is probably introduced to the Toronto Region

LU: Species rank is not verified within the Toronto region

Appendix D Fish and Wildlife Observations

Appendix D1: Fish Species Records for the reaches of the West Humber River & Kilamanagh Creek (Sources: MNRF1&2) with Thermal Regime and Subnational Ranking.

Common Name	Scientific Name	Thermal Regime[3]	Status[4]
Blackchin Shiner	*Miniellus heterodon*	Cool	S4
Blacknose Shiner	*Notropis heterolepis*	Cool	S5
Bluegill	*Lepomis macrochirus*	Warm	S5
Bluntnose Minnow	*Pimephales notatus*	Warm	S5
Brassy Minnow	*Hybognathus hankinsoni*	Cool	S5
Brook Stickleback	*Culaea inconstans*	Cool	S5
Common Shiner	*Luxilus cornutus*	Cool	S5
Creek Chub	*Semotilus atromaculatus*	Cool	S5
Fantail Darter	*Etheostoma flabellare*	Cool	S4
Fathead Minnow	*Pimephales promelas*	Warm	S5
Iowa Darter	*Etheostoma exile*	Cool	S5
Johnny Darter	*Etheostoma nigrum*	Cool	S5
Johnny Darter x Tessellated Darter	*Etheostoma nigrum x Etheostoma olmsted*	Not Applicable	Not Applicable
Largemouth Bass	*Micropterus nigricans*	Warm	S5
Longnose Dace	*Rhinichthys cataractae*	Cool	S5
Mottled Sculpin	*Cottus bairdii*	Cool	S5
Ninespine Stickleback	*Pungitius pungitius*	Cool	S5
Northern Hog Sucker	*Hypentelium nigricans*	Warm	S4
Northern Pearl Dace	*Margariscus nachtriebi*	Cool	S5
Pumpkinseed	*Lepomis gibbosus*	Warm	S5
Rainbow Darter	*Etheostoma caeruleum*	Cool	S4
Redfin Shiner	*Lythrurus umbratilis*	Cool	S4
Redside Dace	*Clinostomus elongatus*	Cool	S1
River Chub	*Nocomis micropogon*	Cool	S4
Rock Bass	*Ambloplites rupestris*	Cool	S5

Common Name	Scientific Name	Thermal Regime[3]	Status[4]
Rosyface Shiner	*Notropis rubellus*	Warm	S4
Sand Shiner	*Miniellus stramineus*	Warm	S4
Slimy Sculpin	*Cottus cognatus*	Cold	S5
Smallmouth Bass	*Micropterus dolomieu*	Cool	S5
Western Blacknose Dace	*Rhinichthys obtusus*	Cool	S5
White Sucker	*Catostomus commersonii*	Cool	S5

1- Fish Records for ARA IDENT: AU-0610-HUM Effective 09/30/2019 prepared by Ontario Ministry of Natural Resources and Forestry (MNRF). 2023. Land Information Ontario Digital mapping of natural heritage features, Ontario Ministry of Natural Resources. Available Online: http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US

2- Fish Records for ARA IDENT: AU-0611-HUM Effective 09/30/2019 prepared by Ontario Ministry of Natural Resources and Forestry (MNRF). 2023. Land Information Ontario Digital mapping of natural heritage features, Ontario Ministry of Natural Resources. Available Online: http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US

3- Coker G.A., Portt C.B. and Minns C.K. 2001. Morphological and Ecological Characteristics of Canadian Freshwater Fishes. Great Lakes Laboratory for Fisheries and Aquatic Sciences Fisheries and Oceans Canada 2001.

4-NHIC 2023 Subnational Ranking

S1: Critically Imperilled— 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.

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.

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.

SNA: Not Applicable —A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities (e.g., long distance aerial and aquatic migrants, hybrids without conservation value, and non-native species or ecosystems; see Master et al. 2012, Appendix A, pg 49 for further details).

3-Ontario Ministry of Natural Resources and Forestry (MNRF). 2023a. Land Information Ontario Digital mapping of Fish Collection Records, Ontario Ministry of Natural Resources. Available Online: http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US

Appendix D.2: Herpetofauna Records and Observations

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	TRCA Status[8]	Source(s)
Ambystomatidae	*Ambystoma jeffersonianum*	Jefferson Salamander	S2	END	END	END	-	ORAA
Ambystomatide	*Ambystoma maculatum*	Spotted Salamander	S4	-	-	-	L1	ORAA, iNaturalist
Bufonidae	*Anaxyrus americanus*	American Toad	S5	-	-	-	L4	ORAA, Stantec 2024
Chelydridae	*Chelydra serpentina*	Snapping Turtle	S4	SC	SC	SC	-	ORAA, iNaturalist
Colubridae	*Lampropeltis triangulum*	Eastern Milksnake	S4	-	SC	SC	-	ORAA, NHIC
Colubridae	*Storeria dekayi*	DeKay's Brownsnake	S5	-	-	-	L4	ORAA, iNaturalist
Colubridae	*Storeria occipitomaculata*	Red-bellied Snake	S5	-	-	-	-	ORAA
Colubridae	*Thamnophis sirtalis sirtalis*	Eastern Gartersnake	S5	-	-	-	L4	ORAA, Stantec
Emydidae	*Chrysemys picta marginata*	Midland Painted Turtle	S4	-	SC	SC	L3	ORAA, iNaturalist
Emydidae	*Graptemys geographica*	Northern Map Turtle	S3	SC	SC	SC	L2	ORAA
Hylidae	*Dryophytes versicolor*	Gray Treefrog	S5	-	-	-	L2	ORAA, Stantec 2024
Hylidae	*Pseudacris crucifer*	Spring Peeper	S5	-	-	-	-	ORAA
Hylidae	*Pseudacris triseriata*	Western Chorus Frog	S4	-	-	-	L2	ORAA
Kinosternidae	*Sternotherus odoratus*	Eastern Musk Turtle	S3	SC	SC	SC	L2	ORAA
Plethodontidae	*Plethodon cinereus*	Eastern Red-backed Salamander	S5	-	-	-	L3	ORAA, iNaturalist
Ranidae	*Lithobates catesbeianus*	American Bullfrog	S4	-	-	-	L2	ORAA
Ranidae	*Lithobates clamitans*	Green Frog	S5	-	-	-	L4	ORAA, Stantec 2024
Ranidae	*Lithobates pipiens*	Northern Leopard Frog	S5	-	-	-	L3	ORAA, Stantec 2024

Appendix D.2: Herpetofauna Records and Observations

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	TRCA Status[8]	Source(s)
Ranidae	*Lithobates septentrionalis*	Mink Frog	S5	-	-	-	L2	ORAA, Stantec 2024
Ranidae	*Lithobates sylvaticus*	Wood Frog	S5	-	-	-	L2	ORAA, Stantec 2024
Salamandridae	*Notophthalmus viridescens viridescens*	Red-spotted Newt	S5	-	-	-	L2	ORAA

Notes:

[1]**Family Name:** The Family name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[2]**Scientific Name:** The scientific name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[3]**Common Name:** The common English name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[4]**S-Rank:** Subnational Rank (S-Rank) is the conservation status of a species or plant community within a particular province, territory, or state. In this scenario, it is the provincial-level ranking system as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[5]**SARO Status:** Species at Risk in Ontario (Provincial Status as defined by the Endangered Species Act, 2007 as amended).

[6]**COSEWIC Status:** Status as defined by the Committee on the Status of Endangered Wildlife in Canada.

[7]**SARA Status:** Federal status as defined by the Species at Risk Act.

[8]**LOCAL STATUS (TRCA):** Local rank assigned by the Toronto and Region Conservation Authority (TRCA) updated for 2023. Based on the methodology of: Toronto and Region Conservation Authority. 2017. Annual Local Occurrence Score and Local Rank Update, Terrestrial Fauna and Flora Species, and Vegetation Communities. Environmental Monitoring and Data Management Section, July 2017.

Source(s):

iNaturalist: Ontario Herpetofauna Project. Atlas Area Search: Caledon Region. Retrieved October 2023 from https://www.inaturalist.org/guides/1327.

NHIC: Natural Heritage Information Centre database review (Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario).

ORAA: ORAA: Ontario Nature. 2019. Ontario Reptile and Amphibian Atlas [web application]. Toronto, Ontario. Available online: https://ontarionature.org/oraa/maps/

Stantec: Environmental Impact Study, City of Caledon and observed by Stantec during 2023 field investigations.

Endangered Species Act and Species at Risk Act Acronyms

END: Endangered

THR: Threatened

SC: Special Concern

EXT: Extirpated

NAR: Not at Risk

Appendix D.2: Herpetofauna Records and Observations

Subnational Rankings (S-Rank)

SNR: Unranked

SU: Unrankable – Currently unrankable due to lack of information

SNA: Not applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities

S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species

?: Indicates uncertainty in the assigned rank

S1: Critically Imperiled – Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled – Imperiled in the province, very few populations (often 20 or fewer),

S3: Vulnerable – Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure – Uncommon but not rare

S5: Secure – Common, widespread, and abundant in the province

SX: Presumed extirpated

SH: Possibly Extirpated (Historical)

SE: if an element is known to occur as an exotic in Ontario, the status value assigned is SE. A ? qualifier added to that value indicates uncertainty about whether it is exotic or native. Numeric ranks of 1 through 5 added to the exotic status indicates the element's abundance in Ontario, with 1 indicating the least abundant and 5 the most.

Local TRCA Rankings

L1: Species of Regional Conservation Concern – regionally scarce due to either accidental occurrence or extreme sensitivity to human impacts

L2: Species of Regional Conservation Concern – somewhat more abundant and generally slightly less sensitive than L1 species

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L4: Species of Urban Concern – occur throughout the region but could show declines if urban impacts are not mitigated effectively

L5: Species that are considered secure throughout the region

L+: Introduced species – not native to the Toronto region

LX: Extirpated species – species not recorded in the region in the past 10 years

L+?: Species is probably introduced to the Toronto Region

LU: Species rank is not verified within the Toronto region

Appendix D.3: Avifauna Records and Observations

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	TRCA Status[8]	Source(s)
Accipitridae	*Accipiter cooperii*	Cooper's Hawk	S4	-	-	-	L4	OBBA
Accipitridae	*Buteo jamaicensis*	Red-tailed Hawk	S5	-	-	-	L5	OBBA,
Alaudidae	*Eremophila alpestris*	Horned Lark	S4	-	-	-	L3	OBBA, Stantec
Alcedinidae	*Megaceryle alcyon*	Belted Kingfisher	S5B, S4N	-	-	-	L4	OBBA, Stantec
Anatidae	*Aix sponsa*	Wood Duck	S5B,S3N	-	-	-	L4	OBBA, Stantec
Anatidae	*Anas crecca*	Green-winged Teal	S4B, S4N, S5M	-	-	-	L2	OBBA
Anatidae	*Anas platyrhynchos*	Mallard	S5	-	-	-	L5	OBBA, Stantec
Anatidae	*Branta canadensis*	Canada Goose	S5	-	-	-	L5	OBBA, Stantec
Anatidae	*Cygnus buccinator*	Trumpeter Swan	S4	-	-	-	L+	OBBA
Ardeidae	*Ardea herodias*	Great Blue Heron	S4	-	-	-	L3	OBBA, Stantec
Ardeidae	*Butorides virescens*	Green Heron	S4B	-	-	-	L4	Stantec
Bombycillidae	*Bombycilla cedrorum*	Cedar Waxwing	S5	-	-	-	L5	OBBA, Stantec
Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal	S5	-	-	-	L5	OBBA, Stantec
Cardinalidae	*Passerina cyanea*	Indigo Bunting	S5B	-	-	-	L4	OBBA, Stantec
Cardinalidae	*Pheucticus ludovicianus*	Rose-breasted Grosbeak	S5B	-	-	-	L4	OBBA
Cardinalidae	*Piranga olivacea*	Scarlet Tanager	S5B	-	-	-	L3	OBBA
Cathartidae	*Cathartes aura*	Turkey Vulture	S5B,S3N	-	-	-	L5	OBBA, Stantec
Charadriidae	*Charadrius vociferus*	Killdeer	S4B	-	-	-	L4	OBBA, Stantec
Columbidae	*Zenaida macroura*	Mourning Dove	S5	-	-	-	L5	OBBA, Stantec
Columbidae	*Columba livia*	Rock Pigeon	SNA	-	-	-	L+	Stantec
Corvidae	*Corvus brachyrhynchos*	American Crow	S5	-	-	-	L5	OBBA, Stantec
Corvidae	*Corvus corax*	Common Raven	S5	-	-	-	L4	OBBA
Corvidae	*Cyanocitta cristata*	Blue Jay	S5	-	-	-	L5	OBBA, Stantec
Falconidae	*Falco sparverius*	American Kestrel	S4	-	-	-	L4	Stantec
Fringillidae	*Haemorhous mexicanus*	House Finch	SNA	-	-	-	L+	OBBA, Stantec

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	TRCA Status[8]	Source(s)
Fringillidae	*Spinus tristis*	American Goldfinch	S5	-	-	-	L5	OBBA, Stantec
Hirundinidae	*Hirundo rustica*	Barn Swallow	S4B	SC	SC	THR	L5	OBBA, Stantec
Hirundinidae	*Riparia riparia*	Bank Swallow	S4B	THR	THR	THR	L3	OBBA
Hirundinidae	*Stelgidopteryx serripennis*	Northern Rough-winged Swallow	S4B	-	-	-	L4	OBBA
Hirundinidae	*Tachycineta bicolor*	Tree Swallow	S4S5B	-	-	-	L4	OBBA, Stantec
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird	S5	-	-	-	L5	OBBA, Stantec
Icteridae	*Icterus galbula*	Baltimore Oriole	S4B	-	-	-	L5	OBBA, Stantec
Icteridae	*Icterus spurius*	Orchard Oriole	S4B	-	-	-	L5	OBBA
Icteridae	*Molothrus ater*	Brown-headed Cowbird	S5	-	-	-	L5	OBBA, Stantec
Icteridae	*Quiscalus quiscula*	Common Grackle	S5	-	-	-	L5	OBBA, Stantec
Icteridae	*Sturnella magna*	Eastern Meadowlark	S4B, S3N	THR	THR	THR	L3	OBBA, Stantec, NHIC
Icteridae	*Dolichonyx oryzivorus*	Bobolink	S4B	THR	THR	THR	L3	Stantec, NHIC
Laridae	*Larus delawarensis*	Ring-billed Gull	S5	-	-	-	L4	Stantec
Mimidae	*Dumetella carolinensis*	Gray Catbird	S5B, S3N	-	-	-	L4	OBBA, Stantec
Mimidae	*Toxostoma rufum*	Brown Thrasher	S4B	-	-	-	L3	Stantec
Paridae	*Poecile atricapillus*	Black-capped Chickadee	S5	-	-	-	L5	OBBA, Stantec
Parulidae	*Geothlypis trichas*	Common Yellowthroat	S5B, S3N	-	-	-	L4	OBBA, Stantec
Parulidae	*Setophaga petechia*	Yellow Warbler	S5B	-	-	-	L5	OBBA, Stantec
Parulidae	*Setophaga ruticilla*	American Redstart	S5B	-	-	-	L4	OBBA
Passerellidae	*Melospiza georgiana*	Swamp Sparrow	S5B,S4N	-	-	-	L4	OBBA
Passerellidae	*Melospiza melodia*	Song Sparrow	S5	-	-	-	L5	OBBA, Stantec
Passerellidae	*Passerculus sandwichensis*	Savannah Sparrow	S5B, S3N	-	-	-	L4	OBBA, Stantec
Passerellidae	*Pooecetes gramineus*	Vesper Sparrow	S4B	-	-	-	L3	OBBA
Passerellidae	*Spizella passerina*	Chipping Sparrow	S5B, S3N	-	-	-	L5	OBBA, Stantec
Passerellidae	*Spizella pusilla*	Field Sparrow	S4B,S3N	-	-	-	L4	OBBA, Stantec
Passeridae	*Passer domesticus*	House Sparrow	SNA	-	-	-	L+	OBBA, Stantec
Phasianidae	*Meleagris gallopavo*	Wild Turkey	S5	-	-	-	L3	Stantec
Picidae	*Colaptes auratus*	Northern Flicker	S5	-	-	-	L4	OBBA, Stantec

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	TRCA Status[8]	Source(s)
Picidae	*Dryobates pubescens*	Downy Woodpecker	S5	-	-	-	L5	OBBA, Stantec
Picidae	*Melanerpes carolinus*	Red-bellied Woodpecker	S5	-	-	-	L5	OBBA, Stantec
Podicipedidae	*Podilymbus podiceps*	Pied-billed Grebe	S4B, S2N	-	-	-	L3	OBBA
Scolopacidae	*Actitis macularius*	Spotted Sandpiper	S5B	-	-	-	L4	OBBA, Stantec
Sittidae	*Sitta carolinensis*	White-breasted Nuthatch	S5	-	-	-	L4	OBBA
Sturnidae	*Sturnus vulgaris*	European Starling	SNA	-	-	-	L+	OBBA, Stantec
Troglodytidae	*Troglodytes aedon*	House Wren	S5B	-	-	-	L5	OBBA, Stantec
Turdidae	*Turdus migratorius*	American Robin	S5	-	-	-	L5	OBBA, Stantec
Turdidae	Hylocichla mustelina	Wood Thrush	S4B	SC	THR	THR	L3	NHIC
Tyrannidae	*Contopus virens*	Eastern Wood-pewee	S4B	SC	SC	SC	L4	OBBA, Stantec, NHIC
Tyrannidae	*Empidonax traillii*	Willow Flycatcher	S4B	-	-	-	L4	OBBA, Stantec
Tyrannidae	*Myiarchus crinitus*	Great Crested Flycatcher	S5B	-	-	-	L4	OBBA
Tyrannidae	*Sayornis phoebe*	Eastern Phoebe	S5B	-	-	-	L5	OBBA
Tyrannidae	*Tyrannus tyrannus*	Eastern Kingbird	S4B	-	-	-	L4	OBBA, Stantec
Vireonidae	*Vireo gilvus*	Warbling Vireo	S5B	-	-	-	L5	OBBA, Stantec
Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	S5B	-	-	-	L5	OBBA, Stantec

Notes:

[1]**Family Name:** The Family name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

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[8]**LOCAL STATUS (TRCA):** Local rank assigned by the Toronto and Region Conservation Authority (TRCA) updated for 2023. Based on the methodology of: Toronto and Region Conservation Authority. 2017. Annual Local Occurrence Score and Local Rank Update, Terrestrial Fauna and Flora Species, and Vegetation Communities. Environmental Monitoring and Data Management Section, July 2017.

Source(s):

NHIC: Natural Heritage Information Centre database review (Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario).

OBBA: Cadman, M.D., D.A. Sutherland, G.G., Beck, D., Lepage, A.R., Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. (eds) Bird Studies Canada, Environment Conada, Ontario Field Ornithologists, Ontario Ministry of natural resources, and Ontario Nature, Toronto, xxii + 706pp

Stantec: Observed by Stantec during 2023 field investigations.

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L+: Introduced species – not native to the Toronto region

LX: Extirpated species – species not recorded in the region in the past 10 years

L+?: Species is probably introduced to the Toronto Region

LU: Species rank is not verified within the Toronto region

Appendix C.3: Mammals Records and Observations

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	TRCA Status[8]	Source(s)
Canidae	*Canis latrans*	Coyote	S5	-	-	-	L5	Stantec, iNaturalist
Canidae	*Vulpes vulpes*	Red Fox	S5	-	-	-	L4	iNaturalist
Castoridae	*Castor canadensis*	Beaver	S5	-	-	-	L4	Stantec, iNaturalist
Cervidae	*Odocoileus virginianus*	White-tailed Deer	S5	-	-	-	L4	Stantec, iNaturalist
Cervidae	*Odocoileus virginianus*	White-tailed Deer	S5	-	-	-	L4	iNaturalist
Cricetidae	*Microtus pennsylvanicus*	Meadow Vole	S5	-	-	-	L4	iNaturalist
Cricetidae	*Ondatra zibethicus*	Muskrat	S5	-	-	-	L4	iNaturalist
Cricetidae	*Peromyscus maniculatus*	Deer Mouse	S5	-	-	-	L4	iNaturalist
Didelphidae	*Didelphis virginiana*	Virginia Opossum	S4	-	-	-	L4	iNaturalist
Dipodidae	*Napaeozapus insignis*	Woodland Jumping Mouse	S5	-	-	-	L2	iNaturalist
Erethizontidae	*Erethizon dorsatum*	Porcupine	S5	-	-	-	L2	iNaturalist
Leporidae	*Sylvilagus floridanus*	Eastern Cottontail	S5	-	-	-	L4	iNaturalist, Stantec
Leporidae	*Sylvilagus floridanus*	Eastern Cottontail	S5	-	-	-	L4	iNaturalist
Mephitidae	*Mephitis mephitis*	Striped Skunk	S5	-	-	-	L5	iNaturalist
Muridae	*Rattus norvegicus*	Norway Rat	SNA	-	-	-		iNaturalist
Mustelidae	*Neogale vison*	American Mink	S4	-	-	-	L4	iNaturalist
Procyonidae	*Procyon lotor*	Northern Raccoon	S5	-	-	-	L5	iNaturalist
Sciuridae	*Marmota monax*	Woodchuck	S5	-	-	-	L5	Stantec, iNaturalist

Appendix C.3: Mammals Records and Observations

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	TRCA Status[8]	Source(s)
Sciuridae	*Sciurus carolinensis*	Eastern Gray Squirrel	S5	-	-	-	L5	Stantec, iNaturalist
Sciuridae	*Tamiasciurus hudsonicus*	Red Squirrel	S5	-	-	-	L4	iNaturalist
Soricidae	*Blarina brevicauda*	Northern Short-tailed Shrew	S5	-	-	-	L3	iNaturalist
Soricidae	*Sorex cinereus*	Masked Shrew	S5	-	-	-	-	iNaturalist
Suidae	*Sus scrofa*	Wild Boar	-	-	-	-	-	iNaturalist
Talpidae	*Condylura cristata*	Star-nosed Mole	S5	-	-	-	L3	iNaturalist
Talpidae	*Parascalops breweri*	Hairy-tailed Mole	S4	-	-	-	L3	iNaturalist
Tamias	*Tamias striatus*	Eastern Chipmunk	S5	-	-	-	L4	iNaturalist
Vespertilionidae	*Eptesicus fuscus*	Big Brown Bat	S4	-	-	-	L4	MNRF, Stantec
Vespertilionidae	*Lasionycteris noctivagans*	Silver-haired Bat	S4	-	END	-	L3	MNRF, Stantec
Vespertilionidae	*Lasiurus borealis*	Eastern Red Bat	S4	-	END	-	L3	MNRF, Stantec
Vespertilionidae	*Lasiurus cinereus*	Hoary Bat	S4	-	END	-	L3	MNRF, Stantec
Vespertilionidae	*Myotis leibii*	Eastern Small-footed Myotis	S2S3	END	-	-	L2	MNRF
Vespertilionidae	*Myotis lucifugus*	Little Brown Myotis	S3	END	END	END	L3	MNRF, Stantec
Vespertilionidae	*Myotis septentrionalis*	Northern Myotis	S3	END	END	END	L2	MNRF
Vespertilionidae	*Perimyotis subflavus*	Tricolored Bat	S3?	END	END	END	L3	MNRF

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Appendix C.3: Mammals Records and Observations

[3]**Common Name**: The common English name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

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Source(s):

iNaturalist: Ontario Mammals Project. Atlas Area Search: Town of Caledon. Retrieved April 2023 from https://www.inaturalist.org/guides/1327.

MNRF: Dobbyn, J.S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Don Mills, Ontario, 120 pp.

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Appendix C.3: Mammals Records and Observations

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L5: Species that are considered secure throughout the region

L+: Introduced species – not native to the Toronto region

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L+?: Species is probably introduced to the Toronto Region

LU: Species rank is not verified within the Toronto region

Appendix D.5: Insect Records and Observations

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	Source(s)
Pieridae	*Pyrisitia lisa*	Little Yellow	SNA	-	-	-	OBA
Nymphalidae	*Boloria bellona*	Meadow Fritillary	S5	-	-	-	OBA
Nymphalidae	*Lethe eurydice*	Eyed Brown	S5	-	-	-	OBA
Hesperiidae	*Polites origenes*	Crossline Skipper	S4	-	-	-	OBA
Hesperiidae	*Euphyes conspicua*	Black Dash	S3	-	-	-	OBA
Nymphalidae	*Libytheana carinenta*	American Snout	SNA	-	-	-	OBA
Papilionidae	*Papilio canadensis*	Canadian Tiger Swallowtail	S5	-	-	-	OBA
Hesperiidae	*Erynnis icelus*	Dreamy Duskywing	S5	-	-	-	OBA
Lycaenidae	*Satyrium acadica*	Acadian Hairstreak	S4	-	-	-	OBA
Lycaenidae	*Satyrium caryaevorus*	Hickory Hairstreak	S4	-	-	-	OBA
Nymphalidae	*Polygonia progne*	Gray Comma	S5	-	-	-	OBA
Nymphalidae	*Vanessa cardui*	Painted Lady	S5B	-	-	-	OBA
Hesperiidae	*Anatrytone logan*	Delaware Skipper	S4	-	-	-	OBA
Lycaenidae	*Satyrium liparops*	Striped Hairstreak	S5	-	-	-	OBA
Nymphalidae	*Aglais milberti*	Milbert's Tortoiseshell	S5	-	-	-	OBA
Nymphalidae	*Cercyonis pegala*	Common Wood-Nymph	S5	-	-	-	OBA
Hesperiidae	*Pompeius verna*	Little Glassywing	S4	-	-	-	OBA
Papilionidae	*Papilio cresphontes*	Giant Swallowtail	S4	-	-	-	OBA
Nymphalidae	*Polygonia interrogationis*	Question Mark	S5	-	-	-	OBA
Lycaenidae	*Celastrina neglecta*	Summer Azure	S5	-	-	-	OBA
Nymphalidae	*Lethe anthedon*	Northern Pearly-Eye	S5	-	-	-	OBA
Hesperiidae	*Ancyloxypha numitor*	Least Skipper	S5	-	-	-	OBA
Hesperiidae	*Erynnis baptisiae*	Wild Indigo Duskywing	S4	-	-	-	OBA
Nymphalidae	*Phyciodes tharos*	Pearl Crescent	S4	-	-	-	OBA
Hesperiidae	*Polites themistocles*	Tawny-edged Skipper	S5	-	-	-	OBA
Nymphalidae	*Nymphalis l-album*	Compton Tortoiseshell	S5	-	-	-	OBA
Hesperiidae	*Poanes viator*	Broad-winged Skipper	S4	-	-	-	OBA
Nymphalidae	*Limenitis archippus*	Viceroy	S5	-	-	-	OBA

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	Source(s)
Pieridae	*Colias eurytheme*	Orange Sulphur	S5	-	-	-	OBA
Nymphalidae	*Limenitis arthemis arthemis*	White Admiral	S5	-	-	-	OBA
Hesperiidae	*Epargyreus clarus*	Silver-spotted Skipper	S4	-	-	-	OBA
Hesperiidae	*Euphyes vestris*	Dun Skipper	S5	-	-	-	OBA
Nymphalidae	*Lethe appalachia*	Appalachian Brown	S4	-	-	-	OBA
Nymphalidae	*Vanessa atalanta*	Red Admiral	S5B	-	-	-	OBA
Nymphalidae	*Coenonympha tullia*	Common Ringlet	S5	-	-	-	OBA
Hesperiidae	*Thymelicus lineola*	European Skipper	SNA	-	-	-	OBA
Nymphalidae	*Nymphalis antiopa*	Mourning Cloak	S5	-	-	-	OBA
Papilionidae	*Papilio glaucus*	Eastern Tiger Swallowtail	S5	-	-	-	OBA
Hesperiidae	*Erynnis juvenalis*	Juvenal's Duskywing	S5	-	-	-	OBA
Lycaenidae	*Satyrium calanus*	Banded Hairstreak	S4	-	-	-	OBA
Lycaenidae	*Celastrina lucia*	Northern Spring Azure	S5	-	-	-	OBA
Hesperiidae	*Wallengrenia egeremet*	Northern Broken-Dash	S5	-	-	-	OBA
Nymphalidae	*Megisto cymela*	Little Wood-Satyr	S5	-	-	-	OBA
Nymphalidae	*Limenitis arthemis astyanax*	Red-spotted Purple	S5	-	-	-	OBA
Lycaenidae	*Glaucopsyche lygdamus*	Silvery Blue	S5	-	-	-	OBA
Lycaenidae	*Feniseca tarquinius*	Harvester	S4	-	-	-	OBA
Nymphalidae	*Phyciodes cocyta*	Northern Crescent	S5	-	-	-	OBA,
Nymphalidae	*Vanessa virginiensis*	American Lady	S5	-	-	-	OBA
Hesperiidae	*Poanes hobomok*	Hobomok Skipper	S5	-	-	-	OBA
Pieridae	*Colias philodice*	Clouded Sulphur	S5	-	-	-	OBA
Nymphalidae	*Polygonia comma*	Eastern Comma	S5	-	-	-	OBA
Lycaenidae	*Cupido comyntas*	Eastern Tailed Blue	S5	-	-	-	OBA
Pieridae	*Pieris rapae*	Cabbage White	SNA	-	-	-	OBA, Stantec
Hesperiidae	*Polites peckius*	Peck's Skipper	S5	-	-	-	OBA
Papilionidae	*Papilio polyxenes*	Black Swallowtail	S5	-	-	-	OBA
Nymphalidae	*Danaus plexippus*	Monarch	S2N,S4B	SC	END	SC	OBA, Stantec
Lycaenidae	*Lycaena hyllus*	Bronze Copper	S5	-	-	-	OBA
Lycaenidae	*Celastrina lucia*	Northern Spring Azure	S5	-	-	-	OBA

Family[1]	Scientific Name[2]	Common Name[3]	S-Rank[4]	SARO Status[5]	COSEWIC Status[6]	SARA Status[7]	Source(s)
Nymphalidae	*Megisto cymela*	Little Wood-Satyr	S5	-	-	-	OBA
Nymphalidae	*Limenitis arthemis astyanax*	Red-spotted Purple	S5	-	-	-	OBA
Nymphalidae	*Speyeria cybele*	Great Spangled Fritillary	S5	-	-	-	OBA
Nymphalidae	*Megisto cymela*	Little Wood-Satyr	S5	-	-	-	OBA
Nymphalidae	*Limenitis arthemis astyanax*	Red-spotted Purple	S5	-	-	-	OBA
Nymphalidae	*Speyeria cybele*	Great Spangled Fritillary	S5	-	-	-	OBA
Hesperiidae	*Anatrytone logan*	Delaware Skipper	S4	-	-	-	OBA
Lycaenidae	*Satyrium calanus*	Banded Hairstreak	S4	-	-	-	OBA
Nymphalidae	*Nymphalis l-album*	Compton Tortoiseshell	S5	-	-	-	OBA
Nymphalidae	*Euphydryas phaeton*	Baltimore Checkerspot	S4	-	-	-	OBA
Nymphalidae	*Aglais milberti*	Milbert's Tortoiseshell	S5	-	-	-	OBA
Lycaenidae	*Cupido comyntas*	Eastern Tailed Blue	S5	-	-	-	OBA
Hesperiidae	*Thorybes pylades*	Northern Cloudywing	S5	-	-	-	OBA
Nymphalidae	*Cercyonis pegala*	Common Wood-Nymph	S5	-	-	-	OBA
Nymphalidae	*Vanessa atalanta*	Red Admiral	S5B	-	-	-	OBA
Lycaenidae	*Glaucopsyche lygdamus*	Silvery Blue	S5	-	-	-	OBA
Papilionidae	*Papilio cresphontes*	Giant Swallowtail	S4	-	-	-	OBA
Lycaenidae	*Celastrina lucia*	Northern Azure	S5	-	-	-	OBA
Lycaenidae	*Polyommatus icarus*	European Common Blue	SNA	-	-	-	OBA

Notes:

[1]**Family Name:** The Family name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[2]**Scientific Name**: The scientific name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[3]**Common Name**: The common English name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[4]**S-Rank:** Subnational Rank (S-Rank) is the conservation status of a species or plant community within a particular province, territory or state. In this scenario, it is the provincial-level ranking system as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[5]**SARO Status:** Species at Risk in Ontario (Provincial Status as defined by the Endangered Species Act, 2007 as amended).

[6]**COSEWIC Status**: Status as defined by the Committee on the Status of Endangered Wildlife in Canada.

[7]**SARA Status:** Federal status as defined by the Species at Risk Act.

Source(s):

OBA: Macnaughton, A., Layberry, R., Cavasin, R., Edwards, B., and Jones, C. 2023. Ontario Butterfly Atlas [web application]. Listowel, Ontario. Available online: https://www.ontarioinsects.org/atlas/

Stantec: Observed by Stantec during 2023 field investigations.

Endangered Species Act and Species at Risk Act Acronyms

END: Endangered

THR: Threatened

SC: Special Concern

EXT: Extirpated

NAR: Not at Risk

Subnational Rankings (S-Rank)

SNR: Unranked

SU: Unrankable – Currently unrankable due to lack of information

SNA: Not applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities

S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species

?: Indicates uncertainty in the assigned rank

S1: Critically Imperiled – Critically imperiled in the province (often 5 or fewer occurrences)

S2: Imperiled – Imperiled in the province, very few populations (often 20 or fewer),

S3: Vulnerable – Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure – Uncommon but not rare

S5: Secure – Common, widespread, and abundant in the province

SX: Presumed extirpated

SH: Possibly Extirpated (Historical)

SE: if an element is known to occur as an exotic in Ontario, the status value assigned is SE. A ? qualifier added to that value indicates uncertainty about whether it is exotic or native. Numeric ranks of 1 through 5 added to the exotic status indicates the element's abundance in Ontario, with 1 indicating the least abundant and 5 the most.

Appendix E SAR and SOCC Habitat Screening Assessment

Appendix E.1: Species at Risk Habitat Screening Assessment

Group	Common Name[1]	Scientific Name[2]	SARO[3]	COSEWIC[4]	SARA[5]	S-Rank[6]	Source(s)	Habitat Description	Probability of Occurrence in the Study Area (Low, Medium or High)
Avifauna	Bank Swallow	*Riparia riparia*	THR	THR	THR	S4B	OBBA	The Bank Swallow excavates nests in exposed earth banks along watercourses and lakeshores, roadsides, stockpiles of soil, and the sides of sand and gravel pits. Single nests may occur, although colonies are typical and range from two to several thousand. Adjacent grasslands and watercourses are used for foraging habitat (Cadman et al. 2007).	**Low** – Suitable habitat for Bank Swallow was not observed in the Study Area. Bank Swallow was not observed in the Study Area during the breeding bird survey (3 site visits).
Avifauna	Bobolink	*Dolichonyx oryzivorus*	THR	THR	THR	S4B	OBBA, NHIC, Stantec	The Bobolink is generally referred to as a "grassland species". It nests primarily in forage crops with a mixture of grasses and broad-leaved forbs, predominantly hayfields and pastures. Preferred ground cover species include grasses such as Timothy and Kentucky bluegrass and forbs such as clover and dandelion (COSEWIC 2010a). Bobolink is an area-sensitive species, with reported lower reproductive success in small habitat fragments (Kuehl and Clark 2002; Winter et al. 2004).	**Confirmed** – Hayfields in the Study Area have the potential to support Bobolink. Bobolink was confirmed in the Study Area during field investigations.
Avifauna	Eastern Meadowlark	*Sturnella magna*	THR	THR	THR	S4B	OBBA, NHIC, Stantec	The Eastern Meadowlark is a ground nesting bird (Harrison 1975), which is often associated with human-modified habitats where they sing from prominent perches such as roadside wires, trees, and fenceposts. As a grassland species the Eastern Meadowlark typically occurs in meadows, hayfields, and pastures. However, it will utilize a wider range of habitat than most grassland species, including mown lawn (e.g., golf course, parks), wooded city ravines, young conifer plantations and orchards (Peck and James 1983). The Eastern Meadowlark is generally tolerant of habitat with early succession of trees or shrubs. As with other grassland species, current threats are primarily the result of expanding urbanization and intensive farming practices (Cadman et al. 2007).	**Confirmed** – Hayfields in the Study Area have the potential to support Eastern Meadowlark. Eastern Meadowlark was confirmed in the Study Area during field investigations.
Amphibian	Jefferson Salamander	*Ambystoma jeffersonianum*	END	END	END	S2	ORRA	The Jefferson Salamander is terrestrial during the adult stage and inhabits upland deciduous forests with suitable breeding areas including limestone sinkhole ponds, kettle ponds, vernal pools and other natural basins. Breeding areas are often ephemeral and are fed by spring runoff, groundwater, or springs. In Canada, the species is associated with mature, Carolinian forests (COSEWIC 2010b).	**Medium** – Forest, and swamp communities have the potential to provide suitable habitat for Jefferson Salamander. The species was not observed during the 2023 field program. No targeted Salamander surveys were completed as part of the 2023 Field program.
Mammals	Little Brown Myotis	*Myotis lucifugus*	END	END	END	S4	MNRF, Stantec	This species up until recently was considered the most common bat species in Ontario, and most frequently found bat species in North America. The recent change in status is due to significant declines in recent years attributed to a condition referred to as White-nose Syndrome (WNS). A widespread species, the Little Brown Bat is commonly found in warm sites such as buildings, attics, roof crevices, under bridges or in cavities of canopy trees in the forest (COSEWIC 2013).	**Confirmed** – The species was observed in suitable habitat during the 2023 field program. Forest and swamp communities and buildings in the Study Area have the potential to provide suitable bat maternity habitat for SAR bats. Little Brown Myotis was recorded in the Study Area during bat acoustic surveys.
Mammals	Eastern Small-footed Myotis	*Myotis leibii*	END	Not listed	END	S2S3	MNRF	The Eastern Small-footed Myotis hibernates in the fall in caves and abandoned mines after mating occurs near these communal sites. During summer months, this bat typically roosts in crevices and cracks associated with rocky site (e.g., rip rap, rock piles, bluffs, bedrock outcrops) but also have also been found in old buildings (e.g., barns, and houses) (Humphrey 2017).	**Medium** – Forest and swamp communities and buildings in the Study Area have the potential to provide suitable bat maternity habitat for SAR bats. Eastern Small-footed Myotis was not recorded in the Study Area during bat acoustic surveys; however, there were 314 unidentified Myotis species calls recorded which

Group	Common Name[1]	Scientific Name[2]	SARO[3]	COSEWIC[4]	SARA[5]	S-Rank[6]	Source(s)	Habitat Description	Probability of Occurrence in the Study Area (Low, Medium or High)
									have the potential to be Eastern Small-footed Myotis.
Mammals	Northern Myotis	*Myotis septentrionalis*	END	END	END	S3?	MNDMNRF	The Northern Myotis is a resident bat of upland forests of eastern North America, typically foraging for aerial insects in the forest understory. Maternity roosts are typically located under the bark of large trees and are rarely found in human-made structures. Hibernating colonies typically reside in cave crevices (COSEWIC 2013). The precipitous population decline of this species in recent years is attributed to a condition referred to as White-nose Syndrome (WNS).	**Medium** – Forest and swamp communities and buildings in the Study Area have the potential to provide suitable bat maternity habitat for SAR bats. Northern Myotis was not recorded in the Study Area during bat acoustic surveys; however, there were 314 unidentified Myotis species calls recorded, which have the potential to be Northern Myotis.
Mammals	Tricolored Bat	*Perimyotis subflavus*	END	END	END	S3?	MNDMNRF	The Tricolored Bat prefers partly open habitat such as fields with large trees or woodland edges while avoiding both denser and more open areas. In the summer, Tricolored Bats roost in trees or dead clusters of leaves on trees. In the winter, they often hibernate in the deepest part of the caves where temperature is the least variable and the humidity is high. Maternity colonies are usually found either in tree cavities or man-made structures, but in at least parts of their range they have also been recorded in large clumps of arboreal lichen (COSEWIC 2013). Populations have recently declined precipitously due to the rapid spread of White Nose Syndrome (WNS).	**Medium** – Forest and swamp communities in the Study Area have the potential to provide suitable bat maternity habitat for SAR bats. Tri-coloured Bat was not recorded in the Study Area during bat acoustic surveys; however, there were 5 unidentified species calls recorded as either Little Brown Myotis or Tri-coloured Bat that could not be confirmed.
Fish	Redside Dace	*Clinostomus elongatus*	END	END	END	S1	NHIC	The Redside Dace is a cool water species found in clear slow-moving sections of streams with pool and riffle sequences and overhanging banks or vegetation for cover. Substrates vary and include boulders, rocks, gravel or sand often with a shallow covering of detritus or silt (Redside Dace Recovery Team 2010).	**Confirmed** – Kilamanagh Creek has been confirmed by the MECP as occupied Redside Dace habitat. The results of the fish habitat assessment identified suitable habitat associated with this watercourse.
Plants	Black Ash	*Fraxinus nigra*	END	THR	-	S4	NHIC	The Black Ash occurs as a pure stand or in mixed stands with black spruce, balsam fir, eastern white-cedar, speckled alder, red maple, and silver maple; tolerates standing water, intolerant of shade (Farrar 1995).	**Medium** – Suitable Habitat for Black Ash was observed in the Study Area associated with the Greenbelt NHS forest and swamp communities. The species was not observed in the Study Area during the field program. No targeted or tree inventory surveys were completed as part of the field program in this area, as developments in the NHS were not proposed.

Notes:

[1]**Common Name:** The common English name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.
[2]**Scientific Name:** The scientific name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.
[3]**SARO Status:** Species at Risk in Ontario (Provincial Status as defined by the Endangered Species Act, 2007 as amended).
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[5]**SARA Status:** Federal status as defined by the Species at Risk Act
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Appendix E.1: Species at Risk Habitat Screening Assessment

Source(s):

NHIC: Natural Heritage Information Centre database review (Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario).
MNDMNRF: MNDMNRF Species at Risk in Ontario List. Species range information retrieved November 2021 from https://www.ontario.ca/page/species-risk-ontario
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ORAA: Ontario Nature. 2019. Ontario Reptile and Amphibian Atlas [web application]. Toronto, Ontario. Available online: https://www.ontarioinsects.org/herp/
Stantec: Observed by Stantec during 2023 field investigations.

Habitat Description Sources

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Endangered Species Act and Species at Risk Act Acronyms

END: Endangered
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SC: Special Concern
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NAR: Not at Risk

Subnational Rankings (S RANK)

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SNA: Not applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities
S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species
?: Indicates uncertainty in the assigned rank
S1: Critically Imperiled – Critically imperiled in the province (often 5 or fewer occurrences)
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S3: Vulnerable – Vulnerable in the province, relatively few populations (often 80 or fewer)
S4: Apparently Secure – Uncommon but not rare
S5: Secure – Common, widespread, and abundant in the province
SX: Presumed extirpated
SH: Possibly Extirpated (Historical)
SE: if an element is known to occur as an exotic in Ontario, the status value assigned is SE. A ? qualifier added to that value indicates uncertainty about whether it is exotic or native. Numeric ranks of 1 through 5 added to the exotic status indicates the element's abundance in Ontario, with 1 indicating the least abundant and 5 the most.

Appendix E.2: Species of Conservation Concern Habitat Screening Assessment

Group	Common Name[1]	Scientific Name[2]	SARO[3]	COSEWIC[4]	SARA[5]	S-Rank[6]	Source(s)	Habitat Description	Probability of Occurrence in the Study Area (Low, Medium or High)
Avifauna	Barn Swallow	*Hirundo rustica*	SC	SC	THR	S4B	OBBA, Stantec	The Barn Swallow nests on walls or ledges of barns as well as on other human-made structures such as bridges, culverts, or other buildings (Cadman et al. 2007). Where suitable nesting structures occur, Barn Swallow often form small colonies, sometimes mixed with Cliff Swallows. Barn Swallows feed on aerial insects while foraging in open habitat). Barn Swallows forage over meadows, hay, pasture, woodland clearings, and over wetland habitats or open water where insect prey is abundant (COSEWIC 2021).	**Confirmed** – the species was observed in suitable habitat. Barn Swallow were observed at various locations on both properties, and individuals were observed during all three bird surveys. An active Barn Swallow nest was observed in a barn at 12861 Dixie Road. The nest was located in the rafters inside the barn.
Avifauna	Eastern Wood-pewee	*Contopus virens*	SC	SC	SC	S4B	OBBA, Stantec, NHIC	The Eastern Wood-Pewee is a forest bird of deciduous and mixed woods. Nest-site selection favors open space near the nest, typically provided by clearings, roadways, water, and forest edges. Nests are cryptic as they are covered with lichens, typically appearing like a knot on top of a branch and little is known about nesting behavior (Cadman et al. 2007).	**Confirmed** – The species was observed in suitable habitat. Eastern Wood-pewee was observed on May 30 and June 22 in the woodlot at the northwest end of 12489 Dixie Road, adjacent to BBS5. This woodlot provides suitable nesting habitat, and it is anticipated that this species is breeding here.
Avifauna	Wood Thrush	*Hylocichla mustelina*	SC	THR	THR	S4B	NHIC	The Wood Thrush prefers deciduous and mixed forests in southern Ontario, ranging from small and isolated to large and contiguous woodlots. The presence of tall trees and a thick understory are preferred (Cadman et al. 2007).	**Medium** – There is a potential habitat for Wood Thrush in the Study Area. The species was not observed during the field program.
Reptiles	Eastern Milksnake	*Lampropeltis triangulum*	-	SC	SC	S4	ORAA, NHIC	The Eastern Milksnake is frequently reported in and around buildings, especially old structures. However, it is found in a variety of habitats, including prairies, pastures, hayfields, rocky hillsides, and a wide variety of forest types. Two important features of ideal habitat are proximity to water and suitable locations for basking and egg-laying. Nesting sites may include compost or manure piles, stumps, under boards, or in loose soil (COSEWIC 2014).	**High** – Good quality habitat for Milksnake was identified in the Study Area. The species was not observed during the field program. Targeted snake surveys were not completed as part of the 2023 field program.
Reptiles	Eastern Musk Turtle	*Sternotherus odoratus*	SC	SC	SC	S3	ORAA	The Eastern Musk Turtle require aquatic habitats of soft substrate and shallow water with little to no current. Nesting occurs in areas close to the water with direct exposure to sunlight. Eggs are laid on open ground or in shallow excavations in decaying vegetation and rotting wood. Nests have also been found in shallow gravel or rock crevices. This species is highly aquatic and rarely leaves the water (COSEWIC 2012).	**Medium –** Potential habitat for Eastern Musk Turtle was observed in the Study Area associated with the ponds on the Subject Lands. The species was not observed during the field program. No targeted turtle surveys were completed as part of the field program.
Reptiles	Midland Painted Turtle	*Chrysemys picta marginata*	-	SC	SC	S4	ORAA, iNaturalist	The Midland Painted Turtle inhabits waterbodies, such as ponds, marshes, lakes and slow-moving creeks, that have a soft bottom and provide abundant basking sites and aquatic vegetation. These turtles often bask on shorelines or on logs and rocks that protrude from the water. The Midland Painted Turtle hibernates on the bottom of waterbodies (Ontario Nature 2019).	**Medium –** Potential habitat for Midland Painted Turtle was observed in the Study Area associated with the ponds on the Subject Lands. The species was not observed during the field program. No targeted turtle surveys were completed as part of the field program.
Reptiles	Northern Map Turtle	*Graptemys geographica*	SC	SC	SC	S3	ORAA	The Northern Map Turtle is highly aquatic and inhabits slow moving, large rivers and lakes with soft bottoms and abundant aquatic vegetation. Basking sites include rocks and deadheads adjacent to deep water (COSEWIC 2002) Nesting occurs in soft sand or soil and at a distance from the water,	**Low –** Potential habitat for Northern Map Turtle was not observed in the Study Area. The species was not observed during the field program. No targeted turtle surveys were completed as part of the field program.

Group	Common Name[1]	Scientific Name[2]	SARO[3]	COSEWIC[4]	SARA[5]	S-Rank[6]	Source(s)	Habitat Description	Probability of Occurrence in the Study Area (Low, Medium or High)
								hibernation is communal and occurs at the bottoms of lakes. Females leave the water in June to nest (MacCulloch 2002).	
Reptiles	Snapping Turtle	*Chelydra serpentina*	SC	SC	SC	S4	ORAA, iNaturalist	The Snapping Turtle inhabit ponds, sloughs, streams, rivers, and shallow bays that are characterized by slow moving water, aquatic vegetation, and soft bottoms. Females show strong nest site fidelity and nest in sand or gravel banks at waterway edges in late May or early June (COSEWIC 2008).	**Low –** Potential habitat for Snapping Turtle was not observed in the Study Area. The species was not observed during the field program. No targeted turtle surveys were completed as part of the field program.
Mammals	Eastern Red Bat	*Lasiurus borealis*	-	END	-	S4	MNRF, Stantec	The Eastern Red Bat is a solitary, tree dwelling species that roosts exclusively in the terminal foliage of deciduous trees (Dobbyn 1994; MNRF 1984). Eastern Red Bats typically forage near or above treetops and water bodies such as streams, lakes, rivers, and riparian flood plains (MNRF 1984).	**Confirmed** – The species was observed in suitable habitat during the 2023 field program. Forest and swamp communities and buildings in the Study Area have the potential to provide suitable bat maternity habitat for SOCC bats. Eastern Red Bat was recorded in the Study Area during bat acoustic surveys.
Mammals	Hoary Bat	*Lasiurus cinereus*	-	END	-	S4	MNRF, Stantec	The Hoary Bat is a solitary, tree dwelling species that roosts in the terminal foliage of coniferous or deciduous trees (Dobbyn 1994; MNRF 1984). Hoary Bats typically forage over glades or lakes in forested areas (MNRF 1984).	**Confirmed** – The species was observed in suitable habitat during the 2023 field program. Forest and swamp communities and buildings in the Study Area have the potential to provide suitable bat maternity habitat for SOCC bats. Hoary Bat was recorded in the Study Area during bat acoustic surveys.
Mammals	Silver-haired Bat	*Lasionycteris noctivagans*	-	END	-	S4	MNRF, Stantec	The Silver-haired Bat is a solitary, tree dwelling species that forms maternity colonies in hollow trees, woodpecker holes and birds' nests, and typically does not utilize anthropogenic structures, but has been found in sheds/garages (Dobbyn 1994; MNRF 1984). Silver-haired Bats typically forage over woodland lakes and streams (MNRF 1984).	**Confirmed** – The species was observed in suitable habitat during the 2023 field program. Forest and swamp communities and buildings in the Study Area have the potential to provide suitable bat maternity habitat for SOCC bats. Silver-haired Bat was recorded in the Study Area during bat acoustic surveys.
Insects	Black Dash	*Euphyes conspicua*	-	-	-	S3	OBA	Black Dash occurs in open thicket or partially wooded wetlands. They have an affinity for Carex stricta. They do not inhabit woodlands with deep shade (NatureServe 2023).	**Medium** – Potential habitat to support Black was observed in the Study Area. The species was not observed during the field program. No targeted insect surveys were completed as part of the field program.
Insects	Monarch	*Danaus plexippus*	SC	END	SC	S4B, S2N	OBA, Stantec	In southern Ontario, the Monarch is found primarily wherever milkweed and wildflowers (including goldenrods, asters and purple loosestrife) exist. The Larvae occur only where milkweed exists; adults are more generalized, feeding on a variety of wildflower nectar. This includes abandoned farmland, along roadsides, and other open spaces where these plants grow (COSEWIC 2016).	**High** – Potential habitat to support Monarchs was observed in the Study Area. Populations of Milkweed observations were limited to scattered individuals in various meadows on the Subject Lands. The species was observed in the meadow directly adjacent to the Greenbelt NHS located on the southern property (12489 Dixie Road). No targeted insect surveys were completed as part of the field program.

Notes:

[1]**Common Name:** The common English name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[2]**Scientific Name:** The scientific name of a species as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

[3]**SARO Status:** Species at Risk in Ontario (Provincial Status as defined by the Endangered Species Act, 2007 as amended).

[4]**COSEWIC Status:** Status as defined by the Committee on the Status of Endangered Wildlife in Canada

[5]**SARA Status:** Federal status as defined by the Species at Risk Act

[6]**S-Rank:** Subnational Rank is the conservation status of a species or plant community within a particular province, territory or state. In this scenario, it is the provincial level ranking system as published by the Natural Heritage Information Centre hosted by the Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario.

Source(s):

iNaturalist: Ontario Herpetofauna Project. Atlas Area Search: Caledon Region. Retrieved October 2023 from https://www.inaturalist.org/guides/1327.

NHIC: Natural Heritage Information Centre database review (Ministry of Northern Development, Mines, Natural Resources and Forestry / Land Information Ontario).

MNRF: Dobbyn, J.S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists, Don Mills, Ontario, 120 pp.

OBBA: Cadman, M.D., D.A. Sutherland, G.G., Beck, D., Lepage, A.R., Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. (eds) Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of natural resources, and Ontario Nature, Toronto, xxii + 706pp

OBA: Macnaughton, A., Layberry, R., Cavasin, R., Edwards, B., and Jones, C. 2023. Ontario Butterfly Atlas [web application]. Listowel, Ontario. Available online: https://www.ontarioinsects.org/atlas/

ORAA: Ontario Nature. 2019. Ontario Reptile and Amphibian Atlas [web application]. Toronto, Ontario. Available online: https://ontarionature.org/oraa/maps/

Stantec: Observed by Stantec during 2023 field investigations.

Habitat Description Sources:

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COSEWIC. 2002. COSEWIC assessment and status report on the northern map turtle *Graptemys geogrphica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 34 pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

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COSEWIC. 2014. COSEWIC assessment and status report on the Milksnake *Lampropeltis triangulum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x +61 pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

COSEWIC. 2016. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 59 pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

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MacCulloch, R.D. 2002. The ROM field guide to Amphibians and Reptiles of Ontario. McClelland & Steward Ltd. Toronto, Ontario. 168pp.

Ministry of Natural Resources and Forestry (MNRF). 1984. Habitat Management Guidelines for Bats of Ontario. Available online: https://dr6j45jk9xcmk.cloudfront.net/documents/2790/guide-bats.pdf

Ontario Nature. 2019. Ontario Reptile and Amphibian Atlas [web application]. Toronto, Ontario. Available online: https://ontarionature.org/oraa/maps/

Endangered Species Act and Species at Risk Act Acronyms

END: Endangered

THR: Threatened

SC: Special Concern

EXT: Extirpated

NAR: Not at Risk

Subnational Rankings (S RANK)

SNR: Unranked

SU: Unrankable – Currently unrankable due to lack of information

SNA: Not applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities

S#S#: Range Rank – A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species

?: Indicates uncertainty in the assigned rank

S1: Critically Imperiled – Critically imperiled in the province (often 5 or fewer occurrences)

Appendix E.2: Species of Conservation Concern Habitat Screening Assessment

S2: Imperiled – Imperiled in the province, very few populations (often 20 or fewer),

S3: Vulnerable – Vulnerable in the province, relatively few populations (often 80 or fewer)

S4: Apparently Secure – Uncommon but not rare

S5: Secure – Common, widespread, and abundant in the province

SX: Presumed extirpated

SH: Possibly Extirpated (Historical)

SE: if an element is known to occur as an exotic in Ontario, the status value assigned is SE. A ? qualifier added to that value indicates uncertainty about whether it is exotic or native. Numeric ranks of 1 through 5 added to the exotic status indicates the element's abundance in Ontario, with 1 indicating the least abundant and 5 the most.

Appendix F Significant Wildlife Habitat Screening Assessment

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
Seasonal Concentration Areas			
Waterfowl Stopover and Staging Area (Terrestrial)	Fields with sheet water during spring (mid-March to May), or annual spring meltwater flooding found in any of the following Community Types: Meadow (CUM1), Thicket (CUT1). Agricultural fields with waste grains are commonly used by waterfowl, and these are not considered SWH unless they have sheet water available.	ELC surveys were used to assess features within the Study Area that may support waterfowl stopover and staging areas (terrestrial).	**Low** – Potentially suitable SWH habitat was not observed in the Study Area. There are wildlife records or field observations for listed shorebird species.
Waterfowl Stopover and Staging Area (Aquatic)	The following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Deciduous Swamp (SWD). Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration to support waterfowl. The combined area of the ELC ecosites and a 100 m radius area is the SWH. Sewage treatment ponds and stormwater ponds do not qualify as a SWH; however, a reservoir managed as a large wetland or pond/lake does qualify.	ELC surveys were used to assess features within the Study Area that may support waterfowl stopover and staging areas (aquatic).	**Medium** – Potentially suitable SWH habitat was observed in the Study Area and there are wildlife records or field observations for listed waterfowl species.
Shorebird Migratory Stopover Area	Shorelines of lakes, rivers, and wetlands, including beach areas, bars, and seasonally flooded, muddy, and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of amour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a significant wildlife habitat. The following community types: Meadow Marsh (MAM), shoreline (BB), or Sand Dune (SD).	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support migratory shorebirds.	**Low** – Potentially suitable SWH habitat was not observed in the Study Area. There are wildlife records or field observations for listed shorebird species.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
Raptor Wintering Area	At least one of the following Forest Community Types: Deciduous Forest (FOD), Mixed Forest (FOM) or Coniferous Forest (FOC), in combination with one of the following Upland Community Types: Meadow (CUM1), Thicket (CUT1), Savannah (CUS1), Woodland (CUW1) (<60% cover) that are >20 ha and provide roosting, foraging and resting habitats for wintering raptors. Upland habitat (CUM1, CUT1, CUS1, CUW1), must represent at least 15 ha of the 20-ha minimum size.	ELC surveys and GIS analysis were used to assess features within the Study Area that may support wintering raptors.	**High** – Good quality SWH habitat has been identified associated with the Greenbelt NHS located in the central portion of the site. There are wildlife records or field observations for listed raptor species.
Bat Hibernacula	Hibernacula may be found in caves, mine shafts, underground foundations, and karsts. May be found in these Community Types: Crevice (CCR), Cave (CCA).	ELC surveys were used to assess features within the Study Area that may support bat hibernacula.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Bat Maternity Colonies	Maternity colonies considered significant wildlife habitat are found in forested ecosites. Either of the following Community Types: Deciduous Forest (FOD), Mixed Forest (FOM), Deciduous Swamp (SWD), Mixed Swamp (SWM). Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3, or class 1 or 2. Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	ELC surveys were used to assess features within the Study Area that may support bat maternity colonies.	**High** – Good quality SWH habitat has been identified associated with the woodlands in Greenbelt NHS located in the central portion of the site. Several species of bats are known to occur on the Subject Lands based on the results of the 2023 bat survey. Note, the FOM-a community associated with 12861 Dixie Road is not larger than 10ha and is therefore not considered SWH.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
Turtle Wintering Areas	Snapping and Midland Painted turtles utilize ELC community classes: Swamp (SW), Marsh (MA) and Open Water (OA). Shallow water (SA), Open Fen (FEO) and Open Bog (BOO). Northern Map turtle- open water areas such as deeper rivers or streams and lakes can also be used as over-wintering habitat. Water has to be deep enough not to freeze and have soft mud substrate. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen.	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support areas of permanent standing water but not deep enough to freeze.	**Medium** – Potentially suitable SWH habitat is present in the Study Area associated with the wetlands located in the Greenbelt NHS valleylands. There are known wildlife records in the general area. Note, man-made ponds are generally not considered SWH.
Snake Hibernacula	Hibernation occurs in sites located below frost lines in burrows, rock crevices, broken and fissured rock and other natural features. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Any ecosite in southern Ontario other than very wet ones may provide habitat. The following Community Types may be directly related to snake hibernacula: Talus (TA), Rock Barren (RB), Crevice (CCR), Cave (CCA), and Alvar (RBOA1, RBSA1, RBTA1).	ELC surveys, wildlife surveys and wildlife habitat assessments were used to assess features within the Study Area that may support snake hibernacula.	**High** – Good quality habitat was observed surrounding the buildings at both properties and there are known records for several snake species in the area.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
Colonial-Nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns found in any of the following Community Types: Meadow (ME), Thicket (TH), Bluff (BL), Cliff (CL). Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil, or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation.	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Colonial-Nesting Bird Breeding Habitat (Tree/Shrubs)	Identification of stick nests in any of the following Community Types: Mixed Swamp (SWM), Deciduous Swamp (SWD), Treed Fen (FET). The edge of the colony and a minimum 300 m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0 ha with a colony is the SWH. Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.	ELC surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat (Trees/Shrubs).	**Low** – Stick nests / suitable SWH habitat was not observed through the field program. There are colonial nesting species records in the general area.
Colonial-Nesting Bird Breeding Habitat (Ground)	Any rocky island or peninsula within a lake or large river. For Brewer's Blackbird close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM1-6), Shallow Marsh (MAS1-3), Meadow (CUM1), Thicket (CUT1), Savannah (CUS1).	ELC surveys, breeding bird surveys and wildlife habitat assessments were used to assess features within the Study Area that may support colonial bird breeding habitat (Ground).	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands. There are no Brewer's Blackbird records for the area.
Migratory Butterfly Stopover Areas	Located within 5 km of Lake Ontario. A combination of ELC communities, one from each land class is required: Field (ME, TH) and Forest (FOC, FOM, FOD).	ELC surveys and GIS analysis were used to assess features within the Study Area that may support migratory butterfly	**Absent** – The Study Area is not located within 5km of Lake Ontario.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
	Minimum of 10 ha in size with a combination of field and forest habitat present.	stopover areas.	
Landbird Migratory Stopover Areas	The following community types: Forest (FOD, FOM, FOC) or Swamp (SWC, SWM, SWD). Woodlots must be >10 ha in size and within 5 km of Lake Ontario – woodlands within 2 km of Lake Ontario are more significant.	ELC surveys and GIS analysis were used to assess features within the Study Area that may support landbird migratory stopover areas.	**Absent** – The Study Area is not located within 5km of Lake Ontario.
Deer Yarding Areas	Delineated by the MNDMNRF as areas where deer move to in response to the onset of winter snow and cold. The following forested ecosites within Community Series: FOC, FOM, SWC, SWM. Deer yard may also occur in mixed and coniferous plantations (CUP2 and CUP3), and deciduous forest (FOD) and thicket (CUT) communities.	No studies required as the MNDMNRF delineates this habitat.	**Absent** – Not identified in the Study Area by MNRF.
Deer Winter Congregation Areas	Woodlots typically >100 ha in size unless determined by the MNR as significant. (If large woodlots are rare in a planning area >50 ha). All forested ecosites within Community Series: FOC, FOM, FOD, SWC, SWM, SWD. Conifer plantations much smaller than 50 ha may also be used.	No studies required as the MNDMNRF delineates this habitat.	**Absent** – Not identified in the Study Area by MNRF.
Rare Vegetation Communities			
Cliffs and Talus Slopes	A Cliff is vertical to near vertical bedrock >3 m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris. Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT. Most cliff and talus slopes occur along the Niagara Escarpment.	ELC surveys were used to assess features within the Study Area that would be considered cliffs or talus slopes.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Sand Barrens	Sand barrens typically are exposed sand, generally	ELC surveys were used to	**Absent on Subject Lands** – Habitat not

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
	sparsely vegetated and cause by lack of moisture, periodic fires, and erosion. Vegetation can vary from patchy and barren to tree covered but less than 60%. Any of the following Community Types: SBO1 (Open Sand Barren Ecosite), SBS1 (Shrub Sand Barren Ecosite), SBT1 (Treed Sand Barren Ecosite).	assess features within the Study Area that would be considered to be sand barrens.	observed on the Subject Lands or directly adjacent to the Subject Lands.
Alvars	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. Any of the following Community Types: ALO1(Open Alvar Rock Barren Ecosite), ALS1 (Alvar Shrub Rock Barren Ecosite), ALT1 (Treed Alvar Rock Barren Ecosite), FOC1 (Dry-Fresh Pine Coniferous Forest), FOC2 (Dry-Fresh Cedar Coniferous Forest), CUM2 (Bedrock Cultural Meadow), CUS2 (Bedrock Cultural Savannah), CUT2-1 (Common Juniper Cultural Alvar Thicket), or CUW2 (Bedrock Cultural Woodland). An Alvar site >0.5 ha in size.	ELC surveys were used to assess features within the Study Area that would be considered to be alvar communities.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Old-growth Forest	Old-growth forests tend to be relatively undisturbed, structurally complex, and contain a wide variety of trees and shrubs in various age classes. These	ELC surveys were used to assess features within the Study Area that would be considered to	**Absent** – Interior habitat is not present associated with the woodland features in the Study Area.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
	habitats usually support a high diversity of wildlife species. Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.	be old-growth forest communities.	
Savannahs	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. Any of the following Community Types: TPS1 (Dry-Fresh Tallgrass Mixed Savannah Ecosite), TPS2 (Fresh-Moist Tallgrass Deciduous Savannah Ecosite), TPW1 (Dry-Fresh Black Oak Tallgrass Deciduous Woodland Ecosite), TPW2 (Fresh-Moist Tallgrass Deciduous Woodland Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite).	ELC surveys were used to assess features within the Study Area that would be considered to be savannah communities.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Tallgrass Prairies	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has <25% tree cover. Any of the following Community Types: TPO1 (Dry Tallgrass Prairie Ecosite), TPO2 (Fresh-Moist Tallgrass Prairie Ecosite).	ELC surveys were used to assess features within the Study Area that would be considered to be tall-grass communities.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG.	ELC surveys were used to assess features within the Study Area that would be considered to be other rare vegetation communities.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Specialized Habitat for Wildlife			
Waterfowl Nesting Area	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4. Note: includes adjacency to Provincially Significant Wetlands.	ELC surveys were used to assess features within the Study Area that may support nesting waterfowl. Habitats adjacent to wetlands without standing water were not considered candidate SWH.	**Medium** – Potentially suitable SWH habitat is present in the Study Area associated with the wetlands located in the Greenbelt NHS valleylands. There are known wildlife records in the general area.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
Bald Eagle and Osprey nesting, Foraging, and Perching Habitat	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms). ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds, and wetlands.	ELC surveys, breeding bird surveys, and wildlife habitat assessments were used to assess features within the Study Area that may support nesting, foraging and perching habitat for large raptors.	**Low** – Potential SWH habitat is present in the Study Area west of the Subject Lands in the deciduous woodlands / swamp. There are no Osprey or Bald Eagle records in the general area.
Woodland Raptor Nesting Habitat	All natural or conifer plantation woodland/forest stands combined >30 ha and with >4 ha of interior habitat. Interior habitat determined with a 200 m buffer. Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small offshore islands. May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	ELC surveys, wildlife habitat assessments and GIS analysis were used to assess features within the Study Area that may support nesting habitat for woodland raptors.	**Absent** – Interior habitat is not present associated with the woodland features in the Study Area.
Turtle Nesting Areas	Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC Ecosites: MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, BOO1, FEO1. Best nesting habitat for turtles is close to water, away from roads and sites less prone to loss of eggs by predation from skunks, raccoons, or other animals. For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed	ELC surveys, wildlife habitat assessments and GIS analysis were used to assess features within the Study Area that may support turtle nesting areas.	**Low** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands. There are known wildlife records in the general area.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
	shallow weedy areas of marshes, lakes, and rivers are most frequently used.		
Seeps and Springs	Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs. Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.	ELC surveys were used to assess features within the Study Area that may support seeps/springs.	**Low** – Habitat not observed during the field program including vegetation review and HDFA assessment. Review of the hydrogeological report does not indicate the presence of seeps and springs on or directly adjacent to the Subject Lands.
Amphibian Breeding Habitat (Woodland)	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD. Presence of a wetland, lake, or pond within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	ELC surveys and amphibian call surveys were used to assess features within the Study Area that may support woodland breeding amphibians.	**High** – Amphibians were heard calling in the FODM7-7, FODM5-1, and FODM4-5 woodland ecosites located in the Greenbelt NHS valleylands in the center and south/southeast side of the Subject Lands during the 2024 amphibian call surveys. There are also known wildlife records in the general area.
Amphibian Breeding Habitat (Wetland)	ELC Community Classes SW, MA, FE, BO, OA, and SA. Wetland areas >120 m from woodland habitats. Wetlands and pools (including vernal pools) >500 m^2 (about 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape, and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation.	ELC surveys and amphibian call surveys were used to assess features within the Study Area that may support breeding amphibians.	**High** – Amphibians were heard calling during the 2024 amphibian call surveys. Amphibians were heard in the MAMM1-3, MAMM1-3/MEMM3, SWDM4-1, MAMM1-3/THDM2 wetland ecosites in the Greenbelt NHS valleylands in the center and south/southeast sides of the Subject Lands, as well as the MAM wetland ecosite in the south Adjacent Lands. There are also known wildlife records in the general area.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
Woodland Area-Sensitive Bird Breeding Habitat	Large mature forest stands or woodlots >30ha with interior forest habitat (i.e., at least 200m from edge). All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD.	ELC surveys and GIS analysis were used to determine habitat.	**Absent** – Interior habitat is not present associated with the woodland features in the Study Area.
Species of Conservation Concern			
Marsh Bird Breeding Habitat	All wetland habitats with shallow water and emergent aquatic vegetation. May include any of the following Community Types: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: Swamp (SW), Marsh (MA) and Meadow (CUM) Community Types.	ELC surveys and breeding bird surveys were used to identify marshes with shallow water and emergent vegetation that may support marsh breeding birds.	**Low** – Potentially suitable SWH habitat was not observed in the Study Area but there are wildlife records or field observations for listed marsh bird species (Green Heron and Trumpeter Swan).
Open Country Bird Breeding Habitat	Grassland areas > 30 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or hay or livestock pasturing in the last 5 years, in the following Community Type: Meadow (CUM).	ELC surveys and GIS analysis were used to identify grassland communities within the Study Area that may support area-sensitive breeding birds.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Shrub/Early Successional Bird Breeding Habitat	Old field areas succeeding to shrub and thicket habitats >10 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Types: Thickets (CUT), Savannahs or Woodlands (CUW).	ELC surveys and GIS analysis were used to identify large communities that may support shrub/early successional breeding birds.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands or directly adjacent to the Subject Lands.
Terrestrial Crayfish	Meadow marshes and edges of shallow marshes (no minimum size). Vegetation communities include MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM. Terrestrial Crayfish construct burrows in marshes, mudflats, meadows. Can be found far from water.	ELC surveys and wildlife habitat assessments were used to identify shallow marsh and meadow marsh communities that may support Terrestrial Crayfish within the Study Area.	**High** – Good quality habitat was observed in the Study Area associated with the marsh and swamp communities present on the Subject Lands located within and directly adjacent to the Greenbelt NHS valleylands.
Special Concern and Rare Wildlife Species	All special concern and provincially rare (S1-S3, SH) plant and animal species (SOCC) with potential to occur in the Study Area.	ELC surveys, flora and wildlife surveys were used to identify suitable habitat for each potential SOCC listed in **Appendix E.2**.	**Confirmed** - The results of field surveys and SOCC Screening Assessment confirmed 7 SOCC species on the Subject Lands.

Candidate Wildlife Habitat	Criteria	Methods	Probability of Occurrence in the Study Area (Low, Medium, or High)
Animal Movement Corridors			
Amphibian Movement Corridor	Movement corridors are elongated, naturally vegetated parts of the landscape used by amphibians to move between breeding habitat and summer habitat. Determined based on identifying significant amphibian breeding habitat (wetland).	Identified after Amphibian Breeding Habitat is confirmed. Movement corridors should be considered when amphibian breeding habitat is confirmed as SWH from Amphibian Breeding Habitat.	**Absent on Subject Lands** – Habitat not observed on the Subject Lands.
Deer movement corridors	Associated with deer wintering habitat confirmed by MNRF.	Identified after deer wintering habitat is confirmed by the MNRF.	**Absent** – Deer wintering habitat hasn't been confirmed by the MNRF in the Study Area.

Appendix G Photographic Log

Photo Log G-1 Watercourses

Photo 1: Conditions in the tributary of the West Humber River on 12861 Dixie Road. Date: August 23 2023

Photo 2: Conditions in the tributary of the West Humber River on 12861 Dixie Road facing west. Date: August 23 2023

Photo 3: Conditions in the tributary of the West Humber River on 12861 Dixie Road. Date: August 23 2023

Photo 4: Conditions in the tributary of the West Humber River on 12861 Dixie Road. Date: August 23 2023

Photo 5: Conditions in the tributary of the West Humber River on 12861 Dixie Road. Date: August 23, 2023

Photo 6: Conditions in the tributary of the West Humber River on 12861 Dixie Road. Date: August 23 2023

Photo 7: Conditions in the tributary of the West Humber River on 12861 Dixie Road. Date: August 23 2023

Photo 8: Conditions in the tributary of the West Humber River on 12861 Dixie Road. Date: August 23 2023

Photo 9: Conditions in the tributary of the West Humber River within the forested valley on 12489 Dixie Road. Date: April 14, 2023

Photo 10: Conditions in the tributary of the West Humber River within the forested valley on 12489 Dixie Road. Date: April 14, 2023

Photo 11: Conditions in the tributary of the West Humber River within the forested valley on 12489 Dixie Road. Date: April 14, 2023

Photo 12: Conditions in the tributary of the West Humber River within the forested valley on 12489 Dixie Road. Date: April 14, 2023

Photo 13: Conditions in Kilamanagh Creek facing downstream. Date: May 24 2023

Photo 14: Conditions in Kilamanagh Creek facing upstream. Date: May 24 2023

Photo 15: Conditions in Kilamanagh Creek facing upstream with old concrete pipe culvert in the channel and csp draining HDF-KCR-H1 on the north bank. Date: April 14 2023

Photo 16: Conditions in Kilamanagh Creek facing downstream Date: April 14 2023

Photo 17: Pond in the valley north of Kilamanagh Creek on 12861 Dixie Road. Date: August 15 2023

Photo 18: Conditions in Kilamanagh Creek facing downstream Date: April 14 2023

Photo Log G-2 HDF Photos

Photo 1: Conditions in HDF WHR-H1. Tile outlet at the top of the valley. Date: August 23 2023

Photo 2: Conditions in HDF WHR-H2A. Channel with defined banks on the steep valley slope. Date: August 23 2023

Photo 3: Conditions in HDF WHR-H2B. Date: August 23 2023

Photo 4: Conditions in HDF WHR-H3A. Date: August 2 2023

Photo 5: Conditions in HDF WHR-H3B. Facing Upstream Date: April 14 2023

Photo 6: Conditions in HDF WHR-H3B. Facing Downstream. Date: May 24 2023

Photo 7: Conditions in HDF WHR-H3C. Swale like conditions without defined banks. Facing upstream. Date: May 24 2023

Photo 8: Conditions in HDF WHR-H3D. Channel with defined banks in incised valley. Facing South. Date: May 24, 2023

Photo 9: Conditions in HDF WHR-H3D channel with defined banks in incised valley. Facing South. Date: May 24, 2023

Photo 10: Conditions in HDF WHR-H3E with swale-like conditions without defined banks. Facing Southeast. Date: Aug 2, 2023

Photo 11: Conditions in HDF WHR-H3F with no visible channel. Facing upstream. Date: April 14, 2023

Photo 12: Conditions in HDF WHR-H4A tile outlet at the top of the valley. Facing East. Date: May 24, 2023

Photo 13: Conditions in HDF WHR-H5. Facing upstream. Date: May 24, 2023

Photo 14: Conditions in HDF WHR-H5 with tile outlet. Facing upstream. Date: May 24, 2023

Photo 15: Conditions in HDF WHR-H6A. Facing downstream. Date: Aug 2, 2023

Photo 16: Conditions in HDF WHR-H6B. Facing upstream. Date: May 24 2023

Photo 17: Corrugated steel pipe (in front of culvert) conveying flows from KCR-H1 into Kilamanagh Creek. Facing upstream. Date: April 14 2023

Photo 18: Conditions in HDF KCR-H1. Facing downstream. Date: Aug 15 2023

Appendix H Supporting Documents

O3 CULVERT

O2 CULVERT

O1 CULVERT

EXT-3
19.92 Ha
0.25
Tp ~ 1.55hr

EXT-2
58.47 Ha
0.25
Tp ~ 1.51hr

EXT-1
14.11 Ha
0.25
Tp ~ 0.85hr

3.29 Ha
101

6.05 Ha
102

9.81 Ha
103

11.23 Ha
104

15.65 Ha
105

11.73 Ha
106

12.40 Ha
110

12.69 Ha
107

29.56 Ha
108

3.32 Ha
109

21.67 Ha

0.84 Ha

DIXIE ROAD

D1 CULVERT

UPSTREAM EXTERNAL CONTRIBUTING DRAINAGE AREA: 823 Ha

D2 CUVLERT

UPSTREAM EXTERNAL CONTRIBUTING DRAINAGE AREA: 66 Ha

UPSTREAM EXTERNAL CONTRIBUTING DRAINAGE AREA: 1103 Ha

OLD SCHOOL ROAD

69.95 Ha

9.13 Ha

85.70 Ha

HEART LAKE ROAD

0 120 360 600m

1:12,000

\\ca0215-ppfss01\1606\active\16062314\drawing\sheet_files\16062314_comb_c-fig_lbws

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Stantec

Stantec Consulting Ltd.
300W-675 Cochrane Drive
Markham ON L3R 0B8
Tel: (905) 944-7777
www.stantec.com

Legend

- PRIMARY STUDY AREA (PSA)
- SECONDARY STUDY AREA (SSA)
- NON PARTICIPATING LANDS
- SSA EXTERNAL AREA
- SSA SITE TO TRIBUTARY OF WEST HUMBER RIVER
- SSA SITE TO KILAMANAGH CREEK
- PSA DRAINAGE BOUNDARY
- 3.32 Ha / 109 — AREA / CATCHMENT ID
- EXT-2 / 57.79 Ha / 0.25 / Tc ~ MIN — CATCHMENT ID / AREA / RUNOFF COEFFICIENT / TIME OF CONCENTRATION

Client/Project
QUADREAL PROPERTY GROUP

INDUSTRIAL DEVELOPMENT

12489 & 12861 Dixie Road, Caledon, ON

Project No.
1606 23114

Title
LOCAL SWS EXISTING DRAINAGE PLAN

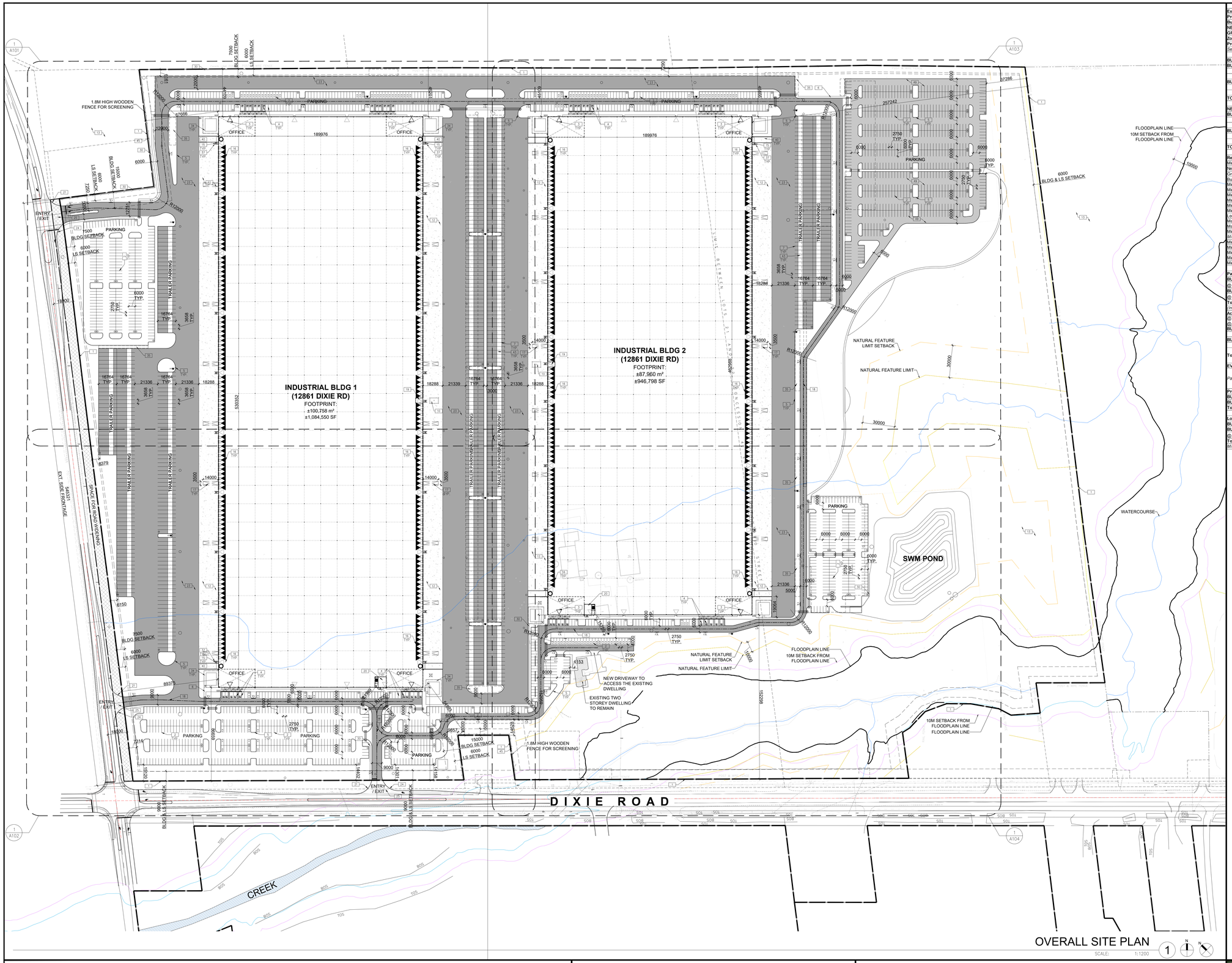
Revision
-

Date
2025.07.23

Reference Sheet
-

Figure No.
D.1

CAUTION: IF THIS SHEET IS NOT 36"x48" IT IS A REDUCED PRINT



OVERALL SITE PLAN

SCALE: 1:1200

SITE STATISTICS

Existing Zoning Category	*A1*	
Proposed Zoning Category	*MP*	
Building Classification	*Group F2 (O.B.C. A- 3.1.2.1.(1))*	
NET DEVELOPABLE AREA	4,899,303 SF	455,160.62m²
GROSS SITE AREA	6,271,978 SF	582,686.42m²
Zone Permitted Use *(Town of Caledon Zoning By-law 2006-50)*		
Proposed Use	*Industrial*	
Section 8.3 - Zoning Standards - MP Zone		
BUILDING AREA:		
BUILDING 1	**1,084,549 SF**	**100,757.96 m²**
Warehouse Area	*1,058,648 SF*	*98,351.68 m²*
Office Area	*25,901 SF*	*2,406.27 m²*
BUILDING 2	**946,797 SF**	**87,960.42 m²**
Warehouse Area	*920,229 SF*	*85,492.13 m²*
Office Area	*26,568 SF*	*2,468.29 m²*
TOTAL BUILDING AREA	**2,031,346 SF**	**188,718.37 m²**
NET FLOOR AREA:		
BUILDING 1	**1,083,400 SF**	**100,651.28 m²**
Floor Area	*1,084,549 SF*	*100,757.96 m²*
Building Area under services, M&E rooms etc.	*1,149 SF*	*106.68 m²*
BUILDING 2	**945,731 SF**	**87,861.36 m²**
Floor Area	*946,797 SF*	*87,960.42 m²*
Building Area under services, M&E rooms etc.	*1,066 SF*	*99.06 m²*
TOTAL NET AREA	**2,029,131 SF**	**188,512.63 m²**

Requirements	**Proposed**	**Required**
Min. Lot Area	582,686.42m²	925.00m²
Net Floor Area	188,512.63m²	-
Gross Floor Area	188,718.37m²	-
Building Area	32.39%	50.00%
Min. Lot Frontage (m)	91.81	30.00
Min. Front Yard Building Setback (m)	86.00	9.00
Min. Ext Side Yard Building Set back (m)	89.38	7.50
Min. Int.Side Yard Building Set back (m)	257.24	6.00
Min. Int. Side Yard Building Set back (m) - Abutting Residential	54.99	15.00
Min. Rear Yard Building Setback (m)	44.11	7.50
Lot Coverage	32.39%	50.00%
Maximum Building Height (m) - Building 1	16.01	18.00
Maximum Building Height (m) - Building 2	16.01	18.00
Min. Landscape Area (% of Lot Area)	30.59%	10.00%
Min. Landscape Area (SM)	*178,257.16m²*	*58,268.64m²*
Min. Front Landscape Buffer (m)	14.16	9.00
Min. Ext. Side Landscape Buffer (m)	6.15	6.00
Min. Int. Side Landscape Buffer (m)	6.00	6.00
Min. Rear Landscape Buffer (m)	6.16	6.00
Min. Landscape Buffer (m) - Abutting EPA > 6m width	37.29	-

Parking Calculations	**Proposed**	**Required**
BUILDING 1		
@139 + 1/170m² of Net Floor Area over 10,000 m²	915	672
BUILDING 2		
@139 + 1/170m² of Net Floor Area over 10,000 m²	1067	597
Total no. of Parking Spaces	**1982**	**1269**
(including Accessible Parking Spaces)		
Accessible Parking Spaces		
@201 to 1000 parking spaces is 2 plus 2% of total spaces		
@More than 1000 parking spaces is 11 plus 1% of total spaces		
BUILDING 1		
	22	15
BUILDING 2		
	22	14
Total no. of Accessible Parking Spaces	**44** *22 Type - A* *22 Type - B*	**29** *14 Type - A* *15 Type - B*
EV Parking Spaces	*24*	
Parking Stall Dimensions	*STANDARD: 2.75m X 6.0m w/ 6.0m Aisle* *ACCESSIBLE: TYPE A - 3.4m X 5.4m* *TYPE B - 2.75m X 5.4m* *w/ 1.5m access aisle on either side*	

Proposed Trailer Parking	**Proposed**	**Required**
BUILDING 1	300	-
BUILDING 2	241	-
Total no. of Trailer Parking Spaces	**541**	**-**

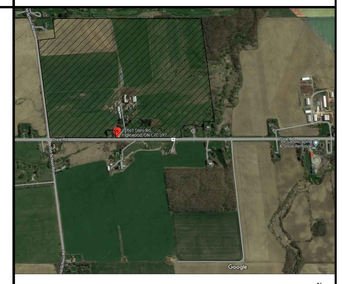
Loading Space Calculations	**Proposed**	**Required**
BUILDING 1	211	13
BUILDING 2	183	12
@3 + 1 per 9300 m² in excess of 7441 m² of Net Floor Area		
Total no. of Loading Spaces	**394**	**25**
Min. Loading Space Dimensions	*3.5m(W) X 14.0m(L) X 3.35m(H)*	

GENERAL NOTES

1. PROPERTY LINE
2. 2750x6000 PARKING STALL, PAINTED PARKING STRIPING PER CITY STANDARDS. WITH 6M WIDE DOUBLE LOADED AISLE.
3. PRINCIPLE ENTRY – TENANT FIT–UP SUBJECT TO INTERIOR ALTERATION PERMIT
4. TYPICAL SHARED ACCESSIBLE PARKING STALLS, PAINTED PARKING STRIPING PER CITY STANDARDS. TO HAVE (2) TYPE B (2750x6000),(2) TYPE A STALLS (3400X6000),OR ONE OF EACH WITH 1500mm PATH STRIP BETWEEN. – REFER TO TOWN OF CALEDON'S ACCESSIBLE PARKING STANDARDS.
5. 150mm WIDE CURB TYPICAL
6. MIN. 1500mm WIDE SIDEWALK TYPICAL U.N.O
7. TRAILER PARKING STALL – 12'–0" X 55'–0"
8. ACCESSIBLE CURB RAMP AS PER DETAIL
9. FIRE DEPARTMENT CONNECTION / SIAMESE
10. PROPOSED LOCATION OF TRANSFORMER C/W CONCRETE PAD
11. 1.8m HIGH BLACK VINYL CHAIN LINK FENCING OR APPROVED EQUAL ALONG DEVELOPMENT LIMIT BOUNDARY
12. CONCRETE APRON
13. LANDSCAPE AREA – SEE LANDSCAPE DWGS.
14. PEDESTRIAN RAIL (1070mm HIGH) SET INTO RETAINING WALL WHERE GRADE CHANGE GREATER THAN 600mm. PROVIDE CONCRETE–FILLED STEEL BOLLARD AT END OF RETAINING WALL – SEE CIVIL DWGS.
15. EXTERIOR STEEL STAIRS W/ TUBE STEEL GUARDRAIL, TYP.
16. TRUCK LOADING DOCK (TYPICAL)
17. LOADING SPACE – L.S. (MIN. 3.5m x 14.0m)
18. FIRE ACCESS ROUTE W/ 12M TURNING RADIUS
19. PROPOSED ELECTRICAL ROOM
20. PROPOSED MECHANICAL ROOM
21. CURB RADII AT ENTRANCES WITHIN MUNICIPAL SIDEWALK LIMITS TO CONFORM TO OPSD 350.010. – SEE CIVIL DWGS.
22. 1.8M WIDE PAINTED PEDESTRIAN PATHWAY
23. HATCHED AREA DENOTES HEAVY DUTY ASHPHALT, TYPICAL FOR ALL AREAS REQUIRING FIRE TRUCK OR TRACTOR TRUCK ACCESS.
24. 15.0m CENTERLINE RADIUS DISTANCE TO FIRE ACCESS ROAD
25. ROAD CURB AND SIDEWALK TO BE CONTINUOUS THROUGH THE DRIVEWAY. DRIVEWAY GRADE TO BE COMPATIBLE WITH EXIST. SIDEWALK AND A CURB DEPRESSION WILL BE PROVIDED FOR AT EACH ENTRANCE.
26. INVERTED U–SHAPE GALVANIZED BICYCLE RACKS MIN. 1.8Mx0.6M PER SPACE
27. PROPOSED STOP SIGN LOCATION
28. PRESSED PATTERNED ASPHALT PEDESTRIAN PATHWAY
29. YELLOW PAINTED LINES
30. RETAINING WALL
31. PRECAST SCREEN WALL TO BE INSTALLED ON TOP OF RETAINING WALL – REFER TO STRUC. DWGS
32. PROPOSED FIRE ROUTE SIGN LOCATION
33. RESERVED
34. PROPOSED AMENITY AREA
35. SNOW STORAGE ON SITE AT 2% TOTAL SITE AREA
36. PROPOSED CHAIN–LINK FENCE
37. CONCRETE/STEEL SAFETY BOLLARD
38. SCREEN WALL
39. PROPOSED PYLON SIGNAGE
40. DRIVE–IN RAMP WITH GALVANIZED GUARDRAIL ON EACH SIDE. SEE CIVIL DWGS FOR SLOPE %
41. RESERVED
42. DETECTIBLE TACTILE WARNING SURFACE, CONFORMING TO 2012 O.B.C.
43. MIN. 3m WIDE CONCRETE DOLLY PAD AT TRAILER STALLS
44. ACCESSIBLE PARKING GRADE SLOPING UP TO MEET PROPOSED CURB LEVEL
45. PROPOSED 1.8M HIGH WOODEN FENCE. REFER LANDSCAPE DWGS.
46. WASTE COLLECTION STAGING AREA. TO BE USED TO TEMPORARILY PLACE BINS FOR GARBAGE COLLECTION
47. TRUCK WHEEL STOP. REFER TO DETAIL #14/A105
48. BIKE REPAIR STATION – REFER LANDSCAPE
49. LIGHT COLOURED PAVEMENT TO HAVE INITIAL SOLAR REFLECTANCE OF AT LEAST 0.33 OR AN SRI OF 29

SITE LEGEND

- NEW HEAVY DUTY PAVEMENT (HATCHED)
- LIGHT COLOURED PAVEMENT TO HAVE INITIAL SOLAR REFLECTANCE OF AT LEAST 0.33 OR AN SRI OF 29
- LANDSCAPE AREA
- DETECTIBLE TACTILE WARNING SURFACE, CONFORMING TO 2012 O.B.C.
- FIRE ACCESS ROUTE WITH 12.5M TURNING RADIUS
- TRUCK LOADING DOCK DOOR
- KNOCK OUT PANEL
- MAN DOOR ENTRY
- EXIT DOOR LOCATION
- FIRE DEPT CONNECTION (VERIFY LOCATION WITH CIVIL DRAWINGS)
- PROPOSED FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- EXISTING FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- 1500mm WIDE DEPRESSED CURB FOR ACCESSIBLE PARKING AND PEDESTRIAN ACCESS – REFER TO DETAIL 4/A1.2
- PROPOSED CATCHBASIN
- CP — PAINTED CARPOOL PARKING SPACE SYMBOL
- BFPS — BARRIER FREE PARKING SIGN
- BFPSV — BARRIER FREE PARKING SIGN WITH VAN TAB
- DRIVE–IN DOOR
- STOP — NEW STOP SIGN
- R.R. — NEW FIRE ROUTE SIGN
- GM — GAS METER & PRESSURE REGULATING STATION BY GAS COMPANY
- LIGHT FIXTURES, REFER ELECTRICAL DWG FOR DETAILS
- LIGHT POLES, REFER ELECTRICAL DWG FOR DETAILS
- MH — DENOTES MANHOLE
- WHP/HP — EXISTING HYDRO POLE



VICINITY MAP
SCALE: NOT TO SCALE

WARE MALCOMB
6020 Highway 7, Suite 300
Vaughan, ON L4H 6R1, Canada
P 905.760.1221
ARCHITECTURE CIVIL ENGINEERING
PLANNING BRANDING
INTERIORS BUILDING MEASUREMENT

QUADREAL PROPERTY GROUP
TOWN OF CALEDON DIXIE ROAD
12861 DIXIE ROAD
CALEDON, ONTARIO CANADA

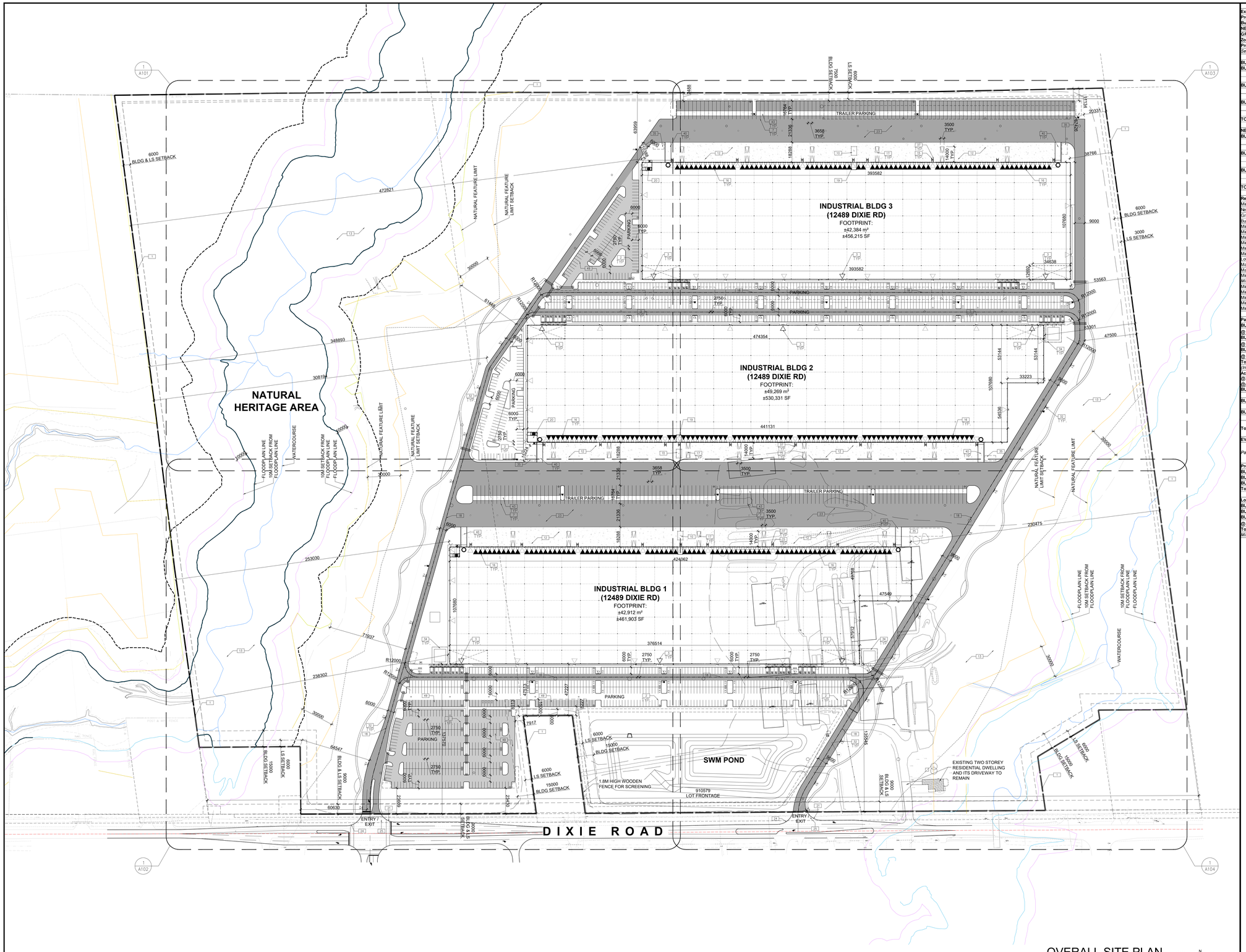
DATE	REMARKS
1 2023-12-12	ISSUED FOR OPA/ZBA
2 2024-08-16	REISSUED FOR OPA/ZBA
3 2024-12-05	REISSUED FOR OPA/ZBA
4 2025-01-09	ISSUED FOR COORDINATION
5 2025-02-05	ISSUED FOR COORDINATION
6 2025-02-20	ISSUED FOR SPA

OVERALL SITE PLAN

PA / PM:	SK
DRAWN BY:	JS
JOB NO.:	TOR22–0060–01

SHEET
A100

CAUTION: IF THIS SHEET IS NOT 36"x48" IT IS A REDUCED PRINT



OVERALL SITE PLAN

SCALE: 1:1200

SITE STATISTICS		
Existing Zoning Category	*A1*	
Proposed Zoning Category	*MP*	
Building Classification	*Group F2 (O.B.C. A- 3.1.2.1.(1))*	
NET DEVELOPABLE AREA	3,445,017 SF	320,052.83m²
GROSS SITE AREA	6,257,235 SF	581,316.71m²
Zone Permitted Use *(Town of Caledon Zoning By-law 2006-50)*		
Proposed Use	*Industrial*	
Section 8.3 - Zoning Standards - MP Zone		
BUILDING AREA:		
BUILDING 1	**461,902 SF**	**42,912.18 m²**
Warehouse Area	*452,438 SF*	*42,032.94 m²*
Office Area	*9,464 SF*	*879.24 m²*
BUILDING 2	**530,331 SF**	**49,269.39 m²**
Warehouse Area	*520,992 SF*	*48,401.76 m²*
Office Area	*9,339 SF*	*867.64 m²*
BUILDING 3	**456,214 SF**	**42,383.74 m²**
Warehouse Area	*446,750 SF*	*41,504.50 m²*
Office Area	*9,464 SF*	*879.24 m²*
TOTAL BUILDING AREA	**1,448,447.62 m²**	**134,565.32 m²**
NET FLOOR AREA:		
BUILDING 1	**460,852 SF**	**42,814.63 m²**
Floor Area	*461,902 SF*	*42,912.18 m²*
Building Area under services, M&E rooms etc.	*1,050 SF*	*97.55 m²*
BUILDING 2	**529,281 SF**	**49,171.85 m²**
Floor Area	*530,331 SF*	*49,269.39 m²*
Building Area under services, M&E rooms etc.	*1,050 SF*	*97.55 m²*
BUILDING 3	**455,164 SF**	**42,286.19 m²**
Floor Area	*456,214 SF*	*42,383.74 m²*
Building Area under services, M&E rooms etc.	*1,050 SF*	*97.55 m²*
TOTAL NET AREA	**1,445,297.62 m²**	**134,272.67 m²**

Requirements	**Proposed**	**Required**
Min. Lot Area	581,316.71m²	925.00m²
Net Floor Area	134,272.67m²	-
Gross Floor Area	134,565.32m²	-
Building Area	23.15%	50.00%
Min. Lot Frontage (m)	910.58	30.00
Min. Front Yard Building Setback (m)	135.55	9.00
Min. Int.Side (N) Yard Building Set back (m)	238.30	6.00
Min. Int Side (S) Yard Building Set back (m)	38.77	6.00
Min. Int. Side Yard Building Set back (m) - Abutting Residential	47.23	15.00
Min. Rear Yard Building Setback (m)	63.96	7.50
Lot Coverage	23.15%	50.00%
Maximum Building Height (m) - Building 1	14.50	18.00
Maximum Building Height (m) - Building 2	14.50	18.00
Min. Landscape Area (% of Lot Area)	54.57%	10.00%
Min. Landscape Area (SM)	*317,244.45m²*	*58,131.67m²*
Min. Front Landscape Buffer (m)	23.43	9.00
Min. Int. (N) Side Landscape Buffer (m)	64.55	6.00
Min. Int. (S) Side Landscape Buffer (m)	20.33	3.00
Min. Rear Landscape Buffer (m)	7.49	6.00
Min. Landscape Buffer (m) - Abutting EPA > 6m width	61.45	-

Parking Calculations	**Proposed**	**Required**
BUILDING 1		
@139 + 1/170m² of Net Floor Area over 10,000 m²	797	333
BUILDING 2		
@139 + 1/170m² of Net Floor Area over 10,000 m²	414	370
BUILDING 3		
@139 + 1/170m² of Net Floor Area over 10,000 m²	400	329
Total no. of Parking Spaces	**1611**	**1032**
(Including Accessible Parking Spaces)		
Accessible Parking Spaces		
@201 to 1000 parking spaces is 2 plus 2% of total spaces		
@More than 1000 parking spaces is 11 plus 1% of total spaces		
BUILDING 1		
	18	9
BUILDING 2		
	12	9
BUILDING 3		
	10	9
Total no. of Accessible Parking Spaces	**40** *20 Type - A* *20 Type - B*	**27** *13 Type - A* *14 Type - B*
EV Parking Spaces	*24*	
Parking Stall Dimensions	*STANDARD: 2.75m X 6.0m w/ 6.0m Aisle* *ACCESSIBLE: TYPE A - 3.4m X 5.4m* *TYPE B - 2.75m X 5.4m* *w/ 1.5m access aisle on either side*	
Proposed Trailer Parking	**Proposed**	**Required**
BUILDING 1	60	-
BUILDING 2	61	-
BUILDING 3	98	-
Total no. of Trailer Parking Spaces	**219**	**-**

Loading Space Calculations	**Proposed**	**Required**
BUILDING 1	65	7
BUILDING 2	87	7
BUILDING 3	77	7
@3 + 1 per 9300 m² in excess of 7441 m² of Net Floor Area		
Total no. of Loading Spaces	**249**	**21**
Min. Loading Space Dimensions	*3.5m(W) X 14.0m(L) X 3.35m(H)*	

GENERAL NOTES

1. PROPERTY LINE
2. 2750x6000 PARKING STALL, PAINTED PARKING STRIPING PER CITY STANDARDS. WITH 6M WIDE DOUBLE LOADED AISLE.
3. PRINCIPLE ENTRY – TENANT FIT–UP SUBJECT TO INTERIOR ALTERATION PERMIT
4. TYPICAL SHARED ACCESSIBLE PARKING STALLS, PAINTED PARKING STRIPING PER CITY STANDARDS. TO HAVE (2) TYPE B (2750x6000),(2) TYPE A STALLS (3400X6000),OR ONE OF EACH WITH 1500mm PATH STRIP BETWEEN – REFER TO TOWN OF CALEDON'S ACCESSIBLE PARKING STANDARDS.
5. 150mm WIDE CURB TYPICAL
6. MIN. 1500mm WIDE SIDEWALK TYPICAL U.N.O
7. TRAILER PARKING STALL – 12'–0" X 55'–0"
8. ACCESSIBLE CURB RAMP AS PER DETAIL
9. FIRE DEPARTMENT CONNECTION / SIAMESE
10. PROPOSED LOCATION OF TRANSFORMER C/W CONCRETE PAD
11. 1.8m HIGH BLACK VINYL CHAIN LINK FENCING OR APPROVED EQUAL ALONG DEVELOPMENT LIMIT BOUNDARY
12. CONCRETE APRON
13. LANDSCAPE AREA – SEE LANDSCAPE DWGS.
14. PEDESTRIAN RAIL (1070mm HIGH) SET INTO RETAINING WALL WHERE GRADE CHANGE GREATER THAN 600mm. PROVIDE CONCRETE–FILLED STEEL BOLLARD AT END OF RETAINING WALL – SEE CIVIL DWGS.
15. EXTERIOR STEEL STAIRS W/ TUBE STEEL GUARDRAIL, TYP.
16. TRUCK LOADING DOCK (TYPICAL)
17. LOADING SPACE – L.S. (MIN. 3.5m x 14.0m)
18. FIRE ACCESS ROUTE W/ 12M TURNING RADIUS
19. PROPOSED ELECTRICAL ROOM
20. PROPOSED MECHANICAL ROOM
21. CURB RADII AT ENTRANCES WITHIN MUNICIPAL SIDEWALK LIMITS TO CONFORM TO OPSD 350.010. – SEE CIVIL DWGS.
22. 1.8M WIDE PAINTED PEDESTRIAN PATHWAY
23. HATCHED AREA DENOTES HEAVY DUTY ASHPHALT, TYPICAL FOR ALL AREAS REQUIRING FIRE TRUCK OR TRACTOR TRUCK ACCESS.
24. 15.0m CENTERLINE RADIUS DISTANCE TO FIRE ACCESS ROAD
25. ROAD CURB AND SIDEWALK TO BE CONTINUOUS THROUGH THE DRIVEWAY. DRIVEWAY GRADE TO BE COMPATIBLE WITH EXIST. SIDEWALK AND A CURB DEPRESSION WILL BE PROVIDED FOR AT EACH ENTRANCE.
26. INVERTED U–SHAPE GALVANIZED BICYCLE RACKS MIN. 1.8Mx0.6M PER SPACE
27. PROPOSED STOP SIGN LOCATION
28. PRESSED PATTERNED ASPHALT PEDESTRIAN PATHWAY
29. YELLOW PAINTED LINES
30. RETAINING WALL
31. PRECAST SCREEN WALL TO BE INSTALLED ON TOP OF RETAINING WALL – REFER TO STRUC. DWGS
32. PROPOSED FIRE ROUTE SIGN LOCATION
33. RESERVED
34. PROPOSED AMENITY AREA
35. SNOW STORAGE ON SITE AT 2% TOTAL SITE AREA
36. PROPOSED CHAIN–LINK FENCE
37. CONCRETE/STEEL SAFETY BOLLARD
38. SCREEN WALL
39. PROPOSED PYLON SIGNAGE
40. DRIVE–IN RAMP WITH GALVANIZED GUARDRAIL ON EACH SIDE. SEE CIVIL DWGS FOR SLOPE %
41. RESERVED
42. DETECTIBLE TACTILE WARNING SURFACE, CONFORMING TO 2012 O.B.C.
43. MIN. 3m WIDE CONCRETE DOLLY PAD AT TRAILER STALLS
44. ACCESSIBLE PARKING GRADE SLOPING UP TO MEET PROPOSED CURB LEVEL
45. PROPOSED 1.8M HIGH WOODEN FENCE. REFER LANDSCAPE DWGS.
46. WASTE COLLECTION STAGING AREA. TO BE USED TO TEMPORARILY PLACE BINS FOR GARBAGE COLLECTION
47. TRUCK WHEEL STOP. REFER TO DETAIL #14/A105
48. BIKE REPAIR STATION – REFER LANDSCAPE
49. LIGHT COLOURED PAVEMENT TO HAVE INITIAL SOLAR REFLECTANCE OF AT LEAST 0.33 OR AN SRI OF 29

SITE LEGEND

- NEW HEAVY DUTY PAVEMENT (HATCHED)
- LIGHT COLOURED PAVEMENT TO HAVE INITIAL SOLAR REFLECTANCE OF AT LEAST 0.33 OR AN SRI OF 29
- LANDSCAPE AREA
- DETECTIBLE TACTILE WARNING SURFACE, CONFORMING TO 2012 O.B.C.
- FIRE ACCESS ROUTE WITH 12.5M TURNING RADIUS
- TRUCK LOADING DOOR
- KNOCK OUT PANEL
- MAN DOOR ENTRY
- EXIT DOOR LOCATION
- FIRE DEPT CONNECTION (VERIFY LOCATION WITH CIVIL DRAWINGS)
- FH PROPOSED FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- FH EXISTING FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)
- D.C. 1500mm WIDE DEPRESSED CURB FOR ACCESSIBLE PARKING AND PEDESTRIAN ACCESS – REFER TO DETAIL 4/A1.2
- PROPOSED CATCHBASIN

- CP PAINTED CARPOOL PARKING SPACE SYMBOL
- BFPS BARRIER FREE PARKING SIGN
- BFPSV BARRIER FREE PARKING SIGN WITH VAN TAB
- DRIVE–IN DOOR
- STOP NEW STOP SIGN
- DIR. NEW FIRE ROUTE SIGN
- GM GAS METER & PRESSURE REGULATING STATION BY GAS COMPANY
- LIGHT FIXTURES, REFER ELECTRICAL DWG FOR DETAILS
- LIGHT POLES, REFER ELECTRICAL DWG FOR DETAILS
- MH DENOTES MANHOLE
- WHP,HP EXISTING HYDRO POLE

VICINITY MAP

SCALE: NOT TO SCALE

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PLANNING BRANDING MEASUREMENT
INTERIORS BUILDING MEASUREMENT

QUADREAL PROPERTY GROUP
TOWN OF CALEDON DIXIE ROAD
12489 DIXIE ROAD
CALEDON, ONTARIO CANADA

OVERALL SITE PLAN

	DATE	REMARKS
1	2023-12-12	ISSUED FOR OPA/ZBA
2	2024-03-08	REISSUED FOR OPA/ZBA
3	2024-12-24	REISSUED FOR CORRDINATION
4	2025-01-09	ISSUED FOR CORRDINATION
5	2025-02-05	ISSUED FOR CORRDINATION
6	2025-02-20	ISSUED FOR SPA

PA / PM:	SK
DRAWN BY:	JS
JOB NO.:	TOR22-0111-00

SHEET
A100