ENVIRONMENTAL IMPACT STATEMENT

Plan of Vacant Land Condominium and Rezoning Applications

8168 McLeod Road, City of Niagara Falls

21 February 2024

TERRASTORY
environmental consulting inc.

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8168 McLeod Road, City of Niagara Falls

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1 INTRODUCTION

1.1 Study Background

Terrastory Environmental Consulting Inc. (hereinafter "Terrastory") was retained by Lotus Land Development Corp. (hereinafter "the Applicant") to prepare this Environmental Impact Study (EIS) in relation to a development application at 8168 McLeod Road (hereinafter "Subject Property") in the City of Niagara Falls (hereinafter "City"). The Subject Property is an approximately 0.8-hectare (2 acre) parcel on the south side of McLeod Road just east of Kalar Road. The Subject Property contains an existing residence, accessory building, and manicured amenity space, with natural features primarily restricted to the rear-yard and abutting parcels. The locations of the Subject Property and Study Area within their broader landscape setting are shown in **Figure 1**.

The Subject Property falls within a designated settlement area ("Built-up Area") per Schedule A (Regional Structure) of the Regional Municipality of Niagara's 2014 Official Plan (hereinafter "ROP"). The Subject Property is split-designated "Residential" and "Environmental Protection Area" (EPA) per Schedule A (Future Land Use) of the City's Official Plan (OP). The Subject Property is also subject to the policies of the Garner South Secondary Plan and is more specifically split-designated "Residential High" and EPA per Schedule A3. The EPA designation reflects the presence of wetland units associated with the Provincially Significant Warren Creek Wetland Complex (hereinafter "PSW") on Adjacent Lands to the east, while a tributary of Warren Creek occurs to the west; both natural features are indicated on Schedule A-1 (Natural Heritage Features and Adjacent Lands) and relevant Appendices under the City's OP. Development activities adjacent to the wetland and watercourse are regulated by Niagara Peninsula Conservation Authority (NPCA), including with lands falling within the regulatory flood hazard (181.53 masl).

An 18-unit townhouse development is proposed for the lands fronting onto a private road. The proposed development will be facilitated by supporting Zoning By-law Amendment (ZBA) and Plan of Vacant Land Condominium applications. A pre-consultation meeting was held with the City, Niagara Region, and NPCA on 30 June 2021, wherein the Region and NPCA requested the submission of an EIS to inform the rezoning and condominium applications. An updated pre-consultation meeting was held on 21 December 2023 to confirm submission requirements. A Terms of Reference (ToR) which scopes the conduct and content of this study was prepared by Terrastory and confirmed via email by NPCA (N. Godfrey, Watershed Planner) on 12 May 2022 and by Regional Environmental Planning staff (A. Boudens, Senior Environmental Planner) on 19 May 2022. The approved ToR is provided in **Appendix 1**.

1.2 Study Purpose

The purpose of this study is to present a biophysical characterization of the Subject Property and Adjacent Lands as a means to assess the potential for adverse effects on the natural environment and natural heritage features stemming from the proposed townhouse development. The scope and approach of this study address the reporting requirements of the ToR (see **Appendix 1**), Policy 11.1.18 of the City's OP, Regional EIS Guidelines (January 2018), and NPCA's Interim EIS Guideline (August 2022). It is understood that this report will form part of the ZBA/condominium application package to be submitted for consideration by the City, Region, and NPCA.

2 APPROACH AND METHODS

This study is composed of five (5) discrete components which are bulleted below and further described in the following sections.

1. **Acquire background biophysical information and mapping** available for the local landscape surrounding the Subject Property (see **Section 2.1**).
2. **Conduct site assessments and ecological surveys** to field-verify the accuracy of the acquired background biophysical information and collect additional biophysical information as necessary (see **Section 2.2**).
3. **Assess the significance** of the biophysical information collected and natural features identified within the context of applicable natural heritage and environmental policies (see **Section 2.3**).
4. **Predict the effects** of the application on the identified significant natural features and natural environment, particularly the net effects once mitigation measures and technical recommendations are implemented (see **Section 2.4**).
5. **Determine whether the proposed application addresses applicable natural heritage and environmental policies** at municipal, provincial, and federal levels (see **Section 2.5**).

2.1 Background Biophysical Information Assessment

This study is supported by background biophysical information and mapping acquired and reviewed from a variety of sources which are listed below in **Table 1**.

Table 1. Background Biophysical Information Acquired and Reviewed.

Type of Information Acquired	Description
Ortho-rectified Aerial Photographs	• 1934, 1954, 1965, 2009, 2013, 2015 to 2018, and 2020 to 2023.
Natural Feature Mapping	• City of Niagara Falls Official Plan (August 2023 Office Consolidation) Schedules A, A-1, and A-3; Appendices III to IIE and VII-A. • Regional Municipality of Niagara Official Plan (2014 consolidation) Schedule C (Core Natural Heritage). • Land Information Ontario (LIO) accessed via the "Make a Map: Natural Heritage Areas" web-based platform (last accessed 24 November 2023). • Niagara Peninsula Conservation Authority (NPCA) regulation mapping (last accessed 24 November 2023).
Physiographic Resource Mapping and Datasets	• Topographic Survey of the Subject Property. • Provincial Digital Terrain Model (LiDAR-derived). • Ontario Well Records (publicly-available). • The Soils of the Regional Municipality of Niagara (Kingston and Presant 1989). • Agricultural Information Atlas (last accessed 24 November 2023). • Bedrock Topography and Overburden Thickness Mapping (Gao et al. 2006). • Paleozoic Geology of Southern Ontario (Armstrong and Dodge 2007). • Surficial Geology of Southern Ontario (Ontario Geological Survey 2010). • Physiography of Southern Ontario (Chapman and Putnam 1984).

Type of Information Acquired	Description
Ecological Resource Mapping and Datasets	• Natural Heritage Information Centre (NHIC) database accessed via the "Make a Map: Natural Heritage Areas" web-based platform (squares: 17PH5170, 17PH5171, 17PH5271, 17PH5270, 17PH5269, 17PH5169, 17PH5069, 17PH5070, 17PH5071 (last accessed 24 November 2023). • Critical Habitat for SAR National Dataset (last accessed 24 November 2023). • iNaturalist "(NHIC) Rare species of Ontario" project (last accessed 24 November 2023). • Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005 (Cadman et al. 2007) (square: 17PH57). • eBird (last accessed 24 November 2023). • iNaturalist "Herps of Ontario" project and Ontario Reptile & Amphibian Atlas (last accessed 24 November 2023). • Ontario Butterfly Atlas database (square: 17PH57; last accessed 24 November 2023). • iNaturalist "Ontario Odonata" project (last accessed 24 November 2023). • Bumble Bee species distribution maps from iNaturalist and Bumble Bee Watch. • Aquatic Species at Risk Maps produced by Fisheries and Oceans Canada (last accessed 24 November 2023). • Atlas of the Mammals of Ontario (Dobbyn 2005).
Other EIS Reports from the Local Landscape	• Constraints Analysis and Environmental Impact Statement for 8056 McLeod Road by Colville Consulting (Oct. 2013). • Environmental Impact Study for 8100 McLeod Road by Beacon Environmental (Feb. 2018).

2.2 Site Assessments and Surveys

The acquired background information per **Table 1** helped direct several site assessments carried out by Terrastory staff in 2021/2022. **Table 2** below indicates the primary assessments/surveys performed during each site visit, weather conditions, and time on-site.

Table 2. Site Assessments and Ecological Surveys performed on the Subject Property.

Date of Site Assessment	Assessments/Surveys Performed	Terrastory Staff	Weather Conditions	Time On-site
10 September 2021	Site reconnaissance.	T. Knight	n/a	12:00-13:00
11 April 2022	Anuran call survey (Round 1), incidental wildlife observations.	J. Consiglio, C. Wegenschimmel	Air Temperature 13°C; Beaufort Wind 0-1; Cloud Cover 100%; No Precipitation.	21:00-21:20
04 May 2022	Anuran call survey (Round 2), incidental wildlife observations.	T. Knight	Air Temperature 11°C; Beaufort Wind 0-1; Cloud Cover 0%; No Precipitation.	21:34-21:54
06 June 2022	Breeding bird survey (Round 1), late spring vascular plant	T. Knight	Air Temperature 11°C; Beaufort Wind 0-1; Cloud Cover 0%; Light Rain.	7:25-8:00

Date of Site Assessment	Assessments/Surveys Performed	Terrastory Staff	Weather Conditions	Time On-site
	survey, incidental wildlife observations.			
2 July 2022	Breeding bird survey (Round 2), incidental wildlife observations.	T. Knight	Air Temperature 21°C; Beaufort Wind 0-1; Cloud Cover 25-50%; No Precipitation.	7:21-7:51
10 August 2022	Ecological land classification, late summer vascular plant survey, incidental wildlife observations.	C. Wegenschimmel	Air Temperature 25°C; Beaufort Wind 0-1; Cloud Cover 0-25%; No Precipitation.	14:21-16:24

The site assessments and surveys centred on characterizing the land use (e.g., historical development patterns, existing built features, land maintenance, etc.), physiographic (e.g., topography, drainage, surface water features, etc.), and ecological (e.g., vegetation, wildlife, habitats, etc.) conditions and features of the Subject Property and (where appropriate) Adjacent Lands (i.e., those within 120 m of the Subject Property and south of McLeod Road). All land-use, physiographic, and ecological information described for Adjacent Lands was collected from either current aerial photographs or observations from inside the Subject Property and/or publicly-accessible areas (e.g., rights-of-way, etc.). The locations and boundaries of significant natural features and/or habitats were recorded on-site with a high-accuracy GPS supported by representative photographs.

In addition to collecting general biophysical information, the following targeted assessments (i.e., feature- or species-specific surveys) were undertaken:

- **Vegetation Mapping according to Ecological Land Classification (ELC):** Vegetation communities on the Subject Property were characterized and mapped according to Ecological Land Classification (Lee et al. 1998) and the 2008 update to the Vegetation Type List (Lee 2008). Vegetation communities were initially identified based on current aerial photographs and then verified and refined (as necessary) on-site. ELC mapping was scaled to the finest level of resolution deemed appropriate (i.e., either Ecosite or Vegetation Type). Vegetation communities mapped on Adjacent Lands were delineated predominantly via aerial photograph interpretation.
- **Vascular Plant Survey:** Vascular plants were recorded based on a comprehensive area search ("wandering transects") within naturally-occurring (i.e., non-planted) or naturalizing areas of vegetation. Particular effort was paid to areas with the greatest potential to support significant vascular plants (i.e., designated Species at Risk, provincially rare, etc.) and areas with the greatest potential for impact based on the proposed development plan. Nomenclature and common names for the recorded vascular plant species are generally consistent with the Southern Ontario Vascular Plant Species List (Bradley 2013) except where a name change has more recently been adopted by NHIC.
- **Anuran Calling Surveys according to the Marsh Monitoring Protocol:** Two rounds of Anuran calling surveys were conducted in accordance with the Marsh Monitoring Protocol (Bird Studies Canada et al. 2008). Surveys occurred within the appropriate season (April to June), time of day (between 30 minutes after sunset and 12:00am), and weather conditions (minimal to no rain, wind speed ≤3 on the Beaufort Wind Scale). The final round of Anuran calling surveys (June) was canceled due to a lack of habitat for late-season breeding Anurans within or adjacent to the Subject Property.

- **Breeding Bird Surveys according to the Ontario Breeding Bird Atlas Protocol:** Two rounds of breeding bird surveys were conducted in accordance with the Ontario Breeding Bird Atlas (OBBA) protocol (Bird Studies Canada et al. 2001). Surveys occurred within the appropriate season (May 24–July 10), time of day (between dawn and approximately 5 hours after dawn), and weather conditions (no rain, wind speed ≤3 on the Beaufort Wind Scale). While the OBBA protocol recommends that stations be situated at least 300 m apart (to avoid double counting), the stations established herein were often closer together to ensure more comprehensive survey coverage. Surveys occurred for a minimum duration of 10 minutes at each station.

2.3 Significance Assessment

2.3.1 Definitions and Criteria

"Significant natural features" as described herein represent natural features and habitats that have recognized status (and therefore policy significance) within the planning jurisdiction in which an application is proposed. Significant natural features are defined herein to include those referenced in section 2.1 of the 2020 Provincial Policy Statement (PPS), namely:

- Significant Wetlands;
- Significant Woodlands;
- Significant Valleylands;
- Significant Wildlife Habitat (SWH);
- Significant Areas of Natural and Scientific Interest (ANSIs);
- Habitat of Endangered and Threatened Species; and
- Fish Habitat.

Defining "significant natural features" pursuant to the PPS is considered warranted as such features form part of the City's Natural Heritage System (NHS) and the Regional Core NHS per Schedule C of the 2014 ROP. It is noted that the City's OP and ROP provide provisions that consider and/or protect additional natural features beyond the requirements of the PPS. These features are also considered "significant" herein and include:

- Environmental Corridors & Ecological Links (per Subsections 11.1.23 to 11.1.26 of the City's OP);
- Other Evaluated Wetlands (considered Environmental Conservation Areas under the ROP);
- Regionally Significant Life Science ANSIs (considered Environmental Conservation Areas under the ROP); and
- Publicly-owned Conservation Lands (considered Environmental Conservation Areas by the Region).

Criteria used to determine the presence or absence of the above significant natural features within the Subject Property and Adjacent Lands were considered from a variety of sources including the local and Regional OPs, Natural Heritage Reference Manual (MNR 2010), and (for Significant Wildlife Habitat) the Ecoregion 7E Criteria Schedule (MNRF 2015).

Apart from PPS-derived significant natural features, this study also seeks to determine whether any natural features or hazards regulated by NPCA pursuant to O. Reg. 155/06 occur within the Subject Property and/or Adjacent Lands. NPCA regulated features and hazard lands include:

- Wetlands (significant, evaluated, or identified);
- Watercourses and their associated meanderbelts and floodplains;
- Valleylands;
- Steep slopes and other hazard lands; and
- Shorelines.

Like significant natural features, "significant species" represent individuals of wild species which have recognized status (and therefore policy significance) within the planning jurisdiction in which an application is proposed. Significant species are defined herein to include:

- Species designated Endangered, Threatened, or Special Concern under O. Reg. 230/08 pursuant to the provincial *Endangered Species Act, 2007*.
- Species designated Provincially Rare (i.e., S1, S2, or S3) by NHIC.
- Species considered Regionally Rare in Niagara Region pursuant to the *List of the Vascular Plants of Ontario's Carolinian Zone* (Oldham 2017).

2.3.2 Determination

After collecting the background biophysical information and conducting the fieldwork program, the data was interpreted to determine whether any significant natural features (per PPS or OPs), natural features/hazards regulated by NPCA, and/or significant species occur within the Subject Property and/or Adjacent Lands. If a natural feature or species met the significance criteria, it is considered "confirmed". If a natural feature or species may be present on the Subject Property and/or Adjacent Lands given the prevailing biophysical or habitat conditions but was not confirmed based on either background or site-specific biophysical data, it is considered potential or "candidate". Candidate significant natural features and species are treated as confirmed where no additional information is available.

2.4 Effects Assessment and Mitigation

The potential ecological effects of an application can be understood spatially as zones that radiate outward from the direct project footprint (e.g., building envelope, etc.) and associated areas of site alteration (e.g., grading, etc.). While the greatest potential for effects typically occurs within areas directly subject to development or disturbance, surrounding areas may also be affected indirectly. Such indirect effects can include light or noise pollution that affects wildlife communities on Adjacent Lands, or degradation of water quality within a downstream receptor resulting from sediment runoff during construction.

The following five-pronged approach is employed herein to assess the effects of an application on significant natural features and species and (where warranted) the natural environment in general:

1. **Scope** the effects assessment to environmental components that warrant consideration. The effects assessment herein centres principally on significant natural features and species (i.e., those that have

policy significance within the planning jurisdiction, as defined in **Section 2.3**) but may also consider general environmental effects where warranted.

2. **Identify the predicted direct and indirect effects** of the application on each significant natural feature or species during all project stages (i.e., pre- to -post-development) in the absence of mitigation. Direct effects are those where there is a cause-effect relationship between a proposed activity and an effect on a natural feature or species (e.g., tree clearance within a building footprint, etc.). Indirect effects result when an activity is linked to a direct effect through a chain of foreseeable interactions or steps.
3. **Evaluate the significance** of the predicted effects for each environmental component based on their attributes (i.e., spatial extent, magnitude, timing, frequency, and duration) and likelihood (i.e., high, medium, low).
4. Where the potential for negative effects are anticipated, **recommend ecologically-meaningful mitigation measures** to avoid such impacts first (where possible), and where impacts cannot be avoided to minimize, compensate, and/or enhance as appropriate.
5. **Identify the predicted residual or net effect**s of the application assuming implementation of all recommended mitigation measures.

Per step 4, mitigation measures are offered where the potential for negative effects are anticipated to a degree that cannot be supported given the prevailing policy context. Whenever possible, Terrastory works iteratively with the project team as a means to identify development plan options that avoid negative effects first; options that would minimize or mitigate such negative effects are less preferred and considered secondarily. In general, avoidance measures that have already been incorporated into the application or project design are not duplicated as technical recommendations herein. The effects assessment and any recommended mitigation measures are provided in **Section 5**.

2.5 Natural Heritage Policy Context

There is an overlapping municipal, provincial, and federal policy framework respecting the protection of natural heritage features and areas across southern Ontario. These requirements include objectives, policies, and directives which are principally contained in federal and provincial statutes, regulations, policy statements, Official Plans, and guidance documents. The overarching natural heritage policy framework directing development activities within the Subject Property is outlined below in **Table 3**. A determination of whether the application considered herein addresses such policies is provided in **Section 6**.

Policy 3.1.30.3.1 of the current Niagara Official Plan (approved by the Province with modifications on 4 November 2022) establishes that the operative natural heritage policy framework for applications which proceeded through pre-consultation one-year prior to the OP approval (i.e., no earlier than 4 November 2021) is the 2014 ROP (provided that a complete application is submitted by 4 November 2024). Similarly, it is understood that NPCA has also applied a one-year transitional period for their new Policy Document (in force and effect on 16 November 2022), such that applications which proceeded through pre-consultation prior to November 2022 are subject to the previous Policy Document (dated September 2018). While the formal pre-consultation meeting occurred in May 2021, the ToR was approved by Regional and NPCA staff prior to adoption of the Niagara Official Plan (NOP) by Regional council on 23 June 2023. As such, it is appropriate to assess this application against the natural heritage policy framework contained within the 2014 ROP and 2018 NPCA Policy Document.

Table 3. Applicable Natural Heritage Policies.

Level of Government	Natural Heritage or Environmental Policy Requirements
Municipal	City of Niagara Falls Official Plan (August 2023 office consolidation). Regional Municipality of Niagara Official Plan (2014 office consolidation).
Provincial	Provincial Policy Statement 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13, including: • Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (MNR 2010). • Significant Wildlife Habitat Technical Guide (MNR 2000). • Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF 2015). • Significant Wildlife Habitat Mitigation Support Tool (MNRF 2014). *Conservation Authorities Act*, R.S.O. 1990, c. C.27, including: • Ontario Regulation 155/06 – Niagara Peninsula Conservation Authority Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. • NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act (September 2018). *Endangered Species Act* (ESA), S.O. 2007, c. 6, including: • Ontario Regulation 230/08 – Species at Risk in Ontario List • Ontario Regulation 242/08 – General • Ontario Regulation 832/21 – Habitat *Fish and Wildlife Conservation Act,* S.O. 1997, c. 41.
Federal	*Fisheries Act*, R.S.C. 1985, c. F-14, including: • Fish and Fish Habitat Protection Policy Statement (DFO 2019). *Migratory Birds Convention Act*, S.C. 1994, c. 22, including: • Migratory Birds Regulations, C.R.C., c. 1035.

3 EXISTING BIOPHYSICAL CONDITIONS

The following is a description of the biophysical features and conditions of the Study Area, which are shown spatially on **Figure 2**. Representative photographs are provided in **Appendix 2**.

3.1 Land-use and Landscape Setting

The Subject Property is situated within the built-up portion of Niagara Falls on the south side of McLeod Road between Kalar Road and Pin Oak Drive. Parcels immediately adjacent to the Subject Property consist of residential and commercial uses and contain a variety of natural features (thicket, swamp, and woodlands), while the surrounding landscape consists of a mixture of residential neighbourhoods, agricultural land, and natural areas.

3.2 Physical Setting

3.2.1 Surficial Geology and Soils

The entire Subject Property is comprised of glaciolacustrine deep water deposits composed of silt and clay (Ontario Geological Survey 2010). These soils were deposited during retreat of the

Wisconsin ice sheet (circa 11,000 to 22,000 years ago). Glaciolacustrine silts and clays are widespread throughout Niagara Region (between the Niagara Escarpment and Onondaga Escarpment) and form part of the Haldimand Clay Plain (Chapman and Putnam 1984).

Soils within the Subject Property have been mapped as "Niagara" type (Kingston and Presant 1989). "Niagara" soils are imperfectly drained and moderately to slowly permeable. They have moderate to high water-holding capacities. Surface runoff ranges from slow (on level topography) to rapid (on slopes).

3.2.2 Topography and Drainage

The Study Area is overall flat, extending between 180.5 to 183 metres above sea level (masl). The Subject Property extends between 182.5 masl in the northeast corner along McLeod Road to 181 masl in the southwest corner nearest to Warren Creek. Overland drainage is principally conveyed in a southwest direction.

There are no discrete swales, channels, or surface water drainage features within the Subject Property, suggesting that precipitation runs off as sheet flow, infiltrates into the surficial soils, or evapotranspires. Warren Creek flows in a predominantly south to southeast direction on Adjacent Lands to the west; at the closest point, Warren Creek flows within approximately 2 m of the southwest corner of the Subject Property. Based on a review of historical aerial photographs, this segment of Warren Creek appears to have been straightened prior to 1934 and to this day exhibits a straight alignment. The channel of Warren Creek was observed to contain a dense stand of Common Reed (*Phragmites australis* ssp. *australis*) where it flows nearest to the southwest corner of the Subject Property.

3.3 **Ecological Setting**

3.3.1 Vegetation Communities

The largest vegetation community on the Subject Property by spatial extent is a Graminoid Meadow (MEG). This meadow forms part of rear-yard amenity space which is occasionally maintained (i.e., mowed) by the current tenants or owner. The meadow is dominated by Redtop (*Agrostis gigantea*), Kentucky Bluegrass (*Poa pratensis*), Garden Bird's-foot Trefoil (*Lotus corniculatus*), and Black Knapweed (*Centaurea nigra*). There are small depressions within the meadow supporting wetland vegetation, including Purple Loosestrife (*Lythrum salicaria*), White Panicled Aster (*Symphyotrichum lanceolatum*), Fox Sedge (*Carex vulpinoidea*), and Fowl Bluegrass (*Poa palustris*).

In the southeast corner on the Subject Property is a small Scots Pine Coniferous Plantation (CUP3-3). The canopy is dominated by Scot's Pine (*Pinus sylvestris*) and Norway Spruce (*Picea abies*). Red Raspberry (*Rubus idaeus*) and Gray Dogwood (*Cornus racemosa*) are present in the understory. The ground layer is generally very sparse (due to dense shade case by the conifer overstorey) with Tall Goldenrod (*Solidago altissima*) being present in better-lit areas.

Along the eastern and southern boundary of the Subject Property and extending eastward onto Adjacent Lands is an extensive Hawthorn Deciduous Shrub Thicket (THDM2-11). Canopy trees are occasionally present, especially towards the southern and southeastern boundary of the Subject Property. Canopy and subcanopy tree species include White Elm (*Ulmus americana*), Green Ash (*Fraxinus pennsylvanica*), and Swamp White Oak (*Quercus bicolor*). The understory is dominated by

Cockspur Hawthorn (*Crataegus crus-galli*), Holmes' Hawthorn (*Crataegus holmesiana*), Gray Dogwood, and Common Buckthorn. Ground layer species include White Avens (*Geum canadense*), White Panicled Aster (*Symphyotrichum lanceolatum*), and Wild Strawberry (*Fragaria virginiana*). This description is based on observations from inside the Subject Property.

Along the western boundary of the Subject Property is a Fresh - Moist Manitoba Maple Deciduous Woodland (WODM5-3). The canopy is dominated by Manitoba Maple (*Acer negundo*) with occasional White Elm, Eastern Cottonwood (*Populus deltoides*), Green Ash, Hybrid Willow (*Salix* × *fragilis*), and Trembling Aspen (*Populus tremuloides*). The subcanopy is similarly composed of Manitoba Maple, Green Ash, and Trembling Aspen. The understory is mainly composed of Common Buckthorn, Gray Dogwood, and Dog Rose (*Rosa canina*) with occasional Frosted Hawthorn (*Crataegus pruinosa* var. *pruinosa*), White Mulberry (*Morus alba*), and Smooth Serviceberry (*Amelanchier laevis*). Abundant ground layer species include Canada Avens, Tall Goldenrod, and Wild Strawberry.

3.3.2 Vascular Plants

A total of 102 vascular plant species were recorded within the Subject Property (see **Appendix 3**). Of these, 56 (54.9%) are considered native to Ontario while 46 (45.1%) are exotic.

The following plant species of conservation interest were recorded:

- **Butternut (*Juglans cinerea*)** – this species is designated Endangered both provincially and federally. One small individual (1 cm DBH) was documented along the western boundary of the Subject Property (see **Section 4.4.2**).
- **Holmes' Hawthorn (*Crataegus holmesiana*)** – this species is considered Regionally Rare per Oldham (2017) and was documented in various portions of the Subject Property. The distribution and abundance of hawthorn species in Ontario is not well understood due to taxonomic and identification challenges; Holmes' Hawthorn is in fact common across the Golden Horseshoe and is not considered an appropriate target for conservation efforts in Niagara at this time.

3.3.3 Breeding Anurans

Anuran calling surveys were undertaken at one station on 11 April and 5 May 2022. A third survey in June was not conducted due to low anuran calling activity during the second survey and absence of permanent standing water in the vicinity of the survey station. The location of the anuran calling survey station is shown on **Figure 2** while the full survey results are provided in **Appendix 4**. A general description of the Anuran communities present within the Study Area is provided below.

Survey station AN-1 was situated on the east side of the Subject Property and focused on the PSW to the east. A full chorus of Western Chorus Frog (*Pseudacris triseriata*) was detected calling from the PSW during the first survey, along with a single calling American Toad (*Anaxyrus americanus*). During the second survey, low numbers of Western Chorus Frog were detected east and west of the Subject Property.

Terrastory's 2022 anuran calling survey results align with 2017 surveys on the abutting property to the east (8100 McLeod Road) which were completed through an EIS for a separate development application. For that study, Western Chorus Frog was found to be calling in low abundance (call code 1) with no breeding evidence exhibited by other anuran species.

3.3.4 Breeding Birds

Breeding bird surveys were conducted at one station (BI-1) on 5 June and 2 July 2022. One station was considered sufficient to cover the entire Subject Property given its small size and narrow configuration. The survey station location is shown on **Figure 2** while the full survey results indicating each species' breeding status by survey station can be found in **Appendix 5**. The locations of significant bird species recorded are shown on **Figure 3**. A general summary of the breeding bird communities present within the Study Area is provided below.

A total of twenty-five (25) bird species were detected during the breeding bird surveys, twenty-two (22) of which were considered at least possibly breeding within the Study Area. Three (3) species were flyovers and determined to be nonbreeders within the Study Area, including Barn Swallow (*Hirundo rustica*), Ring-billed Gull (*Larus delawarensis*), and Rock Pigeon (*Columba livia*). Of the 22 breeding birds, one was non-native: European Starling (*Sturnus vulgaris*). At a provincial/subnational level, all of the native breeding species recorded have been assigned subnational ranks of either S4 or S5 by the NHIC which indicates that their provincial populations are "apparently secure" or "secure", respectively.

Of the twenty-one (21) native and potentially breeding birds, the highest level of breeding evidence documented was "Probable", either by the observation of agitated birds (code A), pairs of birds (code P), or territorial males (code T), which is defined as a singing male being present at the same location at least seven days apart. This evidence was the highest level obtained for nine (9) species.

The next highest level documented was "Possibly" breeding, evidenced by codes singing male (S) and observed in suitable habitat during the breeding season (H). This evidence was obtained for twelve (12) species.

Of the 21 native breeding birds, no Species at Risk were found to be breeding within the Study Area; however, one flyover Barn Swallow was recorded. No nests associated with Barn Swallow were present along the exterior surfaces of buildings or structures within the Subject Property in 2022.

3.3.5 Incidental Wildlife Recorded

Efforts to incidentally document wildlife were made during all site visits by Terrastory in 2022. Incidentally recorded species included:

- Four (4) **butterfly** species: Common Ringlet (*Coenonympha tullia*), Peck's Skipper (*Polites peckius*), Viceroy (*Limenitis archippus*), and Common Wood-nymph (*Cercyonis pegala).*
- Two (2) **dragonfly** species: Widow Skimmer (*Libellula luctuosa*), White-faced Meadowhawk (*Sympetrum obtrusum*).
- One (1) **mammal** species: Eastern Cottontail (*Sylvilagus floridanus*).

4 SIGNIFICANCE ASSESSMENT

Based on the biophysical information collected during background information gathering (per **Table 1**) and the results of Terrastory's site assessments (per **Sections 2.2** and **3**), **Table 4** below provides a determination of the presence (or potential presence) of each significant natural feature considered herein. Shaded rows denote features which were confirmed or may be present within the Subject

Property or Adjacent Lands and are considered further as part of the effects assessment in **Section 5**. Significant natural feature mapping is provided in **Figure 3**.

Table 4. Summary of the Assessment of Significant Natural Features on the Subject Property and Adjacent Lands.

Significant Natural Feature	Status within the Subject Property	Status on Adjacent Lands (i.e., < 120 m from the Subject Property)
PPS Significant Natural Features		
Significant Wetlands	**Absent**. See **Section 4.1.**	**Confirmed**. See **Section 4.1.**
Significant Woodlands	**Absent**. See **Section 4.2.**	**Confirmed**. See **Section 4.2.**
Significant Valleylands	**Absent**.	**Absent**.
Significant Wildlife Habitat	**Candidate**. See **Section 4.3.**	**Candidate**. See **Section 4.3.**
Significant Areas of Natural and Scientific Interest	**Absent**.	**Absent**.
Habitat of Endangered and Threatened Species (per ESA)	**Candidate**. See **Section 4.4.**	**Confirmed**. See **Section 4.4.**
Fish Habitat (per *Fisheries Act*)	**Candidate**. See **Section 4.5.**	**Candidate**. See **Section 4.5.**
Locally Significant Natural Features (i.e., apart from PPS requirements)		
Environmental Corridors & Ecological Links	**Candidate**. See **Section 4.6.**	**Candidate**. See **Section 4.6.**
Regionally Significant Natural Features (i.e., apart from PPS requirements)		
Evaluated Wetlands	**Absent**. See **Section 4.1.**	**Absent**. See **Section 4.1.**
Regionally Significant ANSIs	**Absent**.	**Absent**.
Publicly-owned Conservation Lands	**Absent**.	**Absent**.
Conservation Authority Regulated Features and Hazard Lands		
Wetlands, watercourses, valleylands, meanderbelts, floodplains, steep slopes, and shorelines.	**Confirmed.** See **Section 4.7**.	**Confirmed.** See **Section 4.7**.

4.1 Significant Wetlands

Wetland units associated with the Provincially Significant Warren Creek Wetland Complex ("PSW") occur on Adjacent Lands to the east. The western limit of the PSW extends between 12 and 80 m from the eastern boundary of the Subject Property. The PSW is not visible from within the boundaries of the Subject Property.

An assessment of potential effects to the PSW associated with the proposed development plan is provided in **Section 5.2.1**.

4.2 Significant Woodlands

The 2014 ROP defines "woodland" as:

> *A treed area that provides environmental and economic benefits to both the private landowner and the general public such as erosion prevention, hydrologic and nutrient cycling, provision of clean air and long term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities and the sustainable harvest of woodland products. It does not include a cultivated fruit or nut orchard or a plantation used for the purpose of producing Christmas trees.*

In the context of the current ROP, the Region considers all vegetation communities with at least 35% canopy coverage by trees to be "woodlands", thereby including all "forest" and "woodland" communities as defined by ELC (Lee et al. 1998; Lee 2008), but excluding savannahs. To be considered "significant", Policy 7.B.1.5 of the ROP requires that a woodland must meet "one or more" of the following criteria:

a) Contain threatened or endangered species or species of concern;
b) In size, be equal to or greater than:
    a. 2 hectares;
    b. 4 hectares, if located outside Urban Areas and north of the Niagara Escarpment;
    c. 10 hectares, if located outside Urban Areas and south of the Niagara Escarpment;
c) Contain interior woodland habitat at least 100 metres in from the woodland boundaries;
d) Contain older growth forest and be 2 hectares or greater in area;
e) Overlap or contain one or more of the other significant natural heritage features listed in Policies 7.B.1.3 or 7.B.1.4; or
f) Abut or be crossed by a watercourse or water body and be 2 or more hectares in area.

Per ROP Policy 7.B.1.4 and the requirements of the City's OP, Significant Woodlands are to be considered Environmental Conservation Areas (ECA).

Natural areas to the east of the Subject Property are indicated as "Significant Woodland" per Appendix III-C of the City's OP. Much of this area is in fact comprised of thicket communities (i.e., non-woodland) which is substantiated by Terrastory's 2022 fieldwork and other fieldwork completed in support of the development application to the east (8100 McLeod Road) in 2017. The PSW to the east is not visible from within the Subject Property but was mapped previously by others as a treed deciduous swamp, and thus would also be considered a "woodland/forest" community. This vegetation community is 1 ha in size (i.e., does not meet the minimum size threshold); however, the treed swamp is a PSW, thus satisfying woodland significance criteria e) above. As such, Significant Woodland is confirmed for Adjacent Lands (based on information available at this time).

A woodland (WODM5-3) extends slightly onto the Subject Property from Adjacent Lands to the west and is approximately 0.3 ha in size. The woodland does not contain "interior habitat" (i.e., areas greater than 100 m from an edge) nor older growth forest. While the woodland contains a small (1 cm DBH) Butternut (see **Figure 3**) and candidate roosting habitat for Endangered bats, these would not constitute "significant" habitat for Endangered species per ROP Policy 7.B.1.3. Given the above, the woodland west of the Subject Property is not considered "significant" in the context of the 2014 ROP. A small plantation in the southeast corner of the Subject Property also does not meet relevant significance criteria.

As the Significant Woodland overlaps entirely with the PSW, a joint effects assessment for both features in the context of the proposed development plan is provided in **Section 5.2.1**.

4.3 Significant Wildlife Habitat

An assessment of the likelihood that any candidate or confirmed SWH types occur within the Study Area or Adjacent Lands is provided in **Appendix 6**. Based on the results of this assessment, two SWH types are considered further through this study:

- Seasonal Concentration Areas of Animals
    1. Bat Maternity Colonies
- Habitat of Species of Conservation Concern
    2. Special Concern and Rare Wildlife Species

Also based on this assessment, a total of five Special Concern or provincially rare species are considered to have at least a possible likelihood of occurrence within the Study Area given their habitat associations and current distribution in southern Ontario:

1) Tufted Titmouse (*Baeolophus bicolor*)
2) American Bumble Bee (*Bombus pensylvanicus*)
3) Monarch (*Danaus plexippus*)
4) Pink-legged Tiger Moth (*Spilosoma latipennis*)
5) Yellow-banded Bumblebee (*Bombus terricola*)

None of the SWH types and/or species of conservation interest have been "confirmed" within the Study Area; all are considered "candidate" or "possible" based on the assessment in **Appendix 6**.

An assessment of potential effects to the identified candidate SWH types and Special Concern/provincially rare species associated with the proposed development plan is provided in **Section 5.2.2**.

4.4 Habitat of Endangered and Threatened Species

An assessment of the likelihood that any Endangered and Threatened species or their habitats occur within the Subject Property or Adjacent Lands is provided in **Appendix 7**. A total of three Endangered or Threatened species are considered to have a possible likelihood of occurrence within the Study Area (or were confirmed) given their habitat associations and current distribution in southern Ontario:

1) Little Brown Myotis (*Myotis lucifugus*)
2) Northern Myotis (*Myotis septentrionalis*)
3) Butternut (*Juglans cinerea*)

A general description of each Endangered/Threatened species and their habitat is offered below. An assessment of potential effects to these Endangered/Threatened species associated with the proposed development plan is provided in **Section 5.2.3**.

4.4.1 Endangered Bats

Per the assessment in **Appendix 7**, Little Brown Myotis and Northern Myotis have the potential to roost and forage on the Subject Property. Both of these bat species are designated Endangered in Ontario per O. Reg. 230/08 pursuant to the *Endangered Species Act* (ESA) and are federally designated Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Little

Brown Myotis and Northern Myotis form maternity colonies that roost in large-diameter trees with cracks, crevices, and/or exfoliating bark; Little Brown Myotis will also frequently roost in buildings (e.g., attics, barns, etc.). Individuals (i.e., non-reproductive females and males) of both bat species may roost in smaller diameter trees and other spaces (e.g., beneath house siding, etc.) which are not occupied by maternity colonies. Overwintering habitat includes caves and mines that maintain temperatures above 0°C. White Nose Syndrome (a fungal disease caused by an introduced pathogen) has devastated populations of each species across their ranges. The fungus causes hibernating individuals to become dehydrated, leading to excessive arousal, depleted fat reserves, and ultimately emaciation and/or death.

Wooded areas within the Study Area contain suitable roosting habitat for Endangered bats, while the edges and openings could support feeding. While maternity colonies of Little Brown Myotis and Northern Myotis tend to select larger roost trees (≥ 25 cm diameter), which are generally limited to the adjacent wooded areas to the east, individual bats (e.g., males and/or non-reproductive females) are less restrictive in their roosting requirements and may select trees of varying sizes and decay classes as "day roosts".

4.4.2 Butternut

Butternut is designated Endangered in Ontario per O. Reg. 230/08 pursuant to the *Endangered Species Act* (ESA) and is also listed as Endangered on Schedule 1 of the *Species at Risk Act*. This species occupies a wide variety of woodland types in southern Ontario and may be found in most treed habitats (including hedgerows) except the wettest or driest. Butternut requires partial sun exposure to carry out its physiological processes, but individuals may persist in shaded forests as canopy constituents or seedlings/saplings awaiting release. The abundance and condition of Butternut throughout eastern North America is in serious decline due to Butternut Canker (*Ophiognomonia clavigignenti-juglandacearum*), a fungal disease introduced to North America in the mid-nineteenth century.

One (1) Butternut was documented along the western boundary of the Subject Property within the deciduous woodland (WODM5-3 vegetation community). The Butternut could not be inspected in full (as it is slightly beyond the Subject Property limit) but appeared to be in a healthy condition with a high live crown ratio (>90%) and no evidence of sooty or open cankers (within visible areas). For the purposes of this EIS, the Butternut is considered "retainable" (i.e., Category 2) in the context of the ESA.

4.5 **Fish Habitat**

The segment of Warren Creek flowing southward to the west of the Subject Property was previously mapped as Type 2 (i.e., important but not critical) fish habitat by NPCA. This watercourse is only partially visible from the southwest corner of the Subject Property but is otherwise obstructed by existing vegetation. Based on observations from within the Subject Property and a review of current aerial photographs, Warren Creek is expected to exhibit an intermittent flow regime. In the absence of more detailed information (e.g., electrofishing survey), and given NPCA's previous classification of the watercourse as Type 2 fish habitat, the watercourse is assumed to provide direct, seasonal fish habitat (small-bodied fish only). An electrofishing survey would be necessary to confirm the presence or absence of fish within Warren Creek to the west.

An assessment of potential effects to fish habitat associated with the proposed development plan is provided in **Section 5.2.4**.

4.6 Environmental Corridors and Ecological Links

The southern portion of the lands provide a connective ecological corridor linking Warren Creek (and surrounding wooded areas) to the west with the PSW (and surrounding shrubby/thicket areas) to the east.

4.7 Conservation Authority Regulated Areas

NPCA regulates development and site alteration (including fill placement and grade changes) within 15 m of the regulatory floodplain associated with an unconfined valleyland pursuant to clause 2(1)(b) under O. Reg. 155/06. NPCA also regulates areas within 120 m of PSWs per clause 2(1)(e).

The southern portion of the Subject Property is encumbered by the regulatory floodplain of Warren Creek. All portions of the Subject Property are situated within 120 m of the PSW; thus, NPCA has regulatory jurisdiction over development within the Subject Property.

5 EFFECTS ASSESSMENT AND MITIGATION

The purpose of this EIS is to present a biophysical characterization of the Subject Property and Adjacent Lands as a means to identify the potential for adverse effects on the natural environment and natural heritage features stemming from the proposed construction of a townhouse residential community. Several significant natural features and species were documented (or may occur) within the Subject Property pursuant to the assessments presented in **Section 4**. The following effects assessment provides an evaluation of the potential for the proposed application to result in negative effects to such environmental components and offers technical recommendations to mitigate such effects where warranted. Certain technical recommendations offered herein apply to several natural features and/or species simultaneously; as such, all technical recommendations should be read and considered in their entirety. The baseline or existing conditions against which the application is assessed are treated as the state of the Subject Property at the time of the fieldwork program. The effects assessment herein is based on the design drawings provided in **Appendix 8**.

5.1 Proposed Development Plan

The proposed development plan contemplates the creation of 18 new residential lots by way of a vacant land condominium application. Vehicular entrance to the development will be gained from the eastern side of the frontage along McLeod Road, providing access to a proposed surface parking area to the south of the residential units. The townhouse community will be serviced by municipal water and wastewater. The regulatory flood limit (181.53 masl) is proposed to be reconfigured to facilitate more efficient use of land.

It is understood through discussions with the project Land-use Planner (Upper Canada Consultants) that minimum parking requirements for each townhouse unit are 1.4 spaces, with additional spaces required for visitors and residents of accessory dwelling units. The need to provide minimum parking requirements restricts the possibility of reducing the development envelope (without compromising lot yield). The overall narrowness of the Subject Property also limits opportunities to increase development setbacks from the eastern lot line (adjacent to the PSW to the east).

In recognizing the foregoing, a feature-based assessment of potential effects to the significant natural features identified herein is provided below in **Section 5.2**.

5.2 Feature-based Effects Assessment and Technical Recommendations

5.2.1 Provincially Significant Wetland, Significant Woodland, and Ecological Corridor/Linkage

Given overlap between the PSW and Significant Woodland, a joint effects assessment for both features is offered below.

Where development and/or site alteration activities are proposed adjacent to wetlands, adverse effects may occur via the following pathways:

- Alterations to surface water and/or groundwater contributions to the wetland from construction (e.g., dewatering, etc.), grading that modifies the existing topography or drainage, and/or increased coverage of impervious surfaces (e.g., roads, roofs, etc.);
- Increased sediment loadings and/or nutrient enrichment within the wetland via runoff exiting from development areas during and post construction. This may alter wetland water quality and vegetation communities via increased turbidity, eutrophication, contamination by toxic substances, changes in pH, etc.
- Noise and/or light pollution that may adversely affect the ability of wetland wildlife to successfully carry out their life processes (e.g., breeding, feeding, etc.); and
- Increased human activity (i.e., encroachment) within the wetland which may result in soil compaction, dumping, etc.
- Potential for fuel spills during the construction phase of development.
- Increased potential for introducing invasive species including both animals and plants during and post construction.

Where development and/or site alteration activities are proposed adjacent to forests or woodlands, adverse effects may occur via the following pathways:

- Mechanical injury to the trunk, roots, branches, and/or foliage of retained woody vegetation.
- Smothering or exposure of roots due to changes in grade.
- Soil compaction from the use of heavy machinery.
- Noise and/or light pollution that may adversely affect the ability of woodland wildlife to successfully carry out their life processes (e.g., breeding, feeding, etc.).
- Increased human activity (i.e., encroachment) within or adjacent to the woodland which may result in soil compaction, dumping, etc.
- Increased susceptibility to establishment by invasive species either directly or indirectly and including both animals and plants.

The proposed internal (private) road represents the nearest built feature to the PSW and Significant Woodland. At its closest point, the western boundary of the PSW/Significant Woodland to the east is 20 m from the edge of proposed road curbing; when factoring in site alteration (i.e., grading is proposed to the eastern property boundary) this distance is reduced 17 m (see **Figure 3**). It is understood through discussions with the project team that the internal road cannot be shifted westward without compromising the intended uses given the overall narrowness of the lot (i.e., 41 m

wide). It is further understood that the development application at 8100 McLeod Road to the east proceeded on the basis of a 15 m setback to the PSW (which was reduced even further in some areas).

The following recommendations are offered to protect the PSW and Significant Woodland:

- **An Ecological Corridor and Buffer Enhancement Plan will be prepared as a condition of draft plan approval and will include the following elements (minimum):**
  - **Native plantings will be installed in the "Ecological Corridor and Enhancement Area" and "Wetland Buffer Enhancement Area" (see Figure 3) incorporating a diversity of trees and shrubs.**
  - **Restoration planting areas will be treated as "natural, self-sustaining vegetation" (no mow), with existing vegetation to be retained.**
  - **Specifications related to removal of existing surficial gravel within the "Ecological Corridor and Enhancement Area" and replacement with topsoil.**
  - **Removal of existing fencing along the western and eastern property boundaries within the "Ecological Corridor and Enhancement Area" and "Wetland Buffer Enhancement Area".**
  - **Installation of permanent fencing at the northern limit of the "Ecological Corridor and Enhancement Area" and "Wetland Buffer Enhancement Area" (see Figure 3).**
  - **Removal of litter, debris, and any other built structures within the enhancement areas.**

Where development is proposed adjacent to wetlands, any changes to the spatial configuration of the wetland's watershed (catchment) and/or water transfer mechanisms (e.g., contributions of surface and/or groundwater) may adversely affect wetland form and function. Application of the *Wetland Water Balance Risk Evaluation* protocol (TRCA 2017) can be useful in ascribing risk of hydrological and/or ecological effects to on-site or off-site wetlands during the development review process.

Given the prevailing low-permeability, silty clay substrates which generally transmit groundwater very slowly, the PSW on Adjacent Lands to the east is considered to function as a surface water depression whereby the wetland is maintained by direct precipitation and surface runoff, with negligible groundwater inflow and outflows. Through review of topographic contours contained within the Provincial Digital Terrain Model (see **Figure 2**), much of the PSW occupies an area between the 181.5 and 182 masl contour, with a small portion of the southwestern corner extending between 181 and 181.5 masl. It is evident that the Subject Property sheds surface water in a predominantly southwest direction towards Warren Creek (see **Section 3.2.2**) and occurs outside of the PSW's watershed/catchment. Per the *Wetland Water Balance Risk Evaluation* protocol (TRCA 2017), a "low" magnitude of hydrological change to the PSW would be expected, which by

extension generates a risk assignment of "low risk". Based on the available information, no additional groundwater monitoring is required in situations of "low risk" to the wetland water balance and no adverse hydrological changes to the PSW would be anticipated.

As part of maintaining the ecological functions of Significant Woodland and PSW post-development, maintenance of ecological connectivity with Warren Creek and surrounding wooded areas to the west must also be established. The project Planner is proposing to zone the 35 m wide ecological corridor linking Warren Creek to the west with the PSW/Significant Woodland to the east as EPA, facilitating permanent protection of the existing ecological linkage functions (to be further enhanced through adherence to the recommendations herein).

During construction it is anticipated that the proposed development areas will contain exposed soils, which are inherently unstable and have a greater potential for runoff into adjacent areas (including adjacent wetlands) during rainfall events. The most effective erosion and sediment control system emphasizes the prevention of erosion first, minimizes sediment transport off-site through a multi-barrier approach, and involves regular inspection and maintenance. To protect the adjacent natural areas (e.g., Significant Woodland, PSW) from construction-related impacts, the following measure is recommended:

- **An Erosion and Sediment Control Plan will be prepared at detailed design.**

5.2.2 Significant Wildlife Habitat

Per the assessment in **Section 4.3**, a total of two SWH types are considered further through this study:

- Seasonal Concentration Areas of Animals
    1. Bat Maternity Colonies
- Habitat of Species of Conservation Concern
    2. Special Concern and Rare Wildlife Species

Also based on this assessment, a total of five Special Concern or provincially rare species are considered to have at least a possible likelihood of occurrence within the Study Area given their habitat associations and current distribution in southern Ontario (or were confirmed based on the fieldwork program):

1) Tufted Titmouse (*Baeolophus bicolor*)
2) American Bumble Bee (*Bombus pensylvanicus*)
3) Monarch (*Danaus plexippus*)
4) Pink-legged Tiger Moth (*Spilosoma latipennis*)
5) Yellow-banded Bumblebee (*Bombus terricola*)

No specific recommendations are offered herein to minimize impacts to candidate/confirmed SWH. Implementation of other overlapping mitigation measures (see **Section 5.2.1**) will also serve to protect candidate SWH types within the Study Area.

5.2.3 Habitat of Endangered and Threatened Species

Per the assessment in **Appendix 7** a total of three Endangered or Threatened species are considered to have a possible likelihood of occurrence on the Subject Property (or were confirmed) given their habitat associations and current distribution in southern Ontario:

1) Little Brown Myotis (*Myotis lucifugus*)
2) Northern Myotis (*Myotis septentrionalis*)
3) Butternut (*Juglans cinerea*)

Wooded areas with the greatest potential to support maternity roosting by Little Brown Myotis and Northern Myotis fall outside the limits of the Subject Property. Notwithstanding this, tree removals are required to support development (particularly within the conifer plantation); such areas may support non-specific roosting activities (i.e., "day roosts") by individual bats (e.g., males and non-reproductive females). The following mitigation measures are offered to avoid potential construction-related effects to Endangered bats:

- **If construction activities occur during the active bat season (i.e., April 1 and September 30), work will be restricted to daylight hours only and the use of artificial lighting will be avoided.**
- **Any lighting incorporated into the final building designs should be directed downward (i.e., towards the ground) and/or away from the adjacent woodlot (i.e., directed southward) to the extent practicable.**

A timing restriction on vegetation removal (to protect both roosting bats and nesting birds) is also recommended below in **Section 5.2.5**.

One small (1 cm DBH) Butternut was documented on Adjacent Lands to the west. MECP generally considers all lands within 50 m of a Butternut (excluding impervious surfaces and bodies of water) to form part of its regulated "habitat". As development (including grading and site alteration) is proposed to extend in close proximity to the Butternut, an activity registration under O. Reg. 829/21 of the ESA is expected to be required to address "impactful actions" to the Butternut and its habitat. As such, the following measures are recommended:

- **A formal Butternut Health Assessment will be completed as a condition of draft plan approval.**
- **If the Butternut is confirmed to be "retainable", grading and other site alteration activities should be restricted from the rooting zone of the Butternut to the extent practicable.**
- **If the Butternut is confirmed to be "retainable", an activity registration under O. Reg. 830/21 must occur prior to development activities adjacent to the Butternut.**

5.2.4 Fish Habitat

Where development and/or site alteration activities are proposed adjacent to watercourses that support (or are assumed to support) fish and/or aquatic organisms, adverse effects may occur via the following pathways (amongst others):

- Alterations to surface water and/or groundwater contributions to the watercourse from construction (e.g., dewatering, etc.), grading that modifies the existing topography or drainage, and/or increased coverage of impervious surfaces (e.g., roads, roofs, etc.);
- Increased sediment loadings and/or nutrient enrichment within the watercourse via runoff exiting from development areas during and post construction. This may alter water quality and/or degrade habitat quality via increased turbidity, eutrophication, contamination by toxic substances, changes in pH, etc.
- Introduction of invasive species including aquatic organisms and aquatic plants.
- Increased human activity (i.e., encroachment) in the vicinity of the watercourse which may result in bank compaction, exploitation of fish, dumping, etc.

The segment of Warren Creek flowing southeastward to the west of the Subject Property was previously mapped as Type 2 (i.e., important but not critical) fish habitat by NPCA. In the absence of more detailed information (e.g., electrofishing survey), and given NPCA's previous classification of the watercourse as Type 2 fish habitat, the watercourse is assumed to provide direct, seasonal fish habitat (small-bodied fish only) at this time.

Warren Creek is situated no closer than approximately 17 m from the limit of proposed curbing associated with the rear-yard surface parking area. Implementation of other overlapping mitigation measures (see **Section 5.2.1**) will also serve to protect candidate fish habitat within Warren Creek.

5.2.5 Other Natural Environment Considerations

While the recommendations offered herein restrict development activities from all significant natural heritage features, some vegetation removal (i.e., woody and herbaceous vegetation) is required to facilitate development. To further minimize potential adverse effects to the natural environment and breeding birds during construction, the following measures are recommended:

- **All necessary vegetation removal (e.g., trees, meadow vegetation, etc.) will be completed outside the primary bird nesting period (i.e., to be completed between September 1 and March 31). Should minor vegetation removal be proposed during the bird nesting period, a bird nesting survey will be undertaken to confirm the presence or absence of nesting birds or bird nests within or adjacent to the areas subject to vegetation clearance. The survey is to take place within 48 hours of vegetation removal.**
- **Incorporation of Bird-Friendly Guidelines into the residence design such as those published in City of Toronto's "Best Practices for Bird-Friendly Glass" and "Best Practices for Effective Lighting" should be considered at detailed design.**
- **Any Landscape Plans prepared as part of the development approval should incorporate species native to the local landscape.**

5.2.6 Summary of Technical Recommendations

All technical recommendations provided in **Section 5.2** are reiterated in **Appendix 9**.

6 APPLICABLE NATURAL HERITAGE AND ENVIRONMENTAL POLICIES

The following sections summarize the various municipal, provincial, and federal environmental policies that may apply to the proposed development plan and describe how the recommendations provided in this EIS will address these policies (where applicable).

6.1 City of Niagara Falls Official Plan (August 2023 office consolidation)

The City's OP is a legal document prepared as required under section 14.7(3) of the *Planning Act*. An OP sets out goals, objectives, and policies that direct and manage land-use and future development activities and their effects on the social and natural environment of a municipality. Provincial plans that offer direction on matters of provincial interest are implemented principally through the City's OP. Provided herein is a description of relevant environmental and natural heritage policies contained within the City's OP and an assessment of whether the proposed development addresses such policies.

The Subject Property is split-designated "Residential" and "Environmental Protection Area" (EPA) per Schedule A (Future Land Use) of the City's OP. The Subject Property is also subject to the policies of the Garner South Secondary Plan and is more specifically split-designated "Residential High" and EPA per Schedule A3 (Garner South Secondary Plan). The EPA designation reflects the presence of wetland units associated with the Provincially Significant Warren Creek Wetland Complex (hereinafter "PSW") on Adjacent Lands to the east, while a tributary of Warren Creek occurs to the west; both natural features are indicated on Schedule A-1 (Natural Heritage Features and Adjacent Lands) and relevant Appendices under the City's OP.

The City's OP provides a land-use framework for protection of natural heritage features within Section 11. A list of natural heritage provisions of the City's OP that pertain to the application considered herein is provided below.

- **Policy 11.1.17** requires the submission of an EIS in support of development activities that are adjacent to Environmental Protection Areas (per Schedule A-1) or contain natural heritage features.
- **Policy 11.1.25** requires that development or site alteration in or near a natural heritage feature should be designed to maintain (or enhance) the ecological functions of existing linkages. Alternative corridors may be created where feasible.
- **Policy 11.2.13** identifies PSWs (along with significant habitat of Threatened and Endangered species) as EPA. Per **Policy 11.2.14** development or site alteration is generally not permitted in EPAs.
- **Policy 11.2.22** identifies Significant Woodlands and Significant Wildlife Habitat (amongst other natural heritage features) as Environmental Conservation Areas (ECAs). Per **Policy 11.2.27** the intent of the ECA designation is to provide for the protection of natural heritage features, and that activities on adjacent lands must demonstrate that the proposed use will not adversely impact the feature or its functions.

A similar suite of natural heritage policies (i.e., pertaining to designated EPA and ECA features) is contained in the Garner Road Secondary Plan, which can be found in Part 5, Section 1 of the City's OP.

Terrastory reviewed potential impacts to the identified significant natural features – including the PSW, Significant Woodland, candidate SWH, candidate/confirmed habitat of Endangered/Threatened species, and assumed fish habitat in Warren Creek – in **Section 5.2** of this EIS. Provided that Terrastory's recommended mitigation measures (summarized in **Appendix 9**) are carried out in full no negative impacts are anticipated to the identified significant natural heritage features as part of implementing the proposed development plan. Based on the preceding discussion, it is concluded that the proposed development plan appropriately addresses the natural heritage protection provisions of the City's OP.

6.2 Regional Municipality of Niagara Official Plan (2014 Consolidation)

Consistent with the City's OP, the 2014 ROP directs land-use and land management within its jurisdiction. Relevant natural heritage policies contained in the 2014 ROP generally align with the City's OP. A simplified and condensed summary of relevant ROP natural heritage policies which the subdivision application must address is as follows:

- **Policy 7.A.2.1** – development and site alteration must not have negative impacts (including cross-jurisdictional and cross-watershed impacts) on the natural hydrologic characteristics of watercourses, the quantity/quality of surface and groundwater resources, and the functions that surface and groundwater resources provide to natural features and functions of the Core Natural Heritage System.
- **Policy 7.B.1.1** – the Core Natural Heritage System consists of: a) Core Natural Areas (EPA or ECA), b) Potential Natural Heritage Corridors, c) Greenbelt Natural Heritage and Water Resources Systems, and d) Fish Habitat.
- **Policy 7.B.1.2** – development and site alteration within the Core Natural Heritage System shall be subject to the Healthy Landscape Policies of Chapter 7.A and the Core Natural Heritage System Policies.
- **Policy 7.B.1.3** – Environmental Protection Areas (EPAs) include PSWs, Significant Life Science ANSIs, and significant habitat of Endangered and Threatened species.
- **Policy 7.B.1.4** – Environmental Conservation Areas (ECAs) include Significant Woodlands, Significant Wildlife Habitat, significant habitat of species of concern, Regionally significant Life Science ANSIs, other evaluated wetlands, significant valleylands, savannahs and tallgrass prairies, and alvars.
- **Policy 7.B.1.11** – development and site alteration may be permitted within and adjacent to Environmental Conservation Areas if it has been demonstrated that, over the long term, there will be no significant negative impact on the Core Natural Heritage System component or adjacent lands and the proposed development or site alteration is not prohibited by other Regional Policies.
- **Policy 7.B.1.13** – where development or site alteration is proposed in or near a Potential Natural Heritage Corridor, development should be located, designed, and constructed to maintain and, where possible, enhance the ecological functions of the Corridor in linking Core Natural Areas or an alternative corridor should be developed.
- **Policy 7.B.1.18** – where development or site alteration is approved in or adjacent to the Core Natural Heritage System, new created lots shall not extend into either the area to be retained in a natural state as part of the Core Natural Heritage System or the buffer zone identified through an Environmental Impact Study prepared in accordance with Policies

7.B.2.1 to 7.B.2.5. The lands to be retained in a natural state and the adjacent buffer zone shall be maintained as a single block and zoned to protect their natural features and ecological functions.

- **Policy 7.B.1.19** – where development or site alteration is approved within the Core Natural Heritage System or adjacent lands, a Tree Saving Plan must be prepared to maintain or enhance the remaining natural features and ecological functions.

The PSW is considered EPA whereas the Significant Woodland and Significant Wildlife Habitat are considered ECA in the context of the 2014 ROP. Per Policy 7.B.1.11, the proposed development plan must establish "no significant negative impact" to these significant natural features to substantiate the permissibility of the submitted planning applications.

Provided that all recommended mitigation measures outlined in **Section 5.2** and summarized in **Appendix 9** are carried out in full (and are included as draft plan conditions, where appropriate), no negative impacts are anticipated to the significant natural heritage features identified herein. Based on the preceding discussion, it is concluded that the proposed development plan appropriately addresses the natural heritage protection provisions of the 2014 ROP.

6.3 Provincial Policy Statement 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P. 13

The Provincial Policy Study (PPS) is promulgated under the authority of the *Planning Act* and came into effect on 1 May 2020. The PPS provides direction to municipalities on land-use matters of provincial interest and sets the policy framework for regulating the use and development of land. Municipal OP's must be consistent with the PPS. Per its preamble, the PPS *provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment*.

The principal PPS policies that apply to natural heritage protection are outlined in section 2.1. While recognizing that the natural heritage protection framework is not intended to limit the ability of agricultural uses to continue (Policy 2.1.9), the PPS instructs that *natural features and areas shall be protected for the long term* (Policy 2.1.1) and that their diversity and connectivity be *maintained, restored or, where possible, improved* (Policy 2.1.2). In Ecoregions 6E and 7E the PPS separates significant features into three categories:

1) Those in which development and site alteration are not permitted, including 1) Provincially Significant Wetlands and 2) Significant Coastal Wetlands (Policy 2.1.4);
2) Those in which development and site alteration are not permitted unless it can be demonstrated that no negative impacts on the significant natural feature and/or its functions will occur, including: 1) Significant Woodlands, 2) Significant Valleylands, 3) Significant Wildlife Habitat, 4) Significant Areas of Natural and Scientific Interest, 5) Non-significant Coastal wetlands, and 6) Adjacent Lands (Policy 2.1.5 and 2.1.8).
3) Those in which development and site alteration are not permitted except in accordance with federal/provincial requirements, including: 1) fish habitat (Policy 2.1.6) and 2) habitat of Endangered and Threatened Species (Policy 2.1.7).

In considering the aforementioned PPS policies, it has been determined that the proposed development plan addresses relevant natural heritage provisions of the PPS for the following reasons:

- Per **Table 4** of this report, no Significant Areas of Natural or Scientific Interest or Significant Valleylands are present within the Study Area.
- Per **Section 5.2** of this report, no negative impacts to the Significant Woodland or Significant Wildlife Habitat are anticipated given implementation of the proposed development plan provided that the recommended mitigation measures are implemented in full.
- Per **Section 5.2** of this report, Fish Habitat and Endangered/Threatened species habitat will be protected in accordance with provincial and federal requirements.

6.4 Niagara Peninsula Conservation Authority Regulation 155/06, pursuant to the *Conservation Authorities Act*, R.S.O. 1990, c. C.27

NPCA's regulatory jurisdiction includes areas within and adjacent to valley and stream corridors, the Lake Ontario/Lake Erie shorelines, hazard lands (e.g., floodplains, steep slopes, etc.), watercourses, and wetlands as provided under O. Reg. 155/06 of the *Conservation Authorities Act*. NPCA's Policy Document provides guidance for the administration of O. Reg. 155/06. Provided herein is a description of relevant policies and an assessment of whether the Site Plan Application considered herein addresses such policies.

NPCA regulates development and site alteration (including fill placement and grade changes) within 15 m of the regulatory floodplain associated with an unconfined valleyland pursuant to clause 2(1)(b) under O. Reg. 155/06. NPCA also regulates areas within 120 m of PSWs per clause 2(1)(e). Permission to develop within an NPCA regulated area must establish how the "five tests of regulation" per subsection 3(1) of O. Reg. 155/06 have been met. More specifically, development is only permitted if (in the opinion of the Authority) the control of 1) flooding, 2) erosion, 3) dynamic beaches, 4) pollution, or 5) conservation of land will not be affected by the development.

The southern portion of the Subject Property is encumbered by the regulatory floodplain of Warren Creek. All portions of the Subject Property are situated within 120 m of the PSW; thus, NPCA has regulatory jurisdiction over development within the Subject Property. NPCA's governing Policy Document (2018 version) applies minimum watercourse buffers to permanent watercourses (15 m) and intermittent watercourses (10 m) as outlined in Policy 9.2.5. While it is emphasized that the flow regime of Warren Creek is not known with certainty, it appears to represent an intermittent watercourse based on current information. No development or site alteration is proposed within 10 m of Warren Creek.

It is understood that the regulatory floodplain is being reconfigured by the project Civil Engineer (Upper Canada Consultants) to support development. As site alteration activities are proposed within a regulated area, permission from NPCA is required to allow the works to proceed.

6.5 Provincial *Endangered Species Act*, S.O. 2007, c. 6

The *Endangered Species Act* (ESA) is administered by MECP and protects designated Endangered and Threatened species in Ontario from being killed, harmed, or harassed (s. 9) or having their habitat damaged or destroyed (s. 10). The protection afforded to Endangered and Threatened species "habitat" is either prescribed by O. Reg. 832/21, or (for those species that lack regulated habitat) is defined as *an area on which the species depends, directly or indirectly, to carry on its life processes, including life processes such as reproduction, rearing, hibernation, migration or feeding*. Development activities that constitute habitat damage and/or destruction typically require permitting under section 17 of the ESA, or

proceed through registration of the activity as a conditional exemption under O. Reg. 242/08 or O. Reg. 830/21 (where applicable).

A detailed assessment of potential and confirmed Endangered and Threatened habitat within the Study Area is provided in **Appendix 7**. Per this assessment, and provided that relevant technical recommendations outlined in **Section 5.2** are implemented in full, it has been determined that the proposed development plan is consistent with the species and habitat protection provisions of the ESA.

6.6 Federal *Fisheries Act*, R.S.C. 1985, c. F-14

The amended federal *Fisheries Act* (Bill C-68) received Royal Assent in June 2019 while the updated fish and fish habitat protection provisions came into force in August 2019. Subsection 34.4(1) of the amended *Fisheries Act* prohibits all work, undertaking, or activity from causing the death of fish (other than fishing). Subsection 35(1) requires that project activities not result in the "*harmful alteration, disruption or destruction of fish habitat*" (HADD) unless undertaken in accordance with the requirements of a statutory exemption per subsection 35(2). Based on the Fish and Fish Habitat Protection Policy Statement (August 2019), HADD is interpreted by DFO to include "*any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish*".

No in-water works or fill placement below the high-water mark of a surface water feature containing fish habitat is proposed through this application. Consistent with the assessment carried out in **Section 5.2** and provided that relevant technical recommendations outlined in **Section 5.2.4** are implemented in full, it has been determined that the proposed development plan is consistent with the fish and fish habitat protection provisions outlined in the *Fisheries Act*.

6.7 Federal *Migratory Birds Convention Act*, S.C. 1994, c. 22

Section 5 of the Migratory Birds Regulations (2022) under the *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance or destruction of viable eggs, active nests, or nest shelters of a migratory bird. The provincial *Fish and Wildlife Conservation Act, 1997* (FWCA) extends the protection of bird nests and eggs to certain species not listed under the Migratory Birds Regulations (e.g., Corvids, Strigids, Accipitrids, etc.).

Provided that the recommendations outlined in **Section 5.2.5** are implemented in full (i.e., prohibition on vegetation removal during the bird breeding season), no impacts to breeding birds or bird nests protected by the MBCA or FWCA are anticipated.

7 CONCLUSIONS

In accordance with the Terms of Reference for this study (**Appendix 1**) and relevant environmental policies, the preceding Environmental Impact Study provides a detailed characterization of the natural environment occurring within and adjacent to 8168 McLeod Road in Niagara Falls. This EIS has been prepared in support of rezoning and condominium applications submitted to support an 18-unit residential townhouse community, and to support NPCA's regulatory review under O. Reg. 155/06 pursuant to the *Conservation Authorities Act*. Included herein is a comprehensive approach to identifying the presence or absence of several significant natural features afforded varying degrees of protection by applicable environmental policies. Potential negative impacts to the identified

significant natural features are described with mitigation measures and technical recommendations offered to avoid or minimize such impacts and/or offer enhancements as appropriate.

Based on the findings presented in this report, the following natural features with ecological and/or policy significance have been identified:

- A **Provincially Significant Wetland** (Warren Creek Wetland Complex) occurs on Adjacent Lands to the east which is confluent with a **Significant Woodland**.
- **Candidate Significant Wildlife Habitat** types primarily occur to the east and include potential habitat for bat maternity colonies and possible breeding habitat for Tufted Titmouse.
- A sapling **Endangered Butternut** occurs on Adjacent Lands to the west, while the broader Study Area may support roosting by **Endangered Bats** (Little Brown Myotis and Northern Myotis).
- Candidate **Fish Habitat** occurs in Warren Creek which flows southeastward in a straightened channel just west of the Subject Property.

Based on the presence of the above-mentioned significant natural heritage features, a comprehensive set of recommendations and mitigation measures are offered in **Section 5.2** to achieve "no negative impact" and address applicable municipal, provincial, and federal policies outlined in **Section 6**. This includes the need for an Ecological Corridor and Buffer Enhancement Plan to improve ecological functioning along the southern and eastern portions of the lands and a construction timing window restriction on vegetation removal (to protect nesting birds and roosting bats). Permission from NPCA pursuant to O. Reg. 155/06 is required to recontour the regulatory floodplain and undertake development activities within 120 m of the PSW.

It has been determined that no negative impacts to the above-noted features will occur and that the application appropriately addresses applicable natural heritage policies provided that all technical mitigation measures recommended herein (summarized in **Appendix 9**) are implemented in full. It is advised that such technical recommendations be incorporated into any necessary development approvals that permit the application.

8 REFERENCES

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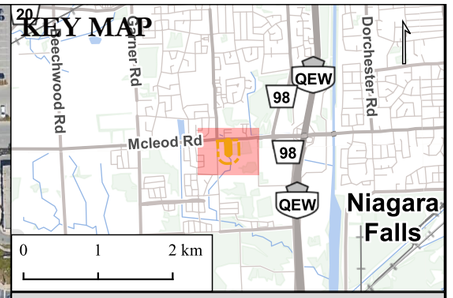

Legend

Area of Assessment
- Subject Property
- Study Area

GENERAL NOTES:
-Features depicted herein should not be used in place of a professional survey.
-Numeric scale is for a 11x17 inch print.

TERRASTORY
environmental consulting inc.
info@terrastoryenviro.com 905.745.5398

N | 1:2,500 | 0 20 40 60 80 m

Location:
8168 McLeod Road,
City of Niagara Falls

Project No.: 21157
Date: 2024-01-11
By: CW **Checked:** TK
Orthophotograph Date: 2022 (Google)

Figure 1:
Location of the Subject Property and Study Area

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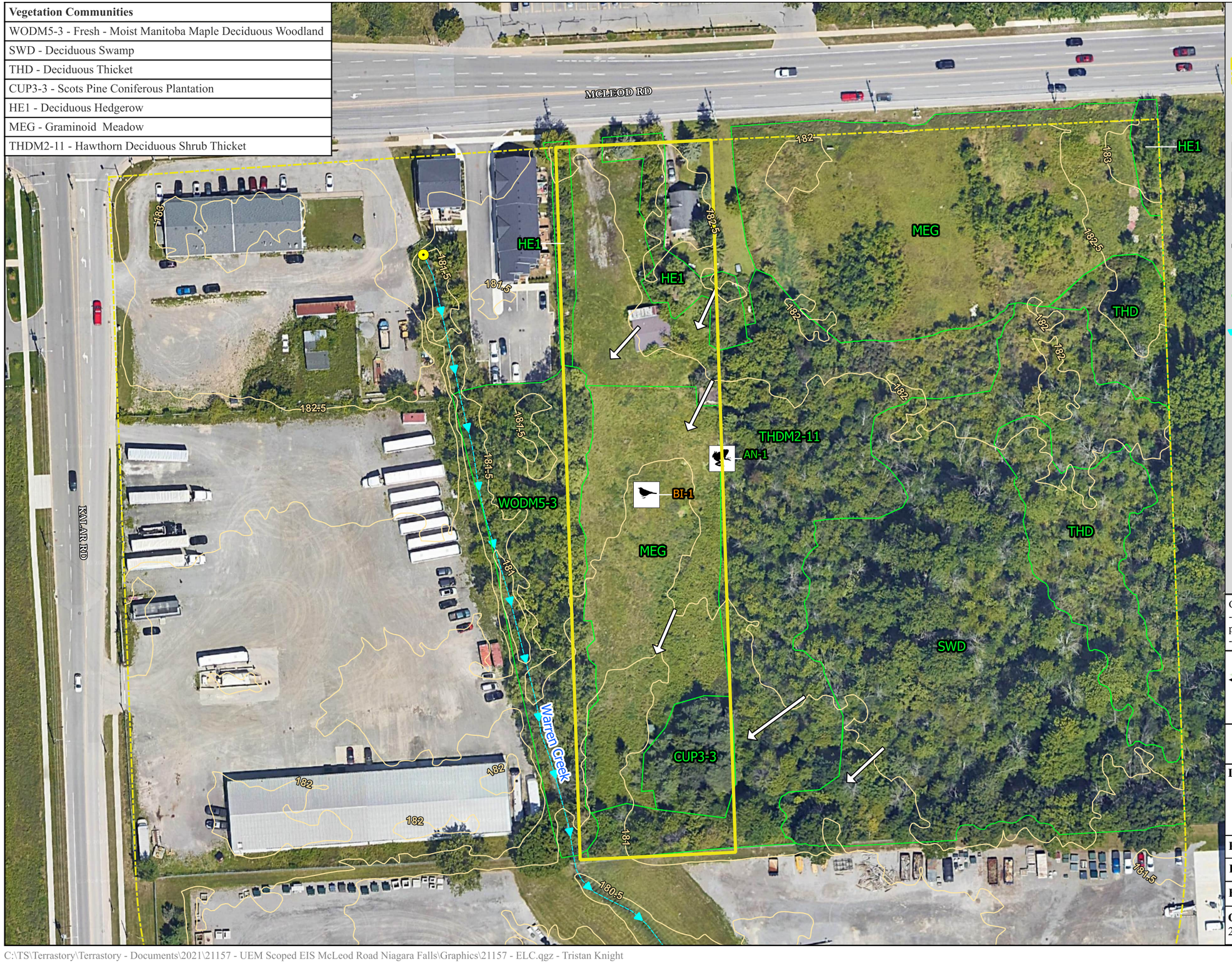
Vegetation Communities
WODM5-3 - Fresh - Moist Manitoba Maple Deciduous Woodland
SWD - Deciduous Swamp
THD - Deciduous Thicket
CUP3-3 - Scots Pine Coniferous Plantation
HE1 - Deciduous Hedgerow
MEG - Graminoid Meadow
THDM2-11 - Hawthorn Deciduous Shrub Thicket



Legend

Area of Assessment
- Subject Property
- Study Area

Built Structures and Infrastructure
- Culvert Inlet/Outlet

Survey Stations
- Anuran Calling Stations
- Breeding Bird Survey Stations

Biophysical Features and Conditions

Terrain
- Overland Runoff Direction
- Topographic Contours (0.5 m; SWOOP-DTM)

Vegetation Communities
- Vegetation Communities

Surface Water Drainage Features
- Intermittent Watercourse

GENERAL NOTES:
-Features depicted herein should not be used in place of a professional survey.
-Numeric scale is for a 11x17 inch print.

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N | 1:1,000 | 0 5 10 15 20 25 30 m

Location:
8168 McLeod Road,
City of Niagara Falls

Project No.: 21157
Date: 2024-02-21
By: CW **Checked:** TK
Orthophotograph Date: 2022 (Google)

Figure 2:
Biophysical Features and Conditions

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Legend

Area of Assessment
- Subject Property
- Study Area

Significant Natural Features - Agency Identified
- Provincially Significant Wetland

Significant Natural Features - Terrastory
- Type 2 Fish Habitat (mapped by NPCA)
- Significant Woodland

Species of Conservation Interest

Endangered and Threatened Species
- Butternut (Juglans cinerea)

Special Concern and Provincially Rare Species
- Tufted Titmouse (Baeolophus bicolor)

Proposed Activities
- Proposed Development Plan

Mitigation Measures Recommended
- Ecological Corridor and Enhancement Area
- Wetland Buffer Enhancement Area
- Permanent Fence

GENERAL NOTES:
-Features depicted herein should not be used in place of a professional survey.
-Numeric scale is for a 11x17 inch print.

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environmental consulting inc.
info@terrastoryenviro.com 905.745.5398

N

1:1,000

0 5 10 15 20 25 30 m

Location:

8168 McLeod Road,
City of Niagara Falls

Project No.: 21157

Date: 2024-01-22

By: CW **Checked:** TK

Orthophotograph Date: 2022 (Google)

Figure 3:

Significant Natural Features with Proposed Development Overlay

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Appendix 1. Terms of Reference

Tristan Knight

From: Nicholas Godfrey <ngodfrey@npca.ca>
Sent: May 12, 2022 2:25 PM
To: Tristan Knight; Lampman, Cara
Subject: RE: ToR for EIS - 8168 McLeod Road, Niagara Falls

Good afternoon Tristan,

NPCA staff are satisfied that the proposed scope of work will adequately characterize the ecological form and function of NPCA regulated features within the study area.

Please ensure that field sheets / raw data and representative soil samples are included with the EIS submission.

Please let me know if you have any questions.

Best,

Nicholas Godfrey, M.A.
Watershed Planner
Niagara Peninsula Conservation Authority (NPCA)
250 Thorold Road West, 3rd Floor, Welland, ON, L3C 3W2
905-788-3135, ext. 278
ngodfrey@npca.ca
www.npca.ca

From: Tristan Knight <tristan@terrastoryenviro.com>
Sent: April 15, 2022 1:58 PM
To: Lampman, Cara <Cara.Lampman@niagararegion.ca>; Nicholas Godfrey <ngodfrey@npca.ca>
Subject: ToR for EIS - 8168 McLeod Road, Niagara Falls

Hi Cara, Nick,

Terrastory has been retained to complete an EIS in support of a development application (subdivision or condo) at 8168 McLeod Road in Niagara Falls. For reference, the Pre-consultation checklist is attached.

Our ToR for the EIS is below; please incorporate any requested updates as **redlines**. Our ecological surveys are ongoing.

A natural feature staking with agency staff will be required. Please provide three potential timeslots for early/mid-June 2022, preferably late morning.

Cheers,
T.

Terms of Reference for Environmental Impact Study – 8168 McLeod Road, Niagara Falls

- **Overall Approach and Methodology**
  - EIS will be undertaken consistent with Policy 7.B.2 of the ROP and Regional EIS Guidelines (Jan. 2018).
  - Study Area will include the Subject Property and Adjacent Lands (natural areas) to a distance of 120 m.
  - All Regional Environmental Planning and NPCA pre-con comments (per attached) will be considered and incorporated into the EIS.
- **Background Biophysical Information Gathering**
  - The following information sources will be reviewed (minimum):
    - EIS Reports for Adjacent Lands including 8056 McLeod Road (Colville 2013) and 1800 McLeod Road (Beacon 2018).
    - Current and historical aerial photographs.
    - Existing natural feature mapping (e.g., OP Schedules, NHIC, NPCA regulation mapping, etc.).
    - Ontario Base Mapping and other sources of topographic information (e.g., LiDAR).
    - Ontario well records from the local landscape
    - Soils mapping for the local landscape
    - Paleozoic and surficial geology mapping for the local landscape.
    - Physiographic mapping for the local landscape
    - NHIC element occurrences
    - iNaturalist element occurrences, including rare species records retrieved through the "(NHIC) Rare Species of Ontario" project.
    - eBird
    - Ontario Breeding Bird Atlas database
    - Ontario Butterfly Atlas
    - DFO Aquatic Species at Risk Maps
    - Atlas of the Mammals of Ontario
- **Site Assessments and Ecological Surveys (i.e., Fieldwork)**
  - General biophysical description of the Study Area (i.e., direction of drainage, land management, etc.)
  - Ecological Land Classification (ELC) for the Subject Property and Adjacent Lands.
  - Anuran calling surveys (3 rounds) according to the Marsh Monitoring Protocol.
  - Breeding bird surveys (2 rounds) according to the Ontario Breeding Bird Atlas Protocol.
  - List of vascular plants (single season – early summer).
  - Assessment of the identified watercourse (Warren Creek tributary) on Adjacent Lands per the OSAP Rapid Channel Morphology module.
    - *Note, this feature occurs exclusively on Adjacent Lands; access may be restricted subject to "permission to enter" agreement.
  - Characterization and delineation of all Key Natural Heritage Features (where present), including woodland dripline and wetland (where present).
  - Incidental wildlife observations (e.g., insects, etc.).
  - Natural feature staking (NPCA/Region).
    - *Note, limit of wetland may not extend onto the Subject Property.
- **Significance Assessment**
  - Determination of whether any confirmed or potential significant natural heritage features are present within the Subject Property (or Adjacent Lands) consistent with relevant policies and criteria (local/regional OPs, etc.).
  - Mapping of significant natural features (where present) per provincial protocols (e.g., dripline for woodlands).
  - Screening table for SWH (based on the Ecoregion 7E Criteria Schedule).
  - Screening table for Species at Risk.

    - If any Endangered/Threatened species are documented, their locations will be mapped and the extent of their habitat will be delineated. Any correspondence with MECP (if required) will be appended to the NHE.
    - If any S1-S3 species are found on site, their locations and habitat extent will be mapped and considered through the impact assessment.
- **Impact Assessment and Recommendations**
    - Description of the proposed development plan and any related technical plans/documents where available (FSR, SWM Report, etc.).
    - Mapping which indicates the proposed development plans overlaid with the significant natural feature mapping on a current airphoto base.
    - Impact assessment for all natural heritage/hazard features identified and their functions from an ecological perspective.
    - Consideration of anticipated wetland impacts from a water balance perspective.
        - *Note, coarse topographic contours (i.e., 1 m) available for the site indicate that the wetland is mostly upgradient from the proposed development area. Scale and effort of wetland hydroperiod impact assessment will be reflective of this.
    - Recommendations related to the preferred lot configuration based on the data collected, impact assessment, and conformity with applicable policies and legislation.
    - Recommendation for minimum setbacks where significant natural features have been documented, and enhancement measures (e.g., planting areas) where warranted.
    - Mitigation measures to avoid/minimize impacts (e.g., vegetation removal timing window, ESC measures, etc.).
- **Policy Conformity Assessment**
    - Incorporate an overall assessment of whether the proposed development plan, combined with any design changes and mitigation measures, is consistent with relevant natural heritage policies contained in:
        - City OP
        - Regional OP
        - Provincial Policy Statement
        - *Endangered Species Act*
        - NPCA Policy Document
        - *Fisheries Act*
        - *Migratory Birds Convention Act*

—
Tristan Knight M.E.S., M.Sc.
Senior Ecologist | President
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(c) 905-745-5398
www.terrastoryenv.com

communication in error, please notify the sender and permanently delete the original and any copy from your computer system. Thank-you. Niagara Peninsula Conservation Authority.

Tristan Knight

From: Boudens, Adam <Adam.Boudens@niagararegion.ca>
Sent: May 19, 2022 3:05 PM
To: Tristan Knight; Lampman, Cara; ngodfrey@npca.ca
Cc: Karlewicz, Lori; Loiacono, Johnpaul
Subject: RE: ToR for EIS - 8168 McLeod Road, Niagara Falls

Hi Tristan,

Regional Environmental Planning staff have reviewed the proposed Terms of Reference for the Environmental Impact Study (EIS) required for the property located at 8168 McLeod Road, Niagara Falls. Our only request is that if habitat for white wood aster is identified on the subject lands that a fall botanical survey be completed to confirm presence/absence. Otherwise, staff offer no objection to the proposed work plan.

Please note that EIS work completed for the adjacent properties and final approval documents may be publicly available which may assist with the completion of this Report. Please contact me to coordinate a site visit to stake the extent of Significant Woodland, if determined to be present, and please include a copy of this correspondence in the Final Report.

Thanks and let me know if you have any questions or concerns.

Adam

Adam Boudens
Senior Environmental Planner/Ecologist

Planning and Development Services, Niagara Region
1815 Sir Isaac Brock Way, P.O. Box 1042
Thorold, ON L2V 4T7
Phone: **905-980-6000 ext. 3770** Toll-free: 1-800-263-7215
Adam.Boudens@niagararegion.ca

From: Tristan Knight <tristan@terrastoryenviro.com>
Sent: Friday, April 15, 2022 1:58 PM
To: Lampman, Cara <Cara.Lampman@niagararegion.ca>; ngodfrey@npca.ca
Subject: ToR for EIS - 8168 McLeod Road, Niagara Falls

Hi Cara, Nick,

Terrastory has been retained to complete an EIS in support of a development application (subdivision or condo) at 8168 McLeod Road in Niagara Falls. For reference, the Pre-consultation checklist is attached.

Our ToR for the EIS is below; please incorporate any requested updates as **redlines**. Our ecological surveys are ongoing.

A natural feature staking with agency staff will be required. Please provide three potential timeslots for early/mid-June 2022, preferably late morning.

Cheers,
T.

Terms of Reference for Environmental Impact Study – 8168 McLeod Road, Niagara Falls

- **Overall Approach and Methodology**
  - EIS will be undertaken consistent with Policy 7.B.2 of the ROP and Regional EIS Guidelines (Jan. 2018).
  - Study Area will include the Subject Property and Adjacent Lands (natural areas) to a distance of 120 m.
  - All Regional Environmental Planning and NPCA pre-con comments (per attached) will be considered and incorporated into the EIS.
- **Background Biophysical Information Gathering**
  - The following information sources will be reviewed (minimum):
    - EIS Reports for Adjacent Lands including 8056 McLeod Road (Colville 2013) and 1800 McLeod Road (Beacon 2018).
    - Current and historical aerial photographs.
    - Existing natural feature mapping (e.g., OP Schedules, NHIC, NPCA regulation mapping, etc.).
    - Ontario Base Mapping and other sources of topographic information (e.g., LiDAR).
    - Ontario well records from the local landscape
    - Soils mapping for the local landscape
    - Paleozoic and surficial geology mapping for the local landscape.
    - Physiographic mapping for the local landscape
    - NHIC element occurrences
    - iNaturalist element occurrences, including rare species records retrieved through the "(NHIC) Rare Species of Ontario" project.
    - eBird
    - Ontario Breeding Bird Atlas database
    - Ontario Butterfly Atlas
    - DFO Aquatic Species at Risk Maps
    - Atlas of the Mammals of Ontario
- **Site Assessments and Ecological Surveys (i.e., Fieldwork)**
  - General biophysical description of the Study Area (i.e., direction of drainage, land management, etc.)
  - Ecological Land Classification (ELC) for the Subject Property and Adjacent Lands.
  - Anuran calling surveys (3 rounds) according to the Marsh Monitoring Protocol.
  - Breeding bird surveys (2 rounds) according to the Ontario Breeding Bird Atlas Protocol.
  - List of vascular plants (single season – early summer).
  - Assessment of the identified watercourse (Warren Creek tributary) on Adjacent Lands per the OSAP Rapid Channel Morphology module.
    - *Note, this feature occurs exclusively on Adjacent Lands; access may be restricted subject to "permission to enter" agreement.
  - Characterization and delineation of all Key Natural Heritage Features (where present), including woodland dripline and wetland (where present).
  - Incidental wildlife observations (e.g., insects, etc.).
  - Natural feature staking (NPCA/Region).
    - *Note, limit of wetland may not extend onto the Subject Property.
- **Significance Assessment**

- Determination of whether any confirmed or potential significant natural heritage features are present within the Subject Property (or Adjacent Lands) consistent with relevant policies and criteria (local/regional OPs, etc.).
- Mapping of significant natural features (where present) per provincial protocols (e.g., dripline for woodlands).
- Screening table for SWH (based on the Ecoregion 7E Criteria Schedule).
- Screening table for Species at Risk.
- If any Endangered/Threatened species are documented, their locations will be mapped and the extent of their habitat will be delineated. Any correspondence with MECP (if required) will be appended to the NHE.
- If any S1-S3 species are found on site, their locations and habitat extent will be mapped and considered through the impact assessment.

- **Impact Assessment and Recommendations**
  - Description of the proposed development plan and any related technical plans/documents where available (FSR, SWM Report, etc.).
  - Mapping which indicates the proposed development plans overlaid with the significant natural feature mapping on a current airphoto base.
  - Impact assessment for all natural heritage/hazard features identified and their functions from an ecological perspective.
  - Consideration of anticipated wetland impacts from a water balance perspective.
    - *Note, coarse topographic contours (i.e., 1 m) available for the site indicate that the wetland is mostly upgradient from the proposed development area. Scale and effort of wetland hydroperiod impact assessment will be reflective of this.
  - Recommendations related to the preferred lot configuration based on the data collected, impact assessment, and conformity with applicable policies and legislation.
  - Recommendation for minimum setbacks where significant natural features have been documented, and enhancement measures (e.g., planting areas) where warranted.
  - Mitigation measures to avoid/minimize impacts (e.g., vegetation removal timing window, ESC measures, etc.).
- **Policy Conformity Assessment**
  - Incorporate an overall assessment of whether the proposed development plan, combined with any design changes and mitigation measures, is consistent with relevant natural heritage policies contained in:
    - City OP
    - Regional OP
    - Provincial Policy Statement
    - *Endangered Species Act*
    - NPCA Policy Document
    - *Fisheries Act*
    - *Migratory Birds Convention Act*

—
Tristan Knight M.E.S., M.Sc.
Senior Ecologist | President
Terrastory Environmental Consulting Inc.
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Appendix 2. Representative Photographs

Photo 1. Rear-yard of the Subject Property facing north (10 September 2021).

Photo 2. Rear-yard of the Subject Property facing west towards the woodland (10 September 2021).

Photo 3. Rear-yard of the Subject Property facing south (10 September 2021).

Photo 4. Subject Property facing McLeod Road (10 September 2021).

Photo 5. Southern end of the Subject Property facing north (10 September 2021).

Photo 6. Southern end of the Subject Property facing northeast(10 September 2021).

Photo 7. Subject Property facing northwest towards the woodland on Adjacent Lands to the west (19 August 2022).

Photo 8. Thicket community along the eastern property line facing east (19 August 2022).

Photo 9. Warren Creek to the west of the Subject Property facing west (10 September 2021).

Photo 10. Butternut facing west (02 July 2022).

Appendix 3. Vascular Plant List

Scientific Name	Common Name	Family	Regionally Rare are per Oldham 2017?	S-Rank (per NHIC)	Coefficient of Conservatism	Coefficient of Wetness
Acer negundo	Manitoba Maple	Aceraceae		S5	0	0
Acer x freemanii	Freeman's Maple	Aceraceae		SNA	6	-5
Achillea millefolium	Common Yarrow	Asteraceae		SNA	0	3
Agrostis gigantea	Redtop	Poaceae		SNA	0	-3
Agrostis stolonifera	Creeping Bentgrass	Poaceae		SNA	0	-3
Amelanchier laevis	Smooth Serviceberry	Rosaceae		S5	5	5
Apocynum cannabinum	Hemp Dogbane	Apocynaceae		S5	3	0
Asclepias incarnata	Swamp Milkweed	Asclepiadaceae		S5	6	-5
Bidens frondosa	Devil's Beggarticks	Asteraceae		S5	3	-3
Carex crinita	Fringed Sedge	Cyperaceae		S5	6	-5
Carex molesta	Troublesome Sedge	Cyperaceae		S4S5	5	0
Carex scoparia	Pointed Broom Sedge	Cyperaceae		S5	5	-3
Carex vulpinoidea	Fox Sedge	Cyperaceae		S5	3	-5
Centaurea nigrescens	Short-fringed Knapweed	Asteraceae		SNA	0	5
Cichorium intybus	Chicory	Asteraceae		SNA	0	5
Cirsium arvense	Canada Thistle	Asteraceae		SNA	0	3
Cirsium vulgare	Bull Thistle	Asteraceae		SNA	0	3
Convolvulus arvensis	Field Bindweed	Convolvulaceae		SNA	0	5
Cornus obliqua	Pale Dogwood	Cornaceae		S5	2	-3
Cornus racemosa	Gray Dogwood	Cornaceae		S5	2	0
Crataegus crus-galli	Cockspur Hawthorn	Rosaceae		S4	4	0
Crataegus holmesiana	Holmes' Hawthorn	Rosaceae	Regionally Rare	S4S5	4	5
Crataegus pruinosa var. *pruinosa*	Frosted Hawthorn	Rosaceae		S4S5	4	5
Dactylis glomerata	Orchard Grass	Poaceae		SNA	0	3
Daucus carota	Wild Carrot	Apiaceae		SNA	0	5
Dianthus armeria	Deptford Pink	Caryophyllaceae		SNA	0	5
Dichanthelium implicatum	Slender-stemmed Panicgrass	Poaceae		S5	3	0
Dipsacus fullonum	Common Teasel	Dipsacaceae		SNA	0	3
Epilobium ciliatum	Northern Willowherb	Onagraceae		S5	3	-3
Epilobium coloratum	Purple-veined Willowherb	Onagraceae		S5	3	-5
Erigeron philadelphicus	Philadelphia Fleabane	Asteraceae		S5	1	-3
Eupatorium perfoliatum	Common Boneset	Asteraceae		S5	2	-3
Euthamia graminifolia	Grass-leaved Goldenrod	Asteraceae		S5	2	0
Fragaria virginiana	Wild Strawberry	Rosaceae		S5	2	3
Fraxinus pennsylvanica	Green Ash	Oleaceae		S4	3	-3
Galega officinalis	Goat's Rue	Fabaceae		SNA	0	0
Galium aparine	Cleavers	Rubiaceae		S5	4	3
Geum canadense	White Avens	Rosaceae		S5	3	0
Geum laciniatum	Rough Avens	Rosaceae		S4	4	-3
Glechoma hederacea	Ground Ivy	Lamiaceae		SNA	0	3
Gleditsia triacanthos	Honey-locust	Fabaceae		S2?	8	0
Glyceria striata	Fowl Mannagrass	Poaceae		S5	3	-5

Scientific Name	Common Name	Family	Regionally Rare are per Oldham 2017?	S-Rank (per NHIC)	Coefficient of Conservatism	Coefficient of Wetness
Hemerocallis fulva	Orange Daylily	Liliaceae		SNA	0	5
Hypericum perforatum	Common St. John's-wort	Clusiaceae		SNA	0	5
Impatiens capensis	Spotted Jewelweed	Balsaminaceae		S5	4	-3
Juglans cinerea	Butternut	Juglandaceae		S2?	6	3
Juncus dudleyi	Dudley's Rush	Juncaceae		S5	1	-3
Juncus effusus	Soft Rush	Juncaceae		S5	4	-5
Juncus torreyi	Torrey's Rush	Juncaceae		S5	3	-3
Lactuca serriola	Prickly Lettuce	Asteraceae		SNA	0	3
Lapsana communis	Common Nipplewort	Asteraceae		SNA	0	3
Leersia oryzoides	Rice Cutgrass	Poaceae		S5	3	-5
Ligustrum vulgare	European Privet	Oleaceae		SNA	0	3
Linaria vulgaris	Butter-and-eggs	Scrophulariaceae		SNA	0	5
Lobelia inflata	Indian-tobacco	Campanulaceae		S5	3	3
Lolium pratense	Meadow Fescue	Poaceae		SNA	0	3
Lonicera morrowii	Morrow's Honeysuckle	Caprifoliaceae		SNA	0	3
Lotus corniculatus	Garden Bird's-foot Trefoil	Fabaceae		SNA	0	3
Lycopus americanus	American Water-horehound	Lamiaceae		S5	4	-5
Lythrum salicaria	Purple Loosestrife	Lythraceae		SNA	0	-5
Malus pumila	Common Apple	Rosaceae		SNA	0	5
Medicago lupulina	Black Medic	Fabaceae		SNA	0	3
Melilotus albus	White Sweet-clover	Fabaceae		SNA	0	3
Mentha canadensis	Canada Mint	Lamiaceae		S5	3	-3
Morus alba	White Mulberry	Moraceae		SNA	0	0
Parthenocissus quinquefolia	Virginia Creeper	Vitaceae		S4?	6	3
Parthenocissus vitacea	Thicket Creeper	Vitaceae		S5	4	3
Persicaria virginiana	Virginia Smartweed	Polygonaceae		S4	6	0
Phalaris arundinacea	Reed Canary Grass	Poaceae		S5	0	-3
Phleum pratense	Common Timothy	Poaceae		SNA	0	3
Phragmites australis ssp. australis	European Reed	Poaceae		SNA	0	-3
Picea abies	Norway Spruce	Pinaceae		SNA	0	5
Picea glauca	White Spruce	Pinaceae		S5	6	3
Picea pungens	Blue Spruce	Pinaceae		SNA	0	3
Pinus sylvestris	Scots Pine	Pinaceae		SNA	0	3
Plantago lanceolata	English Plantain	Plantaginaceae		SNA	0	3
Poa palustris	Fowl Bluegrass	Poaceae		S5	5	-3
Poa pratensis subsp. pratensis	Kentucky Bluegrass	Poaceae		SNA	0	3
Populus deltoides	Eastern Cottonwood	Salicaceae		S5	4	0
Prunella vulgaris	Heal-all	Lamiaceae		S5	0	0
Quercus bicolor	Swamp White Oak	Fagaceae		S4	8	-3
Quercus palustris	Pin Oak	Fagaceae		S4	9	-3
Rhamnus cathartica	Common Buckthorn	Rhamnaceae		SNA	0	0
Rhus typhina	Staghorn Sumac	Anacardiaceae		S5	1	3

Scientific Name	Common Name	Family	Regionally Rare are per Oldham 2017?	S-Rank (per NHIC)	Coefficient of Conservatism	Coefficient of Wetness
Rosa canina	Dog Rose	Rosaceae		SNA	0	5
Rubus idaeus subsp. strigosus	Wild Red Raspberry	Rosaceae		S5	2	3
Rumex crispus	Curly Dock	Polygonaceae		SNA	0	0
Salix atrocinerea	Rusty Willow	Salicaceae		SNA	0	-3
Salix matsudana	Corkscrew Willow	Salicaceae		SNA	0	0
Setaria pumila	Yellow Foxtail	Poaceae		SNA	0	0
Solanum dulcamara	Bittersweet Nightshade	Solanaceae		SNA	0	0
Solidago altissima	Tall Goldenrod	Asteraceae		S5	1	3
Solidago rugosa subsp. rugosa	Northern Rough-stemmed Goldenrod	Asteraceae		S5	4	0
Sonchus oleraceus	Common Sow-thistle	Asteraceae		SNA	0	3
Stellaria graminea	Grass-leaved Starwort	Caryophyllaceae		SNA	0	5
Symphyotrichum lanceolatum	Panicled Aster	Asteraceae		S5	3	-3
Symphyotrichum novae-angliae	New England Aster	Asteraceae		S5	2	-3
Symphyotrichum pilosum var. pilosum	Old Field Aster	Asteraceae		S5	1	3
Thuja occidentalis	Eastern White Cedar	Cupressaceae		S5	4	-3
Ulmus americana	American Elm	Ulmaceae		S5	3	-3
Viburnum lantana	Wayfaring-tree	Caprifoliaceae		SNA	0	5
Vitis riparia	Riverbank Grape	Vitaceae		S5	0	0

Appendix 4. Anuran Calling Survey Results

1 ANURAN CALLING SURVEY METHODOLOGY

Calling anuran surveys were conducted in accordance with the *Marsh Monitoring Program for Surveying Amphibians* (Bird Studies Canada et al. 2008). This protocol involves the completion of three (3) rounds of surveys once per month between April and June from 30 minutes after sunset until approximately midnight. Appropriate weather conditions include no or very light precipitation and wind speed ≤3 on the Beaufort wind scale. Although the Subject Property is located within the central region (between the 43rd and 47th parallels), it is situated at the 43rd parallel, so there is some flexibility as to timing of the surveys.

One (1) anuran calling station was established and situated systematically to cover potentially significant anuran breeding habitats, particularly those that are near proposed areas disturbance. Each station was surveyed for a minimum duration of three (3) minutes. Anurans and evidence of anuran breeding (i.e., vocalizations, tadpoles, etc.) were also recorded incidentally during other field activities on-site.

2 RESULTS

Table 1. Results of Anuran Calling Surveys.

Station ID[1]	**Feature or ELC Community Surveyed**	**Bearing (°)**	**Survey #1 –** 11 April 2022	**Survey #2 –** 04 May 2022	**Comments**[2]
AN-1	PSW	180	American Toad (1-1) Western Chorus Frog (3)	Western Chorus Frog (1-2)	**Survey #1:** **Survey #2:** In strip of trees along western edge, distant and hard to hear over traffic. **Survey #3:** Survey 3 not conducted due to dry conditions.

[1] Locations of Anuran Calling Stations are shown in **Figure 2**.

[2] **Call Code 1** = Individuals can be counted; calls not simultaneous; **Call Code 2** = Calls distinguishable; some simultaneous calling; **Call Code 3** = Full chorus; calls continuous and overlapping. Second number after the call code indicates the estimated number of individuals calling; no estimate of individuals is provided for Call Code 3.

Appendix 5. Breeding Bird Survey Results

1 BREEDING BIRD SURVEY METHODOLOGY

Two breeding bird surveys was conducted following Ontario Breeding Bird Atlas (OBBA) protocols (Bird Studies Canada et al. 2001). The surveys occurred within the appropriate season (May 24–July 10), time of day (between dawn and 5 hours after dawn), and weather conditions (no rain, wind speed ≤3 on the Beaufort Wind Scale). The station was surveyed for a minimum duration of ten (10) minutes.

One (1) survey station was established and situated systematically to cover the variety of bird habitats on-site, particularly habitats with a high potential to support significant bird species and those that occur within or adjacent to proposed areas of disturbance. The locations of all point count stations and significant bird species were recorded in the field with a high-accuracy GPS.

Signs of breeding activity accompanied each bird record (e.g., singing male, probable pair, agitation, carrying nest material, etc.). The OBBA provides four (4) breeding categories to accompany each observation:

> ***Observed:*** Species observed during its breeding season (no evidence of breeding).
>
> ***Possible Breeding:*** Includes any of the following observation types: 1) species observed in its breeding season in suitable nesting habitat, and 2) singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat.
>
> ***Probable Breeding:*** Includes any of the following observation types: 1) pair observed in their breeding season in suitable nesting habitat, 2) permanent territory presumed through registration of territorial song on at least 2 days, a week or more apart, at the same place, 3) courtship or display between a male and a female or 2 males, including courtship feeding or copulation, 4) visiting probable nest site, 5) agitated behaviour or anxiety calls of an adult, 6) brood patch on adult female or cloacal protuberance on adult male, and 7) nest-building or excavation of nest hole.
>
> ***Confirmed Breeding:*** Includes any of the following observation types: 1) distraction display or injury feigning, 2) used nest or egg shell found (occupied or laid within the period of the study), 3) recently fledged young or downy young, including young incapable of sustained flight, 4) adults leaving or entering nest site in circumstances indicating occupied nest, 5) adult carrying faecal sac, 6) adult carrying food for young, 7) nest containing eggs, and 8) nest with young seen or heard.

2 RESULTS

Table 1. Results of Breeding Bird Surveys.

Common Name	Scientific Name	Breeding Status within the Study Area	General Location of Observation
American Goldfinch	*Spinus tristis*	Probable	Throughout survey area
American Robin	*Turdus migratorius*	Probable	Throughout survey area
Baltimore Oriole	*Icterus galbula*	Probable	Deciduous swamp east of the Subject Property
Barn Swallow	*Hirundo rustica*	Flyover	Flyover
Blue Jay	*Cyanocitta cristata*	Probable	Flyover
Brown-headed Cowbird	*Molothrus ater*	Possible	West edge of the Subject Property
Canada Goose	*Branta canadensis*	Possible	30 m west of the Subject Property
Cedar Waxwing	*Bombycilla cedrorum*	Possible	Throughout survey area
Common Grackle	*Quiscalus quiscula*	Possible	North boundary of the Subject Property
Downy Woodpecker	*Dryobates pubescens*	Probable	Throughout survey area
Eastern Phoebe	*Sayornis phoebe*	Probable	East and west edge of the Subject Property
European Starling	*Sturnus vulgaris*	Probable	North section of the Subject Property near the residence
Gray Catbird	*Dumetella carolinensis*	Possible	East edge of the Subject Property in Common Buckthorn Thicket
Great Crested Flycatcher	*Myiarchus crinitus*	Possible	Deciduous swamp east of the Subject Property
House Wren	*Troglodytes aedon*	Possible	South portion of the Subject Property
Mourning Dove	*Zenaida macroura*	Probable	North and south boundary of the Subject Property
Northern Cardinal	*Cardinalis cardinalis*	Probable	Throughout survey area
Red-winged Blackbird	*Agelaius phoeniceus*	Possible	50 m northeast of the Subject Property
Ring-billed Gull	*Larus delawarensis*	Flyover	Flyover
Rock Pigeon	*Columba livia*	Flyover	Flyover
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Possible	Deciduous swamp east of the Subject Property
Song Sparrow	*Melospiza melodia*	Probable	Throughout survey area
Tufted Titmouse	*Baeolophus bicolor*	Possible	120 m east of the Subject Property
White-breasted Nuthatch	*Sitta carolinensis*	Possible	Deciduous swamp east of the Subject Property
Willow Flycatcher	*Empidonax traillii*	Possible	120 m southwest of the Subject Property

[1] Locations of breeding bird survey stations are indicated on **Figure 2**.

[2] Co = Confirmed Breeder; Pr = Probable Breeder; Po = Possible Breeder; O = Observed (no evidence of breeding). Breeding status determined based on the results of the formal breeding bird surveys; where a higher level of breeding status was documented incidentally (i.e., during other field surveys), this is noted in within the main body of the report (where applicable).

Appendix 6. Significant Wildlife Habitat Assessment

1 SIGNIFICANT WILDLIFE HABITAT ASSESSMENT METHODOLGY

The PPS protects Significant Wildlife Habitat (SWH) from development and site alteration unless it can be demonstrated that no negative impacts on the feature or its function will occur. As outlined in the SWH Technical Guide (OMNR 2000) and supporting Ecoregion Criteria Schedules (OMNRF 2015), SWH is composed of four (4) principal components:

- Seasonal Concentration Areas of Animals
- Rare Vegetation Communities or Specialized Habitats;
- Habitat of Species of Conservation Concern; and
- Animal Movement Corridors.

The process for identifying SWH is outlined in s. 9.2.3 of the Natural Heritage Reference Manual (OMNR 2010). Step 1 considers the nature of the development application proposed and involves the assembly of background ecological information for the Study Area and Adjacent Lands. If the application triggers a need to protect SWH (e.g., change in land-use that requires approval under the Planning Act, etc.), a more thorough investigation of potential SWH features within the Study Area or Adjacent Lands must occur. Any confirmed SWH for the Study Area and Adjacent Lands as identified in relevant planning documents or by the MNRF should be noted at this stage.
Where a need to protect SWH is triggered, step 2 involves undertaking a more thorough analysis of features, functions, and habitats within the Study Area via Ecological Land Classification (see Section 2.8). The list of ELC Ecosite codes generated for the Study Area is compared to those codes considered candidate SWH in the relevant Ecoregion Criterion Schedule (i.e., 5E, 6E, or 7E) in step 3. Where a positive match between an ELC Ecosite and candidate SWH exists, the area is considered candidate SWH.

Two options are available for candidate SWH: 1) the area may be protected without further study, or 2) the area may be evaluated to ascertain whether confirmed SWH is present. Evaluation may involve generating more detailed maps of vegetation cover, or conducting surveys of the wildlife population within the candidate SWH including reproductive, feeding, and movement patterns. If the area is confirmed SWH, the final step in the process is the completion of an impact assessment to demonstrate that no negative impacts to the confirmed SWH or its function will occur. The impact assessment process is assisted by SWH Mitigation Support Tool (OMNRF 2014).

2 RESULTS

Table 1. Results of the Significant Wildlife Habitat Assessment.

Ecoregion 7E	Do any Features, Habitats, or Areas within the Study Area meet relevant criteria (Ecoregion 7E Criteria Schedule) as Candidate SWH?	Do any Features, Habitats, or Areas o within the Study Area meet relevant criteria (Ecoregion 7E Criteria Schedule) as Confirmed SWH?	Likelihood that Negative Effects to SWH (i.e., "degradation that threatens the health and integrity" as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Seasonal Concentration Areas of Animals			
Waterfowl Stopover and Staging Areas (Terrestrial)	**No.** Meadows, fields, and/or thickets that annually flood during spring and could support significant congregations of migrating waterfowl are absent.	--	--
Waterfowl Stopover and Staging Areas (Aquatic)	**No.** Large surface water features (e.g., ponds, lakes, bays, coastal inlets, large watercourses, etc.) and/or wetlands that annually flood during spring could support significant congregations of migrating waterfowl are absent.	--	--
Shorebird Migratory Stopover Areas	**No.** Unvegetated open areas adjacent to surface water features (e.g., shorelines, beaches, mudflats, etc.) and could support significant congregations of migrating shorebirds are absent.	--	--
Raptor Wintering Areas	**No.** While forest and (to a lesser extent) meadow habitats are present, which may occasionally support wintering raptors, such habitats are too small to support significant congregations of wintering raptors.	--	--
Bat Hibernacula	**No.** Natural features and habitats that could support hibernating bats (e.g., caves, mine shafts, crevices, karsts, etc.) are absent.	--	--
Bat Maternity Colonies	**Yes.** Mature deciduous and mixed forests with a high-density (i.e., >10/ha) of large-diameter (i.e., ≥25 cm DBH) trees containing cracks/cavities may be present.	**Unknown.** Acoustic monitoring devices were not deployed as part of this study.	**Negligible.** Development and site alteration activities are restricted from the boundary (i.e., dripline) of wooded areas which have the greatest likelihood of supporting maternal colonies of this species. Any necessary removal of trees within the conifer plantation, which are unlikely to support bat maternal roosting colonies, will be subject to a timing restriction. See report for greater details.
Turtle Wintering Areas	**No.** Surface water features and/or wetlands with soft muddy substrate which do not freeze to the bottom during winter are absent.	--	--
Reptile Hibernaculum	**No.** Features (e.g., small mammal burrows, rock crevices, etc.) and/or habitats (e.g., certain wetlands with a fluctuating water table, etc.) that could provide snakes with access below the frost line are present.	--	--
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	**No.** Features that could support nesting by Cliff Swallow and Northern Rough-winged swallow (e.g., eroding banks, sandy hills, borrow pits, steep slopes, cliff faces, etc.) are absent.	--	--
Colonially - Nesting Bird Breeding Habitat Breeding Habitat (Tree/Shrubs)	**No.** Swamp and treed fen communities are absent.	--	--
Colonially - Nesting Bird Breeding Habitat (Ground)	**No.** Rocky islands or peninsulas along lakes or large rivers are absent.	--	--

Ecoregion 7E	Do any Features, Habitats, or Areas within the Study Area meet relevant criteria (Ecoregion 7E Criteria Schedule) as Candidate SWH?	Do any Features, Habitats, or Areas o within the Study Area meet relevant criteria (Ecoregion 7E Criteria Schedule) as Confirmed SWH?	Likelihood that Negative Effects to SWH (i.e., "degradation that threatens the health and integrity" as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Migratory Butterfly Stopover Areas	**No.** A mixture of fields and forests within 5 km from the shoreline of Lake Erie or Lake Ontario are absent.	--	--
Landbird Migratory Stopover Areas	**No.** While migrating landbirds may temporarily stopover to feed and rest, the Subject Property is unlikely to support significant congregations of migrating landbirds as it is greater than 5 km from the shoreline of Lake Erie.	--	--
Deer Winter Congregation Areas	**No.** The Subject Property and/or Adjacent Lands have not been identified as a deer wintering area by MNRF.	--	--
Rare Vegetation Communities or Specialized Habitats for Wildlife			
Cliffs and Talus Slopes	**No.** Cliffs and talus slope communities are absent.	--	--
Sand Barren	**No.** Sand barren communities are absent.	--	--
Alvar	**No.** Flora characteristic of alvars are absent.	--	--
Old Growth Forest	**No.** Based on a review of historical aerial photographs, wooded areas within the Study Area have emerged recently and would not be expected to exhibit old-growth characteristics (e.g., old trees, abundant snags and downed woody debris, canopy gaps caused by species turnover, limited disturbance, etc.).	--	--
Savannah	**No.** Flora characteristic of savannahs are absent.	--	--
Tallgrass Prairie	**No.** Flora characteristic of tallgrass prairies are absent.	--	--
Other Rare Vegetation Community	**No.** Provincially rare vegetation communities are absent.	--	--
Waterfowl Nesting Area	**No.** Wetlands which may support nesting waterfowl are absent.	--	--
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	**No.** Forest communities adjacent to large surface water features are absent.	--	--
Woodland Raptor Nesting Habitat	**No.** Natural and conifer plantation woodland/forest stands >30ha with >4ha of interior habitat are absent.	--	--
Turtle Nesting Areas	**No.** Exposed mineral soils adjacent to surface water features (e.g., lakes, ponds, etc.) and/or wetlands that may support turtles are absent.	--	--
Seeps and Springs	**No.** Areas where groundwater emerges at the surface and may support specialized habitat for plants and wildlife are absent.	--	--
Amphibian Breeding Habitat (Woodland)	**Yes.** Forests with wetlands, ponds, and/or pools that may support significant congregations of breeding amphibians may be present.	**No.** The results of anuran calling surveys confirmed that this SWH type is absent from the Study Area.	--
Amphibian Breeding Habitat (Wetlands)	**No.** Wetlands and surface water features (e.g., ponds, lakes, etc.) that may support significant congregations of breeding amphibians are absent.	--	--

Ecoregion 7E	Do any Features, Habitats, or Areas within the Study Area meet relevant criteria (Ecoregion 7E Criteria Schedule) as Candidate SWH?	Do any Features, Habitats, or Areas o within the Study Area meet relevant criteria (Ecoregion 7E Criteria Schedule) as Confirmed SWH?	Likelihood that Negative Effects to SWH (i.e., "degradation that threatens the health and integrity" as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Woodland Area-Sensitive Bird Breeding Habitat	**No.** Interior forest interior conditions (i.e., >200 m from edge) are absent.	--	--
Habitat for Species of Conservation Concern			
Marsh Bird Breeding Habitat	**No.** Wetlands with shallow water and emergent aquatic vegetation are absent.	--	--
Open Country Bird Breeding Habitat	**No.** Meadow habitats of sufficient size are absent.	--	--
Shrub/Early Successional Bird Breeding Habitat	**No.** Shrub/early-successional habitats of sufficient size are absent.	--	--
Terrestrial Crayfish	**Yes.** Marsh and swamp communities and/or wet fields are present	**No.** Terrestrial crayfish chimneys were not documented.	--
Special Concern and Rare Wildlife Species	**Yes.** See **Table 2** below.	**Yes.** See **Table 2** below.	**Possible.** See **Table 2** below.
Animal Movement Corridors			
Amphibian Movement Corridors	**No.** Significant amphibian breeding habitat is absent. Subject Property is not expected to act as a significant movement corridor between breeding and summer habitat for amphibians.	--	--

Table 2. Results of the Special Concern and Provincially Rare Species Assessment.

Species	Status per O. Reg. 230/08 under the ESA and/or NHIC	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy or Use within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Study Area	Likelihood that Negative Effects to the Species or its Habitat (i.e., "degradation that threatens the health and integrity" as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities
Birds					
Bald Eagle (*Haliaeetus leucocephalus*)	SC	Species distribution and on-site habitats	• Generally found feeding along waterbodies and shorelines, and adjacent deciduous and mixed forests. • Super-canopy trees are used for nesting and roosting. • Feeds largely on fish and carrion.	**Negligible.** Suitable breeding habitat is absent. Bald Eagle was not detected during breeding bird surveys in 2022.	--
Barn Swallow (*Hirundo rustica*)	SC	OBBA	• Nests in barns, bridge/culvert undersides, awnings/overhangs on sides of buildings, and (historically) tree cavities. • Forages in a variety of open areas including agricultural lands, meadows, prairies, woodland clearings, marshes, and above waterbodies.	**Possible.** While this species may forage over open areas on the Subject Property for brief periods during migration or forays from adjacent breeding sites (e.g., a flyover Barn Swallow was documented during breeding bird surveys in 2022), no nests were observed within the Subject Property.	--
Black-crowned Night-heron (*Nycticorax nycticorax*)	S3B	iNaturalist	• Occupies a variety of wetlands. • Nests in trees or in cattails—usually in a habitat safe from predators such as on an island, in a swamp, or over water.	**Negligible.** Suitable breeding habitat is absent.	--
Common Nighthawk (*Chordeiles minor*)	SC	OBBA	• Breeds and forages in a variety of open habitats with sparse cover of woody vegetation. • Also occupies urban areas and nests on flat roof tops.	**Negligible.** Suitable breeding habitat is absent.	--
Eastern Wood-pewee (*Contopus virens*)	SC	OBBA	• Breeds and forages in relatively open, deciduous and mixed forests of various sizes (including urban forest fragments) and along forest edges.	**Negligible.** Suitable breeding habitat is present within the Study Area, however, no individuals were detected during breeding bird surveys in 2022. Species was also not documented during breeding bird surveys on Adjacent Lands to the east as part of an EIS for 8100 McLeod Road.	--
Grasshopper Sparrow (*Ammodramus savannarum*)	SC	OBBA	• Breeds and forages in hayfields, savannahs, pastures, meadows, grasslands, and prairies.	**Negligible.** Suitable breeding habitat is absent. Grasshopper Sparrow was not detected during breeding bird surveys in 2022.	--
Peregrine Falcon (*Falco peregrinus*)	SC	Species distribution and on-site habitats	• Nests on tall, steep ledges usually close to waterbodies, including cliffs, quarry walls, and buildings.	**Negligible.** Suitable breeding habitat is absent.	--
Purple Martin (*Progne subis*)	S3B	OBBA	• Forages over towns, cities, parks, open fields, dunes, streams, wet meadows, beaver ponds, and other open areas. • Nests in cavities (both artificial and natural), though is almost entirely dependent on human constructed nesting structures (martin houses) in Ontario.	**Negligible.** While this species may forage over open areas on the Subject Property for brief periods during migration or forays from adjacent breeding sites, suitable breeding sites within the Subject Property are absent.	--
Tufted Titmouse (*Baeolophus bicolor*)	S3B	OBBA	• Breeds in deciduous woods or mixed evergreen-deciduous woods, typically in areas with a dense canopy and many tree species. • May also occupy orchards, parks, and suburban areas.	**Possible.** One singing male was detected approximately120 m east of the Subject Property during breeding bird survey on 5 June 2022; species is considered a "possible" breeder within the Study Area.	**Negligible.** General area in which this species was detected is a considerable distance from the limit of development.

Species	Status per O. Reg. 230/08 under the ESA and/or NHIC	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy or Use within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Study Area	Likelihood that Negative Effects to the Species or its Habitat (i.e., "degradation that threatens the health and integrity" as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities
Wood Thrush (*Hylocichla mustelina*)	SC	OBBA	• Breeds and forages in second-growth and mature deciduous and mixed forests with a well-developed understory.	**Negligible.** Suitable breeding habitat is present within the Study Area, however, no birds were detected during breeding bird surveys in 2022. Species was also not documented during breeding bird surveys on Adjacent Lands to the east as part of an EIS for 8100 McLeod Road.	--
Fish					
Grass Pickerel (*Esox americanus*)	SC	DFO, NHIC	• Occupies wetlands, ponds, slow-moving streams and shallow bays of larger lakes with warm, shallow, clear water and an abundance of aquatic plants.	**Negligible.** Suitable habitat is absent from the Study Area.	--
Greater Redhorse (*Moxostoma valenciennesi*)	S3	NHIC	• Occupies clear, relatively fast-moving rivers and in both shallow and deep waters in some lakes.	**Negligible.** Suitable habitat is absent from the Study Area.	--
Spotted Sucker (*Minytrema melanops*)	S3	DFO	• Occupies clear creeks and small to moderate sized rivers with sand, gravel or hard-clay bottoms, usually free of silt.	**Negligible.** Suitable habitat is absent from the Study Area.	--
Insects					
American Bumble Bee (*Bombus pensylvanicus*)	SC	Species distribution and on-site habitats	• Occupies a range of open areas with nectaring sites. • Nests above ground in dense mats of long grasses but has also been known to nest in abandoned rodent burrows and bird nests high above the ground.	**Possible.** Species is a habitat generalist and occupies a wide range of areas.	**Negligible.** Proposed development and disturbance are restricted to a partially maintained rear-yard area. Proposed development and disturbance will not adversely affect nectaring opportunities for this species.
Monarch (*Danaus plexippus*)	SC	Ont. Butterfly Atlas	• Oviposits on Milkweeds (*Asclepias* spp.). • Generalist foraging that nectars in most areas with wildflowers.	**Possible.** Ovipositing sites (i.e., species in the genus *Asclepias*) are present, and species may forage on the Subject Property.	**Negligible.** Proposed development and disturbance are restricted to a partially maintained rear-yard area. Proposed development and disturbance will not adversely affect nectaring opportunities for this species.
Pink-legged Tiger Moth (*Spilosoma latipennis*)	S3S4	iNaturalist	• The larvae feed on various plants, including ash trees, dandelions, impatiens, and plantain.	**Possible.** Species is a habitat generalist and occupies a wide range of areas.	**Negligible.** Proposed development and disturbance will not adversely affect habitat and host plant availability in the local landscape.
Yellow Banded Bumble Bee (*Bombus terricola*)	SC	Species distribution and on-site habitats	• Occupies a range of open areas with nectaring sites. • Nests underground in abandoned rodent burrows or decomposing logs.	**Possible.** Species is a habitat generalist and occupies a wide range of areas.	**Negligible.** Proposed development and disturbance will not adversely affect nectaring opportunities for this species.
Mammals					
Woodland Vole (*Microtus pinetorum*)	SC	Species distribution and on-site habitats	• Occupies deciduous forests in areas of soft, friable, often sandy soil beneath deep humus to facilitate burrowing.	**Negligible.** Suitable habitat is absent from the Study Area.	--
Plants					
Black Tupelo (*Nyssa sylvatica*)	S3	iNaturalist	• Occupies moist or dry woods and savannas.	**Negligible.** Not detected during vascular plant surveys in 2022.	--

Species	Status per O. Reg. 230/08 under the ESA and/or NHIC	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy or Use within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Study Area	Likelihood that Negative Effects to the Species or its Habitat (i.e., "degradation that threatens the health and integrity" as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities
Common Pawpaw (*Asimina triloba*)	S3	iNaturalist	• Occupies rich, moist deciduous woods often on floodplains.	**Negligible.** Not detected during vascular plant surveys in 2022.	--
Fox Grape (*Vitis labrusca*)	S1	Species distribution and on-site habitats	• Inhabits forest edges, forests, meadows and fields, shores of rivers or lakes.	**Negligible.** Not detected during vascular plant surveys in 2022.	--
Hairy Green Sedge (*Carex hirsutella*)	S3	iNaturalist	• Occupies dry, open woods and old fields.	**Negligible.** Not detected during vascular plant surveys in 2022.	--
Lizard's-tail (*Saururus cernuus*)	S3	iNaturalist	• Occupies edges of streams and rivers, and in low wet woods	**Negligible.** Not detected during vascular plant surveys in 2022.	--
Weak Stellate Sedge (*Carex seorsa*)	S2	iNaturalist	• Occupies moist, acidic woods growing around the edges of woodland pools.	**Negligible.** Not detected during vascular plant surveys in 2022.	--
Willdenow's Sedge (*Carex willdenowii*)	S1	iNaturalist	• Occupies moist clay woods, woodland openings, and meadows.	**Negligible.** Not detected during vascular plant surveys in 2022.	--
Reptiles					
Northern Map Turtle (*Graptemys geographica*)	SC	iNaturalist	• Occupies lakes and large rivers with slow moving currents. • Nests in exposed, usually coarse, friable substrate.	**Negligible.** Suitable habitat is absent from the Study Area.	--
Snapping Turtle (*Chelydra serpentina*)	SC	iNaturalist, Ont. Herp Atlas	• Occupies a variety of aquatic habitats with slow moving water. • Nests in exposed, usually coarse, friable substrate. • Known to make long-distance overland movements (i.e., several kilometers) between habitats.	**Negligible.** Suitable habitat is absent from the Study Area.	--

[1] Likelihood categories should be interpreted as follows:

Negligible: so limited that the assessed species can be assumed absent.

Unlikely: while theoretically conceivable, species presence very improbable or temporary based on available information (e.g., habitat conditions, range, abundance in local landscape, etc.).

Possible: species presence plausible based on available information; no convincing evidence suggesting species could not occur on-site.

Probable: while not confirmed, available information suggests species has a high likelihood of being present.

Confirmed: species observed and/or evidence of occupation (e.g., tracks, etc.) documented.

Appendix 7. Endangered and Threatened Species Assessment

Species	Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Study Area	Likelihood that Negative Effects to the Species or its Habitat (i.e., "Damage" or "Destruction" as defined in the ESA) will occur based on the Proposed Development Plan and any related Site Alteration Activities
Amphibians					
Allegheny Mountain Dusky Salamander (Carolinian) (*Desmognathus ochrophaeus*)	END	Ont. Herp Atlas, iNaturalist	• Occupies small, forested streams, springs, seeps, and adjacent areas. • Nesting areas include underground cavities close to seeps, or in shallow depressions in moist soil beneath logs, stones, moss, leaf litter, or stumps. • Usually absent from larger streams with predatory fish.	**Negligible.** Suitable breeding habitat is absent from the Subject Property.	--
Jefferson Salamander (*Ambystoma jeffersonianum*) and Unisexual Salamander	END	Critical Habitat for Species at Risk National Dataset - Canada	• Generally found in deciduous and mixed forests adjacent to breeding areas. • Breeding areas include woodland vernal pools and ponds.	**Negligible.** Suitable breeding habitat is absent from the Subject Property.	
Northern Dusky Salamander (Carolinian Population) (*Desmognathus fuscus*)	END	Ont. Herp Atlas, iNaturalist	• Occupies small groundwater fed streams, seeps, springs, and adjacent areas. • Often found beneath cover objects such as rocks, decaying logs, or leaf litter.	**Negligible.** Suitable breeding habitat is absent from the Subject Property.	--
Birds					
Acadian Flycatcher (*Empidonax virescens*)	END	OBBA	• Breeds and forages in mature, relatively undisturbed deciduous forest and swamps, often in valleys/ravines.	**Negligible.** Suitable breeding habitat is absent from the Study Area. Not detected during breeding bird surveys in 2022.	--
Bank Swallow (*Riparia riparia*)	THR	Species distribution and on-site habitats	• Nests in natural or anthropogenically derived exposed, sandy substrates on vertical or steep surfaces. • Forages in a variety of open areas including agricultural lands, meadows, prairies, woodland clearings, marshes, and above waterbodies.	**Negligible.** While this species may forage over open areas on the Subject Property for brief periods during migration or forays from adjacent breeding sites, suitable breeding sites within the Subject Property are absent. Not detected during breeding bird surveys in 2022.	--
Bobolink (*Dolichonyx oryzivorus*)	THR	OBBA	• Breeds and forages in hayfields, pastures, meadows, grasslands, and prairies which are often (but not always) greater 4 ha. • May be found in more marginal habitats (e.g., shrubby fields, smaller fields, etc.) during migration or following disturbance to breeding habitats (e.g., hay cutting).	**Negligible.** Suitable breeding habitat is absent from the Subject Property.	--
Chimney Swift (*Chaetura pelagica*)	THR	OBBA	• Nests in large, uncapped chimneys and (historically) tree cavities. • May forage above a wide variety of anthropogenic (e.g., cities, towns) and natural (e.g., fields, forests) areas.	**Negligible.** While this species may forage over open areas on the Subject Property for brief periods during migration or forays from adjacent breeding sites, suitable breeding sites within the Subject Property are absent. Not detected during breeding bird surveys in 2022.	--
Eastern Meadowlark (*Sturnella magna*)	THR	OBBA	• Breeds and forages in hayfields, savannahs, pastures, meadows, grasslands, prairies, and shrubby fields.	**Negligible.** Suitable breeding habitat is absent from the Subject Property.	--
Eastern Whip-poor-will (*Caprimulgus vociferus*)	THR	Species distribution and on-site habitats	• Breeds and forages in semi-open deciduous forests and thickets, and their edges.	**Negligible.** Suitable breeding habitat is absent from the Subject Property. Eastern Whip-poor-will's range has retracted from most of Southern Ontario; in	--

Species	Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Study Area	Likelihood that Negative Effects to the Species or its Habitat (i.e., "Damage" or "Destruction" as defined in the ESA) will occur based on the Proposed Development Plan and any related Site Alteration Activities
				Niagara, this species is generally restricted to Wainfleet Bog.	
Henslow's Sparrow (*Ammodramus henslowii*)	END	Species distribution and on-site habitats	• Breeds and forages in hayfields, pastures, meadows, and wet meadows.	**Negligible.** Historically widespread in Southern Ontario, Henslow's Sparrow has undergone severe decline since 1960s and is absent from most historic locations. Suitable breeding habitat is absent from the Subject Property.	--
Northern Bobwhite (*Collinus virginianus*)	END	NHIC	• Breeds and forages in savannahs, grasslands, around abandoned farm fields, along brushy fencerows.	**Negligible.** Historically widespread in Ontario, the only native breeding population is now restricted to southwestern Ontario (Walpole Island). Not detected during breeding bird surveys in 2022.	--
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	END	NHIC	• Breeds and forages in open forests, savannahs, and forest edges that tend to contain large, mature trees.	**Unlikely.** Suitable habitat is present on Adjacent Lands east of the Subject Property. Species was also not documented during breeding bird surveys on Adjacent Lands to the east as part of an EIS for 8100 McLeod Road. Not detected during breeding bird surveys in 2022.	--
Yellow-breasted Chat (*Icteria virens*)	END	Species distribution and on-site habitats	• Breeds and forages in prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	**Unlikely.** Suitable habitat is present on Adjacent Land east of the Subject Property. Species was also not documented during breeding bird surveys on Adjacent Lands to the east as part of an EIS for 8100 McLeod Road. Not detected during breeding bird surveys in 2022.	--
Insects					
Nine-Spotted Lady Beetle (*Coccinella novemnotata*)	END	Species distribution and on-site habitats	• Occupies a range of open natural areas, including gardens, parks, meadows and agricultural areas. • Distribution is driven by prey availability, typically feeding on aphids which colonize crops and orchards.	**Negligible.** Nine-Spotted Lady Beetle has not been documented in Ontario since 1987. Additionally, the prevalence of non-suitable plants on the site suggests that aphid densities necessary to support the species may not be present.	--
Rusty-patched Bumble Bee (*Bombus affinis*)	END	Species distribution and on-site habitats	• Occupies a range of open areas with nectaring sites. • Nests underground in abandoned rodent burrows or decomposing logs.	**Negligible.** Most records in Ontario are historical (before 1970). The species was last observed from Pinery Provincial Park in 2009 per the provincial Recovery Strategy.	--
Mammals					
Eastern Small-footed Myotis (*Myotis leibii*)	END	Species distribution and on-site habitats	• Maternal roosting sites include exposed rock outcrops, crevices, and cliffs. • Overwinters in caves and mines that maintain temperatures above 0°C.	**Unlikely.** While this species may forage above open habitats on the Subject Property or adjacent lands, potential maternal roosting habitat (e.g., rock outcrops, cliffs, etc.) is absent.	--
Little Brown Myotis (*Myotis lucifugus*)	END	Species distribution and on-site habitats	• Maternity roosts sites most often include buildings and large diameter trees with cracks, crevices, and/or exfoliating bark. • Overwinters in caves and mines that maintain temperatures above 0°C.	**Possible.** While species may forage above open habitats on the Subject Property suitable maternity and non-specific roosting habitat (i.e., "day roosts") are absent. Swamp/woodland communities are present on	**Negligible.** No tree removal is proposed within forest/woodland or treed swamp communities that exhibit the greatest potential to support maternity roosting. A timing window restriction is applied to

Species	Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Study Area	Likelihood that Negative Effects to the Species or its Habitat (i.e., "Damage" or "Destruction" as defined in the ESA) will occur based on the Proposed Development Plan and any related Site Alteration Activities
				Adjacent Lands (within 120 m) which could provide roosting opportunities for maternity colonies of this species within larger-diameter snags, cavity trees, or trees with cracks/crevices/loose bark.	necessary tree removal activities within the conifer plantation to avoid impacting roosting bats. Additional mitigation measures for construction and detailed design are also provided. See report for greater details.
Northern Myotis (*Myotis septentrionalis*)	END	Species distribution and on-site habitats	• Maternity roosts most often include large diameter trees with cracks, crevices, and/or exfoliating bark (buildings rarely used). • Overwinters in caves and mines that maintain temperatures above 0°C.	**Possible.** While species may forage above open habitats on the Subject Property suitable maternity and non-specific roosting habitat (i.e., "day roosts") are absent. Swamp/woodland communities are present on Adjacent Lands (within 120 m) which could provide roosting opportunities for maternity colonies of this species within larger-diameter snags, cavity trees, or trees with cracks/crevices/loose bark.	**Negligible.** No tree removal is proposed within forest/woodland or treed swamp communities that exhibit the greatest potential to support maternity roosting. A timing window restriction is applied to necessary tree removal activities within the conifer plantation to avoid impacting roosting bats. Additional mitigation measures for construction and detailed design are also provided. See report for greater details.
Tri-colored Bat (*Perimyotis subflavus*)	END	Species distribution and on-site habitats	• Maternal roosting sites include Maple (*Acer* spp.) and Oak (*Quercus* spp.) with dead/dying leaf clusters. • Overwinters in caves and mines that maintain temperatures above 0°C.	**Unlikely.** While species may forage above open habitats within the Study Area, maple and oak trees are found in limited quantity. This species is rare in the local landscape and southern Ontario more generally.	--
Mussels					
Eastern Pondmussel (*Ligumia nasuta*)	END	NHIC	• Occupies sheltered areas of lakes or slow streams in substrates of fine sand and mud.	**Negligible.** Suitable habitat is absent from the Study Area.	--
Round Hickorynut (*Obovaria subrotunda*)	END	NHIC	• Occupies rivers with clay, sand, or gravel bottoms.	**Negligible.** Suitable habitat is absent from the Study Area.	--
Plants					
American Ginseng (*Panax quinquefolius*)	END	Critical Habitat for Species at Risk National Dataset - Canada	• Occupies rich, relatively undisturbed deciduous forests.	**Negligible.** Species not documented during vascular plant surveys.	--
Black Ash (*Fraxinus nigra*)	END	Species distribution and on-site habitats	• Occupies deciduous swamps (often peaty), floodplains, and wet woods.	**Negligible.** Species not documented during vascular plant surveys.	--
Butternut (*Juglans cinerea*)	END	Species distribution and on-site habitats	• Occupies a variety of treed habitats including mature forests, early-successional forests, and hedgerows.	**Confirmed.** One small Butternut (1 cm DBH) was observed in the woodland along the western boundary of the Subject Property.	The individual documented is recommended to be reassessed as a condition of draft plan approval. If the Butternut is found to be "retainable", the development application must be supported by an activity registration (either O. Reg. 242/08 or O. Reg. 830/21). See report for more details.
Deerberry (*Vaccinium stamineum*)	THR	NHIC	• Occupies dry open woods on sandy and well-drained soils growing under beneath Oak (*Quercus* spp.) and Pine (*Pinus* spp.).	**Negligible.** Species not documented during vascular plant surveys.	--
Eastern Flowering Dogwood (*Cornus florida*)	END	Species distribution and on-site habitats	• Dry (usually with Oak) to rich deciduous forests, often on hillsides and river banks.	**Negligible.** Species not documented during vascular plant surveys.	--

Species	Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Study Area	Likelihood that Negative Effects to the Species or its Habitat (i.e., "Damage" or "Destruction" as defined in the ESA) will occur based on the Proposed Development Plan and any related Site Alteration Activities
Goldenseal (*Hydrastis canadensis*)	THR	Critical Habitat for Species at Risk National Dataset - Canada	• Occupies rich deciduous forests.	**Negligible.** Species not documented during vascular plant surveys.	--
Round-leaved Greenbrier (*Smilax rotundifolia*)	THR	NHIC	• Occupies open moist to wet woodlands, often growing on sandy soil.	**Negligible.** Species not documented during vascular plant surveys.	--
Spoon-leaved Moss (*Bryoandersonia illecebra*)	END	Species distribution and on-site habitats	• Occupies moist or low-lying areas that are seasonally flooded under trees or shrub thickets. • May be found in a variety of vegetation communities including disturbed open woodlands, cultural thicket, savannah, and meadow.	**Negligible.** Species not documented during vascular plant surveys.	--
White Wood Aster (*Eurybia divaricata*)	THR	Species distribution and on-site habitats	• Occupies open, dry deciduous forests.	**Negligible.** Species not documented during vascular plant surveys.	--
Reptiles					
Spotted Turtle (*Clemmys guttata*)	END	Critical Habitat for Species at Risk National Dataset - Canada	• Occupies ponds, marshes, bogs and ditches with slow-moving water. • Nests in exposed, usually coarse, friable substrate.	**Negligible.** Suitable habitat is absent from the Subject Property.	--
Wood Turtle (*Clemmys insculpta*)	END	Critical Habitat for Species at Risk National Dataset - Canada	• Occupies clear rivers, streams or creeks with a slight current and sandy or gravelly bottom. • Often feeds in upland areas adjacent to streams. • Nests in exposed, usually coarse, friable substrate.	**Negligible.** Suitable habitat is absent from the Subject Property.	--

[1] Likelihood categories are to be interpreted as follows:

Negligible: so limited that the assessed species can be assumed absent.

Unlikely: while theoretically conceivable, species presence very improbable or temporary based on available information (e.g., habitat conditions, range, abundance in local landscape, etc.).

Possible: species presence plausible based on available information; no convincing evidence suggesting species could not occur on-site.

Probable: while not confirmed, available information suggests species has a high likelihood of being present.

Confirmed: species observed and/or evidence of occupation (e.g., tracks, etc.) documented.

Appendix 8. Proposed Development Plan.

ZONING MATRIX

PROVISION	ZONING (R4)	PROVIDED
MIN. LOT FRONTAGE	30m for townhouse dwelling containing more than 4 units, 24m for townhouse dwelling containing 4 units or less on an interior lot, 25.5m for townhouse dwelling containing 4 units or less on a corner lot.	41.72m
MIN LOT AREA	250m² per dwelling unit	359m²/DWELLING UNIT
MIN. FRONT YARD	6m plus any applicable distance specified in section 4.27.1	4.5m
MIN. INTERIOR SIDE YARD	one-half the height of the building	5.0m
MIN EXTERIOR SIDE YARD	4.5m plus any applicable distance specified in section 4.27.1	N/A
MIN REAR YARD	7.5m plus any applicable distance specified in section 4.27.1	35.63m
MAX. BUILDING HEIGHT	10m (32.81ft) subject to section 4.27	10m
MAX LOT COVERAGE	35%	21.27%
MINIMUM LANDSCAPED OPEN SPACE	45m² per dwelling unit	150m² per dwelling unit

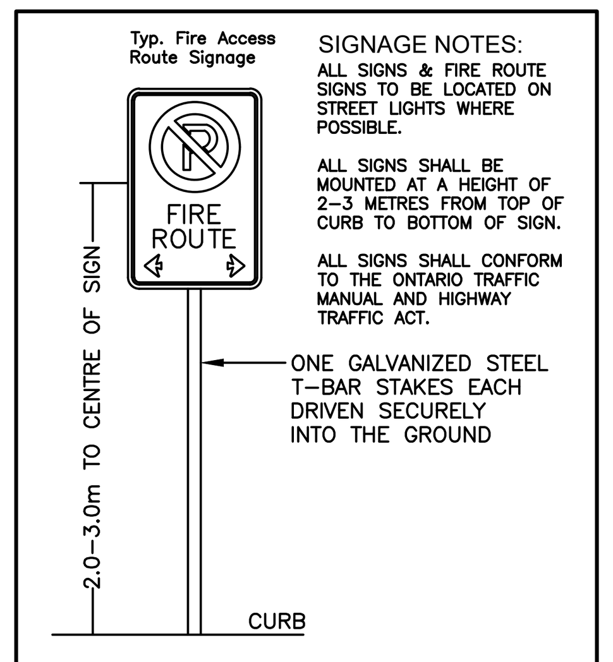
LAND USE SCHEDULE

LAND USE	LOT/BLOCK	# OF UNITS	AREA(ha)	AREA(%)
TOWNHOUSES/ACCESSORY DWELLING UNIT		18	0.172	21.27
PARKING LOT AND ROAD			0.173	21.39
DRIVEWAY			0.03	3.72
EPA LANDS			0.15	3.72
LANDSCAPE			0.27	51.93
3.0m ROAD WIDENING			0.012	1.48
TOTAL		18	0.809	100.00

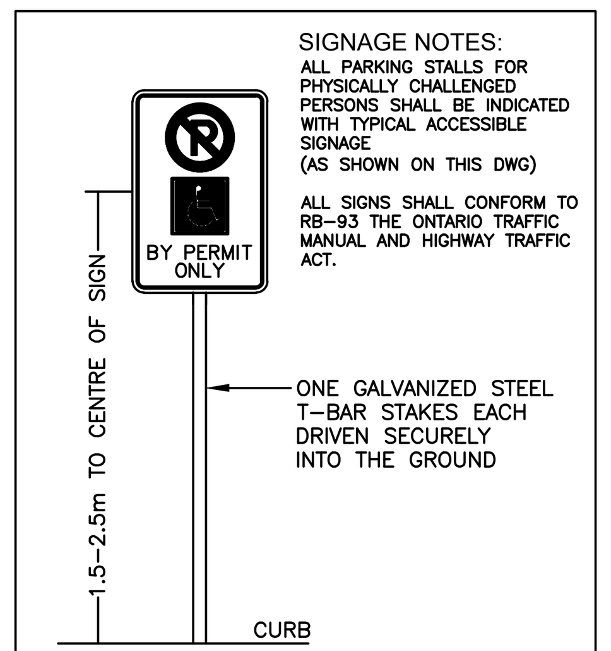
DEVELOPABLE AREA = 0.647ha
EPA AREA (NON DEVELOPABLE) = 0.15ha
DEVELOPABLE DENSITY = 27.82 units/ha (NOT INCLUDING ACCESSORY DWELLING UNIT)

PARKING REQUIREMENTS:

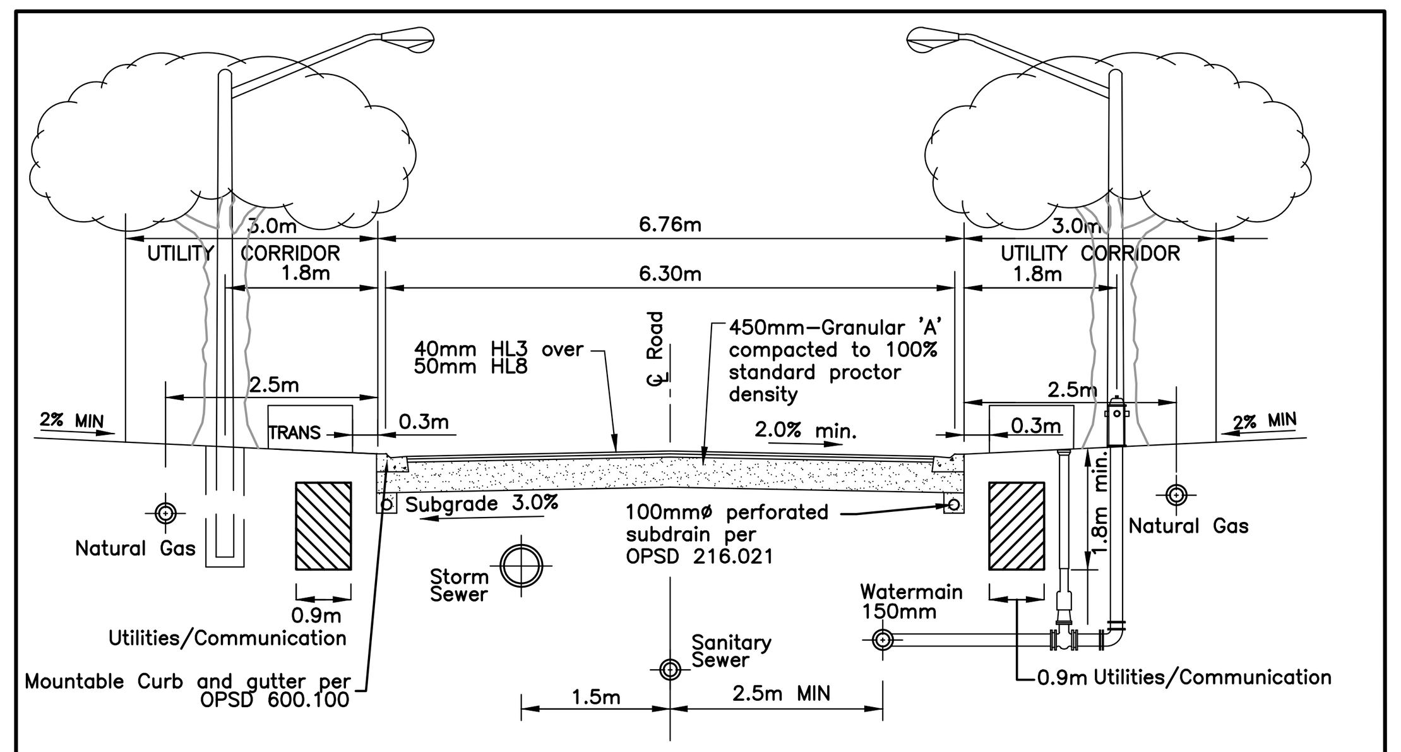
1.4 SPACE PER TOWNHOUSE UNIT = 25 SPACES REQUIRED
1.0 SPACE PER ACCESSORY DWELLING UNIT = 18
TOTAL PARKING SPACES REQUIRED 43 SPACES
TOTAL PARKING SPACES PROVIDED 44



FIRE ROUTE PARKING SIGN DETAIL
NTS



ACCESSIBLE PARKING SIGN DETAIL
NTS

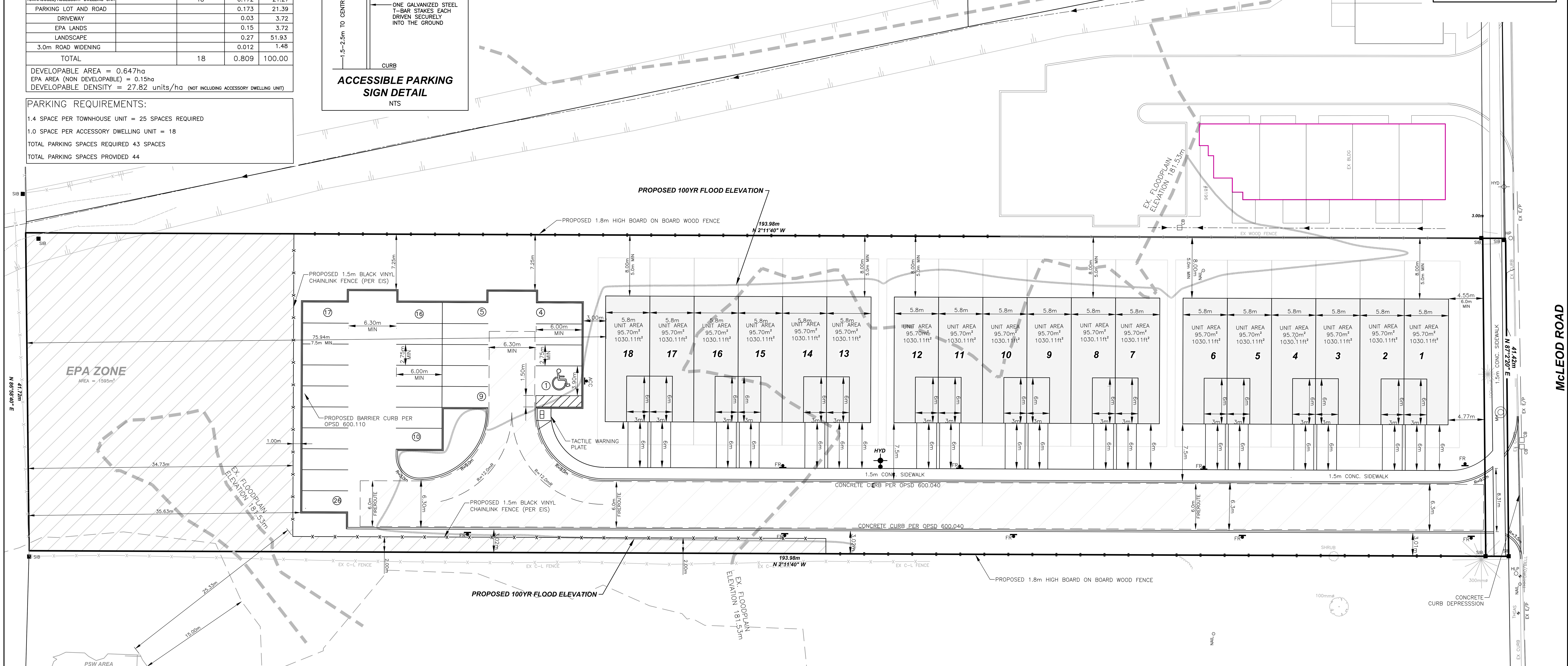


TYPICAL ROAD SECTION
N.T.S.

KEY PLAN
N.T.S.

LEGAL DESCRIPTION

PART OF TOWNSHIP LOT 179
GEOGRAPHIC TOWNSHIP OF STAMFORD
NOW IN THE
CITY OF NIAGARA FALLS
REGIONAL MUNICIPALITY OF NIAGARA



NOTES:

1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER, AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION MUST COMPLY WITH THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENT.

#	REVISION	DATE	INIT
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0	ISSUED FOR	YYYY–MM–DD	.

DRAFTING	M.C.
DESIGN	A.K.
CHECKED BY	J.S.
APPROVED BY	––

LOTUS LAND DEVELOPMENT CORP.
95 TYCOPS DRIVE
TORONTO ON
M6B 1W3

UPPER CANADA CONSULTANTS
ENGINEERS / PLANNERS

8168 MCLEOD ROAD
CITY OF NIAGARA FALLS
PRELIMINARY SITE PLAN

CONSULTANT FILE No.	2232
DATE	2024–01–19
PRINTED	2024–01–19
SCALE	1:250 m
REF No.	.
DWG No.	2232-SP
REV	

DRAWING FILE: F:\2232\Engineering\2232–BASE 5JUN 19.DWG PLOTTED: Jan 19, 2024 – 10:10am PLOTTED BY: MCook

Appendix 9. Summary of Technical Recommendations

Natural Feature	Technical Recommendations (per Section 5 of report)
Provincially Significant Wetland, Significant Woodland, and Ecological Corridor/Linkage	● An Ecological Corridor and Buffer Enhancement Plan will be prepared as a condition of draft plan approval and will include the following elements (minimum): ● Native plantings will be installed in the "Ecological Corridor and Enhancement Area" and "Wetland Buffer Enhancement Area" (see **Figure 3**) incorporating a diversity of trees and shrubs ● Restoration planting areas will be treated as "natural, self-sustaining vegetation" (no mow), with existing vegetation to be retained. ● Specifications related to removal of existing surficial gravel within the "Ecological Corridor and Enhancement Area" and replacement with topsoil. ● Removal of existing fencing along the western and eastern property boundaries within the "Ecological Corridor and Enhancement Area" and "Wetland Buffer Enhancement Area". ● Installation of permanent fencing at the northern limit of the "Ecological Corridor and Enhancement Area" and "Wetland Buffer Enhancement Area" (see **Figure 3**). ● Removal of litter, debris, and any other built structures within the enhancement areas. ● An Erosion and Sediment Control Plan will be prepared at detailed design.
Significant Wildlife Habitat	● Potential for impacts will be addressed through full implementation of other overlapping mitigation measures.
Habitat of Endangered and Threatened Species	● If construction activities occur during the active bat season (i.e., April 1 and September 30), work will be restricted to daylight hours only and the use of artificial lighting will be avoided. ● Any lighting incorporated into the final building designs should be directed downward (i.e., towards the ground) and/or away from the adjacent woodlot (i.e., directed southward) to the extent practicable. ● A formal Butternut Health Assessment will be completed as a condition of draft plan approval. ● If the Butternut is confirmed to be "retainable", grading and other site alteration activities should be restricted from the rooting zone of the Butternut to the extent practicable. ● If the Butternut is confirmed to be "retainable", an activity registration under O. Reg. 830/21 must occur prior to development activities adjacent to the Butternut.
Fish Habitat	● Potential for impacts will be addressed through full implementation of other overlapping mitigation measures.
Other Natural Environment Considerations	● All necessary vegetation removal (e.g., trees, meadow vegetation, etc.) will be completed outside the primary bird nesting period (i.e., to be completed between September 1 and March 31). Should minor vegetation removal be proposed during the bird nesting period, a bird nesting survey will be undertaken to confirm the presence or absence of nesting birds or bird nests within or adjacent to the areas subject to vegetation clearance. The survey is to take place within 48 hours of vegetation removal. ● Incorporation of Bird-Friendly Guidelines into the residence design such as those published in City of Toronto's "Best Practices for Bird-Friendly Glass" and "Best Practices for Effective Lighting" should be considered at detailed design. ● Any Landscape Plans prepared as part of the development approval should incorporate species native to the local landscape.