ENVIRONMENTAL IMPACT STATEMENT

Zoning By-law Amendment Application

1544 &1546 Four Mile Creek Road, Niagara-on-the-Lake

16 April 2025

TERRASTORY
environmental consulting inc.

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Prepared for:

Times Group Corp.
976 Four Mile Creek Road
Niagara-on-the-Lake ON L0S 1J0

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Project No.: 23231
16 April 2025

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1 INTRODUCTION

1.1 Study Background

Terrastory Environmental Consulting Inc. (hereinafter "Terrastory") was retained by the Times Group Corporation (hereinafter "Applicant") to prepare this Environmental Impact Study (EIS) in connection with a Zoning By-law Amendment (ZBA) application at 1544 & 1546 Four Mile Creek Road (hereinafter "Subject Property") in Virgil (Town of Niagara-on-the-Lake). The Subject Property is bounded by Four Mile Creek Road (east), a residential parcel at 1536 Four Mile Creek Road (south), the Lower Virgil Reservoir (west), and a wooded valleyland (north). The Subject Property contains gravel parking areas, two (2) buildings, manicured lawn, and planted specimen trees (some comprising hedgerows), and is generally surrounded by low-density residential/commercial developments and agricultural lands. The Subject Property also borders a treed valleyland associated with Four Mile Creek extending below the Virgil dam (i.e., Lower Virgil Reservoir). The location of the Subject Property and Study Area (i.e., lands within 120 m of the Subject Property on the west side of Four Mile Creek Road) within their broader landscape setting is shown in **Figure 1**.

The Subject Property is contained within a designated settlement area ("Delineated Built-up Area") per Schedule B (Regional Structure) of the Niagara Official Plan (NOP), also occurring within the "Towns / Villages" overlay of the "Protected Countryside" designation of the Greenbelt Plan. The Subject Property is primarily designated "Service Commercial" per Schedule C (Land Use Plan) under the Town's Official Plan (OP) with the adjacent treed valleyland and Virgil Dam and Reservoir (to the west) designated "Conservation". The Subject Property is further zoned "Village Commercial – Holding" (VC-H) under Schedule A-14 of the Town's Zoning By-law (No. 4316-09), with the treed valleyland zoned "Open Space", that includes "Woodland" and "NPCA Regulation Area" under the Town's "Environmental Conservation Zone & Overlay".

Significant natural heritage features mapped within the Subject Property under Schedule C2 (Natural Environment System – Individual Components and Features) of the NOP include:

- An **Other Woodland** mapped along the valley slope, also shown as **Woodland** under Schedule A-14 of the Town's Zoning By-law.
- A unit associated with the **Evaluated (non-significant) Virgil Conservation Area Wetland Complex** also mapped from the valleyland to the north/northwest.

The Applicant is requesting the removal of the Holding Provision facilitate the construction of a two-storey commercial building, four-storey residential building, associated surface and underground parking areas, internal access road, and landscaped/amenity space. The need for this EIS was specified in Town/Regional comments stemming from an 18 April 2024 pre-consultation meeting and associated Pre-consultation Agreement. A Terms of Reference (ToR) which scopes the conduct and content of this study was prepared by Terrastory and confirmed via email by Regional Environmental Planning staff (A. Boudens, Senior Environmental Planner / Ecologist) on 11 April 2025. 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 Study Area 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 development. The scope and approach of this study address the reporting requirements of **Appendix 1**, Schedule J (Schedule for Complete Application) of the Town's OP, Regional EIS Guidelines (January 2018), and NPCA's Interim EIS Guideline (July 2022). It is understood that this report will form part of the ZBA package to be submitted for consideration by the Town, 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 a site assessment 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	• 1954, 2009, 2013, 2015 to 2018, 2020, 2023.
Natural Feature Mapping	• Town of Niagara on the Lake Official Plan (amended July 2017) Schedule C. • Niagara Official Plan (May 2024 office consolidation) Schedules B, C1, and C2. • Land Information Ontario (LIO) accessed via the "Make a Map: Natural Heritage Areas" web-based platform (last accessed 5 March 2025). • Niagara Peninsula Conservation Authority (NPCA) regulation mapping (last accessed 5 March 2025).
Physiographic Resource Mapping and Datasets	• Topographic Survey of the Subject Property. • Ontario Base Mapping produced by MNR (1:10,000) with 5 m contours. • 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 5 March 2025).

Type of Information Acquired	Description
	• 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).
Ecological Resource Mapping and Datasets	• Natural Heritage Information Centre (NHIC) database accessed via the "Make a Map: Natural Heritage Areas" web-based platform (squares: 17PH5385, 17PH5285, 17PH5185, 17PH5386, 17PH5286, 17PH5186, 17PH5387, 17PH5287, 17PH5187; last accessed 5 March 2025). • Critical Habitat for SAR National Dataset (last accessed 5 March 2025). • iNaturalist "(NHIC) Rare species of Ontario" project (last accessed 5 March 2025). • Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005 (Cadman et al. 2007), along with OBBA 3 (2021-2023) existing data from the Birds Canada-NatureCounts database (square: 17PH58). • eBird (last accessed 5 March 2025). • iNaturalist "Herps of Ontario" project and Ontario Reptile & Amphibian Atlas (last accessed 5 March 2025). • Ontario Butterfly Atlas database (square: 17NH58; last accessed 5 March 2025). • iNaturalist "Ontario Odonata" project (last accessed 5 March 2025). • Bumble Bee species distribution maps from iNaturalist and Bumble Bee Watch. • Aquatic Species at Risk Maps produced by Fisheries and Oceans Canada (last accessed 5 March 2025). • Atlas of the Mammals of Ontario (Dobbyn 2005). • Flowing Waters Information System (FWIS) Database (last accessed 5 March 2025). • MNRF Fish ON-line database maintained by MNRF (last accessed 5 March 2025).

2.2 Site Assessment and Surveys

The acquired background information per **Table 1** helped direct several site assessments carried out by Terrastory staff in 2024 and 2025. **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
12 January 2024	Preliminary dripline and top of bank staking	T. Knight	Cold	13:30 to 14:30
07 August 2024	Dripline and physical top of bank staking with Region and NPCA staff	T. Knight	Warm	10:00 to 11:00
17 July 2024	Tee inventory, vegetation survey, ELC	J. Consiglio	Air temperature: 24-33°C, Beaufort wind 2, cloud cover 30-25-50%, no precipitation.	09:10 to 15:00

Date of Site Assessment	Assessments/Surveys Performed	Terrastory Staff	Weather Conditions	Time On-site
14 February 2025	Updated dripline staking with Region staff	T. Knight	Cold	11:00 to 12:00
11 March 2025	Site verification	C. Wegenschimmel	Air temperature: 10-12°C, Beaufort wind 0-2, cloud cover 30-0%, no precipitation.	10:30-12:00

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, west of Four Mile Creek Road). In addition to assessing natural areas, the exterior surfaces of existing built structures were visually inspected for their potential to provide wildlife habitat (e.g., nesting sites for birds). 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:

- **Tree Inventory and Health Assessment:** Trees were inventoried and assessed by Terrastory's ISA-certified Arborist. All private trees 10 cm diameter at breast height (DBH) or greater and all municipal trees regardless of size (if present), located within or immediately adjacent to the proposed area of disturbance (e.g., building envelopes, grading, servicing etc.), were inventoried and assessed from the ground. Trees situated on adjacent private properties near the proposed areas of disturbance were reviewed as necessary and to the extent possible from areas in which access was granted. All assessed trees were: (1) labeled using metal number-stamped tags, (2) identified to species, (3) measured at breast-height (approximately 1.37 metres above ground) with calipers and/or DBH tape, (4) assessed for crown diameter, and (5) assessed for risk features, indicators of decline, and growth constraints (e.g., open wounds, live crown ratio, disease, etc.). The tree health and structural assessment was undertaken consistent with accepted arboricultural techniques. None of the assessed trees were cored, probed, or climbed, nor were their roots exposed for detailed assessment. As the tree inventory was undertaken during leaf-off, certain indicators of tree health and structural integrity (e.g., live crown ratio, etc.) could not be assessed.
- **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.

- **Woodland Boundaries:** A dripline staking of the wooded area was initially performed on 12 January 2024 with Regional Environmental Planning staff (A. Boudens) and was further verified/updated on 07 August 2024 (under leaf-on conditions) and 14 February 2025 (following recent and approved site remediation works).
- **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.

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 a development application is proposed. The Greenbelt Plan (p. 10) directs as follows for lands within a designated settlement area (i.e., "Towns/Villages"):

> *Generally, this Plan does not apply to lands within the boundaries of Towns/Villages and Hamlets. Official plans will continue to govern land use within these settlement areas based on policy direction provided by the Growth Plan.*

On this basis, significant natural features are defined herein to include those referenced in Section 4.1 of the 2024 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 Town and Regional environmental designations and in particular the Regional Natural Environment System (NES). Notwithstanding this, NOP Section 3.1.9 provides provisions that consider and/or protect additional natural features beyond the requirements of the PPS where they occur outside of the Provincial Natural Heritage System (NHS) and/or within designated Settlement Areas. The potential presence of these regionally/locally significant features are also considered herein and include:

- Other Wetlands;

- Other Woodlands;
- Regionally Significant ANSIs;
- Permanent and Intermittent Streams;
- Inland Lakes and their Littoral Zones; and
- Supporting Features and Areas (Section 3.1.15 of the NOP), Enhancement Areas (Section 3.1.16 of the NOP), and Linkages (Section 3.1.17 of the NOP).

Definitions for the above regionally/locally significant natural features can be found in Schedule L (Natural Environment System: Components, Definitions, and Criteria) of the NOP. 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 Town's OP, NOP, Natural Heritage Reference Manual (MNR 2010), and (for Significant Wildlife Habitat) the Ecoregion 7E Criteria Schedule (MNRF 2015).

Apart from Greenbelt Plan- and OP-derived significant natural features, this study also seeks to determine whether any natural features or hazards regulated by NPCA pursuant to O. Reg. 41/24 occur within the Subject Properties 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
- 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 site assessment, the data was interpreted to determine whether any significant natural features (as defined above), natural features/hazards regulated by NPCA, and/or significant species occur on 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**.

Table 3. Applicable Natural Heritage Policies.

Level of Government	Natural Heritage or Environmental Policy Requirements
Municipal	Town of Niagara on the Lake Official Plan (amended July 2017). Niagara Official Plan (May 2024 office consolidation).
Provincial	Provincial Planning Statement 2024, 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 41/24 – Prohibited Activities, Exemptions, and Permits. • NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act. Policies for the Administration of the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. (November 2022). *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 Subject Property, 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 in the community of Virgil on the west side of Four Mile Creek Road to the south of Niagara Stone Road. The Subject Property abuts the Virgil Dam and Reservoir Conservation Area (owned by NPCA) and is adjacent to residential parcels containing single-family dwellings. The surrounding landscape consists mainly of residential and commercial properties with some natural lands generally associated with Four Mile Creek and its associated wooded valleyland.

3.2 Physical Setting

3.2.1 Surficial Geology and Soils

The tableland and valley slope portions of the Study Area are comprised of glaciolacustrine deposits of clay to silt-textured till. Areas along Four Mile Creek are comprised of modern alluvial deposits of clay, silt, sand and gravel as well as some organic deposits (Ontario Geological Survey 2010).

Soils within the Subject Property are primarily described as Tavistock (Kingston and Presant 1989) which are imperfectly drained and moderately to slowly permeable. Temporary groundwater occupies the upper loamy sediments, just above the clay subsoil, for significant periods of time each year. Tavistock soils have relatively high-water holding capacities. Surface runoff ranges from moderate to high, depending on slope.

3.2.2 Topography and Drainage

As described in **Section 3.2.1**, the Study Area encompasses a wide topographic gradient (i.e., ridge top, steep slope, and valley bottom), with the Four Mile Creek valley slope trending in a northeast/southwest direction. Provincial geographic information (i.e., SWOOP Digital Terrain Model) indicates approximately 4 m of topographic relief between the upper crest (~92 masl) and toe of slope (~88 m) associated with Four Mile Creek, at least in the northern portion of the Subject Property. The valley slope lessens in a southerly direction (i.e., towards the southern Subject Property boundary) becoming almost imperceptible along an unopened road allowance at the southern end of the site. Overall, surface water is shed in a predominantly westerly direction towards Four Mile Creek, which is dammed just west of the Subject Property to form the Lower Virgil Reservoir.

3.3 Ecological Setting

3.3.1 Vegetation Communities

The most extensive vegetation community within the Study Area is a Fresh – Moist Green Ash - Hardwood Lowland Deciduous Forest (FODM7-20). This community occupies the lowlands adjacent to Four Mile Creek northwest of the Subject Property. The canopy is dominated by Green Ash (*Fraxinus pennsylvanica*), Manitoba Maple (*Acer negundo*), and Black Walnut (*Juglans nigra*). The subcanopy is composed of Green Ash, Manitoba Maple, Black Walnut, and Eastern White Cedar (*Thuja occidentalis*). The understory is composed of Green Ash, Hawthorn species (*Crataegus spp.*), Black Raspberry (*Rubus occidentalis*), and Common Buckthorn (*Rhamnus cathartica*). The ground layer is composed of Tall Goldenrod (*Solidago altissima*), Reed Canary Grass (*Phalaris arundinacea*), Virginia Wild Rye (*Elymus virginicus*), and Kentucky Bluegrass (*Poa pratensis*). This community is only partially visible from within the Subject Property and was mapped to the extent possible.

A Fresh – Moist Manitoba Maple Deciduous Woodland (WODM5-3) located along the eastern slope of the Four Mile Creek Valley. The canopy and subcanopy are dominated by Manitoba Maple and Green Ash. The understory is composed of Green Ash, Manitoba Maple, Common Buckthorn, and Gray Dogwood (*Cornus racemosa*).

West of the Subject Property above the western slope of Four Mile Creek is a small Dry – Fresh White Pine – Sugar Maple Mixed Forest (FOMM2-2). The canopy has a mixture of Eastern White

Pine (*Pinus strobus*), Sugar Maple (*A. saccharum*), and Black Walnut. Understory species include Common Buckthorn, and hawthorn species.

There are two coniferous Hedgerows (HE2) located within the Subject Property. One hedgerow is located along the along the western boundary of the Subject Property and is dominated by Norway Spruce (*Picea abies*) while the second is located along the southeastern property boundary and is dominated by Eastern White Cedar. One mixed hedgerow (HE3) is located along the western boundary of the Subject Property and is dominated by Norway Spruce and Manitoba Maple. Additionally, there is a deciduous hedgerow (HE1) located along the southwest boundary of the Subject Property composed of Norway Maple (*A. platanoides*) and Green Ash.

3.3.2 Trees

A total of 211 trees situated within or adjacent to the potential area of disturbance were inventoried and assessed as part of the Arborist Report and TPP (prepared by Terrastory under a separate cover). Species which comprise the inventoried tree canopy within the Subject Property are summarized below in **Table 4**.

Table 4. Composition and Abundance of Trees within and/or adjacent to the proposed Areas of Development and Disturbance.

Species	Total Assessed	Percentage of Total (%)
Black Walnut (*Juglans nigra*)	4	1.9
Callery Pear (*Pyrus calleryana*)	1	0.5
Common Pear (*Pyrus communis*)	1	0.5
Eastern Cottonwood (*Populus deltoides* ssp. *deltoides*)	1	0.5
Eastern White Cedar (*Thuja occidentalis*)	17	8.1
Eastern White Pine (*Pinus strobus*)	5	2.4
Manitoba Maple (*Acer negundo*)	17	8.1
Norway Maple (*Acer platanoides*)	21	10.0
Norway Spruce (*Picea abies*)	98	46.4
Red/Green Ash (*Fraxinus pennsylvanica*)	27	12.8
Silver Maple (*Acer saccharinum*)	17	8.1
Sweet Cherry (*Prunus avium*)	2	0.9
TOTAL	**211**	**~100**

3.3.3 Vascular Plants

A total of 40 vascular plant species were recorded within the Subject Property (see **Appendix 3**). No locally or provincially rare or species at risk vascular plants were documented.

3.3.4 Incidental Wildlife Recorded

Efforts to incidentally document wildlife (or signs of wildlife) were made during all site visits by Terrastory in 2024/2025. Incidentally recorded species included:

- Twelve (12) **bird** species: American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), Canada Goose (*Branta canadensis*), Carolina Wren (*Thryothorus ludovicianus*), Common Grackle (*Quiscalus quiscula*), European Starling (*Sturnus vulgaris*), House Finch (*Haemorhous mexicanus*), House Sparrow (*Passer domesticus*), Northern Cardinal (*Cardinalis cardinalis)* and Ring-billed Gull (*Larus delawarensis*).
- Three (3) **mammal** species: Coyote (*Canis latrans*), Eastern Cottontail (*Sylvilagus floridanus*) and Eastern Gray Squirrel (*Sciurus carolinensis*).

4 SIGNIFICANCE ASSESSMENT

Based on the biophysical information collected during background information gathering (per **Table 1**) and the results of Terrastory's site assessment (per **Sections 2.2** and **3**), **Table 5** 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 5. Summary of the Assessment of Significant Natural Features on the Subject Property and Adjacent Lands.

Significant Natural Feature	Status on 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.**	**Absent**. See **Section 4.1.**
Significant Woodlands	**Absent**. See **Section 4.2.**	**Absent**. See **Section 4.2.**
Significant Valleylands	**Present**. See **Section 4.3.**	**Present**. See **Section 4.3.**
Significant Wildlife Habitat	**Confirmed/Candidate**. See **Section 4.4.**	**Confirmed/Candidate**. See **Section 4.4.**
Significant Areas of Natural and Scientific Interest	**Absent**.	**Absent**.
Habitat of Endangered and Threatened Species (per ESA)	**Candidate**. See **Section 4.5.**	**Candidate**. See **Section 4.5.**
Fish Habitat (per *Fisheries Act*)	**Absent**. See **Section 4.6.**	**Absent**. See **Section 4.6.**
Regionally Significant Natural Features (i.e., apart from PPS requirements)		
Other Wetlands	**Absent**. See **Section 4.1.**	**Absent**. See **Section 4.1.**
Other Woodlands	**Confirmed**. See **Section 4.2.**	**Confirmed**. See **Section 4.2.**
Regionally Significant ANSIs	**Absent**.	**Absent**.
Permanent or Intermittent Streams	**Absent**.	**Confirmed**. See **Section 4.6.**
Lakes and their littoral zones	**Absent**.	**Absent**.
Supporting Features and Areas, Enhancement Areas, and Linkages	**Absent**.	**Absent**.
Conservation Authority Regulated Features and Hazard Lands		

Significant Natural Feature	Status on the Subject Property	Status on Adjacent Lands (i.e., < 120 m from the Subject Property)
Wetlands, watercourses, valleylands, meanderbelts, floodplains, steep slopes, and shorelines.	**Confirmed**. See **Section 4.7**.	**Confirmed**. See **Section 4.7**.

4.1 Significant and Other Wetlands

An evaluated wetland (Virgil Conservation Area Wetland Complex) is currently mapped along the northwestern property boundary. This area was reviewed with NPCA as part of a staking exercise on 07 August 2024; no wetlands (significant, evaluated, or other) were deemed present. There are no wetlands within 30 m of the Subject Property.

4.2 Significant and Other Woodlands

Significant Woodlands are defined in Schedule L of the NOP as follows:

> *Significant woodlands means woodlands that are ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history (PPS, 2020).*

Criteria for defining Significant Woodlands is also provided per Schedule L:

> *To be identified as significant, a woodland must meet the definition of ELC forest (as per the definition of 'woodland'), and then meet one or more of the following criteria:*
>
> *1. 2 ha or greater in size;*
>
> *2. 1 ha or greater in size meeting at least one of the following criteria:*
>
> *a. Naturally occurring (i.e., not planted) trees (as defined in the species list of Appendix D in the Greenbelt Technical Paper);*
>
> *b. Treed areas planted with the intention of restoring woodland;*
>
> *c. 10 or more trees per ha greater than 100 years old or 50 cm or more in diameter;*
>
> *d. Wholly or partially within 30 m of a provincially significant wetland or habitat of an endangered or threatened species;*
>
> *e. Overlapping or abutting one or more of the following features:*
>
> *i. Permanent streams or intermittent streams;*
>
> *ii. Fish habitat;*
>
> *iii. Significant valleylands;*
>
> *3. 0.5 ha or greater in size meeting at least one of the following criteria:*
>
> *a. A provincially rare treed vegetation community with an S1, S2 or S3 in its ranking by the MNRF's N.H.I.C.;*

b. Habitat of a woodland plant species with an S1, S2 or S3 in its ranking or an 8, 9, or 10 in its Southern Ontario Coefficient of Conservatism by the NHIC, consisting of 10 or more individual stems or 100 or more sqm of leaf coverage;

c. Any woodland overlapping or abutting one or more of the following features:

i. Significant wildlife habitat;

ii. Habitat of threatened species and endangered species; or

iii. Non-Provincially Significant Wetlands

4. Any size overlapping or abutting one or more of the following features:

a. Provincially significant wetland; and

b. Life Science area of natural and scientific interest

"Other Woodlands" are defined in Schedule L of the NOP as follows:

> *Other woodlands means woodlands determined to be ecologically important in terms of features, functions, representation, or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. Other woodlands include all terrestrial treed vegetation communities where the percent tree cover is >25%. Other woodlands would not include woodlands meeting the criteria as significant woodlands.*

Criteria for defining Other Woodlands is also provided per Schedule L:

> *To be identified as an other woodland, a terrestrial treed area must have ≥ 25% tree cover and meet one or more of the following criteria:*
>
> *1. an average minimum width of 40 m and is ≥0.3 ha, measured to crown edges; or*
> *2. any size abutting a significant woodland, wetland or permanent stream*

Based on the above criteria, the wooded area occurring along the northwestern Subject Property boundary does <u>not</u> constitute a Significant Woodland as it exhibits < 60% tree cover. The wooded area <u>does</u> constitute an Other Woodland (as defined in the NOP) as it exhibits ≥ 25% tree cover, meets the average minimum width/size criteria, and abuts a Permanent Stream.

An assessment of potential effects to the Other Woodland associated with the proposed development plan is provided in **Section 5.3.1**.

4.3 Significant Valleylands

Significant Valleylands are defined in Schedule L of the NOP as follows:

> *Significant valleyland means valleyland which is ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. These are to be identified using criteria established by the Province (Growth Plan, 2019).*

Criteria for defining Significant Valleylands is also provided per Schedule L:

Significant valleylands include any of the features identified in any of the following three categories:

a. all streams with well-defined valley morphology (i.e., floodplains, riparian zones, meander belts and/or valley slopes) of an average width of 25 metres or more; the physical boundary is defined by the stable top of bank (as defined by the conservation authority);

b. all spillways and ravines with the presence of flowing or standing water for a period of no less than two months in an average year. Such features must be greater than 50 metres in length (as defined from the point of valley formation downstream to the confluence of the valley being assessed); 25 metres in average width with a well-defined morphology (i.e., two valley walls of 15 per cent slope or greater with a minimum height of 5 metres, and valley floor), and having an overall area of 0.5 hectares or greater; or

c. additional features or areas beyond the ones described above that have been identified by the Region, Local Area Municipality, or the Niagara Peninsula Conservation Authority as providing one or more of the features or functions described in the table contained in Appendix A of the Greenbelt Plan 2005 Technical Definitions and Criteria for Key Natural Heritage Features in the Natural Heritage System of the Protected Countryside Area (MNRF, 2012).

The valleyland flanking Four Mile Creek meets criteria (a) above as it exhibits an average width of 25 m or more.

An assessment of potential effects to the Significant Valleyland associated with the proposed development plan is provided in **Section 5.3.2**.

4.4 Significant Wildlife Habitat

An assessment of the likelihood that any candidate or confirmed SWH types occur within the Subject Property or Adjacent Lands is provided in **Appendix 4**. Based on the results of this assessment, three (3) SWH types are considered further through this study:

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

Also based on this assessment, a total of seven (7) Special Concern or provincially rare species are considered to have at least a possible likelihood of occurrence on the Subject Property given their habitat associations and current distribution in southern Ontario:

1) Eastern Wood-pewee (*Contopus virens*)
2) Tufted Titmouse (*Baeolophus bicolor*)
3) Wood Thrush (*Hylocichla mustelina*)
4) American Bumble Bee (*Bombus pensylvanicus*)
5) Monarch (*Danaus plexippus*)
6) Yellow-banded Bumblebee (*Bombus terricola*)
7) Snapping Turtle (*Chelydra serpentina*)

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 5.3.3**.

4.5 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 5**. A total of six (6) 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) Tri-colored Bat (*Perimyotis subflavus*)
4) Eastern Red Bat (*Lasiurus borealis*)
5) Hoary Bat (*Lasiurus cinereus*)
6) Silver-haired Bat (*Lasionycteris noctivagans*)

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 5.3.4**.

4.5.1 Bats

Per the assessment in **Appendix 5**, Little Brown Myotis, Northern Myotis, and Tri-colored Bat have the potential to roost and forage on the Subject Property. Each 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.). Roosting sites for Tri-colored Bat maternity colonies are less understood but have been documented in dead or dying leaf clusters of oaks (*Quercus* spp.) and maples (*Acer* spp.), along with live foliage and buildings (Humphrey and Fotherby 2019). Individuals (i.e., non-reproductive females and males) of all three 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.

Per the assessment in **Appendix 5**, migratory bats (Eastern Red Bat, Hoary Bat, and Silver-haired Bat) also have the potential to roost and forage within the Subject Property. Each of these bat species are designated Endangered in Ontario per O. Reg. 230/08 pursuant to the ESA and are federally listed Endangered by COSEWIC. These migratory species are primarily found in Ontario during the summer months, and their summer habitat is generally comprised of foraging, drinking, and roosting sites (COSEWIC 2023).

Eastern Red Bat and Hoary Bat typically roost with dependent young (i.e., pups) in deciduous or coniferous forests of all age classes, with a preference for roosting in tall, large diameter trees, and at sufficient heights to deter predators (i.e., at a height greater than five metres; COSEWIC 2023). Occurrences of Eastern Red Bat and Hoary Bat roosting in anthropogenic structures are rare. Silver-haired Bat reproductive females typically roost in decaying, large diameter deciduous or coniferous trees with heart-rot or exfoliating bark, and are known to occasionally roost on or in buildings (COSEWIC 2023). Roost switching is common among all three migratory species. All three migratory bats species undergo seasonal migrations during the fall and spring which expose them to numerous threats, including fatalities associated with wind energy facilities. Other threats to these species include declines in prey abundance, and losses of forested roosting habitat and foraging habitat.

Targeted bat roosting habitat assessments and/or acoustic monitoring were not undertaken as part of this study. Suitable maternity roosting habitat for Little Brown Myotis and/or Northern Myotis occurs within the wooded valleyland where snags and/or trees with sufficiently-sized cracks or crevices are present; however, no removal of candidate maternity roosts is anticipated. Oaks and/or maples could theoretically support roosting by Tri-colored Bat, though this species is generally rare in southern Ontario. Other trees within or outside the on-site woodlands could support "day roosts" for individual myotis bats (e.g., males or non-reproductive females) or providing generalized roosting habitat for other migratory endangered bats.

4.6 Fish Habitat and Permanent Stream

The reach of Four Mile Creek flowing downstream of the Virgil dam (GU-6001-fou) is considered by the Province to contain "warmwater" fish habitat per the Aquatic Resource Area (ARA) dataset. Four Mile Creek is also expected to be a "Permanent Stream" (as defined in the NOP).

An assessment of potential effects to fish habitat associated with the proposed development plan is provided in **Section 5.3.5**.

4.7 Conservation Authority Regulated Areas

NPCA regulates development and site alteration (including fill placement and grade changes) within 15 m of the physical top of bank (TOB) or long-term stable top of slope (LTSTOS; whichever is greater) associated with a confined valleyland pursuant to clause 2(1)(b) under O. Reg. 41/24. The physical TOB was staked with NPCA staff on 07 August 2024.

NPCA Policy 5.1.4.1 clarifies that valleylands must have a minimum height of 3 m to be considered "regulated valleylands". It is understood that portions of the physical TOB as staked with NPCA staff do not achieve a minimum 3 m height, as outlined in a letter by a geotechnical professional (exp). The staked physical TOB and portion of the valleyland that is < 3 m in height (per exp) is indicated on **Figure 3**.

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 two-storey commercial building, four-storey residential building, associated surface and underground parking areas, internal access road, and landscaped/amenity space. 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 development 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 site assessments. The effects assessment herein is based on the proposed development plans provided in **Appendix 6**.

5.1 Proposed Development Plan

The proposed development and site alteration activities consist of the following elements:

- Demolition of two (2) existing buildings;
- Construction of two (2) building envelopes, including a two-storey commercial building and four-storey residential building;
- Excavation of an underground parking area;
- Installation of surface parking and internal access roads;
- Installation of servicing connections at Four Mile Creek Road;
- Installation of landscaping and amenities (e.g., playground); and
- Necessary grading.

Elements of the proposed development which have been considered herein are illustrated on the Site Plan, Preliminary Site Grading Plan, and Preliminary Site Servicing Plan (see **Appendix 6**). Details related to shoring and other disturbances associated with excavation of the underground parking area are not available at this time and must also be considered in light of relevant natural heritage policy tests.

5.2 Avoidance Measures incorporated into the Proposed Development Plan

Since project commencement in December 2023 Terrastory has provided extensive feedback to and worked iteratively with the project team during formulation of the proposed development plans. These discussions have centred on the need to avoid/minimize impacts to and maintain ecologically/policy appropriate setbacks from the significant natural features identified herein. As a result, the proposed development plan and associated technical plans have been subject to multiple revisions in order to achieve minimum necessary setbacks from the identified Other Woodland and Significant Valleyland associated with Four Mile Creek.

In recognizing the foregoing, an assessment of the potential for negative impacts on the identified significant natural features are further described below.

5.3 Feature-based Effects Assessment and Technical Recommendations

5.3.1 Other Woodlands

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

- Direct vegetation removal (e.g., trees, shrubs, herbaceous vegetation), resulting in loss of woodland area and functions (e.g., wildlife habitat, carbon sequestration, runoff attenuation).
- Exposure of the woodland edge to new biophysical conditions following direct vegetation removal (i.e., edge effects), which may modify the prevailing light regime (e.g., increasing the potential for sunscald injuries to woody vegetation), wind regime (e.g., increasing the potential for windthrow and/or structural concerns due to greater wind velocities), and/or moisture regime.
- 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.

As noted in **Section 4.2**, the wooded area extending slightly within the northern and northwestern property boundary represents an Other Woodland as defined within the NOP. The proposed limit of hardened surfaces (i.e., curb edge) generally extends within < 1 m to over 9 m from the staked dripline of the Other Woodland, whereas the proposed four-storey residential building abuts touches the southern edge of the staked dripline. A small amenity area (playground) also abuts the dripline adjacent to the residential building (see **Appendix 6**).

With consideration for the proposed uses and relevant policy tests for the protection of Other Woodlands under the NOP (i.e., "no negative impact"), along with the general condition of the Other Woodland (i.e., representative of second-growth, dominated by non-native flora), the setback as proposed (i.e., averaging about 5 m from the curb edge though nearly abutting the building envelope and playground) is considered sufficient. Notwithstanding this, the following is recommended to achieve "no negative impact" to the Other Woodland as required under the NOP:

- **A Buffer Enhancement and Tree Replacement Plan will be prepared for the areas identified on Figure 3 to establish a functional buffer zone and enhance the ecological conditions of the wooded valleyland.**

- **Future excavation and shoring plans as part of constructing the four-storey residential building and underground parking will minimize the need for tree removals within the Other Woodland to the greatest extent practicable.**

The Hydrogeological Investigation (exp) suggests that dewatering is required during short-term construction phase (>400,000 L/day, necessitating an Environmental Activity and Sector Registration) and longer-term post-development phase (>50,000 L/day, necessitating a Category 3 Permit To Take Water). The Hydrogeological Investigation further suggests that all dewatering will be conveyed to the Regional storm sewers and that a suitable treatment method may be required to address potential Total Suspended Solid (TSS) and metal exceedances. As dewatering will be

directed to the Regional storm sewer per the Hydrogeological Investigation, no additional recommendations to protect the Other Woodland are considered necessary.

Within the Arborist Report (issued under a separate cover) Terrastory calculated the number of trees to be replaced (per the Town's *Private Tree Protection By-law Reference Guide*) as 279. It is expected that replacement trees will be maximized within the areas shown as Buffer Enhancement and Tree Replacement areas per **Figure 3**, with any deficit addressed through cash-in-lieu (see Terrastory's Arborist Report for further details).

Updates to this EIS (i.e., Addendum) may be required pending confirmation and receipt of excavation and/or shoring plans at detailed design.

5.3.2 Significant Valleylands

As noted in **Section 4.3**, the valleyland associated with Four Mile Creek meets relevant criteria as a Significant Valleyland pursuant to the NOP.

The project geotechnical professional (exp) has indicated that the southern portion of the physical TOB staked with NPCA in August 2024 is less than 3 m in height and thereby does not represent a "Regulated Valleyland". On this basis, the proposed building and underground parking envelopes do not extend within 4.8 m of the physical TOB of the Significant Valleyland. Note further that the portion of the valleyland facing the northwest corner of the proposed residential building is maintained as manicured grass and thereby exhibits limited ecological function.

No feature-specific recommendations are deemed necessary to protect the ecological functions of the Significant Valleyland beyond what is already recommended for other significant features herein (particularly the Other Woodland in **Section 5.3.1**).

5.3.3 Significant Wildlife Habitat

Per the assessment in **Section 4.4**, a total of three (3) candidate SWH types were considered further through this study:

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

Also based on this assessment, a total of seven (7) Special Concern or provincially rare species have at least a possible likelihood of occurrence on the Subject Property given their habitat associations and current distribution in southern Ontario (or were confirmed based on the site assessment):

1) Eastern Wood-pewee (*Contopus virens*)
2) Tufted Titmouse (*Baeolophus bicolor*)
3) Wood Thrush (*Hylocichla mustelina*)
4) American Bumble Bee (*Bombus pensylvanicus*)
5) Monarch (*Danaus plexippus*)
6) Yellow-banded Bumblebee (*Bombus terricola*)
7) Snapping Turtle (*Chelydra serpentina*)

The above-noted SWH types and habitats for species of conservation interest are generally contained in the wooded valleyland associated with Four Mile Creek (or the watercourse/reservoir itself). No feature-specific recommendations are deemed necessary to protect candidate SWH types beyond what is already recommended for other significant features herein (particularly the Other Woodland in **Section 5.3.1**).

5.3.4 Habitat of Endangered and Threatened Species

Per the assessment in **Appendix 5** a total of six (6) 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) Tri-colored Bat (*Perimyotis subflavus*)
4) Eastern Red Bat (*Lasiurus borealis*)
5) Hoary Bat (*Lasiurus cinereus*)
6) Silver-haired Bat (*Lasionycteris noctivagans*)

Areas of tree removal (i.e., overlapping with the limits of development and site alteration as indicated in **Appendix 6**) do not overlap with suitable maternity roost habitat for Endangered myotis bats. Notwithstanding this, trees to be removed could provide generalized "day roost" habitat for Endangered bats, and the on-site buildings may also provide generalized roosting opportunities. On this basis, the following recommendations are offered:

- **All necessary tree removals and removal of the on-site buildings will be completed outside the primary bat activity period (i.e., to be completed between October 1 and March 31). If limited tree removal is required during the restricted timing window, consult a qualified ecologist and/or MECP for further direction.**

- **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 eastward) to the extent practicable.**

Updates to this EIS (i.e., Addendum) may be required pending confirmation and receipt of excavation and/or shoring plans at detailed design.

5.3.5 Fish Habitat and Permanent Stream

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.

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 Four Mile Creek) 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 adjacent fish habitat from construction-related impacts, the following measures are recommended:

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

Fish habitat within Four Mile Creek is set back greater than 25 m from the edge of the proposed residential building and the Hydrogeological Investigation (exp) does not anticipate any potential impacts to surface water features during dewatering. On this basis, no additional recommendations are deemed necessary to protect fish habitat or Four Mile Creek (as a "Permanent Stream").

5.3.6 Other Natural Environment Considerations

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 wildlife during construction, the following measures are recommended:

- **All removal of trees will be undertaken consistent with Terrastory's Tree Protection Plan.**

- **All necessary vegetation removal (e.g., trees, meadow vegetation) 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 restricted timing window within readily searchable habitat types, 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 bird nesting survey is to take place within 48 hours of vegetation removal.**

- **Incorporation of Bird-Friendly Guidelines into the building 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.**

5.3.7 Summary of Technical Recommendations

All technical recommendations provided in **Section 5.3** are reiterated in **Appendix 7**.

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 study will address these policies (where applicable).

6.1 Town of Niagara-on-the-Lake Official Plan (amended July 2017)

The Town'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 Town's OP. Provided herein is a description of relevant environmental and natural heritage policies contained within the Town's OP and an assessment of whether the ZBA addresses such policies.

The Subject Property is primarily designated "Service Commercial" per Schedule C (Land Use Plan) under the Town's OP with the adjacent treed valleyland and Virgil Dam and Reservoir (to the west) designated "Conservation".

A summarized and condensed list of key natural heritage provisions of the Town's OP that pertain to the ZBA considered herein is provided below.

- **Policy 3.1(d)** directs that applications for development on lands within or adjacent to Environmental Conservation Areas shall include an environmental impact study stating that there will be no negative impact on the natural feature or its ecological function.
- **Policy 6.15** directs the Town to consult with MNR and/or NPCA to prior to the approval of any development on lands abutting Conservation Areas and further directs that any proposed uses be sensitive to and minimize any impact on the natural environment in a Conservation designation.
- **Section 16.3.2** provides wetland-specific policies, which are not applicable to this application (as wetlands were confirmed to be absent based on a staking with NPCA).

Terrastory reviewed potential impacts to the identified significant natural features – including the Significant Valleyland, candidate SWH, fish habitat, and potential habitat of Endangered and Threatened species – in **Section 5.3** of this EIS. Provided that Terrastory's recommended mitigation measures (summarized in **Appendix 7**) are carried out in full, no negative impacts are anticipated to the any significant natural heritage feature identified herein. Based on the preceding discussion,

Terrastory can conclude that the proposed development plan appropriately addresses the natural heritage protection provisions of the Town's OP.

6.2 Regional Municipality of Niagara Official Plan (May 2024)

The NOP was recently approved by the Province with modifications on 4 November 2022, which replaced the previous 2014 ROP. As a pre-consultation meeting did not occur within one-year prior to the 2022 NOP approval (i.e., between 4 November 2021 and 4 November 2022), the operative natural heritage policy framework is contained in the current in force and effect NOP (rather than the 2014 ROP).

The NOP does not carry forward the EPA/ECA designation framework for significant natural features, as contained in the Town's current OP and the 2014 ROP. The natural heritage policy framework is largely contained in Chapter 3 (Sustainable Region) of the NOP. A simplified and condensed summary of relevant Regional natural heritage policies which the subdivision application must address is as follows:

- **Policy 3.1.1.1** establishes a Natural Environment System for Niagara Region, the features and components of which are identified in Schedule L and also include groundwater features, surface water features, and other hydrologic functions per **Policy 3.1.1.2**.
- **Section 3.1.9** applies to lands in designated Settlement Areas which are outside of the Provincial NHS (i.e., Growth Plan NHS and Greenbelt Plan NHS) and Niagara Escarpment Plan area.
- **Policy 3.1.9.5.1** prohibits development and site alteration within the following significant natural features:
    a) Provincially Significant Wetlands,
    b) Significant Coastal Wetlands, and
    c) Significant Woodlands.
- **Policy 3.1.9.5.2** permits development in the following natural heritage features only where it can be demonstrated that no negative impacts on the feature or its ecological functions is anticipated:
    a) Other Woodlands,
    b) Significant Valleylands,
    c) Significant Wildlife Habitat, and
    d) Areas of Natural and Scientific Interest.
- **Policy 3.1.9.5.4** recognizes the overlapping regulatory authority of NVCA as it pertains to development within or adjacent to Watercourses, Provincially Significant Wetlands, and Other Wetlands.
- **Policy 3.1.9.9.1** clarifies that there are no "minimum" buffers/setbacks required in designated Settlement Areas, but that a "mandatory" buffer/setback must be specified through an EIS.
- **Policy 3.1.20.2** directs than an EIS demonstrate how enhancements to ecological function, ecological integrity, or biodiversity of the natural environment system can be achieved.

Consistent with the conformity assessment provided under the Town's OP in **Section 6.1** above, no negative impacts are anticipated to any significant natural feature herein provided that the recommendations made herein are captured through any future development plans.

6.3 Provincial Planning Statement 2024, pursuant to the *Planning Act*, R.S.O. 1990, c. P. 13

The Provincial Planning Statement (PPS) is promulgated under the authority of the *Planning Act* and came into effect on 20 October 2024, replacing the previous PPS that 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 4.1. While recognizing that the natural heritage protection framework is not intended to limit the ability of agricultural uses to continue (Policy 4.1.9), the PPS instructs that *natural features and areas shall be protected for the long term* (Policy 4.1.1) and that their diversity and connectivity be *maintained, restored or, where possible, improved* (Policy 4.1.2). 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 4.1.4);
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 4.1.5 and 4.1.8).
3) Those in which development and site alteration are not permitted except in accordance with federal/provincial requirements, including: 1) fish habitat (Policy 4.1.6) and 2) habitat of Endangered and Threatened Species (Policy 4.1.7).

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 5** of this report, no Significant Wetlands, Significant Woodlands, or Areas of Natural or Scientific Interest are present within the Subject Property.
- Per **Section 5.3** of this report, no negative impacts to the Significant Valleyland or candidate Significant Wildlife Habitat are anticipated given implementation of the proposed development plan provided that the recommended mitigation measures are implemented in full.
- Per **Section 5.3** of this report, Fish Habitat and Endangered/Threatened species habitat will be protected in accordance with provincial and federal requirements.

6.4 Greenbelt Plan 2017, pursuant to the *Greenbelt Act*, S.O. 2005, c. 1

The Greenbelt Plan guides development in the Golden Horseshoe region by identifying areas where development is most suitable. There are four general land-use designations provided by the Plan: 1) Oak Ridges Moraine, 2) Niagara Escarpment, 3) Parkway Belt West, and 4) Protected Countryside. The Subject Properties are situated within the Protected Countryside, which itself contains three types of land-use policies: 1) Agricultural System, 2) Natural System, and 3) Settlement Areas.

The Study Area is located within a designated Settlement Area (i.e., "Towns and Villages", being Virgil). The most restrictive natural feature protection policies of the Greenbelt Plan (i.e., Policy 3.2.5) do not apply to designated Settlement Areas. Lands within designated Town and Villages are generally governed by relevant Official Plan policies and related initiatives, which were reviewed herein in **Section 6.1** (Town OP) and **Section 6.2** (NOP). On this basis, the proposed development conforms to relevant natural heritage policies under the Greenbelt Plan.

6.5 O. Reg. 41/24, pursuant to the *Conservation Authorities Act*, R.S.O. 1990, c. C.27

NPCAs regulatory jurisdiction includes areas within and adjacent to valley and stream corridors, the Lake Erie shoreline, hazard lands (e.g., floodplains, steep slopes), watercourses, and wetlands as provided under O. Reg. 41/24 of the *Conservation Authorities Act*. NPCA's Policy Document provides guidance for the administration of O. Reg. 41/24.

NPCA regulates development and site alteration (including fill placement and grade changes) within 15 m of the stable top of bank/slope associated with a confined valleyland and within 30 m of all wetlands. Permission to develop within a regulated area must establish how the "five tests" of development within or adjacent to "hazardous land" 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) unstable soil, or 5) bedrock will not be affected.

As development is proposed within 15 m of a regulated valleyland, permission from NPCA under O. Reg. 41/24 will be required to facilitate implementation of the proposed development plan.

6.6 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 Subject Property is provided in **Appendix 5**. Per this assessment, and provided that relevant technical recommendations outlined in **Section 5.3** 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.

6.7 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 5.3** and provided that relevant technical recommendations outlined in **Section 5.3.5** 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*.

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

Subsection 5(1) of the Migratory Birds Regulations under the *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance or destruction of nests, eggs, or nest shelters of a migratory bird without authorization. Subsection 5(2) of the Migratory Birds Regulations allows for damage or destruction of nests which lack a live bird or viable egg with the exception of inactive nests associated with species listed under Schedule 1. In Ontario, the nests of Schedule 1 species are afforded year-round protection (i.e., regardless of the presence or absence of a live bird or viable egg), inclusive of the following species:

- Black-crowned Night Heron (*Nycticorax nycticorax*)
- Cattle Egret (*Bubulcus ibis*)
- Great Blue Heron (*Ardea herodias*)
- Great Egret (*Ardea alba)*
- Green Heron (*Butorides virescens*)
- Pileated Woodpecker (*Dryocopus pileatus*)
- Snowy Egret (*Egretta thula*)

The provincial *Fish and Wildlife Conservation Act, 1997* (FWCA) extends the protection of bird nests and eggs to certain non-migratory species not listed under the Migratory Birds Regulations (e.g., Corvids, Strigids, Accipitrids). Section 7(1) of the FWCA prohibits a person from destroying, taking, or possessing the nest or eggs of a bird that belongs to a species that is wild by nature. Section 7(3) identifies that section 7(1) of the FWCA does not apply to a person who destroys, takes, or possesses the nest or eggs of a bird described in subsection (a) in accordance with the authorization of the Minister, or subsection (b) in the circumstances prescribed by the regulations. The nests of certain non-migratory bird species are not protected under the FWCA (e.g., Red-winged Blackbird).

Provided that the recommendations outlined in **Section 5.3.6** 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 EIS provides a detailed characterization of the natural environment occurring within and adjacent to 1544 & 1546 Four Mile Creek Road in Virgil (Niagara-on-the-Lake). This EIS has been prepared in support of a Zoning By-law Amendment (ZBA) application to remove a Holding Provision from the lands to permit the development of residential and mixed uses, and to support NPCA's regulatory review under O. Reg. 41/24 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 **Significant Valleyland** comprised of **Other Woodland** extends slightly into the northwestern portion of the Subject Property, the boundary (top of bank) of which was staked with NPCA in August 2024.
- The wooded valleyland flanks **Four Mile Creek** (Permanent Stream) which contains warmwater **Fish Habitat**.
- The wooded valleyland also provided candidate **Significant Wildlife Habitat** for various species conservation interest and potential roosting habitat for **Endangered Bats**.

Based on the presence of the above-mentioned significant natural heritage features, a comprehensive set of recommendations and mitigation measures are offered in **Section 5.3** to achieve "no negative impact" and address applicable municipal, provincial, and federal policies outlined in **Section 6**. This includes (amongst other measures) the preparation of a Buffer Enhancement and Tree Replacement Plan, preparation of Erosion and Sediment Control plans at construction, and a timing restriction on tree/vegetation removal to protect nesting birds and roosting bats.

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 7**) 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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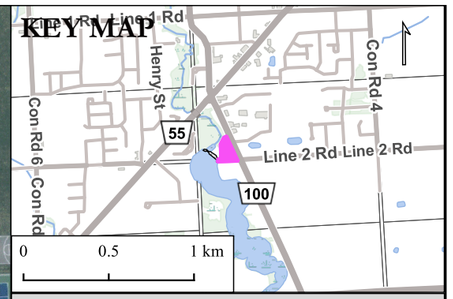

Legend

Area of Assessment
- Subject Property
- Adjacent Lands
- Parcel Fabric

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

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Location:

1544 & 1546 Four Mile Creek Road,
Town of Niagara-on-the-Lake

Project No.: 23231

Date: 2025-03-05

By: TK **Checked:** --

Orthophotograph Date: 2020 (Niagara Region)

Figure 1:

Location of the Subject Property and Study Area

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Legend

Area of Assessment
- Subject Property
- Adjacent Lands

Biophysical Features and Conditions

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

Vegetation Communities
- Forest
- Woodland

Surface Water Drainage Features
- Permanent Watercourse
- Drainage Feature

VEGETATION COMMUNITY CODES:
FOMM2-2: Dry – Fresh White Pine – Sugar Maple Mixed Forest
WODM5-3: Fresh - Moist Manitoba Maple Deciduous Woodland
HE1: Deciduous Hedgerow
HE2: Coniferous Hedgerow
HE3: Mixed Hedgerow

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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Location:
1544 & 1546 Four Mile Creek Road, Town of Niagara-on-the-Lake

Project No.: 23231
Date: 2025-03-19
By: TK **Checked:** --
Orthophotograph Date: 2020 (Niagara Region)

Figure 2:
Biophysical Features and Conditions

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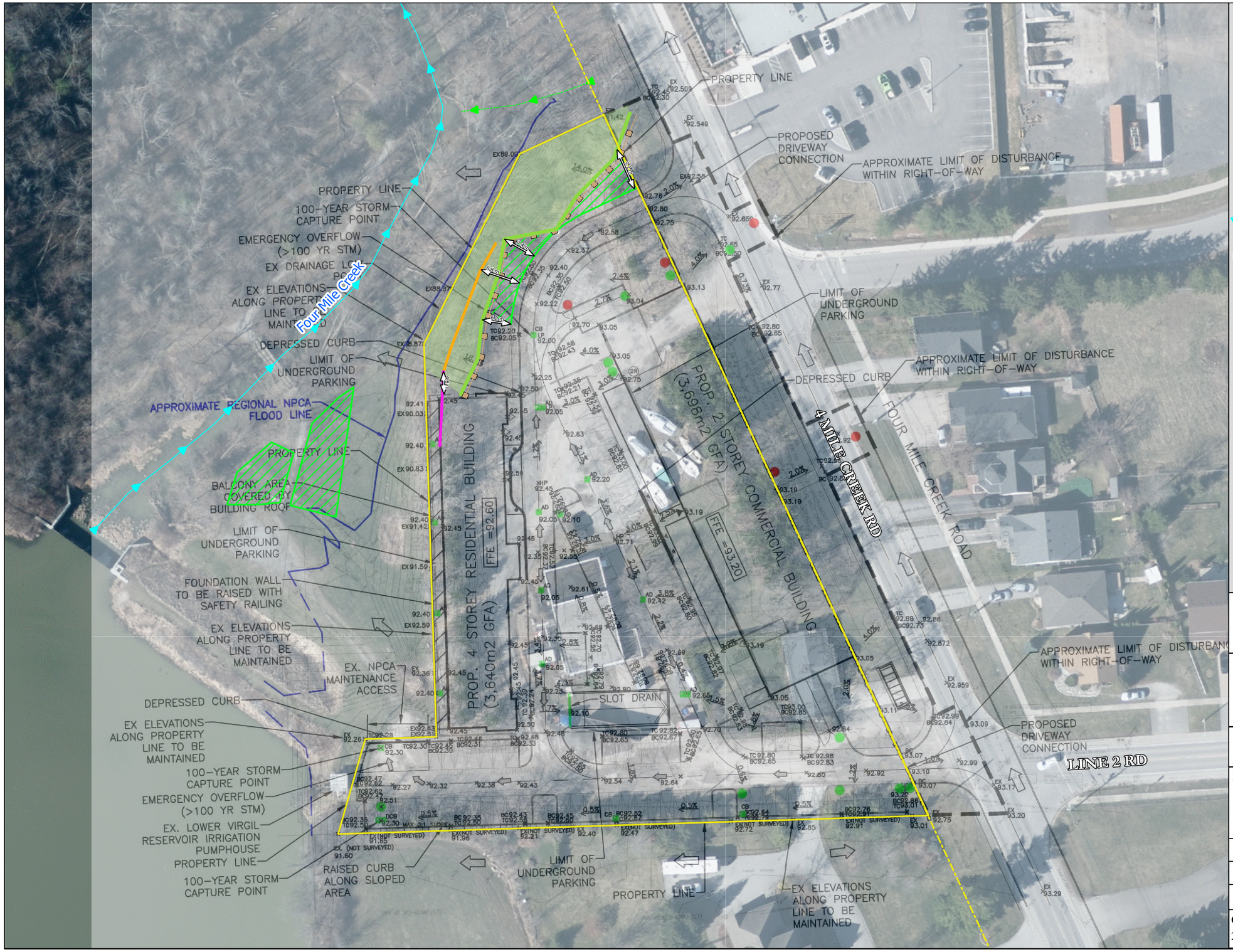

Legend

Area of Assessment
- Subject Property
- Adjacent Lands

Significant Natural Features - Terrastory
- Dripline of Treed Area (per Staking with Region on 14 Feb. 2025)
- Physical Top of Slope (per Staking with NPCA on 07 Aug. 2024)
- Portion of Physical Top of Slope deemed to be "non-regulated" Valleyland by exp
- Other Woodland
- Direct (Warmwater) Fish Habitat

Mitigation Measures Recommended
- Tree Protection Barrier / Silt Fence
- Buffer Enhancement and Tree Replacement Plan Area

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 289.309.7040

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Location:
1544 & 1546 Four Mile Creek Road, Town of Niagara-on-the-Lake

Project No.: 23231
Date: 2025-03-31
By: TK **Checked:** --
Orthophotograph Date: 2020 (Niagara Region)

Figure 3:
Significant Natural Features with Proposed Development Overlay

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Appendix 1. Terms of Reference

Tristan Knight

From: Boudens, Adam <Adam.Boudens@niagararegion.ca>
Sent: April 11, 2025 9:45 AM
To: Tristan Knight
Cc: Stephen; Development Planning Applications
Subject: RE: ToR for EIS - Four Mile Creek Road, NOTL
Attachments: 23231 - Terrastory EIS ToR Four Mile Creek Rd ToR NOTL Mar 2025.pdf; 23.11-A102-SITE PLAN.pdf; Figure 3 - Significant Natural Features (draft).pdf

Hi Tristan,

Regional staff have reviewed the attached EIS Terms of Reference and offer no objection to the proposed work plan.

Furthermore, staff have reviewed the preliminary development concept and have identified no concerns from an environmental planning perspective that would impede approval of the application.

We look forward to reviewing the fulsome EIS when circulated.

Please note that the Region requires a Terms of Reference review fee of **$555.** Please have your client make payment at their earliest convenience.

Online Payment:

If paying online by Visa or MasterCard, please note that you will now be required to first set-up an account in our payment portal, and forward your log-in information (i.e. Log-In ID/email), as well as your application information (i.e. address, municipality, application type), to devtplanningapplications@niagararegion.cabefore being able to complete your payment.

To do this, please follow these steps:

1. Click the following link to navigate to the Niagara Portal: https://cityview.niagararegion.ca/portal

2. **Making a Payment requires a login and for the application to have your Portal Account attached to it.** If you have an account, please log in. If you do not have an account, please complete the registration process.

a. To ensure you receive response in a timely manner please ensure your contact method is **EMAIL**

2. You will receive a separate account registration email. Please click on the link provided to complete the registration.

3. Notify the Niagara Region Planning Department of your Login ID (email address) and the Application you are requesting to pay by sending an email to devtplanningapplications@niagararegion.ca

4. After Niagara Region receives this information, the Niagara Region Planning staff will notify you when you are able to pay.

5. On Portal, ensure you are logged in, go to the **Planning Applications** section and select “planning applications search”.

6. In the **planning application** search put in your project name, planning application number, or address, or roll number. This should populate your file, if not found contact devtplanningapplications@niagararegion.caor 905-980-6000 ext. 3256.

7. If your planning application is in the system click on “**Pay Fees**”, then click “**Make Payment**” and follow the remaining instructions to process the credit payment.

Once you've created an account, please contact our program administrator to complete the payment. If you encounter any issues, feel free to reach out.

Thanks, and have a nice weekend,
Adam

Growing Better Together

Niagara Region

Adam Boudens, MSc
Senior Environmental Planner / Ecologist
Public Works Department
Niagara Region
P: (905) 980-6000 ext. 3770
W: www.niagararegion.ca
E: adam.boudens@niagararegion.ca

My workday may look different from your workday. Please do not feel obligated to respond outside of your normal working hours.

From: Tristan Knight <tristan@terrastoryenviro.com>
Sent: Monday, March 31, 2025 3:52 PM
To: Boudens, Adam <Adam.Boudens@niagararegion.ca>
Cc: Stephen <stephen@timesgroup.ca>
Subject: ToR for EIS - Four Mile Creek Road, NOTL

Niagara Region Security Warning:	This is an external email, use caution when opening attachments or clicking links

Hi Adam,

Reconnecting with you on this application which is nearing submission.

Please find attached Terrastory’s proposed Terms of Reference (ToR) for the EIS. While typically we would circulate the ToR far earlier in the submission process, in this case we have been working consistently and in

earnest with the project team on the overall development layout to ensure it addresses various technical requirements, including natural heritage.

I've also attached the proposed site plan and Figure 3 (draft) from our EIS report, which indicates the setback and lateral extent of the buffer zone to the "Other Woodland" along with enhancement areas.

We have not circulated NPCA this ToR as there is an absence of wetlands within 30 m of the proposed development limit, as verified through our various staking exercises last year.

We look forward to your review/comments.

Cheers,
T.

—
Tristan Knight M.E.S., M.Sc., I.S.A., C.E.R.P.
Senior Ecologist | Arborist
Terrastory Environmental Consulting Inc.
(c) 905-745-5398
www.terrastoryenv.com

March 31, 2025
Project No.: 23231

TERRASTORY
environmental consulting inc.

Adam Boudens M.Sc.
Senior Environmental Planner / Ecologist
Niagara Region
905-980-6000 x3770
adam.boudens@niagararegion.ca

SUBJECT: EIS Terms of Reference
Four Mile Creek Road
Community of Virgil, Town of Niagara-on-the-Lake

Dear Adam,

Terrastory Environmental Consulting Inc. (hereinafter "Terrastory") has been retained to prepare an Environmental Impact Study (EIS) in connection with a Zoning By-law Amendment application at the above-captioned location (hereinafter "Subject Property") in Virgil (Town of Niagara-on-the-Lake).

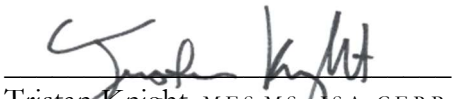
The Subject Property is bounded by Four Mile Creek Road (east), a residential parcel at 1536 Four Mile Creek Road (south), the Lower Virgil Reservoir (west), and a wooded valleyland (north). The Subject Property contains gravel parking areas, two (2) buildings, manicured lawn, and planted specimen trees (some comprising hedgerows), and is generally surrounded by low-density residential/commercial developments and agricultural lands. The Subject Property also borders a treed valleyland associated with Four Mile Creek extending below the Virgil dam (i.e., Lower Virgil Reservoir).

The Subject Property is contained within a designated settlement area ("Delineated Built-up Area") per Schedule B (Regional Structure) of the Niagara Official Plan (NOP), also occurring within the "Towns / Villages" overlay of the "Protected Countryside" designation of the Greenbelt Plan. The Subject Property is primarily designated "Service Commercial" per Schedule C (Land Use Plan) under the Town's Official Plan (OP) with the adjacent treed valleyland and Virgil Dam and Reservoir (to the west) designated "Conservation". The Subject Property is further zoned "Village Commercial – Holding" (VC-H) under Schedule A-14 of the Town's Zoning By-law (No. 4316-09), with the treed valleyland zoned "Woodland" and "NPCA Regulation Area" under the Town's "Environmental Conservation Zone & Overlay".

The need for this EIS was specified in Town/Regional comments stemming from an 18 April 2024 pre-consultation meeting and associated Pre-consultation Agreement. A Terms of Reference (ToR) is provided below for review and approval by relevant agency staff. Should you have any questions or require further clarification regarding the contents of this letter, I would be pleased to discuss them further and can be reached by phone (905.745.5398) or email (tristan@terrastoryenviro.com).

Regards,

Terrastory Environmental Consulting Inc.



Tristan Knight, M.E.S, M.Sc., I.S.A., C.E.R.P.
Senior Ecologist | Arborist

ENVIRONMENTAL IMPACT STUDY TERMS OF REFERENCE

Approach

The Environmental Impact Study (EIS) will incorporate the following broad components:

- Identification, description, and delineation of all significant natural heritage features on and adjacent to the Subject Property (where present), along with characterization of their ecological functions;
- Connections between the identified significant natural heritage features and broader landscape, including potential linkages with off-site features (where applicable);
- Description of the proposed development and assessment of the potential for negative impacts to any identified significant natural heritage features;
- Technical recommendations and mitigation measures (where necessary); and
- Assessment of development application consistency with relevant municipal, provincial, and federal natural heritage legislative and policy requirements.

Assessment Methodology

- EIS will be undertaken consistent with the Regional Environmental Impact Statement (EIS) Guidelines (January 2018 or updated 2025 version), Section 3.1.33 of the NOP, Schedule J (Schedule for Complete Application) of the Town's OP, and NPCA's Interim EIS Guidelines (August 2022).
- Study Area will include the Subject Property and Adjacent Lands (natural lands) to a distance of 120 m from the limit of the proposed lot (restricted westward of Four Mile Creek Road).
- Biophysical information for Adjacent Lands will be collected from background sources and areas where permission to enter has been granted.

Background Information Gathering

Background biophysical information will be gathered from the following sources:

- Current and historical aerial photographs.
- Existing natural feature mapping.
    - Town of Niagara-on-the-Lake Official Plan Schedule C.
    - Niagara Official Plan Schedules C1 (Natural Environment System Overlay and Provincial Natural Heritage Systems) and C2 (Natural Environment System – Individual Components and Features)
    - Land Information Ontario (LIO).
    - NPCA regulation mapping (screening maps).
- Ontario Base Mapping, LiDAR, and other sources of topographic information.
- 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.
- Natural Heritage Information Centre (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.
- Ontario Reptile and Amphibian Atlas.
- iNaturalist "Odonata of Ontario" project.
- Atlas of the Mammals of Ontario.
- DFO Aquatic Species at Risk Maps.
- Provincial Aquatic Resource Area (ARA) dataset.
- Flowing Waters Information System (FWIS) Database.

Field Work Program

The following field assessments and surveys are considered necessary to appropriately characterize the biophysical nature of the Subject Property:

- Characterization and mapping of vegetation communities following the **Ecological Land Classification (ELC)** protocol.
- Single-season **Vascular Plant Inventory**
- **Staking exercise** with Region/NPCA to confirm natural feature boundaries (i.e., Other Woodland, top of bank), where present.
    - Natural feature boundaries will be pre-staked by qualified Terrastory staff.
    - Staking exercise has been completed.
- **Incidental wildlife** (including birds, butterflies, odonates, and bumblebees) to be recorded during all site visits.

Significance Assessment

- Determination of whether any confirmed or potential significant natural heritage features and/or natural hazards are present within the Subject Property (or Adjacent Lands), particularly (among others) SWH, SAR, valleylands, and woodlands.
- Mapping of significant natural heritage feature boundaries (e.g., staked/approved), where present.
- Screening for SWH (based on the Ecoregion 7E Criteria Schedule).
- Screening for Species at Risk (SAR).
- 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 EIS.
- A list of all species documented will be provided including their relevant local, provincial, and federal rankings. Local rankings will be based on the *Niagara Natural Areas Inventory Project* Species Checklist (March 2010).
- If any S1-S3 species are found on site, their locations and habitat extent will be mapped and considered through the impact assessment.

Effects Assessment and Recommendations

- Description of the proposed development plan and any related technical plans/documents where available.

- Mapping which indicates the proposed development plan overlaid with the significant natural feature mapping on a current airphoto base.
- Effects assessment for all natural heritage/hazard features identified and their functions from an ecological perspective, including direct, indirect, and cumulative effects.
- Recommendations for an ecologically and policy-appropriate buffers/setbacks/VPZs to relevant natural features (where present) based on the data collected, impact assessment, and conformity with applicable policies and legislation.
- Mitigation measures to avoid/minimize impacts (e.g., tree removal timing window, ESC measures, etc.).

Policy Conformity Assessment

- Confirmation that relevant OP policies and other legislative requirements are addressed by the proposed development plan, including:
    - Town of Niagara-on-the-Lake Official Plan (version in force and effect at the time the application is made)
    - Regional Municipality of Niagara Official Plan, particularly (but not exclusive to):
        - Section 3.1.4 (Refinements to the Limits of the Natural Environment System)
        - Section 3.1.9 (Lands Outside of a Provincial Natural Heritage System and Outside of the Niagara Escarpment Plan Area)
        - Section 3.1.10 (Key Hydrologic Areas, Key Hydrologic Features, and Other Important Water Resources)
        - Section 3.1.13 (Habitat of Endangered Species and Threatened Species)
        - Section 3.1.15 (Supporting Features and Areas)
        - Section 3.1.20 (Enhancements to the Natural Environment)
    - Provincial Planning Statement (2024)
    - NPCA Regulation (O. Reg. 41/24) and related Policy Document
    - Provincial *Endangered Species Act*
    - Provincial *Fish and Wildlife Conservation Act*
    - Federal *Migratory Birds Convention Act*
    - Federal *Fisheries Act*

PROPOSED TABLE OF CONTENTS

A proposed Table of Contents for the EIS will generally follow the outline below:

1) Introduction
    a. Study Background
    b. Study Purpose
2) Approach and Methods
    a. Background Biophysical Information Collected (see above).
    b. Agency Correspondence (as needed).
    c. Site Assessments and Survey Methodologies
    d. Impact/Effects Assessment and Mitigation
    e. Natural Heritage and Environmental Policy Context
        i. Town of Niagara-on-the-Lake Official Plan
        ii. Niagara Official Plan

iii. Provincial Planning Statement (2024) pursuant to the *Planning Act*
iv. Provincial *Endangered Species Act* including relevant regulations
v. Provincial *Fish and Wildlife Conservation Act*
vi. Federal *Fisheries Act*
vii. Federal *Migratory Birds Convention Act*

3) Existing Biophysical Conditions
    a. Land-use Setting
    b. Physical Setting (e.g., hydrology, surficial geology, etc.).
    c. Ecological Setting
4) Significance Assessment
    a. Significant Natural Features
    b. Significant Species (*if present).
5) Description of the Proposed Development
    a. Include consideration for and review of other overlapping technical studies/plans (e.g., stormwater management).
6) Effects Assessment
    a. Development Alternatives and Avoidance Measures incorporated into Project Design.
    b. Effects Assessment (e.g., spatial extent, magnitude, frequency, duration, adjacent lands, etc.).
    c. Mitigation Strategy
7) Policy Analysis
8) Conclusions
9) References
10) Appendices:
    a. Terms of Reference and Key Agency Correspondence
    b. Representative Photographs
    c. Vascular Plant List
    d. Species at Risk Screening
    e. SWH Assessment
    f. Summary of Technical Recommendations

Figure 1. Location of the Subject Property and Adjacent Lands.

Appendix 2. Representative Photographs

Photo 1. (23 July 2024). Trees adjacent to Four Mile Creek Road, facing east.

Photo 2. (23 July 2024). Trees adjacent to Four Mile Creek Road, facing east.

Photo 3. (23 July 2024). Coniferous hedgerow adjacent to Four Mile Creek Road, facing south.

Photo 4. (23 July 2024). Coniferous hedgerow adjacent to Four Mile Creek Road, facing north.

Photo 5. (23 July 2024). Edge of woodland within the northwest portion of the Subject Property, facing south.

Photo 6. (23 July 2024). Trees adjacent to Four Mile Creek Road, facing southwest.

Photo 7. (23 July 2024). Trees adjacent to southern road allowance, facing southeast.

Photo 8. (23 July 2024). Edge of woodland within the northern portion of the Subject Property, facing north.

Appendix 3. Vascular Plant List

Scientific Name	Common Name	Family	S-Rank (per NHIC)	Coefficient of Conservatism	Coefficient of Wetness
Acer negundo	Manitoba Maple	Aceraceae	S5	0	0
Acer platanoides	Norway Maple	Aceraceae	SNA	n/a	5
Acer saccharinum	Silver Maple	Aceraceae	S5	5	-3
Acer saccharum	Sugar Maple	Aceraceae	S5	4	3
Allium vineale	Wild Garlic	Liliaceae	SNA	n/a	3
Asclepias syriaca	Common Milkweed	Asclepiadaceae	S5	0	5
Carex granularis	Limestone Meadow Sedge	Cyperaceae	S5	3	-3
Carya ovata	Shagbark Hickory	Juglandaceae	S5	6	3
Centaurea nigrescens	Short-fringed Knapweed	Asteraceae	SNA	n/a	5
Cornus racemosa	Gray Dogwood	Cornaceae	S5	2	0
Cornus sericea	Red-osier Dogwood	Cornaceae	S5	2	-3
Dactylis glomerata	Orchard Grass	Poaceae	SNA	n/a	3
Daucus carota	Wild Carrot	Apiaceae	SNA	n/a	5
Elymus virginicus	Virginia Wildrye	Poaceae	S5	5	-3
Fraxinus pennsylvanica	Green Ash	Oleaceae	S4	3	-3
Juglans nigra	Black Walnut	Juglandaceae	S4?	5	3
Juniperus virginiana	Eastern Red Cedar	Cupressaceae	S5	4	3
Lonicera tatarica	Tartarian Honeysuckle	Caprifoliaceae	SNA	n/a	3
Malus pumila	Common Apple	Rosaceae	SNA	n/a	5
Medicago lupulina	Black Medic	Fabaceae	SNA	n/a	3
Phalaris arundinacea	Reed Canary Grass	Poaceae	S5	0	-3
Picea abies	Norway Spruce	Pinaceae	SNA	n/a	5
Picea glauca	White Spruce	Pinaceae	S5	6	3
Pinus nigra	Black Pine	Pinaceae	SNA	n/a	5
Pinus strobus	Eastern White Pine	Pinaceae	S5	4	3
Plantago lanceolata	English Plantain	Plantaginaceae	SNA	n/a	3
Poa pratensis	Kentucky Bluegrass	Poaceae	S5	0	3
Populus deltoides	Eastern Cottonwood	Salicaceae	S5	4	0
Populus tremuloides	Trembling Aspen	Salicaceae	S5	2	0
Prunella vulgaris	Heal-all	Lamiaceae	S5	0	0
Prunus avium	Sweet Cherry	Rosaceae	SNA	n/a	5
Prunus serotina	Black Cherry	Rosaceae	S5	3	3
Pyrus communis	Common Pear	Rosaceae	SNA	n/a	5
Quercus rubra	Northern Red Oak	Fagaceae	S5	6	3
Rhamnus cathartica	Common Buckthorn	Rhamnaceae	SNA	n/a	0
Rhus typhina	Staghorn Sumac	Anacardiaceae	S5	1	3
Rosa multiflora	Multiflora Rose	Rosaceae	SNA	n/a	3
Rubus occidentalis	Black Raspberry	Rosaceae	S5	2	5
Solidago altissima	Tall Goldenrod	Asteraceae	S5	1	3
Thuja occidentalis	Eastern White Cedar	Cupressaceae	S5	4	-3
Vitis riparia	Riverbank Grape	Vitaceae	S5	0	0

Appendix 4. Significant Wildlife Habitat Assessment

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 2024 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. A large agricultural land to the east of the Subject Property was planted with corn in 2018, which provides minimal habitat for small mammals during winter (major prey item).	--	--
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 are present.	**Unknown.** Bat roosting habitat assessment and/or acoustic monitoring not undertaken as part of this study.	**Negligible.** Any necessary removal of trees, which are unlikely to support maternal roosting colonies of either Big Brown Bat or Silver-haired Bat, will be subject to a timing restriction. See report for greater details.
Turtle Wintering Areas	**Yes.** Surface water features and/or wetlands with soft muddy substrate which do not freeze to the bottom during winter are present.	**Unknown.** Spring basking surveys for turtles were not conducted.	**Negligible**. Potential turtle overwintering areas (i.e., Lower Virgil Reservoir) are well set back from the proposed limit of development and restricted to Adjacent Lands.
Reptile Hibernaculum	**Yes.** 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.	**No.** While spring emergence surveys were not undertaken, proposed areas of development/disturbance do not possess attributes with a higher likelihood of supporting significant congregations of overwintering snakes.	--
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.	--	--
Migratory Butterfly Stopover Areas	**No.** A mixture of fields and forests within 5 km from the northern shoreline of Lake Erie or Lake Ontario 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 2024 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
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 northern shoreline of Lake Erie and Lake Ontario.	--	--
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, nearby wooded areas 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.** On-site forest/woodland communities are to small to support nesting raptors.	--	--
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)	**No.** Forests with wetlands, ponds, and/or pools that may support significant congregations of breeding amphibians are absent.	--	--
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 2024 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 2024 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities
Birds					
Barn Swallow (*Hirundo rustica*)	SC	Ontario Breeding Bird Atlas	• 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.	**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.	--
Black-crowned Night Heron (*Nycticorax nycticorax*)	S3	Species distribution and on-site habitats	• Occupies a variety of wetlands including marshes, swamps, streams, rivers, lakes, ponds, lagoons, canals, reservoirs, and wet agricultural fields. • Nests in trees or in cattails usually in a habitat safe from predators such as on an island, in a swamp, or over water.	**Unlikely.** While suitable foraging habitat is present within the Study Area, suitable breeding habitat is unlikely to be present.	--
Blue-winged Teal (*Spatula discors*)	S3B	Ontario Breeding Bird Atlas	• Nests amongst grasses or herbaceous vegetation and forages in summer in shallow ponds or pond-marsh mixes.	**Negligible.** Suitable breeding habitat is absent from the Subject Property.	--
Common Nighthawk (*Chordeiles minor*)	SC	Species distribution and on-site habitats	• 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.** 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.	--
Eastern Wood-pewee (*Contopus virens*)	SC	Ontario Breeding Bird Atlas	• Breeds and forages in relatively open, deciduous and mixed forests of various sizes (including urban forest fragments) and along forest edges.	**Possible.** Suitable habitat is present within the Subject Property.	**Negligible.** While the proposed development abuts the edge of a wooded area, it is unlikely that the proposed development activities would constitute "no negative impact" (as defined) to this species (if occurring nearby).
Fish Crow (*Corvus ossifragus*)	S1B, S3N	iNaturalist	• Inhabits beaches, marshes, estuaries, lakes, and rivers. • Nest is placed near the top of various trees.	**Unlikely.** Suitable breeding habitat is absent from the Subject Property. Fish Crow may occasionally forage within the Study Area.	--
Purple Martin (*Progne subis*)	S3B	Species distribution and on-site habitats	• 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	Ontario Breeding Bird Atlas	• 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.** Suitable habitat is present within the Subject Property.	**Negligible.** While the proposed development abuts the edge of a wooded area, it is unlikely that the proposed development activities would constitute "no negative impact" (as defined) to this species (if occurring nearby).

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 2024 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities
Upland Sandpiper (*Bartramia longicauda*)	S3B	Ontario Breeding Bird Atlas	• Breeds in grasslands, pastures, both grazed and ungrazed, and in agricultural fields, especially fallow fields, but sometimes hay or other crop fields.	**Negligible.** Suitable habitat is absent from the Subject Property.	--
Wood Thrush (*Hylocichla mustelina*)	SC	Species distribution and on-site habitats	• Breeds and forages in second-growth and mature deciduous and mixed forests with a well-developed understory.	**Possible.** Suitable habitat is present within the Subject Property.	**Negligible.** While the proposed development abuts the edge of a wooded area, it is unlikely that the proposed development activities would constitute "no negative impact" (as defined) to this species (if occurring nearby).
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 will not adversely affect nectaring opportunities for this species.
Monarch (*Danaus plexippus*)	SC	Ontario 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.** Areas of proposed development and disturbance lack Milkweed. The landscape surrounding the Study Area provides nectaring and ovipositing sites for this species.
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.
Plants					
Kansas Hawthorn (*Crataegus coccinioides)*	S2	NHIC	• Inhabits anthropogenic (man-made or disturbed habitats), forest edges, forests, meadows and fields	**Possible.** Suitable habitat is present within the Subject Property; however, species was not documented.	--
Reptiles					
Northern Map Turtle (*Graptemys geographica*)	SC	Ontario Reptile & Amphibian Atlas	• Occupies lakes and large rivers with slow moving currents. • Nests in exposed, usually coarse, friable substrate.	**Unlikely.** While the Lower Virgil Reservoir provides theoretically suitable habitat for this species, inland populations are overall very rare in Niagara Region and therefore this species is not expected to be present..	--
Snapping Turtle (*Chelydra serpentina*)	SC	Ontario Reptile & Amphibian 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.	**Possible.** Lower Virgil Reservoir and Four Mile Creek may provide suitable habitat for Snapping Turtles.	**Negligible.** Proposed development and site alteration activities are considerably set back from the Lower Virgil Reservoir and Four Mile Creek.

[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.

Subnational Ranks (S-Ranks) are interpreted as follows:
S1: Critically Imperiled - Extremely rare in Ontario; usually 5 or fewer occurrences in the province, or very few remaining hectares.
S2: Imperiled - Very rare in Ontario; usually between 5 and 20 occurrences in the province, or very few remaining hectares.
S3: Vulnerable - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.
S4: Apparently Secure – Apparently secure in the province, with many occurrences.
S5: Secure – Demonstrably secure in Ontario.
SH: Possibly Extirpated – Known from only historical records but still some hope of discovery.
SX: Extirpated – A species or vegetation community that is extirpated from Ontario.
SNA: Not Applicable – A conservation status risk is not applicable because the species or vegetation community is not a suitable target for conservation activities.
SNR: Unranked – Conservation status not yet assessed.
SU: Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

Appendix 5. Endangered and Threatened Species Assessment

Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	Species	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[1]	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
		Birds			
THR	Ontario Breeding Bird Atlas	Bank Swallow (*Riparia riparia*)	•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 are absent from the Subject Property.	--
THR	NHIC; Ontario Breeding Bird Atlas	Bobolink (*Dolichonyx oryzivorus*)	•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.	--
THR	Ontario Breeding Bird Atlas	Chimney Swift (*Chaetura pelagica*)	•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 are absent from the Subject Property.	--
THR	NHIC, Ontario Breeding Bird Atlas	Eastern Meadowlark (*Sturnella magna*)	•Breeds and forages in hayfields, savannahs, pastures, meadows, grasslands, prairies, and shrubby fields.	**Negligible.** Suitable breeding habitat is absent from the Subject Property.	--
END	NHIC	Loggerhead Shrike (*Lanius ludovicianus*)	•Breeds and forages in alvar pasture or other grasslands with scattered low trees and shrubs and short grass, which makes it easier to spot its prey.	**Negligible.** Records from square 17TPH68 are historic (before 1967).	--
		Insects			
END	Species distribution and on-site habitats	Nine-spotted Lady Beetle (*Coccinella novemnotata*)	•Lives in diverse habitats such as agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows, riparian areas, and isolated natural areas.	**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.	--
END	Species distribution and on-site habitats	Rusty-patched Bumble Bee (*Bombus affinis*)	•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 (Colla and Taylor-Pindar, 2011).	--
END	Species distribution and on-site habitats	Transverse Lady Beetle (*Coccinella transversoguttata*)	•Habitat generalist, meaning it is able to live in a wide range of habitats, including agricultural areas, suburban gardens, parks, coniferous forests, deciduous forests, prairie grasslands, meadows and riparian areas.	**Negligible**. In Ontario, all records are historical, from 1990 and earlier (Linton, J., and D. McCorquodale. 2019). There has been one recent record from northern Ontario 2021 (https://inaturalist.ca/observations/85247515).	--
		Mammals			
END	Species distribution and on-site habitats	Eastern Red Bat (*Lasiurus borealis*)	• Maternity roost sites are typically within deciduous or coniferous forests of all age classes, with a preference for roosting in tall, large diameter trees. • Occurrences of roosting in anthropogenic structures are rare. • A migratory species primarily found in Ontario during the summer months, with summer habitat consisting of foraging, drinking, and roosting sites.	**Possible.** Forest/woodland communities within the Study Area could provide roosting opportunities for this species. The forest/woodland edge and canopy openings provide suitable foraging habitat for this species.	**Negligible.** A timing window restriction will be applied to tree removal activities to avoid impacting roosting bats. Additional mitigation measures for construction and detailed design are also provided See report for greater details.

Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	Species	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[1]	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
END	Species distribution and on-site habitats	Hoary Bat (*Lasiurus cinereus*)	• Maternity roost sites are typically within deciduous or coniferous forests of all age classes, with a preference for roosting in tall, large diameter trees. • Occurrences of roosting in anthropogenic structures are rare. • A migratory species primarily found in Ontario during the summer months, with summer habitat consisting of foraging, drinking, and roosting sites.	**Possible.** Forest/woodland communities within the Study Area could provide roosting opportunities for this species. The forest/woodland edge and canopy openings provide suitable foraging habitat for this species.	**Negligible.** A timing window restriction will be applied to tree removal activities to avoid impacting roosting bats. Additional mitigation measures for construction and detailed design are also provided See report for greater details.
END	iNaturalist; Species distribution and on-site habitats	Little Brown Myotis (*Myotis lucifugus*)	•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.** Forest/woodland communities within the Study Area could provide roosting opportunities for maternity colonies of this species within larger-diameter snags, cavity trees, or trees with cracks/crevices/loose bark. Other trees within or outside the forest/woodland communities (including smaller-diameter trees) may offer non-specific roosting habitat (i.e., "day roosts") for individual bats (males or non-reproductive females). The forest/woodland edge and canopy openings provide suitable foraging habitat for this species.	**Negligible.** A timing window restriction will be applied to tree removal activities to avoid impacting roosting bats (individuals or maternity colonies). Additional mitigation measures for construction and detailed design are also provided See report for greater details.
END	Species distribution and on-site habitats	Northern Myotis (*Myotis septentrionalis*)	•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**. Forest/woodland communities within the Study Area could provide roosting opportunities for maternity colonies of this species within larger-diameter snags, cavity trees, or trees with cracks/crevices/loose bark. Other trees within or outside the forest/woodland communities (including smaller-diameter trees) may offer non-specific roosting habitat (i.e., "day roosts") for individual bats (males or non-reproductive females). The forest/woodland edge and canopy openings provide suitable foraging habitat for this species.	**Negligible.** A timing window restriction will be applied to tree removal activities to avoid impacting roosting bats (individuals or maternity colonies). Additional mitigation measures for construction and detailed design are also provided See report for greater details.
END	Species distribution and on-site habitats	Silver-haired Bat (*Lasionycteris noctivagans*)	• Maternity roost sites are typically within decaying, large diameter deciduous or coniferous trees with heart-rot or exfoliating bark. • Known to occasionally roost on or in buildings. • A migratory species primarily found in Ontario during the summer months, with summer habitat consisting of foraging, drinking, and roosting sites.	**Possible**. Forest/woodland communities within the Study Area could provide roosting opportunities for maternity colonies of this species within larger-diameter snags, cavity trees, or trees with cracks/crevices/loose bark. Other trees within or outside the forest/woodland communities (including smaller-diameter trees) may offer non-specific roosting habitat (i.e., "day roosts") for individual bats (males or non-reproductive females). The forest/woodland edge and canopy openings provide suitable foraging habitat for this species.	**Negligible.** A timing window restriction will be applied to tree removal activities to avoid impacting roosting bats (individuals or maternity colonies). Additional mitigation measures for construction and detailed design are also provided See report for greater details.

Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	Species	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[1]	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
END	Species distribution and on-site habitats	Tri-colored Bat (*Perimyotis subflavus*)	•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.	**Possible.** Maple and Oak with dead/dying leaf clusters are present within the Subject Property.	**Negligible.** A timing window restriction will be applied to tree removal activities to avoid impacting roosting bats (individuals or maternity colonies). Additional mitigation measures for construction and detailed design are also provided See report for greater details.
		Reptiles			
END	Critical Habitat for Species at Risk National Dataset - Canada	Spotted Turtle (*Clemmys guttata*)	•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.	--
END	Critical Habitat for Species at Risk National Dataset - Canada	Wood Turtle (*Glyptemys insculpta*)	•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.	--
		Plants			
END	NHIC	Bird's-foot Violet (*Viola pedata*)	•Occupies sandy open plains, slopes, and savannas, usually with jack pine and/or oaks.	**Negligible.** Species not documented during vascular plant surveys.	
END	Species distribution and on-site habitats	Black Ash (*Fraxinus nigra*)	•Occupies deciduous swamps (often peaty), floodplains, and wet woods.	**Negligible.** Species not documented during vascular plant surveys.	--
END	Species distribution and on-site habitats.	Butternut (*Juglans cinerea*)	•Occupies a variety of treed habitats including mature forests, early-successional forests, and hedgerows.	**Negligible.** Species not documented during vascular plant surveys.	--

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

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

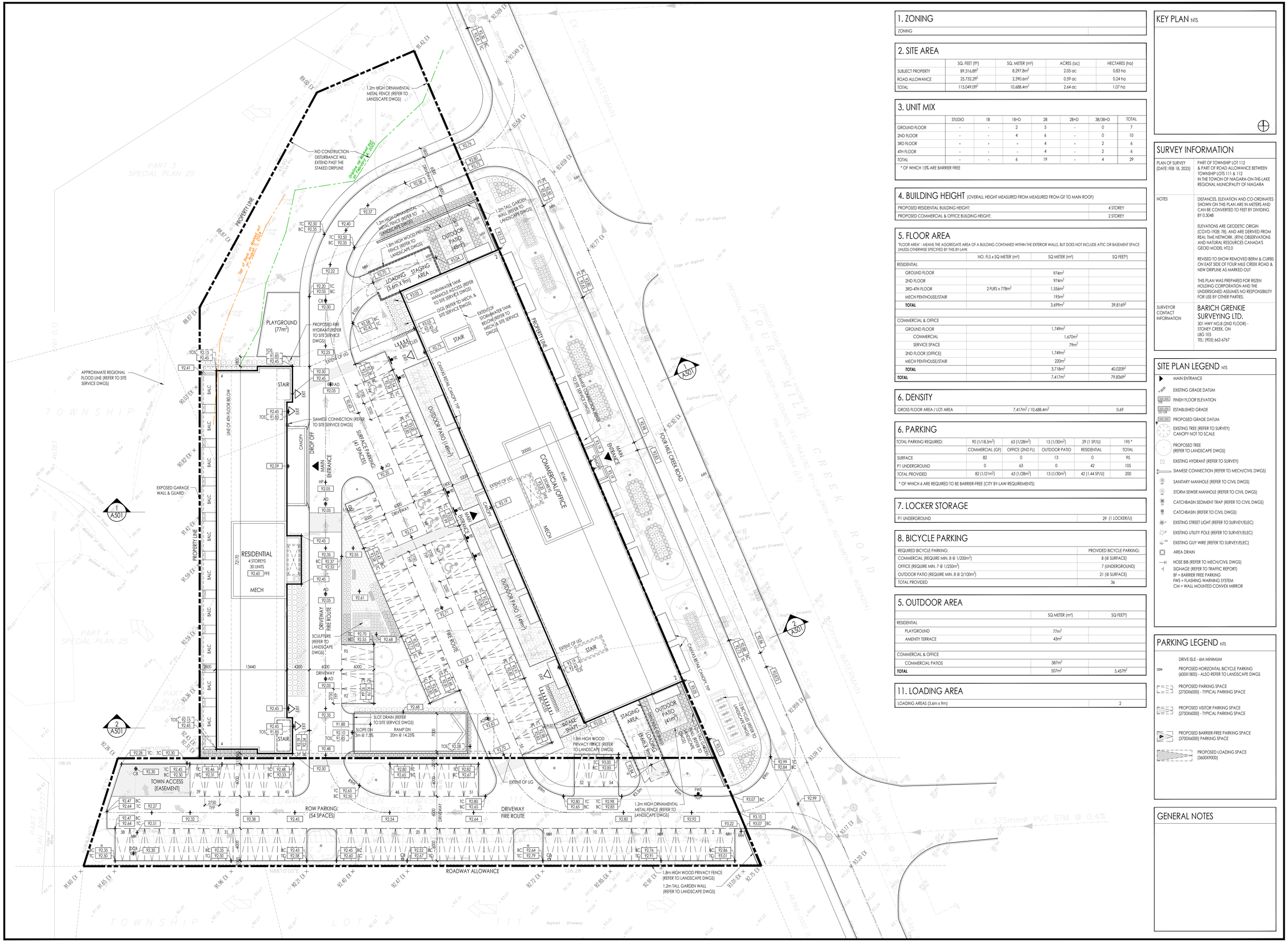
Unlikely: while theoretically conceivable, species presence very improbable or temporary based on available information (e.g., habitat conditions, range, abundance in local landscape, etc.).

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 6. Proposed Development Plan.



1. ZONING

ZONING	

2. SITE AREA

	SQ. FEET (ft²)	SQ. METER (m²)	ACRES (ac)	HECTARES (ha)
SUBJECT PROPERTY	89,316.8ft²	8,297.8m²	2.05 ac	0.83 ha
ROAD ALLOWANCE	25,732.2ft²	2,390.6m²	0.59 ac	0.24 ha
TOTAL	115,049.0ft²	10,688.4m²	2.64 ac	1.07 ha

3. UNIT MIX

	STUDIO	1B	1B+D	2B	2B+D	3B/3B+D	TOTAL
GROUND FLOOR	-	-	2	5	-	0	7
2ND FLOOR	-	-	4	6	-	0	10
3RD FLOOR	-	-	-	4	-	2	6
4TH FLOOR	-	-	-	4	-	2	6
TOTAL	-	-	6	19	-	4	29

* OF WHICH 15% ARE BARRIER FREE

4. BUILDING HEIGHT (OVERALL HEIGHT MEASURED FROM MEASURED FROM GF TO MAIN ROOF)

PROPOSED RESIDENTIAL BUILDING HEIGHT:	4 STOREY
PROPOSED COMMERCIAL & OFFICE BUILDING HEIGHT:	2 STOREY

5. FLOOR AREA

"FLOOR AREA" - MEANS THE AGGREGATE AREA OF A BUILDING CONTAINED WITHIN THE EXTERIOR WALLS, BUT DOES NOT INCLUDE ATTIC OR BASEMENT SPACE UNLESS OTHERWISE SPECIFIED BY THIS BY-LAW.

	NO. FLS x SQ METER (m²)	SQ METER (m²)	SQ FEET²
RESIDENTIAL			
GROUND FLOOR		974m²	
2ND FLOOR		974m²	
3RD-4TH FLOOR	2 FLRS x 778m²	1,556m²	
MECH PENTHOUSE/STAIR		195m²	
TOTAL		3,699m²	39,816ft²
COMMERCIAL & OFFICE			
GROUND FLOOR		1,749m²	
COMMERCIAL		1,670m²	
SERVICE SPACE		79m²	
2ND FLOOR (OFFICE)		1,749m²	
MECH PENTHOUSE/STAIR		220m²	
TOTAL		3,718m²	40,020ft²
TOTAL		7,417m²	79,836ft²

6. DENSITY

GROSS FLOOR AREA / LOT AREA	7,417m² / 10,688.4m²	0.69

6. PARKING

TOTAL PARKING REQUIRED:	90 (1/18.5m²)	63 (1/28m²)	13 (1/30m²)	29 (1 SP/U)	195 *
	COMMERCIAL (GF)	OFFICE (2ND FL)	OUTDOOR PATIO	RESIDENTIAL	TOTAL
SURFACE	82	0	13	0	95
P1 UNDERGROUND	0	63	0	42	105
TOTAL PROVIDED	82 (1/21m²)	63 (1/28m²)	13 (1/30m²)	42 (1.44 SP/U)	200

* OF WHICH 6 ARE REQUIRED TO BE BARRIER-FREE (CITY BY-LAW REQUIREMENTS)

7. LOCKER STORAGE

P1 UNDERGROUND	29 (1 LOCKER/U)

8. BICYCLE PARKING

REQUIRED BICYCLE PARKING:	PROVIDED BICYCLE PARKING:
COMMERCIAL (REQUIRE MIN. 8 @ 1/200m²)	8 (@ SURFACE)
OFFICE (REQUIRE MIN. 7 @ 1/250m²)	7 (UNDERGROUND)
OUTDOOR PATIO (REQUIRE MIN. 8 @ 2/100m²)	21 (@ SURFACE)
TOTAL PROVIDED	36

5. OUTDOOR AREA

	SQ METER (m²)	SQ FEET²
RESIDENTIAL		
PLAYGROUND	77m²	
AMENITY TERRACE	43m²	
COMMERCIAL & OFFICE		
COMMERCIAL PATIOS	387m²	
TOTAL	507m²	5,457ft²

11. LOADING AREA

LOADING AREAS (3.6m x 9m)	2

KEY PLAN NTS

SURVEY INFORMATION

PLAN OF SURVEY (DATE: FEB 18, 2025)	PART OF TOWNSHIP LOT 112 & PART OF ROAD ALLOWANCE BETWEEN TOWNSHIP LOTS 111 & 112 IN THE TOWN OF NIAGARA-ON-THE-LAKE REGIONAL MUNICIPALITY OF NIAGARA
NOTES	DISTANCES, ELEVATION AND CO-ORDINATES SHOWN ON THIS PLAN ARE IN METERS AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048 ELEVATIONS ARE GEODETIC ORIGIN (CGVD-1928: 78), AND ARE DERIVED FROM REAL TIME NETWORK, (RTN) OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOID MODEL HT2.0 REVISED TO SHOW REMOVED BERM & CURBS ON EAST SIDE OF FOUR MILE CREEK ROAD & NEW DRIPLINE AS MARKED OUT THIS PLAN WAS PREPARED FOR REZEN HOLDING CORPORATION AND THE UNDERSIGHED ASSUMES NO RESPONSIBILITY FOR USE BY OTHER PARTIES.
SURVEYOR CONTACT INFORMATION	BARICH GRENKIE SURVEYIING LTD. 301 HWY NO.8 (2ND FLOOR) - STONEY CREEK, ON L8G 1E5 TEL: (905) 662-6767

SITE PLAN LEGEND NTS

- MAIN ENTRANCE
- 92.00 EXISTING GRADE DATUM
- 100.000 FIN FINISH FLOOR ELEVATION
- 100.000 EG ESTABLISHED GRADE
- 100.000 PROPOSED GRADE DATUM
- EXISTING TREE (REFFER TO SURVEY) CANOPY NOT TO SCALE
- PROPOSED TREE (REFER TO LANDSCAPE DWGS)
- EXISTING HYDRANT (REFER TO SURVEY)
- SIAMESE CONNECTION (REFER TO MECH/CIVIL DWGS)
- SANITARY MANHOLE (REFER TO CIVIL DWGS)
- STORM SEWER MANHOLE (REFER TO CIVIL DWGS)
- CATCHBASIN SEDIMENT TRAP (REFER TO CIVIL DWGS)
- CATCHBASIN (REFER TO CIVIL DWGS)
- EXISTING STREET LIGHT (REFER TO SURVEY/ELEC)
- EXISTING UTILITY POLE (REFER TO SURVEY/ELEC)
- EXISTING GUY WIRE (REFER TO SURVEY/ELEC)
- AREA DRAIN
- HOSE BIB (REFER TO MECH/CIVIL DWGS)
- SIGNAGE (REFER TO TRAFFIC REPORT) BF = BARRIER FREE PARKING FWS = FLASHING WARNING SYSTEM CM = WALL MOUNTED CONVEX MIRROR

PARKING LEGEND NTS

- DRIVE ISLE - 6M MINIMUM
- PROPOSED HORIZONTAL BICYCLE PARKING (600X1800) - ALSO REFER TO LANDSCAPE DWGS
- PROPOSED PARKING SPACE (2750X6000) - TYPICAL PARKING SPACE
- PROPOSED VISITOR PARKING SPACE (2750X6000) - TYPICAL PARKING SPACE
- PROPOSED BARRIER-FREE PARKING SPACE (3700X6000) PARKING SPACE
- PROPOSED LOADING SPACE (3600X9000)

GENERAL NOTES

NO.	DATE	ISSUE	BY
Issued			

ICKE | BROCHU
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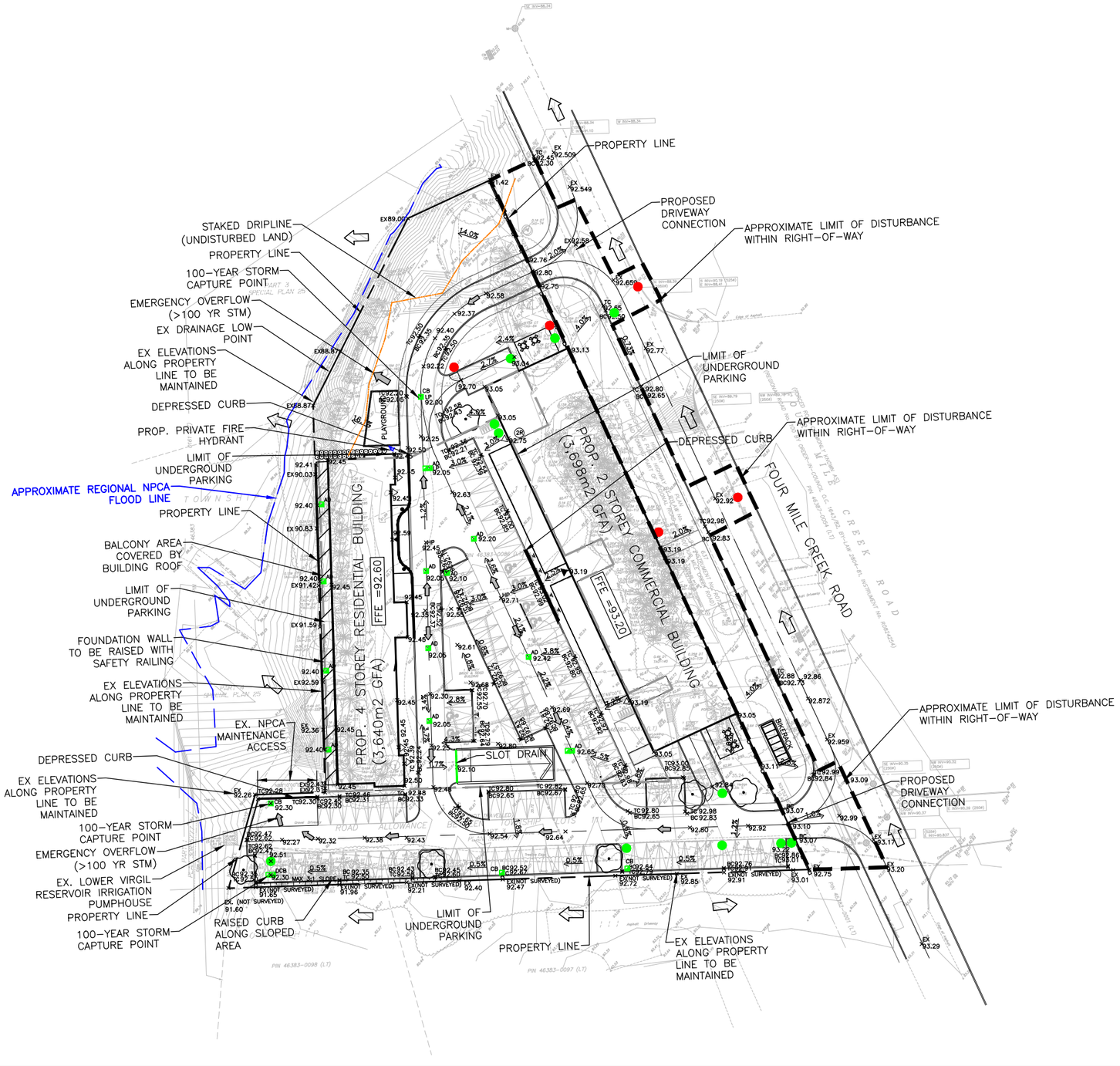
T 647 288 1800 ibarchitects.net

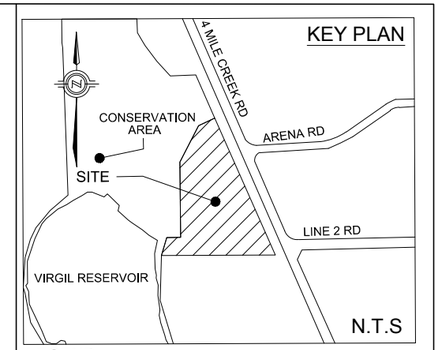
1544 & 1546 FOUR MILE CREEK RD RESIDENTIAL DEVELOPMENT

FOUR MILE CREEK — NIGARA-ON-THE-LAKE, ONTARIO

Drawing title
SITE PLAN

Date	MARCH, 2025	Drawn By	PL/YL
Scale	1:300	Reviewed By	AB
Project No.	23.11	Drawing No.	A102
Plot Date	March 28, 2025		





LEGEND:

- PROPERTY LINE
- NEW / EXISTING WATER VALVE AND BOX
- EXISTING HYDRANT
- PROPOSED ELEVATION
- EXISTING ELEVATION
- DRAINAGE ARROW / SLOPE (MAX 3:1)
- MAJOR EXTERNAL OVERLAND FLOW
- MAJOR INTERNAL OVERLAND FLOW
- APPROXIMATE LIMIT OF DISTURBED AREA WITHIN CITY RIGHT-OF-WAY
- HEAVY DUTY PAVEMENT AREA FOR FIRE TRUCK ACCESS
- EX. STORM/SANITARY M.H.
- EX. CATCH BASIN
- LIMIT OF UNDERGROUND PARKING
- AD PROP. AREA DRAIN
- CB PROP. CATCHBASIN
- PROP. STORM M.H.
- PROP. SANITARY M.H.

NOTES

- TOPOGRAPHIC SURVEY PROVIDED BY BARICH GRENKIE SURVEYING LTD. COMPLETED ON JANUARY 25, 2024.
- SITE PLAN PROVIDED BY ICKE BROCHU ARCHITECTS INC

SCALE: 1:1000

	DRAWN BY	CHECKED BY
exp.	R.N	S.P.

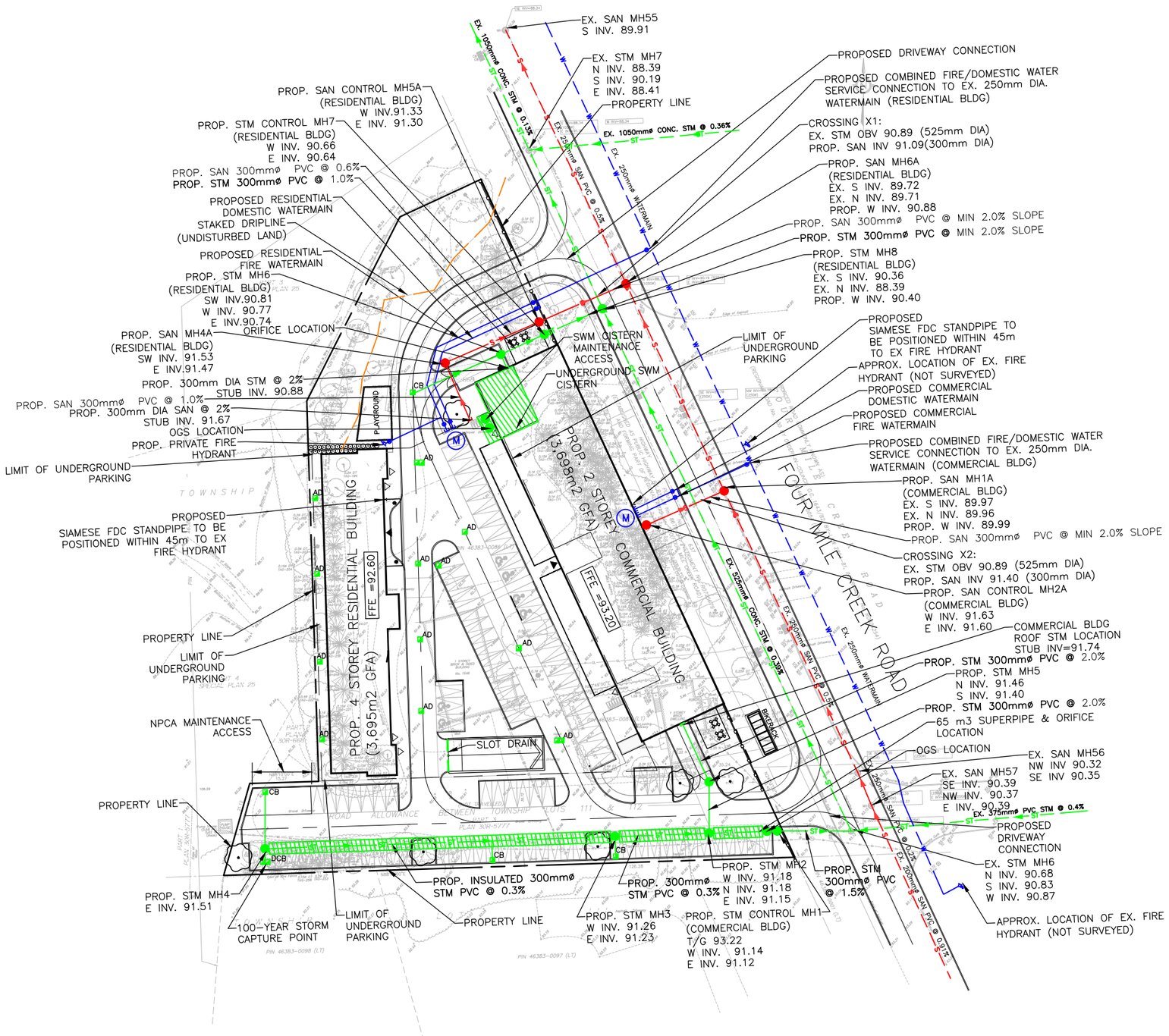
PRELIMINARY SITE GRADING PLAN

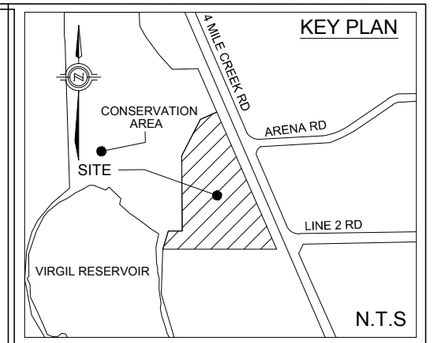
FIGURE 2

1544 & 1546 FOUR MILE CREEK RD
NIAGARA ON THE LAKE, ONTARIO

PROJECT NUMBER: ALL-24011473-A0

DATE: MARCH 2025





LEGEND:

- PROPERTY LINE
- NEW / EXISTING WATER VALVE AND BOX
- EXISTING HYDRANT
- 109.42 PROPOSED ELEVATION
- 109.42 EXISTING ELEVATION
- DRAINAGE ARROW / SLOPE (MAX 3:1)
- MAJOR INTERNAL OVERLAND FLOW
- MAJOR EXTERNAL OVERLAND FLOW
- EX. STORM/SANITARY M.H.
- EX. CATCH BASIN
- PROP. CATCHBASIN
- PROP. STORM M.H.
- PROP. SANITARY M.H.
- EX. STORM SEWER
- PROP. STORM SEWER
- EX. SAN SEWER
- PROP. SANITARY SEWER
- EX. WATERMAIN
- PROP. WATERMAIN
- PROP. SWM QUANTITY STORAGE FACILITY
- WATER METER LOCATION

NOTES

- TOPOGRAPHIC SURVEY PROVIDED BY BARICH GRENKIE SURVEYING LTD. COMPLETED ON JANUARY 25, 2024.
- SITE PLAN PROVIDED BY ICKE BROCHU ARCHITECTS INC

SCALE: 1:1000

	DRAWN BY	CHECKED BY
exp.	R.N	S.P.

PRELIMINARY SITE SERVICING PLAN

FIGURE 3

1544 & 1546 FOUR MILE CREEK RD
NIAGARA ON THE LAKE, ONTARIO

PROJECT NUMBER: ALL-24011473-A0

DATE: MARCH 2025

Appendix 7. Summary of Technical Recommendations

Natural Feature	Technical Recommendations (per Section 5 of report)
Other Woodlands	• A Buffer Enhancement and Tree Replacement Plan will be prepared for the areas identified on **Figure 3** to establish a functional buffer zone and enhance the ecological conditions of the wooded valleyland. • Future excavation and shoring plans as part of constructing the four-storey residential building and underground parking will minimize the need for tree removals within the Other Woodland to the greatest extent practicable.
Significant Valleylands	• Potential for impacts will be addressed through full implementation of other overlapping mitigation measures.
Significant Wildlife Habitat	• Potential for impacts will be addressed through full implementation of other overlapping mitigation measures.
Habitat of Endangered and Threatened Species	• All necessary tree removals and removal of the on-site buildings will be completed outside the primary bat activity period (i.e., to be completed between October 1 and March 31). If limited tree removal is required during the restricted timing window, consult a qualified ecologist and/or MECP for further direction. • 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 eastward) to the extent practicable.
Fish Habitat	• An Erosion and Sediment Control Plan will be prepared at detailed design and implemented during construction.
Other Natural Environment Considerations	• All removal of trees will be undertaken consistent with Terrastory's Tree Protection Plan. • All necessary vegetation removal (e.g., trees, meadow vegetation) 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 restricted timing window within readily searchable habitat types, 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 bird nesting survey is to take place within 48 hours of vegetation removal. • Incorporation of Bird-Friendly Guidelines into the building 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.