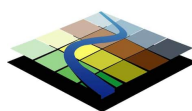


ENVIRONMENTAL IMPACT STATEMENT & ARBORIST REPORT

Plan of Subdivision Application
165 Lake Street, Town of Grimsby
6 September 2023



TERRASTORY
environmental consulting inc.

ENVIRONMENTAL IMPACT STATEMENT & ARBORIST REPORT

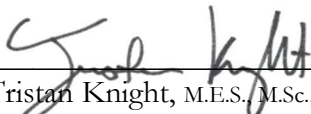
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Prepared for:

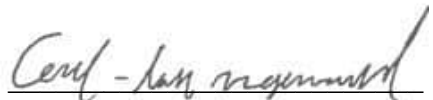
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6 September 2023

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TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	Study Background	1
1.2	Study Purpose	1
2	APPROACH AND METHODS	2
2.1	Background Biophysical Information Assessment	2
2.2	Site Assessment and Surveys	3
2.3	Significance Assessment.....	5
2.3.1	Definitions and Criteria.....	5
2.3.2	Determination	6
2.4	Effects Assessment and Mitigation	6
2.5	Natural Heritage Policy Context.....	7
3	EXISTING BIOPHYSICAL CONDITIONS	8
3.1	Land-use and Landscape Setting.....	9
3.2	Physical Setting.....	9
3.3	Ecological Setting.....	9
3.3.1	Vegetation Communities	9
3.3.2	Vascular Plants	10
3.3.3	Trees	10
3.3.4	Breeding Birds	11
3.3.5	Incidental Wildlife Recorded.....	11
4	SIGNIFICANCE ASSESSMENT	12
4.1	Significant Woodlands.....	12
4.2	Significant Wildlife Habitat.....	13
4.3	Habitat of Endangered and Threatened Species	14
4.3.1	Bank Swallow.....	14
4.3.2	Bats.....	14
4.4	Fish Habitat.....	15
4.5	Conservation Authority Regulated Areas	15
5	EFFECTS ASSESSMENT AND MITIGATION	15
5.1	Proposed Development Plan.....	15
5.2	Avoidance Measures incorporated into the Proposed Development Plan	15
5.3	Feature-based Effects Assessment and Technical Recommendations	16
5.3.1	Significant Wildlife Habitat	16
5.3.2	Habitat of Endangered and Threatened Species.....	16

5.3.3	Fish Habitat	18
5.3.4	Tree Protection Plan and Other Natural Environment Considerations	19
5.3.5	Summary of Technical Recommendations	20
6	APPLICABLE NATURAL HERITAGE AND ENVIRONMENTAL POLICIES.....	20
6.1	Town of Grimsby Official Plan (August 2018)	20
6.2	Regional Municipality of Niagara Official Plan (2014 Consolidation)	22
6.3	Provincial Policy Statement 2020, pursuant to the <i>Planning Act</i> , R.S.O. 1990, c. P. 13	23
6.4	Greenbelt Plan 2017, pursuant to the <i>Greenbelt Act</i> , S.O. 2005, c. 1	24
6.5	Niagara Peninsula Conservation Authority Regulation 155/06, pursuant to the <i>Conservation Authorities Act</i> , R.S.O. 1990, c. C.27	24
6.6	Provincial <i>Endangered Species Act</i> , S.O. 2007, c. 6	24
6.7	Federal <i>Fisheries Act</i> , R.S.C. 1985, c. F-14	25
6.8	Federal <i>Migratory Birds Convention Act</i> , S.C. 1994, c. 22	25
7	CONCLUSIONS	25
8	REFERENCES	27

Figures

Figure 1.	Location of the Study Area.	28
Figure 2.	Biophysical Features and Conditions.....	29
Figure 3.	Significant Natural Features with Proposed Development Overlay.....	30
Figure 4.	Preliminary Tree Protection Plan.....	31

Tables

Table 1.	Background Biophysical Information Acquired and Reviewed.	2
Table 2.	Site Assessments and Ecological Surveys performed within the Study Area.....	3
Table 3.	Applicable Natural Heritage Policies.....	8
Table 4.	Composition and Abundance of Trees within and/or adjacent to the proposed Areas of Development and Disturbance.....	10
Table 5.	Summary of the Assessment of Significant Natural Features within the Study Area and Adjacent Lands.....	12

Appendices

Appendix 1.	Terms of Reference
Appendix 2.	Representative Photographs
Appendix 3.	Vascular Plant List

Appendix 4. Tree Inventory and Condition Assessment

Appendix 5. Breeding Bird Survey Results

Appendix 6. Significant Wildlife Habitat Assessment

Appendix 7. Endangered and Threatened Species Assessment

Appendix 8. Proposed Development Plan.

Appendix 9. Summary of Technical Recommendations

1 INTRODUCTION

1.1 Study Background

Terrastory Environmental Consulting Inc. (hereinafter “Terrastory”) was retained by Sophies Landing Grimsby Inc. (hereinafter “the Applicant”) to prepare this Environmental Impact Study (EIS) and Arborist Report in support of a Plan of Subdivision and Zoning By-law Amendment (ZBA) applications at 165 Lake Street and an abutting vacant parcel to the west (hereinafter “Study Area”) in the Town of Grimsby. The Study Area totals approximately 1.3 hectares (3.2 acres) in area and is bounded by Lake Street (south), residential parcels (east and west), and the shoreline of Lake Ontario (north). The western portion of the Study Area is largely naturalized with trees, thickets, and open field, while the eastern portion contains an existing residence surrounded by treed and manicured amenity space. The location of the Study Area within its broader landscape setting is shown in **Figure 1**.

The Study Area is situated within an “Urban Settlement Area” pursuant to Schedule A (Municipal Structure) of the Town’s OP. Schedule A further maps the Town’s “Natural Heritage System” (NHS) along the shoreline of the Study Area extending onto adjacent tablelands above (i.e., southward from) the Lake Ontario shore bluff. The Study Area is more specifically designated “Low Density Residential Area” per Schedule B (Land Use) of the Town’s OP, with an “Environmental Conservation Area” (ECA) designation and “Hazard Land Area” overlay associated with the Lake Ontario shoreline and shore bluff. The western parcel is zoned “Neighbourhood Development” (ND) while the eastern parcel is zoned “Residential Detached 2” with exception 35 (RD2.35); both parcels contain a “Hazard Overlay” zone coincident with the Lake Ontario shoreline and shore bluff. Development within the Study Area is also subject to regulatory approval by the Niagara Peninsula Conservation Authority (NPCA) given presence of the shore bluff and its associated erosion hazard.

The Applicant is proposing to construct a 32-unit residential condominium development. Unit #32 will act as a clubhouse for the community, while two private driveway entrances are proposed from Lake Street. A Pre-consultation Meeting was held on 20 May 2021 with Town, Niagara Region, and NPCA staff to determine submission requirements. Given the presence of fish habitat (in Lake Ontario) within 30 m of the limit of development, Regional Environmental Planning staff requested the submission of an EIS to form part of the complete application. A Terms of Reference (ToR) which scopes the conduct and content of this EIS was prepared by Terrastory and confirmed via email by Regional Environmental Planning staff (A. Boudens) on 31 May 2022 and by NPCA staff (T. Lennard) on 01 June 2022. The approved ToR is provided in **Appendix 1**.

Included as part of this EIS/Arborist Report is a preliminary Tree Protection Plan (TPP) as requested by the Town through pre-consultation.

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 plan. The scope and approach of this study address the reporting requirements of **Appendix 1**, section 9.18 (Environmental Impact Study Requirements) of the Town’s OP, Regional EIS Guidelines (January 2018), and NPCA Interim EIS Guideline (July 2022). It is understood that this EIS report and

accompanying TPP will form part of the Draft Plan of Subdivision and rezoning application 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 Study Area (see **Section 2.1**).
2. **Conduct site assessments and ecological surveys** to field-verify the accuracy of the acquired background biophysical information and collect additional biophysical information as necessary (see **Section 2.2**).
3. **Assess the significance** of the biophysical information collected and natural features identified within the context of applicable natural heritage and environmental policies (see **Section 2.3**).
4. **Predict the effects** of the application on the identified significant natural features and natural environment, particularly the net effects once mitigation measures and technical recommendations are implemented (see **Section 2.4**).
5. **Determine whether the proposed application addresses applicable natural heritage and environmental policies** at municipal, provincial, and federal levels (see **Section 2.5**).

2.1 Background Biophysical Information Assessment

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

Table 1. Background Biophysical Information Acquired and Reviewed.

Type of Information Acquired	Description
Ortho-rectified Aerial Photographs	<ul style="list-style-type: none"> • 1934, 1954, 1965, 2000, 2006, 2010, 2013, 2015 to 2022.
Natural Feature Mapping	<ul style="list-style-type: none"> • Town of Grimsby Official Plan (8 August 2018 office consolidation) Schedules A, B, and B-2, and Appendices 2 and 3. • Regional Municipality of Niagara Official Plan (2014 consolidation) Schedule C. • Land Information Ontario (LIO) accessed via the “Make a Map: Natural Heritage Areas” web-based platform (accessed 28 March 2023). • Niagara Peninsula Conservation Authority (NPCA) regulation mapping (accessed 28 March 2023).
Physiographic Resource Mapping and Datasets	<ul style="list-style-type: none"> • Topographic Survey of the Study Area. • 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 (accessed 28 March 2023). • Bedrock Topography and Overburden Thickness Mapping (Gao et al. 2006). • Paleozoic Geology of Southern Ontario (Armstrong and Dodge 2007). • Surficial Geology of Southern Ontario (Ontario Geological Survey 2010).

Type of Information Acquired	Description
	<ul style="list-style-type: none"> • Physiography of Southern Ontario (Chapman and Putnam 1984).
Ecological Resource Mapping and Datasets	<ul style="list-style-type: none"> • Natural Heritage Information Centre (NHIC) database accessed via the “Make a Map: Natural Heritage Areas” web-based platform (squares: 17PH1883, 17PH1884, 17PH1984, 17PH1983, 17PH1982, 17PH1882, 17PH1782, 17PH1783, 17PH1784; accessed 28 March 2023). • iNaturalist “(NHIC) Rare species of Ontario” project (accessed 28 March 2023). • Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005 (Cadman et al. 2007) (square: 17PH18). • eBird (accessed 28 March 2023). • iNaturalist “Herps of Ontario” project and Ontario Reptile & Amphibian Atlas (accessed 28 March 2023). • Ontario Butterfly Atlas database (square: 17PH18; accessed 28 March 2023). • iNaturalist “Ontario Odonata” project (accessed 28 March 2023). • Bumble Bee species distributions maps from iNaturalist and Bumble Bee Watch. • Aquatic Species at Risk Maps produced by Fisheries and Oceans Canada (accessed 28 March 2023). • Atlas of the Mammals of Ontario (Dobbyn 2005).

2.2 Site Assessment and Surveys

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

Table 2. Site Assessments and Ecological Surveys performed within the Study Area.

Date of Site Assessment	Assessments/Surveys Performed	Terrastory Staff	Weather Conditions	Time On-site
26 May 2022	Site Reconnaissance; Breeding Bird Survey #1	C.-A. Wegenschimmel	Air temperature: 18 to 20°C, Beaufort wind 2, cloud cover 50 to 75%, no precipitation.	8:00 to 9:00
20 June 2022	Breeding Bird Survey #2	C.-A. Wegenschimmel	Air temperature: 16 to 18°C, Beaufort wind 1, cloud cover 75 to 100%, no precipitation.	7:00 to 7:45
15 July 2022	Vascular Plant Survey, Ecological Land Classification	C.-A. Wegenschimmel	n/a	9:00 to 15:00
09 September 2022	Tree Inventory and Conditions Assessment	C.-A. Wegenschimmel	n/a	9:30 to 13:00
15 September 2022	Tree Inventory and Conditions Assessment	C.-A. Wegenschimmel	n/a	14:45 to 16:45
21 March 2023	Leaf-off assessment of bat roosting habitat	C.-A. Wegenschimmel	Cool, partly cloudy.	11:00 to 12:30

Date of Site Assessment	Assessments/Surveys Performed	Terrastory Staff	Weather Conditions	Time On-site
28 March 2023	Tree Inventory and Conditions Assessment; site reconnaissance	T. Knight	Cool.	10:00 to 11:30
31 May 2023	Bank Swallow nesting survey and nest excavation count	T. Knight	Warm	6:45 to 7:45

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 Study Area and (where appropriate) Adjacent Lands (i.e., those within 50 m of the Study Area to the north of Lake Street). All land-use, physiographic, and ecological information described for Adjacent Lands was collected from either current aerial photographs or observations from inside the Study Area 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 a Terrastory 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 Study Area were characterized and mapped according to Ecological Land Classification (Lee et al. 1998) and the 2008 update to the Vegetation Type List (Lee 2008). Vegetation communities were initially identified based on current aerial photographs and then verified and refined (as necessary) on-site. ELC mapping was scaled to the finest level of resolution deemed appropriate (i.e., either Ecosite or Vegetation Type). Vegetation communities mapped on Adjacent Lands were delineated predominantly via aerial photograph interpretation.
- Vascular Plant Survey:** Vascular plants were recorded based on a comprehensive area search (“wandering transects”) within naturally-occurring (i.e., non-planted) or naturalizing areas of vegetation. Particular effort was paid to areas with the greatest potential to support significant vascular plants (e.g.,

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.

- **Bat Maternal Roosting Habitat Assessment according to MECP Protocols :** Targeted surveys of bat habitat on the Study Area focused on identifying the presence of candidate maternity roost sites. The bat habitat assessment followed methods outlined in the “Tree Habitats – Maternity Roost Surveys” protocol (MECP 2022a). The habitat assessment was restricted to portions of the Study Area in which development or site alteration activities (which might result in tree impacts or removal) are proposed.
- **Breeding Bird Surveys according to the Ontario Breeding Bird Atlas Protocol:** Two rounds of breeding bird surveys were conducted in accordance with the Ontario Breeding Bird Atlas (OBBA) protocol (Bird Studies Canada et al. 2001). Surveys occurred within the appropriate season (May 24–July 10), time of day (between dawn and approximately 5 hours after dawn), and weather conditions (no rain, wind speed ≤ 3 on the Beaufort Wind Scale). While the OBBA protocol recommends that stations be situated at least 300 m apart (to avoid double counting), the stations established herein were often closer together to ensure more comprehensive survey coverage. Surveys occurred for a minimum duration of 10 minutes at each station.

2.3 Significance Assessment

2.3.1 Definitions and Criteria

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

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

Defining “significant natural features” pursuant to the PPS is considered warranted as such features form part of the Town’s NHS and Schedule C of the 2014 ROP. It is noted that the ROP provides provisions that consider and/or protect additional natural features beyond the requirements of the PPS. These features are also considered “significant” herein and include:

- Other Evaluated Wetlands (considered Environmental Conservation Areas by the Region);
- Regionally Significant Life Science ANSIs (considered Environmental Conservation Areas by the Region); and

- Publicly-owned Conservation Lands (considered Environmental Conservation Areas by the Region).

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

Apart from PPS- 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. 155/06 occur within the Study Area 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 designated locally rare per the List of Vascular Plant’s of Ontario’s Carolinian Zone (Oldham 2017).

2.3.2 Determination

After collecting the background biophysical information and conducting the fieldwork program, the data was interpreted to determine whether any significant natural features (i.e., per PPS or OPs), natural features/hazards regulated by NPCA, and/or significant species occur on the Study Area 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 Study Area 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 effects** 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 Study Area is outlined below in **Table 3**. A determination of whether the application considered herein addresses such policies is provided in **Section 6**.

Policy 3.1.30.3.1 of the current Niagara Official Plan (approved by the Province with modifications on 4 November 2022) establishes that the operative natural heritage policy framework for applications which proceeded through pre-consultation one-year prior to the OP approval (i.e., no earlier than 4 November 2021) is the 2014 ROP (provided that a complete application is submitted

by 4 November 2024). Similarly, it is understood that NPCA has also applied a one-year transitional period for their new Policy Document (in force and effect on 16 November 2022), such that applications which proceeded through pre-consultation prior to November 2022 are subject to the previous Policy Document (dated September 2018). While the formal pre-consultation meeting occurred in May 2021, the ToR was approved by Regional and NPCA staff prior to adoption of the Niagara Official Plan (OP) by Regional council on 23 June 2023. As such, it is considered appropriate to assess this application against the natural heritage policy framework contained within the 2014 ROP and 2018 NPCA Policy Document.

Table 3. Applicable Natural Heritage Policies.

Level of Government	Natural Heritage or Environmental Policy Requirements
Municipal	Town of Grimsby Official Plan (8 August 2018 office consolidation). Regional Municipality of Niagara Official Plan (2014 consolidation).
Provincial	Provincial Policy Statement 2020, pursuant to the <i>Planning Act</i> , R.S.O. 1990, c. P.13, including: <ul style="list-style-type: none"> • 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 6E (MNRF 2015a). • Significant Wildlife Habitat Mitigation Support Tool (MNRF 2014). Greenbelt Plan 2017, pursuant to the <i>Greenbelt Act</i> , S.O. 2005, c. 1, including: <ul style="list-style-type: none"> • Technical Definitions and Criteria for Key Natural Heritage Features in the Natural Heritage System of the Protected Countryside. <i>Conservation Authorities Act</i> , R.S.O. 1990, c. C.27, including: <ul style="list-style-type: none"> • Ontario Regulation 155/06 – Niagara Peninsula Conservation Authority Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. • NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and the Planning Act (September 2018). • NPCA Interim EIS Guideline (August 2022). <i>Endangered Species Act</i> (ESA), S.O. 2007, c. 6, including: <ul style="list-style-type: none"> • Ontario Regulation 230/08 – Species at Risk in Ontario List • Ontario Regulation 242/08 – General • Ontario Regulation 832/21 – Habitat <i>Fish and Wildlife Conservation Act</i> , S.O. 1997, c. 41.
Federal	<i>Fisheries Act</i> , R.S.C. 1985, c. F-14, including: <ul style="list-style-type: none"> • Fish and Fish Habitat Protection Policy Statement (DFO 2019). <i>Migratory Birds Convention Act</i> , S.C. 1994, c. 22, including: <ul style="list-style-type: none"> • Migratory Birds Regulations, C.R.C., c. 1035.

3 EXISTING BIOPHYSICAL CONDITIONS

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

3.1 Land-use and Landscape Setting

A review of historical airphotos indicates that the Study Area was primarily maintained as a tree farm (possibly an orchard) from the 1930's to the 1960's. Today, the Study Area occurs within a broader residential area which backs onto the shoreline of Lake Ontario. The residential areas east and west of the Study Area appear to have been constructed sometime before 2000.

3.2 Physical Setting

Tablelands within the Study Area (i.e., topographically above the shore bluff) sit between approximately 82.5 and 85.5 metres above sea level (masl). The highest elevation is associated with a fill pile near Lake Street. The shore bluff exhibits approximately 7 to 8 m of relief from crest to toe. The surveyed "bottom of slope" (i.e., toe) sits between approximately 75 and 76 masl. The shore bluff acts as a prominent feature within the Study Area and contains approximately 2 to 3 m of nearly vertical bluff face at the crest, which is fronted by a broad area of talus (slumped bluff material) at the base.

Soils within the Study Area are mapped as Grimsby Sandy Loam (GMY 8), which is a well-drained, reddish-hued lacustrine deposit laid down during higher-water stages of ancestral Lake Ontario. The Study Area is also mapped as containing glaciolacustrine sand per provincial surficial geology mapping (Ontario Geological Survey 2010).

There are no regulated watercourses or streams within the Study Area. A drainage ditch is shown on the survey which conveys water over a low-point in the shore bluff (which has eroded due to overland drainage). This ditch likely only conveys water during the spring freshet and/or following large storm events.

3.3 Ecological Setting

3.3.1 Vegetation Communities

The tablelands south of the shore bluff consist of a variety of culturally-influenced vegetation communities. This includes a small deciduous woodland (WODM4) composed of Black Walnut (*Juglans nigra*), Staghorn Sumac (*Rhus typhina*), Trembling Aspen (*Populus tremuloides*), and Manitoba Maple (*Acer negundo*). Black Raspberry and Staghorn Sumac are common in the understory. Kentucky Bluegrass (*Poa pratensis*), Tall Goldenrod (*Solidago altissima*), Virginia Creeper (*Parthenocissus quinquefolia*), and Enchanters Nightshade (*Circaea canadensis*) dominate the ground layer. The deciduous woodland grades into a deciduous hedgerow (FODM11) with a similar species complement. South of the woodland is a cultural thicket (THDM2) dominated by Staghorn Sumac and regenerating Black Locust (*Robinia pseudoacacia*), Manitoba Maple, and Hybrid Crack Willow (*Salix x fragilis*). The herbaceous layer is dominated by Tall Goldenrod, Calico Aster (*Symphotrichum lateriflorum*), Canada Thistle (*Cirsium arvense*), and Garlic Mustard (*Alliaria petiolata*). A cultural meadow (MEMM3) containing Tall Goldenrod, White Sweet Clover (*Melilotus alba*), Black Knapweed (*Centaurea nigra*), and Kentucky Bluegrass occurs between the aforementioned woody cultural communities.

An Open Bluff (BLO) occupies the shore bluff. The slope leading up to the vertical face of the bluff ranges from 40 to 80 degrees (overall is mostly about 60 degrees) and is 7 to 8 m in height. The vertical face varies from 2 to 3 m high and abuts the top of bank. Vegetation is present on the slope (0-10% shrub cover; 10-25% ground cover). Regenerating trees and shrubs along the bluff/slope

include Trembling Aspen, Autumn Olive (*Elaeagnus umbellata*), and Staghorn Sumac. Herbaceous groundcover species include Common Ragweed (*Ambrosia artemisiifolia*), Coltsfoot (*Tussilago farfara*), Riverbank Grape (*Vitis riparia*), and Tall Goldenrod.

The remaining areas within the Study Area are comprised of manicured amenity space with scattered trees and mowed lawn.

3.3.2 Vascular Plants

A total of 112 vascular plant species were recorded within the Study Area (see **Appendix 3**). No species at risk, provincially rare, or locally rare vascular plants were documented.

3.3.3 Trees

A total of 162 trees situated within or adjacent to the proposed area of disturbance were inventoried and assessed. The full results of the tree inventory and condition assessment are provided in **Appendix 4**. The locations of all trees assessed are shown in **Figure 2**. A brief description of the overall tree composition and conditions observed is provided below and in **Table 4**.

The Town of Grimsby does not regulate the protection and/or removal of trees through a stand-alone private tree protection by-law. Rather, trees are considered through the planning approvals process.

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 (%)
Austrian Pine (<i>Pinus nigra</i>)	30	18.5
Black Locust (<i>Robinia pseudoacacia</i>)	1	0.6
Black Walnut (<i>Juglans nigra</i>)	32	19.8
Blue Spruce (<i>Picea pungens</i>)	1	0.6
Common Pear (<i>Pyrus communis</i>)	1	0.6
Eastern Cottonwood (<i>Populus deltoides</i>)	11	6.8
Eastern Redcedar (<i>Juniperus virginiana</i>)	1	0.6
Freeman’s Maple (<i>Acer x freemanii</i>)	6	3.7
Hybrid Crack Willow (<i>Salix x fragilis</i>)	3	1.9
Mahaleb Cherry (<i>Prunus mahaleb</i>)	1	0.6
Manitoba Maple (<i>Acer negundo</i>)	13	8.0
Nootka Cypress (<i>Callitropsis nootkatensis</i>)	2	1.2
Norway Maple (<i>Acer platanoides</i>)	5	3.1
Norway Spruce (<i>Picea abies</i>)	8	4.9
Peach-leaved Willow (<i>Salix amygdaloides</i>)	2	1.2
Siberian Crabapple (<i>Malus baccata</i>)	1	0.6

Species	Total Assessed	Percentage of Total (%)
Staghorn Sumac (<i>Rhus typhina</i>)	1	0.6
Trembling Aspen (<i>Populus tremuloides</i>)	39	24
Weeping Birch (<i>Betula pendula</i>)	4	2.5
TOTAL	162	~100

3.3.4 Breeding Birds

Breeding bird surveys were conducted on 26 May and 20 June 2022. As the Study Area is small (i.e., less than 150 m wide) the entire area was covered during the breeding bird surveys (i.e., no discrete survey “stations” were established). A total of twenty-three (23) bird species were detected. Of these, twenty (20) species are considered native to Ontario and three (3) species are non-native including European Starling (*Sturnus vulgaris*), House Finch (*Haemorhous mexicanus*), and House Sparrow (*Passer domesticus*). All species detected had Provincial ranks of S4 or S5 (Apparently Secure or Secure).

Of the twenty (20) native species of birds documented, one (1) species displayed no breeding evidence (“X”), which reflects a Ring-billed Gull (*Larus delawarensis*) observed flying over the Study Area. Of the remaining nineteen (19) native species documented, five (5) species were determined to be “possibly” breeding within the Study Area, evidenced by the presence of a singing male (S) in suitable habitat during the breeding season (H). These species were only observed during one of the two breeding bird surveys and included American Redstart (*Setophaga ruticilla*), Blue Jay (*Cyanocitta cristata*), Mourning Dove (*Zenaidura macroura*), Northern Flicker (*Colaptes auratus*), and Northern Rough-winged Swallow (*Stelgidopteryx serripennis*).

The next highest level of breeding evidence attained was “probable” based on agitated behaviour (A), pair observed (P), and presumed territory (T). Ten (10) of the twenty (20) native species displayed “probable” breeding evidence, including American Goldfinch (*Spinus tristis*), American Robin (*Turdus migratorius*), Baltimore Oriole (*Icterus galbula*), Black-capped Chickadee (*Poecile atricapillus*), Brown-headed Cowbird (*Molothrus ater*), Cedar Waxwing (*Bombycilla cedrorum*), House Wren (*Troglodytes aedon*), Northern Cardinal (*Cardinalis cardinalis*), Song Sparrow (*Melospiza melodia*), and Warbling Vireo (*Vireo gilvus*).

The highest level of breeding attained was “confirmed”, evidenced by an adult entering, occupying, or leaving a nest site (AE) and/or an adult carrying food for young (CF). Confirmed breeding was observed for four (4) species, including Bank Swallow (*Riparia riparia*), Belted Kingfisher (*Megasceryle alcyon*), Common Grackle (*Quiscalus quiscula*), and Red-winged Blackbird (*Agelaius phoeniceus*).

One (1) species at risk was detected: Bank Swallow. This species and its habitat on-site are further described in **Section 4.3.1** below.

3.3.5 Incidental Wildlife Recorded

Efforts to incidentally document wildlife were made during all site visits by Terrastory in 2022/2023. In addition to the birds documented during the formal breeding bird surveys (see **Section 3.3.4**), Common Raven (*Corvus corax*) and White-breasted Nuthatch (*Sitta carolinensis*) were also observed incidentally. White-winged Scoter (*Melanitta deglandi*), Greater Scaup (*Aythya marila*), Long-tailed Duck (*Clangula hyemalis*), and Red-breasted Merganser (*Mergus serrator*) were observed in Lake Ontario

on 21 March 2023. Wild Indigo Duskywing (*Erynnis baptisiae*) were observed foraging within the meadow; this species’ host plant Crown-vetch (*Securigera varia*) is present on-site.

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 Study Area 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 within the Study Area and Adjacent Lands.

Significant Natural Feature	Status within the Study Area	Status on Adjacent Lands (i.e., < 50 m from the Study Area)
PPS Significant Natural Features		
Significant Wetlands	Absent.	Absent.
Significant Woodlands	Absent. See Section 4.1.	Absent. See Section 4.1.
Significant Valleylands	Absent.	Absent.
Significant Wildlife Habitat	Confirmed/Candidate. See Section 4.2.	Confirmed/Candidate. See Section 4.2.
Significant Areas of Natural and Scientific Interest	Absent.	Absent.
Habitat of Endangered and Threatened Species (per ESA)	Candidate. See Section 4.3.	Candidate. See Section 4.3.
Fish Habitat (per <i>Fisheries Act</i>)	Confirmed. See Section 4.4.	Confirmed. See Section 4.4.
Regionally Significant Natural Features (i.e., apart from PPS requirements)		
Evaluated Wetlands	Absent.	Absent.
Regionally Significant Life Science ANSIs	Absent.	Absent.
Publicly-owned Conservation Lands	Absent.	Absent.
Conservation Authority Regulated Features and Hazard Lands		
Wetlands, watercourses, valleylands, meanderbelts, floodplains, steep slopes, and shorelines.	Confirmed. See Section 4.5.	Confirmed. See Section 4.5.

4.1 Significant Woodlands

A determination of woodland significance within the Study Area relies primarily on guidance from the ROP and related policies. The ROP defines “woodland” as:

A treed area that provides environmental and economic benefits to both the private landowner and the general public such as erosion prevention, hydrologic and nutrient cycling, provision of clean air and long term storage of carbon, provision of wildlife habitat, outdoor recreational opportunities and the sustainable harvest of

woodland products. It does not include a cultivated fruit or nut orchard or a plantation used for the purpose of producing Christmas trees.

In the context of the 2014 ROP, the Region considers all vegetation communities with at least 35% canopy coverage by trees to be “woodlands”, thereby including all “forest” and “woodland” communities as defined by ELC (Lee et al. 1998; Lee 2008), but excluding savannahs (which have 25 to 35% canopy coverage). To be considered “significant”, Policy 7.B.1.5 of the ROP requires that a woodland must meet “one or more” of the following criteria:

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

The Town provides identical criteria for determining woodland significance pursuant to Section 3.1.1.7 of the OP.

The deciduous woodland (WODM4) community totals 0.164 ha in size and lacks confirmed species at risk habitat, interior woodland habitat, or older growth forest. This feature also does not overlap with any other significant natural feature identified in Policy 7.B.1.3 of the 2014 ROP.

Given the above, the Study Area lacks Significant Woodland.

4.2 Significant Wildlife Habitat

An assessment of the likelihood that any candidate or confirmed SWH types occur within the Study Area or Adjacent Lands is provided in **Appendix 6**. Based on the results of this assessment, two (2) SWH types are considered further through this study:

- Seasonal Concentration Areas of Animals
 1. Waterfowl Stopover and Staging Areas (Aquatic)
- Habitat of Species of Conservation Concern
 2. Special Concern and Rare Wildlife Species

Also based on this assessment, one (1) Special Concern or provincially rare species is considered to have at least a possible likelihood of occurrence on the Study Area given their habitat associations and current distribution in southern Ontario (or were confirmed based on the site assessment): Monarch (*Danaus plexippus*).

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 5.3.1**.

4.3 Habitat of Endangered and Threatened Species

An assessment of the likelihood that any Endangered and Threatened species or their habitats occur within the Study Area or Adjacent Lands is provided in **Appendix 7**. A total of three (3) Endangered or Threatened species are considered to have a possible likelihood of occurrence on the Study Area (or were confirmed) given their habitat associations and current distribution in southern Ontario:

- 1) Bank Swallow (*Riparia riparia*)
- 2) Little Brown Myotis (*Myotis lucifugus*)
- 3) Northern Myotis (*Myotis septentrionalis*)

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 5.3.2**.

4.3.1 Bank Swallow

Bank Swallow is designated Threatened in Ontario per O. Reg. 230/08 pursuant to the ESA and is federally designated Threatened by COSEWIC. This species is a colonial breeder which nests in exposed, sandy substrates on vertical or steep surfaces, including cliff/bluff faces, river-banks, and construction stockpiles. Foraging habitat includes a variety of open areas including agricultural lands, meadows, prairies, woodland clearings, marshes, and waterbodies.

A colony of Bank Swallow were documented within the upper 1 to 1.5 m of the Lake Ontario shore bluff. While a total of 236 nest burrows were documented in 2022, the number of nest burrows increased to 383 based on the 31 May 2023 nesting survey. The portion of the shore bluff in which Bank Swallow nesting is relatively continuous is shown per **Figure 3**.

4.3.2 Bats

Per the assessment in **Appendix 7**, Little Brown Myotis and Northern Myotis have the potential to roost and forage within the Study Area. Both of these bat species are designated Endangered in Ontario per O. Reg. 230/08 pursuant to the *Endangered Species Act* (ESA) and are federally designated Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Little Brown Myotis and Northern Myotis form maternity colonies that roost in large-diameter trees with cracks, crevices, and/or exfoliating bark; Little Brown Myotis will also frequently roost in buildings (e.g., attics, barns, etc.). Individuals (i.e., non-reproductive females and males) of both bat species may roost in smaller diameter trees and other spaces (e.g., beneath house siding, etc.) as “day roosts” 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.

Large diameter snags, cavity trees, and/or trees with cracks/crevices/loose bark that could support maternity colonies of Little Brown Myotis and/or Northern are likely to be absent from the Study Area. Certain smaller diameter snags (10-20 cm DBH) occur within the deciduous woodland which may offer non-specific roosting habitat (i.e., “day roosts”) for individual bats (males or non-reproductive females). The Lake Ontario shoreline offers suitable foraging habitat given an

abundance of flying insects. Much of the surrounding landscape is suburban, although there is some woodland south of Lake Street.

4.4 Fish Habitat

The Lake Ontario shoreline provides habitat for a variety of fish species which occupy littoral habitats. An assessment of potential effects to fish habitat associated with the proposed development plan is provided in **Section 5.3.3**.

4.5 Conservation Authority Regulated Areas

NPCA regulates development and site alteration (including fill placement and grade changes) within the predicted long-term stable top of slope (LTSTOS) and/or the 100-year flood level (plus the appropriate allowance for wave uprush) associated with Lake Ontario shoreline pursuant to clause 2(1)(a) under O. Reg. 155/06. The predicted LTSTOS has been determined by the project geotechnical consultant and is shown on **Figure 3**.

5 EFFECTS ASSESSMENT AND MITIGATION

The purpose of this EIS is to present a biophysical characterization of the Study Area 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 condominium development. Several significant natural features and species were documented (or may occur) within the Study Area pursuant to the assessments presented in **Section 4**. The following effects assessment provides an evaluation of the potential for the proposed development 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 Study Area at the time of the site assessment. The effects assessment herein is based on the site plan and grading/servicing drawings provided in **Appendix 8**.

5.1 Proposed Development Plan

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

- Site preparation (i.e., vegetation removal) and earthworks within the limit of disturbance.
- Creation of 32 condominium lots, with 31 lots containing a residence and 1 lot containing a communal clubhouse.
- Two driveway entrances from Lake Street.
- Servicing connections at Lake Street
- Installation of a shoreline protection structure consisting of an armourstone revetment, to be outfitted with a replacement nesting structure for Bank Swallow.

5.2 Avoidance Measures incorporated into the Proposed Development Plan

Since project commencement in March 2022 Terrastory has provided extensive feedback to and worked iteratively with the project team during formulation of the proposed lotting configuration, shoreline protection structure, and associated technical reports. 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.

There are minimal opportunities to retain existing vegetation within the Study Area beyond the defined erosion hazard associated with Lake Ontario. The lands will be disturbed to the eastern and western property boundaries to match existing elevations and establish necessary drainage swales. Additional disturbance of the shore bluff and adjacent tablelands is required to install the shoreline revetment and Bank Swallow nesting structure (sheet pile wall), which must be supported by tie-rods and be back-filled.

The preliminary grading/servicing plans and shoreline protection structure are provided for review in **Appendix 8**.

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 Significant Wildlife Habitat

Per the assessment in **Section 4.2**, a total of two (2) candidate SWH types were considered further through this study:

- Seasonal Concentration Areas of Animals
 1. Waterfowl Stopover and Staging Areas (Aquatic)
- Habitat of Species of Conservation Concern
 2. Special Concern and Rare Wildlife Species

Also based on this assessment, one (1) Special Concern or provincially rare species is considered to have at least a possible likelihood of occurrence on the Study Area given their habitat associations and current distribution in southern Ontario (or were confirmed based on the site assessment): Monarch.

No specific recommendations are offered herein to minimize impacts to potential foraging and breeding habitat for Monarch. This species is a habitat generalist and abundant nectaring habitat exists within the wider landscape surrounding the Study Area. Oviposition sites for Monarch (e.g., Common Milkweed, Swamp Milkweed) and general nectaring habitat is present within the wider local landscape.

The proposed development including installation of the shoreline revetment will not compromise the function of the Lake Ontario shoreline as waterfowl wintering habitat.

5.3.2 Habitat of Endangered and Threatened Species

Per the assessment in **Appendix 7** a total of three (3) Endangered or Threatened species are considered to have a possible likelihood of occurrence on the Study Area (or were confirmed) given their habitat associations and current distribution in southern Ontario:

- 1) Bank Swallow (*Riparia riparia*)
- 2) Little Brown Myotis (*Myotis lucifugus*)

3) Northern Myotis (*Myotis septentrionalis*)

5.3.2.1 Bank Swallow

Terrastory has engaged extensively with MECP staff related to the Bank Swallow colony which is nesting along the Lake Ontario shore bluff (see **Figure 2**) within the Study Area. This includes the submission of an Information Gathering Form (IGF) on 29 September 2022, resubmissions of the IGF circulated to MECP in December 2022 and May 2023, and extensive email and verbal correspondence throughout that time period.

A number of mitigation measures have been incorporated into the project design to minimize the potential for impacts to Bank Swallows, including constructing the shoreline revetment structure outside the nesting period for Bank Swallow. Notwithstanding this, it is the opinion of MECP that the works require an “Overall Benefit” permit under section 17(2)(c) of the ESA to proceed as the shoreline revetment will arrest further toe erosion of the shore bluff, leading the crest to recede landward until the slope eventually stabilizes. While this process may take several years, the resulting shore bluff will no longer contain a vertical crest and thus will not be suitable for nesting by Bank Swallow.

As part of fulfilling the legislative requirements of “Overall Benefit”, the project team is proposing to construct a new artificial Bank Swallow nesting structure into the shoreline revetment. The nesting structure will be installed in the eastern portion of the shoreline, which is currently unsuitable for Bank Swallow nesting (due to lack of a vertical crest and existing armourstone toe protection) and does not contain existing nests. To date, MECP has provided general guidance on the overall nesting structure design, including the need to incorporate (at a minimum) the same number of nesting burrows into the structure as is currently present. Correspondence with MECP is ongoing.

Given the above, the following is recommended to address relevant requirements under the ESA:

- **The proposed development will proceed consistent with the requirements of a forthcoming “Overall Benefit” permit secured under section 17(2)(c) of the ESA to address impacts to Bank Swallow nesting habitat.**

5.3.2.2 Endangered Bat Roosting Habitat (Maternity Colonies and Individuals)

During preliminary discussions with MECP related to assessing potential impacts to Bank Swallow, potential impacts to roosting bats was also considered. Through submission of an Information Gathering Form (IGF) on 29 September 2022 and subsequent revisions to the IGF recirculated to MECP in December 2022 and May 2023, MECP confirmed that no impacts to Endangered bats were anticipated through this application provided that the recommendations in the IGF were implemented. This includes as follows:

- **Any necessary tree removal within the proposed development envelopes will only take place between October 1 and April 30 to avoid the active season for bats. Should minor tree removal be required between May 1 and September 30, a qualified professional will complete an exit survey of suitable maternal roosting sites identified for removal a maximum of 24 hours before removal. The exit survey must make use of a bat detector and will occur for no less than the**

time period between sunset and 60 minutes after sunset. If an Endangered bat is identified during the survey, MECP should be contacted to obtain further direction prior to removal of the tree.

- **If construction activities occur during the active bat season (i.e., May 1 and September 30), work will be restricted to daylight hours only and the use of artificial lighting will be avoided.**

5.3.3 Fish Habitat

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

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

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 Lake Ontario) 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 fish habitat within Lake Ontario from construction-related impacts, the following measures are recommended:

- **An Erosion and Sediment Control (ESC) Plan is to be prepared to control stormwater runoff as a condition of subdivision approval.**
- **All works will be completed consistent with the Environmental Protection Plan measures contained within the Functioning Servicing Report prepared by Pearson Engineering.**

Portions of the shoreline protection structure (revetment) extend below the high-water mark of Lake Ontario. Terrastory recommends the following to demonstrate that the works will appropriately protect fish habitat:

- **The shoreline revetment design will be submitted to DFO through a formal Request for Project Review as a condition of subdivision approval to confirm legislative requirements related to the *Fisheries Act* (if any).**

5.3.4 Tree Protection Plan and Other Natural Environment Considerations

While the recommendations offered herein restrict development activities from all significant natural heritage features, tree removal (i.e., woody and herbaceous vegetation) is required to facilitate development. It is understood through discussions with the project team that the grading/servicing plans which form part of the Functional Servicing Report (FSR) are preliminary and will be updated at detailed design (i.e., following approval of the Draft Plan of Subdivision). Lack of confirmation of the limit of grading precludes the preparation of a fulsome TPP, and it is further anticipated that modifications to the shoreline protection structure may occur through ongoing review by MECP in the context of Bank Swallow.

Notwithstanding the above, Terrastory has prepared a Preliminary TPP to guide the project works (see **Figure 4**). It is estimated that a minimum of 128 trees (or 79%) require removal to facilitate the proposed development plan. Additional trees may also be impacted and/or require removal pending finalization of the development plans at detailed design.

Given the above, the following measures are recommended in relation to on-site trees.

- **The requirements of the Preliminary Tree Protection Plan (see Figure 4) will be implemented.**
- **An updated and finalized Arborist Report and Tree Protection Plan (and associated tree protection measures) will be prepared to protect on-site trees as a condition of subdivision approval.**
- **Replacement of necessary tree removals is to occur consistent with relevant Town standards.**

Per case law in Ontario a tree is considered shared if any portion of its trunk (i.e., area between the root collar and lowest canopy branch) extends across a property line. Section 10(3) of the *Forestry Act* prohibits the injury or destruction of a tree growing on the boundary of adjoining properties without the landowners' consent. Per the tree assessment spreadsheet (see **Appendix 4**), several shared/boundary or neighbouring trees are anticipated to be impacted and/or require removal to allow the works to proceed. The following measure is recommended to address relevant legislative requirements related to impacting shared/boundary and neighbouring trees:

- **The Applicant must secure approval to impact all shared/boundary and neighbouring from relevant property owners prior to construction.**

To further minimize potential adverse effects to the natural environment and breeding birds during construction, the following measures are recommended:

- **The removal of trees will generally be restricted to areas in direct conflict with the footprints of the proposed development features, shoreline protection structure, and grading, along with any hazardous trees in the immediate vicinity that pose an unacceptable risk to human life or property.**
- **All necessary vegetation removal (e.g., trees, meadow vegetation, etc.) will be completed outside the primary bird nesting period (i.e., to be**

completed between September 1 and March 31). Should minor vegetation removal be proposed during the bird nesting period, a bird nesting survey will be undertaken to confirm the presence or absence of nesting birds or bird nests within or adjacent to the areas subject to vegetation clearance. The survey is to take place within 48 hours of vegetation removal.

- Portions of the erosion hazard and associated allowance which are beyond the proposed lot lines will be treated as natural, self-sustaining vegetation (i.e., no mow) outside of designated amenity spaces/areas (e.g., walkways/pathways) and infrastructure maintenance areas.
- Incorporation of Bird-Friendly Guidelines into the residence design such as those published in City of Toronto’s “Best Practices for Bird-Friendly Glass” and “Best Practices for Effective Lighting” should be considered at detailed design.
- Any Landscape Plans prepared as part of the development approval should incorporate species native to the local landscape.

5.3.5 Summary of Technical Recommendations

All technical recommendations provided in **Section 5.3** are reiterated in **Appendix 9**.

6 APPLICABLE NATURAL HERITAGE AND ENVIRONMENTAL POLICIES

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

6.1 Town of Grimsby Official Plan (August 2018)

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 development application addresses such policies.

The Study Area is situated within an “Urban Settlement Area” pursuant to Schedule A (Municipal Structure) of the Town’s OP. Schedule A further maps the Town’s “Natural Heritage System” (NHS) along the shoreline of the Study Area extending onto adjacent tablelands above (i.e., southward from) the Lake Ontario shore bluff. The Study Area is more specifically designated “Low Density Residential Area” per Schedule B (Land Use) of the Town’s OP, with an “Environmental Conservation Area” (ECA) designation and “Hazard Land Area” overlay associated with the Lake Ontario shoreline and shore bluff.

The Town's Natural Environment policies are primarily provided in Section 3.1 of the OP. A summarized and condensed list of key natural heritage provisions of the Town's OP that pertain to the development application considered herein is provided below.

- **Section 3.1.1.1** directs that Environmental Protection Areas include:
 - Provincially significant wetlands
 - Provincially significant life science ANSIs
 - Fish habitat
 - Significant habitat of threatened and endangered species;
 - Regionally significant ANSIs
- **Section 3.1.1.2** clarifies that within the entirety of the Greenbelt Plan Area, Environmental Protection Areas also include Key Hydrologic Features, including:
 - Permanent and intermittent streams;
 - Lakes and their littoral zones;
 - Seepage areas;
 - Springs; and
 - Wetlands
- **Section 3.1.1.8** prohibits most development activities within the Environmental Protection Area designation, though erosion control projects are permitted.
- **Section 3.1.1.12** allows for development and site alteration on Adjacent Lands to Environmental Protection Areas provided that:
 - It has been determined through an EIS in accordance with Section 9.18 that, over the long term, there will be no significant negative impact on the feature or its function or Adjacent Lands
 - The proposed development or site alteration is not prohibited by other Policies in this Plan.
- **Section 3.1.1.13** permits development in fish habitat if undertaken to the satisfaction of DFO.
- **Section 3.1.2.1** directs that Environmental Conservation Areas include:
 - Significant woodlands;
 - Significant wildlife habitat;
 - Significant habitat of species of concern;
 - Regionally significant Life Science ANSIs
 - Other evaluated wetlands;
 - Significant valley lands;
 - Savannahs and tall grass prairies;
 - Alvars; and
 - Publicly-owned conservation lands.
- **Section 3.1.2.5** permits development within or adjacent to Environmental Conservations Areas where it has been demonstrated through and EIS in accordance with Section 9.18 that, over the long term, there will be no significant negative impact on the natural feature or its ecological functions or Adjacent Lands.

Based on the Town's OP, fish habitat in Lake Ontario and the Bank Swallow nesting colony are considered Environmental Protection Areas, while the confirmed waterfowl wintering area (SWH) is considered an Environmental Conservation Area.

Terrastory reviewed potential impacts to the identified significant natural features – including fish habitat, confirmed nesting habitat for the Threatened Bank Swallow, and candidate/confirmed SWH – in **Section 5.3** of this EIS. Provided that Terrastory’s recommended mitigation measures (summarized in **Appendix 9**) are carried out in full, no negative impacts are anticipated to any EPA/ECA 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 (2014 Consolidation)

Consistent with the Town’s OP, the 2014 ROP directs land-use and land management within its jurisdiction. Relevant natural heritage policies contained in the ROP are largely consistent with the City’s OP. For example, **Policy 7.B.1.1** defines the Core Natural Heritage System as consisting of Core Natural Areas (EPA and ECA), Natural Heritage Corridors, Greenbelt Natural Heritage and Water Resources Systems, and Fish Habitat. Further, **Policy 7.B.1.3** defines EPAs and EPAs consistent with the Town’s OP.

A simplified and condensed summary of relevant ROP natural heritage policies which the subdivision application must address is as follows:

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

- **Policy 7.B.1.18** – where development or site alteration is approved in or adjacent to the Core Natural Heritage System, new created lots shall not extend into either the area to be retained in a natural state as part of the Core Natural Heritage System or the buffer zone identified through an Environmental Impact Study prepared in accordance with Policies 7.B.2.1 to 7.B.2.5. The lands to be retained in a natural state and the adjacent buffer zone shall be maintained as a single block and zoned to protect their natural features and ecological functions.
- **Policy 7.B.1.19** – where development or site alteration is approved within the Core Natural Heritage System or adjacent lands, a Tree Saving Plan must be prepared to maintain or enhance the remaining natural features and ecological functions.

Provided that all recommended mitigation measures outlined in **Section 5.3** and summarized in **Appendix 9** are carried out in full (and are included as Draft Plan conditions, where appropriate), no negative impacts are anticipated to the significant natural heritage features identified herein. Based on the preceding discussion, Terrastory can conclude that the proposed development plan appropriately addresses the natural heritage protection provisions of the 2014 ROP.

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

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

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

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

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

- Per **Table 5** of this report, no Significant Woodlands, Significant Valleylands, or Significant Areas of Natural or Scientific Interest are present within the Study Area.
- Per **Section 5.3** of this report, no negative impacts to the significant waterfowl wintering area or habitats for species of conservation interest 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 Study Area is 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 outside of the Greenbelt Plan Natural Heritage System, and is therefore subject to the Town/Village policies. Section 3.4.3 clarifies that Towns/Villages are to be governed by official plans and are not subject to the policies of the Greenbelt Plan save and except for (among others) Section 3.2.3 (Water Resource System Policies) and Section 3.2.6 (External Connections). The proposed development plan addresses relevant natural heritage requirements of the Town and Regional OP's and thus is considered consistent with relevant requirements under the Greenbelt Plan.

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

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

NPCA regulates development and site alteration (including fill placement and grade changes) within the predicted long-term stable top of slope (LTSTOS) and/or the 100-year flood level (plus the appropriate allowance for wave uprush) associated with Lake Ontario shoreline pursuant to clause 2(1)(a) under O. Reg. 155/06. The predicted LTSTOS has been determined by the project geotechnical consultant and is shown on **Figure 3**.

NPCA comments received on the ToR (see **Appendix 1**) suggested that the Authority may only be reviewing the application from a shoreline erosion hazard perspective (i.e., rather than natural heritage). As site alteration activities are proposed within the shoreline erosion hazard and associated regulated area, permission from NPCA is required to allow the works to proceed.

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 Study Area is provided in **Appendix 7**. 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. The includes securement of an OB permit under section 17(2)(c) of the ESA for Bank Swallow.

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*”.

In-water works associated with construction of the shoreline protection structure (armourstone revetement) are proposed through this application. Consistent with the assessment carried out in **Section 5.3.3** 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 fish and fish habitat protection provisions outlined in the *Fisheries Act*. This includes the submission of a formal Request for Project Review to DFO at detailed design.

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

Section 6 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. The provincial *Fish and Wildlife Conservation Act, 1997* (FWCA) extends the protection of bird nests and eggs to certain species not listed under the Migratory Birds Regulations (e.g., Corvids, Strigids, Accipitrids, etc.).

Provided that the recommendations outlined in **Section 5.3.4** are implemented in full (i.e., prohibition on vegetation removal during the bird breeding season), no impacts to breeding birds or bird nests protected by the MBCA or FWCA are anticipated.

7 CONCLUSIONS

In accordance with the Terms of Reference for this study (**Appendix 1**) and relevant environmental policies, the preceding Environmental Impact Study provides a detailed characterization of the

natural environment occurring within and adjacent to 165 Lake Street in Grimsby. This EIS has been prepared in support of the forthcoming Plan of Subdivision and rezoning applications submitted to facilitate the creation of a 32-lot development plan, and to support NPCA's regulatory review under O. Reg. 155/06 pursuant to the *Conservation Authorities Act*. Included herein is a comprehensive approach to identifying the presence or absence of several significant natural features afforded varying degrees of protection by applicable environmental policies. Potential negative impacts to the identified significant natural features are described with mitigation measures and technical recommendations offered to avoid or minimize such impacts as appropriate.

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

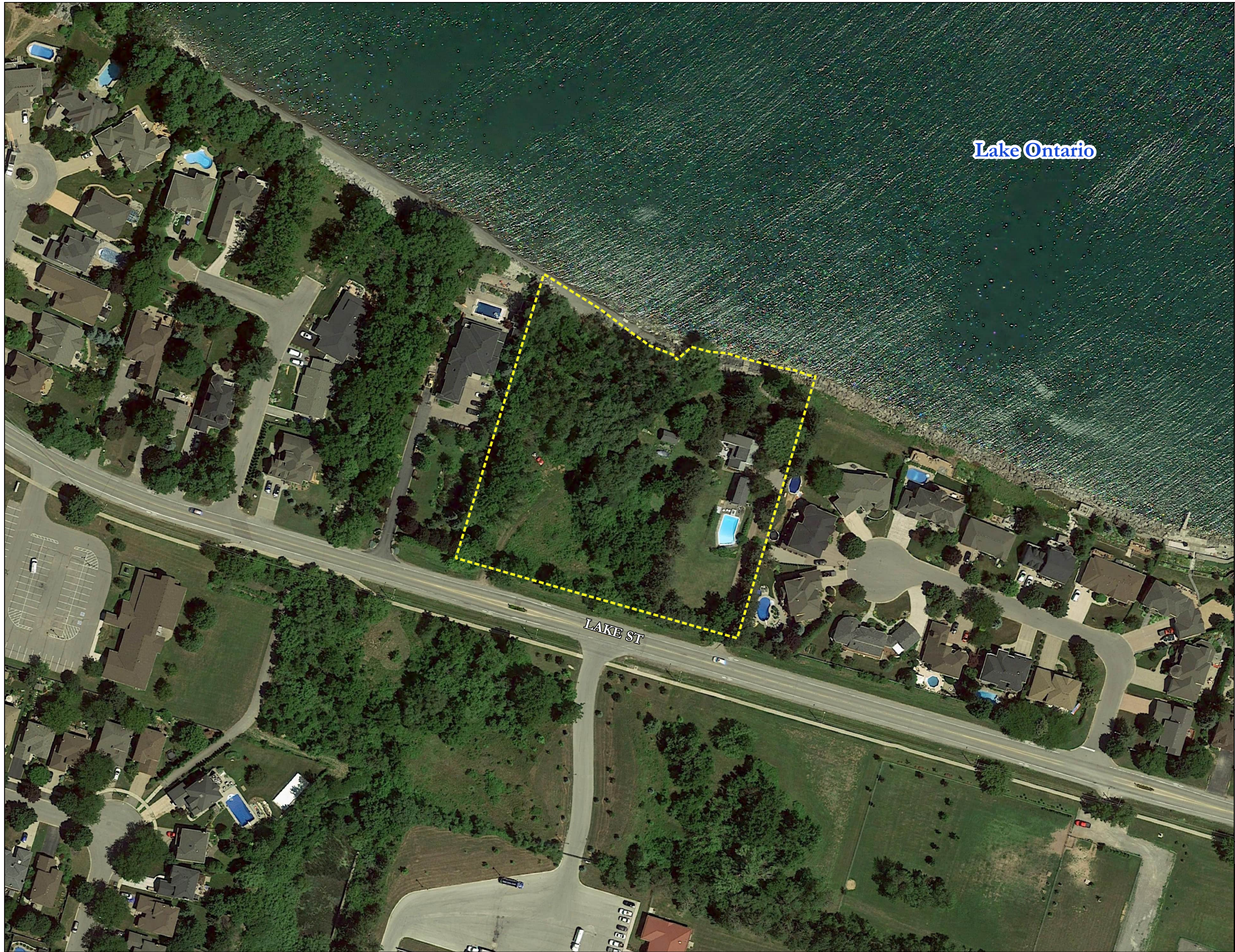
- A colony of **Threatened Bank Swallow** is nesting within the Lake Ontario shore bluff
- **Fish habitat** is present within adjacent Lake Ontario, which is also known to provide **Significant Wildlife Habitat for wintering waterfowl**.

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 items) the implementation of erosion and sediment control measures, securement of an Overall Benefit permit under the *Endangered Species Act* to address long-term loss of Bank Swallow nesting habitat, submission of the shoreline protection works to DFO for review under the *Fisheries Act*, and finalization of the Arborist Report/Tree Protection Plan at detailed design.

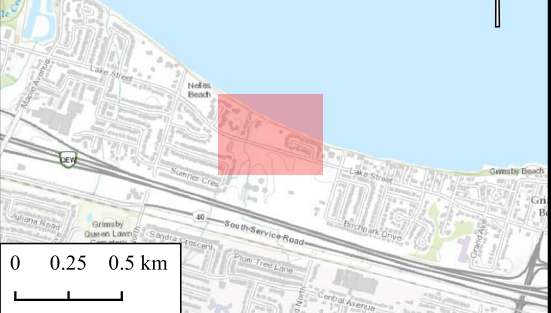
It is advised that such technical recommendations be incorporated into any necessary development approvals that permit the application.

8 REFERENCES

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- . 2015b. "Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E," no. January.
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KEY MAP

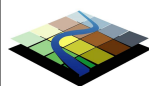


Legend

- Area of Assessment
- Study Area

GENERAL NOTES:

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

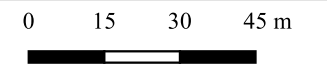


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environmental consulting inc.

info@terrastoryenviro.com 905.745.5398



1:1,500



Location:

165 Lake Street,
Town of Grimsby

Project No.: 22018

Date: 2023-04-18

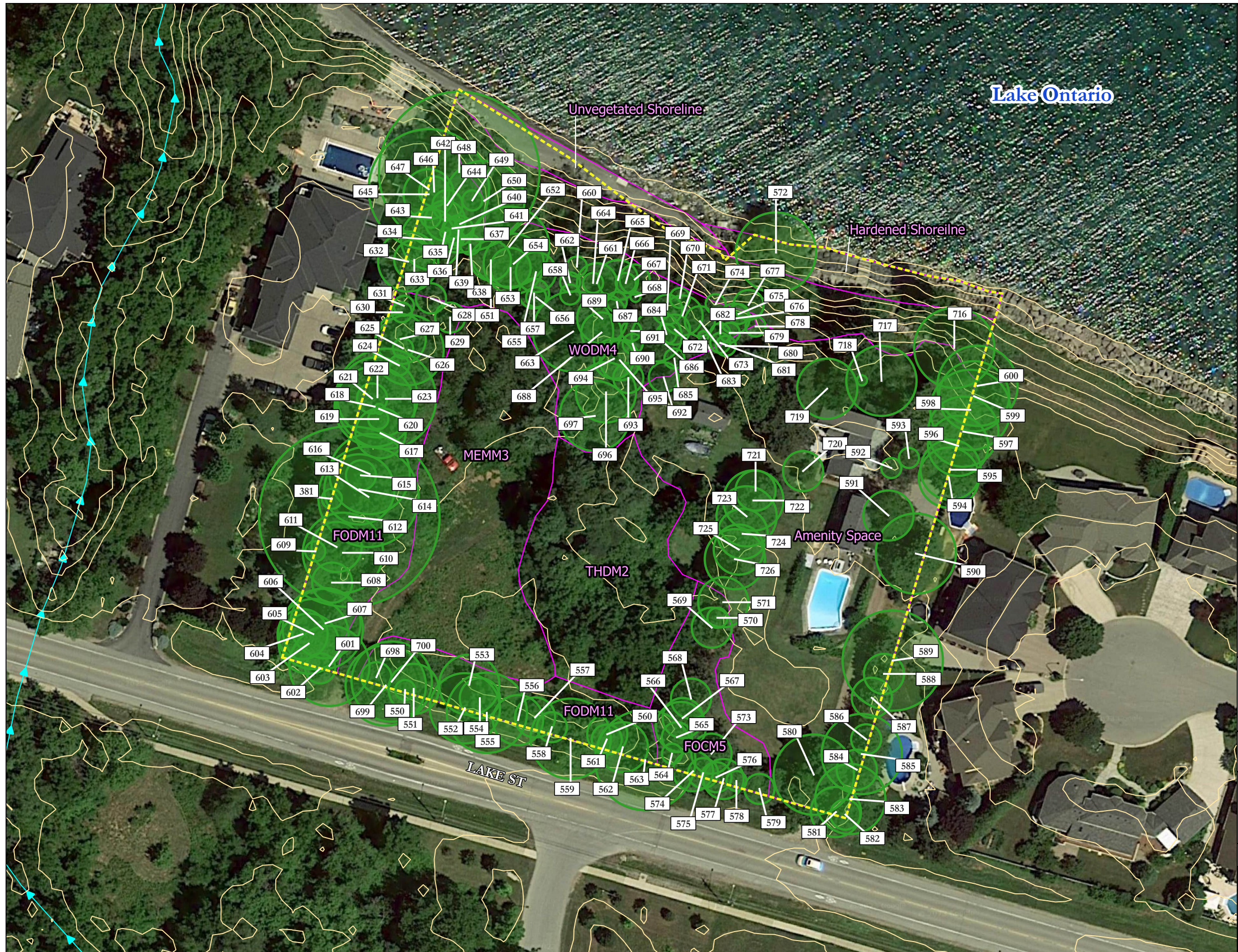
By: TK

Checked: --

Orthophotograph Date:
2018

Figure 1:

Location of the
Study Area



Legend

Area of Assessment

Study Area

Tree Assessment

Tree Inventory

Biophysical Features and Conditions

Topographic Contours (1 m; DTM)

Physical Top of Bank (TOB) - per Topographic Survey

Vegetation Communities

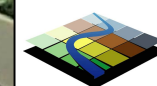
Watercourse

VEGETATION COMMUNITY CODES:

WODM4: Dry - Fresh Deciduous Woodland
 FODM11: Naturalized Deciduous Hedgerow
 FOCM5: Naturalized Coniferous Hedgerow
 THDM2: Dry - Fresh Deciduous Shrub Thicket
 BLO: Open Bluff
 MEMM3: Dry - Fresh Mixed Meadow

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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1:750

0 5 10 15 20 25 m

Location:

165 Lake Street,
 Town of Grimsby

Project No.: 22018

Figure 2:

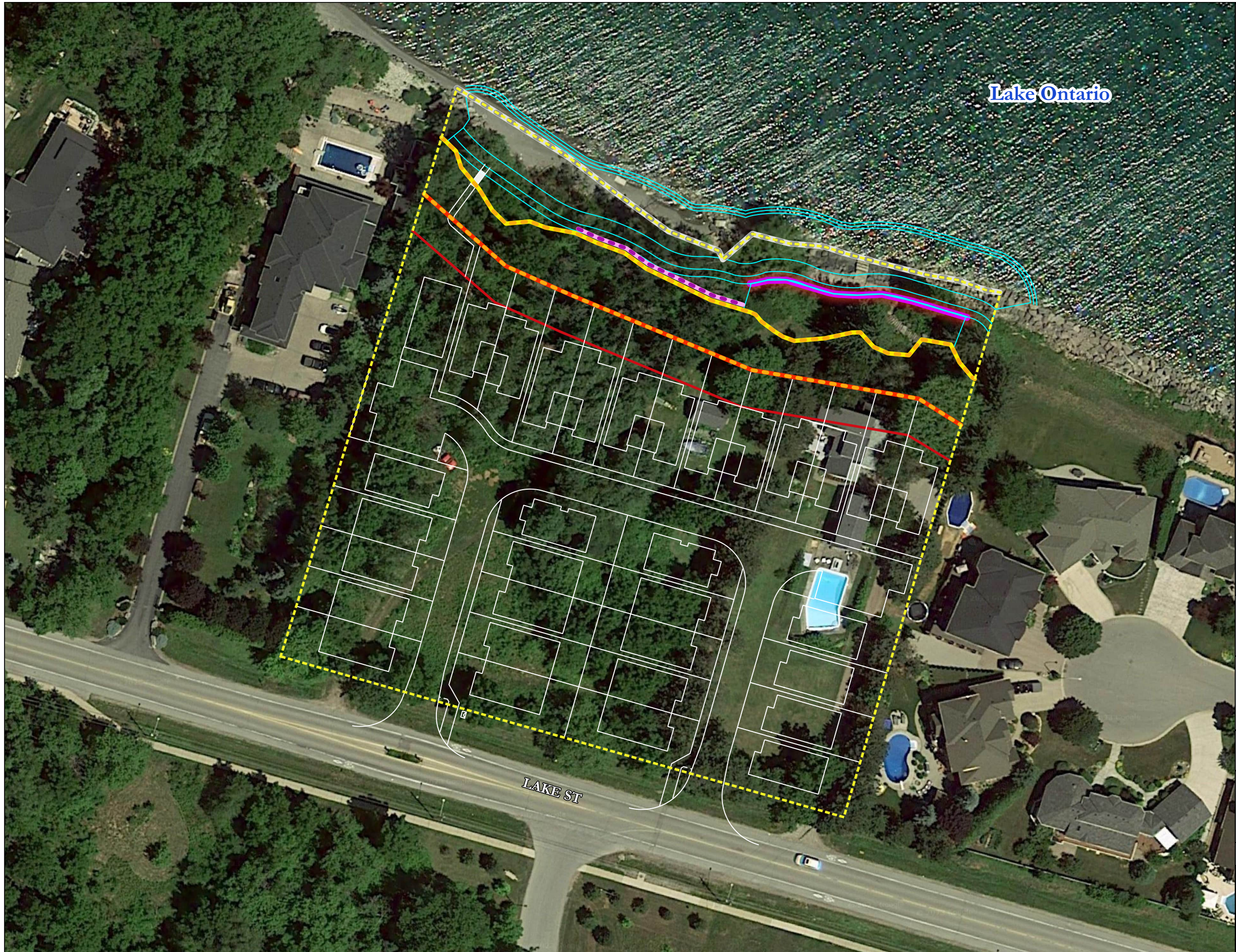
Date: 2023-08-25

Biophysical
 Features and
 Conditions

By: TK

Checked: --

Orthophotograph Date:
 2018 (Google Maps)



Lake Ontario

LAKE ST

Legend

Area of Assessment

--- Subject Property

Significant Natural Features

--- Physical Top of Bank (TOB) - per Topographic Survey

--- Long-term Stable Top of Slope (LTSTOS) - per Soil Engineers Ltd.

--- Waters Edge (25 April 2022) - per Topographic Survey

--- Bank Swallow Nesting Area (2022/2023)

Proposed Activities

--- Proposed Development Plan

--- Proposed Shoreline Protection Works Area

Natural Feature Setbacks Prescribed by Policy

--- 7.5 m Setback from LTSTOS - per Soil Engineers Ltd.

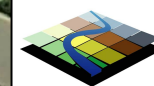
Mitigation Measures Recommended

--- Bank Swallow Artificial Nesting Structure

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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905.745.5398



1:750

0 5 10 15 20 25 m

Location:

165 Lake Street,
Town of Grimsby

Project No.: 22018

Date: 2023-08-25

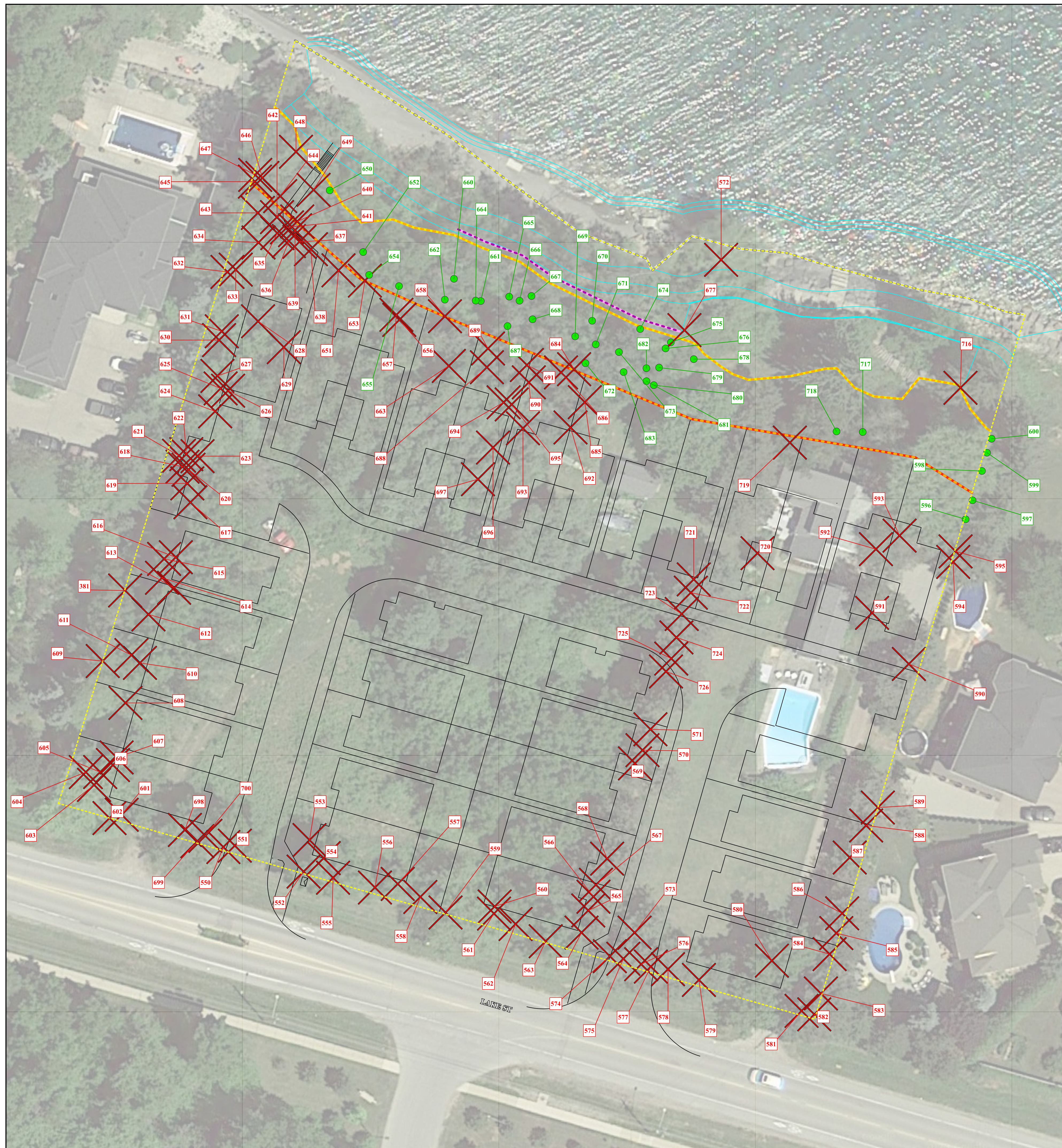
By: TK

Checked: --

Orthophotograph Date:
2018 (Google Maps)

Figure3:

Significant Natural
Features with
Proposed Development
Overlay



TREE REMOVAL AND PRESERVATION NOTES:

GENERAL:

1. CONSTRUCTION ACTIVITIES WILL TREAT ALL TREES RECOMMENDED FOR RETENTION SHOWN HEREIN AS CONSTRAINTS.

TREE REMOVAL:

2. ALL NECESSARY TREE REMOVALS WILL BE COMPLETED OUTSIDE THE PRIMARY BIRD NESTING AND BAT ACTIVITY PERIODS (I.E., TO BE COMPLETED BETWEEN OCTOBER 1 AND MARCH 31). IF LIMITED TREE REMOVAL IS REQUIRED DURING THIS PERIOD, A SURVEY WILL BE CONDUCTED BY A QUALIFIED ECOLOGIST WITHIN TWO (2) DAYS OF THE COMMENCEMENT OF TREE REMOVAL ACTIVITIES TO DETERMINE HABITAT SUITABILITY AND/OR CONFIRM THE PRESENCE/ABSENCE OF NESTING BIRDS AND ROOSTING BATS.

3. SHOULD A NESTING BIRD OR ROOSTING BAT BE IDENTIFIED, A MITIGATION PLAN MUST BE DEVELOPED (WHICH MAY INCLUDE DISCUSSIONS WITH RELEVANT AGENCIES) TO ADDRESS REGULATORY REQUIREMENTS.

TREE PROTECTION BARRIER:

4. TREE PROTECTION FENCE (SEE DETAIL #1) WILL BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE PREPARATION AND OTHER CONSTRUCTION ACTIVITIES. NO DEVELOPMENT, SITE ALTERATION (E.G., GRADING, EXCAVATION, SOIL STOCKPILING, ETC.), MACHINERY MOVEMENT, OR STORAGE OF EQUIPMENT OR MATERIALS WILL OCCUR WITHIN ANY AREA ISOLATED BY TREE PROTECTION FENCE.

5. A QUALIFIED ARBORIST WILL INSPECT THE TREE PROTECTION FENCE FOLLOWING INSTALLATION AND PRIOR TO THE COMMENCEMENT OF SITE PREPARATION OR OTHER CONSTRUCTION ACTIVITIES.

6. TREE PROTECTION FENCE WILL REMAIN IN PLACE AND BE IN GOOD CONDITION DURING IMPLEMENTATION OF THE PROPOSED DEVELOPMENT PLAN. TREE PROTECTION FENCE WILL NOT BE REMOVED UNTIL ALL SITE DISTURBANCES ASSOCIATED WITH THE PROPOSED DEVELOPMENT PLAN HAVE CONCLUDED.

PRUNING:

7. ALL NECESSARY PRUNING OF BRANCHES AND/OR ROOTS SHALL BE CONDUCTED BY A QUALIFIED ARBORIST AND SHALL BE IN ACCORDANCE WITH GOOD ARBORICULTURAL STANDARDS AND PRACTICES.

ROOT SENSITIVE EXCAVATION:

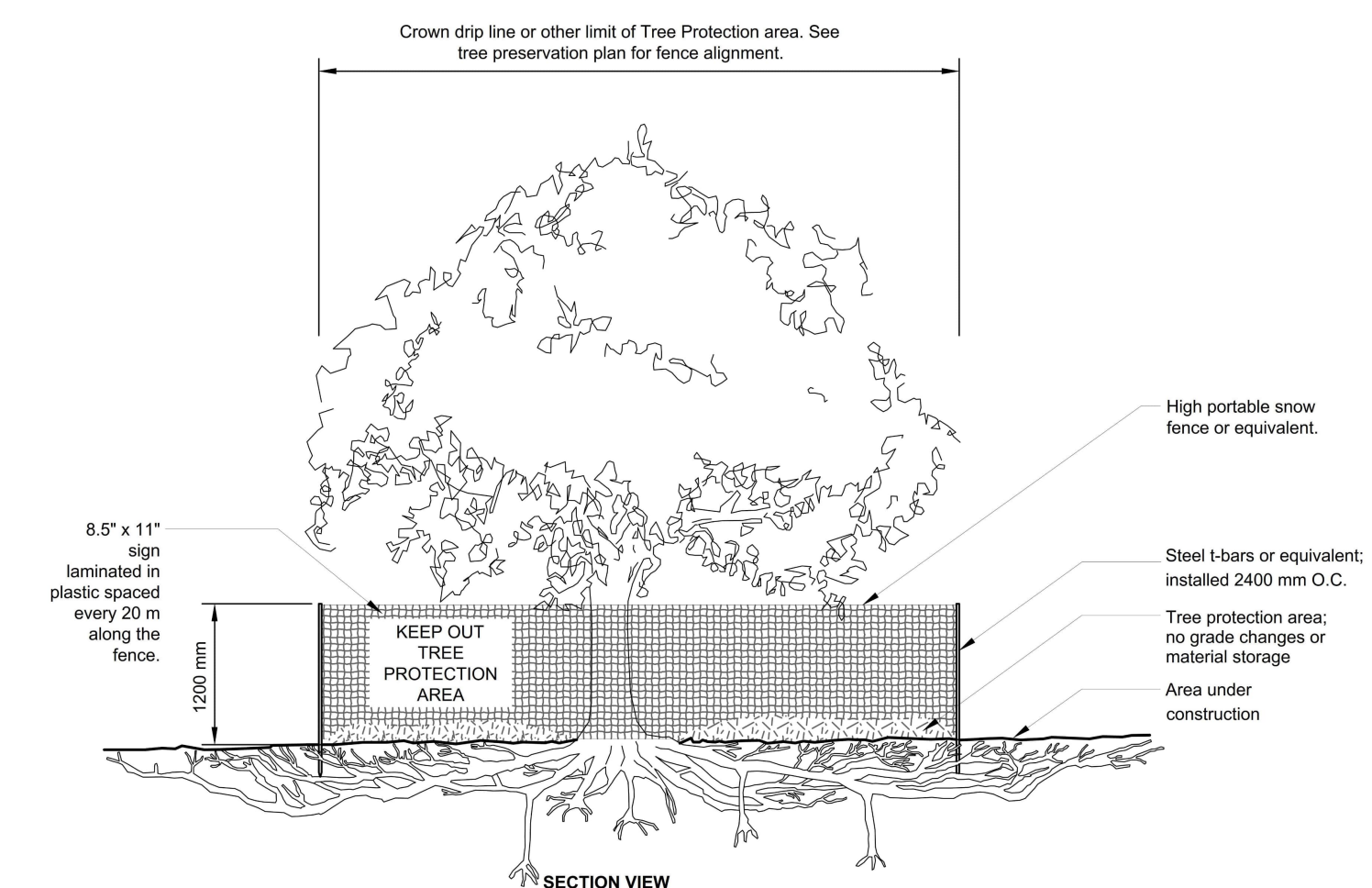
8. ROOT-SENSITIVE EXCAVATION TECHNIQUES (EITHER PNEUMATIC EXCAVATION, HYDRO-VAC EXCAVATION, OR HAND-DIGGING) WILL BE EMPLOYED WITHIN THE AREAS SHOWN DURING SEDIMENT FENCE INSTALLATION AND PRIOR TO THE COMMENCEMENT OF GRADING OR MACHINE EXCAVATION. THE EXCAVATED TRENCH WILL BE APPROXIMATELY 30 CM DEEP AND 15 CM WIDE TO EXPOSE ROOTS AT THE LIMIT OF DISTURBANCE. ROOT-SENSITIVE EXCAVATION AND SUBSEQUENT BACKFILLING TO SECURE THE SEDIMENT FENCE WILL BE UNDERTAKEN ON THE OUTSIDE EDGE OF THE TREE PROTECTION ZONE ONLY.

9. FOLLOWING ROOT EXPOSURE, A QUALIFIED ARBORIST WILL SUPERVISE THE ROOT CUTTING PROCEDURES AND EXAMINE IF ANY EXCESSIVE OR LARGE STRUCTURAL ROOTS REQUIRE CUTTING. ALL EXPOSED TREE ROOTS WILL BE SEVERED CLEANLY IN ACCORDANCE WITH STANDARD ARBORICULTURAL PRACTICES. LOSS OF STRUCTURAL ROOTS MAY NECESSITATE REMOVAL OF THE SUBJECT TREE, TO BE DETERMINED BY THE ON-SITE QUALIFIED ARBORIST.

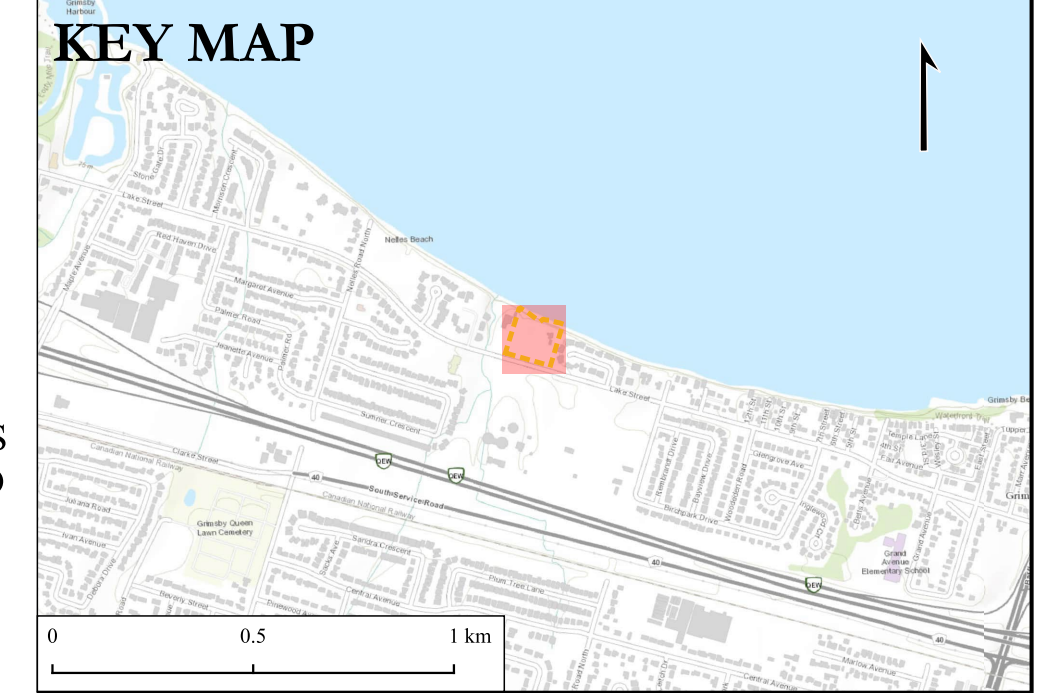
SHARED/BOUNDARY OR NEIGHBOURING TREES:

10. THE APPLICANT MUST SECURE APPROVAL TO IMPACT AND/OR REMOVE SHARED AND NEIGHBOURING TREES FROM RELEVANT PROPERTY OWNERS PRIOR TO CONSTRUCTION.

TREE PROTECTION FENCE DETAIL:



1 TREE PROTECTION FENCE



Legend

Area of Assessment

- Subject Property

Tree Assessment

- Tree may be Retainable (to be confirmed at detailed design)
- Tree to be Removed

Significant Natural Features

- Bank Swallow Nesting Area (2022/2023)
- Physical Top of Bank (TOB) - per Topographic Survey
- Long-term Stable Top of Slope (LTSTOS) - per Soil Engineers Ltd.
- Waters Edge (25 April 2022) - per Topographic Survey

Proposed Activities

- Proposed Development Plan copy
- Proposed Shoreline Protection Works Area

GENERAL NOTES:

- Tree inventory completed by Terrastory Arborist 9 September 2022, 15 September 2022, and 28 March 2023.
- 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.
- Notwithstanding the determinations of tree health and structural integrity made herein (e.g., good, fair, poor), it must be recognized that all trees (in good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.
- Notwithstanding any recommendations concerning tree preservation or removal made herein, this plan does not supersede or expunge any civil or common law property rights as they pertain to shared/boundary trees or trees occurring on adjacent properties. This plan does not confirm tree ownership nor authorize the client to encroach or enter onto adjacent properties to destroy or injure trees situated on adjacent properties without the owner's consent.
- Verify all drawing dimensions.
- Numeric scale is for a 24x36 inch print. Do not scale.
- Contractor to report any discrepancies, errors, or omissions to the project Arborist before proceeding.

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www.terrastoryenv.com info@terrastoryenviro.com 905.745.5398
Specialists in Natural Heritage, Tree Protection, and Environmental Policy

North arrow and ISA logo (Tristan Knight #ON-1665A)

Scale: 1:300. Scale bar from 0 to 25 m.

Location:
165 Lake Street
Town of Grimsby

Project No.: 22018 **Figure 1.**
Date: 2023-09-06
By: TK **Checked:** --
Orthophotograph Date: 2018 (Google Maps)
Preliminary Tree Protection Plan

Appendix 1. Terms of Reference

Tristan Knight

From: Taran Lennard <tlennard@npca.ca>
Sent: June 1, 2022 7:58 AM
To: Tristan Knight
Subject: RE: ToR for EIS - 165 Lake Street, Grimsby

Hi Tristan,

No further comments from NPCA at this time. Generally the Lake hazards are more-so Engineering considerations from NPCA which will form the majority of our reviews (shore protection, Geotechnical, etc).

Thanks!

Taran Lennard
Watershed Planner

Niagara Peninsula Conservation Authority (NPCA)
250 Thorold Road West, 3rd Floor | Welland, ON L3C 3W2
Tel: 905-788-3135 | extension 277
email: tlennard@npca.ca

[NPCA Watershed Explorer](#)

Due to the COVID-19 pandemic, the NPCA has taken measures to protect staff and public while providing continuity of services. The NPCA main office is open by appointment only with limited staff, please refer to the [Staff Directory](#) and reach out to the staff member you wish to speak or meet with directly.

Updates regarding NPCA operations and activities can be found at [Get Involved NPCA Portal](#), or on social media at facebook.com/NPCAOntario & twitter.com/NPCA_Ontario.

For more information on Permits, Planning and Forestry please go to the Permits & Planning webpage at <https://npca.ca/administration/permits>.

For mapping on features regulated by the NPCA please go to our GIS webpage at <https://gis-npca-camaps.opendata.arcgis.com/> and utilize our Watershed Explorer App or GIS viewer.

To send NPCA staff information regarding a potential violation of Ontario Regulation 155/06 please go to the NPCA Enforcement and Compliance webpage at <https://npca.ca/administration/enforcement-compliance>

From: Tristan Knight <tristan@terrastoryenviro.com>
Sent: Tuesday, May 31, 2022 11:18 PM
To: Boudens, Adam <Adam.Boudens@niagararegion.ca>; Karlewicz, Lori <Lori.Karlewicz@niagararegion.ca>; Taran Lennard <tlennard@npca.ca>
Cc: Lampman, Cara <Cara.Lampman@niagararegion.ca>
Subject: RE: ToR for EIS - 165 Lake Street, Grimsby

Thanks Adam.

[@Taran Lennard](#) does NPCA have any additional comments on the ToR? I know you have been corresponding directly with the applicant as well in relation to the shoreline hazard.

Cheers,
T.

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

From: Boudens, Adam <Adam.Boudens@niagararegion.ca>
Sent: May 31, 2022 9:56 AM
To: Tristan Knight <tristan@terrastoryenviro.com>; Karlewicz, Lori <Lori.Karlewicz@niagararegion.ca>
Cc: tlennard@npca.ca; Lampman, Cara <Cara.Lampman@niagararegion.ca>
Subject: RE: ToR for EIS - 165 Lake Street, Grimsby

Hi Tristan,

Environmental Planning staff have reviewed the TOR for 165 Lake Street, Grimsby and offer no objection to the proposed work plan.

If the TOR review fee is not paid before the application is circulated for review and approval, the full EIS review fee will be required at that time.

Please let me now if you have any questions.

Thanks,
Adam

Adam Boudens
Senior Environmental Planner/Ecologist

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

From: Tristan Knight <tristan@terrastoryenviro.com>
Sent: Friday, April 15, 2022 10:27 AM
To: Karlewicz, Lori <Lori.Karlewicz@niagararegion.ca>
Cc: tlennard@npca.ca
Subject: ToR for EIS - 165 Lake Street, Grimsby

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Hi Lori,

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Lori - we look forward to working with you on this.
T.

Terms of Reference for Environmental Impact Study – 165 Lake Street, Town of Grimsby

- **Overall Approach and Methodology**
 - EIS will be undertaken consistent with Policy 7.B.1.15 of the ROP and Regional EIS Guidelines (Jan. 2018).
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- **Background Biophysical Information Gathering**
 - The following information sources will be reviewed (minimum):
 - Current and historical aerial photographs
 - Existing natural feature mapping (e.g., OP Schedules, NHIC, NPCA regulation mapping, etc.).
 - Ontario Base Mapping and other sources of topographic information (e.g., LiDAR).
 - Ontario well records from the local landscape
 - Soils mapping for the local landscape
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 - Physiographic mapping for the local landscape
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 - Atlas of the Mammals of Ontario
- **Site Assessment and Ecological Surveys (i.e., Fieldwork)**
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 - Characterization of the Lake Ontario shoreline area. - ***note, the shoreline at this location is a known significant winter waterfowl congregation area.**
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 - List of vascular plants (single season – early summer).
 - Characterization and delineation of all Key Natural Heritage Features (where present).
 - Incidental wildlife observations.
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 - Determination of whether any confirmed or potential KNHFs/KHFs are present within the Subject Property (or Adjacent Lands) consistent with Greenbelt Plan policies and criteria (i.e., *Technical Definitions and Criteria for KNHFs in the NHS and Protected Countryside Area*).
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 - Screening table for SWH (based on the Ecoregion 7E Criteria Schedule)
 - Screening table for Species at Risk

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Due to the COVID-19 pandemic, the NPCA has taken measures to protect staff and public while providing continuity of services. The NPCA main office is open by appointment only with limited staff, please refer to the [Staff Directory](#) and reach out to the staff member you wish to speak or meet with directly. Our Conservation Areas are currently open, but may have modified amenities and/or regulations.

Updates regarding NPCA operations and activities can be found at [Get Involved NPCA Portal](#), or on social media at [NPCA's Facebook Page](#) & [NPCA's Twitter page](#).

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Tristan Knight

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Appendix 2. Representative Photographs



Photo 1. Open meadow and treed conditions facing northwest towards Lake Ontario (09 September 2022).



Photo 2. Open meadow and treed conditions facing south towards Lake Street (09 September 2022).



Photo 3. On-site trees (09 September 2022).



Photo 4. On-site trees (09 September 2022).



Photo 5. Bank Swallow colony along the shore bluff of Lake Ontario (16 September 2022).



Photo 6. Shore bluff and beach along Lake Ontario facing east (21 March 2023).



Photo 7. On-site trees (21 March 2023).



Photo 8. On-site trees (21 March 2023).

Appendix 3. Vascular Plant List

Scientific Name	Common Name	Family	S-Rank (per NHIC)	Coefficient of Conservatism	Coefficient of Wetness
<i>Acer negundo</i>	Manitoba Maple	Aceraceae	S5	0	0
<i>Acer platanoides</i>	Norway Maple	Aceraceae	SNA	0	5
<i>Acer x freemanii</i>	Freeman's Maple	Aceraceae	SNA	6	-5
<i>Agrostis gigantea</i>	Redtop	Poaceae	SNA	0	-3
<i>Agrostis stolonifera</i>	Creeping Bentgrass	Poaceae	SNA	0	-3
<i>Alliaria petiolata</i>	Garlic Mustard	Brassicaceae	SNA	0	0
<i>Ambrosia artemisiifolia</i>	Common Ragweed	Asteraceae	S5	0	3
<i>Arctium minus</i>	Common Burdock	Asteraceae	SNA	0	3
<i>Berberis vulgaris</i>	European Barberry	Berberidaceae	SNA	0	3
<i>Betula papyrifera</i>	Paper Birch	Betulaceae	S5	2	3
<i>Bromus inermis</i>	Smooth Brome	Poaceae	SNA	0	5
<i>Cahstegia sepium</i>	Hedge False Bindweed	Convolvulaceae	S5	2	0
<i>Carex cristatella</i>	Crested Sedge	Cyperaceae	S5	3	-3
<i>Carex granularis</i>	Limestone Meadow Sedge	Cyperaceae	S5	3	-3
<i>Carex spicata</i>	Spiked Sedge	Cyperaceae	SNA	0	3
<i>Carex stipata</i>	Awl-fruited Sedge	Cyperaceae	S5	3	-5
<i>Carex vulpinoidea</i>	Fox Sedge	Cyperaceae	S5	3	-5
<i>Carya cordiformis</i>	Bitternut Hickory	Juglandaceae	S5	6	0
<i>Catalpa speciosa</i>	Northern Catalpa	Bignoniaceae	SNA	0	3
<i>Centaurea nigra</i>	Black Knapweed	Asteraceae	SNA	0	5
<i>Cichorium intybus</i>	Chicory	Asteraceae	SNA	0	5
<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade	Onagraceae	S5	2	3
<i>Cirsium arvense</i>	Canada Thistle	Asteraceae	SNA	0	3
<i>Cirsium vulgare</i>	Bull Thistle	Asteraceae	SNA	0	3
<i>Cornus racemosa</i>	Gray Dogwood	Cornaceae	S5	2	0
<i>Cornus stolonifera</i>	Red-osier Dogwood	Cornaceae	S5	2	-3
<i>Dactylis glomerata</i>	Orchard Grass	Poaceae	SNA	0	3
<i>Daucus carota</i>	Wild Carrot	Apiaceae	SNA	0	5
<i>Dipsacus fullonum</i>	Common Teasel	Dipsacaceae	SNA	0	3
<i>Echinocystis lobata</i>	Wild Mock-cucumber	Cucurbitaceae	S5	3	-3
<i>Echium vulgare</i>	Common Viper's Bugloss	Boraginaceae	SNA	0	5
<i>Elaeagnus umbellata</i>	Autumn Olive	Elaeagnaceae	SNA	0	3
<i>Elymus repens</i>	Creeping Wildrye	Poaceae	SNA	0	3
<i>Epilobium coloratum</i>	Purple-veined Willowherb	Onagraceae	S5	3	-5
<i>Erigeron canadensis</i>	Canada Horseweed	Asteraceae	S5	0	3
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	Asteraceae	S5	1	-3
<i>Fallopia convolvulus</i>	Black Bindweed	Polygonaceae	SNA	0	3
<i>Fragaria virginiana</i>	Wild Strawberry	Rosaceae	S5	2	3
<i>Galium odoratum</i>	Sweet Bedstraw	Rubiaceae	SNA	0	5
<i>Geranium robertianum</i>	Herb-Robert	Geraniaceae	S5	2	3
<i>Geum canadense</i>	White Avens	Rosaceae	S5	3	0
<i>Geum laciniatum</i>	Rough Avens	Rosaceae	S4	4	-3

Scientific Name	Common Name	Family	S-Rank (per NHIC)	Coefficient of Conservatism	Coefficient of Wetness
<i>Geum urbanum</i>	Wood Avens	Rosaceae	SNA	0	5
<i>Glechoma hederacea</i>	Ground Ivy	Lamiaceae	SNA	0	3
<i>Hesperis matronalis</i>	Dame's Rocket	Brassicaceae	SNA	0	3
<i>Hypericum perforatum</i>	Common St. John's-wort	Clusiaceae	SNA	0	5
<i>Juglans nigra</i>	Black Walnut	Juglandaceae	S4?	5	3
<i>Juncus bufonius</i>	Toad Rush	Juncaceae	S5	1	-3
<i>Juncus dudleyi</i>	Dudley's Rush	Juncaceae	S5	1	-3
<i>Juncus effusus</i>	Soft Rush	Juncaceae	S5	4	-5
<i>Juniperus virginiana</i>	Eastern Red Cedar	Cupressaceae	S5	4	3
<i>Lepidium campestre</i>	Field Peppergrass	Brassicaceae	SNA	0	5
<i>Leucanthemum vulgare</i>	Oxeye Daisy	Asteraceae	SNA	0	5
<i>Ligustrum vulgare</i>	European Privet	Oleaceae	SNA	0	3
<i>Lolium perenne</i>	Perennial Ryegrass	Poaceae	SNA	0	3
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	Caprifoliaceae	SNA	0	3
<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil	Fabaceae	SNA	0	3
<i>Malus pumila</i>	Common Apple	Rosaceae	SNA	0	5
<i>Medicago lupulina</i>	Black Medic	Fabaceae	SNA	0	3
<i>Melilotus albus</i>	White Sweet-clover	Fabaceae	SNA	0	3
<i>Melilotus officinalis</i>	Yellow Sweet-clover	Fabaceae	SNA	0	3
<i>Morus alba</i>	White Mulberry	Moraceae	SNA	0	0
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel	Oxalidaceae	S5	0	3
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	Vitaceae	S4?	6	3
<i>Persicaria maculosa</i>	Spotted Lady's-thumb	Polygonaceae	SNA	0	-3
<i>Phleum pratense</i>	Common Timothy	Poaceae	SNA	0	3
<i>Phytolacca americana</i>	Common Pokeweed	Phytolaccaceae	S4	3	3
<i>Pinus nigra</i>	Black Pine	Pinaceae	SNA	0	5
<i>Pinus strobus</i>	Eastern White Pine	Pinaceae	S5	4	3
<i>Plantago lanceolata</i>	English Plantain	Plantaginaceae	SNA	0	3
<i>Plantago major</i>	Common Plantain	Plantaginaceae	SNA	0	3
<i>Poa compressa</i>	Canada Bluegrass	Poaceae	SNA	0	3
<i>Poa palustris</i>	Fowl Bluegrass	Poaceae	S5	5	-3
<i>Poa pratensis</i> ssp. <i>pratensis</i>	Kentucky Bluegrass	Poaceae	SNA	0	3
<i>Poa trivialis</i>	Rough Bluegrass	Poaceae	SNA	0	-3
<i>Polygonum aviculare</i>	Prostrate Knotweed	Polygonaceae	S4?	0	3
<i>Populus deltoides</i>	Eastern Cottonwood	Salicaceae	S5	4	0
<i>Populus tremuloides</i>	Trembling Aspen	Salicaceae	S5	2	0
<i>Potentilla recta</i>	Sulphur Cinquefoil	Rosaceae	SNA	0	5
<i>Prunus avium</i>	Sweet Cherry	Rosaceae	SNA	0	5
<i>Prunus mahaleb</i>	Perfumed Cherry	Rosaceae	SNA	0	5
<i>Prunus serotina</i>	Black Cherry	Rosaceae	S5	3	3
<i>Pyrus communis</i>	Common Pear	Rosaceae	SNA	0	5
<i>Rhus typhina</i>	Staghorn Sumac	Anacardiaceae	S5	1	3

Scientific Name	Common Name	Family	S-Rank (per NHIC)	Coefficient of Conservatism	Coefficient of Wetness
<i>Ribes cynosbati</i>	Prickly Gooseberry	Grossulariaceae	S5	4	3
<i>Robinia pseudoacacia</i>	Black Locust	Fabaceae	SNA	0	3
<i>Rosa multiflora</i>	Multiflora Rose	Rosaceae	SNA	0	3
<i>Rubus occidentalis</i>	Black Raspberry	Rosaceae	S5	2	5
<i>Rumex crispus</i>	Curly Dock	Polygonaceae	SNA	0	0
<i>Salix interior</i>	Sandbar Willow	Salicaceae	S5	1	-3
<i>Salix lucida</i>	Shining Willow	Salicaceae	S5	5	-3
<i>Salix x fragilis</i>	(<i>Salix alba</i> X <i>Salix euxina</i>)	Salicaceae	SNA	0	0
<i>Securigera varia</i>	Common Crown-vetch	Fabaceae	SNA	0	5
<i>Silene vulgaris</i>	Bladder Champion	Caryophyllaceae	SNA	0	5
<i>Solanum dulcamara</i>	Bittersweet Nightshade	Solanaceae	SNA	0	0
<i>Solidago altissima</i>	Tall Goldenrod	Asteraceae	S5	1	3
<i>Solidago juncea</i>	Early Goldenrod	Asteraceae	S5	3	5
<i>Symphotrichum lanceolatum</i>	Panicled Aster	Asteraceae	S5	3	-3
<i>Symphotrichum lateriflorum</i> var. <i>lateriflorum</i>	Calico Aster	Asteraceae	S5	3	0
<i>Taraxacum officinale</i>	Common Dandelion	Asteraceae	SNA	0	3
<i>Toxicodendron radicans</i>	Poison Ivy	Anacardiaceae	S5	2	0
<i>Toxicodendron rydbergii</i>	Western Poison Ivy	Anacardiaceae	S5	2	0
<i>Trifolium pratense</i>	Red Clover	Fabaceae	SNA	0	3
<i>Trifolium repens</i>	White Clover	Fabaceae	SNA	0	3
<i>Tussilago farfara</i>	Colt's-foot	Asteraceae	SNA	0	3
<i>Verbena urticifolia</i>	White Vervain	Verbenaceae	S5	4	0
<i>Veronica peregrina</i>	Purslane Speedwell	Scrophulariaceae	S5	0	0
<i>Veronica serpyllifolia</i> ssp. <i>serpyllifolia</i>	Thyme-leaved Speedwell	Scrophulariaceae	SNA	0	0
<i>Viburnum opulus</i> ssp. <i>opulus</i>	Cranberry Viburnum	Caprifoliaceae	SNA	0	-3
<i>Vicia cracca</i>	Tufted Vetch	Fabaceae	SNA	0	5
<i>Vinca minor</i>	Periwinkle	Apocynaceae	SNA	0	5
<i>Vitis riparia</i>	Riverbank Grape	Vitaceae	S5	0	0

Appendix 4. Tree Inventory and Condition Assessment

Tag No.	Common Name (Scientific Name)	DBH (cm)	Crown Radius (m)	Health Condition ¹	Structural Condition ¹	Ownership ²	Min. TPZ (m)	Tree Preservation Recommendation ³
381	Peach-leaved Willow (<i>Salix amygdaloides</i>)	15	1	Good/Fair	Good/Fair	Shared with 153 Lake Street	1.8	Remove - protection cannot be accommodated
550	Black Walnut (<i>Juglans nigra</i>)	13	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
551	Black Walnut (<i>Juglans nigra</i>)	25	5	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
552	Black Walnut (<i>Juglans nigra</i>)	28	7	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
553	Black Walnut (<i>Juglans nigra</i>)	20	6	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
554	Black Walnut (<i>Juglans nigra</i>)	21	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
555	Black Walnut (<i>Juglans nigra</i>)	30	8	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
556	Black Walnut (<i>Juglans nigra</i>)	21	5	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
557	Black Walnut (<i>Juglans nigra</i>)	16	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
558	Black Walnut (<i>Juglans nigra</i>)	15	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
559	Manitoba Maple (<i>Acer negundo</i>)	25, 60	8	Good/Fair	Fair	Applicant	3.6	Remove - protection cannot be accommodated
560	Manitoba Maple (<i>Acer negundo</i>)	19	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
561	Black Walnut (<i>Juglans nigra</i>)	16	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
562	Black Walnut (<i>Juglans nigra</i>)	23	5	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
563	Black Walnut (<i>Juglans nigra</i>)	33	10	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
564	Austrian Pine (<i>Pinus nigra</i>)	42	2	Good	Fair	Applicant	3	Remove - protection cannot be accommodated
565	Austrian Pine (<i>Pinus nigra</i>)	33	3	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
566	Austrian Pine (<i>Pinus nigra</i>)	33,26	5	Good	Fair	Applicant	2.4	Remove - protection cannot be accommodated
567	Austrian Pine (<i>Pinus nigra</i>)	26, 25	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
568	Austrian Pine (<i>Pinus nigra</i>)	43, 36	4	Good	Good	Applicant	3	Remove - protection cannot be accommodated
569	Austrian Pine (<i>Pinus nigra</i>)	20	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
570	Austrian Pine (<i>Pinus nigra</i>)	38	2	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
571	Austrian Pine (<i>Pinus nigra</i>)	34	5	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
572	Hybrid Crack Willow (<i>Salix x fragilis</i>)	32, 40	8	Good	Fair	Applicant	2.4	Remove - protection cannot be accommodated
573	Austrian Pine (<i>Pinus nigra</i>)	45	4	Good	Good	Applicant	3	Remove - protection cannot be accommodated
574	Austrian Pine (<i>Pinus nigra</i>)	42	4	Good	Good	Applicant	3	Remove - protection cannot be accommodated
575	Austrian Pine (<i>Pinus nigra</i>)	32	3	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
576	Austrian Pine (<i>Pinus nigra</i>)	26, 32	3	Good	Good/Fair	Applicant	2.4	Remove - protection cannot be accommodated
577	Austrian Pine (<i>Pinus nigra</i>)	40	4	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
578	Austrian Pine (<i>Pinus nigra</i>)	42	4	Good	Good	Applicant	3	Remove - protection cannot be accommodated
579	Austrian Pine (<i>Pinus nigra</i>)	37	3	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
580	Black Walnut (<i>Juglans nigra</i>)	38	8	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
581	Austrian Pine (<i>Pinus nigra</i>)	51	5	Good	Good	Applicant	3.6	Remove - protection cannot be accommodated
582	Austrian Pine (<i>Pinus nigra</i>)	32	3	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
583	Austrian Pine (<i>Pinus nigra</i>)	54	7	Good	Good	Shared with 20 Jacobs Landing	3.6	Remove - protection cannot be accommodated
584	Austrian Pine (<i>Pinus nigra</i>)	34	4	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
585	Austrian Pine (<i>Pinus nigra</i>)	48	8	Good	Good	Applicant	3	Remove - protection cannot be accommodated
586	Austrian Pine (<i>Pinus nigra</i>)	30	3	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated

Tag No.	Common Name (Scientific Name)	DBH (cm)	Crown Radius (m)	Health Condition ¹	Structural Condition ¹	Ownership ²	Min. TPZ (m)	Tree Preservation Recommendation ³
587	Nootka Cypress (<i>Callitropsis nootkatensis</i>)	27, 17	4	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
588	Austrian Pine (<i>Pinus nigra</i>)	31, 31, 17, 19	4	Good	Fair	Applicant	2.4	Remove - protection cannot be accommodated
589	Austrian Pine (<i>Pinus nigra</i>)	48, 39, 29	10	Good	Fair/Poor	Shared with 18 Jacobs Landing	3	Remove - protection cannot be accommodated
590	Austrian Pine (<i>Pinus nigra</i>)	54, 40	8	Good	Good	Applicant	3.6	Remove - protection cannot be accommodated
591	Weeping Birch (<i>Betula pendula</i>)	39	5	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
592	Weeping Birch (<i>Betula pendula</i>)	26, 25, 15	2	Poor	Poor	Applicant	1.8	Remove - protection cannot be accommodated
593	Nootka Cypress (<i>Callitropsis nootkatensis</i>)	19	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
594	Norway Spruce (<i>Picea abies</i>)	51	6	Good	Good	Shared with 18 Jacobs Landing	3.6	Remove - protection cannot be accommodated
595	Norway Spruce (<i>Picea abies</i>)	51	6	Good	Good	Shared with 18 Jacobs Landing	3.6	Remove - protection cannot be accommodated
596	Norway Spruce (<i>Picea abies</i>)	51	6	Good	Good	Shared with 16 Jacobs Landing	3.6	Retention may be possible (to be determined at detailed design)
597	Norway Spruce (<i>Picea abies</i>)	48	7	Good	Good	Shared with 16 Jacobs Landing	3	Retention may be possible (to be determined at detailed design)
598	Norway Spruce (<i>Picea abies</i>)	60	8	Good	Good	Shared with 16 Jacobs Landing	3.6	Retention may be possible (to be determined at detailed design)
599	Norway Spruce (<i>Picea abies</i>)	48	7	Good	Good	Shared with 16 Jacobs Landing	3	Retention may be possible (to be determined at detailed design)
600	Norway Spruce (<i>Picea abies</i>)	48	8	Good	Good	Shared with 16 Jacobs Landing	3	Retention may be possible (to be determined at detailed design)
601	Norway Maple (<i>Acer platanoides</i>)	23	8	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
602	Manitoba Maple (<i>Acer negundo</i>)	12, 18	3	Fair/Poor	Fair/Poor	Applicant	1.8	Remove - protection cannot be accommodated
603	Manitoba Maple (<i>Acer negundo</i>)	33	6	Fair	Fair/Poor	Applicant	2.4	Remove - protection cannot be accommodated
604	Norway Maple (<i>Acer platanoides</i>)	23	5	Fair/Poor	Poor	Applicant	1.8	Remove - protection cannot be accommodated
605	Black Walnut (<i>Juglans nigra</i>)	20	7	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
606	Norway Maple (<i>Acer platanoides</i>)	33	8	Good/Fair	Good/Fair	Applicant	2.4	Remove - protection cannot be accommodated
607	Norway Maple (<i>Acer platanoides</i>)	32	7	Good/Fair	Good/Fair	Applicant	2.4	Remove - protection cannot be accommodated
608	Common Pear (<i>Pyrus communis</i>)	23	4	Fair	Fair/Poor	Applicant	1.8	Remove - protection cannot be accommodated
609	Peach-leaved Willow (<i>Salix amygdaloides</i>)	30	3	Good	Good/Fair	Shared with 153 Lake Street	2.4	Remove - protection cannot be accommodated
610	Black Walnut (<i>Juglans nigra</i>)	24	8	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
611	Black Walnut (<i>Juglans nigra</i>)	24	5	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
612	Black Walnut (<i>Juglans nigra</i>)	45	18	Good	Good	Applicant	3	Remove - protection cannot be accommodated
613	Black Walnut (<i>Juglans nigra</i>)	33	10	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
614	Black Walnut (<i>Juglans nigra</i>)	25	7	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
615	Black Locust (<i>Robinia pseudoacacia</i>)	23	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
616	Black Walnut (<i>Juglans nigra</i>)	44	8	Good	Good	Applicant	3	Remove - protection cannot be accommodated
617	Manitoba Maple (<i>Acer negundo</i>)	14	5	Good/Fair	Good/Fair	Applicant	1.8	Remove - protection cannot be accommodated
618	Eastern Red Cedar (<i>Juniperus virginiana</i>)	35	8	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
619	Mahaleb Cherry (<i>Prunus mahaleb</i>)	12	2	Fair	Fair	Applicant	1.8	Remove - protection cannot be accommodated
620	Manitoba Maple (<i>Acer negundo</i>)	15	1	Poor	Poor	Applicant	1.8	Remove - protection cannot be accommodated
621	Black Walnut (<i>Juglans nigra</i>)	13	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
622	Black Walnut (<i>Juglans nigra</i>)	30	8	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
623	Manitoba Maple (<i>Acer negundo</i>)	47	10	Fair	Fair	Applicant	3	Remove - protection cannot be accommodated
624	Freeman's Maple (<i>Acer x freemanii</i>)	18, 9	2	Fair	Fair	Applicant	1.8	Remove - protection cannot be accommodated

Tag No.	Common Name (Scientific Name)	DBH (cm)	Crown Radius (m)	Health Condition ¹	Structural Condition ¹	Ownership ²	Min. TPZ (m)	Tree Preservation Recommendation ³
625	Manitoba Maple (<i>Acer negundo</i>)	23	2	Poor	Poor	Applicant	1.8	Remove - protection cannot be accommodated
626	Norway Maple (<i>Acer platanoides</i>)	28	7	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
627	Manitoba Maple (<i>Acer negundo</i>)	37	5	Fair	Fair	Applicant	2.4	Remove - protection cannot be accommodated
628	Trembling Aspen (<i>Populus tremuloides</i>)	27	3	Fair	Fair	Applicant	1.8	Remove - protection cannot be accommodated
629	Freeman's Maple (<i>Acer x freemanii</i>)	20	3	Fair/Poor	Fair	Applicant	1.8	Remove - protection cannot be accommodated
630	Manitoba Maple (<i>Acer negundo</i>)	10	2	Fair	Fair/Poor	Applicant	1.8	Remove - protection cannot be accommodated
631	Manitoba Maple (<i>Acer negundo</i>)	23	2	Poor	Fair/Poor	Applicant	1.8	Remove - protection cannot be accommodated
632	Freeman's Maple (<i>Acer x freemanii</i>)	38	6	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
633	Freeman's Maple (<i>Acer x freemanii</i>)	20	4	Fair/Poor	Fair	Applicant	1.8	Remove - protection cannot be accommodated
634	Manitoba Maple (<i>Acer negundo</i>)	40, 36	6	Poor	Poor	Applicant	2.4	Remove - protection cannot be accommodated
635	Eastern Cottonwood (<i>Populus deltoides</i>)	13	1	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
636	Eastern Cottonwood (<i>Populus deltoides</i>)	30	2	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
637	Eastern Cottonwood (<i>Populus deltoides</i>)	12	0	Poor	Poor	Applicant	1.8	Remove - protection cannot be accommodated
638	Eastern Cottonwood (<i>Populus deltoides</i>)	15	2	Good/Fair	Good/Fair	Applicant	1.8	Remove - protection cannot be accommodated
639	Eastern Cottonwood (<i>Populus deltoides</i>)	20	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
640	Eastern Cottonwood (<i>Populus deltoides</i>)	14	1	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
641	Eastern Cottonwood (<i>Populus deltoides</i>)	16	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
642	Eastern Cottonwood (<i>Populus deltoides</i>)	29,13,14	4	Good/Fair	Good/Fair	Applicant	2.4	Remove - protection cannot be accommodated
643	Freeman's Maple (<i>Acer x freemanii</i>)	10	2	Poor	Poor	Applicant	1.8	Remove - protection cannot be accommodated
644	Freeman's Maple (<i>Acer x freemanii</i>)	10	3	Fair	Good/Fair	Applicant	1.8	Remove - protection cannot be accommodated
645	Eastern Cottonwood (<i>Populus deltoides</i>)	28	5	Good/Fair	Fair/Poor	Applicant	1.8	Remove - protection cannot be accommodated
646	Eastern Cottonwood (<i>Populus deltoides</i>)	19	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
647	Eastern Cottonwood (<i>Populus deltoides</i>)	50	12	Good	Good	Shared with 153 Lake Street	3	Remove - protection cannot be accommodated
648	Hybrid Crack Willow (<i>Salix x fragilis</i>)	65, 48, 50	16	Good	Fair	Applicant	4.2	Remove - protection cannot be accommodated
649	Trembling Aspen (<i>Populus tremuloides</i>)	14	2	Good	Good/Fair	Applicant	1.8	Remove - protection cannot be accommodated
650	Black Walnut (<i>Juglans nigra</i>)	46	8	Good	Good	Applicant	3	Retention may be possible (to be determined at detailed design)
651	Manitoba Maple (<i>Acer negundo</i>)	36	4	Good/Fair	Good/Fair	Applicant	2.4	Remove - protection cannot be accommodated
652	Black Walnut (<i>Juglans nigra</i>)	28	8	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
653	Black Walnut (<i>Juglans nigra</i>)	20	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
654	Black Walnut (<i>Juglans nigra</i>)	38	6	Good	Good	Applicant	2.4	Retention may be possible (to be determined at detailed design)
655	Black Walnut (<i>Juglans nigra</i>)	15	4	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
656	Trembling Aspen (<i>Populus tremuloides</i>)	16	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
657	Trembling Aspen (<i>Populus tremuloides</i>)	27	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
658	Trembling Aspen (<i>Populus tremuloides</i>)	10	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
660	Trembling Aspen (<i>Populus tremuloides</i>)	13	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
661	Trembling Aspen (<i>Populus tremuloides</i>)	25	4	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
662	Black Walnut (<i>Juglans nigra</i>)	15	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)

Tag No.	Common Name (Scientific Name)	DBH (cm)	Crown Radius (m)	Health Condition ¹	Structural Condition ¹	Ownership ²	Min. TPZ (m)	Tree Preservation Recommendation ³
663	Black Walnut (<i>Juglans nigra</i>)	28	8	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
664	Trembling Aspen (<i>Populus tremuloides</i>)	13	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
665	Trembling Aspen (<i>Populus tremuloides</i>)	25	4	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
666	Trembling Aspen (<i>Populus tremuloides</i>)	17	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
667	Trembling Aspen (<i>Populus tremuloides</i>)	15	3	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
668	Trembling Aspen (<i>Populus tremuloides</i>)	11	1	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
669	Trembling Aspen (<i>Populus tremuloides</i>)	12	3	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
670	Trembling Aspen (<i>Populus tremuloides</i>)	10	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
671	Trembling Aspen (<i>Populus tremuloides</i>)	32	4	Good	Good	Applicant	2.4	Retention may be possible (to be determined at detailed design)
672	Trembling Aspen (<i>Populus tremuloides</i>)	11	3	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
673	Trembling Aspen (<i>Populus tremuloides</i>)	19	3	Poor	Fair/Poor	Applicant	1.8	Retention may be possible (to be determined at detailed design)
674	Trembling Aspen (<i>Populus tremuloides</i>)	11	2	Good	Fair/Poor	Applicant	1.8	Retention may be possible (to be determined at detailed design)
675	Trembling Aspen (<i>Populus tremuloides</i>)	11	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
676	Trembling Aspen (<i>Populus tremuloides</i>)	15	3	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
677	Trembling Aspen (<i>Populus tremuloides</i>)	12	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
678	Staghorn Sumac (<i>Rhus typhina</i>)	10	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
679	Hybrid Crack Willow (<i>Salix x fragilis</i>)	13	2	Good	Good/Fair	Applicant	1.8	Retention may be possible (to be determined at detailed design)
680	Trembling Aspen (<i>Populus tremuloides</i>)	11	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
681	Trembling Aspen (<i>Populus tremuloides</i>)	10	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
682	Trembling Aspen (<i>Populus tremuloides</i>)	11	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
683	Trembling Aspen (<i>Populus tremuloides</i>)	11	1	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
684	Trembling Aspen (<i>Populus tremuloides</i>)	11	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
685	Trembling Aspen (<i>Populus tremuloides</i>)	11	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
686	Trembling Aspen (<i>Populus tremuloides</i>)	26	5	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
687	Trembling Aspen (<i>Populus tremuloides</i>)	13	2	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
688	Trembling Aspen (<i>Populus tremuloides</i>)	17	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
689	Trembling Aspen (<i>Populus tremuloides</i>)	26	5	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
690	Trembling Aspen (<i>Populus tremuloides</i>)	13	2	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
691	Trembling Aspen (<i>Populus tremuloides</i>)	21	4	Poor	Fair/Poor	Applicant	1.8	Remove - protection cannot be accommodated
692	Trembling Aspen (<i>Populus tremuloides</i>)	19	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
693	Trembling Aspen (<i>Populus tremuloides</i>)	18	3	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
694	Trembling Aspen (<i>Populus tremuloides</i>)	17	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
695	Trembling Aspen (<i>Populus tremuloides</i>)	18	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
696	Trembling Aspen (<i>Populus tremuloides</i>)	26, 22	6	Good	Good/Fair	Applicant	1.8	Remove - protection cannot be accommodated
697	Trembling Aspen (<i>Populus tremuloides</i>)	22,29,32	7	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
698	Black Walnut (<i>Juglans nigra</i>)	16	3	Good	Fair	Applicant	1.8	Remove - protection cannot be accommodated
699	Black Walnut (<i>Juglans nigra</i>)	46	8	Fair	Fair	Applicant	3	Remove - protection cannot be accommodated
700	Black Walnut (<i>Juglans nigra</i>)	33	8	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated

Tag No.	Common Name (Scientific Name)	DBH (cm)	Crown Radius (m)	Health Condition ¹	Structural Condition ¹	Ownership ²	Min. TPZ (m)	Tree Preservation Recommendation ³
716	Norway Spruce (<i>Picea abies</i>)	54	8	Good	Good	Applicant	3.6	Remove - protection cannot be accommodated
717	Weeping Birch (<i>Betula pendula</i>)	25, 22, 15, 16	7	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
718	Blue Spruce (<i>Picea pungens</i>)	11	1	Good	Good	Applicant	1.8	Retention may be possible (to be determined at detailed design)
719	Weeping Birch (<i>Betula pendula</i>)	35, 24	6	Good	Good	Applicant	2.4	Remove - protection cannot be accommodated
720	Siberian Crabapple (<i>Malus baccata</i>)	24	4	Good	Good	Applicant	1.8	Remove - protection cannot be accommodated
721	Austrian Pine (<i>Pinus nigra</i>)	41	4	Good	Good	Applicant	3	Remove - protection cannot be accommodated
722	Austrian Pine (<i>Pinus nigra</i>)	48	6	Good	Good	Applicant	3	Remove - protection cannot be accommodated
723	Austrian Pine (<i>Pinus nigra</i>)	42	6	Good	Good	Applicant	3	Remove - protection cannot be accommodated
724	Austrian Pine (<i>Pinus nigra</i>)	42	5	Good	Good	Applicant	3	Remove - protection cannot be accommodated
725	Austrian Pine (<i>Pinus nigra</i>)	50	5	Good	Good	Applicant	3	Remove - protection cannot be accommodated
726	Austrian Pine (<i>Pinus nigra</i>)	54	6	Good	Good	Applicant	3.6	Remove - protection cannot be accommodated

¹ - Notwithstanding the determinations of tree health and structural integrity made herein (e.g., good, fair, poor), it must be recognized that all trees (in good health or otherwise) have the potential for failure given adverse weather, damage due to mechanical injury, or other factors that cause stress.

² - All determinations of tree ownership are approximate and have been made in the absence of on-site property boundary markers or other direction from a licensed surveyor.

³ - Notwithstanding any recommendations concerning tree preservation or removal made herein, this report does not supersede or expunge any civil or common law property rights as they pertain to shared/boundary trees or trees occurring on adjacent properties. It is expected that the Applicant will seek approval to injure/remove any and all shared/boundary or neighbouring trees from relevant owners.

Appendix 5. Breeding Bird Survey Results

1 BREEDING BIRD SURVEY METHODOLOGY

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

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

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

Observed: Species observed during its breeding season (no evidence of breeding).

Possible Breeding: Includes any of the following observation types: 1) species observed in its breeding season in suitable nesting habitat, and 2) singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat.

Probable Breeding: Includes any of the following observation types: 1) pair observed in their breeding season in suitable nesting habitat, 2) permanent territory presumed through registration of territorial song on at least 2 days, a week or more apart, at the same place, 3) courtship or display between a male and a female or 2 males, including courtship feeding or copulation, 4) visiting probable nest site, 5) agitated behaviour or anxiety calls of an adult, 6) brood patch on adult female or cloacal protuberance on adult male, and 7) nest-building or excavation of nest hole.

Confirmed Breeding: Includes any of the following observation types: 1) distraction display or injury feigning, 2) used nest or egg shell found (occupied or laid within the period of the study), 3) recently fledged young or downy young, including young incapable of sustained flight, 4) adults leaving or entering nest site in circumstances indicating occupied nest, 5) adult carrying faecal sac, 6) adult carrying food for young, 7) nest containing eggs, and 8) nest with young seen or heard.

2 RESULTS

Table 1. Results of Breeding Bird Surveys.

Common Name	Scientific Name	Breeding Status¹	General Location of Observation
American Goldfinch	<i>Spinus tristis</i>	Probable	Small flocks present.
American Redstart	<i>Setophaga ruticilla</i>	Possible	Singing male.
American Robin	<i>Turdus migratorius</i>	Probable	A few singing males present.
Baltimore Oriole	<i>Icterus galbula</i>	Probable	Singing male present.
Bank Swallow	<i>Riparia riparia</i>	Confirmed	Colony present 60 or more bird observed.
Belted Kingfisher	<i>Megasceryle alcyon</i>	Confirmed	Adult entering nest.
Black-capped Chickadee	<i>Poecile atricapillus</i>	Probable	One bird calling.
Blue Jay	<i>Cyanocitta cristata</i>	Possible	Three birds flew over.
Brown-headed Cowbird	<i>Molothrus ater</i>	Probable	One singing/displaying male.
Cedar Waxwing	<i>Bombycilla cedrorum</i>	Probable	Flock of 20. Calling birds present during second visit.
Common Grackle	<i>Quiscalus quiscula</i>	Confirmed	Singing/displaying bird. Adult carrying food during second visit.
European Starling	<i>Sturnus vulgaris</i>	Probable	Flyover.
House Finch	<i>Haemorhous mexicanus</i>	Possible	Bird calling, male.
House Sparrow	<i>Passer domesticus</i>	Possible	Calling birds east of the study area.
House Wren	<i>Troglodytes aedon</i>	Probable	Singing male within the study area.
Mourning Dove	<i>Zenaidura macroura</i>	Possible	Bird observed adjacent to the study area.
Northern Cardinal	<i>Cardinalis cardinalis</i>	Probable	Singing male.
Northern Flicker	<i>Colaptes auratus</i>	Possible	Calling bird within the study area.
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	Possible	Large, exposed bank present, with BANS and BEKI nests.
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Confirmed	Female agitated carrying food, singing males present.
Ring-billed Gull	<i>Larus delawarensis</i>	Observed	Flyover.
Song Sparrow	<i>Melospiza melodia</i>	Probable	Singing male.
Warbling Vireo	<i>Vireo gilvus</i>	Probable	Singing male.

¹ Co = Confirmed Breeder; Pr = Probable Breeder; Po = Possible Breeder; O = Observed (no evidence of breeding). Breeding status determined based on the results of the formal breeding bird surveys; where a higher level of breeding status was documented incidentally (i.e., during other field surveys), this is noted in within the main body of the report (where applicable).

Appendix 6. Significant Wildlife Habitat Assessment

1 SIGNIFICANT WILDLIFE HABITAT ASSESSMENT METHODOLOGY

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

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

The process for identifying SWH is outlined in s. 9.2.3 of the Natural Heritage Reference Manual (OMNR 2010). Step 1 considers the nature of the development application proposed and involves the assembly of background ecological information for the Study Area and Adjacent Lands. If the application triggers a need to protect SWH (e.g., change in land-use that requires approval under the Planning Act, etc.), a more thorough investigation of potential SWH features within the Study Area or Adjacent Lands must occur. Any confirmed SWH for the Study Area and Adjacent Lands as identified in relevant planning documents or by the MNRF should be noted at this stage.

Where a need to protect SWH is triggered, step 2 involves undertaking a more thorough analysis of features, functions, and habitats within the Study Area via Ecological Land Classification (see Section 2.8). The list of ELC Ecosite codes generated for the Study Area is compared to those codes considered candidate SWH in the relevant Ecoregion Criterion Schedule (i.e., 5E, 6E, or 7E) in step 3. Where a positive match between an ELC Ecosite and candidate SWH exists, the area is considered candidate SWH.

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

2 RESULTS

Table 1. Results of the Significant Wildlife Habitat Assessment.

Ecoregion 7E	Do any Features, Habitats, or Areas on the Study Area or Adjacent Lands meet relevant criteria (Ecoregion 7E Criteria Schedule) as Candidate SWH?	Do any Features, Habitats, or Areas on the Study Area or Adjacent Lands meet relevant criteria (Ecoregion 7E Criteria Schedule) as Confirmed SWH?	Likelihood that Negative Effects to SWH (i.e., “degradation that threatens the health and integrity” as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Seasonal Concentration Areas of Animals			
Waterfowl Stopover and Staging Areas (Terrestrial)	No. Meadows, fields, and/or thickets that annually flood during spring and could support significant congregations of migrating waterfowl are absent.	--	--
Waterfowl Stopover and Staging Areas (Aquatic)	Yes. 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.	Yes. Lake Ontario adjacent to the Study Area is identified as a Waterfowl Winter Congregation Area.	No. Development is restricted to the tablelands south of the stable slope allowance. Installation of shore bluff protection (revetment) will not adversely affect the function of Lake Ontario as wintering habitat for ducks.
Shorebird Migratory Stopover Areas	Yes. Unvegetated open areas adjacent to surface water features (e.g., shorelines, beaches, mudflats, etc.) and could support significant congregations of migrating shorebirds are absent	Unlikely. A 60 m long section of beach is present within the Study Area, which is relatively narrow and surrounded by protected shoreline which lacks beach. While spring and/or fall surveys for shorebirds have not been conducted, it is unlikely that this narrow and isolated stretch of beach would be confirmed as SWH for migratory shorebirds (i.e., presence of 3 or more of the listed species with > 1000 shorebird use days during spring or fall migration).	--
Raptor Wintering Areas	No. Forest and meadow habitats of sufficient size are absent from the Study Area.	--	--
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	No. 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 absent.	--	--
Turtle Wintering Areas	No. Surface water features and/or wetlands with soft muddy substrate which do not freeze to the bottom during winter are absent.	--	--
Reptile Hibernaculum	No. Features (e.g., small mammal burrows, rock crevices, etc.) and/or habitats (e.g., certain wetlands with a fluctuating water table, etc.) with a high potential to provide snakes with access below the frost line are absent.	--	--
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)	Yes. 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 present.	No. There is an Open Bluff present within the Study Area. Two Northern Rough-winged Swallow were observed on 26 May 2022; however, no evidence of breeding was documented.	--
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)	No. Swamp and treed fen communities are absent.	--	--

Ecoregion 7E	Do any Features, Habitats, or Areas on the Study Area or Adjacent Lands meet relevant criteria (Ecoregion 7E Criteria Schedule) as Candidate SWH?	Do any Features, Habitats, or Areas on the Study Area or Adjacent Lands meet relevant criteria (Ecoregion 7E Criteria Schedule) as Confirmed SWH?	Likelihood that Negative Effects to SWH (i.e., “degradation that threatens the health and integrity” as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Colonially - Nesting Bird Breeding Habitat (Ground)	No. Rocky islands or peninsulas along lakes or large rivers are absent.	--	--
Migratory Butterfly Stopover Areas	Yes. A mixture of fields and forests within 5 km from the shoreline of Lake Erie or Lake Ontario are present.	No. Evidence of congregations of butterflies were not documented in September 2022. Study Area is less than 10 ha in size.	--
Landbird Migratory Stopover Areas	Yes. Study Area abuts the shoreline of Lake Ontario.	Unlikely. While migrating landbirds may temporarily stopover to feed and rest, the Study Area is unlikely to support significant congregations of migrating landbirds as forest/woodlands of sufficient size are absent.	--
Deer Winter Congregation Areas	No. The Study Area 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, the deciduous forest has emerged recently and does not 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. Wetland communities are absent.	--	--
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Yes. Forest communities adjacent to large surface water features are present.	No. Bald Eagle and/or Osprey nests are absent. Neither species has been documented within the Study Area during the course of breeding bird surveys or incidentally in 2022/2023.	--
Woodland Raptor Nesting Habitat	No. Forest communities of sufficient size are absent from the Study Area.	--	--
Turtle Nesting Areas	Yes. Exposed mineral soils adjacent to surface water features (e.g., lakes, ponds, etc.) and/or wetlands that may support turtles are present.	Unlikely. The beach/shoreline of Lake Ontario within the Study Area is subject to high energy (i.e., high exposure) and are thus unlikely to be routinely used as nesting habitat for turtles. There are no coastal wetlands or embayments in the vicinity of the Study Area.	--
Seeps and Springs	No. Areas where groundwater emerges at the surface and may support specialized habitat for plants and wildlife are absent.	--	--

Ecoregion 7E	Do any Features, Habitats, or Areas on the Study Area or Adjacent Lands meet relevant criteria (Ecoregion 7E Criteria Schedule) as Candidate SWH?	Do any Features, Habitats, or Areas on the Study Area or Adjacent Lands meet relevant criteria (Ecoregion 7E Criteria Schedule) as Confirmed SWH?	Likelihood that Negative Effects to SWH (i.e., “degradation that threatens the health and integrity” as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
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.	--	--
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	No. Marsh and swamp communities and/or wet fields are absent.	--	--
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. Study Area 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 Area within or adjacent to proposed Development or Site Alteration ¹	Likelihood that Negative Effects to the Species or its Habitat (i.e., “degradation that threatens the health and integrity” as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Birds					
Bald Eagle <i>(Haliaeetus leucocephalus)</i>	SC	Species distribution and on-site habitats	<ul style="list-style-type: none"> Generally found feeding along waterbodies and shorelines, and adjacent deciduous and mixed forests. Super-canopy trees are used for nesting and roosting. <ul style="list-style-type: none"> Feeds largely on fish and carrion. 	Negligible. Species not observed during breeding bird surveys or incidentally in 2022. No nests documented.	--
Barn Swallow <i>(Hirundo rustica)</i>	SC	OBBA	<ul style="list-style-type: none"> 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 Study Area for brief periods during migration or forays from adjacent breeding sites, suitable breeding sites within the Study Area are absent. Not observed during breeding bird surveys in 2022.	--
Black-crowned Night-Heron <i>(Nycticorax nycticorax)</i>	S3B	iNaturalist	<ul style="list-style-type: none"> Nests in trees or in cattails usually in a habitat safe from predators such as on an island, in a swamp, or over water Nests colonially, often with a dozen nests in a single tree. 	Negligible. Suitable breeding habitat is absent. Not observed during breeding bird surveys in 2022.	--
Caspian Tern <i>(Hydroprogne caspia)</i>	S3B	iNaturalist	<ul style="list-style-type: none"> Breeds in colonies on Islands in the Great Lakes. 	Negligible. Suitable breeding habitat is absent. Not observed during breeding bird surveys in 2022.	--
Eastern Wood-pewee <i>(Contopus virens)</i>	SC	OBBA	<ul style="list-style-type: none"> Breeds and forages in relatively open, deciduous and mixed forests of various sizes (including urban forest fragments) and along forest edges. 	Negligible. Not observed during breeding bird surveys in 2022.	--
Great Black-backed Gull <i>(Larus marinus)</i>	S1B	iNaturalist	<ul style="list-style-type: none"> Generally, nests in colonies, often mixed with Herring Gulls or other birds; sometimes nests in isolated pairs. In Lake Ontario breeding sites are known from specific Islands. 	Negligible. Suitable breeding habitat is absent. Not observed during breeding bird surveys in 2022. Likely present only in winter.	--
Long-tailed Duck <i>(Clangula hyemalis)</i>	S3B	iNaturalist	<ul style="list-style-type: none"> Breeds on arctic tundra, often near freshwater wetlands. Overwinters on the Great Lakes. 	Negligible. Long-tailed Duck was observed on 21 March 2022; however, breeding habitat is absent from the Study Area.	--
Purple Martin <i>(Progne subis)</i>	S3B	OBBA	<ul style="list-style-type: none"> Forage over towns, cities, parks, open fields, dunes, streams, wet meadows, beaver ponds, and other open areas. Breeds in cavities both artificial and natural. Almost entirely dependent on human constructed houses in Ontario. 	Negligible. While this species may forage over open areas on the Study Area for brief periods during migration or forays from adjacent breeding sites, suitable breeding sites within the Study Area are absent. Species was not observed during breeding bird surveys in 2022.	--
Tufted Titmouse <i>(Baeolophus bicolor)</i>	S3	NHIC	<ul style="list-style-type: none"> Breeds in deciduous woods or mixed evergreen-deciduous woods, typically in areas with a dense canopy and many tree species. They are also common in orchards, parks, and suburban areas. 	Negligible. Species was not observed during breeding bird surveys in 2022.	--

Species	Status per O. Reg. 230/08 under the ESA and/or NHIC	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy or Use within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Area within or adjacent to proposed Development or Site Alteration ¹	Likelihood that Negative Effects to the Species or its Habitat (i.e., “degradation that threatens the health and integrity” as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Wood Thrush (<i>Hylocichla mustelina</i>)	SC	NHIC, OBBA	<ul style="list-style-type: none"> Breeds and forages in second-growth and mature deciduous and mixed forests with a well-developed understory. 	Negligible. Suitable breeding habitat is absent. Not observed during breeding bird surveys in 2022.	--
Insects					
Arrow Clubtail (<i>Stylurus spiniceps</i>)	S3	NHIC	<ul style="list-style-type: none"> Inhabits rivers with muddy/sandy bottoms and with trees along the edges. 	Negligible. Suitable habitat is absent from the Study Area.	--
Fraternal Potter Wasp (<i>Eumenes fraternus</i>)	S3	iNaturalist	<ul style="list-style-type: none"> Inhabits woodland edges and shrubby fields. 	Unlikely. Study Area is small and is surrounded by residential development.	--
Monarch (<i>Danaus plexippus</i>)	SC	iNaturalist	<ul style="list-style-type: none"> Oviposits on Milkweeds (<i>Asclepias</i> spp.). Generalist foraging that nectars in most areas with wildflowers. 	Possible. Species may forage on the Study Area.	Negligible. Areas of proposed development and disturbance lack Milkweed. The landscape surrounding the Study Area provides nectaring and ovipositing sites for this species.
Northern Oak Hairstreak (<i>Satyrrium favonius ontario</i>)	S1	NHIC	<ul style="list-style-type: none"> Inhabits oak woodlands with > 60% canopy cover. Adults are nectar generalists and visit floral resources within forest openings or meadows adjacent to the oak forest edges. Females have been observed ovipositing on White Oak (<i>Quercus alba</i>). 	Negligible. Suitable habitat is absent from the Study Area. Historical record in NHIC square 17PH18 is from 1894.	--
Slender Bluet (<i>Enallagma traviatum</i>)	S2S3	iNaturalist	<ul style="list-style-type: none"> Inhabits permanent ponds and lakes with abundant emergent and aquatic vegetation. 	Negligible. Suitable habitat is absent from the Study Area.	--
Yellow Banded Bumble Bee (<i>Bombus terricola</i>)	SC	Species distribution and on-site habitats	<ul style="list-style-type: none"> Occupies a range of open areas with nectaring sites. Nests underground in abandoned rodent burrows or decomposing logs. 	Unlikely. Species is a habitat generalist and occupies a wide range of areas; however, nearest available records are from north of Cootes Paradise in Hamilton.	--
Mammals					
Woodland Vole (<i>Microtus pinetorum</i>)	SC	Species distribution and on-site habitats	<ul style="list-style-type: none"> Occupies deciduous forests in areas of soft, friable, often sandy soil beneath deep humus to facilitate burrowing. 	Negligible. Suitable habitat is absent from the Study Area.	--
Plants					
Pawpaw (<i>Asimina triloba</i>)	S3	NHIC	<ul style="list-style-type: none"> Occupies deciduous forests, typically in well-drained, deep, fertile bottomland along rivers. 	Negligible. Suitable habitat is absent from the Study Area. Not found during botanical surveys in 2022.	--
Perfoliate Bellwort (<i>Uvularia perfoliata</i>)	S1S2	NHIC	<ul style="list-style-type: none"> Found in dry deciduous forests. 	Negligible. Suitable habitat is absent from the Study Area. Not found during botanical surveys in 2022.	--
Shumard Oak (<i>Quercus shumardii</i>)	SC	NHIC	<ul style="list-style-type: none"> Occupies moist soils and swampy areas in deciduous forests or along fencerows. 	Negligible. Suitable habitat is absent from the Study Area. Not found during botanical surveys in 2022.	--
White-tinged Sedge (<i>Carex albicans</i> var. <i>albicans</i>)	S3	NHIC	<ul style="list-style-type: none"> Found mainly in dry rocky or sandy, upland forests. 	Negligible. Suitable habitat is absent from the Study Area. Not found during botanical surveys in 2022.	--
Reptiles					

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 Area within or adjacent to proposed Development or Site Alteration ¹	Likelihood that Negative Effects to the Species or its Habitat (i.e., “degradation that threatens the health and integrity” as defined in the 2020 PPS) will occur based on the Proposed Development Plan and any related Site Alteration Activities.
Snapping Turtle <i>(Chelydra serpentina)</i>	SC	NHIC	<ul style="list-style-type: none"> • 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. 	Unlikely. Suitable habitat is absent from the Study Area. Species is unlikely to occupy the Lake Ontario shoreline adjacent to the Study Area given the high-energy environment, although individuals may move through this environment on-transit between habitats.	--

¹ Likelihood categories should be interpreted as follows:

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

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

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

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

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

**Appendix 7. Endangered and Threatened Species
Assessment**

Species	Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Area within or adjacent to proposed Development or Site Alteration 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
Amphibians					
Jefferson Salamander (<i>Ambystoma jeffersonianum</i>) and Unisexual Salamander	END	NHIC, Ont. Herp Atlas	<ul style="list-style-type: none"> Generally found in deciduous and mixed forests adjacent to breeding areas. Breeding areas include woodland vernal pools and ponds. 	Negligible. Suitable breeding habitat is absent from the Study Area.	--
Birds					
Bank Swallow (<i>Riparia riparia</i>)	THR	OBBA	<ul style="list-style-type: none"> 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. 	Confirmed. A Bank Swallow colony was documented along the upper (vertical) portion of the Lake Ontario shore bluff. A total of 236 nest burrows were recorded in 2022, with 383 documented in 2023.	Confirmed. Shore bluff stabilization (revetment) is proposed to address the slope hazard. The stabilized shoreline will no longer recede landward MECP has confirmed the need for an Overall Benefit permit to address expected impacts to breeding habitat. See report for greater details.
Chimney Swift (<i>Chaetura pelagica</i>)	THR	OBBA	<ul style="list-style-type: none"> 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 Study Area for brief periods during migration or forays from adjacent breeding sites, suitable breeding sites within the Study Area are absent.	--
Eastern Meadowlark (<i>Sturnella magna</i>)	THR	OBBA	<ul style="list-style-type: none"> Breeds and forages in hayfields, savannahs, pastures, meadows, grasslands, prairies, and shrubby fields. 	Negligible. Suitable breeding habitat is absent.	--
Fish					
Shortnose Cisco (<i>Coregonus reighardi</i>)	END	DFO	<ul style="list-style-type: none"> Little know about habitat requirements, breeds at lake bottom in the spring. Possibly in habits 22 to 92 m in Lake Ontario in areas where its primary prey, Opossum Shrimp (<i>Mysis diluviana</i>) and a small bottom-dwelling invertebrate, Diporeia sp., occur. 	Negligible. Potential habitat mapped by the DFO within Lake Ontario; however, species was last seen in Lake Ontario in 1964 and may be extirpated.	--
Mammals					
Eastern Small-footed Myotis (<i>Myotis leibii</i>)	END	Species distribution and on-site habitats	<ul style="list-style-type: none"> Maternal roosting sites include exposed rock outcrops, crevices, and cliffs. Overwinters in caves and mines that maintain temperatures above 0°C. 	Negligible. While species may forage above open habitats on the Study Area or adjacent lands, potential maternal roosting habitat (e.g., rock outcrops, cliffs, etc.) is absent.	--
Little Brown Myotis (<i>Myotis lucifugus</i>)	END	Species distribution and on-site habitats	<ul style="list-style-type: none"> 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. Large diameter snags, cavity trees, and/or trees with cracks/crevices/loose bark that could support maternity colonies of Little Brown Myotis and/or Northern are considered likely to be absent from the Study Area. Certain smaller diameter snags (10-20 cm DBH) occur within the deciduous woodland which may offer non-specific roosting habitat (i.e., “day roosts”) for individual bats (males or non-reproductive females). Much of the surrounding landscape is suburban, although there is some woodland south of Lake Street.	Negligible. Although trees within the Study Area are proposed for removal, they are unlikely to provide roosting habitat for SAR bats. A timing window restriction on tree removal will be applied which will avoid the active season for bats (May-September). See report for greater details.

Species	Status per O. Reg. 230/08 of the ESA	Rationale for Consideration in this Study	General Description of Habitats and Features which the Species is Known to Occupy within the Ecoregion in which this Study is Located	Likelihood that the Species Occupies the Area within or adjacent to proposed Development or Site Alteration 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
Northern Myotis <i>(Myotis septentrionalis)</i>	END	Species distribution and on-site habitats	<ul style="list-style-type: none"> • 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. Large diameter snags, cavity trees, and/or trees with cracks/crevices/loose bark that could support maternity colonies of Little Brown Myotis and/or Northern are considered likely to be absent from the Study Area. Certain smaller diameter snags (10-20 cm DBH) occur within the deciduous woodland which may offer non-specific roosting habitat (i.e., “day roosts”) for individual bats (males or non-reproductive females). Much of the surrounding landscape is suburban, although there is some woodland south of Lake Street.	Negligible. Although trees within the Study Area are proposed for removal, they are unlikely to provide roosting habitat for SAR bats. A timing window restriction on tree removal will be applied which will avoid the active season for bats (May-September). See report for greater details.
Tri-colored Bat <i>(Perimyotis subflavus)</i>	END	Species distribution and on-site habitats	<ul style="list-style-type: none"> • Maternal roosting sites include Maple (<i>Acer</i> spp.) and Oak (<i>Quercus</i> spp.) with dead/dying leaf clusters. • Overwinters in caves and mines that maintain temperatures above 0°C. 	Negligible. While there are Manitoba Maple (<i>Acer negundo</i>) present within the Study Area, dead/dying leaf clusters are absent. There are no other maple species or oak species present within the Study Area.	--
Plants					
Black Ash <i>(Fraxinus nigra)</i>	END	Species distribution and on-site habitats	<ul style="list-style-type: none"> • Occupies deciduous swamps (often peaty), floodplains, and wet woods. 	Negligible. Species not documented during vascular plant surveys.	--
Butternut <i>(Juglans cinerea)</i>	END	Species distribution and on-site habitats	<ul style="list-style-type: none"> • Occupies a variety of treed habitats including mature forests, early-successional forests, and hedgerows. 	Negligible. Species not documented during vascular plant surveys.	--
Cucumber Tree <i>(Magnolia acuminata)</i>	END	NHIC	<ul style="list-style-type: none"> • Occupies moist deciduous or mixed forest habitats. 	Negligible. Species not documented during vascular plant surveys.	--
Eastern Flowering Dogwood <i>(Cornus florida)</i>	END	NHIC	<ul style="list-style-type: none"> • Dry (usually with Oak) to rich deciduous forests, often on hillsides and river banks. 	Negligible. Species not documented during vascular plant surveys.	--
Reptiles					
Blanding's Turtle <i>(Emydoidea blandingii)</i>	THR	Species distribution and on-site habitats	<ul style="list-style-type: none"> • Occupies freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes, and swamps. <ul style="list-style-type: none"> • Nests in exposed, usually coarse, friable substrate. • Known to make long-distance overland movements (i.e., several kilometers) between habitats. 	Negligible. Suitable feeding and basking habitat (e.g., wetlands, large woodland ponds, etc.) is absent from the Study Area. Study Area is not expected to act as a movement corridor.	--

¹ Likelihood categories are to be interpreted as follows:

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

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

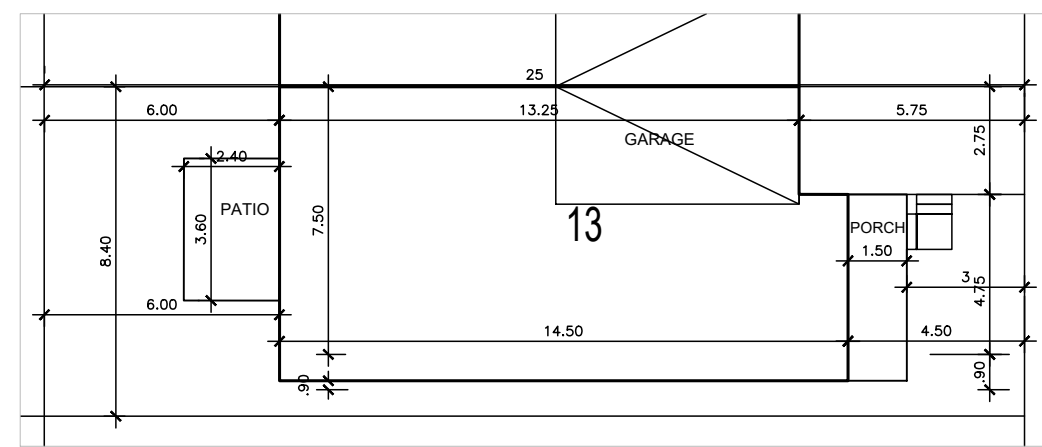
Possible: species presence plausible based on available information; no convincing evidence suggesting species could not occur on-site.

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

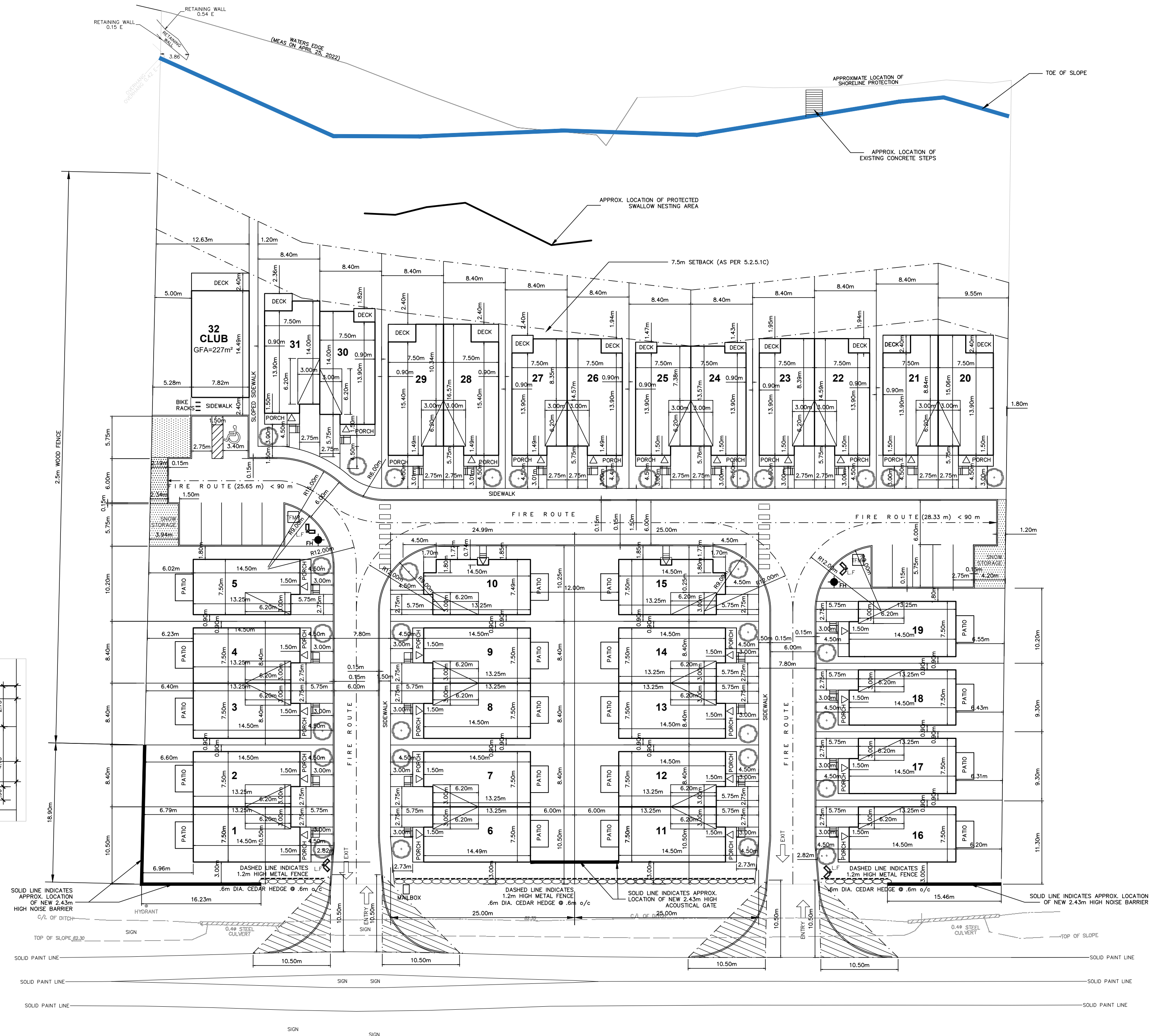
Confirmed: species observed and/or evidence of occupation (e.g., tracks, etc.) documented.

Appendix 8. Proposed Development Plan.

Zone Matrix 165 Lake Street / Sophie's Landing Grimsby		
	Zone Provisions	Proposed
Permitted Uses	Single Detached Dwelling Semi-Detached Dwelling 1 Accessory Amenity Building	
Min. Lot Area	300 m ² per POTL	Min Lot Size 210 m ² Total Lot Area = 7,865.96 m ²
Min. Lot Frontage	9.0 meters	8.4 meters for interior units
Max. Lot Coverage (includes porches and waterfront decks)	40%	10.25 meters for ext. units 30% (3,741.47 m ²) Site Area (12,631.44 m ²)
Asphalt Area		Asphalt = 1514.64 m ²
Setback from Hazard Zone Overlay	Min. 7.5 meters	7.5 meters
Front Yards	Min. 4.5 meters	2.72 meters (to porch) 4.5 meters (to bldg)
Min. Interior Yards	Min. 1.2 and .6 meters	.9 meters / 1.8 meters from adjacent bldgs
Min. Exterior Yards	Min. 2.6 meters	1.8 meters
Min. Rear Yards	Min. 7.5 meters	6.0 meters
Building Height	Max. 9.0 meters	10 meters
Min. Landscaped Open Space per POTL	N/A	35% per POTL (Based on Lot 13)
Max. Fence Height	N/A	1.8 meters
Min. Parking Spaces	62 spaces (2 per Residential Unit)	62 spaces + 12 visitor spaces (1 barrier free)
Min. Parking Space dimensions	2.75m x 5.75m	2.75m x 5.75m Garages 2.90m x 6.00m
Min. Visitor Parking Spaces	16 spaces (5 per Residential Unit)	12 spaces (4 per Residential Unit) Inclusive of Barrier Free
Min. Barrier Free Parking Spaces	1 space (1 per 20 visitor spaces)	1 space (1 per 20 visitor spaces) 1 Type A space 3.4m x 5.75m plus 1.5m aisle
Min. Aisle Width	6 meters	6 meters
Min. Bicycle Parking Spaces	N/A	3 spaces
Deck Setback in rear yard (waterfront lots)	7.5 meters	7.5 meters Decks may encroach into the required rear yard by 2.5 meters
Sight Triangles	10.5 meters x 10.5 meters	10.5 meters x 10.5 meters



TYPICAL SITE PLAN (SMALLEST LOT)



This drawing, as an instrument of service, is provided by and is the property of STUDIO C2.
The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify company of any variations from the supplied information.
The company is not responsible for the accuracy of survey structural, mechanical, electrical, etc., information shown on this drawing. Refer to the appropriate consultant's drawing.
Construction must conform to all applicable codes and requirements of authorities having jurisdiction.
The contractor working from drawings specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from the work.

REV.	DESCRIPTION	DATE
3	Zoning By-Law Amendment & Draft Plan of Subdivision	26/07/23
2	Site Plan Design	22/03/23
1	Site Plan Design	11/02/23

GENERAL NOTES

NORTH

STUDIO C2

t: 416.524-3880 e: studioc2@gmail.com

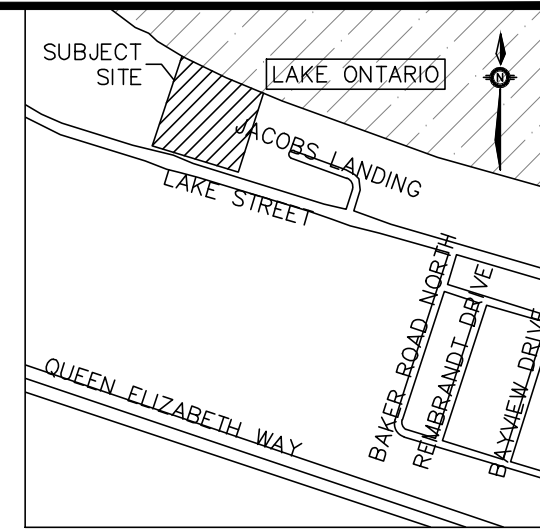
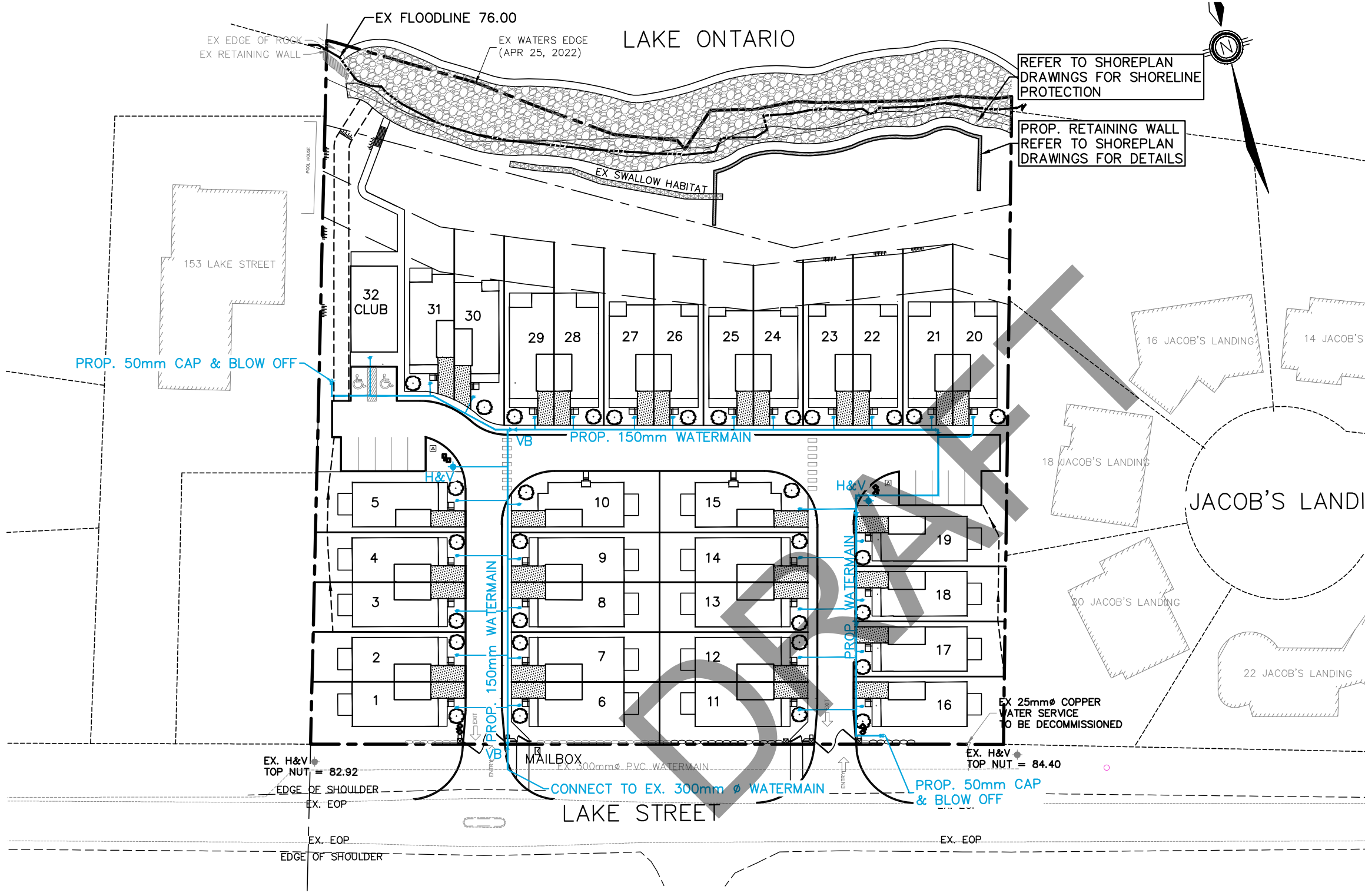
CLIENT
Sophie's Landing Grimsby Inc
88 Bloor St. E.,
Toronto, ON, M4W 3G9
t: 416.449.8800 e: sam@sophieslanding.ca

PROJECT
Sophie's Landing Grimsby
165 Lake St.
Grimsby, ON

TITLE
Site Plan

CHECKED BY	CRC	DATE	22/08/2020
DRAWN BY	ACAD	SCALE	1:200
PROJECT No.	2211	PAGE No.	SP1

P:\Autodesk Vault\Working Folders\21132 - Sophies, 165 Lake Street, Grimsby\Layout SHEETS\21132 - FSR.dwg Layout:FIG-2 Plotted Aug 18, 2023 @ 4:31pm by jpearce © PEARSON ENGINEERING LTD.



KEYMAP
N.T.S

LEGEND

- SITE BOUNDARY
- WATERMAIN
- SERVICE CAP
- HYD. FIRE HYDRANT
- VB WATER VALVE
- CURB STOP W/ SERVICE

NO.	REVISION NOTE	DATE	BY

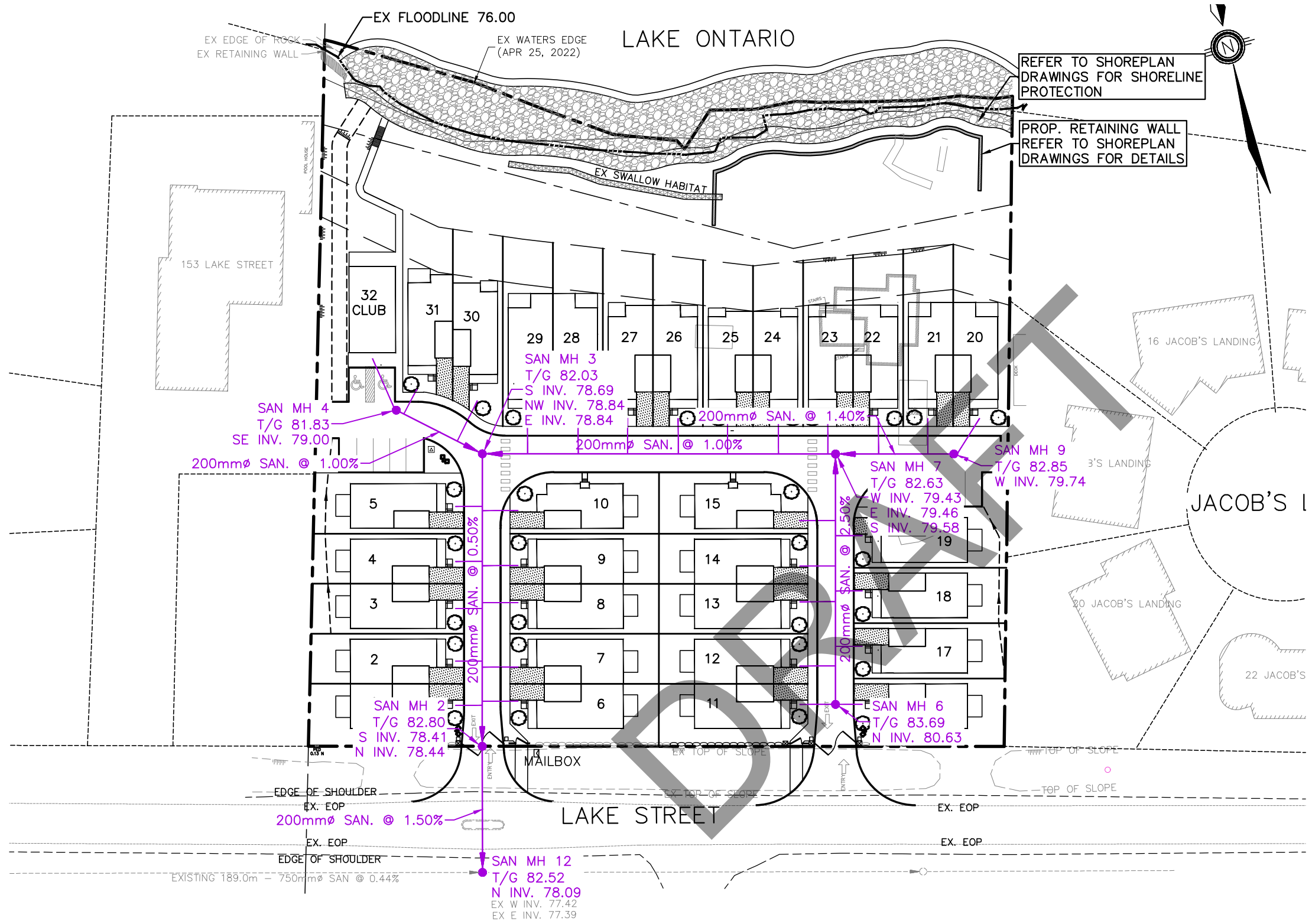
SOPHIES LANDING
165 LAKE STREET
GRIMSBY, ON

WATER SERVICING PLAN

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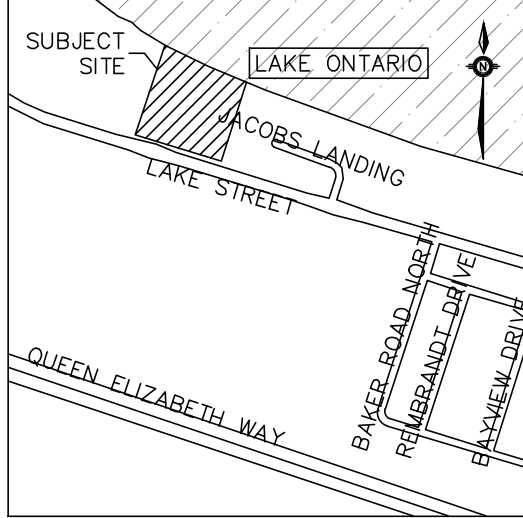
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DRAWN BY	JP	VERT SCALE		DRAWING #	FIG-2
CHECKED BY	MWD	DATE	MAY 2023	REVISION #	0

P:\Autodesk Vault\Working Folders\21132 - Sophies, 165 Lake Street, Grimsby\Layout SHEETS\21132 - FSR.dwg Layout:FIG-3 Plotted Aug 18, 2023 @ 4:31pm by jpearce @ PEARSON ENGINEERING LTD.



REFER TO SHOREPLAN DRAWINGS FOR SHORELINE PROTECTION

PROP. RETAINING WALL REFER TO SHOREPLAN DRAWINGS FOR DETAILS



KEYMAP N.T.S

LEGEND

	SITE BOUNDARY
	EXISTING FLOODLINE
	EX. SANITARY MANHOLE
	PROP. SANITARY MANHOLE
	SANITARY SEWER

NO.	REVISION NOTE	DATE	BY

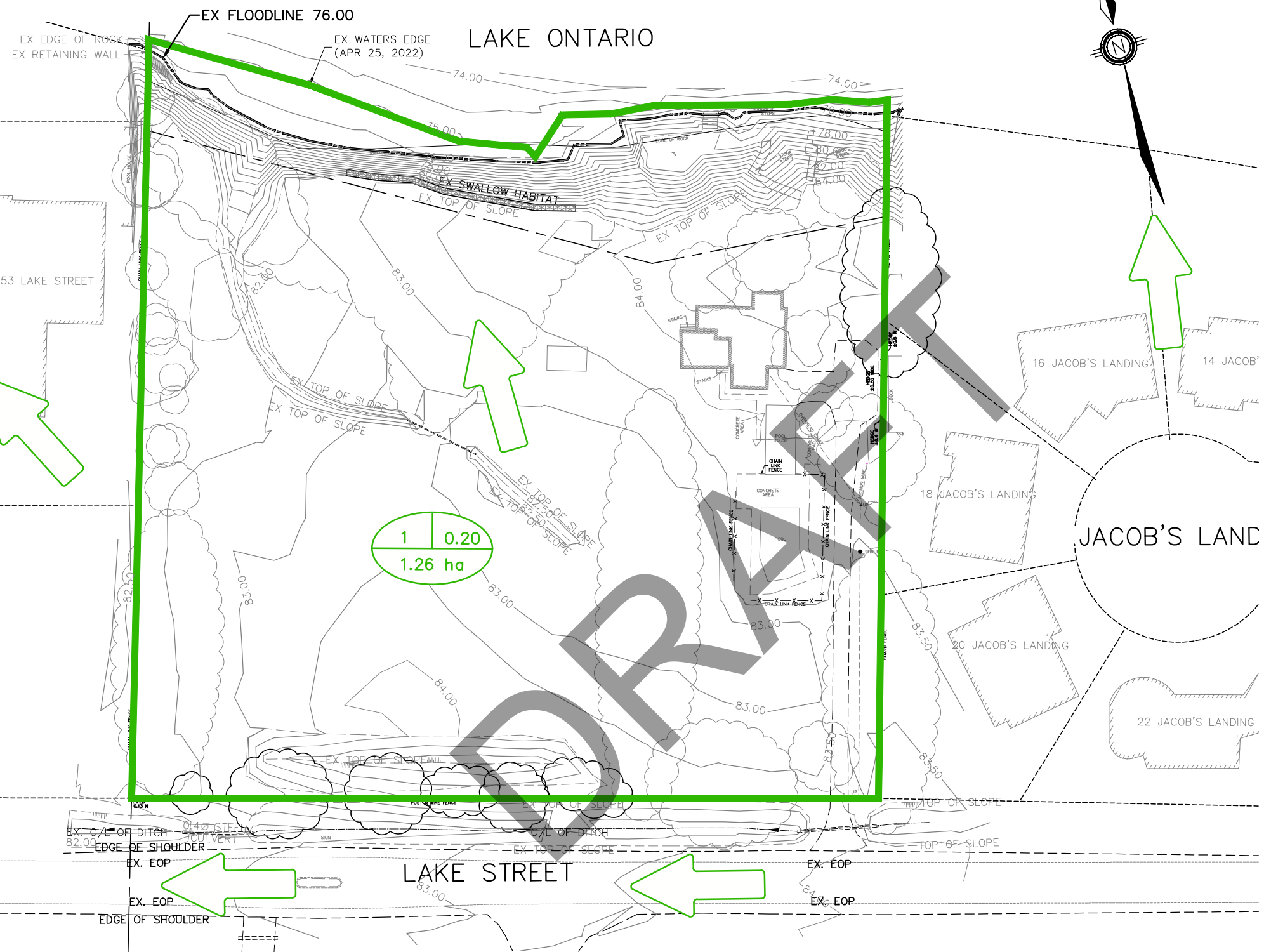
SOPHIES LANDING
165 LAKE STREET
GRIMSBY, ON

SANITARY SERVICING PLAN

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DESIGNED BY	AMC/JP	HORIZ SCALE	1:750	PROJECT #	21132
DRAWN BY	JP	VERT SCALE		DRAWING #	FIG-3
CHECKED BY	MWD	DATE	MAY 2023	REVISION #	0

P:\Autodesk Vault\Working Folders\21132 - Sophies, 165 Lake Street, Grimsby\Layout SHEETS\21132 - FSR.dwg Layout:FIG-4 Plotted Aug 18, 2023 @ 4:31pm by jpearce © PEARSON ENGINEERING LTD.



**KEYMAP
N.T.S**

LEGEND

- SITE BOUNDARY
- EXISTING FLOODLINE
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA
- CATCHMENT BOUNDARY

1	0.20	RUNOFF COEFFICIENT
1.26	1.00	

NO.	REVISION NOTE	DATE	BY

**SOPHIES LANDING
165 LAKE STREET
GRIMSBY, ON**

**PRE-DEVELOPMENT
STORM CATCHMNT PLAN**

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DESIGNED BY	AMC/JP	HORIZ SCALE	1: 750	PROJECT #	21132
DRAWN BY	JP	VERT SCALE		DRAWING #	FIG-4
CHECKED BY	MWD	DATE	MAY 2023	REVISION #	0

P:\Autodesk Vault\Working Folders\21132 - Sophies, 165 Lake Street, Grimsby\Layout SHEETS\21132 - FSR.dwg Layout:FIG-5 Plotted Aug 18, 2023 @ 4:31pm by jpearce @ PEARSON ENGINEERING LTD.

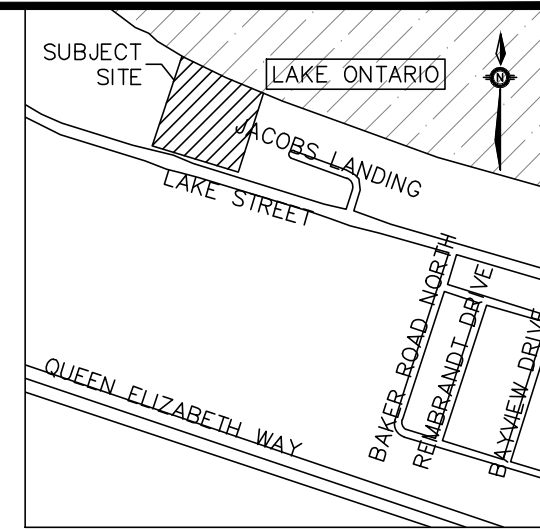
REFER TO SHOREPLAN DRAWINGS FOR STORM OUTLET DETAILS THROUGH SHORE PROTECTION
24.7m - 300mm ϕ HDPE STM. @ 4.20%

EX FLOODLINE 76.00
EX WATERS EDGE (APR 25, 2022)

LAKE ONTARIO

REFER TO SHOREPLAN DRAWINGS FOR SHORELINE PROTECTION

PROP. RETAINING WALL REFER TO SHOREPLAN DRAWINGS FOR DETAILS



KEYMAP N.T.S

LEGEND

- SITE BOUNDARY
- EXISTING FLOODLINE
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA

1	0.75
1.00 ha	

 RUNOFF COEFFICIENT
- AREA IN HECTARES
- CATCHMENT BOUNDARY

STM MH1
T/G 80.19
S INV. 78.04
NE INV. 77.54

300mm ϕ STM. @ 5.61%
153 LAKE STREET

STM OGS
T/G 82.02
S INV. 79.71
N INV. 79.71

300mm ϕ STM. @ 1.00%

STM CBMH1
T/G 81.75
N INV. 79.73
SE INV. 79.88

250mm ϕ STM. @ 1.00%

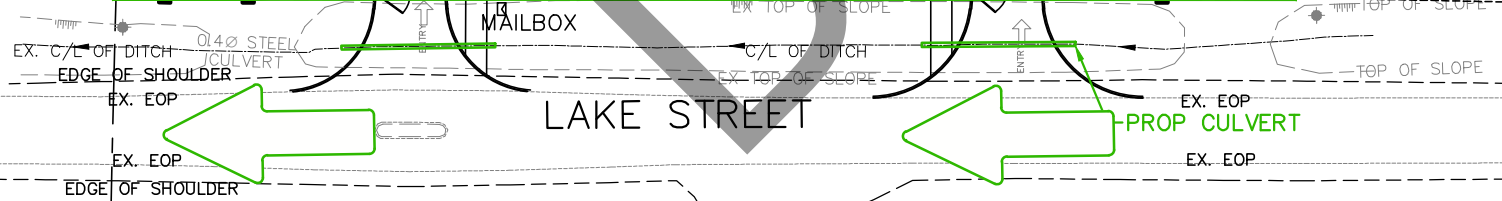
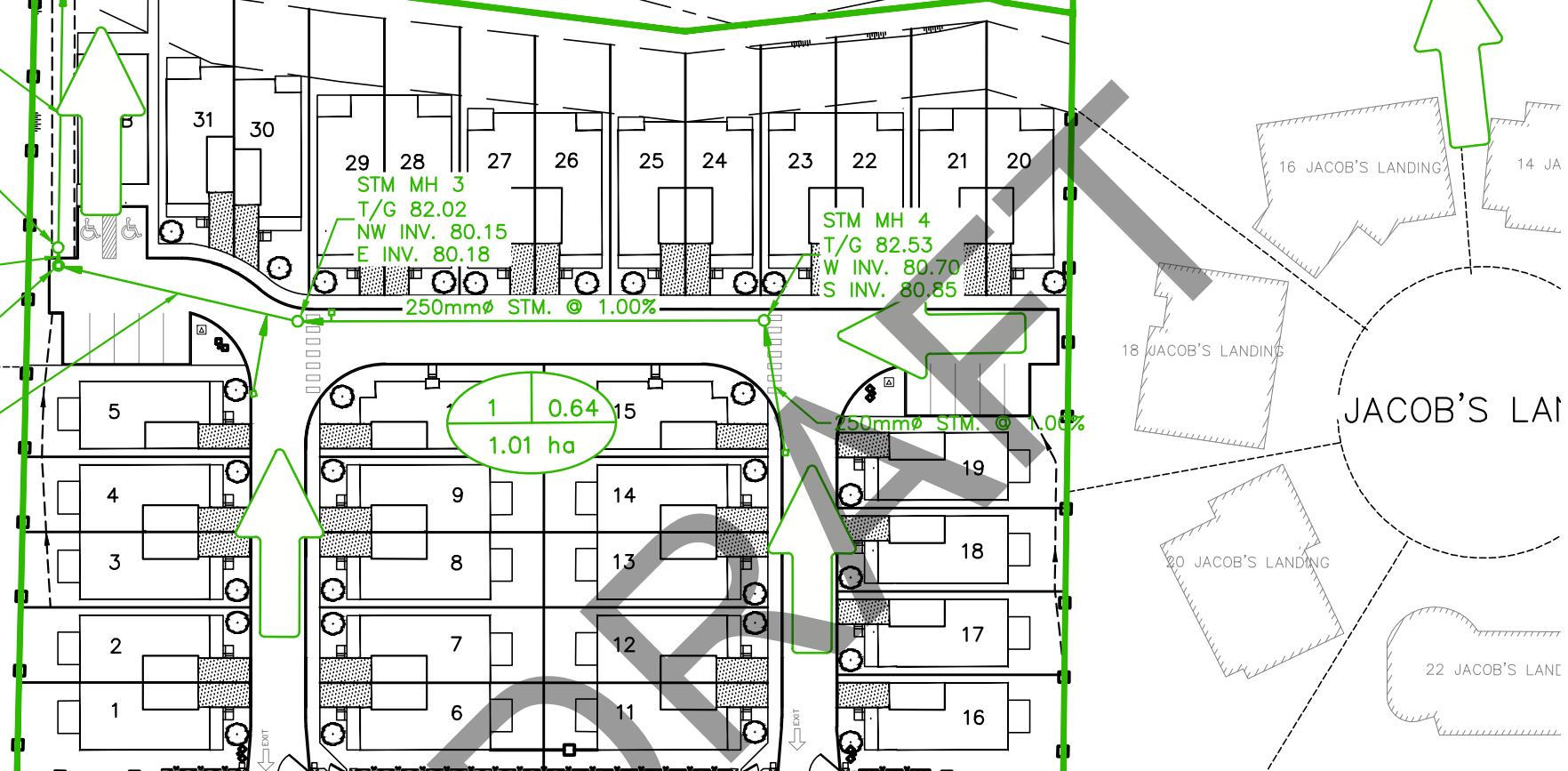
2	0.31
0.50 ha	

STM MH 3
T/G 82.02
NW INV. 80.15
E INV. 80.18

STM MH 4
T/G 82.53
W INV. 80.70
S INV. 80.85

1	0.64
1.01 ha	

250mm ϕ STM. @ 1.00%



NO.	REVISION NOTE	DATE	BY

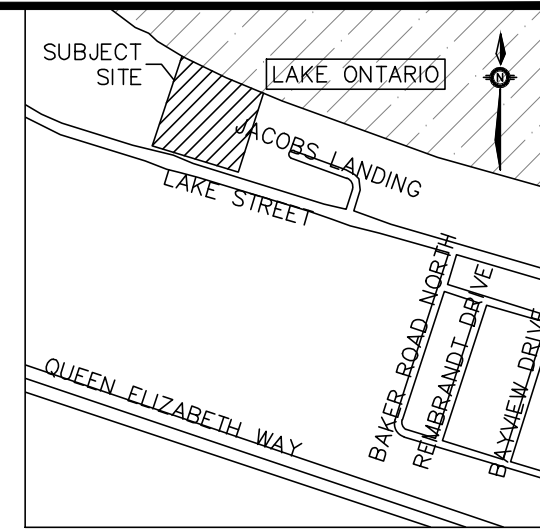
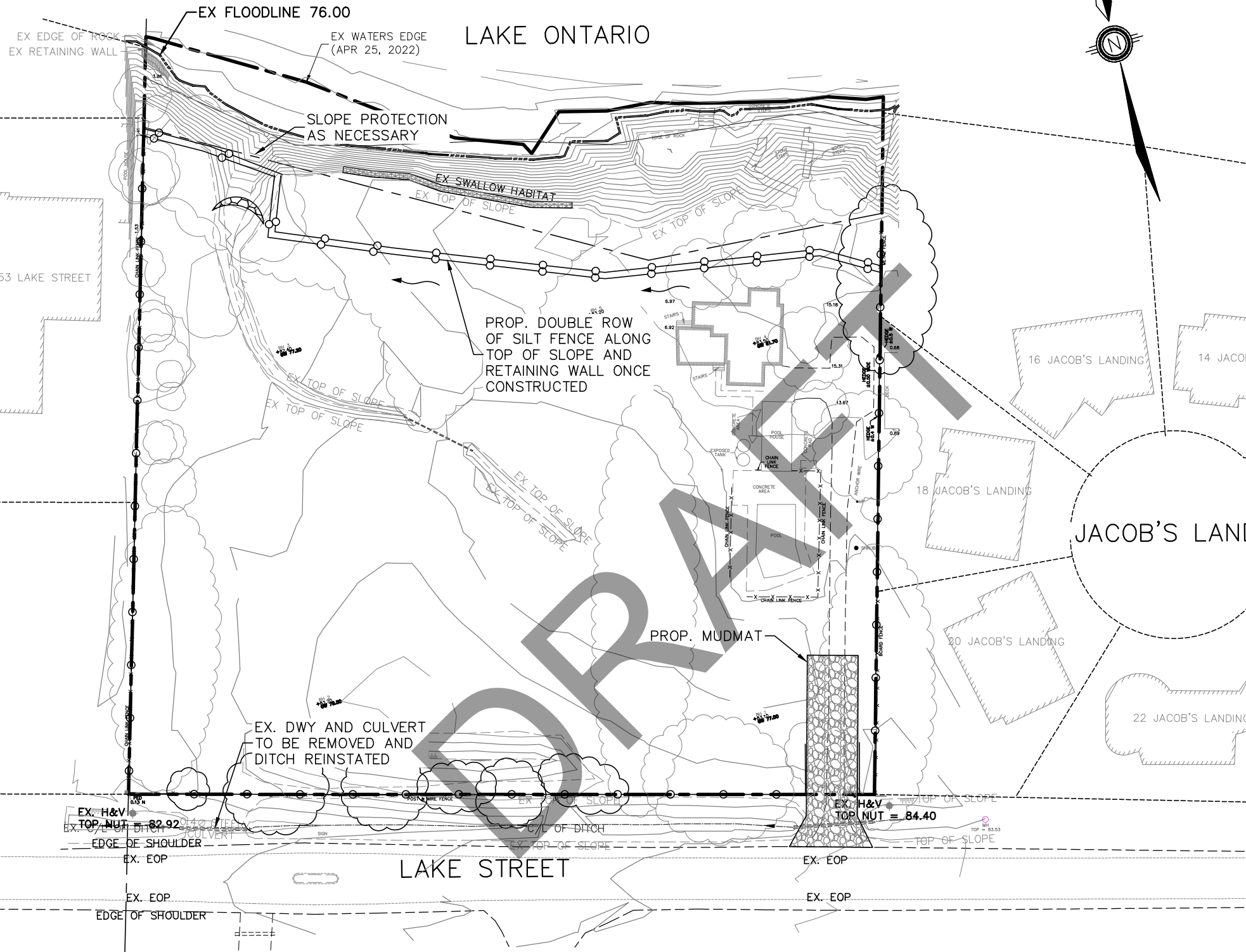
SOPHIES LANDING
165 LAKE STREET
GRIMSBY, ON

POST-DEVELOPMENT
STORM CATCHMNT PLAN

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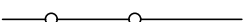
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DRAWN BY	JP	VERT SCALE		DRAWING #	FIG-5
CHECKED BY	MWD	DATE	MAY 2023	REVISION #	0

P:\Autodesk Vault\Working Folders\21132 - Sophies, 165 Lake Street, Grimsby\LAYOUT SHEETS\21132 - FSR.dwg Layout:FIG-6 Plotted Aug 18, 2023 @ 4:32pm by jpearce @ PEARSON ENGINEERING LTD.



KEYMAP
N.T.S


LEGEND

-  SITE BOUNDARY
-  EXISTING FLOODLINE
-  LIMIT OF GRADING AND TREE PROTECTION
-  ROCK CHECK DAM
-  SWALE
-  SILT FENCE

NO.	REVISION NOTE	DATE	BY

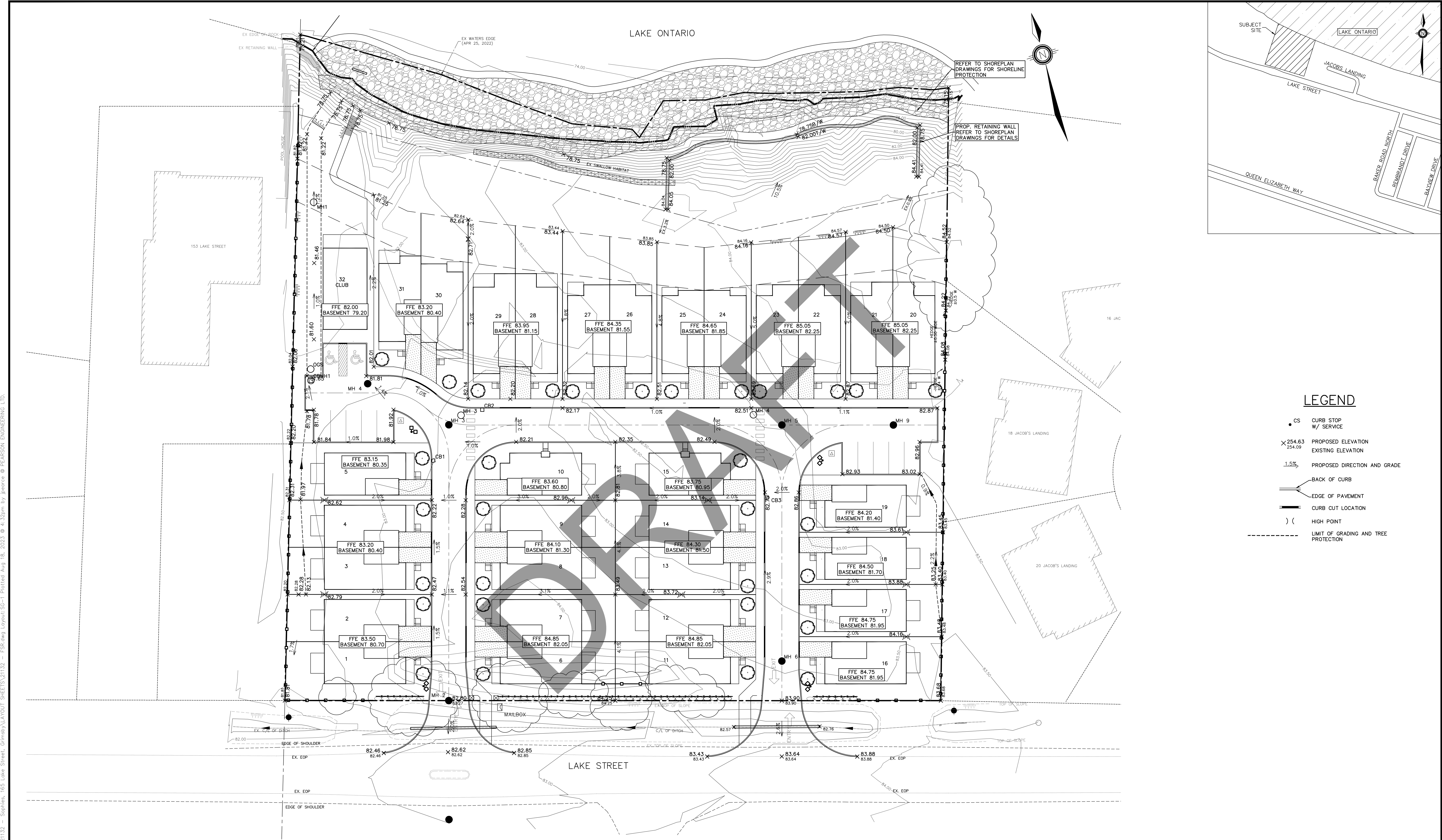
SOPHIES LANDING
165 LAKE STREET
GRIMSBY, ON

ENVIRONMENTAL PROTECTION PLAN



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DESIGNED BY	AMC/JP	HORIZ SCALE	1: 750	PROJECT #	21132
DRAWN BY	JP	VERT SCALE		DRAWING #	FIG-6
CHECKED BY	MWD	DATE	MAY 2023	REVISION #	0



P:\Autodesk Vault\Working\Folders\21132 - Sophies, 165 Lake Street, Grimsby\Layout\SHEETS\21132 - FSR.dwg Layout:SG-1 Plotted Aug 18, 2023 @ 4:32pm by Jance @ PEARSON ENGINEERING LTD.

LEGEND

- CS CURB STOP W/ SERVICE
- X 254.63 PROPOSED ELEVATION
- 254.09 EXISTING ELEVATION
- 1.5% PROPOSED DIRECTION AND GRADE
- BACK OF CURB
- EDGE OF PAVEMENT
- CURB CUT LOCATION
-) (HIGH POINT
- - - - - LIMIT OF GRADING AND TREE PROTECTION

NO.	REVISION NOTE	DATE	BY

BENCHMARK:

SOPHIES LANDING
165 LAKE STREET
GRIMSBY, ON

SITE GRADING PLAN

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DESIGNED BY JP/AMC	HORIZ SCALE 1:300	PROJECT # 21132
DRAWN BY JP	VERT SCALE	DRAWING # SG-1
CHECKED BY MWD	DATE MAY 2023	REVISION # 0

Appendix 9. Summary of Technical Recommendations

Natural Feature	Technical Recommendations (per Section 5 of report)
Significant Wildlife Habitat	<ul style="list-style-type: none"> ● Potential for impacts will be addressed through full implementation of other overlapping mitigation measures.
Habitat of Endangered and Threatened Species	<ul style="list-style-type: none"> ● The proposed development will proceed consistent with the requirements of a forthcoming “Overall Benefit” permit secured under section 17(2)(c) of the ESA to address impacts to Bank Swallow nesting habitat. ● Any necessary tree removal within the proposed development envelopes will only take place between October 1 and April 30 to avoid the active season for bats. Should minor tree removal be required between May 1 and September 30, a qualified professional will complete an exit survey of suitable maternal roosting sites identified for removal a maximum of 24 hours before removal. The exit survey must make use of a bat detector and will occur for no less than the time period between sunset and 60 minutes after sunset. If an Endangered bat is identified during the survey, MECP should be contacted to obtain further direction prior to removal of the tree. ● If construction activities occur during the active bat season (i.e., May 1 and September 30), work will be restricted to daylight hours only and the use of artificial lighting will be avoided.
Fish Habitat	<ul style="list-style-type: none"> ● An Erosion and Sediment Control (ESC) Plan is to be prepared to control stormwater runoff as a condition of subdivision approval. ● All works will be completed consistent with the Environmental Protection Plan measures contained within the Functioning Servicing Report prepared by Pearson Engineering. ● The shoreline revetment design will be submitted to DFO through a formal Request for Project Review as a condition of subdivision approval to confirm legislative requirements related to the Fisheries Act (if any).
Tree Protection Plan and Other Natural Environment Considerations	<ul style="list-style-type: none"> ● The requirements of the Preliminary Tree Protection Plan (see Figure 4) will be implemented. ● An updated and finalized Arborist Report and Tree Protection Plan (and associated tree protection measures) will be prepared to protect on-site trees as a condition of subdivision approval. ● Replacement of necessary tree removals is to occur consistent with relevant Town standards. ● The Applicant must secure approval to impact all shared/boundary and neighbouring from relevant property owners prior to construction. ● The removal of trees will generally be restricted to areas in direct conflict with the footprints of the proposed development features, shoreline protection structure, and grading, along with any hazardous trees in the immediate vicinity that pose an unacceptable risk to human life or property. ● All necessary vegetation removal (e.g., trees, meadow vegetation, etc.) will be completed outside the primary bird nesting period (i.e., to be completed between September 1 and March 31). Should minor vegetation removal be proposed during the bird nesting period, a bird nesting survey will be undertaken to confirm the presence or absence of nesting birds or bird nests within or adjacent to the areas subject to vegetation clearance. The survey is to take place within 48 hours of vegetation removal. ● Portions of the erosion hazard and associated allowance which are beyond the proposed lot lines will be treated as natural, self-sustaining vegetation (i.e., no mow) outside of designated amenity spaces/areas (e.g., walkways/pathways) and infrastructure maintenance areas. ● Incorporation of Bird-Friendly Guidelines into the residence design such as those published in City of Toronto’s “Best Practices for Bird-Friendly Glass” and “Best Practices for Effective Lighting” should be considered at detailed design. ● Any Landscape Plans prepared as part of the development approval should incorporate species native to the local landscape.