TERRAPEX

2350048 ONTARIO LTD.

SPECIES AT RISK SCREENING

644 Garrison Road, Fort Erie, Ontario

FINAL REPORT

MAY 14, 2021

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1.0 INTRODUCTION

2350048 Ontario Ltd. retained a project team consisting of Terrapex Environmental Ltd. (Terrapex) and Terrastory Environmental Consulting Inc. (Terrastory) in November 2020 to provide environmental consulting services in support of its ongoing development of a 2.6 ha property known municipally as 644 Garrison Road and legally described as Part of Lot 1, Concession 2 N.R. in the Town of Fort Erie, Ontario (**Figure 1**).

2350048 Ontario Ltd. is undertaking the development of the subject property in two phases. Phase I, approved in 2020 and currently under construction, comprises the southern 1.1 ha portion of the subject property and consists of three commercial buildings with drive-through facilities. Phase II comprises the remaining 1.5 ha portion of the subject property (**Figure 1**). Proposed Phase II development includes a six-story residential apartment building and 239 surface parking spaces; existing natural vegetation within the narrow portion of the subject property that projects north towards Sims Avenue (Segment A) will be retained (**Appendix I**). 2350048 Ontario Ltd. has submitted to the Town of Fort Erie an application for a combined Official Plan and Zoning By-Law amendment in support of its proposed Phase II development.

During the April 23, 2020 pre-consultation meeting to discuss its Phase II application, the Regional Municipality of Niagara requested that 2350048 Ontario Ltd. provide a species at risk (SAR) screening. Terrapex confirmed the requirements for the requested SAR screening with the Region's Manager of Environmental Planning, Ms. Cara Lampman (**Appendix II**).

This report provides the results of the SAR screening. It includes the following six sections:

- **Section 1** provides a brief introduction.
- **Section 2** describes the methodology used to complete the SAR screening.
- **Section 3** provides the results of the SAR screening.
- **Section 4** assesses the compliance of the proposed Phase II development with the federal Species at Risk Act (2002), known as SARA, the provincial Endangered Species Act (2007) and the SAR-related provisions of the Niagara Region Official Plan.
- **Section 5** outlines the conclusions of the report.
- **Section 6** provides a list of references.

Together, these sections satisfy Niagara Region's SAR screening requirement.

2.0 METHODOLOGY

2.1 STUDY AREA

Terrapex defines the study area of the SAR screening as proposed Phase II and the adjacent lands located within 120 m of this portion of the subject property (**Figure 1**). In the opinion of Terrapex, this study area is sufficient to identify any SAR and/or SAR habitat that the proposed Phase II development might reasonably affect and satisfies Provincial Policy Statement (2020) and Niagara Region Official Plan requirements regarding adjacent lands.

2.2 OVERVIEW OF DATA COLLECTION

Terrapex used two levels of investigation to assess the potential occurrence of SAR and/or SAR habitat within study area, including a review of existing information sources and several detailed field surveys and assessments. The following sections describe each level of investigation in further detail.

2.3 REVIEW OF EXISTING INFORMATION SOURCES

Terrapex reviewed the following sources for information on the potential occurrence of SAR and/or SAR habitat within study area:

- Aerial imagery from Google Earth
- Ontario Nature online Ontario Reptile and Amphibian Atlas
- Natural Heritage Information Centre (NHIC) database records
- Fort Erie Creeks Watershed Plan (Philips Engineering Ltd. et al. 2008)
- Bird Studies Canada (BSC) online Ontario Breeding Bird Atlas (OBBA) and eBird databases
- Natural Areas Inventory: Town of Fort Erie's Settlement Areas, Volume 1 and Volume 2 (Dougan & Associates 2003)
- Ministry of Natural Resources and Forestry (MNRF) online Make A Map: Natural Heritage Areas
- Ministry of the Environment, Conservation and Parks (MECP) online Species at Risk in Ontario webpage
- Niagara Peninsula Conservation Authority (NPCA) Natural Areas Inventory 2006-2009
- Government of Canada's online Species at Risk Public Registry
- NPCA Watershed Explorer online mapping tool

Section 6 lists additional reference material used in the preparation of this report.

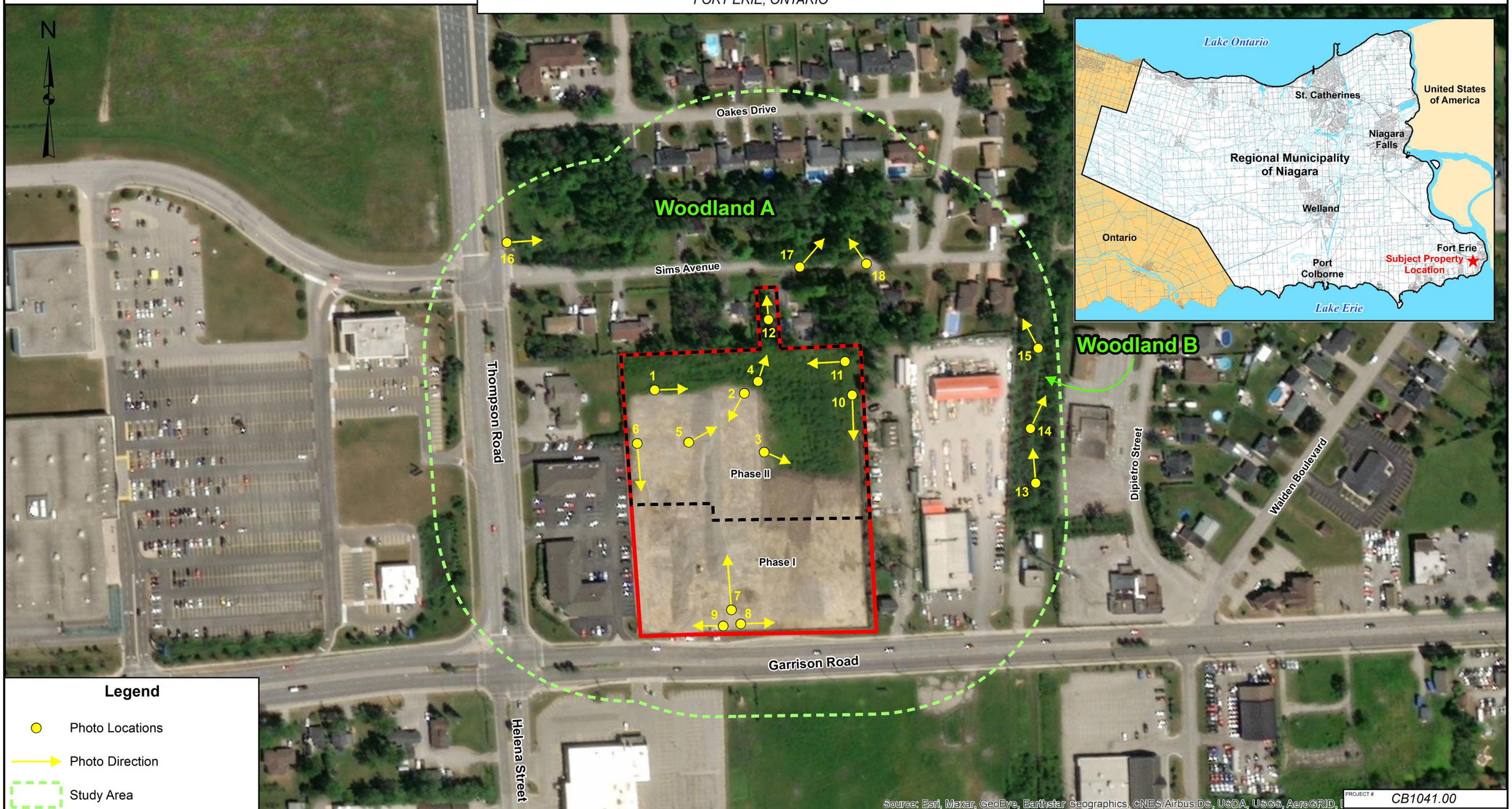
TERRAPEX

SUBJECT PROPERTY AND STUDY AREA

644 GARRISON ROAD
FORT ERIE, ONTARIO

CLIENT

2350048 Ontario Ltd



Legend

- Photo Locations
- Photo Direction
- Study Area
- Approximate Limits of Phase II
- Approximate Subject Property Boundary

NOTE:
Aerial imagery dates to 2017 and does not reflect existing conditions. Please refer to the Appendix III for representative photographs of the subject property.

0 50 100 200
Meters

PROJECT #	CB1041.00
SCALE	1:2,250
DATE	MAY 14, 2021
DRAWN	RC
CHECKED	MS
DRAWING #	FIGURE 1

2.4 FIELD SURVEYS

Project team biologists completed field surveys of the study area on November 26, 2020 and December 29, 2020 to supplement the data obtained from the review of existing information sources. This included a vascular plant survey and a visual inspection for habitat features (i.e., snags) with the potential to function as maternity roost habitat for SAR bats. Project team biologists also recorded incidental observations of wildlife or evidence of their presence (e.g., nests, tracks) and took representative photographs of the subject property to document existing conditions. The following sections describe these field surveys in further detail.

2.4.1 VASCULAR PLANT SURVEY

Project team biologists recorded vascular plants within the Phase II lands based on a comprehensive search of naturally occurring (i.e., non-planted) or naturalizing areas of vegetation. Nomenclature and common names for the recorded vascular plant species are generally consistent with the Southern Ontario Vascular Plant Species List (Bradley 2013) except where a name change has more recently been adopted by NHIC.

2.4.2 BAT MATERNITY ROOST SURVEY

Project team biologists surveyed the Phase II lands under leaf-off conditions per MNRF (2017) to identify snags with the potential to function as maternity roost habitat for two SAR bats: Little Brown Myotis (*Myotis lucifugus*) and Northern Myotis (*Myotis septentrionalis*). MNRF defines a snag as a standing tree, dead or alive, with a diameter-at-breast-height (dbh) of at least 10 cm that exhibits cracks, cavities, and/or loose bark (Watt and Caceres 1999, MNRF 2017). For each snag identified, project team biologists recorded the following information:

- species
- dbh (cm)
- approximate height (m)
- presence of any cracks, crevices, cavities and/or peeling bark
- decay class per Watt and Caceres (1999)
- unique identification number

Project team biologists also noted any Maple (*Acer* spp.) or Oak (*Quercus* spp.) tree with a dbh of a least 10 cm as MNRF (2017) notes that such trees have the potential to function as maternity roost habitat for a third SAR bat, Tri-colored Bat (*Perimyotis subflavus*).

2.5 SAR Screening

Terrapex biologists used existing sources of information on the geographic distribution of SAR (see **Section 2.3**) to identify a subset with the potential to occur within the study area. For the purposes of this assessment, Terrapex defines SAR as:

(1) Species listed on Schedule 1 of the federal Species at Risk Act (2002) and/or the Species at Risk in Ontario (SARO) list (i.e., Ontario Regulation 230/08) of Ontario's Endangered Species Act (2007).

(2) Species that the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) categorizes as Endangered, Threatened, or Special Concern.

Terrapex biologists then characterized the potential for each SAR of the subset to occur within the Phase II portion of the subject property and/or the adjacent lands based on the availability of suitable habitat and the results of the field surveys.

3.0 RESULTS

3.1 STUDY AREA

The study area occurs within the Fort Erie Moraine (Feenstra 1972). The moraine is composed mainly of clay and silt tills, resulting in generally poor drainage (Dougan & Associates 2003).

Four roads roughly bound the study area: Oakes Drive to the north, Garrison Road to the south, Thompson Road to the west and Dipietro Street to the east. Commercial land use predominates the southern portion of the study area, while the northern portion largely consists of a residential subdivision (**Figure 1**).

The subject property has been heavily disturbed. The Phase I lands have been graded and are currently under construction, while the Phase II lands largely consist of exposed soil and a number of overburden stockpiles. Remaining vegetation is limited to small areas of early successional species located along the northern and eastern boundaries of the Phase II lands, and more mature vegetation (i.e., trees and shrubs) within the narrow segment of the subject property that projects north towards Sims Avenue (Segment A). **Section 3.2** and **Section 3.3** further describe the vegetation of the subject property.

The broader study area beyond the Phase II lands includes two natural heritage features:

Woodland A consists of several remnant blocks of tableland deciduous forest fragmented by Sims Avenue and residential development. The largest contiguous block is located north of Sims Avenue (**Figure 1**). The area immediately northeast of the intersection of Thompson Road and Sims Avenue is more open and consists of younger vegetation than adjacent portions of Woodland A due to the removal of several anthropogenic structures approximately 15 years ago. The remaining portions of Woodland A consist of mature forest, with many large (> 25 cm dbh) trees, numerous snags, and a well-developed understorey, though areas north of Sims Avenue have been subject to understorey thinning and/or other tree removal.

Woodland B consists of a narrow (approximately 25 m wide) cultural woodland bisected by an informal ATV trail (**Figure 1**). Historical aerial photographs reveal ongoing regeneration since 1995. Few trees > 10 cm dbh are present. Two unmapped, unnamed headwater drainage features (HDF) extend along either side of the ATV trail, widening in several places to form small (< 10 m^2) areas of riparian wetland. HDF flow is southward, conveyed beneath Garrison Road through a Corrugated Steel Pipe (CSP) culvert.

Appendix III provides representative photographs of the study area, with a particular focus on the Phase II lands.

3.2 Vascular Plant Survey

Project team biologists recorded 40 vascular plant species from the Phase II lands. None of these species is categorized as Endangered, Threatened or Special Concern under SARA or the Endangered Species Act (2007) and none is considered by the NHIC to be provincially rare (**Table 1**).

Table 1: Vascular plants recorded from the subject property.

Family	Common Name	Scientific Name	NHIC S-Rank[1]
Aceraceae	Freeman's Maple	*Acer x freemanii*	SNA
Asteraceae	Short-fringed Knapweed	*Centaurea nigrescens*	SNA
Asteraceae	Canada Thistle	*Cirsium arvense*	SNA
Cornaceae	Pale Dogwood	*Cornus obliqua*	S5
Cornaceae	Gray Dogwood	*Cornus racemosa*	S5
Cornaceae	Red-osier Dogwood	*Cornus stolonifera*	S5
Poaceae	Orchard Grass	*Dactylis glomerata*	SNA
Dipsacaceae	Common Teasel	*Dipsacus fullonum*	SNA
Onagraceae	Northern Willowherb	*Epilobium ciliatum*	S5
Celastraceae	Winged Euonymus	*Euonymus alatus*	SNA
Asteraceae	Grass-leaved Goldenrod	*Euthamia graminifolia*	S5
Rhamnaceae	Glossy Buckthorn	*Frangula alnus*	SNA
Oleaceae	Green Ash	*Fraxinus pennsylvanica*	S4
Rosaceae	White Avens	*Geum canadense*	S5
Rosaceae	Rough Avens	*Geum laciniatum*	S4
Lamiaceae	Ground Ivy	*Glechoma hederacea*	SNA
Juglandaceae	Black Walnut	*Juglans nigra*	S4?
Asteraceae	Oxeye Daisy	*Leucanthemum vulgare*	SNA
Lamiaceae	Northern Water-horehound	*Lycopus uniflorus*	S5
Primulaceae	Creeping Jennie	*Lysimachia nummularia*	SNA
Vitaceae	Virginia Creeper	*Parthenocissus quinquefolia*	S4?
Poaceae	Reed Canary Grass	*Phalaris arundinacea*	S5
Poaceae	European Reed	*Phragmites australis ssp. australis*	SNA
Poaceae	Kentucky Bluegrass	*Poa pratensis subsp. pratensis*	SNA
Salicaceae	Trembling Aspen	*Populus tremuloides*	S5
Lamiaceae	Heal-all	*Prunella vulgaris*	S5
Fagaceae	Swamp White Oak	*Quercus bicolor*	S4

Family	Common Name	Scientific Name	NHIC S-Rank[1]
Fagaceae	Bur Oak	*Quercus macrocarpa*	S5
Fagaceae	Pin Oak	*Quercus palustris*	S4
Rhamnaceae	Common Buckthorn	*Rhamnus cathartica*	SNA
Anacardiaceae	Staghorn Sumac	*Rhus typhina*	S5
Salicaceae	Rusty Willow	*Salix atrocinerea*	SNA
Cyperaceae	Cottongrass Bulrush	*Scirpus cyperinus*	S5
Asteraceae	Tall Goldenrod	*Solidago altissima*	S5
Asteraceae	Smooth Sow-thistle	*Sonchus arvensis subsp. arvensis*	SNA
Asteraceae	Panicled Aster	*Symphyotrichum lanceolatum*	S5
Asteraceae	New England Aster	*Symphyotrichum novae-angliae*	S5
Typhaceae	Narrow-leaved Cattail	*Typha angustifolia*	SNA
Ulmaceae	American Elm	*Ulmus americana*	S5
Vitaceae	Riverbank Grape	*Vitis riparia*	S5

1. S-Rank Legend

SNA Not applicable.

S#? Denotes inexact numeric rank.

S4 **Apparently Secure** — At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

S5 **Secure** — At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

3.3 Bat Maternity Roost Survey

Nine trees with a dbh > 10 cm are present within the Phase II lands. Six of these nine trees are snags per MNRF (2017) and have at least some potential to function as maternity roost habitat for Little Brown Myotis and/or Northern Myotis. All six of these trees are located within Segment A (Terrastory 2021). The six trees include a single Trembling Aspen (*Populus tremuloides*) and five Green Ash (*Fraxinus pennsylvanica*). All five Green Ash exhibit evidence of infestation by Emerald Ash Borer (*Agrilus planipennis*) and are in poor health, many with incipient cracks in their bark (**Table 2**). **Appendix III** provides a photograph of Tree 364 showing a large area of peeling bark.

Table 2: Assessment of snags for their potential to function as bat maternity roost habitat.

Tree Number[1]	Species	DBH (cm)	Approximate Height (m)	Decay Class[2]	Features With Potential to Function as Roost Habitat
360	Swamp White Oak	78	>10 m	1	Small areas of peeling bark
361	Swamp White Oak	12	8 m	1	Small areas of peeling bark
362	Green Ash	22	>10 m	2	Several incipient cracks in bark > 5 m above ground
363	Trembling Aspen	14	8 m	1	15 cm crack in bark approximately 2 m above ground
364	Green Ash	39	>10 m	2	Large areas of peeling bark
365	Green Ash	13	8 m	2	Multiple incipient cracks in bark
366	Green Ash	16, 13, 13	9 m	2	Multiple incipient cracks in bark
367	Green Ash	49	>10 m	2	Peeling bark; multiple incipient cracks in bark
368	Pin Oak	43	>10 m	1	

1. Per Tree Saving Plan (Terrastory 2021)
2. As defined by Watt and Caceres (1999).

Three of the nine trees have the potential to function as maternity roost habitat for Tri-coloured Bat, including one Pin Oak (*Quercus palustris*) and two Swamp White Oak (*Quercus bicolor*). The Pin Oak is located along the northern boundary of the subject property, while the two Swamp White Oak are located in Segment A (Terrastory 2021).

3.4 Incidental Observations

A project team biologist recorded incidentally six species of birds from the study area on December 29, 2020. None of these six species is categorized as Endangered, Threatened or Special Concern under SARA or the Endangered Species Act (2007) and none is considered by the NHIC to be provincially rare (**Table 3**).

Table 3: Birds observed incidentally within the study area.

Common Name	Scientific Name	NHIC S-Rank[1]
Black-capped Chickadee	*Poecile atricapillus*	S5
Blue Jay	*Cyanocitta cristata*	S5
Downy Woodpecker	*Picoides pubescens*	S5
Northern Cardinal	*Cardinalis cardinalis*	S5
Red-tailed Hawk	*Buteo jamaicensis*	S5
White-breasted Nuthatch	*Sitta carolinensis*	S5

1. S-Rank Legend

S5 **Secure** — At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

A Project Team biologist also located on December 29, 2020 two bird nests approximately 30 m southwest of the northeast corner of the Phase II lands (**Appendix III**). Based on their size, construction, height above ground, and surrounding habitat, both nests are likely those of Willow Flycatcher (*Empidonax traillii*), Yellow Warbler (*Setophaga petechia*) or American Goldfinch (*Spinus tristis*). Nests of these three species are very similar and their accurate identification requires the presence of nesting adults (Cadman et al. 2007). None of these three species is categorized as Endangered, Threatened or Special Concern under SARA or the Endangered Species Act (2007); NHIC assigns all three an S-Rank of S5 (see **Table 3** for definition).

3.5 SAR Screening

COSEWIC categorizes 258 species that occur in Ontario as Endangered, Threatened, or Special Concern. SARA Schedule 1 lists 211 of these 258 species; the remaining 47 lack formal status under the Act.

The SARO list includes 227 species that the Committee on the Status of Species at Risk in Ontario (COSSARO) categorizes as Endangered, Threatened or Special Concern.

Altogether, COSEWIC and/or COSSARO categorize 271 species that occur in Ontario as Endangered, Threatened or Special Concern. Both SARA and the Endangered Species Act (2007), define the term "species" as a species, subspecies, variety or genetically or geographically distinct population of animal, plant or other organism, other than a bacterium or virus.

Of these 271 species, 52 (37 fish and 15 mussels) are wholly aquatic. This report does not consider these 52 species further as Fisheries and Oceans Canada (2021) and MECP (2020) indicate that they do not occur in Niagara Region and/or that suitable habitat for them is not present in the study area.

Of the remaining 219 species, Terrapex biologists excluded another 167 from further consideration because existing information sources indicate that they have no potential to occur within the study area. This determination reflects one or more of the following factors:

(1) The species does not occur in Niagara Region. Examples include Wolverine (*Gulo gulo*), Blue Racer (*Coluber constrictor*), Lake Huron Grasshopper (*Trimerotropis huroniana*) and Toothed Globe (*Mesodon zaletus*).

(2) Few records of the species from Niagara Region exist and NPCA (2010) indicates that these require confirmation. Examples include False Hop Sedge (*Carex lupuliformis*) and Willowleaf Aster (*Symphyotrichum praealtum*).

(3) The species occurs periodically in Niagara Region but NPCA (2010) categorizes recorded individuals as either Visitors or Transients. Examples include American White Pelican (*Pelecanus erythrorhynchos*) and Loggerhead Shrike (*Lanius ludovicianus*).

(4) The species occurs in Niagara Region but NPCA (2010) considers these populations introduced. Examples include Kentucky Coffee-tree (*Gymnocladus dioicus*) and Dense Blazing Star (*Liatris spicata*).

(5) The species occurs in Niagara Region but its distribution is restricted to isolated locations well beyond the study area. Examples include Cherry Birch (*Betula lenta*) and Northern Dusky Salamander (*Desmognathus fuscus*).

(6) The species occurs in Niagara Region but suitable habitat for the species is not present in the study area. Examples include Peregrine Falcon (*Falco peregrinus*) and Spiny Softshell (*Apalone spinifera*).

Of the remaining 52 species that COSEWIC and/or COSSARO categorize as Endangered, Threatened or Special Concern, there is at least some potential for 17 of these to occur within the study area (i.e., the Phase II portion of the subject property and/or adjacent lands) based on the availability of potentially suitable habitat (**Table 4**).

Notwithstanding the availability of potentially suitable habitat, in the opinion of Terrapex, four of these 17 species (Barn Owl, Milksnake, Nine-spotted Lady Beetle and Black Ash) are highly unlikely to occur within the study area. Specifically, Terrapex notes the following:

Barn Owl: This species is at the northern limit of its range in southern Ontario. It is poorly adapted to cold climates, and its use of anthropogenic structures for nesting and roosting may be particularly important in Ontario as it allows the owls to conserve energy. No barns or abandoned buildings are present within the study area. Since 2001, there have only been two confirmed observations of Barn Owl breeding activity in Ontario; recent records are restricted to Haldimand County and the Municipality of Chatham-Kent (COSEWIC 2010a, Environment Canada 2016).

Milksnake: In the United States activity ranges of this species vary in size from 10 - 20 ha. In a recent study in eastern Ontario, investigators found the activity ranges of 10 male Milksnakes varied from 5 – 29 ha. The minimum patch size to sustain a viable population is unknown but is likely > 10 ha (COSEWIC 2014). In the opinion of Terrapex, Milksnake is unlikely to be present within the study area due to the extent of its urbanization and the road network's fragmentation of potentially suitable habitat.

Nine-spotted Lady Beetle: This species was once one of the more common lady beetle species in Canada. During the 1980s, investigators recorded a very small number of observations of the species from several localities in Ontario, the nearest of which is located > 75 km from the study area. Investigators have not recorded the species in Ontario since 1987, despite directed efforts to find it in the mid-1990s and 2014 (Linton and McCorquodale 2018).

Black Ash: This species is declining due to the introduced Emerald Ash Borer (EAB). Mortality of mature ash trees (all species) reached 99% within six years in parts of Michigan and Ohio, and Black Ash is the ash species most severely affected by EAB (COSEWIC 2018a). EAB is present in the study area: all five of the Green Ash located within the Phase II lands exhibit evidence of EAB infestation and are in poor health. Accordingly, if present in the broader study area, Black Ash is unlikely to persist.

Accordingly, there remain 13 species that COSEWIC and/or COSSARO categorize as Endangered, Threatened or Special Concern with at least some possibility of occurring within the study area (i.e., the Phase II portion of the subject property and/or adjacent lands) based on the availability of potentially suitable habitat (**Table 5**).

Table 4: Availability of habitat potentially suitable for SAR within the study area.

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Birds	Henslow's Sparrow	*Ammodramus henslowii*	END	END	END	Not Present	Not Present	Nests in large, open, usually moist to wet, fields. Vegetation must be dense and > 30 cm in height. Nesting habitat in Ontario includes regenerating old fields, lightly used pastures, hayfields, wet meadows and sedge marshes (Cadman et al. 2007).
	Acadian Flycatcher	*Empidonax virescens*	END	END	END	Not Present	Not Present	Most commonly encountered in large blocks of mature, primarily deciduous, closed-canopy forest, with an open to sparse understorey and ground layer. Often, territories are located near woodland pools or along streams in heavily wooded ravines (Cadman et al. 2007).
	Yellow-breasted Chat	*Icteria virens*	END	END	END	Not Present	Not Present	The Yellow-breasted Chat is an open-canopy obligate species, and occupies early successional shrub habitats, with low, dense deciduous or coniferous vegetation (ECCC 2019). Nesting habitat in Ontario includes regenerating old fields, forest edges, railway and hydro rights-of-way, young coniferous reforestations and, occasionally, wet thickets bordering wetlands. Tangles of grape and raspberry are a feature of most breeding sites (Cadman et al. 2007). Some research suggests that the species may be area sensitive, preferring large (i.e., > 10 ha) areas of suitable habitat, but one study found the minimum patch size to support Yellow-breasted Chat to be 2.3 ha. Within habitat patches, investigators have documented territories that average 1.2 ha. Continuous tracts of suitable habitat or clusters of habitat within close proximity (i.e., 500 m) are likely important features to allow multiple pairs to colonize an area (ECCC 2019).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Birds	Barn Owl	*Tyto alba*	END	END	END	Potentially Present	Not Present	In Ontario, Barn Owls nest and roost in barns and abandoned buildings. They may also use natural cavities in trees or cliff faces (requires an entry hole ≥ 15 cm in diameter) as they did before the arrival of Europeans in North America, though nest sites in trees tend to be short-lived. Barn Owls live year round at their nests and hunt for rodents over orchards and grasslands such as meadows and fallow fields (COSEWIC 2010a, Environment Canada 2016, MECP 2020). No barns or abandoned buildings are present within the study area. Woodland A includes a number of large (dbh > 20 cm) trees with the potential to support Barn Owl nesting, but those located in Segment A appear to lack cavities that would permit nesting by Barn Owl.
	Grasshopper Sparrow	*Ammodramus savannarum*	SC	SC	SC	Not Present	Not Present	Prefers drier, sparsely vegetated grasslands, particularly rough or unimproved pastures, at least 30 ha in size. It will occasionally use cultivated hayfields and cereal crops (Cadman et al. 2007).
	Short-eared Owl	*Asio flammeus*	SC	SC	SC	Not Present	Not Present	Prefers open habitats including tundra, grasslands, wetlands, and agricultural lands (Cadman et al. 2007).
	Canada Warbler	*Cardellina canadensis*	THR	SC	SC	Potentially Present	Not Present	Occurs in a variety of forest types, but is most common in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. It can also be locally abundant in regenerating forests, 6-30 years after natural (e.g., forest fire) or anthropogenic (e.g., timber harvesting) disturbance (COSEWIC 2008). Woodland B may provide suitable habitat for Canada Warbler.
	Black Tern	*Chlidonias niger*	Not Listed	Not at Risk	SC	Not Present	Not Present	Black Terns build floating nests in loose colonies in shallow marshes, especially in cattails (MECP 2020).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Birds	Eastern Wood-Pewee	*Contopus virens*	SC	SC	SC	Potentially Present	Potentially Present	Eastern Wood-Pewee typically breeds in deciduous and mixed woods near forest edges, clearings, roadways or water. Woodland A has the potential to function as nesting habitat. If present in the study area, the species is more likely to occur within portions of Woodland A north of Sims Avenue than those to the south (including Segment A) as Eastern Wood-Pewee occurs less frequently in woodlands with surrounding development than in those without nearby houses (Cadman et al. 2007).
	Bald Eagle	*Haliaeetus leucocephalus*	Not Listed	Not at Risk	SC	Not Present	Not Present	Nests in large, "super-canopy" trees typically found near the shorelines of lakes or large rivers, often on forested islands (Cadman et al. 2007).
	Wood Thrush	*Hylocichla mustelina*	THR	THR	SC	Not Present	Not Present	The Wood Thrush lives in mature deciduous and mixed forests ranging in size from small (3 ha) and isolated to large and contiguous. The presence of tall trees and a thick understorey are usually prerequisites for site occupancy (Cadman et al. 2007, MECP 2020).
	Red-headed Woodpecker	*Melanerpes erythrocephalus*	THR	END	SC	Not Present	Not Present	Red-headed Woodpeckers breed in open woodland and woodland edges, especially oak savannah and riparian forest. These habitats can occur in parks, golf courses, cemeteries and private woodlands. Breeding habitat characteristically includes areas with tall trees of large circumferences, high basal area, a low density of stems in the understorey, and a high density of snags and dead limbs. Studies in the United States indicate that summer territories range from 3.1 ha to 8.5 ha (Cadman et al. 2007, COSEWIC 2018b).
	Golden-winged Warbler	*Vermivora chrysoptera*	THR	THR	SC	Potentially Present	Not Present	The Golden-winged Warbler is a habitat specialist that prefers to nest in areas with young shrubs (10-30 years into succession) surrounded by mature forest: locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas. Average territories range in size from 1-2 ha (COSEWIC 2006, MECP 2020). The more open portion of Woodland A located immediately northeast of the intersection of Thompson Road and Sims Avenue may provide suitable habitat for Golden-winged Warbler.

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Birds	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	THR	THR	Not Present	Not Present	In Ontario, the species' preferred habitats include rock or sand barrens with scattered trees, savannahs, old burns in a state of early forest succession, and open conifer plantations (Cadman et al. 2007). All of these habitats exhibit characteristics such as well-drained soils, moderate tree cover and moderate to sparse shrub and herbaceous cover (ECCC 2018a).
	Chimney Swift	*Chaetura pelagica*	THR	THR	THR	Potentially Present	Not Present	Prior to European settlement, nested in large (> 50 cm dbh) hollow trees, other tree cavities and cracks in cliffs. Today, Chimney Swifts are more likely to occur in and around urban settlements where they nest and roost in chimneys and other anthropogenic structures, such as silos, wells and abandoned buildings. A recent study from southern Ontario found that Chimney Swifts prefer chimneys of non-residential buildings that extend 2.86 m above the roofline and have an internal area of about 1 m^2 (Cadman et al. 2007, COSEWIC 2018c). Project Team biologists observed no chimneys suitable for Chimney Swift in the study area, but Woodland A includes several large (> 50 cm dbh) trees. One such tree is present within the Phase II lands: Tree 360 (Terrastory 2021). This tree is located in Segment A but appears to lack cavities that would permit nesting by Chimney Swift.
	Bobolink	*Dolichonyx oryzivorus*	THR	THR	THR	Not Present	Not Present	Breeds in hayfields and other grasslands, typically those with relatively tall vegetation. Nesting success is considerably higher in undisturbed fields and those mown in mid- to late summer, as early haying results in a high rate of juvenile mortality or nest failure (Cadman et al. 2007).
	Barn Swallow	*Hirundo rustica*	THR	THR	THR	Potentially Present	Not Present	Barn Swallows often live in close association with humans and build their cup-shaped mud nests almost exclusively on structures such as barns, bridges and culverts. Natural nest sites such as cliffs or caves are now rarely used (Cadman et al. 2007, MECP 2020). Project Team biologists observed no evidence of Barn Swallow nests but structures with the potential to support Barn Swallow nesting are present within the lands adjacent to the Phase II portion of the subject property.

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Birds	Least Bittern	*Ixobrychus exilis*	THR	THR	THR	Not Present	Not Present	In Ontario, the Least bittern occurs in a variety of wetland habitats, but strongly prefers cattail marshes with a mix of open pools and channels (MECP 2020).
	Bank Swallow	*Riparia riparia*	THR	THR	THR	Not Present	Not Present	Traditionally nested in exposed earthen banks created by erosion along watercourses and lakeshores but has adapted to nesting in artificial sites such as sand and gravel pits, along roadsides, and in stockpiles of soil and other materials (Cadman et al. 2007). Nesting Bank Swallows require a vertical or near-vertical bank of a suitable substrate, typically consisting of fine sand or silt. Natural erosion and human-related excavation of material refreshes the vertical profile and keeps the bank suitable for nesting. If the vertical face of a bank is not maintained or "refreshed", it usually slumps and stabilizes within several years, rendering it unsuitable for nesting (Falconer et al. 2016).
	Cerulean Warbler	*Setophaga cerulea*	END	END	THR	Not Present	Not Present	Cerulean Warbler nests mainly in mature deciduous upland or swamp forest with a tall canopy of uneven structure, often with gaps, and a sparse understorey (Cadman et al. 2007).
	Eastern Meadowlark	*Sturnella magna*	THR	THR	THR	Not Present	Not Present	Eastern Meadowlarks breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas. Individuals use small trees, shrubs or fence posts as elevated song perches (MECP 2020).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Insects	Nine-spotted Lady Beetle	*Coccinella novemnotata*	Not Listed	END	END	Present	Present	The Nine-spotted Lady Beetle is a habitat generalist that occurs within a wide variety of areas including agricultural areas, suburban gardens, prairie grasslands, parks, coniferous forests, deciduous forests, meadows, riparian areas and other natural open areas. The species is most often associated with areas of shrubs or small trees interspersed with open grassy areas, but not continuous closed canopy forests (Linton and McCorquodale 2018).
	Mottled Duskywing	*Erynnis martialis*	Not Listed	END	END	Not Present	Not Present	Mottled Duskywing tends to live in dry habitats with sparse vegetation. These include open barrens, sandy patches among woodlands, and alvars (MECP 2020). In Ontario, Mottled Duskywing deposit their eggs on only two plants: New Jersey Tea (*Ceanothus americanus)* and Prairie Redroot (*Ceanothus herbaceus*). The former is not present within the Phase II lands and the latter is not present in Niagara Region (NPCA 2010).
	Riverine Clubtail	*Stylurus amnicola*	END	END	END	Not Present	Not Present	Riverine Clubtail larvae inhabit a variety of lotic habitats ranging in size from small creeks to large rivers. After emerging, adults tend to move from riverbanks to the adjacent forest canopy to feed. In Ontario, the species occurs along the River aux Sables, the Big East River and the Spanish River (all located in Central Ontario) as well as two streams that empty into Lake Erie near Long Point, > 100 km from the study area (COSEWIC 2012, COSEWIC 2021, MECP 2020). The smallest creek in Ontario that functions as habitat for Riverine Clubtail has a mean annual discharge of 7 m^3/s (COSEWIC 2012); the HDFs in Woodland B provide insufficient flow to support the species.
	Yellow-banded Bumble Bee	*Bombus terricola*	SC	SC	SC	Present	Present	Yellow-banded Bumble Bee is a habitat generalist. It occurs within open coniferous, deciduous and mixed-wood forests, wet and dry meadows and prairie grasslands, meadows bordering riparian zones, and urban parks, gardens and agricultural areas. It is a generalist pollen forager and has been collected from a wide variety of plant species. Queens overwinter, typically by burrowing in loose soil or rotting trees (COSEWIC 2015).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Insects	Monarch	*Danaus plexippus*	SC	END	SC	Potentially Present	Present	In Canada, Monarch larvae feed solely on milkweeds in the genus *Asclepias.* These plants grow in a variety of environments, including farmlands, open wetlands, dry sandy areas, prairie, agricultural areas, irrigation ditches, river banks, and along roadsides and in roadside ditches. Adults feed on wildflowers. Other than milkweeds, common nectar sources include Goldenrods (*Solidago* spp.), asters (*Aster* spp.) and related genera such as *Symphytrichum* spp., *Doellingeria* spp., *Virgulus* spp. and *Oclemena* spp. (ECCC 2016). Wildflowers with the potential to function as a source of nectar for Monarch may be present within the more open portion of Woodland A and Project Team biologists recorded three such species within the Phase II lands (**Table 1**).
	American Bumblebee	*Bombus pensylvanicus*	Not Listed	SC	Not Listed	Potentially Present	Not Present	The American Bumble Bee is a habitat generalist and a generalist pollen forager. Foraging workers, queens, and nests are most often found in or adjacent to open fields and meadows, grasslands, and other undisturbed open habitats. The species typically nests within dense mats of long grass at or just above ground level, but may also nest in logs, in the nests of House Wren (*Troglodytes aedon*), and in buildings. The species requires a constant supply of flowering plants throughout the growing season to support colony growth and development (COSEWIC 2018d). The more open portion of Woodland A located immediately northeast of the intersection of Thompson Road and Sims Avenue may provide suitable habitat for American Bumblebee.

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Mammals	Eastern Small-footed Myotis	*Myotis leibii*	Not Listed	No Status	END	Not Present	Not Present	Eastern Small-footed Myotis summer habitat use is poorly understood in Ontario. Elsewhere in its range, the species' summer habitat use generally differs from that of other bat species in eastern North America. Eastern Small-footed bats roost primarily in open, sunny rocky habitats, including cracks and crevices in cliffs and boulders, in talus slopes, beneath stones on rock barrens and in rock outcrops containing crevices. Anthropogenic sites that mimic natural sunny, rocky habitats may also function as summer roosts, such as large areas of rocky riprap, crevices in road cuts, waste rock piles, and crevices in bridges and other concrete structures (Humphrey 2017).
	Little Brown Myotis	*Myotis lucifugus*	END	END	END	Present	Present	Little Brown Myotis occur in a wide range of deciduous and coniferous forest stands. They generally avoid large areas of cleared land, such as farm fields, clearcuts, and large post-fire landscapes. Instead, they forage over still water, rivers and in forest gaps, edges, or along trails. Maternity colonies often exist in warm sites that facilitate pup growth rates, such as attics of buildings and under bridges, in rock crevices, or in cavities of canopy trees in forests (COSEWIC 2013). Trees with a dbh ≥ 10 cm with loose bark, cracks and/or cavities (i.e., snags) have the potential to function as maternity roost habitat (MNRF 2017). Project Team biologists observed a number of snags in Woodland A, including portions that comprise Segment A and the broader study area (i.e., north of Sims Avenue).
	Northern Myotis	*Myotis septentrionalis*	END	END	END	Present	Present	Northern Myotis occur in a wide range of deciduous and coniferous forest stands. They generally avoid large areas of cleared land, such as farm fields, clearcuts, and large post-fire landscapes. Instead, they forage over rivers and in forest gaps, edges, or along trails. Females rarely roost in human-made structures (COSEWIC 2013). Trees with a dbh ≥ 10 cm with loose bark, cracks and/or cavities (i.e., snags) have the potential to function as maternity roost habitat (MNRF 2017). Project Team biologists observed a number of snags in Woodland A, including portions that comprise Segment A and the broader study area (i.e., north of Sims Avenue).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Mammals	Tri-colored Bat	*Perimyotis subflavus*	END	END	END	Present	Present	During the summer, the Tri-colored Bat occurs in a variety of forested habitats and forages most commonly over water and at forest edges (Naughton 2012). The bats form day roosts and maternity colonies in clusters of dead leaves, particularly in Oak or Maple trees with a dbh ≥ 10 cm, and occasionally in barns or other anthropogenic structures (COSEWIC 2013, MNRF 2017, MECP 2020). Project Team biologists observed a number of trees in Woodland A with the potential to function as Tri-coloured Bat habitat. These include three Oak trees within the subject property: Tree 360 and Tree 361 are located in Segment A; Tree 368 is located along the northern boundary of the Phase II lands (Terrastory 2021).
	Woodland Vole	*Microtus pinetorum*	SC	SC	SC	Not Present	Not Present	In Ontario, Woodland Voles are restricted to the Carolinian zone. They occur in most habitat types, but are most common in mesic mixed or dry deciduous forests with well-developed duff and humus layers. Woodland Voles prefer light, friable soils and avoid those that are highly saturated. Woodland Voles can likely survive in habitat fragments because they live in small groups, have relatively small (45 m^2) home ranges, and are habitat generalists (COSEWIC 2010b).
Mosses	Spoon-leaved Moss	*Bryoandersonia illecebra*	END	THR	END	Not Present	Not Present	Spoon-leaved moss grows in a range of habitat types but most Canadian populations are located on soil under trees or shrub thickets in low-lying areas that are seasonally flooded (MECP 2020). The occurrence of the species in regenerating fields and its apparent disappearance from sites that have become overgrown suggests that it has an affinity for open overstorey vegetation (Doubt 2005).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Reptiles	Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	THR	THR	Not Present	Not Present	The Eastern Hog–nosed Snake is a habitat generalist. Five physical features define its preferred habitat: loose or sandy, well–drained soil; open vegetative cover such as open woods, brushland or forest edge; proximity to water; and climatic conditions typical of the eastern deciduous forest biome. The snakes are very mobile; average activity ranges in Wasaga Beach for males and females comprise 225 ha and 141 ha, respectively (Kraus 2011). No records of species exist within 10 km of the study area (NPCA 2010). In the opinion of Terrapex, if the Eastern Hog-nosed Snake was present historically, the species is unlikely to persist within the study area due to its extensive road network and associated urban development.
	Milksnake	*Lampropeltis triangulum*	SC	SC	Not Listed	Potentially Present	Not Present	The Milksnake is a habitat generalist and occurs in open areas such as prairies, meadows and pastures, rock outcrops, and rocky hillsides as well as in forested habitats such as deciduous, coniferous, mixed forests and pine plantations. A study in eastern Ontario suggests that Milksnakes preferentially use open and edge habitats rather than areas of closed-canopy. The species requires suitable oviposition and hibernation sites. Females lay eggs in rotting logs, stumps, or mammal burrows; in loose soil, manure piles or leaf mounds, as well as under boards. Potential hibernation sites include mammal burrows, old building foundations, old wells and cisterns, gravel, clay and dirt banks, hollow logs and rotting stumps (COSEWIC 2014). Within the study area, portions of Woodland A north of Sims Avenue have the greatest potential to function as habitat for Milksnake.

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Vascular Plants	American Chestnut	*Castanea dentata*	END	END	END	Not Present	Not Present	Prefers dryer upland deciduous forests with sandy, acidic to neutral soils (MECP 2020).
	Eastern Flowering Dogwood	*Cornus florida*	END	END	END	Potentially Present	Not Present	In Ontario, Eastern Flowering Dogwood commonly grows as an understorey species in mid-age to mature deciduous or mixed forests. It occurs in open woods and forest edges but may also occur along roadsides and in fencerows (Bickerton and Thompson-Black 2010). The edges of Woodland A may provide suitable habitat for this species.
	Small White Lady's-slipper	*Cypripedium candidum*	THR	THR	END	Not Present	Not Present	Small White Lady's-slipper grows in moist prairies, savannahs, and fens. It does best in full sunlight conditions (MECP 2020).
	Butternut	*Juglans cinerea*	END	END	END	Potentially Present	Not Present	In Ontario, Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and often occurs along streams. It does not do well in the shade, and often grows in sunny openings and near forest edges (MECP 2020). The more open portion of Woodland A located immediately northeast of the intersection of Thompson Road and Sims Avenue may provide suitable habitat for Butternut.
	Red Mulberry	*Morus rubra*	END	END	END	Not Present	Not Present	In Ontario, Red Mulberry occurs in fresh to moist, well-drained, forested habitats, including floodplains, bottomlands, the slopes and ravines along the southern portion of the Niagara escarpment and in swales on some western Lake Erie sand spits. Although Red Mulberry is moderately shade tolerant, forest openings of exposed mineral soil, free of competition, appear to promote better recruitment (Parks Canada Agency 2011).
	American Ginseng	*Panax quinquefolius*	END	END	END	Not Present	Not Present	In Ontario, American Ginseng typically occurs in rich, mature deciduous forests in moderately moist but well-drained locations. Generally, few shrubs are present in the understorey. Individuals often occur near seepage areas or within floodplains of first-order or intermittent streams (MECP 2019).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Vascular Plants	Bird's-foot Violet	*Viola pedata*	END	END	END	Not Present	Not Present	Bird's-foot Violet occurs only in black oak savanna, a very rare vegetation type having widely spaced open-grown trees with an understorey of tallgrass prairie herbs. Natural disturbances caused by drought or fire are important for removing trees and shrubs that would otherwise shade out the tiny Bird's-foot Violet (MECP 2020).
	Green Dragon	*Arisaema dracontium*	Not Listed	SC	SC	Not Present	Not Present	Grows in shaded or partly shaded locations subject to seasonal flooding, usually in the narrow transition zone between shoreline areas that remain wet later into the summer and drier uplands. In Ontario, Green Dragon prefers lush creek-side canopy gaps and is rare in adjacent closed canopy areas (Donley et al. 2013a).
	Swamp Rose-mallow	*Hibiscus moscheutos*	SC	SC	SC	Not Present	Not Present	Most commonly found in deep-water cattail marshes and meadow marshes. It reaches its greatest numbers in dyked wetlands, where periodic flooding maintains open habitat and controls competition from other plants. It also occurs in open wet woods, thickets, spoil banks, and drainage ditches (MECP 2020). In Ontario, the species typically occurs no farther than a few hundred metres from the Great Lakes or their associated wetlands. Investigators believe that populations recorded further inland were introduced with landfill (COSEWIC 2004).
	Broad Beech Fern	*Phegopteris hexagonoptera*	Not Listed	SC	SC	Not Present	Not Present	Occurs in rich, undisturbed mature deciduous forest, particularly mature Beech (*Fagus grandifolia*) – Maple (*Acer* sp.) forests. It typically occurs in moister areas such as lower valley slopes, bottomlands and even swamps (van Overbeeke et al. 2013).
	Common Hoptree	*Ptelea trifoliata*	SC	SC	SC	Not Present	Not Present	In Canada, Common Hoptree occurs only in southwestern Ontario along the Lake Erie and Lake St. Clair shorelines, on Lake Erie islands and near Lake Ontario in the Niagara Region. The species typically occurs along shorelines in areas of nutrient poor sandy soils, although it may also occur on thin soils overlying limestone. It does best in full sun and is intolerant of shade (MECP 2020).

Taxon	Common Name	Scientific Name	SARA Status[1]	COSEWIC Status[1]	SARO Status[1]	Availability of Suitable Habitat		Comments
						Adjacent Lands	Phase II Lands	
Vascular Plants	Shumard Oak	*Quercus shumardii*	Not Listed	SC	SC	Not Present	Not Present	Shumard Oak grows on moist, well-drained loamy soils of stream and river terraces, on adjacent ridges and bluffs, and on mesic slopes and poorly drained uplands. Like other Oaks, Shumard Oak requires the full sunlight of open habitat conditions for seedling establishment (Donley et al. 2013b).
	Spotted Wintergreen	*Chimaphila maculata*	END	THR	THR	Not Present	Not Present	Occurs in dry oak-pine woodland habitats with sandy soils. Dominant tree species typically include White Pine (*Pinus strobus*), Red Oak (*Quercus rubra*), Black Oak (*Quercus velutina*) and American Beech. The species does best in semi-open habitats (MECP 2020).
	White Wood Aster	*Eurybia divaricata*	THR	THR	THR	Not Present	Not Present	White Wood Aster grows in open, deciduous forests typically dominated by Sugar Maple (*Acer saccharum*) and American Beech. The species prefers drier soils but tolerates wet conditions fairly well (ECCC 2018b).
	American Water-willow	*Justicia americana*	THR	THR	THR	Not Present	Not Present	Grows along the shores and in the waters of streams, rivers, lakes, ditches and occasionally wetlands. It can grow on wet soil and in up to 1.2 m of water, but appears to require periodic flooding and wave action to reduce competition from other aquatic plants. The underlying subsoil on which it grows is usually gravel, sand or organic matter (MECP 2020).
	Round-leaved Greenbrier	*Smilax rotundifolia*	THR	THR	THR	Not Present	Not Present	Round-leaved Greenbrier prefers open, moist to wet woodlands, often growing on sandy soil (MECP 2020).
	Black Ash	*Fraxinus nigra*	Not Listed	THR	Not Listed	Potentially Present	Not Present	In southern Ontario, Black Ash occurs most frequently in deciduous or Eastern White Cedar (*Thuja occidentalis*) swamps. It also occurs widely in upland forests, often in locally moist microsites, where it is generally an uncommon to rare species. Occupied habitats are often seasonally flooded, where the flood tolerance of Black Ash offers a competitive advantage over more common species that are faster growing or more tolerant of nutrient limitation fire or other stresses (COSEWIC 2018a).

1. SARA and COSEWIC Status Legend

END	Endangered - a wildlife species that is facing imminent extirpation or extinction.
THR	Threatened - a wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction.
SC	Special Concern - a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
Not Listed	SARA Schedule 1 does not include the species.

2. SARO Status Legend

END	Endangered – the species lives in the wild in Ontario but is facing imminent extinction or extirpation.
THR	Threatened – the species lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it.
SC	Special Concern – the species lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats.
Not Listed	The SARO list (i.e., Ontario Regulation 230/08) does not include the species.

Table 5: SAR with potential to occur within the study area.

Common Name	Availability of Suitable Habitat	
	Adjacent Lands	Phase II Lands
Canada Warbler	Potentially Present	Not Present
Eastern Wood-Pewee	Potentially Present	Potentially Present
Golden-winged Warbler	Potentially Present	Not Present
Chimney Swift	Potentially Present	Potentially Present
Barn Swallow	Potentially Present	Not Present
Yellow-banded Bumble Bee	Present	Present
Monarch	Potentially Present	Present
American Bumblebee	Potentially Present	Not Present
Little Brown Myotis	Present	Present
Northern Myotis	Present	Present
Tri-colored Bat	Present	Present
Eastern Flowering Dogwood	Potentially Present	Not Present
Butternut	Potentially Present	Not Present

Confirmation of the presence/absence of these 13 species within the study area would require a qualified biologist to complete further field surveys per standard, generally accepted protocols (e.g., Cadman et al. (2007) methodology for breeding bird surveys). However, in the opinion of Terrapex, the proposed Phase II development has negligible potential to affect these 13 species and/or those portions of the study area with the potential to function as their habitat, so further surveys to confirm their presence/absence are not warranted. **Section 4** elaborates on this conclusion.

4.0 REGULATORY COMPLIANCE

4.1 Species at Risk Act (SARA)

The federal Species at Risk Act (2002) received Royal Assent on December 12, 2002.

SARA is intended to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened.

SARA includes general prohibitions to protect species listed on Schedule 1. These include the following:

Section 32(1) states that no person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.

Section 33 states that no person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada.

SARA defines a residence as a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating.

As the study area does not constitute federal lands, the general prohibitions of Section 32 and Section 33 only apply to:

- aquatic species listed as endangered, threatened or extirpated in Schedule 1 of SARA; and
- migratory birds listed in the Migratory Birds Convention Act (1994) and also listed as endangered, threatened or extirpated in Schedule 1 of SARA.

Four of the 13 SAR with the potential to occur within the study area are subject to Section 32 and Section 33 of SARA: Canada Warbler, Golden-winged Warbler, Chimney Swift and Barn Swallow. Potentially suitable habitat for these four species is not present within the Phase II lands (**Table 4**). Accordingly, in the opinion of Terrapex, the proposed development of the Phase II lands satisfies SARA's requirements as it has negligible potential to affect individuals or the residences of the four SAR potentially present in the study area and subject to the Act's general prohibitions.

Section 58(1) and Section 61(1) of SARA also prohibit the destruction the critical habitat of species categorized as Endangered of Threatened. SARA defines critical habitat as the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species.

No critical habitat subject to Section 58(1) or Section 61(1) is present within the study area. Accordingly, SARA's provisions to protect critical habitat are not applicable to the proposed development of the Phase II lands.

4.2 Endangered Species Act (2007)

Ontario's Endangered Species Act (2007) came into force on June 30, 2008. The Act, administered by the MECP, has three purposes:

1. To identify species at risk based on the best available scientific information, including information obtained from community knowledge and aboriginal traditional knowledge.
2. To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk.
3. To promote stewardship activities to assist in the protection and recovery of species that are at risk.

Section 9.1(a) of the Act states that no person shall kill, harm, harass, capture or take a living member of a species that is listed on the SARO list as an extirpated, endangered or threatened species.

Section 10.1(a) of the Act states that no person shall damage or destroy the habitat of a species that is listed on the SARO list as an endangered or threatened species.

Of the 13 SAR with the potential to occur within the study area, seven are subject to Section 9 and Section 10 of the Act (**Table 4**). Potentially suitable habitat for three of these seven species (Little Brown Myotis, Northern Myotis and Tri-coloured Bat) is present within Phase II lands.

Within the Phase II lands, potentially suitable habitat for the Little Brown Myotis and Northern Myotis consists of six snags located within Segment A (see **Section 3.3**). 2350048 Ontario Ltd. plans to maintain Segment A (including the six snags) under proposed Phase II. However, in the opinion of Terrapex, the removal of five of these six snags (all Ash infested by Emerald Ash Borer) may ultimately be required due to their poor condition and the hazard they will increasingly pose to adjacent houses as they decline.

Within the Phase II lands, potentially suitable habitat for Tri-coloured Bat consists of two Swamp White Oak located in Segment A and one Pin Oak located along the northern boundary of the Phase II lands (see **Section 3.3**). 2350048 Ontario Ltd. plans to retain all three of these trees under proposed Phase II.

Beyond the Phase II lands, potentially suitable habitat for the seven species subject to Section 9 and Section 10 of the Act is largely restricted to Woodland A, particularly those portions located north of Sims Avenue (**Table 4**). However, one of the seven species (Barn Swallow) lives in close association with humans and anthropogenic structures with the potential to support its nesting are located throughout the broader study area.

In the opinion of Terrapex, the proposed development of the Phase II lands satisfies the requirements of the Endangered Species Act (2007) as it has negligible potential to affect individuals or the habitat of the seven SAR potentially present in the study area and subject to Section 9 and Section 10 of the Act.

4.3 Niagara Region Official Plan

The Niagara Region Official Plan (ROP) identifies a Core Natural Heritage System that consists of Core Natural Areas, classified as either Environmental Protection Areas or Environmental Conservation Areas.

Environmental Protection Areas include provincially significant wetlands; provincially significant Life Science Areas of Natural and Scientific Interest (ANSIs); and the significant habitat of endangered and threatened species.

Environmental Conservation Areas 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; and publicly owned conservation lands.

The ROP defines endangered species as follows:

> A species that is listed or categorized as an "Endangered Species" on the Ontario Ministry of Natural Resources official species at risk list or that is designated as Endangered by the Committee on the Status of Wildlife in Canada (COSEWIC), as updated and amended from time to time.

The ROP defines threatened species as follows:

> Any species that is listed or categorized as a "Threatened Species" on the Ontario Ministry of Natural Resources official Species at Risk list or that is designated as “Threatened” by the Committee on the Status of Wildlife in Canada (COSEWIC) as updated from time to time.

The ROP defines species of concern as follows:

> Any species that is listed or categorized as a special concern species on the Ontario Ministry of Natural Resources official Species at Risk list or that is designated as a special concern species by the Committee on the Status of Wildlife in Canada (COSEWIC) or that is not included on those lists but has been given a ranking of S3 imperiled or higher by the Ontario Natural Heritage Information Centre, as updated from time to time.

Two ROP policies that address SAR are relevant to the proposed development of the Phase II lands: **Policy 7.B.1.10** and **Policy 7.B.1.11**.

Policy 7.B.1.10 of the ROP states that, with several exceptions, development and site alteration will not be permitted within Environmental Protection Areas. The ROP designates the significant habitat of endangered and threatened species as Environmental Protection Area.

The ROP defines the significant habitat of threatened and endangered species as follows:

> The habitat, as approved by the Ministry of Natural Resources, that is necessary for the maintenance, survival and/or recovery of the naturally occurring or reintroduced populations of endangered or threatened species, and where those areas of occurrence are occupied or habitually occupied by the species for all or any part(s) of its life cycle.

Of the 13 SAR with the potential to occur within the study area, nine are subject to ROP **Policy 7.B.1.10** due to their categorization as Endangered or Threatened (**Table 4**). Within the Phase II lands, potentially suitable habitat is present for four of these nine species: Little Brown Myotis, Northern Myotis, Tri-coloured Bat and Monarch.

In the opinion of Terrapex, the proposed development of the Phase II lands satisfies the requirements of ROP **Policy 7.B.1.10**. This conclusion reflects the following considerations:

(1) As described in **Section 4.2** (above), all potentially suitable habitat for Little Brown Myotis, Northern Myotis and Tri-coloured Bat (i.e., six snags and three trees) will be retained.

(2) Proposed development will remove small areas of early successional vegetation with the potential to function as foraging habitat for adult Monarch, but this vegetation is not necessary for the maintenance, survival and/or recovery of the species and does not constitute significant habitat as defined by the ROP. The Management Plan for Monarch identifies the loss of overwintering habitat in Mexico, widespread herbicide use and habitat loss due to climate change as the three greatest threats to the species. The Plan identifies the "Level of Concern" associated with the loss of foraging and breeding habitat due to succession or changes in land use as Medium-Low, the second lowest of the nine threats to the species identified by the Plan (ECCC 2016).

Policy 7.B.1.11 of the ROP states the following:

> Development and site alteration may be permitted without an amendment to this Plan:
>
> a) In Environmental Conservation Areas; and
>
> b) On adjacent lands to Environmental Protection and Environmental Conservation Areas as set out in Table 7-1...
>
> 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 Policies in this Plan...

The ROP designates the significant habitat of species of concern as Environmental Conservation Area. The ROP defines the significant habitat of species of concern as follows:

> Habitat that is ecologically important in terms of features, functions, representation or amount, and contributing to the quality, diversity, ecological health and integrity of the Core Natural Heritage System.

Of the 13 SAR with the potential to occur within the study area, six are subject to ROP **Policy 7.B.1.11(a)** due to their categorization as Species of Concern (**Table 4**). Within the Phase II lands, potentially suitable habitat is present for three of these six species: Eastern Wood-Pewee, Yellow-banded Bumble Bee and Monarch.

In the opinion of Terrapex, the proposed development of the Phase II lands satisfies the requirements of ROP **Policy 7.B.1.11(a)**. This conclusion reflects the following considerations:

(1) All potentially suitable habitat for Eastern Wood-Pewee (i.e., Segment A) will be retained.

(2) Proposed development will remove small areas of early successional vegetation with the potential to function as habitat for Yellow-banded Bumble Bee, but because this species is a habitat generalist, this vegetation is not ecologically important in terms of features, functions, representation or amount and does not constitute significant habitat as defined by the ROP.

(3) Proposed development will remove small areas of early successional vegetation with the potential to function as foraging habitat for adult Monarch, but, as described above, this vegetation is not necessary for the maintenance, survival and/or recovery of the species and does not constitute significant habitat as defined by the ROP.

The natural heritage features within the lands adjacent to the Phase II portion of the subject property (see **Figure 1** and **Section 3.1**) are subject to ROP **Policy 7.B.1.11(b)** if they function as SAR habitat.

Woodland A (particularly the portion north of Sims Avenue) and Woodland B have the potential to function as habitat for 11 and two of the 13 SAR with the potential to occur within the study area, respectively (**Table 4**). In the opinion of Terrapex, the proposed development of the Phase II lands will have no significant impact on the potential of Woodland A or Woodland B to function as SAR habitat due to the intervening residential/commercial land uses and the study area's already advanced urbanization. Accordingly, in the opinion of Terrapex, the proposed development of the Phase II lands satisfies the requirements of ROP **Policy 7.B.1.11(b)**.

5.0 CONCLUSIONS

Terrapex reviewed existing information sources and completed several detailed field surveys and assessments to evaluate the potential occurrence of SAR and/or SAR habitat within study area. In the opinion of Terrapex, there are 13 species that COSEWIC and/or COSSARO categorize as Endangered, Threatened or Special Concern with at least some possibility of occurring within the Phase II portion of the subject property and/or adjacent lands based on the availability of potentially suitable habitat.

In the opinion of Terrapex, the proposed development of the Phase II lands satisfies the requirements of the federal Species at Risk Act (2002), the provincial Endangered Species Act (2007) and conforms to the SAR-related policies of the Niagara Region Official Plan.

5.1 SIGNATURES

Terrapex Environmental Ltd. has exercised due care, diligence, and judgement in the preparation of this report; however, studies of this nature have inherent limitations. Terrapex believes that the information in this report provides a reasonable representation of the general conditions of the study area, at the time the report was prepared. However, these conditions may vary with the passage of time.

In addition, the report's comments, conclusions, and recommendations are based in part on the observations and data documented by third parties. By necessity, except where explicitly noted, we have relied upon the accuracy and completeness of information presented by said third parties, regardless of any disclaimers regarding reliance provided in the documentation subjected to peer review. Terrapex Environmental Ltd. does not assume any responsibility for errors, omissions, or other limitations pertaining to third party work programs.

This report has been prepared at the request of 2350048 Ontario Ltd. Terrapex Environmental Ltd. accepts no liability for claims arising from the use of this report, or from actions taken or decisions made as a result of this report, by parties other than 2350048 Ontario Ltd.

Respectfully submitted,

TERRAPEX ENVIRONMENTAL LTD.

Michael Swick, B.Sc.
Biologist

Chris Parent, M.Sc.
Senior Biologist and Project Manager

6.0 REFERENCES

Bickerton, H. and M. Thompson-Black. 2010. Recovery Strategy for the Eastern Flowering Dogwood (*Cornus florida*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi+ 21 pp.

Bradley, D.J. 2013. Southern Ontario Vascular Plant Species List.

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

COSEWIC. 2004. COSEWIC assessment and update status report on the swamp rose-mallow *Hibiscus moscheutos* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 43 pp.

COSEWIC. 2006. COSEWIC assessment and status report on the Golden-winged Warbler *Vermivora chrysoptera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 30 pp.

COSEWIC. 2008. COSEWIC assessment and status report on the Canada Warbler *Wilsonia canadensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 35 pp.

COSEWIC. 2010a. COSEWIC assessment and status report on the Barn Owl *Tyto alba* (Eastern population and Western population) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiv + 34 pp.

COSEWIC. 2010b. COSEWIC assessment and status report on the Woodland Vole *Microtus pinetorum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 35 pp.

COSEWIC. 2012. COSEWIC assessment and status report on the Riverine Clubtail *Stylurus amnicola* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiv + 60 pp.

COSEWIC. 2013. COSEWIC assessment and status report on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.

COSEWIC. 2014. COSEWIC assessment and status report on the Eastern Milksnake *Lampropeltis triangulum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 61 pp.

COSEWIC. 2015. COSEWIC assessment and status report on the Yellow-banded Bumble Bee *Bombus terricola* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 60 pp.

COSEWIC. 2018a. COSEWIC assessment and status report on the Black Ash *Fraxinus nigra* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 95 pp.

COSEWIC. 2018b. COSEWIC assessment and status report on the Red-headed Woodpecker *Melanerpes erythrocephalus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 60 pp.

COSEWIC. 2018c. COSEWIC assessment and status report on the Chimney Swift *Chaetura pelagica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 63 pp.

COSEWIC. 2018d. COSEWIC assessment and status report on the American Bumble Bee *Bombus pensylvanicus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 52 pp.

COSEWIC. 2021. Call for Bids for Status Reports or Designatable Unit Report. Available from https://cosewic.ca/index.php/en-ca/news-and-events/call-for-bids-2021.

Donley, R., J.V. Jalava and J. van Overbeeke. 2013a. Management Plan for the Green Dragon (*Arisaema dracontium*) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 43 pp.

Donley, R.N., J. Jalava, and J. van Overbeeke. 2013b. Management Plan for the Shumard Oak (*Quercus shumardii*) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. v + 59 pp.

Doubt, J. 2005. Recovery Strategy for the Spoon-leaved Moss (*Bryoandersonia illecebra*) in Canada. v + 30 pp.

Dougan & Associates. 2003. Natural Areas Inventory: Town of Fort Erie's Settlement Areas. March 2003. Final Draft. Prepared for the Town of Fort Erie Community Planning & Development Services. 78 pp + appendices.

ECCC. 2016. Management Plan for the Monarch (*Danaus plexippus*) in Canada. Species at Risk Act Management Plan Series. Environment and Climate Change Canada, Ottawa. iv + 45 pp.

ECCC. 2018a. Recovery Strategy for the Eastern Whip-poor-will (*Antrostomus vociferus*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. vi + 107 pp.

ECCC. 2018b. Recovery Strategy for the White Wood Aster (*Eurybia divaricata*) in Canada, Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa, viii + 67 pp.

ECCC. 2019. Recovery Strategy for the Yellow-breasted Chat virens subspecies (*Icteria virens virens*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. xi + 43 pp.

Environment Canada. 2016. Recovery Strategy for the Barn Owl (*Tyto alba*) Eastern Population in Canada [Proposed]. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. 24 pp. + Annexes.

Falconer, M., K. Richardson, A. Heagy, D. Tozer, B. Stewart, J. McCracken, and R. Reid. 2016. Recovery Strategy for the Bank Swallow (*Riparia riparia*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. ix + 70 pp.

Feenstra, B.H. 1972. Quaternary Geology of the Welland Area, Southern Ontario. Ontario Geological Survey, Preliminary Map P.796, Geological Series. 1 pp.

Fisheries and Oceans Canada. 2021. Aquatic Species at Risk Map. Available from: https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

Humphrey, C. 2017. Recovery Strategy for the Eastern Small-footed Myotis (*Myotis leibii*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vii + 76 pp.

Kraus, T. 2011. Recovery Strategy for the Eastern Hog–nosed Snake (*Heterodon platirhinos*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario.

Linton, J and D. McCorquodale. 2018. Recovery Strategy for the Nine-spotted Lady Beetle (*Coccinella novemnotata*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. vi + 33 pp.

MECP. 2019. Recovery Strategy for the American Ginseng (*Panax quinquefolius*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ministry of the Environment, Conservation and Parks, Peterborough, Ontario. iv + 9 pp. + Appendix.

MECP. 2020. Species at risk in Ontario. Available from: https://www.ontario.ca/page/species-risk-ontario.

MNRF. 2017. Recommended Survey Method for SAR Bats Within Treed Habitats. April 2017. Ontario Ministry of Natural Resources and Forestry, Guelph District Office. 7 pp.

Naughton, D. 2012. The Natural History of Canadian Mammals. Canadian Museum of Nature and University of Toronto Press. Toronto. 784 pp.

NPCA. 2010. Natural Areas Inventory 2006-2009. Niagara Peninsula Conservation Authority.

Parks Canada Agency. 2011. Recovery Strategy for the Red Mulberry (*Morus rubra*) in Canada. *Species at Risk Act* Recovery Strategy Series. Parks Canada Agency. Ottawa, Ontario. vi + 47 pp.

Philips Engineering Ltd., Parish Geomorphic, Dougan & Associates, C. Portt & Associates, Blackport & Associates and Shoreplan Engineering Ltd. 2008. Fort Erie Creeks Watershed Plan General Report. Niagara Peninsula Conservation Authority. March 2008. 217 pp + appendices.

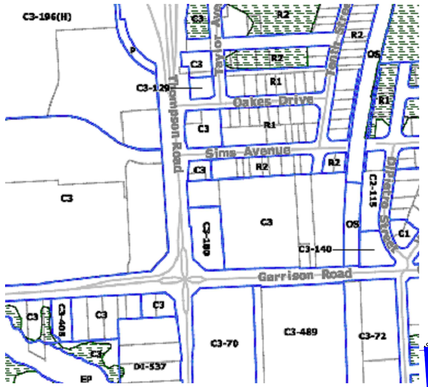
Terrastory Environmental Consulting Inc. 2021. Tree Saving Plan. Official Plan and Zoning By-law Amendment Applications. 644 Garrison Road, Town of Fort Erie. 7 pp + appendices.

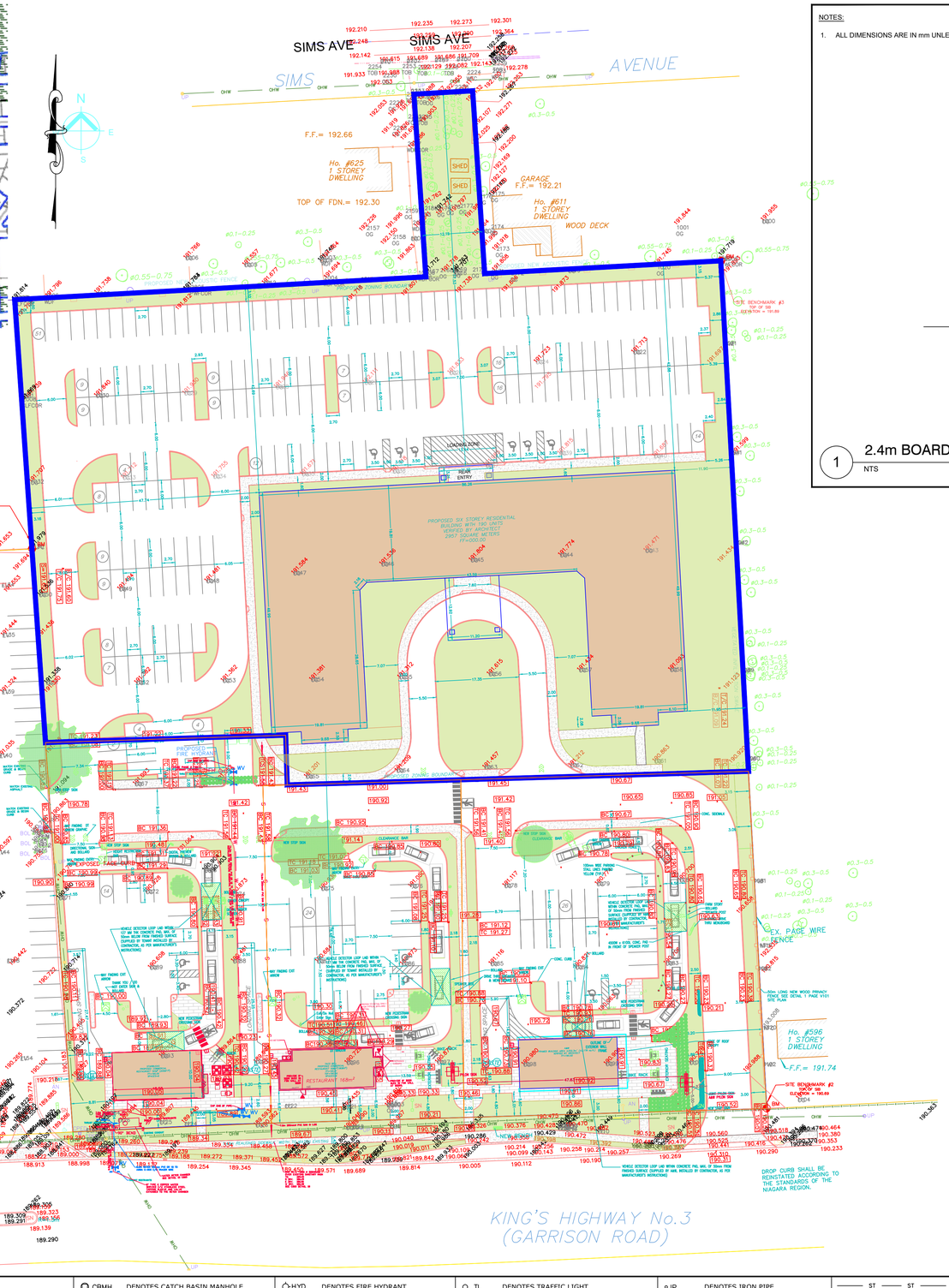
van Overbeeke, J.C., J.V. Jalava and R.H. Donley. 2013. Management Plan for the Broad Beech Fern (*Phegopteris hexagonoptera*) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. v + 25 pp.

Watt, W. R. and M.C. Caceres. 1999. Managing for snags in the boreal forests of northeastern Ontario. Ontario Ministry of Natural Resources, Northeast Science & Technology. TN-016. 20 pp.

APPENDIX I

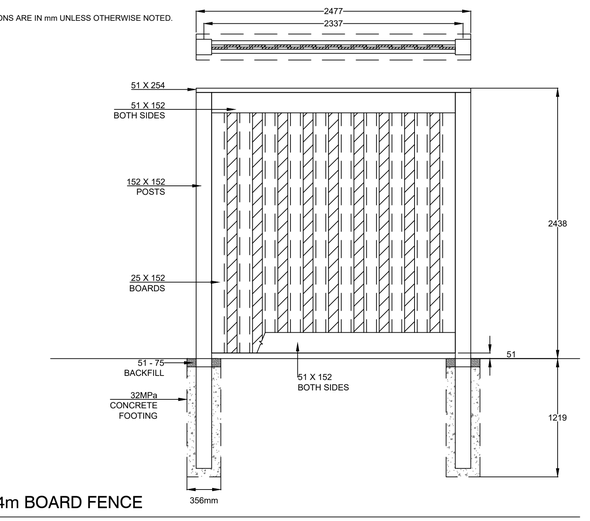
PROPOSED SITE PLAN





NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.



1 2.4m BOARD FENCE
NTS

SITE STATISTICS PHASE 1

	ZONING REQUIREMENTS	PROPOSED
ZONING CATEGORY	HIGHWAY COMMERCIAL (C3)	
REQUIREMENTS		
MINIMUM LOT AREA	450m²	25761.6m² 2.6 ha
PHASE 1		10623.5m²
MINIMUM LOT FRONTAGE (SIMS AVE)	15.0m	12.0m EXISTING
MAXIMUM LOT COVERAGE	60%	2.3% ONLY PHASE 1
MAXIMUM BUILDING HEIGHT	12.0m (2.5 STOREYS)	LESS THE 12.0m (1 STOREY)
FRONT YARD SETBACK (SIMS AVENUE)	15.0m	15.0m PLUS
REAR YARD SETBACK	7.3m	5.0m (MVA 24/19)
SIDE YARD	3.0m	3.0m PLUS
LANDSCAPE OPEN SPACE	0%	0%
BUFFERING	3.0m	0.65-2.0 (MVA24/19)
NO. OF PARKING SPACES	PHASE 1 45 SPACES MIN.	76 PHASE 1
ACCESSIBLE SPACES	2 TYPE A (3.4m X 6.0m)	4 TYPE A
	1 TYPE B (3.2m X 6.0m)	2 TYPE B
PARKING SPACE DIM.	2.7m X 6.0m	2.7m X 6.0m
LOADING SPACE DIMENSIONS	3.5m X 9.0m	3.5m X 9.0m MIN. MET
STACKING SPACE	3.0m X 6.0m	
STACKING LANE	10	10 PLUS FOR RESTAURANTS
STACKING LAND LENGTH	60m	
A&W SEATING	58 INSIDE +12 OUTSIDE=70 TOTAL	18
TACO BELL	40 INSIDE +16 OUTSIDE=56	14
STARBUCKS	34 INSIDE +16 OUTSIDE=50	13
TOTAL REQUIRED PARKING	45 SPACES	76 SPACES 64 SPACES
MAXIMUM WIDTH OF ENTRANCE	9.0m	9.0m
DAYLIGHT TRIANGLE	7.0m	7.0m AT ENTRANCE
AISLE WIDTH	6.0m	6.0m MINIMUM
ACCESS DRIVE WIDTH	7.5m	7.5m MINIMUM

SITE STATISTICS PHASE 2

	ZONING REQUIREMENTS	PROPOSED
ZONING CATEGORY	RESIDENTIAL	
REQUIREMENTS		
MINIMUM LOT AREA	115m²x 190 UNITS	25761.6m² (TOTAL)
PHASE 1		10623.5m²
PHASE 2	21850m²	15138.1m²
MINIMUM LOT FRONTAGE (SIMS AVE)	30.0m	12.0m EXISTING
MAXIMUM LOT COVERAGE	40%	19.5%
RESIDENTIAL BUILDING AREA		2957m²
MAXIMUM BUILDING HEIGHT	26m (9 STOREYS)	6 STOREYS
FRONT YARD SETBACK (SIMS AVENUE)	7.5m	77.5m
REAR YARD SETBACK	HALF THE BUILDING HEIGHT (19m)	78.4m
SIDE YARD	HALF THE BUILDING HEIGHT (19m)	11.8m
	HALF THE BUILDING HEIGHT (19m)	46.9m
MINIMUM FLOOR AREA PER UNIT	BACHELOR 40m²	
	ONE-BEDROOM UNIT 50m²	
	TWO-BEDROOM UNIT 60m²	
	MORE THEN 3 UNITS 79m²	
LANDSCAPE OPEN SPACE	25%	13%
BUFFERING	3.0m	0.65-2.0 (MVA24/19)
NO. OF PARKING SPACES		
RESIDENTIAL	1.5 SPACES PER UNIT	
ACCESSIBLE SPACES	2 TYPE A (3.4m X 6.0m)	6 TYPE A
	1 TYPE B (3.2m X 6.0m)	0 TYPE B
PARKING SPACE DIM.	2.7m X 6.0m	2.7m X 6.0m
LOADING SPACE DIMENSIONS	3.5m X 9.0m	--
TOTAL REQUIRED PARKING	1.5x 190 = 285	214 SPACES
MAXIMUM WIDTH OF ENTRANCE	9.0m	9.0m
DAYLIGHT TRIANGLE	7.0m	7.0m AT ENTRANCE
AISLE WIDTH	6.0m	6.0m MINIMUM
ACCESS DRIVE WIDTH	7.5m	6.0m

UNIT COUNT	
FLOOR	UNIT COUNT
1st FLOOR	30
2nd FLOOR	32
3rd FLOOR	32
4th FLOOR	32
5th FLOOR	32
6th FLOOR	32
	190

NOTES

1. ALL TOPOGRAPHIC & SERVICE INFORMATION COMPILED FROM SURVEY DATA COMPLETED BY SANDS SURVEYING AND DRAFTING.
2. THE POSITION & SIZE OF POLE LINES, CONDUITS, WATERMAINS, SEWERS & OTHER UNDERGROUND & ABOVE GROUND UTILITIES & STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION & SIZE OF SUCH UTILITIES & STRUCTURES IS NOT GUARANTEED. BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES & STRUCTURES & SHALL ASSUME ALL LIABILITY FROM DAMAGE TO SAME.
3. ALL WORKS INVOLVED IN THE CONSTRUCTION, RELOCATION AND REPAIR OF MUNICIPAL SERVICES SHALL BE TO THE SATISFACTION OF THE DIRECTOR OF INFRASTRUCTURE SERVICES.
4. REMOVE CURBS AND POUR NEW CURBS FOR ANY NEW DRIVEWAYS OR DRIVEWAYS TO BE ABANDONED AND / OR MADE GOOD.
5. NO PERSON SHALL CONSTRUCT OR DEMOLISH A BUILDING OR CAUSE A BUILDING TO BE CONSTRUCTED OR DEMOLISHED (INCLUDING SITE SERVICING) UNLESS A BUILDING PERMIT HAS BEEN ISSUED BY THE CHIEF BUILDING OFFICIAL.
6. ABANDONED ENTRANCES TO BE REMOVED AND CURBS / SIDEWALKS RESTORED AS REQUIRED
7. SNOW STORAGE TO BE ON PROPOSED LANDSCAPED AREAS AND PHASE TWO UNDEVELOPED LANDS.
8. THE EXISTING SIDEWALK IS TO BE REMOVED AND DISPOSED OFF-SITE AND THE AREA RESTORED TO SOD.

REV:	DESCRIPTION	DATE	APPROVED BY
0	REDLINES FOR EXISTING DEVELOPMENT	2020.08.17	OWNER
0	INITIAL RELEASE	2020.07.07	CHM

ANTECH DESIGN & ENGINEERING GROUP
Engineers and Urban Planners
25 King Street, Suite 200
Brantford, ON. N3T 3C4
www.antechdesign.com

PROJECT:

SITE PLAN OF PROPOSED NEW CONSTRUCTION OF

LOT 224
REGISTERED PLAN No. 113
(AKA PLAN 453)
PART OF LOT 1, CONCESSION 2 N.R.
TOWN OF FORT ERIE
REGIONAL MUNICIPALITY OF NIAGARA

644 GARRISON ROAD

Scale 1 : 500

20 15 10 5 0 10 20 Metres

METRIC CONVERSION

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

ELEVATION NOTES

ELEVATIONS ARE GEODETIC AND WERE DERIVED USING THE LEICA SMARTNET RTK NETWORK. ELEVATION VALUES ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD1928), H.T.2.0.

LEGEND & NOTES: (IF APPLICABLE)

- DENOTES FOUND MONUMENTS
- DENOTES SET MONUMENTS
- IB DENOTES IRON BAR
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- CC DENOTES CUT CROSS
- N&W DENOTES NAIL & WASHER
- PL DENOTES REGISTERED PLAN
- OU DENOTES ORIGIN UNKNOWN
- M DENOTES MEASURED
- PROP DENOTES PROPORTIONED
- WIT DENOTES WITNESS

- BM DENOTES BENCHMARK
- DENOTES TREELINE
- INV DENOTES INVERT
- VCM DENOTES VERTICAL CONTROL MONUMENT
- BP DENOTES BELL PEDESTAL
- FL DENOTES FLOOD LIGHT
- DENOTES TRAFFIC SIGN
- AC DENOTES AIR CONDITIONER
- GMRK DENOTES GAS MARKER
- CUL DENOTES CULVERT
- CB DENOTES DOUBLE CATCH BASIN

- CBMH DENOTES CATCH BASIN MANHOLE
- CB DENOTES CATCH BASIN
- DCBMH DENOTES DOUBLE CATCH BASIN MANHOLE
- DICB DENOTES DITCH INLET CATCH BASIN
- MH-ST DENOTES STORM MANHOLE
- MH-F DENOTES FIBER OPTIC MANHOLE
- MH-S DENOTES SANITARY MANHOLE
- MH-BMH DENOTES BELL MANHOLE
- MH-H DENOTES HYDRO MANHOLE
- MH-T DENOTES TRAFFIC MANHOLE
- VC DENOTES VALVE CHAMBER
- DRN DENOTES DRAIN
- WELL DENOTES WATER WELL

- HYD DENOTES FIRE HYDRANT
- HGUY DENOTES HYDRO GUIDE WIRE
- UP DENOTES UTILITY POLE
- HP DENOTES HYDRO POLE
- LS DENOTES LIGHT STANDARD
- HLS DENOTES HYDRO LIGHT STANDARD
- FP DENOTES FLAG POLE
- HH DENOTES HAND HOLE
- SN DENOTES SIGN
- MB DENOTES MAIL BOX
- BP DENOTES BELL POLE
- BLRD DENOTES BOLLARD
- OW DENOTES OBSERVATION WELL

- TL DENOTES TRAFFIC LIGHT
- MP DENOTES MONITORING PIN
- CS DENOTES CURB STOP VALVE
- RXS DENOTES RAILWAY SIGN
- RSB DENOTES RAILWAY SIGNAL CONTROL BOX
- BGUY DENOTES BELL GUIDE WIRE
- CTV DENOTES CABLE PEDESTAL
- TCB DENOTES TRAFFIC CONTROL BOX
- WV DENOTES WATER VALVE
- DP DENOTES DECORATIVE POLE
- GV DENOTES GAS VALVE
- PLR DENOTES PILLAR
- GP DENOTES GUARD POST

- IP DENOTES IRON PIPE
- IS DENOTES SPRINKLER HEAD
- OFC DENOTES OIL FILLER CAP
- HW DENOTES HAND WELL
- HTRAN DENOTES HYDRO TRANSFORMER
- PS DENOTES POWER SUPPLY
- PKM DENOTES PARKING METER
- TH DENOTES TEST HOLE
- BH DENOTES BOREHOLE
- MW DENOTES MONITORING WELL
- BMRK DENOTES BELL MARKER
- DENOTES VALVE BOX
- CMRK DENOTES CABLE TV MARKER

- ST DENOTES UNDERGROUND SERVICE LOCATE - STORM
- S DENOTES UNDERGROUND SERVICE LOCATE - SANITARY
- B DENOTES UNDERGROUND SERVICE LOCATE - BELL, TELEPHONE, CABLE
- P DENOTES UNDERGROUND SERVICE LOCATE - HYDRO
- G DENOTES UNDERGROUND SERVICE LOCATE - GAS
- V DENOTES UNDERGROUND SERVICE LOCATE - WATER
- OHW DENOTES OVERHEAD WIRES
- DENOTES PROPERTY LINE
- DENOTES TRAFFIC FLOW DIRECTION
- DENOTES DIRECTION OF SURFACE WATER

TITLE: SITE PLAN

DRAWN BY: CHM	CHECKED BY: JAB	DRAWING DATE: 2020.02.12

CUSTOMER: MELKO DEVELOPMENTS

DRAWING NUMBER: 172903-V101-20

APPENDIX II

CORRESPONDENCE WITH NIAGARA REGION

Chris Parent

From: Lampman, Cara <Cara.Lampman@niagararegion.ca>
Sent: Friday, December 11, 2020 1:26 PM
To: Chris Parent
Cc: Emberson, Lola
Subject: RE: Species at Risk Screening

Hi Chris,

As discussed in our phone call, given the level of impact on this site, staff are satisfied that the requirement for MECP review of the preliminary screening can be waived. The screening with justification should instead be forwarded to the Region for review and confirmation that MECP involvement is not required.

All the best,

Cara Lampman
Manager Environmental Planning
Planning and Development Services, Niagara Region
Phone: 905-980-6000 ext. 3430 Toll-free: 1-800-263-7215
Cell: 289-668-4812
www.niagararegion.ca

From: Lampman, Cara
Sent: Friday, December 11, 2020 12:24 PM
To: 'c.parent@terrapex.com' <c.parent@terrapex.com>
Cc: Emberson, Lola <Lola.Emberson@niagararegion.ca>
Subject: Species at Risk Screening

Hi Chris,

Thanks for reaching out to the Region on this matter. We do not have a formal protocol/template/guidelines, other than its EIS guidelines to inform the required screening at this time. Rather, consultants are required to complete their own preliminary screening for SAR based on best available data sources (e.g., NHIC, LIO, etc.) and site visit(s).

Following the preliminary screening, consultants must then contact MECP at SAROntario@ontario.ca to discuss their preliminary screening. MECP will provide advice regarding mitigation measures and whether additional field surveys are advisable. It is the applicant/consultant's responsibility to conduct all appropriate field surveys/inventories to confirm the presence/absence of SAR or their habitat, and to comply with the requirements of the Endangered Species Act.

Considering the above, the EIS should include a list of potential SAR, screening results, and the results of any specific SAR surveys undertaken. Regional Environmental Planning staff require that all relevant MECP correspondence be appended to the document.

Do not hesitate to reach out with any further questions or concerns.

Cara Lampman
Manager Environmental Planning
Planning and Development Services, Niagara Region
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Chris Parent

From: Emberson, Lola <Lola.Emberson@niagararegion.ca>
Sent: Friday, December 11, 2020 12:04 PM
To: Lampman, Cara
Cc: Chris Parent
Subject: RE: 644 Garrison Road Species at Risk Screening
Attachments: Regional Notes Preconsultation 644 Garrison .pdf

Hi Cara
Could you get back to Chris. The Region's comments (precon notes attached) were respect to due diligence screening for SAR as the woodland feature is on the adjacent lands.

Respectfully,
Lola Emberson, MCIP, RPP
Senior Development Planner/Acting Manager Development Planning
Planning and Development Services
Regional Municipality of Niagara
1815 Sir Isaac Brock Way, PO Box 1042
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From: Chris Parent <c.parent@terrapex.com>
Sent: Friday, December 11, 2020 10:34 AM
To: Emberson, Lola <Lola.Emberson@niagararegion.ca>
Subject: 644 Garrison Road Species at Risk Screening

Hi Lola.

Terrapex Environmental has been retained to complete the species at risk (SAR) screening of 644 Garrison Road in Fort Erie as requested by Niagara Region. Does the Region have a formal protocol/template/guidelines to inform the screening's preparation, other than its EIS guidelines? Please feel free to call to discuss. I can be reached at (647) 668-4293. Thanks.

Chris

Chris Parent, MSc
Senior Biologist & Project Manager

TERRAPEX

Office: 416 245 0011 ext 239
Mobile: 647 668 4293
Email: c.parent@terrapex.com

90 Scarsdale Road
Toronto, ON
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APPENDIX III

REPRESENTATIVE SITE PHOTOGRAPHS

TERRAPEX	PHOTOGRAPHIC LOG		Page 1 of 10
Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 1 **Date:** November 26, 2020 **Viewing Direction:** East **Description:** Standing on an overburden stockpile in the northwest corner of the Phase II lands looking east.	

Photo No: 2 **Date:** November 26, 2020 **Viewing Direction:** Southwest **Description:** Standing on an overburden stockpile in the north-central portion of the Phase II lands looking southwest.	

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 3
Date: November 26, 2020
Viewing Direction: Southeast
Description: Standing on an overburden stockpile in the central portion of the Phase II lands looking southeast.

Photo No: 4
Date: November 26, 2020
Viewing Direction: Northeast
Description: Standing on an overburden stockpile near the northern boundary of the Phase II lands looking northeast at the narrow segment of the subject property that projects north towards Sims Avenue (Segment A).

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 5

Date: November 26, 2020

Viewing Direction:
Northeast

Description:
Standing on an overburden stockpile in the central portion of the Phase II lands looking northeast.

Photo No: 6

Date: November 26, 2020

Viewing Direction:
South

Description:
Standing along the western edge of the Phase II lands looking south.

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 7

Date: November 26, 2020

Viewing Direction:
North

Description:
Standing at the southern end of the subject property looking north across Phase I to Phase II.

Photo No: 8

Date: November 26, 2020

Viewing Direction:
East

Description:
Standing along the southern edge of the subject property looking east across Phase I.

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 9
Date: November 26, 2020
Viewing Direction: West
Description: Standing along the southern edge of the subject property looking west across Phase I.

Photo No: 10
Date: November 26, 2020
Viewing Direction: South
Description: Standing along the eastern boundary of the Phase II lands looking south.

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 11

Date: November 26, 2020

Viewing Direction:
West

Description:
Standing in the northeast corner of the Phase II lands looking west along the northern boundary of the subject property.

Photo No: 12

Date: November 26, 2020

Viewing Direction:
North

Description:
Standing in Segment A looking north towards Sims Avenue.

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 13 **Date:** December 29, 2020 **Viewing Direction:** North **Description:** Woodland B standing astride the informal ATV trail looking north.	

Photo No: 14 **Date:** December 29, 2020 **Viewing Direction:** Northeast **Description:** Woodland B standing astride the informal ATV trail looking northeast.	

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 15

Date: December 29, 2020

Viewing Direction:
Northwest

Description:
Headwater drainage feature riparian wetland.

Photo No: 16

Date: December 29, 2020

Viewing Direction:
East

Description:
The more open portion of Woodland A located immediately northeast of the intersection of Thompson Road and Sims Avenue.

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 17
Date: December 29, 2020
Viewing Direction: Northeast
Description: Edge of Woodland A immediately north of Sims Avenue. Note snag in left foreground.

Photo No: 18
Date: December 29, 2020
Viewing Direction: Northwest
Description: Edge of Woodland A immediately north of Sims Avenue. Note localized tree removal and snag in right background.

Client: 2350048 ONTARIO LTD.	**Site Location**:	644 Garrison Road Fort Erie, Ontario	**Project No**: CB1041.02

Photo No: 19
Date: December 29, 2020
Viewing Direction: Northeast
Description: Bird nest located approximately 30 m southwest of the northeast corner of the Phase II lands.

Photo No: 20
Date: December 29, 2020
Viewing Direction: Northwest
Description: Bird nest located approximately 30 m southwest of the northeast corner of the Phase II lands.