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Environmental Impact Study

76 Bryne Drive, Barrie

Palmer Project #
2004501

Prepared For
M-J-J-J Developments Inc.

December 3, 2020

December 3, 2020

M-J-J-J Developments Inc.
C/O Maurizio Rogato
57 Simpson Rd
Bolton, ON
L7E 4J7

Dear Maurizio:

Re: Environmental Impact Study
Project #: 2004501

Palmer is pleased to provide this Environmental Impact Study (EIS) report for the proposed development at 76 Bryne Drive in the City of Barrie. The EIS contains the results of an assessment of natural heritage features and existing environmental policies through a background review, agency consultation, field investigations, and review of relevant policies. Based on the findings and recommendations of the report, it is our opinion that with the implementation of the mitigation measures as provided, the proposed development is environmentally feasible and no negative impacts to the natural environment are expected consistent with the applicable policies. Please let us know if you have question or comments on this submission.

Yours truly,

Prepared By:

Erin Donkers, B.Sc., PG[ER]
Ecologist, Arborist

Approved By:

Dirk Janas, B.Sc.
Principal, Ecologist

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1. Introduction

Palmer is pleased to submit an Environmental Impact Study (EIS) for the Subject Property located 76 Bryne Drive, City of Barrie (**Figure 1**). This EIS has been completed as part of a proposal to develop a new mixed used commercial and residential building and new parking area.

The Subject Property is 0.79 hectares (ha), surrounded by commercial developments to the north, as well as across Bryne Drive to the east. It is adjacent to a forest to the west, areas regulated by the Lake Simcoe Region Conservation Authority (LSRCA), an area associated with an adjacent watercourse, Hotchkiss Creek, and valley system. Successional forest and a naturalized plantation are found to the south.

The objective of this study is to complete a background review and desktop analysis, conduct field studies to assess the natural heritage features and their functions, assessment of potential impacts from the proposed development, and provide mitigation measures. Investigations and impact assessment for the EIS are for the natural features located directly adjacent to the Subject Property.

2. Environmental Policy

Relevant planning policies, legislation, and regulatory requirements pertinent to this assessment are summarized in the following sections. The general relevance of these policies to the Subject Property is also noted. More detailed analysis of policy implications is provided in subsequent sections of this report where relevant.

2.1 Provincial Policy Statement

The Provincial Policy Statement (PPS, 2020) provides direction to regional and local municipalities regarding planning policies for the protection and management of natural heritage features and resources (Ontario Ministry of Municipal Affairs and Housing, 2020). Section 2.1 of the PPS defines ten natural heritage features (NHF) and adjacent lands and provides planning policies for each. Of these NHF, development is not permitted in:

- Significant Coastal Wetlands;
- Significant Wetlands in Ecoregions 5E, 6E and 7E;
- Fish Habitat, except in accordance with provincial and federal requirements; or
- Habitat of species designated as Endangered and Threatened, except in accordance with provincial and federal requirements.

Additionally, unless it can be demonstrated through an EIS that there will be no negative impacts on the natural features or their ecological functions, development and site alteration are also not permitted in:

- Significant Wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);

- Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);
- Significant Wildlife Habitat;
- Significant Areas of Natural and Scientific Interest;
- Other Coastal Wetlands in Ecoregions 5E, 6E and 7E; and
- Lands defined as *Adjacent Lands* to all the above natural heritage features.

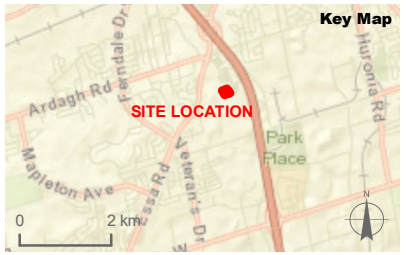
Each of these NHF is afforded varying levels of protection subject to guidelines, and in some cases, regulations. The Subject Property is located in Ecoregion 6E (Crins, Gray, Uhlig, & Wester, 2009). While HotchKiss Creek is adjacent to the Subject Property, no NHF are identified on NHIC Biodiversity Mapping (**Map A**) (Ministry of Natural Resources and Forestry, 2020).

Map A: MNRF NHIC Biodiversity Mapping (property boundary in blue, woodlands shown as green polygon).

LEGEND:

Subject Property

Imagery (2018) provided by Simcoe County WMS



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PROJECT NO.	2004501	REVISION:	1
DATE:	Oct 07, 2020	SCALE:	1:1000
DRAWN:	CV	DATUM:	NAD 1983
CHECKED:	MV	PROJECTION:	UTM zone 17

CLIENT:
M-J-J-J Developments Inc

PREPARED BY:
[redacted]

PROJECT:
76 Bryne Drive EIS & Arborist Report

TITLE:
Site Location

Figure 1

Document Path: G:\Shared drives\Projects 2020\20045 - M-J-J Developments Inc\2004501 - 76 Bryne Drive EIS & Arborist Report\Mapping\Figures\5_ArcGIS\2004501_1-1_Site Location.mxd

2.2 City of Barrie Official Plan

The purpose of the City of Barrie Official Plan (2018) is to "*provide guidance for consideration of land use changes, the provision of public works, actions of local boards, municipal initiatives, and the actions of private enterprise*".

Schedule A: Land Use of the City of Barrie's Official Plan (Office Consolidation – January 2018) identifies the entire Subject Property designated as "General Commercial" (**Map B**). Immediately west of the Subject Property exists lands designated as "Environmental Protection Area", associated with the adjacent wooded valley feature. A review of the City's OP *Schedule H: Natural Heritage Resources*, further identifies a the Subject Property as located immediately adjacent to, and partially containing, lands designated as "Natural Heritage Resources Level 1 with Existing Development Designations subject to 3.5.2.4 d" lands (**Map C**).

2.2.1 Environmental Protection Areas

Section 4.7.2.2 to 4.7.2.4 of the OP provides policies specific to development within and adjacent to EPAs. These policies are summarized as follows:

- *Environmental Protection Areas are intended primarily for preservation and conservation in their natural state. Such uses as passive outdoor recreation, forestry, and wildlife management may be permitted where appropriate.*
- *No buildings or structures shall be permitted in Environmental Protection Areas other than those necessary for flood or erosion control or for conservation purposes as approved by the City in consultation with the applicable agencies.*
- *Development and/or site alteration may be permitted on lands adjacent to Environmental Protection Areas if it has been demonstrated through an Environmental Impact Study (EIS) that it will not negatively impact the natural features or ecological functions for which the area is identified. The diversity of natural features in the area and the natural connections between them should be maintained and improved where possible*.

No specific minimum development setbacks from EPA lands are provided within the City's OP and is therefore assumed to be based on the assessment completed through an EIS.

2.2.2 Level 1 Natural Heritage Resources

With regards to Natural Heritage Resource areas designated as "Level 1 with Existing Development Designations", Section 3.5.2.4d of the OP indicates the following: *Notwithstanding the land use limitations applicable to properties identified as Level 1 in Section 3.5.2.4 a) i), where an existing designation permits other forms of development, such development may proceed subject to the policies of Level 2 in Section 3.5.2.4 a) ii) and the appropriate planning application processes*.

2.2.3 Watercourses and Valleylands

As per City OP, the south and west edges of the Subject Property boundary contains the following features that would qualify for impact assessment consideration: watercourse and associated valleylands and woodlands (**Map D**). City OP policies that would be relevant to these features are summarized as follows:

Section 4.7.2.4 of the OP generally requires “restriction” of development within or near “sensitive surface water features”, as well as protecting, improving and restoring the hydrological functions of these features. Development is prohibited within the limits of a valley feature, unless no negative impacts can be demonstrated.

Section 4.7.2.5 provides the following additional specific requirements related to watercourses and associated valleys:

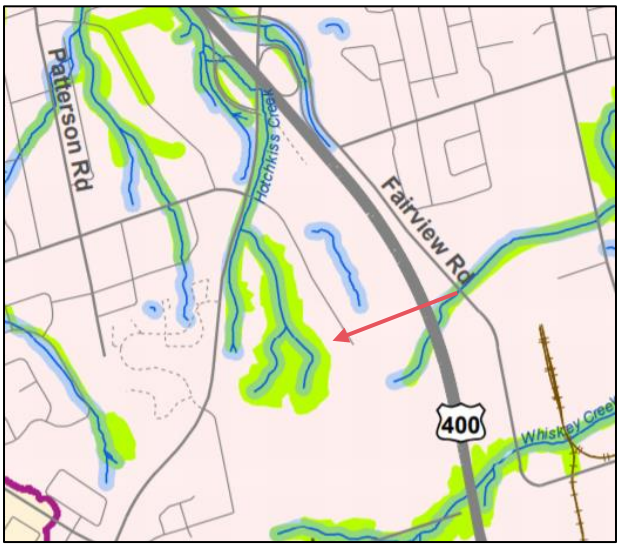
- *Development limits shall be established by the limit of the valley or stream corridor which shall include the watercourse, and associated riparian vegetation, floodplain or erosion hazard lands, top of bank and any additional lands, such as buffers deemed necessary to protect ecological functions. All lands associated with the valley and stream corridor shall be zoned Environmental Protection and shall not form part of the development.*
- *Development and site alteration shall not be permitted in significant valleylands unless it has been demonstrated by the proponent, to the satisfaction of the City, that there will be no negative impacts on their natural features and ecological functions.*
- *Where a watercourse supports warm or cold water fish habitat, an appropriate riparian vegetation zone shall be required. Land uses within the vegetation zone shall be restricted to those which maintain or enhance the natural features and ecological functions of the area.*
- *Emphasis shall be placed on the potential development of Lover's, Bear, Hewitt's, Sophia, Kidd’s, Bunker’s, Dyment’s, **Hotchkiss** and* Whiskey Creeks*, as linear open space corridors. As part of the municipal approvals process, the City shall seek to acquire these areas.*

Section 3.5.2.3.2 (Surface Water Protection) does prescribe a minimum setback from watercourses (30 m), however as per the information above no specific setback is required from valleylands.

2.2.4 Woodlands

As defined in Section 4.7.2.6 of the City’s OP, woodlands are defined as “*a contiguous wooded area, of no less than 0.2 ha, irrespective of ownership, maturity, composition, and density in accordance with the City's Tree Preservation By-law*”. Development is prohibited within woodlands assessed as significant unless no negative impacts can be demonstrated. Furthermore, all woodlands are protected by the City’s Tree Preservation By-law (Section 6.5.2.2). No specific criteria for assessment of woodland significance is provided within the City’s OP, so is expected that the description for significance provided within the Natural Heritage Reference Manual under the Provincial Policy Statement and the Lake Simcoe Protection Plan (LSPP) would apply.

Maps B and C: Barrie OP Land Use mapping (Schedule A) (pink polygon = General Commercial, olive green = Environmental Protection Area) / Barrie OP Natural Heritage Resources mapping (Schedule H) (green patterned polygons = Level 1 with Existing Development Designation Subject to 3.5.2.4d).



Map D. Barrie OP Conservation Authority Regulation Limits mapping (Schedule F), demonstrating LSRCA Regulation Limits (bright green polygons), Watercourses (dark blue polyline), and 30 m Watercourse Setbacks (light blue polygons).

2.3 Lake Simcoe Protection Plan (LSPP)

The Lake Simcoe Protection Plan (LSPP, 2008) has separate requirements depending on whether the proposed development is located within or outside an existing settlement area.

As per Section 6.32 of the LSPP, Settlement Areas are defined as "*urban areas and rural settlement areas (e.g. cities, towns, villages and hamlets) where development is concentrated and lands are designated in municipal official plans for development over the long term*". As described in Section 2.3, above, the Subject Property is identified within the City of Barrie OP as supporting a "General Commercial" land use. Furthermore, the Subject Property is located in an area of Barrie that is extensively developed for urban uses. As such, the Subject Property has been identified as being located within a Settlement Area, and is therefore subject to the following policies under the Act:

6.32-DP *Policies 6.32 - 6.34 apply to existing settlement areas and areas of Lake Simcoe adjacent to these lands, including the littoral zone, and these areas are not subject to policies 6.1 – 6.3, 6.5, 6.11 and policies 6.20 - 6.29.*

6.33-DP *An application for development or site alteration shall, where applicable:*

a. increase or improve fish habitat in streams, lakes and wetlands, and any adjacent riparian areas;

b. include landscaping and habitat restoration that increase the ability of native plants and animals to use valleylands or riparian areas as wildlife habitat and movement corridors;

c. seek to avoid, minimize and/or mitigate impacts associated with the quality and quantity of urban run-off into receiving streams, lakes and wetlands; and

d. establish or increase the extent and width of a vegetation protection zone adjacent to Lake Simcoe to a minimum of 30 metres where feasible.

6.34-DP *Where, through an application for development or site alteration, a buffer is required to be established as a result of the application of the PPS, the buffer shall be composed of and maintained as natural self-sustaining vegetation.*

The LSPP provides definitions for Significant Woodlands and Valleylands as follows:

Significant Woodland: *an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history. The Province (Ministry of Natural Resources) identifies criteria relating to the forgoing (Greenbelt Plan)*

Significant Valleyland: *ecological important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system. The Province (Ministry of Natural Resources) identifies criteria relating to the forgoing (Greenbelt Plan).*

2.4 Lake Simcoe and Region Conservation Authority

The western edge of the Subject Property comprise lands regulated by the Lake Simcoe Region Conservation Authority, associated with Hotchkiss Creek (**Map B**). Development proposed within the LSRCA regulated lands must obtain permit authorization under the *Conservation Authorities Act (Ontario Regulation 179/06*) and comply with the LSRCA's *Watershed Development Guidelines* (2015).

In accordance with Section 4.0.3 of the LSRCA's Guidelines: *all new **development** shall be setback a minimum distance of 30 metres from the normal **high watermark** of Lake Simcoe and the edge of low flow channels of all **watercourses**. Additionally, where there is a defined top of bank/slope, development shall generally be located no closer than 15 metres from the **top of bank/slope**. Exceptions may be permitted within existing **settlement areas** or where lot sizes are restricted*". Furthermore, Section 4.0.4 specifies that "*in accordance with the LSPP, a **vegetation protection zone** comprised of vegetation which is native and non-invasive to the **watershed** shall be maintained or established as a condition of approval*".

Map E: LSRCA Regulation Mapping

2.5 Endangered Species Act

Species designated as *Endangered* or *Threatened* by the Committee on the Status of Species at Risk in Ontario (COSSARO, 2007) are listed as Species at Risk in Ontario (SARO). These species at risk (SAR) and their habitats (e.g. areas essential for breeding, rearing, feeding, hibernation and migration) are afforded legal protection under the *Endangered Species Act* (ESA) (Government of Ontario, 2007).

The protection provisions for species and their habitat within the ESA apply only to those species listed as *Endangered* or *Threatened* on the SARO list, being Ontario Regulation 230/08 of the ESA. Species listed as *Special Concern* may be afforded protection through policy instruments respecting significant wildlife habitat (e.g. the Provincial Policy Statement) as defined by the Province or other relevant authority, or other protections contained in Official Plan policies.

There are two key protection provisions in the ESA:

- Section 9 describes prohibited activities (e.g., kill, harm, harass, possess, collect, buy and sell) for species listed as extirpated, endangered or threatened on the SARO List.
- Section 10 prohibits the damage of destruction of protected habitat of species listed as extirpated, endangered or threatened on the SARO List.

2.6 Federal Fisheries Act

The *Fisheries Act* was updated in 2019 to provide provisions for the sustainability and ongoing productivity of commercial, recreational, and Aboriginal fisheries. The updated Fisheries Act aims to protect all fish and fish habitat, protecting against the death of fish caused other than fishing as well as the "*harmful alteration, disruption or destruction of fish habitat"* (HADD).

2.7 Migratory Birds Convention Act

The *Migratory Birds Convention Act*, MBCA (1994) and Migratory Birds Regulations, MBR (2014) protect most species of migratory birds and their nests and eggs anywhere they are found in Canada. General prohibitions under the MBCA and MBR protect migratory birds, their nests and eggs and prohibit the deposit of harmful substances in waters / areas frequented by them. The MBR includes an additional prohibition against incidental take, which is the inadvertent harming or destruction of birds, nests, or eggs.

Compliance with the MBCA and MBR is best achieved through a due diligence approach, which identifies potential risk, based on a site-specific analysis in consideration of the Avoidance Guidelines and Best Management Practices information on the Environment Canada website.

3. Study Approach

The approach to the study has been scoped in consideration of existing site conditions, applicable policy, and feedback received through ongoing agency liaison.

3.1 Background Review

Palmer has reviewed relevant background material to provide a focus to field investigations and ensure compliance with applicable regulations and policy. Background information collection is guided by the *Natural Heritage Information Request Guide* (Ministry of Natural Resources and Forestry, 2018). Current direction from the Ministry of Natural Resources and Forestry (MNRF) and Ministry of Environment, Conservation and Parks (MECP) is to gather natural heritage information and species occurrence records from available sources; the Natural Heritage Information Centre (NHIC) Make-a-Map application being the main source of information and records from the Ministry itself (Ministry of Natural Resources and Forestry, 2019). Information gathered is recommended to be balanced and supplemented by professional ecological review of potential habitats and characteristics of a project site.

Background review included the collection and review of relevant mapping and reports, including regulations and policies, Official Plans and the NHIC Make-a-Map application for species occurrences and designated area mapping. In addition to these, the following data sources were reviewed for the project:

- **Land Information Ontario (LIO):** certain data types including aquatic resource area (ARA) information is available through these publicly available data layers (Government of Ontario, 2020).
- **Conservation Authorities:** CVC collects and maintains natural heritage mapping and data, and publish reports, that all provide regional and often site-specific ecological context.
- **Fisheries and Oceans Canada (DFO):** The DFO maintains mapping of aquatic species at risk (SAR) habitats, including the critical habitat, occupied and contributing habitat ranges of SAR and Special Concern species (Fisheries and Oceans Canada, 2020).
- **Aerial Photography, including historical photos:** Available on-line mapping sources were reviewed to identify current potential habitat types, biogeography and terrain. Historical photos were reviewed to identify past land uses (University of Toronto, 2020).

Following the *Information Request Guide*, MECP advice and direction should be solicited once potential Species at Risk (SAR) requirements associated with the *Endangered Species Act* are identified via field investigation and analysis.

A document entitled *Scoped Environmental Impact Study* prepared by WSP Canada Inc. (dated July 2016) previously prepared for the Subject Property has been made available to Palmer. Information from this study has been referenced, where applicable in the current EIS report, including recommendations for setbacks to the adjacent woodland for which it is our understanding includes previous agency consultation and agreement.

3.2 Agency Consultation

As part of the natural environment review and assessment, an EIS Terms of Reference (TOR) was submitted to the LSRCA and City of Barrie on June 18, 2020. The TOR outlined the proposed scope of work for completion of the EIS. Palmer conducted email correspondence with the LSRCA regarding the TOR between July 2 and 29, 2020. Palmer did not receive any comments from the City of Barrie regarding the EIS TOR. Correspondence with the LSRCA with respect to the TOR is provided in **Appendix A**.

3.3 Ecological Surveys

Field investigations were conducted at the Subject Property in 2020 as summarized in **Table 1**, below.

Table 1. Field Investigations Summary

Date	Field Investigations	Weather Conditions
June 10, 2020	Breeding Bird Survey, Incidental Wildlife Observations, General Ecological Conditions Assessment	19ºC, 10% cloud cover, slight winds approximately 2 km/hr speeds
June 15, 2020	Ecological Land Classification, Incidental Wildlife Observations	21ºC, full sun, wind gusts up to approximately 20 km.hr
July 3, 2020	Breeding Bird Survey, Incidental Wildlife Observations, General Ecological Conditions Assessment	21ºC, full sun, slight winds approximately 9 km/hr speeds
July 28, 2020	Ecological Land Classification, Incidental Wildlife Observations, Tree Inventory	30ºC, full sun changing to full cloud, wind gusts up to approximately 25 km/hr

The methodology associated with each of these surveys are summarized through subsections 3.3.1 and 3.3.5, as follows.

3.3.1 Vegetation and Flora

Vegetation communities were mapped and described following the Ecological Land Classification (ELC) System for Southern Ontario (Lee, et al., 1998) and 2008 update tables (Lee, 2008). Vegetation community boundaries were delineated on field maps through the interpretation of recent aerial photographs and refined in the field. Information collected during ELC surveys includes dominant species cover, community structure, as well as level of disturbance, presence of indicator species, and other notable features.

Botanical surveys were completed by traversing the site and recording species observed in each vegetation community during the spring season. Provincial plant status was based on the Provincially Rare Flora of Ontario (Oldham & Brinker, 2009) and the Natural Heritage Information Centre (Ministry of Natural Resources and Forestry, 2020). Searches for Butternut (Endangered) were completed during the field surveys.

3.3.2 Wildlife

3.3.2.1 Birds

Breeding bird surveys were conducted at the property on May 27 and June 16, 2020 to document the presence of bird species and their breeding the following habitats in the study area: (i) Cultural Meadow, (ii) Valley Forest, and (iii) flyovers and adjacent areas. Surveys were carried out between 05:30 and 10:00 h to coincide with the dawn chorus. Surveys were conducted in general accordance with Breeding Bird Atlas protocols (Bird Studies Canada, 2001).

3.3.2.2 Incidental Wildlife

Incidental observations of wildlife were made during the field investigation. Palmer ecologists assessed the Subject Property and adjacent lands, noting any evidence of wildlife or sensitive habitat features (e.g., potential amphibian breeding habitat, stick nests) as well as gaining a general characterization of available habitat. A habitat suitability assessment for SWH characteristics was conducted as part of the field information gathering efforts in order to determine whether SWH is present, potentially present, or absent within or adjacent to the Subject Property.

3.3.3 Species at Risk

Prior to field work, existing SAR records were queried via the NHIC database and professional experience of potential habitats seen on current air photos. During field studies, habitat opportunities for SAR on and adjacent to the Subject Property were then assessed by comparing habitat preferences of species deemed to have potential to occur to current site conditions. The species noted during the NHIC search and others known through professional experience to have potential to occur in urban environments were assessed by comparing habitat preferences of species deemed to have potential to occur against current site conditions.

4. Existing Conditions

4.1 Vegetation and Flora

4.1.1 Vegetation Communities

A total of six vegetation communities were identified on and within the immediate vicinity of the Subject Property during Palmer's 2020 investigations, and provided conditions generally consistent with those described within WSP's 2016 Scoped EIS. A chain-link fence extends along the south and west boundaries of the Subject Property, and a recreational trail meanders through the adjacent valley corridor which is accessed from the immediate southeast corner of the Subject Property. Identified vegetation communities are depicted on **Figure 2** and described as follows.

Terrestrial System

Forest

Dry to Fresh Poplar Deciduous Forest Type (FOD3-1)
This community is found outside and immediately south of the Subject Property. The canopy is dominated by Trembling Aspen (*Populus tremuloides*), providing more than 60% cover. The subcanopy contains abundant Trembling Aspen, with Sugar Maple (*Acer saccharum*) and Ironwood (*Ostrya virginiana*) associates. The understory is dominated by Sugar Maple with occasional Ironwood and White Ash (*Fraxinus americana*), while the groundcover is dominated with Sugar Maple seedlings, Virginia Creeper (*Parthenocissus quinquefolia*) and occasional American Basswood (*Tilia americana*), Garlic Mustard (*Alliaria petiolate*) and Red Raspberry (*Rubus idaeus*).

Immediately east of this community comprised a vegetation community with an assemblage very similar to FOD3-1 as described above. Some notable differences in the community included less Sugar Maple in the subcanopy and a denser understory with more Black Walnut (*Juglans nigra*) and tall Staghorn Sumac (*Rhus Typhina*) along the edges of the forest and the recreational trail. Occasional Manitoba Maple (*Acer negundo*) and Tartarian Honeysuckle (*Lonicera tatarica*) were also noted in the understory. These differences were not distinct enough to warrant an entirely different community classification.

Fresh to Moist Hemlock- Hardwood Mixed Forest (FOM6-2)
This community is found outside and southwest of the Subject Property. The canopy is dominated by Eastern Hemlock (*Tsuga canadensis*) and American Beech (*Fagus grandifolia*) with occasional Sugar Maple, providing 90% canopy cover. The subcanopy contains abundant Eastern Hemlock and American Beech with occasional Sugar Maple and White Birch (*Betula papyrifera*). The understory is comprised of abundant Eastern Hemlock, Sugar Maple, and American Beech saplings, providing 50% cover. The groundcover is dominated with Pennsylvania Sedge (*Carex pensylvanica*), and abundant trillium (*Trillium* sp.), providing 25% cover.

Fresh to Moist Manitoba Maple Lowland Deciduous Forest (FODM7-7)
This community was identified on the immediate west side of the Subject Property. The canopy is comprised of abundant Manitoba Maple and Black Walnut, providing more than 60% cover. The subcanopy contains

abundant Manitoba Maple with occasional Sugar Maple. The understory contains abundant Riverbank Grape, and occasional Sugar Maple, Black Walnut, and Manitoba Maple. The groundcover is composed of the same species as those found in FOD3-1. The area slopes from the property west down towards the watercourse

Cultural System

Dry-Moist Old Field Meadow Type (CUM1-1)

The Subject Property consists mostly of Cultural Meadow community. The canopy contained some scatted Meadow Willow (*Salix petiolaris*) and Trembling Aspen, providing 10% cover. The understory was comprised of Riverbank Grape (*Vitis riparia*), Virginia Creeper, Meadow Willow, and Trembling Aspen. The groundcover was dominated by Tall Goldenrod (*Solidago altissima*) and Tufted Vetch (*Vicia cracca*), providing greater than 60% cover. Small patches of shrubs were found on the western and southeastern portions of the unit, containing Meadow Willow to the west and mostly Manitoba Maple (*Acer negundo*) and Staghorn Sumac (*Rhus typhina*), to the southeast. Additionally, a dense patch of Common Reed (*Phragmites australis*) was noted on a mound located southeast of the Subject Property.

Norway Spruce Coniferous Plantation Type (CUP3-9)

This community was identified southeast beyond the Subject Property boundaries. It supported a mature plantation dominated by the coniferous species Norway Spruce (*Picea abies*) and White Pine (*Pinus strobus*).

Mineral Cultural Thicket (CUT1)

This community was primarily identified along the south and southwest portions of the Subject Property and parallels the woodland. This area provided a mixture of thicket areas (dominated by woody shrub species including Meadow Willow with occasional Virginia Creeper, Riverbank Grape and Staghorn Sumac) and areas dominated by young regeneration of deciduous tree species from the adjacent valley edge (primarily Trembling Aspen and Manitoba Maple). The groundcover is composed of the same species as those found in the Cultural Meadow community, providing 60% cover.

Additional Vegetation Community Notes:

Although Palmer's ELC investigations focused primarily on those upland communities located within and immediately adjacent to the Subject Property, the riparian area associated with Hotchkiss Creek was also generally described by Palmer. This area supported a mixed swamp community (SWM) comprised of coniferous trees such as Eastern Hemlock and Eastern White Cedar and deciduous species Yellow Birch (Betula alleghaniensis). The groundcover contains abundant sedges (*Carex* sp.), Spotted Jewelweed (*Impatiens capensis*), Sensitive Fern (*Onoclea sensibilis*), and Christmas Fern (*Polystichum acrostichoides*).

LEGEND:

- Canopy Drip Line *(WSP, 2016)*
- Watercourse *(MNRF)*
- Subject Property
- Ecological Land Classification

ELC DESCRIPTION:

CUM1-1: Dry-Moist Old Field Meadow Type
CUP3-9: Norway Spruce Coniferous Plantation Type
CUT1: Mineral Cultural Thicket
FOD3-1: Dry to Fresh Poplar Deciduous Forest Type
FODM7-7: Fresh to Moist Manitoba Maple Lowland Deciduous Forest
FOM6-2: Fresh to Moist Hemlock-Hardwood Mixed Forest

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metres

PROJECT NO.	2004501	REVISION:	1
DATE:	Dec 04, 2020	SCALE:	1:800
DRAWN:	CV	DATUM:	NAD 1983
CHECKED:	ED	PROJECTION:	UTM zone 17

CLIENT: M-J-J-J Developments Inc

PREPARED BY: [redacted]

PROJECT: 76 Bryne Drive EIS & Arborist Report

TITLE:

Existing Environmental Conditions

Figure 2

4.1.2 Flora

A total of 64 species of vascular plants were recorded within and adjacent to the Subject Property, including 39 (61%) native species, 19 (30%) non-native species to Ontario, and six species were identified to the genus only (**Appendix B**). The recorded presence of non-native species is indicative of past disturbance in the Study Area, typical of developed areas in the GTA (Morton & Venn, 1984). Oldham *et al*. (1995) indicate that in southern Ontario plant communities, non-native flora presence averages between 20 and 30%. Based on a comparison of the botanical survey (**Appendix B**) and published rarity lists, all species have been identified as common.

Within their 2016 Scoped EIS, WSP identified a single Butternut (Juglans cinerea) within the forested valleylands approximately 50 m from the northwest Subject Property corner. WSP confirmed that no other Butternut were noted during their 2016 investigation, nor did Palmer encounter any during the 2020 investigations. Due to its distance from the Subject Property limits, no impacts are expected and no specific mitigation is required and at 50 m from the property protection of habitat under the ESA would not be applicable.

4.2 Wildlife

The overall area is urban/commercial and wildlife habitat opportunities are generally limited within the Subject Property. However, the adjacent woodlands containing Hotchkiss Creek may provide habitat opportunities. Wildlife expected to be present on the Subject Property primarily consist of common, generalist and urban-adapted species such as Raccoon (*Procyon lotor*), Skunk (*Mephitis mephitis*), and Grey Squirrel (*Sciurus carolinensis*).

4.2.1.1 Breeding Birds

The surveys documented birds present within the two vegetation communities in the study area, as well as flyovers and adjacent areas. A total of 14 bird species were documented on the property, as summarized in **Appendix C**. Most of the birds recorded on the property are considered common. The most frequently observed species found on the property included birds characteristic of woodland edge and open meadow areas, such as Song Sparrow (*Melospiza melodia*), Red-eyed Vireo (*Vireo olivaceus*), and House Wren (*Troglodytes aedon*).

One species considered a Species at Risk was heard singing during the second survey. One Eastern Wood-pewee (*Contopus virens*) (Special Concern) was heard singing further into the adjacent woodlands, approximately 70 m from the western edge of the Subject Property on July 3, 2020. This species was also encountered during the 2016 field investigations conducted by WSP.

Area-sensitive bird species were recorded from the property and while not rare, such species are associated with higher quality forests and generally require large areas of continuous habitat for breeding and foraging. The specific habitat requirements vary by species. One area-sensitive species, the White-breasted Nuthatch (*Sitta carolinensis*), was heard calling from the woodland during the second site visit.

4.2.1.2 Incidental Wildlife

During Palmer's field surveys conducted throughout the spring and summer, incidental observations of the following species were made:

- Eight-spotted Skimmer (*Libellula forensis*) – one individual observed within the cultural meadow during the June 10, 2020 site visit;
- Eastern Grey Squirrel (*Sciurus carolinensis*) – multiple observed within the woodlands adjacent to the Subject Property on July 3, 2020;
- Eastern Chipmunk (*Tamias minimus*) – one individual observed within the woodlands adjacent to the Subject Property on July 3, 2020.

All of the above-mentioned species are considered common in the County of Simcoe. Due to the small size of the Subject Property and adjacent commercial land use, the Subject Property itself provides limited habitat to common wildlife species that are adapted to living in urban environments. The adjacent woodlands however, along with the presence of Hotchkiss Creek, potentially provides habitat for other wildlife also adapted to living near urban environments such as White-tailed Deer (*Odocoileus virginianus*), Raccoon (*Procyon lotor*), and Coyote (*Canis latrans*).

5. Assessment of Significance

For the Subject Property, the potential significance of the property and adjacent Hotchkiss Creek corridor, potential habitat for *Endangered* and *Threatened* species (Species at Risk), Significant Woodlands, Valleylands, Fish and Fish Habitat, and Significant Wildlife Habitat (SWH) are evaluated in relation to the project in the following sections. The Subject Property does not hold or have the potential to hold other NHF types (e.g. Provincially Significant Wetlands) and these are not further assessed in this report.

5.1 Significant Valleyland

The City of Barrie's OP (2018) identified the valleyland adjacent to the Subject Property as Environmental Protection Area (EPA) as well as a Level 1 Natural Heritage Resource. Although the City of Barrie's OP (2018) does not provide specific local criteria for the determination of valleyland significance, the LSPP (2008) defines a Significant Valleyland as the following: "*ecological important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system".* Furthermore, the PPS (2020) defines a valleyland as "*a natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year*".

Due to its association with Hotchkiss Creek, the adjacent valleyland feature is considered to be ecologically important, and therefore likely qualifies as "Significant". Also, its location within a highly urbanized landscape further supports the feature's important ecological function as a likely movement corridor for wildlife through the landscape. As shown on **Figure 2,** the dripline of the vegetation associated with the valley corridor was delineated in 2016 by WSP, and confirmed by Palmer in 2020 as providing consistent conditions. The majority of the feature is located off-site and beyond the existing fenceline that is currently

erected along the Subject Property boundaries. A discussion of the valleyland and measures recommended to mitigate impacts to this feature from the proposed development are provided below.

5.2 Significant Woodlands

The City of Barrie's OP (2018) identifies the adjacent wooded lands as a Level 1 Natural Heritage Resource area. The City's OP does not provide specific local criteria for the determination of woodland significance. However, the LSPP (2008) defines a Significant Woodland as the following: "*an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history".* The PPS (2020) provides a definition for Significant Woodland consistent with the above.

Due to its overall size (extending greater than 40 hectares off-site), its association with the Hotchkiss Creek valley corridor, and its provision of important ecological functions (i.e. wildlife habitat) within an overall urbanized landscape, the woodland located south and east adjacent to the Subject Property would be considered significant. As shown on **Figure 2,** the dripline of this woodland was delineated in 2016 by WSP, and confirmed by Palmer in 2020 as providing consistent conditions. The majority of the feature is located beyond the existing fenceline (to the west and south) that is currently erected along the Subject Property boundaries. A discussion of the woodland and measures recommended to mitigate impacts to this feature from the proposed development are provided below.

5.3 Fish and Fish Habitat

The DFO mapping of Hotchkiss Creek adjacent to the Subject Property indicates that there are no recorded SAR species or critical habitats within this reach of the watercourse. As an "Environmental Protection Area", the Hotchkiss Creek corridor is considered to contain Fish and/or Fish Habitat.

There are no predicted impacts from the development on the Subject Property adjacent to Hotchkiss Creek to fish and fish habitat. Potential impacts to the watercourse will be mitigated by appropriate setbacks, namely the setback to the Long-Term Stable Top of Slope.

5.4 Species at Risk

Prior to site visits, the Subject Property was screened for potential SAR habitat opportunities through background review and professional experience. While no species were identified through the MRNF Map-a-Map application (Ministry of Natural Resources and Forestry, 2020), professional experience dictates that Butternut (*Juglans cinerea*) should be screened for in Southern Ontario, and that larger trees may present roosting opportunities for SAR bat species. The Ontario Breeding Bird Atlas (OBBA) and Ontario Reptile and Amphibian Atlas (ORAA) were screened for bird and herpetofauna species records, respectively. Habitat opportunities for SAR on the property were assessed by comparing habitat preferences of species deemed to have potential to occur against current site conditions (**Appendix D**).

The Subject Property and immediately adjacent areas of the valley forest were screened for Butternut trees through the tree inventory process. None were observed during Palmer's 2020 investigations. As noted in Section 4.1.2 above, WSP identified a single Butternut approximately 50 metres west of the Subject Property within the adjacent forested valleyland during their 2016 field investigations. Due to its distance from the Subject Property limits, no impacts are expected, no specific mitigation is required, and there are no implications for this SAR from the proposed development or from restrictions under the *Endangered Species Act*.

Based on available background information and the field surveys, the Subject Property was screened for the potential to host suitable wildlife SAR habitat. In addition to Butternut, the avian SAR Eastern Wood-pewee was also confirmed as residing within the adjacent forested valleyland, 70 m west of the Subject Property. The screening identified the following SAR as having potential to also occur within the valleyland:

- Red-headed Woodpecker (*Melanerpes erythrocephalus*)
- Wood Thrush (*Hylocichla mustelina*)
- Golden-winged Warbler (*Vermivora chrysoptera*)
- SAR Bats: Tri-colored Bat (*Perimyotis subflavus*), Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*)

Other SAR birds identified from OBBA records in the general vicinity of the Subject Property include: Barn Swallow (*Hirundo rustica*), Bobolink (*Dolichonyx oryzivorus*), Eastern Meadowlark (*Sturnella magna*), and Grasshopper Sparrow (*Ammodramus savannarum*). The open meadow habitat present on the Subject Property is relatively small and anthropogenically disturbed. Due to grassland SAR preference for larger and less disturbed meadow habitat for breeding, it is unlikely that any of these species utilize the Subject Property for breeding activities. There is potential that the open meadow may be utilized by Barn Swallow for foraging for flying insects in and around the site, although foraging is typically associated with wetland areas that support insect production. No grassland birds were observed during field surveys.

The ORAA showed records of three (3) SAR herpetofauna in the general vicinity of the Subject Property. These were Blanding's Turtle (*Emydoidea blandingii*), Northern Map Turtle (*Graptemys geographica*), and Snapping Turtle (*Chelydra serpentina*). None of these SAR are expected to be on or immediately adjacent to the Subject Property due to the lack of suitable wetland habitat or nesting areas that these species require. No turtles were observed during field surveys.

No SAR or any evidence of their presence (e.g., nests or roots) with exception to one Eastern Wood-pewee were observed during the 2020 field investigations on the Subject Property. Species-specific surveys were not conducted for SAR bats; however, the Subject Property and Hotchkiss Creek corridor do contain sufficiently large trees that may provide suitable habitat.

5.5 Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) is considered a significant feature in Provincial, Regional, and Municipal (Town of Whitchurch-Stouffville) policies. SWH types are defined by the MNRF in the *Significant Wildlife Habitat Technical Guide* (Ontario Ministry of Natural Resources, 2000) and include the following broad categories:

- seasonal concentration areas;
- rare vegetation communities or specialised habitats for wildlife;
- habitats of species of conservation concern, excluding the habitats of endangered and threatened species; and
- animal movement corridors.

Criteria for the identification of these features are provided in the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (Ontario Ministry of Natural Resources and Forestry, 2015). These criteria were used to screen wildlife habitat within the Subject Property for potential SWH (**Appendix E**). Although no SWH were confirmed within the immediate Subject Property limits, the following SWH types were identified as having the potential to occur throughout the overall Hotchkiss Creek valley corridor:

Seasonal Concentration Areas

- Raptor Wintering Area
- Bat Maternity Colonies

Specialized Habitats for Wildlife

- Bald Eagle & Osprey Nesting, Foraging and Perching Habitat
- Woodland Raptor Nesting Habitat
- Amphibian Breeding Habitat (Woodland)
- Woodland Area-Sensitive Bird Breeding Habitat

As discussed in Section 5.4, above, the Special Concern SAR Eastern Wood-pewee was recorded within the forested valley lands, outside of the immediate Subject Property boundaries. As such, the Hotchkiss Creek valley corridor would be considered as providing candidate SWH for Habitat of Species of Special Concern.

The majority of the forest community associated with the Hotchkiss Creek corridor is located outside of the Subject Property boundaries, with minor overhang ot these communities into the subject site itself. Potential impacts associated with these encroachments are discussed in Section 7.0, below.

6. Proposed Development Plan

As detailed within the architectural drawing package prepared by Fausto Cortese Architects (dated August 19 2020 provided in **Appendix F**), the proposed development consists of a mixed use building with a total of 55 units (7 commercial, 48 residential). Associated parking areas and a 576 m^2 amenity area are also proposed. The proposed development plan is also provided on **Figure 3**. Stormwater management will be provided off site through discharging into the municipal system along Bryne Drive.

LEGEND:

- Canopy Drip Line *(WSP, 2016)*
- Subject Property

Imagery (2018) provided by Simcoe County WMS

0 10 20 30

metres

PROJECT NO.	2004501	REVISION:	1
DATE:	Dec 04, 2020	SCALE:	1:650
DRAWN:	CV	DATUM:	NAD 1983
CHECKED:	MV	PROJECTION:	UTM zone 17

CLIENT: M-J-J-J Developments Inc

PREPARED BY: Palmer

PROJECT: 76 Bryne Drive EIS & Arborist Report

TITLE: **Proposed Development**

Figure 3

Document Path: G:\Shared drives\Projects 2020\20045 - M-J-J Developments Inc\2004501 - 76 Bryne Drive EIS & Arborist Report\Mapping\Figures\5_ArcGIS\2004501_3-1_Proposed Development.mxd

7. Impact Assessment

Given that the majority of the Subject Property is comprised of old field meadow and young cultural thicket communities, direct impacts in the form of vegetation removals are not expected to result in loss of sensitive wildlife habitat. The CUM1-1 community within which the development is proposed supports mainly common and abundant non-native species, indicative of culturally influenced communities. Although flowering herbaceous plants may provide food sources or pollinating habitat to various wildlife species, there is no shortage of such similar habitat on throughout the landscape, and none of these lands have been identified as SWH or important habitat for SAR. While removal of these lands is not expected to have a significant adverse impact on overall wildlife habitat, it is expected that the introduction of hardscaping to these lands could have the potential to increase stormwater inputs into the adjacent lands and therefore appropriate management of stormwater will be required. Considerations for mitigation of such impacts is further discussed in Section 8.

Furthermore, the dripline representing the outer edge of the valley forest communities is entirely located within the “5 m Vegetated Buffer Zone” as depicted on the proposed development plan (**Figure 3**). It should also be noted that the dripline is largely defined by overhanging canopies of the forest community, and the majority of mature trunks are located beyond the Subject Property limits, south and west of the established fenceline. Potential impacts to adjacent retained trees (i.e. root zones, branches) may still result; mitigation for adjacent trees is discussed below.

The primary concerns from the proposed development are associated with the potential indirect impacts to the adjacent defined valley corridor to the west and east, and associated Hotchkiss Creek. As described, this feature is considered a Significant Valleyland, comprises Significant Woodland and potential SAR and SWH habitats. No direct removals or impacts to the valleyland, woodland or habitat of SAR is proposed. The potential for indirect impacts (i.e. sediment movement from construction-related earthworks) can be mitigated appropriately through implementation of the measures described in Section 8.0.

8. Mitigation

8.1 Setback and Buffers

It is Palmer's understanding that a "5 m Vegetated Buffer Zone" was originally recommended within WSP's 2016 EIS report to extend from the existing fenceline into the Subject Property. We understand that this setback was approved by the LSRCA during the 2016 Site Plan Application for the Subject Property, and it is Palmer's opinion that based on current conditions (as described in this EIS) these recommendations and setback configuration are still appropriate for minimizing impacts to the adjacent valley feature given the existing cultural meadow conditions of the property, adaptation of the forest edge to these conditions and proposed plantings with the buffer area. Consistent with the 2016 EIS, Palmer recommends that this zone be clearly defined in field using erosion control fencing, and all clearing and grading activities are to remain outside of its limits.

8.2 Restoration and Enhancement

In order to ensure appropriate function of the 5 m Vegetated Buffer Zone as a mitigative feature for indirect impacts to the adjacent valley corridor, it is recommended that these lands be planted. A robust planting plan should be prepared for these lands that incorporates species that are native and common within the LSRCA watershed as well as are representative of the vegetation community conditions of the overall Hotchkiss Creek valley corridor. Selected plant species should be appropriate for the on-site soil conditions, as well as provide additional habitat value to the Subject Property (i.e. wildlife foraging opportunities). Furthermore, as detailed within Palmer's Arborist Report a total of 158 trees are recommended to be planted in compensation for proposed removals. Such compensation plantings can be incorporated throughout the Vegetated Buffer Zone.

Based on existing site conditions, and consistent with the recommendations of WSP's 2016 EIS report, woody species that may be appropriate as plantings include:

- Sugar Maple
- Ironwood
- Eastern Hemlock
- White Pine
- Alternate-leaved Dogwood
- Nannyberry

In addition to planting of woody species, it is recommended that a native woodland herbaceous seed mix be incorporated into the Vegetated Buffer Zone planting plan. This will help establish the groundcover with native herbaceous species, and hopefully discourage establishment of invasive exotic species such as Garlic Mustard (that has been identified elsewhere throughout the valley corridor).

8.3 Stormwater Management

The Stormwater Management report prepared by Gerrits Engineering (dated July 2020) details the measures proposed to manage on-site generated stormwater. As per the report, minor flows are proposed to be conveyed underground, whereas major storm flows will be directed overland.

An Erosion and Sediment Control (ESC) strategy has been proposed for quality control of generated stormwater. This strategy includes the following measures to be implemented during construction phases of the development:

- *Temporary sediment control fencing should be erected around the perimeter of the grading activities.*
- *Temporary sediment fabric and stone filters should be installed on existing and proposed catch basins until surface cover has been stabilized.*
- *A temporary construction access mud mat should be implemented to reduce the amount of materials that may be transported off site.*
- *Construction during drier months should be monitored for wind-borne transport of sediments. At the direction of the engineer, the contractor may be directed to water down exposed earth areas with an aqueous solution of calcium chloride.*
- *All disturbed areas not under immediate construction for 30 days, or not intended for building activities within a 3-month time period, should be stabilized with seeding*.
- *Built-up sediment should be removed and disposed off-site at least once a month, or more frequently as directed by the engineer.*

It has also been recognized that post-development conditions of the Subject Property will provide hardened surfaces that "*pose a risk to stormwater quality through the collection of grit, salt, sand and oils on the paved and gravel surfaces*". A "treatment train approach" has been recommended to capture site runoff and promote infiltration within the proposed parking lot and into "an existing Stormceptor treatment unit as an end-of-pipe facility". Stormwater will then be discharged into the municipal system along Bryne Drive.

Palmer is conducting a hydrogeological and water balance study in separate cover for the Subject Property. This study should be referred to for further recommendations regarding mitigation of expected hydrogeological impacts from the proposed development.

9. Policy Conformity

With the implementation of the aforementioned mitigation, there are no predicted negative impacts to ecological features or their functions. The following demonstrates the conformity of the redevelopment project to the relevant policies and plans.

Provincial Policy Statement (PPS)

According to the Provincial Policy Statement, development is generally prohibited within significant natural heritage features (NHF) as defined in the policy. In accordance with this guideline, all components of the proposed development will be situated outside of the staked on-Site NHF associated with the Hotchkiss Creek valley corridor. Furthermore, measures have been recommended (including application of development setbacks, buffer planting recommendations and ESC measures) to ensure further protection of these features. The valley corridor has also been identified as having potential to support habitat for SAR and SWH. Through implementation of the recommendations presented in this EIS, it is our opinion that the development as proposed is in compliance with the PPS.

City of Barrie

As per the City's OP, the valley lands associated with Hotchkiss Creek are designated as Environmental Protection Area (EPA), and development must comply with OP Section 4.7.2.2 to 4.7.2.4. The valley and associated woodland have also been assessed as Significant, and as such development must comply with Sections 9.1.3 and 9.1.4 if the City's OP. The dripline associated with the Significant Woodland, Valleyland and EPA will remain undeveloped, and will be protected within a 5 m vegetated buffer zone to be established from the existing Subject Property boundary / fenceline.

Lake Simcoe Protection Plan (LSPP)

Due to the Subject Property's location within an urban Settlement Area, the proposed development has been planned with consideration to Sections 6.32 to 6.34 of the LSPP. A 5 m Vegetated Buffer Zone has been proposed from the Subject Property limits that will encompass the edge/dripline associated with the valley corridor woodland and is recommended to be planted with native vegetation. Furthermore, the EIS has provided an assessment of valleyland and woodland significance with consideration of the LSPP's definitions of Significant for each feature.

Lake Simcoe and Region Conservation Authority (LSRCA)

The western edge of the Subject Property is situated LSRCA Regulated Area, associated with the Hotchkiss Creek valley corridor. In accordance with Section 4.0.3 of the LSRCA's Guidelines*, "where there is a defined top of bank/slope, development shall generally be located no closer than 15 metres from the* ***top of bank/slope****. Exceptions may be permitted within existing* ***settlement areas*** *or where lot sizes are restricted*".

It is Palmer's understanding that a "5 m Vegetated Buffer Zone" was originally recommended within WSP's 2016 EIS report to extend from the existing fenceline into the Subject Property. We understand that this

setback was approved by the LSRCA during the 2016 Site Plan Application for the Subject Property, and it is Palmer's opinion that based on current conditions (as described in this EIS) and that the entire dripline associated with the valley forest communities will be encompassed within this setback, these recommendations and setback configuration are still appropriate for minimizing impacts to the adjacent valley feature. Consistent with the 2016 EIS, Palmer recommends that this zone be clearly defined in field using erosion control fencing, and all clearing and grading activities are to remain outside of its limits.

Endangered Species Act

Based on the results of our field surveys and habitat screening, potential for SAR is confined within the limits of the valley corridor. A single Butternut was identified within the valley in 2016, and the avian SAR Eastern Wood-pewee was confirmed during Palmer's 2020 investigations. No direct impacts to this feature are proposed, and thus the proposed development will conform with the requirements of the ESA.

Migratory Birds Convention Act (MBCA)

Works with potential *Migratory Birds Convention Act* (MBCA) implications will occur during the construction phase of the project when the Subject Property is cleared and grubbed of vegetation. Compliance with the MBCA may be achieved using the following due diligence approach:

Proponent awareness of the MBCA and the potential for bird nesting in the area and for inadvertent impacts to migratory birds, nests and eggs. Avoiding tree/vegetation removal within the "regional nesting period" for this area (generally late April to early August). Should vegetation removals be proposed within this timeframe, then it is recommended that the areas first be screened by a qualified biologist to ensure compliance with the *Migratory Birds Convention Act*.

10. Conclusions

The findings of our study are the result of a background review, an ecological field program, and an analysis of data using current scientific understanding of the ecology of the area and natural heritage policy requirements. We have evaluated the environmental sensitivities, constraints, and development opportunities of the Subject Property.

Based on the results of this EIS, it is our professional opinion that the proposed development is environmentally feasible and would not result in a negative impact to the identified natural heritage features provided that the recommended mitigation measures described in this report are implemented.

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Appendix A

Correspondence

RE: 76 Bryne Drive, Barrie - EIS Terms of Reference

August 20, 2020
10:44 AM

Subject	**RE: 76 Bryne Drive, Barrie - EIS Terms of Reference**
From	Kate Lillie
To	Erin Donkers
Cc	Shawn Filson; Maurizio Rogato; Dirk Janas <dirk.janas@pecg.ca> <Dirk Janas; Carlissa.McLaren@barrie.ca
Sent	July 29, 2020 9:37 AM

Hi Erin,

Thank for providing the additional information. Based on this, we can forgo a site visit to confirm the dripline. We will look to the ELC mapping in your EIS report to show the feature limits. However, once an application is made, should any concerns or questions come up, we may still request a site visit to gather more information. But, for now, please go ahead with your assessment. We will look forward to reviewing the EIS at the time of application.

Kind regards,

Kate Lillie, HBSc, EP, ISA
Natural Heritage Ecologist
Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3
905-895-1281, ext. 286 | 1-800-465-0437
k.lillie@LSRCA.on.ca | www.LSRCA.on.ca
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From: Erin Donkers <erin.donkers@pecg.ca>
Sent: July 22, 2020 10:17 AM
To: Kate Lillie <K.Lillie@lsrca.on.ca>
Cc: Shawn Filson <S.Filson@lsrca.on.ca>; Maurizio Rogato <mrogato@blackthorncorp.ca>; Dirk Janas <dirk.janas@pecg.ca> <Dirk Janas <dirk.janas@pecg.ca>; Carlissa.McLaren@barrie.ca
Subject: Re: 76 Bryne Drive, Barrie - EIS Terms of Reference

Hi Kate,

Here are answers to your questions:

1. Yes, a chainlink fence still exists in good condition along the west and south property boundaries.
2. The site conditions are consistent with what was reported in 2016.
3. We have access to the georeferenced dripline from the original EIS, and have requested this from the project architect. This will be used in all figures in the current submission.
4. Based on our recent observations, the previously delineated dripline does appear to be representative of current conditions.

Please let me know if you require any additional information.

Thanks!

Erin Donkers, B.Sc., PG[ER]
Ecologist, Arborist

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On Mon, Jul 20, 2020 at 9:52 AM Kate Lillie <K.Lillie@lsrca.on.ca> wrote:
Hi Erin,

Thanks for your follow up email. There was a previous application made for this property that included an Environmental Impact Study. At the time, it was determined that a site visit wasn't required. I recall that the property was described as having a chain link fence at the property limit and woody vegetation within the property was scarce. We had accepted the dripline as shown in the EIS based on the site description in the report and visual confirmation via a drive by assessment.

You'll need to provide a bit more information before we can decide on whether a site visit to confirm the woodland boundary is needed still.

1. Is the chain link fence still in place?
2. Have site conditions changed since 2016?
3. Do you have access to the georeferenced dripline used in the previous report?
4. Is the previous line still representative of the woodland dripline?

Kind regards,

Kate Lillie, HBSc, EP, ISA

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Facebook: LakeSimcoeConservation

From: Erin Donkers <erin.donkers@pecg.ca>
Sent: July 15, 2020 3:45 PM
To: Kate Lillie <K.Lillie@lsrca.on.ca>
Cc: Shawn Filson <S.Filson@lsrca.on.ca>; Maurizio Rogato <mrogato@blackthorncorp.ca>; Dirk Janas <dirk.janas@pecg.ca> <Dirk Janas <dirk.janas@pecg.ca>; Carlissa.McLaren@barrie.ca
Subject: Re: 76 Bryne Drive, Barrie - EIS Terms of Reference

Hi Kate,

Thank you for your comments.

I was informed by the proponent that a Preliminary Approval to Site Plan Application was originally granted dated November 2016. It is their further understanding that the dripline associated with the valley feature was actually previously staked and confirmed as part of the ecological investigations conducted in support of this application. Would you be able to confirm this? If a staking was conducted in 2016, then would we instead be able to use this boundary as it is only 4 years old? If so, then perhaps no site walk is required this year.

Please let me know.

Thank you!

Erin Donkers, B.Sc., PG[ER]
Ecologist, Arborist

Palmer™

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Learn More:
www.pecg.ca

On Thu, Jul 2, 2020 at 1:55 PM Kate Lillie <K.Lillie@lsrca.on.ca> wrote:
Hi Erin,

Thanks for your email. We appreciate your patience.

We've reviewed the attached terms of reference for an EIS. The proposed scope of study is appropriate and acceptable for this site with the following additions and points of clarification:

- Ensure ELC is completed as per Lee et al. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Applications. SCSS Field Guide FG-02.
- Collect an inventory of vascular plants on the property in the early summer to provide a single-season vegetation survey.
- Assess wildlife habitat function and screen for existing or potential significant wildlife habitat.

A site visit with LSRCA will be required to confirm the woodland boundary. Please contact us to coordinate. Note that a $1500 site visit fee may apply.

Kind regards,

Kate Lillie, HBSc, EP, ISA
Natural Heritage Ecologist
Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3
905-895-1281, ext. 286 | 1-800-465-0437
k.lillie@LSRCA.on.ca | www.LSRCA.on.ca
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From: Erin Donkers <erin.donkers@pecg.ca>
Sent: June 18, 2020 12:49 PM
To: Shawn Filson <S.Filson@lsrca.on.ca>; carlissa.mclaren@barrie.ca
Cc: Maurizio Rogato <mrogato@blackthorncorp.ca>; Dirk Janas <dirk.janas@pecg.ca>
Subject: 76 Bryne Drive, Barrie - EIS Terms of Reference

Good Afternoon,

Please find attached a Terms of Reference (TOR) for the completion of an Environmental Impact Study (EIS) at the address 76 Bryne Drive in Barrie. It is Palmer's understanding that the EIS is required as part of a development proposal that will consist of a new mixed used commercial and residential building and associated parking area.

As we are well into field season, we would appreciate comment at your earliest convenience.

Thank you,

Erin Donkers, B.Sc., PG[ER]
Ecologist, Arborist

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Appendix B

Vegetation Inventory

Vegetation Inventory

Scientific Name	Common Name	S Rank	G Rank	N Rank	Exotic Status	COSEWIC Status	SAR Schedule 1 Status	SARO Status	Oldham and Brinker (2009)
Acer negundo	Manitoba Maple	S5	G5	N5					
Acer saccharum	Sugar Maple	S5	G5	N5					
Actaea sp.	Baneberry Species								
Agrostis gigantea	Redtop	SNA	G4G5	NNA	SE5				
Alliaria petiolata	Garlic Mustard	SNA	GNR	NNA	SE5				
Apocynum androsaemifolium	Spreading Dogbane	S5	G5	N5					
Asclepias syriaca	Common Milkweed	S5	G5	N5					
Betula alleghaniensis	Yellow Birch	S5	G5	N5					
Betula papyrifera	Paper Birch	S5	G5	N5					
Bromus inermis	Smooth Brome	SNA	G5	NNA	SE5				
Carex pensylvanica	Pennsylvania Sedge	S5	G5	N5					
Cornus alternifolia	Alternate-leaved Dogwood	S5	G5	N5					
Daucus carota	Wild Carrot	SNA	GNR	NNA	SE5				
Echium vulgare	Common Viper's Bugloss	SNA	GNR	NNA	SE5				
Elymus repens	Quackgrass	SNA	GNR	NNA	SE5				
Epigaea repens	Trailing Arbutus	S5	G5	N5					
Equisetum pratense	Meadow Horsetail	S5	G5	N5					
Erigeron sp.	Fleabane Species								
Fagus grandifolia	American Beech	S4	G5	N5					
Fraxinus americana	White Ash	S4	G5	N5					
Hesperis matronalis	Dame's Rocket	SNA	G4G5	NNA	SE5				
Hypericum perforatum	Common St. John's-wort	SNA	GNR	NNA	SE5				
Impatiens capensis	Spotted Jewelweed	S5	G5	N5					
Juglans nigra	Black Walnut	S4?	G5	N4?					
Leucanthemum vulgare	Oxeye Daisy	SNA	GNR	NNA	SE5				
Lonicera tatarica	Tatarian Honeysuckle	SNA	GNR	NNA	SE5				
Maianthemum racemosum	Large False Solomon's Seal	S5	G5	N5					
Oenothera biennis	Common Evening-primrose	S5	G5	N5					
Onoclea sensibilis	Sensitive Fern	S5	G5	N5					
Ostrya virginiana	Eastern Hop-hornbeam	S5	G5	N5					
Parthenocissus quinquefolia	Virginia Creeper	S4?	G5	N4?					
Phleum pratense	Common Timothy	SNA	GNR	NNA	SE5				
Phragmites australis	Common Reed	S4?	G5	N5					
Picea glauca	White Spruce	S5	G5	N5					
Picea pungens	Blue Spruce	SNA	G5	NNA	SE1				
Pinus strobus	Eastern White Pine	S5	G5	N5					
Pinus sylvestris	Scots Pine	SNA	GNR	NNA	SE5				
Plantago lanceolata	English Plantain	SNA	G5	NNA	SE5				
Poa sp.	Bluegrass Species								
Podophyllum peltatum	May-apple	S5	G5	N5					
Polystichum acrostichoides	Christmas Fern	S5	G5	N5					
Populus balsamifera	Balsam Poplar	S5	G5	NNR					
Populus tremuloides	Trembling Aspen	S5	G5	N5					
Prunus serotina	Black Cherry	S5	G5	N5					
Prunus virginiana	Chokecherry	S5	G5	N5					
Quercus rubra	Northern Red Oak	S5	G5	N5					
Rhus typhina	Staghorn Sumac	S5	G5	N5					
Rubus idaeus	Red Raspberry	S5	G5	N5					
Rudbeckia triloba	Brown-eyed Susan	SNA	G5	NNA	SE4				
Salix eriocephala	Cottony Willow	S5	G5	N5					
Salix petiolaris	Meadow Willow	S5	G5	N5					
Silene vulgaris	Bladder Campion	SNA	GNR	NNA	SE5				
Solidago altissima	Tall Goldenrod	S5	G5	N5					
Sorbus sp.	Mountain-ash Species								
Tilia americana	Basswood	S5	G5	N5					
Tilia cordata	Little-leaved Linden	SNA	GNR	NNA	SE1				
Toxicodendron radicans	Poison Ivy	S5	G5	N5					
Trifolium sp.	Clover Species								
Trillium sp.	Trillium Species								
Tsuga canadensis	Eastern Hemlock	S5	G5	N5					
Verbascum thapsus	Common Mullein	SNA	GNR	NNA	SE5				
Viburnum opulus	Cranberry Viburnum	S5	G5	N5					
Vicia cracca	Tufted Vetch	SNA	GNR	NNA	SE5				
Vitis riparia	Riverbank Grape	S5	G5	N5					

Appendix C

Breeding Bird Inventory

Breeding Birds of 76 Bryne Drive - 2020

Common Name	Scientific Name	Status						Locations			Observed on site visit	
		National Species at Risk COSEWIC [a]	Species at Risk in Ontario Listing [a]	Provincial breeding season SRANK [b]	Regional Status	Area-sensitive (OMNR)c	Breeding Evidence	CUM1-1	Valley Forest	Flyovers and adjacent areas	June 10, 2020	July 3, 2020
Ring-billed Gull	*Larus delawarensis*			S5			X			x	2	1
Mourning Dove	*Zenaida macroura*			S5			X			x		1
Northern Flicker	*Colaptes auratus*			S4			T		x		1	1
Eastern Wood-Pewee	*Contopus virens*	SC	SC	S4			S		x			1
Blue Jay	*Cyanocitta cristata*			S5			S		x		1	
Black-capped Chickadee	*Poecile atricapillus*			S5			S		x			1
White-breasted Nuthatch	*Sitta carolinensis*			S5		A	S		x			1
House Wren	*Troglodytes aedon*			S5			T	x	x		2	1
American Robin	*Turdus migratorius*			S5			S	x	x			2
Gray Catbird	*Dumetella carolinensis*			S4			S		x			1
European Starling	*Sturnus vulgaris*			SE			X			x		2
Red-eyed Vireo	*Vireo olivaceus*			S5			T		x		3	2
Song Sparrow	*Melospiza melodia*			S5			T	x	x		3	2
American Goldfinch	*Cardeulis tristis*			S5			S	x	x			5

Field Work Conducted On:	Date	Temp (°C)	Wind Speed (km/h)	Cloud Cover (%)	Start Time	End Time	Level of effort (h:min)	Number of species observed
Site visit 1	26-May-20	19	2	10	7:41	10:00	2:19	6
Site visit 2	19-Jun-20	21	9	0	8:30	10:00	1:30	13

Location 1 - Dry-Fresh Cultural Meadow
Location 2 - Valley Forest
Location 3 - Flyovers and adjacent areas

Number of Species:	14
Number of (provincial and national) Species at Risk:	1
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	1

Location 1

Number of Species:	4
Number of (provincial and national) Species at Risk:	0
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	0

Location 2	11
Number of Species:	1
Number of (provincial and national) Species at Risk:	0
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	1

Location 3	
Number of Species:	3
Number of (provincial and national) Species at Risk:	0
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	0

KEY

a COSEWIC = Committee on the Status of Endangered Wildlife in Canada

a Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario)

END = Endangered, THR = Threatened, SC = Special Concern

[b] SRANK (from Natural Heritage Information Centre) for breeding status if:

S1 (Critically Imperiled), S2 (Imperiled),S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure)

SZB (breeding migrants or vagrants) and SR (reported as breeding, but no persuasive documentation) .

SE (exotic, i.e. non-native)

c Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendices.

d Toronto and Region Conservation Authority L rank:

L1 to L3 Regional species of concern from highest to lowest; L4 Urban concern; L5 Secure through region

Appendix D

SAR Habitat Assessment

Appendix D: Species at Risk Screening

NAME	SARA STATUS	SARO	COSEWIC	SCHEDULE	S-RANK	HABITAT REQUIREMENTS	SOURCE OF RECORD	POTENTIAL HABITAT PRESENT (Y/N)	RATIONALE	POTENTIAL IMPACTS AND MITIGATION
AVIFAUNA										
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	THR	SC	THR	1	S4B	The red-headed woodpecker is a medium-sized bird, with black and white colouring and a bright red head, neck, and breast. Adults often return to the same nesting site year after year. Between May and June, adults often return to the same nesting site and females lay from three to seven eggs. Habitat for the birds includes open woodland and woodland edges, often near man-made landscapes such as parks, golf courses and cemeteries. The red-headed woodpecker is widespread across southern Ontario but rare (Ministry of Natural Resource and Forestry, 2014).	OBBA	Yes, in adjacent forested valleyland	Adjacent woodlands contains deciduous trees that could provide nest cavity opportunities.	Habitat protection does not apply to Special Concern Species.
Eastern Wood-Pewee (*Contopus virens*)	SC	SC	SC	1	S4B	The eastern wood-pewee is classified as a species of special concern by COSSARO. Their population has been gradually declining since the mid-1960's (The Cornell Lab of Ornithology, 2015). The eastern wood-pewee is a "flycatcher", a bird that eats flying insects, that lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation. Threats to the population are largely unknown; however, causes may include loss of habitat due to urban development and decreases in the availability of flying insect prey (Ministry of Natural Resources and Forestry, 2014).	OBBA	CONFIRMED - in adjacent forested valleyland	One Eastern Wood-pewee was heard singing during a breeding bird survey in the adjacent woodlands.	Habitat protection does not apply to Special Concern Species.
Barn Swallow (*Hirundo rustica*)	THR	THR	THR	1	S4B	The barn swallow is a threatened species, is found throughout southern Ontario, and can range into the north as long as suitable nesting locations can be found. These birds prefer to nest within human made structures such as barns, bridges, and culverts. Barn swallow nests are cup-shaped and made of mud; they are typically attached to horizontal beams or vertical walls underneath an overhang. A significant decline in populations of this species has been documented since the mid-1980s, which is thought to be related to a decline in prey. Since the barn swallow is an aerial insectivore, this species relies on the presence of flying insects at specific times during the year. Changes in building practices and materials may also be having an impact on this species (Ministry of Natural Resources and Forestry, 2015).	OBBA	No	No suitable nesting structures exist on or immediately adjacent to the Subject Property. This species may fly over the open meadow to forage.	General Habitat protection applies. General habitat description on MNR website.
Wood Thrush (*Hylocichla mustelina*)	THR	SC	THR	1	S4B	The wood thrush is a species of Special Concern because of habitat degradation or destruction by anthropogenic development. The wood thrush is a medium-sized songbird, generally rusty-brown on the upper parts with white under parts and large blackish spots on the breast and sides, and about 20 cm long. The wood thrush forages for food in leaf litter or on semi-bare ground, including larval and adult insects as well as plant material. They seek moist stands of trees with well-developed undergrowth in large mature deciduous and mixed (conifer-deciduous) forests. The wood thrush flies south to Mexico and Central America for the winter (Ministry of Natural Resources and Forestry, 2014).	OBBA	Yes, in adjacent forested valleyland	The adjacent valley forest provides potential habitat opportunities.	Habitat protection does not apply to Special Concern Species.
Golden Winged Warbler (*Vermivora chrysoptera*)	THR	SC	THR	1	S4B	The golden-winged warbler is classified as a species of special concern by COSSARO. It is a small grey songbird, with yellow patches on its wings and forehead. Nests are built on the gound, in areas with young shrubs surrounded by mature forest. Threats to the species include habitat loss, hybridization with blue-winged warblers, and nest parasitism by brown-headed cowbirds (Ministry of Natural Resources and Forestry, 2014).	OBBA	Yes, in adjacent forested valleyland	The adjacent valley forest provides potential habitat opportunities.	Habitat protection does not apply to Special Concern Species.
Grasshopper Sparrow (*Ammodramus savannarum*)	No Status	No Status	SC	X	S4B	Grasshopper Sparrow are specialized to open relatively short grassland habitat, preferably grasslands with relatively sparse cover such as those in areas of poor soils, including alvars, moraines, and sand plains and generally does not favour tall grass moist meadows. It will also breed in manmade hayfields and occasionally in cereals such as Rye (*Secale cereale*).	OBBA	No	Although the Subject Property provides meadow, it is small in size and distuebed, thus likely not suitable for this species.	Habitat protection does not apply to Special Concern Species.
Bobolink (*Dolichonyx oryzivorus*)	THR	THR	THR	1	S4B	The bobolink is found in grasslands and hayfields, and feeds and nests on the ground. This species is widely distributed across most of Ontario; however, are designated at risk because of rapid population decline over the last 50 years (Ministry of Natural Resources and Forestry, 2014). The historical habitat of the bobolink was tallgrass prairie and other natural open meadow communities; however, as a result of the clearing of native prairies and the post-colonial increase in agriculture, bobolinks are now widely found in hayfields. Due to their reproductive cycle, nesting habits, and use of agricultural areas, bobolink nests and young are particularly vulnerable to loss as a result of common agricultural practices (i.e. first cut hay).	OBBA	No	The Subject Property does not contain suitable amounts of open habitat for this species.	General Habitat protection applies. General habitat description on MNR website.
Eastern Meadowlark (*Sturnella magna*)	THR	THR	THR	1	S4B	The eastern meadowlark is a bird that prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields and human use areas such as airports and roadsides. Eastern meadowlarks can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses. The decline in population of these species is thought to be at least partially related to habitat destruction and agricultural practices (Ministry of Natural Resources and Forestry, 2014).	OBBA	No	The Subject Property does not contain suitable amounts of open habitat for this species.	General Habitat protection applies. General habitat description on MNR website.
HERPTILES										
Blanding's Turtle (*Emydoidea blandingii*)	THR	THR	END	1	S3	Blanding's turtles are threatened in Ontario primarily as a result of habitat loss and fragmentation. Blanding's turtles spend the majority of their life cycle in the aquatic environment, using terrestrial sites for travel between habitat patches and to lay clutches of eggs. These turtles prefer shallow nutrient rich water with organic sediment and dense vegetation. Blanding's turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (Government of Canada, 2015).	ORAA	No	No aquatic habitat on or immediately adjacent to the Subject Property.	General Habitat protection applies. General habitat description on MNR website.
Northern Map Turtle (*Graptemys geographica*)	SC	SC	SC	1	S3	The northern map turtle is a medium sized turtle with a carapace marked by concentric rings that resemble contour lines on a map. The range of this turtle includes larger lakes and rivers that contain an abundance of their primary prey species; molluscs. Shoreline development, water pollution and the spread of the zebra mussel are notable reasons for the decline in populations of this species (Ministry of Natural Resources and Forestry, 2014).	ORAA	No	No aquatic habitat on or immediately adjacent to the Subject Property.	Habitat protection does not apply to Special Concern Species.
Snapping Turtle (*Chelydra serpentina*)	SC	SC	SC	1	S3	The snapping turtle is a species of special concern in Ontario due to the potential for the species to become threatened or endangered as a result of biological factors or other identified threats. While not presently protected by law, the snapping turtle has been recognized as a species of special concern by COSSARO. Snapping turtles spend the majority of their lives in water and travel slightly upland to gravel or sandy embankments or beaches to lay their eggs (Ontario Ministry of Natural Resources and Forestry, 2014).	ORAA	No	No aquatic habitat on or immediately adjacent to the Subject Property.	Habitat protection does not apply to Special Concern Species.
VASCULAR PLANTS										
Butternut (*Juglans cinerea*)	END	END	END	1	S2?	The butternut is designated as endangered by COSSARO and is tracked by the NHIC as a species at risk. The tree is federally regulated by the Species at Risk Act (2002). Butternut belongs to the walnut family and produces edible nuts which are a preferred food source for wildlife. The range of butternut trees is south of the Canadian Shield on soils derived from calcium rich limestone bedrock. Butternut trees, which at one time were much more common to the south extending to the northern aspect of zone 6E, have been declining due to factors including forest loss and disease. Butternut trees suffer from a highly transmissible fungal disease called butternut canker. Butternut canker is causing very rapid decline in this tree species across its native range. The fungal disease is easily transmitted by wind and is very difficult to prevent. Trees often die within a few years of infection by butternut canker (Ministry of Natural Resource and Forestry, 2014).	Professional Experience	CONFIRMED (2016) - in adjacent forested valleyland	A single individual was recorded in 2016. No individuals were noted by Palmer in 2020.	General Habitat Protection as of June 30, 2013.
MAMMALS										
Tri-colored Bat (Eastern Pipistrelle) (*Perimyotis subflavus*)	END	END	END	1	S3?	The eastern pipistrelle is a small bat that is widely distributed in eastern North America and whose range extends north to southern Ontario. The eastern pipistrelle is rare in this region of Ontario which is at the northernmost limit of the natural range for the species. These bats prefer to nest in foliage, tree cavities and woodpecker holes, and are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Eastern pipistrelles feed primarily on small insects and prefer an open forest habitat type in proximity to water (University of Michigan Museum of Zoology, 2004).	Professional Experience	Yes, in adjacent forested valleyland	Some trees in the valley forest adjacent to the Subject Property are >25 cm DBH and may present opportunities for roosting.	General Habitat Protection for Endangered species.
Eastern Small-footed Myotis (*Myotis leibii*)	No Status	END	No Statu	o Schedu	S2S3	The eastern small-footed myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Eastern small-footed bat's fur has black roots and shiny light brown tips, giving it a yellowish-brown appearance. Its face mask, ears and wings are black, and its underside is grayish-brown, about 8 cm long in size and weighs 4-5 grams. In the spring and summer, eastern small-footed bats will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects to eat, including beetles, mosquitos, moths, and flies. They hibernate in winter, often in caves and abandoned mines. They can be found from south of Georgian Bay to Lake Erie and east to the Pembroke area, and choose colder and drier sites (Ministry of Natural Resources and Forestry, 2014).	Professional Experience	Yes, in adjacent forested valleyland	Some trees in the valley forest adjacent to the Subject Property are >25 cm DBH and may present opportunities for roosting.	General Habitat protection applies. General habitat description on MNR website.
Little Brown Myotis (*Myotis lucifugus*)	END	END	END	1	S4	Little brown myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Little brown bats have glossy brown fur and usually weigh between four and 11 grams. Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings and barns for summer colonies where they can raise their young. Little brown bats hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing – an ideal environment for the fungus to grow and flourish. The syndrome affects bats by disrupting their hibernation cycle, so that they use up body fat supplies before the spring when they can once again find food sources (Ministry of Natural Resources and Forestry, 2014).	Professional Experience	Yes, in adjacent forested valleyland	Some trees in the valley forest adjacent to the Subject Property are >25 cm DBH and may present opportunities for roosting.	General Habitat Protection as of January 24, 2013.
Northern Myotis (*Myotis septentrionalis*)	END	END	END	1	S3	The northern long-eared myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Northern long-eared bats have dull yellow-brown fur with pale grey bellies. They are approximately eight cm long, with a wingspan of about 25 cm, and usually weigh six to nine grams. Northern long-eared bats can be found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April, most often in caves or abandoned mines (Ministry of Natural Resources and Forestry, 2014).	Professional Experience	Yes, in adjacent forested valleyland	Some trees in the valley forest adjacent to the Subject Property are >25 cm DBH and may present opportunities for roosting.	General Habitat Protection as of January 24, 2013.
FISH										
None										
OTHER										
None										

Notes:
SC - Special Concern
THR - Threatened
END - Endangered
S1 - Extremely rare in Ontario
S2 - Very rare in Ontario
S3 - Rare to uncommon in Ontario
S4 - Considered to be common in Ontario
S5 - Species is widespread in Ontario
SH - Possibly extirpated
S#S# - Indicates insufficient information exists to assign a single rank.
S#? - Indicates some uncertainty with the classification due to insufficient data
S#N - Nonbreeding
S#B - Breeding

Appendix E

SWH Assessment

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence (Y/N) or Potential (P)	Additional Notes and Species Observations
Seasonal Concentration Areas of Animals					
Waterfowl Stopover and Staging Areas (Terrestrial)	Ducks	CUM + CUT ecosites	Fields with sheet-water flooding mid-March to May	N	Subject Property is not expected to receive sheet-water flooding in spring.
Waterfowl Stopover and Staging Area (Aquatic)	Ducks, Geese	Ponds, Lakes, Inlets, Marshes, Swamps, Shallow Water Ecosites	Sewage & SWM ponds **not** SWH. Reservoir managed as a large wetland or pond/lake qualifies.	N	Community types not present on the Subject Property.
Shorebird Migratory Stopover Area	Shorebirds	Beaches, Dunes, Meadow Marshes	Shorelines. Sewage treatment ponds and storm water ponds **not** SWH.	N	Shorelines not present on the Subject Property.
Raptor Wintering Area	Eagles, Hawks, Owls	**Hawks/Owls:** Combination of both Forest and Cultural Ecosites **Bald Eagle:** Forest or swamp near open water (hunting ground)	**Raptors:** >20ha, with a combo of forest and upland. Meadow (>15ha) with adjacent woodlands. **Eagles:** open water, large trees & snags for roosting.	P	Throughout overall valley forest lands, none within immediate site limits.
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	Caves, Crevices, mines, karsts	Buildings and active mine sites **not** SWH.	N	Features not present on the Subject Property.
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	Decidious or mixed forests and swamps.	Mature deciduous and mixed forests with >10/ha cavity trees >25 cm DBH.	P	Potential as trees >25 cm DBH are present in adjacent valley forest.
Turtle Wintering Area	**Turtles** (Midland, N. Map, Snapping)	SW, MA, OA, SA, FEO, BOO (requires open waters)	**Free water beneath ice.** Soft mud substrate. Permanent water bodies, large wetlands, bogs, fens with adequate DO.	N	Community types not present on the Subject Property.
Reptile Hibernaculum	Snakes	**Snakes:** Any ecosite (esp. w/ rocky areas), other than very wet ones. **Five-lined Skink:** FOD and FOM, FOC1, FOC3 - with rock outcrops	**Access below frost line:** burrows; **rock** crevices, piles or slopes, **stone** fences or foundations. Conifer/shrubby swamps/swales, poor fens, depressions in bedrock w/ accumulations of sphagnum moss or sedge hummock ground cover.	N	Features not present on the Subject Property.
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, N. Rough-winged Swallow	Banks, sandy hills/piles, pits, slopes, cliff faces, bridge abutments, silos, barns.	Exposed soil banks, **not** a licensed/permitted aggregate area or new man-made features (2 yrs).	N	Features not present on the Subject Property.
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Great Blue Heron, Black-crowned NightHeron, Great Egret, Green Heron	SWM2, SWM3, SWM5, SWM6, SWD1 to SWD7, FET1	Nests in live or dead standing trees in wetlands, lakes, islands and peninsulas. Shrubs and emergents may be used. Nests in trees are 11 - 15 m from ground, near tree tops.	N	Community types not present on the Subject Property.
Colonially-nesting Bird Breeding Habitat (Ground)	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird	**Gulls/Terns:** Rocky island or peninsula in lake or river. **Brewer's Blackbird:** close to watercourses in open fields or pastures with scattered trees or shrubs.	**Gulls/Terns:** islands or peninsulas with open water or marshy areas. **Brewers Blackbird colonies:** on the ground in low bushes close to streams and irrigation ditches.	N	Features not present on the Subject Property.
Migratory Butterfly Stopover Area	Painted Lady, Red Admiral, **Special Concern:** Monarch	Combination of open (CU) and forested (FO) ecosites (need one from each).	≥10 ha, located within 5 km of Lake Ontario. Undisturbed sites, with preferred nectar species.	N	Subject Property is > 5 km from Lake Ontario, meadow habitat is < 10 ha.
Landbird Migratory Stopover Areas	All migratory songbirds. All migrant raptor species.	Forest (FO) and Swamp (SW) ecosites	Woodlots >10 ha within 5 km of Lake Ontario. If multiple woodlands are along the shoreline, those <2 km from L. Ontario are more significant.	N	Subject Property is > 5 km from Lake Ontario.
Deer Yarding Areas	White-tailed Deer	Mixed or Conifer ecosites	Determined by MNRF - no studies	N	Area not mapped by MNRF.
Deer Winter Congregation Areas	White-tailed Deer	Mixed or Conifer ecosites	Determined by MNRF - no studies	N	Area not mapped by MNRF.
Rare Vegetation Communities					
Cliffs and Talus Slopes		TAO, TAS, CLO, CLS, TAT, CLT e.g., Niagara Escarpment (contact NEC)	**Cliff:** near vertical bedrock >3m **Talus Slope:** coarse rock rubble at the base of a cliff	N	Community types not present on the Subject Property.
Sand Barren		SBO1, SBS1, SBT1	Sand Barrens >0.5 ha. Vegetation can vary from patchy and barren to tree covered, but <60%. <50% vegetation cover are exotic species.	N	Community types not present on the Subject Property.
Alvar	*Carex crawei, Panicum philadelphicum, Eleocharis compressa, Scutellaria parvula, Trichostema brachiatum,* Loggerhead Shrike	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	Alvar >0.5 ha. **Need 4 of the 5 Alvar Inidcator Spp**. <50% vegetation cover are exotic species.	N	Community types not present on the Subject Property.

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence (Y/N) or Potential (P)	Additional Notes and Species Observations
Old Growth Forest	Trees >140 yrs; heavy mortaily = gaps. Multi-layer canopy, lots of snags and downed logs	FOD, FOC, FOM, SWD, SWC, SWM	Woodland areas ≥30 ha with a≥10 ha interior habitat, assuming a 100 m buffer at edge of forest.	N	Adjacent valley forest < 30 ha and only mid-aged.
Savannah	Prairie Grasses w/ trees	TPS1, TPS2, TPW1, TPW2, CUS2	A Savannah is a tallgrass prairie habitat that has tree cover of 25 – 60%. <50% cover of exotic species.	N	Community types not present on the Subject Property.
Tallgrass Prairie	Prairies Grasses dominate	TPO1, TPO2	An open Tallgrass Prairie habitat has < 25% tree cover. Less than 50% cover of exotic species.	N	Community types not present on the Subject Property.
Other Rare Vegetation Communities		Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of SWHTG.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	N	Provincially rare community types not present on the Subject Property.
Specialized Habitat for Wildlife					
Waterfowl Nesting Area	Ducks	Upland habitats adjacent to: MAS1 to MAS3, SAS1, SAM1, SAF1, MAM1 to MAM6, SWT1, SWT2, SWD1 to SWD4 (>0.5 ha open water wetlands, alone or collectively).	Extends 120 m from a wetland or wetland complex. Upland areas should be at least 120 m wide. Wood Ducks and Hooded Mergansers use cavity trees (>40 cm dbh).	N	Community types not present on the Subject Property.
Bald Eagle & Osprey Nesting, Foraging and Perching Habitat	Osprey, Bald Eagle	FOD, FOM, FOC, SWD, SWM, SWC directly adjacent to riparian areas	Nesting areas are associated with waterbodies along forested shorelines, islands, or on structures over water.	P	Some tall trees within adjacent valley forest, Subject Property within 3 km of Lake Simcoe.
Woodland Raptor Nesting Habitat	Barred Owl. **Hawks:** N. Goshawk, Cooper's, Sharp-shinned, Red-shouldered, Broad-winged.	Forests (FO), swamps (SW), and conifer plantations	>30 ha with > 10 ha interior habitat.	P	Adjacent valley forest > 30 ha with > 10 ha interior habitat.
Turtle Nesting Areas	Midland Painted Turtle **Special Concern:** Snapping Turtle, Northern Map Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within: MAS1 to MAS3, SAS1, SAM1, SAF1, BOO1	Nest sites within open sunny areas with soil suitable for digging. Sand and gravel beaches.	N	Community types not present on the Subject Property.
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.	Seeps/Springs are areas where ground water comes to the surface.	Any forested area within the headwaters of a stream/river system. **(2 or more confirms SWH type).**	N	Community types not present on the Subject Property.
Amphibian Breeding Habitat (Woodland)	Woodland Frogs and Salamanders	FOC, FOM, FOD, SWC, SWM, SWD	Open water wetlands, pond or woodland pool of >500 m^2 within or adjacent to wooded areas. Permanent ponds or holding water until mid-July preferred.	P	Adjacent valley forest (lower portions) may contain pools of water which may support amphibian breeding.
Amphibian Breeding Habitat (Wetlands)	Toads, Frogs, and Salamanders	SW, MA, FE, BO, OA and SA. Typically isolated (>120m) from woodland ecosites, however larger wetlands may be adjacent to woodlands.	Open water wetland ecosites >500m^2 isolated from woodland ecosites with high species diversity. Permanent water with abundant vegetation for bullfrogs.	N	Community types not present on the Subject Property.
Woodland Area-Sensitive Bird Breeding Habitat	Birds (area-sensitive species)	FOC, FOM, FOD, SWC, SWM, SWD	Large mature (>60 years) forest stands/woodlots >30 ha. Interior forest habitat >200m from forest edge.	P	Adjacent valley forest > 30 ha with interior forest habitat > 200 m from forest edge.
Habitat of Species of Conservation Concern					
Marsh Bird Breeding Habitat	Wetland Birds	MAM1 to MAM6, SAS1, SAM1, SAF1, FEO1, BOO1 **Green Heron**: SW, MA and CUM1	Wetlands with shallow water and emergent vegetation. Gr. Heron @ edges of these types w/ woody cover.	N	Community types not present on the Subject Property.
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, N. Harrier, Savannah Sparrow, **Short-eared Owl (SC)**	CUM1, CUM2	Grassland/meadow >30 ha. Not being actively used for farming. Habitat established for 5 years or more.	N	Meadow is < 30 ha in size.
Shrub/Early Successional Bird Breeding Habitat	**Brown Thrasher + Clay-coloured Sparrow (indicators),** Field Sparrow, Black-billed Cuckoo, E. Towhee, Willow Flycatcher, Yellow-breasted Chat, Golden-winged Warbler	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2	Large field areas succeeding to shrub and thicket habitats > 10 ha. Areas not actively used for farming in the last 5 years.	N	Community types not present on the Subject Property.
Terrestrial Crayfish	Chimney or Digger Crayfish; Devil Crayfish or Meadow Crayfish	MAM1 to MAM6, MAS1 to MAS3, SWD, SWT, SWM. CUM1 sites with inclusions of the aforementioned.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish (typc. protected by wetland setbacks).	N	Community types not present on the Subject Property.
Special Concern and Rare Wildlife Species	Any species of concern or rare wildlife species	Any ELC code.	Presence of species of concern or rare wildlife species.	Y - Candidate	Eastern Wood-Pewee (Special Concern) was recorded within the forested valley corridor during the 2020 breeding bird surveys.
Animal Movement Corridors					
Amphibians	Amphibians	all ecosites assoc. w/ water	When Breeding Habitat - wetland confirmed	N	Habitat not present on Site.
Deer Movement	White-tailed Deer	all forested ecosites	When Deer Wintering Habitat confirmed	N	Deer Wintering Habitat is not confirmed.
Exceptions for Ecoregion 6E					
Mast Producing: 6E-14	Black Bear	Forested Ecosites	>30 ha w/ mast producing species: Cherry (berries), Oak, Beech (nuts).	N	Not in Ecoregion 6E-14
Leks: 6E-17	Sharp-tailed Grouse	CUM, CUS, CUT	Grassland/meadow >15 ha adjacent to shrublands, >30 ha adjacent to woodlands. Low agricultural intensity.	N	Not in Ecoregion 6E-17

Appendix F

Development Plan

SITE DEVELOPMENT SCHEDULE

	REQUIRED	PROVIDED	
ZONING	C4 (BYLAW 2009-141)		
MIN LOT AREA	450.00 m2	7869.00 m2	
LOT FRONTAGE	15.00 m	91.00 m	
MIN FRONT YARD	6.00 m	15.68 m	
MIN SIDE YARD	3.00 m	19.17 m	
MIN SIDE YARD ADJOINING	3.00 m	18.34 m	
MIN REAR YARD	7.00 m	48.00 m	
MAX LOT COVERAGE	50%	10.54%	830 m2
MIN DWELING UNIT FLOOR AREA (1BR)	45 m2	45 m2	
MAX BUILDING HEIGHT	14 m	18.60m	
MIN COMM. GFA / BUILDING GFA	20.00%	20.02%	
CONSOLIDATED OUTDOOR AMENITY	576 m2	576 m2	
LADNSCAPED AREA		30.2%	2377 m2
PAVED PARKING AND DRIVEWAYS		45.50%	3581 m2
F.S.I (G.F.A/ LOT AREA)		0.498 m2	

PARKING CALCULATION

	REQUIRED	PROVIDED
COMMERCIAL PARKING (1 / 24 m2)	33	34
RESIDENTIAL PARKING (1.5 / UNIT)	72	73
LOADING SPACE	1	1
BARRIER-FREE PARKING	4	4

FLOOR AREA SCHEDULE

	METRIC	IMPERIAL
NET COMMERCIAL (7 UNITS)	785.60 m2	8450 SF
NET RESIDENTIAL (48 UNITS)	2852 m2	30700 SF
RESIDENTIAL CORRIDORS	285 m2	3070 SF
G.F.A.	3922.60 m2	42220 SF

FLOOR AREA BREAKDOWN

RESIDENTIAL		COMMERCIAL	
NET RESIDENTIAL:	713.00 m2	NET COMMERCIAL:	785.60 m2
STAIRWELL & LIFT:	30.25 m2	STAIRWELL & LIFT:	43.50 m2
CORRIDOR:	71.25 m2		
TOTAL FLOOR AREA:	814.50 m2	TOTAL FLOOR AREA:	830 m2
RES. GFA = 4 * (713 + 71.25) = 3137m2		COM. GFA =	785.60 m2

GFA: 785.60+3137=3922.6 m2

page 2/4 ORIGINAL MOLOK

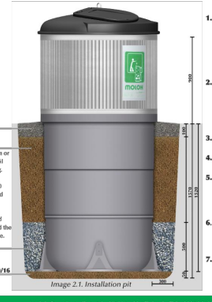


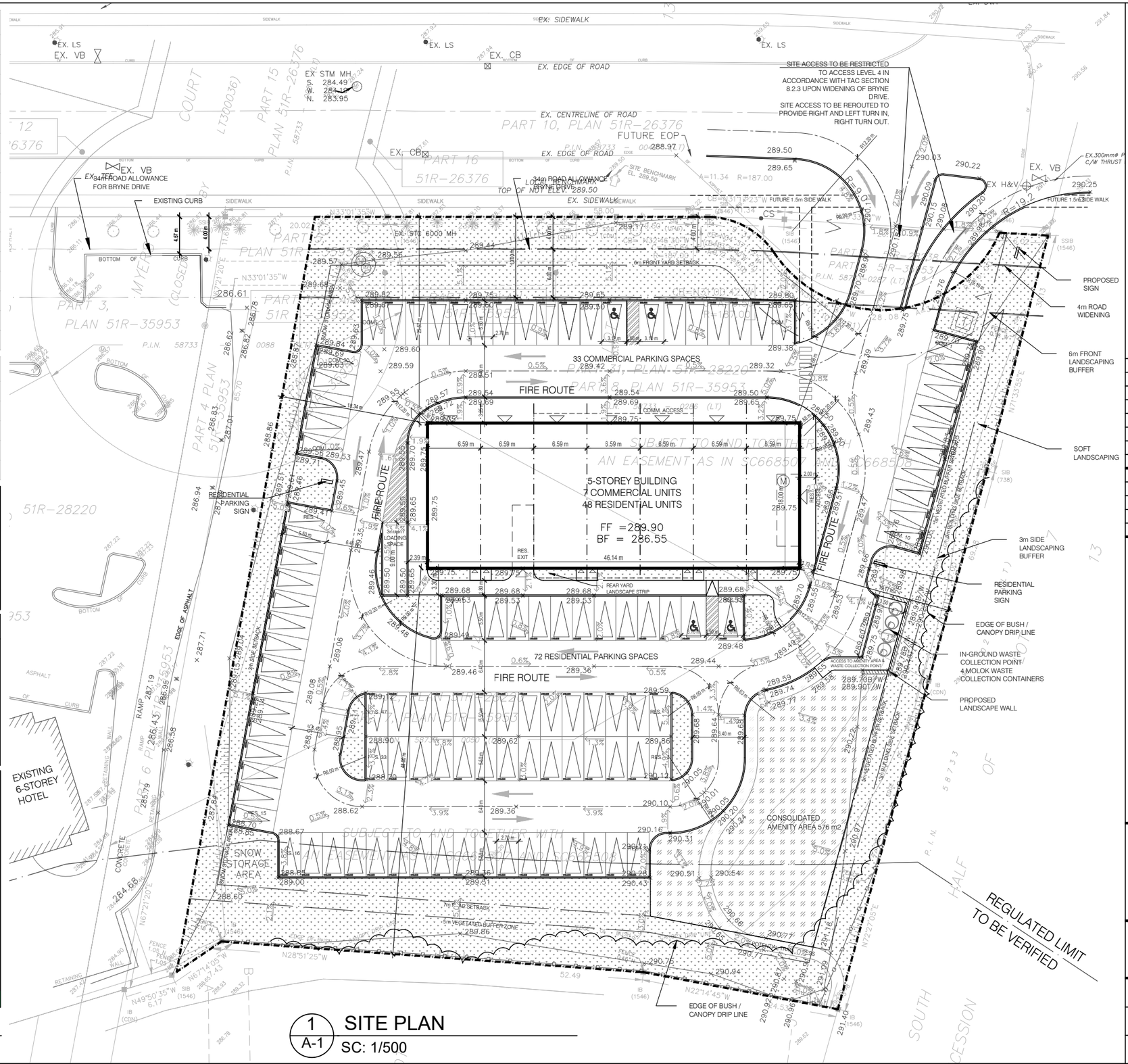
Image 2.1. Installation pit

1. Dig the installation pit according to the measurements in the image 2. The pit should be 600 mm wider than the diameter of the container. Level the bottom carefully with spirit level and compact the ground if needed. (Image 3.1.)
   Diameter of the installation pit:
   MolokClassic®-container 5 m³ 2150 mm
   MolokClassic®-container 3m³ and 1,3 m³ 1750 mm
2. Preparing 800 l and 300 l containers:
   Fasten the anchor steel into the bottom insert according to a separate instruction manual provided.
   Preparing 5 m³, 3 m³ and 1,3 m³ containers:
   Fix the plastic bottom anchors into the container with two bolts each (bolts are tightened max. 25 Nm). (Image 3.2.)
3. Lift the container to the installation pit by using lifting loops. The use of lifting beam is recommended (Image 3.3).
4. Align the lid opening by using the sign in the front panel.
5. Use a spirit level to ensure the container is straight and level. **Depending on the installation site**, use the spirit level either;
   A. on top of the aluminium ring (lid and lifting bag removed) **OR**
   B. from the sides of the container
6. Fill the pit as described in the image 2.
   With a light compactor, compact the filling soil carefully with every 200 mm layer. We recommend to use max. 100 kg round compactor. (Image 3.5)
7. Make sure that the finishing layer slopes slightly downward from the container.

DEEP COLLECTION®

Molok Oy · Nosturikatu 16 · 37150 Nokia, Finland · Tel. +358 10 3429 400 · molok@molok.com · www.molok.com

2 / A-1 WASTE COLLECTION POINT DETAIL



1 / A-1 SITE PLAN
SC: 1/500

No.	DESCRIPTION	DATE
7		Y/MM/DD
6	ISSUED FOR	Y/MM/DD
5	ISSUED FOR	Y/MM/DD
4	ISSUED FOR	Y/MM/DD
3	ISSUED FOR	Y/MM/DD
2	ISSUED FOR SPA	19/08/2020
	REVISIONS	

ISSUED FOR CONSTRUCTION
ISSUED FOR BID
ISSUED FOR BUILDING PERMIT
ISSUED FOR SITE PLAN APPROVAL
SUBMITTALS

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SEALED AND SIGNED BY THE DESIGNER.

DO NOT SCALE DRAWINGS.

FCA
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416-806-7000
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DRAWING:
PROPOSED MIXED USE BUILDING
AT
76 BRYNE DRIVE
CITY OF BARRIE
ONTARIO

DRAWING:
PROPOSED
SITE PLAN

PLOTTED: N/A

DATE:	PROJECT No:
8.19.2020	2020-09
SCALE: AS NOTED	DRAWING No: A1-1
DRAWN BY: S.H.	REVIEWED BY: F.C.

XREFS:
FILE NAME:
PLOT SCALE: 1:1