



# **SCOPED ENVIRONMENTAL IMPACT STUDY**

**1020, 1024, 1028, 1032 AND 1042  
SIXTH LINE, OAKVILLE ON**

JULY 2017





# **Scoped Environmental Impact Study**

**1020, 1024,1028,1032 AND 1042  
Sixth Line, Oakville, Ontario**

## **Report Prepared for:**

Dunpar Homes  
105 Six Point Road  
Etobicoke, ON  
M8Z 2X3

## **Report Prepared by:**

Savanta Inc.  
37 Bellevue Terrace  
St. Catharines, ON  
L2S 1P4

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Savanta File: 7648





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## 1 INTRODUCTION

Savanta Inc. (Savanta) has been engaged by Dunpar Homes to complete a Scoped Environmental Impact Assessment (EIA) for a group of properties located at 1020, 1024, 1028, 1032 and 1042 Sixth Line, in Oakville, Ontario, officially described as Lot 16, Concession 2 SDS (Subject Lands) (**Figure 1, Appendix A**). The Subject Lands are owned by Dunpar Homes and will be redeveloped to accommodate the proposal.

Savanta completed a Preliminary Natural Heritage Technical Opinion of lots 1024 and 1042, in October 2016. Since that initial delineation and characterization of natural heritage features, Dunpar Homes acquired new properties and initiated an Environmental Impact Assessment (EIA) given the proximity of Sixteen Mile Creek Environmentally Significant Area (ESA #16) and associated natural heritage designations.

Through an iterative process coordinated by Halton Region's Planning Services, a Terms of Reference (ToR) for the development proposal was established.

### 1.1 Purpose of the EIA

The purpose of this report is to:

- Identify key Natural Heritage Features present on, or in the vicinity, of the Subject Lands and characterize their ecological functions;
- Identify appropriate buffer widths and any potential enhancement areas on site that are part of the Regional Natural Heritage System (NHS); and
- Relate the proposed development to the NHS features with the goal for their preservation and protection.

The EIA assesses the potential for the development to cause negative impacts to components of the NHS (i.e., Key Features, Linkages, Buffers and Enhancement Areas) and their ecological functions. Impact avoidance, mitigation measures, and recommending opportunities for enhancement are addressed in this report.

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## 2 SITE DESCRIPTION AND NATURAL HERITAGE CONTEXT

The Subject Lands can be divided into the tableland and Sixteen Mile Creek valley slope portions. No development is proposed for the valley slope. The tableland consists of now vacant, single-family homes, their front and rear yards, driveways, and other associated structures (e.g., sheds, fences, etc.). No natural vegetation remains on the tableland; the area is dominated by ornamental landscaping.

The Sixteen Mile Creek is an important fisheries feature, as well as a significant valleyland and connecting corridor that facilitates wildlife movement between Lake Ontario and the Niagara Escarpment foothills. Halton Region's Official Plan Map 1G (*Key Features within the Greenbelt and the Regional Natural Heritage Systems*) identifies the Sixteen Mile Creek valley as a Key Feature, while the existing residential development on the tableland is within the Urban Area.

The Town of Oakville's Official Plan recognizes the Sixteen Mile Creek valley as Zone "N" and Greenspace, and the residential area on the tableland as Zone "RL1-0".

The Ministry of Natural Resources and Forestry (MNRF) online mapping tool (Make-a-Map: *Natural Heritage Areas*), considers the Sixteen Mile Creek valley as part of Natural Heritage System. The map also shows a short "extension", parallel to Sunnycrest Lane, as part of the NHS. That narrow feature is a double row of planted Norway spruce in a driveway "alley" leading to #1042 residence.

Conservation Halton identifies the Sixteen Mile Creek as an Environmentally Significant Area (ESA #16).



### 3 BIOPHYSICAL INVENTORY

#### 3.1 Field Methodologies

A suite of biological surveys was completed on the Subject Lands between years 2015 and 2017. Survey types, dates and surveyor information is included on Table 1 (Appendix B).

##### 3.1.1 *Plants and Vegetation*

Vegetation data were collected using the approach of Ecological Land Classification (ELC, Lee et al. 1998). Vegetation communities were initially identified on satellite imagery and then verified in the field. ELC and vegetation mapping was completed to the finest level of resolution (Vegetation Type) where feasible. The vegetation units were sampled for their structure, species composition and habitat characteristics. This information was supplemented by floristic surveys at the time of each visit. Species names generally follow the nomenclature of Flora Ontario (Newmaster and Ragupathy 2012, University of Guelph, FOIBIS website) and the Ontario Ministry of Natural Resources and Forestry Natural Heritage Information Centre (NHIC website).

The provincial status of all plant species and vegetation communities is based on NHIC (2013 and any current updates). Identification of potentially sensitive native plant species is based on their assigned coefficient of conservatism (CC) value, as determined by Oldham et al. (1995). This CC value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific natural habitat. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

##### 3.1.2 *Birds and Other Wildlife*

Breeding bird surveys were conducted following protocol set forth by the Ontario Breeding Bird Atlas (Cadman et al. 2007), the Ontario Forest Bird Monitoring Program (Cadman et al. 1998) and the Marsh Monitoring Program (Bird Studies Canada 2014 and 2006).

Surveys were conducted between dawn and five hours after dawn with suitable wind conditions, no thick fog or precipitation (Cadman et al. 2007). Point count stations were located in various habitat types within the Subject Lands and combined with area searches to help determine the presence, variety and abundance of bird species. Each point count station was surveyed for 10 minutes for birds within 100 m and outside 100 m. All species recorded on a point-count were mapped to provide specific spatial information and were observed for signs of breeding behaviour. Surveys were conducted at least 10 days apart.

Both the Natural Heritage Information Centre (NHIC 2016) database and the Species at Risk in Ontario (SARO) list (Ontario Regulation 230/08) were reviewed to determine the current provincial status for each bird species.

Wildlife surveys and observations were carried out during all biological surveys.

### 3.1.3 Bats

The survey included a cavity tree search during the off-leaf season and nocturnal surveys using ultrasound detectors during the breeding and foraging season.

Four bat species are listed on the Species at Risk in Ontario (SARO) list as Endangered: Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), Tri-coloured Bat (*Perimyotis subflavus*) and Northern Myotis (*Myotis septentrionalis*), and as such habitat for these species is protected under the *Endangered Species Act 2007* (ESA). Bat Maternity Colonies are a type of Significant Wildlife Habitat to be considered under the *Provincial Policy Statement* (2014). As part of the development approval process, an assessment of natural features was undertaken to determine whether bat habitat is present on the Subject Lands.

Bat surveys were carried out using Wildlife Acoustics EchoMeter Touch (EMT) recording devices. Survey sites were selected based on aerial interpretation, Ecological Land Classification (ELC) vegetation community types, and ground-truthing for suitable bat micro-habitat such as clusters of  $\geq 10$  cm diameter-at-breast-height (DBH) trees with peeling bark, leaf clusters, and cavities, along the edges of woodlands, hedgerows, as well as areas where trees are proposed to be removed.

Surveys were conducted starting at sunset and ending at sunrise when temperatures were  $>10^{\circ}\text{C}$  with low winds and no precipitation. In addition, the EMT and Pettersson microphones were elevated approximately 2 m above the ground to reduce background noise during transect walks and at point count stations (**Figure 2, Appendix A**).

## 3.2 Survey Results

### 3.2.1 Vegetation and Flora

The Subject Lands consist of two distinct areas: the residential tableland and the forest and Sixteen Mile Creek valley slope (**Figure 3, Appendix A**). The tablelands are characterized by ornamental plantings, established as part of the original residential development. The now vacant lots are being colonized by exotic species of herbs, shrubs and trees.

The steep slope of the valley is covered by a deciduous forest dominated by Sugar Maple (*Acer saccharum*), with a minor presence of White Ash (*Fraxinus pennsylvanica*), White Oak (*Quercus alba*), Red Oak (*Q. rubra*), Basswood (*Tilia americana*), and Black Walnut (*Juglans nigra*). The ELC classification of this community is FOD5-1 (Dry-Fresh Sugar Maple Deciduous Forest). The shrub layer is mostly composed of Common Buckthorn (*Rhamnus cathartica*). Herbaceous cover is sparse and mostly non-native, dominated by Garlic Mustard (*Alliaria petiolata*), followed by Dame's Rocket (*Hesperis matronalis*), Zig-zag Goldenrod (*Solidago flexicaulis*), Greater Burdock (*Arctium lappa*) and Yellow Trout-lily (*Erythronium americanum*) in the spring. Due to steep slope, soil slippage and erosion were observed to be common. Some sections located near the top-of-bank are heavily disturbed by disposal of garden refuse, wooden logs, concrete blocks and other trash.

Eighty-one species of vascular plants were recorded from the Subject Lands. Of that number, 31

(or 38%) species are native and 50 (or 62%) species are exotic. The high proportion of non-native species reflects the mostly anthropogenic character of the Subject Lands, dominated by weedy vegetation establishing in abandoned lawns, gardens and roadsides.

All but two of the native species are ranked “S5” (Secure – common, widespread and abundant in Ontario). Two S4 (Apparently Secure, uncommon but not rare) species are:

- Black Walnut (*Juglans nigra*), “S4?” – occasional in the deciduous forest FOD5-1; and
- White Ash (*Fraxinus americana*), “S4?” – rare to occasional in the deciduous forest FOD5-1.

One uncommon species (according to Crins et al. 2006 rankings) is Virginia Stickweed (*Hackelia virginiana*), found as a single plant on the #1042 property.

No nationally or provincially rare or endangered plant species were recorded from the Subject Lands. A complete list of plant species observed on the Subject Lands is provided in **Table 3 (Appendix B)**.

### **3.2.2 Avifauna and Other Wildlife**

Three, point count stations were surveyed within the Subject Lands and are illustrated on **Figure 4 (Appendix A)**.

Thirty-six bird species were observed within the Subject Lands. Of these, six species are confirmed, 11 are probable and 12 are possible breeders on the Subject Lands. The remaining seven species are considered non-breeders, flyovers or migrants.

All species observed on the Subject Lands are listed in **Tables 4 and 7 (Appendix B)**.

Twenty-nine (100%) of the confirmed, probable or possible breeders are provincially ranked S5 (common and secure), S4 (apparently common and secure) or SNA (species not native to Ontario).

A species of Special Concern in Ontario and Canada, Eastern Wood-Pewee (*Contopus virens*), was observed on the Subject Lands. A singing male was heard and observed at Point Count 3 during both rounds of the survey.

One species (Red-Breasted Nuthatch, *Sitta canadensis*), that exhibited breeding evidence on the Subject Lands is listed as indicator species according to the Province’s significant wildlife habitat (SWH) criteria for Ecoregion XE (7E OR 6E) (MNRF 2015). Although Red-breasted Nuthatch is a SWH indicator species and was a possible breeder, habitat on the tableland portion of the Subject Lands does not meet thresholds for designation as SWH.

### **Other Wildlife Observations**

There were no butterfly and one dragonfly species recorded on the Subject Lands. The one species observed is provincially ranked S5 (common and secure), S4 (apparently common and

secure) or SNA (species not native to Ontario).

There were two mammal, no reptile, and no amphibian species, recorded during breeding bird surveys conducted on the Subject Lands. All species observed are provincially ranked S5 (common and secure), S4 (apparently common and secure) or SNA (species not native to Ontario).

### **3.2.3 Aquatic and Fish Habitat Assessment**

The Subject Lands are located on tablelands to the east of the Sixteen Mile Creek valley corridor and watercourse. The fish community within the Sixteen Mile Creek watershed is varied with approximately 68 different species recorded since the early 1900s (Conservation Halton 2013). The main branch of Sixteen Mile Creek, within the Town of Oakville, is generally characterized by a deeply incised, primarily wooded valley. However, the valley morphology and channel width is such that the channel itself is frequently not shaded, and there are many areas of fairly open, unshaded reaches of the watercourse in the vicinity of these Subject Lands, including the Glen Abbey golf course located approximately 1.5 km to the north. Thus, through Oakville, the channel supports both warm water and cool water species. In addition to the migratory species, resident species include smallmouth bass and various cyprinid species (such as minnows and carps).

In the immediate vicinity of the Subject Lands, Sixteen Mile Creek ranges in width from approximately 15 m to 25 m, and the distance between the staked top-of-bank and the watercourse edge below ranges from approximately 35 m to 100 m. During field investigations in August 2016, Savanta walked portions of the valley slope adjacent to the Subject lands, particularly the lower portions of the valley wall along the watercourse. While groundwater seepage occurs in certain portions of the watershed, particularly in the upper reaches to the north of Oakville, no evidence of valley wall seepage was evident in this portion of the valley.

### **3.2.4 Bats**

The cavity tree survey was largely confined to the tableland area, due to inaccessibility of the steep valley slope. Three stems were located in house backyards or driveways, and one near the upper edge of the valley.

During passive acoustic surveys, four bat species were confirmed to be present on the Subject Lands:

- Big Brown Bat (*Eptesicus fuscus*);
- Hoary Bat (*Lasiurus cinereus*);
- Eastern Red Bat (*Lasiurus borealis*); and
- Eastern Small-footed Myotis (*Myotis leibii*).

During the three evenings of active acoustic surveys, a total of 68 low frequency calls and 14 high frequency calls were recorded; with a cumulative total of 82 passes by all species. Of the low frequency calls, 54 calls were confirmed to be Big Brown Bat, three confirmed calls were Hoary Bat, and the remaining 25 low frequency calls were not identifiable to species (**Table 6, Appendix B**). Of the high frequency calls, 10 were confirmed to be Eastern Red Bat, two confirmed calls

were Eastern Small-footed Bat, and the remaining two high frequency calls were not identifiable to species.

The presence of Big Brown Bats in sufficient numbers indicates a potential for presence of Significant Wildlife Habitat for Bat Maternity Colonies in the forest community on the slope.

The recordings of Eastern Small-footed Myotis may require more focused surveys to confirm where its foraging and roosting habitat are present on the valley slope forest or in the local area.

### **3.2.5 Species at Risk**

#### **Natural Heritage Information Centre (NHIC)**

The search of NHIC website revealed the following species potentially to occur within the 1 km radius centred on the Subject Lands (Table 5, Appendix B):

For the non-historical species, their habitat does not occur on the tableland portion of the Subject Lands. Specifically:

- Northern Map Turtle, if still present, would tend to be limited to the bottom of the valley habitats of Sixteen Mile Creek, which will be unaffected by proposed tableland development. Milksnake might use some more open portions of the valley slope, however, its important habitat for basking, refuge or hibernacula, such as old agricultural buildings, sheds, piles of stones, etc., is not present on the Subject Lands; the species was not observed during the surveys;
- *Northern Hawthorn* and *Kansas Hawthorn*, if still present, would occur on the valley slopes of the Sixteen Mile Creek. There is no suitable habitat for these species on the tableland portions of the Subject Lands, and neither were observed during the vegetation surveys;
- There is no suitable habitat for *Virginia Bluebells* (mature, mesic deciduous forest) on either the Subject Lands or on the valley slopes where the forest is too dry and too disturbed due to soil instability; the species was not observed during the vegetation surveys.

#### **Ministry of Natural Resources and Forestry (MNR)**

Early in this project, a formal Information Request Form (IRF) was submitted to the MNR Aurora District office to identify potential Species at Risk (SAR) that may occur on, or in the vicinity of, these Subject Lands. A response from the MNR was received on June 17, 2015, and is contained in **Appendix C** of this report. The MNR has records of three species potentially present on, or adjacent to, the Subject Lands:

COMMON NAME	SCIENTIFIC NAME	STATUS
Silver Shiner	<i>Notropis photogenis</i>	Threatened
Chimney Swift	<i>Chaetura pelagica</i>	Threatened
Butternut	<i>Juglans cinerea</i>	Endangered

- Silver Shiner is a small-bodied minnow that is found in a limited number of watercourses in southern Ontario. Savanta is involved in several large development blocks within the Town of Milton, some of which include portions of the main branch of Sixteen Mile Creek as well as some of its tributaries. Through previous discussions with staff of the MNRF, the presence of direct habitat for this species has been identified within Sixteen Mile Creek, which would include the reach of watercourse adjacent to these Subject Lands. This species is sensitive to excessive sediment loading and activities that could result in increased water temperature. However, based on the anticipated tableland residential development proposed for these lands, there would be no direct impacts anticipated on this fish or its habitat within Sixteen Mile Creek;
- Historically the Chimney Swift nested on cave walls and in hollow trees or tree cavities in old growth forests. Today, they are more likely to be found in and around urban settlements where they nest and roost in chimneys and other manmade structures. They also tend to stay close to water, as this is where the flying insects they eat congregate. The primary causes of the current Chimney Swift population decline are unknown, but are likely related to declines in their flying insect prey. It is unlikely that Chimney Swift ever nested at any of the residences on the Subject Lands because the houses were continuously occupied;
- The range of Butternut extends through most of the southern and eastern mixed deciduous forests in Ontario. This species is Endangered because it is affected by a canker disease. The tree can be found in a variety of habitats, from single specimens to locations within forests, typically in semi-open situations where sunlight is abundant. No butternut trees were observed on the wooded valley slopes or the tableland area.

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## 4 BIOPHYSICAL ANALYSIS

This section briefly addresses each of the seven types of natural heritage features defined in the PPS and provides comments on how the proposed development is related to these features. As is demonstrated, all the pertinent designations are applicable only to the Sixteen Mile Creek valley area.

### **Significant Wetlands**

In Ontario, Provincially Significant Wetlands are identified by conservation authorities or the MNR. There are no Provincially Significant Wetlands on, or within, 120 m of the Subject Lands.

### **Significant Coastal Wetlands**

This category is not applicable to the Subject Lands.

### **Significant Woodlands**

Criteria used for designating significant woodlands include woodland size, shape, proximity to other woodlands or natural, features, linkages, species diversity, uncommon characteristics, and economic and social values. No formal analysis was conducted as part of this report, however, the woodland on the valley slopes is of sufficient size, complexity and ecological function (e.g., linkage, wildlife habitat) to be considered significant using Regional OP policy S. 277.

### **Significant Valleylands**

Criteria for designating significant valley lands include prominence as a distinctive landform, degree of naturalness, and importance of its ecological functions, restoration potential, and historical and cultural values. The valleyland of Sixteen Mile Creek should be considered to be significant.

### **Significant Wildlife Habitat**

There are four general types of significant wildlife habitat: seasonal concentration areas, migration corridors, rare or specialized habitat, and species of conservation concern. The Sixteen Mile Creek ecosystem serves as a major migrating corridor for wildlife and is considered to represent significant wildlife habitat.

### **Significant Areas of Natural and Scientific Interest**

An Area of Natural and Scientific Interest (ANSI) is an area identified by the MNR as having provincially or regionally significant representative geological or ecological features. No ANSIs occur on, or within 50 m of the Subject Lands.

### **Fish Habitat**

Sixteen Mile Creek meets the definition of fish habitat, as defined in the federal Fisheries Act.

### **Habitat of Endangered and Threatened Species**

Endangered and threatened species are identified by the MNR using procedures established by the Committee on the Status of Species at Risk in Ontario (COSSARO). One endangered bat species (Eastern Small-footed Myotis) has been confirmed within the Subject Lands.



## 5 LIMITS AND SETBACKS FROM THE NATURAL HERITAGE FEATURES

Several site meetings with agencies (Halton Region, Conservation Halton) were held in 2016 to delineate and stake out limits of natural heritage features associated with the Sixteen Mile Creek. The Site Plan (**Figure 5, Appendix A**) illustrates the dripline (in dark green), top of bank (in olive green) and long-term stable slope (in purple). The setback of 15 m is applied to the greater of these limits (i.e., furthest into the tableland).

## 6 DEVELOPMENT PROPOSAL

Dunpar proposes a conversion of the existing single-family homes into townhouses blocks, consisting of 81 units (**Figure 5, Appendix A**) connected by a network of internal streets and fire routes. The proposal includes the retention of two homes at 1024 and 1042 Sixth Line.

As concluded in Counterpoint Engineer's Functional Servicing Report (under separate cover), the anticipated flow from the development is 3.05 l/s and the existing 450 mm sanitary sewer on Sixth Line has adequate capacity to support the demand. Sixth Line Road has an existing storm sewer which drains south towards North Service Road, away from the Natural Heritage feature.

The Subject Lands are located within an "Urban Area" of the Region of Halton Official Plan. Under the Oakville Official Plan, the lands are designated "Low Density Residential" with a special policy overlay intended to protect the unique character of lands zoned RL1/RL1-0.

We understand that the Subject Lands are zoned RL1-0 Residential Low Density 1 under Zoning Bylaw 2014-014, which permits single detached dwellings. Under bylaw 1984-063 the Subject Lands are zoned R01, which also permits single-family dwellings. For these reasons, the applicant and their planner have combined Official Plan and Zoning By-law Amendment applications submitted to the municipality.

## 7 IMPACT ASSESSMENT

The proposed development will be entirely contained within the existing footprint of the old subdivision (**Figure 6, Appendix A**). With the application of setbacks from the features associated with the Sixteen Mile Creek (dripline, top of bank, stable slope), the valley ecosystem will continue to perform its landscape, ecological and hydrological functions. The impact on the forest community and its plants and wildlife is considered negligible. During the construction period, wildlife that occasionally use the housing area for foraging will be disrupted and are likely to abandon the disturbed tableland portions of the Subject Lands.

In terms of impact on the type of wildlife that has used, or is presently using, the five lots proposed for re-development, with their single homes surrounded by yards, lawns, gardens, ornamental shrub and herb plantings and trees, the conversion to a more compact housing type will cause a local reduction in habitat usage by common and widespread species. This will be mitigated at least in part by the establishment of new landscaping. Over time, the common species that live in anthropogenic habitats will likely return to the Subject Lands.

No hydrologic impacts are anticipated to groundwater quantity and quality; because the development involves a slab-on-grade construction, no hydrogeological study was required.

No effects to fisheries habitat are anticipated given the separation of the development from Sixteen Mile Creek and no direct or indirect hydrologic connection with the creek. The proposed storm sewer design and layout will be designed to the 5-year storm and will outlet into a stormwater detention tank before leaving the site as a controlled flow. The stormwater management system conforms to the Town of Oakville criteria. The 100 year post-development flow is controlled to the 5 year pre-development flow. Based on this, a detention tank will be sized to accommodate the required detention storage volume of 377.4m<sup>2</sup>. Based upon the foregoing, all development will occur away from the existing top-of-bank and associated valley of Sixteen Mile Creek and, providing the recommended erosion and sediment controls are implemented, there will be no direct or indirect impacts to the aquatic habitat within the watercourse.

Unleashed dogs and outdoors cats can present a threat to local wildlife of mammals and birds, and these impacts have been amply documented in literature. To minimize these impacts, especially on the forested slopes, outreach and education about these effects can be productive.

## 8 PROPOSED MITIGATION STRATEGIES

According to Halton Region's EIA Guidelines,

*Mitigation strategies are intended to lessen and avoid impacts to the RNHS and to increase the long term protection of the Regional Natural Heritage System.*

Avoidance tends to be the most effective approach to mitigating effects. In that regard, the proposed development will be setback from the valley ecosystem of Sixteen Mile Creek. Suitabke development limits (i.e., RNHS limits), established in cooperation with Halton Region and Conservation Halton, are shown on the Site Plan (**Figure 5, Appendix A**). Within the setback zone, no grading and/or construction activities will occur and trees will be retained intact.

In recognition of the importance of the Sixteen Mile Creek valley and ESA, informative signage will be erected, and pamphlets may be produced for the benefit of new homeowners, encouraging good-citizen practices (e.g., not dumping of garden refuse, identification and control of invasive species, pet control, etc.). If informal trails become established along the edge of the valley, measures will be implemented to formalize them as an environment-friendly feature (e.g., properly surfaced, preventing soil erosion, channeling foot traffic, etc.).

On the tableland where development will actually take place, removal of trees should occur outside of bird breeding season. Based on the tree preservation plan, trees identified for retention (including a large Gingko specimen tree at #1042), will be marked and fenced off to minimize trunk and root zone damage during construction.

For the long term, common areas landscaping should use locally native, non-invasive plant species.

## 9 MONITORING

With the separation of the development from the valley by setback zones and no or minor impact (e.g., from trails) on the forest ecosystem, there appears to be no need for ecological monitoring.

## 10 SUMMARY AND CONCLUSIONS

Based on site observations and analysis presented in the foregoing sections of this report, the following conclusions have been reached:

- The significant fish habitat, significant woodlands, significant valley lands, or significant wildlife habitat (migration corridor, species of conservation concern), will be protected from development by setback zones;
- The removal of existing, mostly anthropogenic and landscaped vegetation on the tableland portion will not significantly impact the local landscape ecology; and
- No hydrologic impacts are anticipated to groundwater quantity and quality or the fish habitat of Sixteen Mile Creek and ESA.

Based on the above, the development proposal will not negatively impact upon important natural heritage features and associated functions.

Report Prepared by  
SAVANTA INC



Chris Zoladeski  
Botanist, Senior Ecologist  
[chriszoladeski@savanta.ca](mailto:chriszoladeski@savanta.ca)  
1-800-810-3281 Ext 1050

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## **APPENDICES**

### **Appendix A – Figures**

- Figure 1: Location of Subject Lands
- Figure 2: Bat Acoustic Surveys
- Figure 3: Ecological Land Classification
- Figure 4: Breeding Bird Survey Point Count Locations
- Figure 5: Site Plan
- Figure 6: Site Plan and Ecological Land Classification

### **Appendix B – Tables**

- Table 1 – Survey Type, Dates and Surveyors
- Table 2 – Bat Acoustic Survey Dates, Surveyors and Conditions
- Table 3 – Plant Species List
- Table 4 – Wildlife Species List
- Table 5 – NHIS Species at Risk Reported Within 1 Km
- Table 6 – Bat Acoustic Survey Results
- Table 7 – Bird Species List

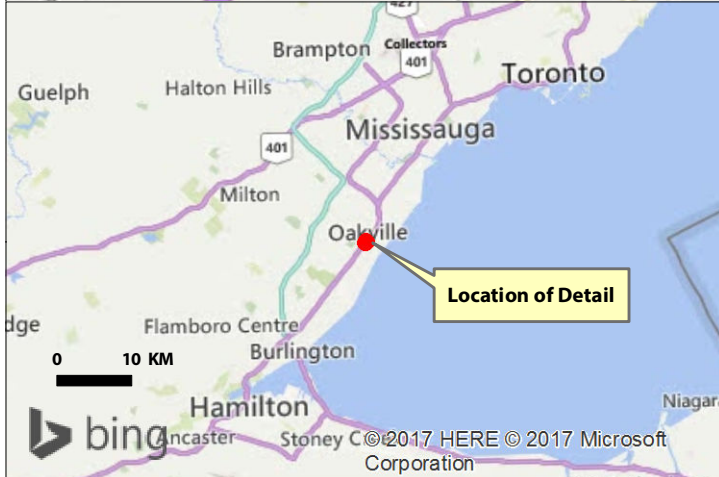
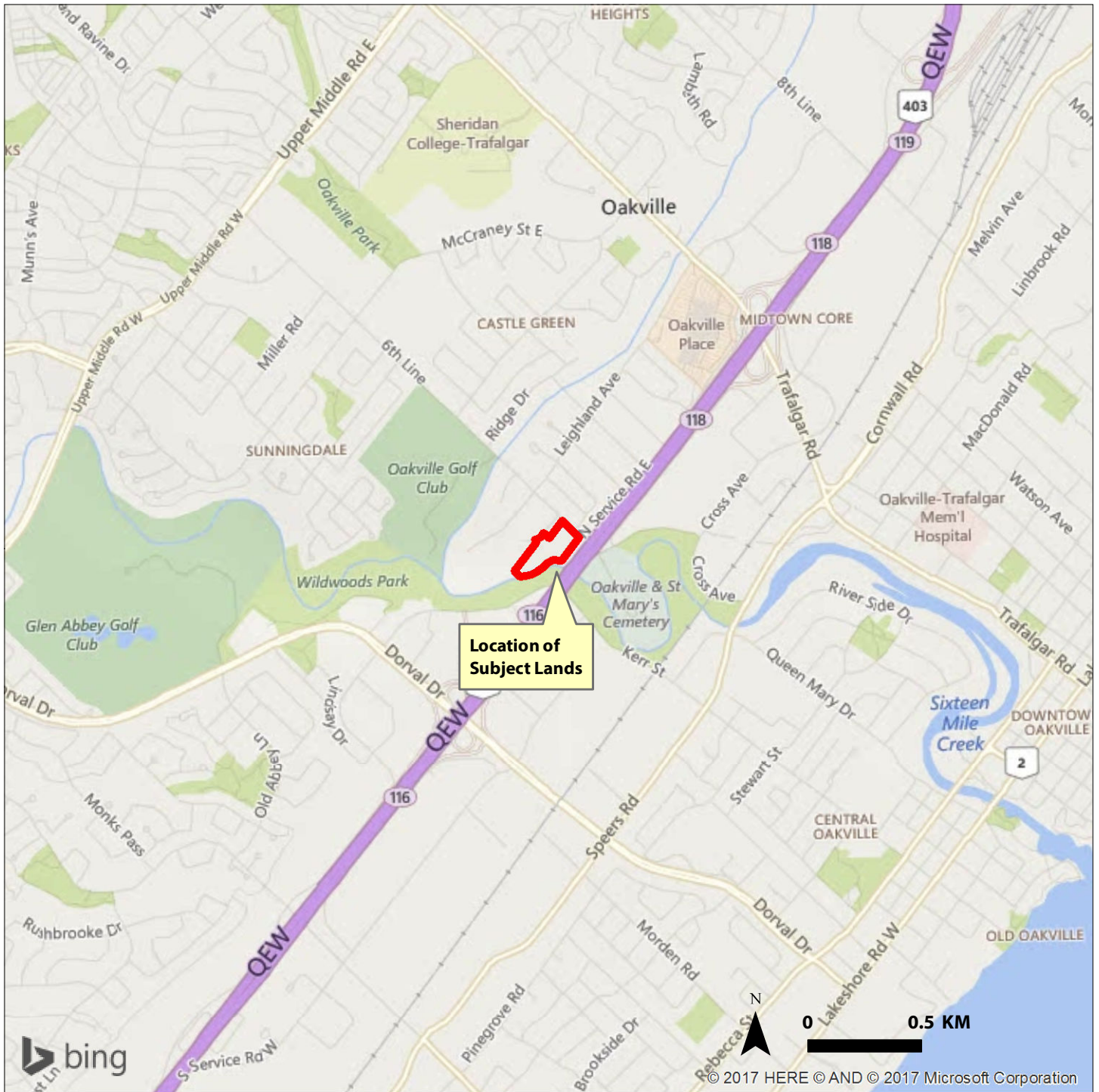
### **Appendix C – Agency Correspondence**





## **Appendix A – Figures**



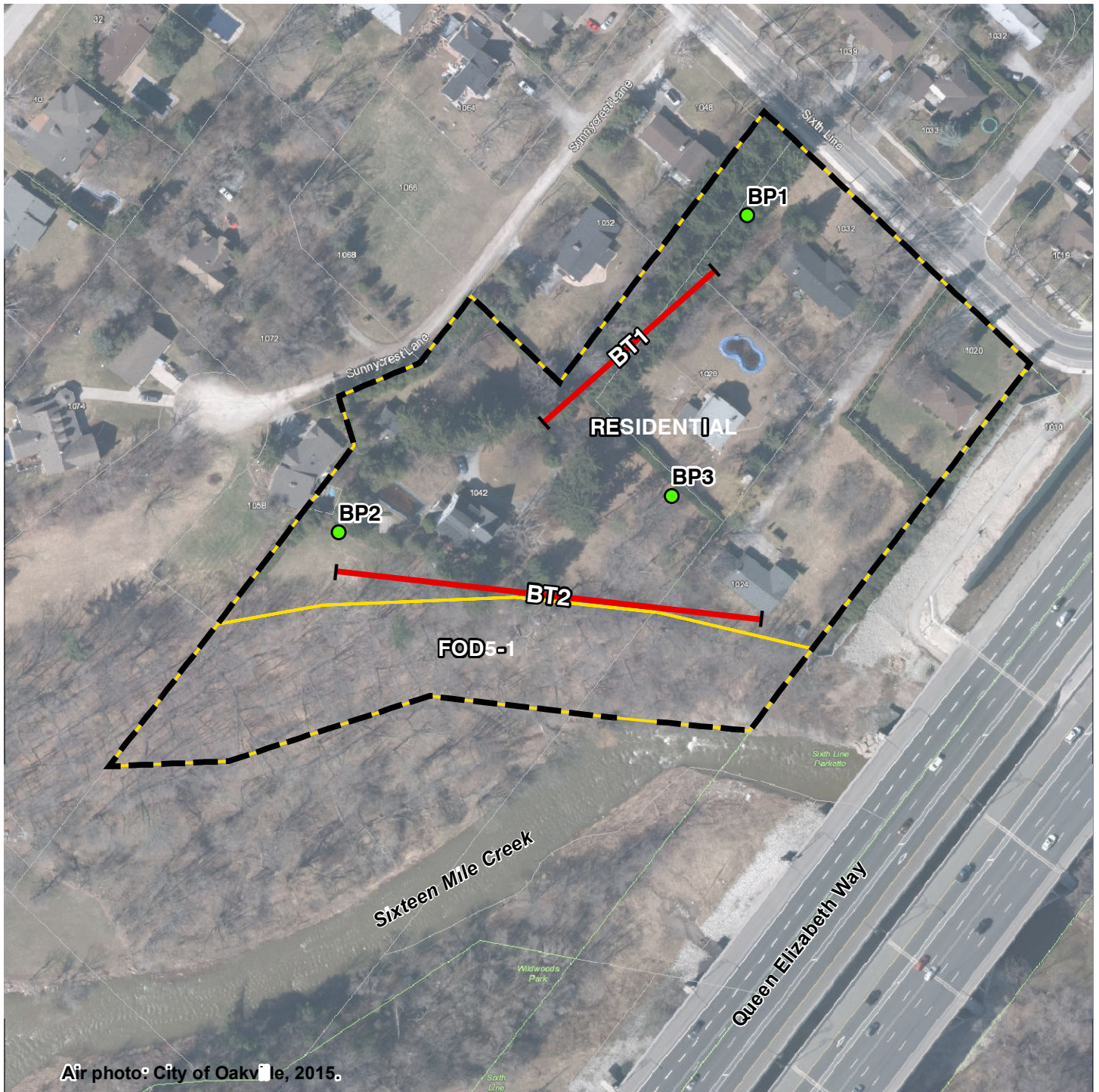


Sixth Line, Scoped EIA

# Figure 1 Location of Subject Lands











Sixth Line, Scoped EIA

Figure 2  
Bat Survey Point Count and Transect Locations



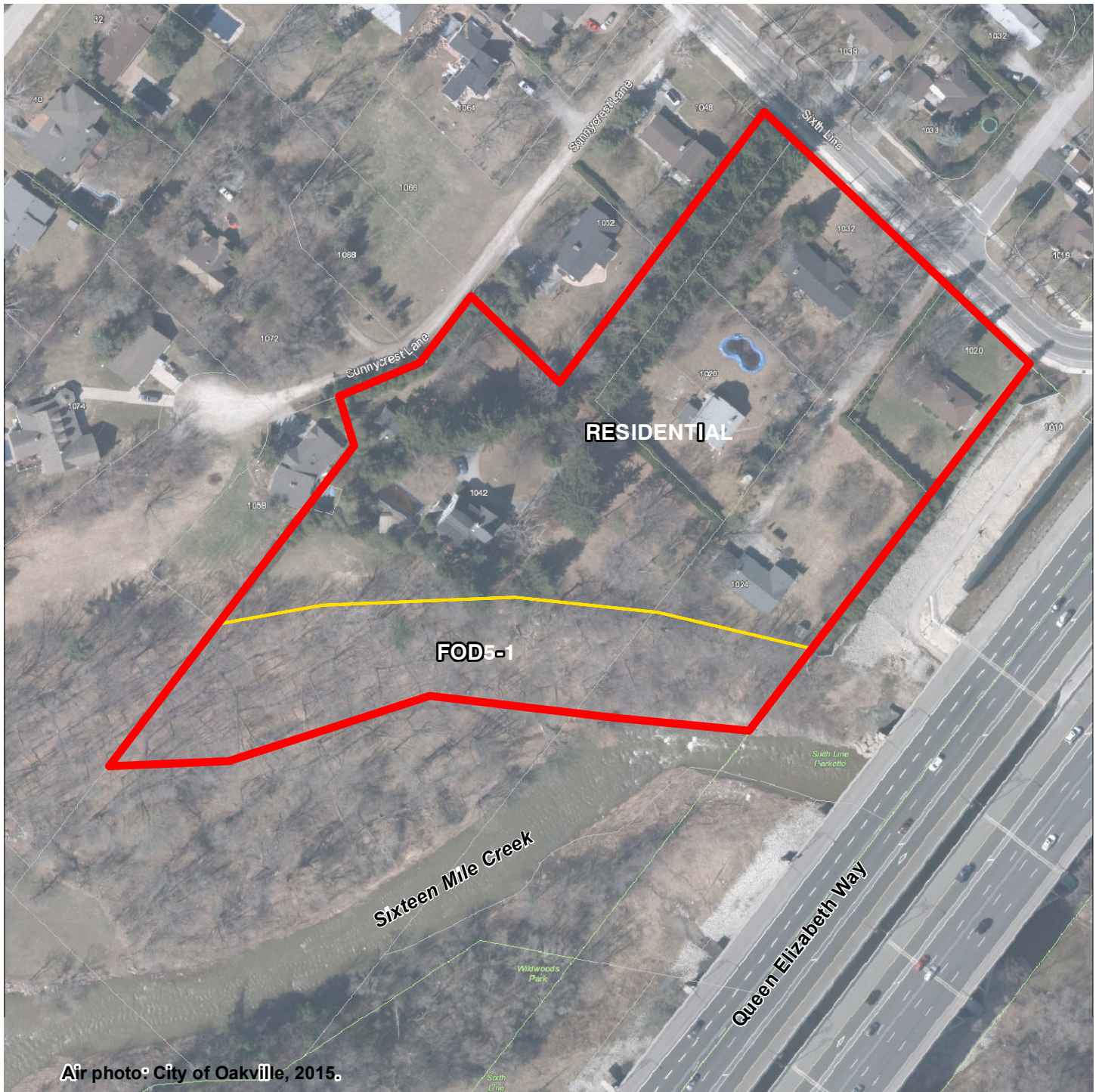
ELC Legend

**FOD5-1** Dry-Fresh Sugar Maple Deciduous Forest

-  Study Area
-  Ecological Land Classification
-  Transect Location
-  Point Count Station







Air photo: City of Oakville, 2015.

Sixth Line, Scoped EIA

Figure 3  
Ecological Land Classification

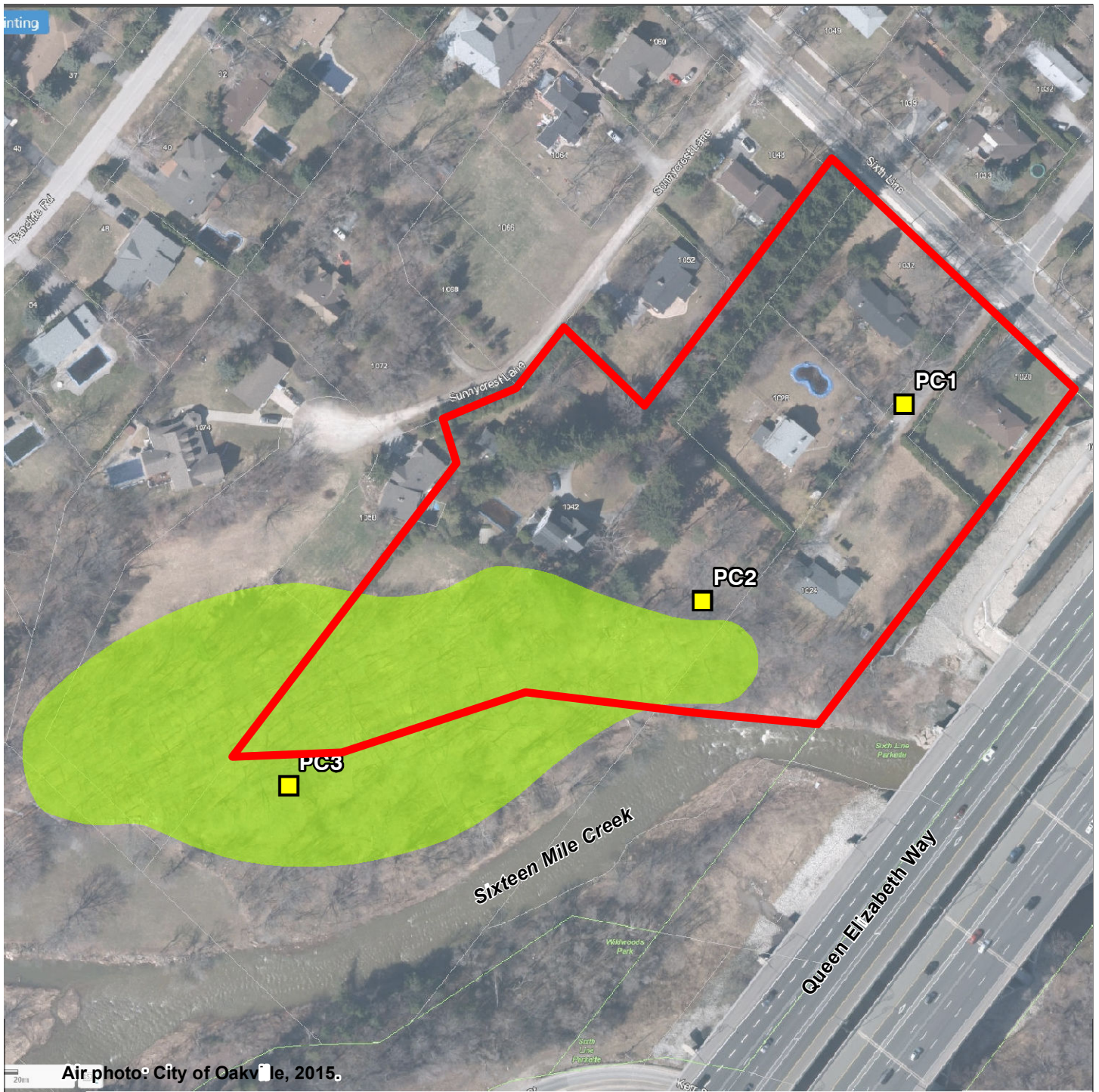


- Study Area
- Ecological Land Classification

ELC Legend  
**FOD5-1** Dry-Fresh Sugar Maple Deciduous Forest







Air photo: City of Oakville, 2015.

Sixth Line, Scoped EIA

Figure 4  
Breeding Bird Survey Point Count Locations  
and Bird Species at Risk Habitat

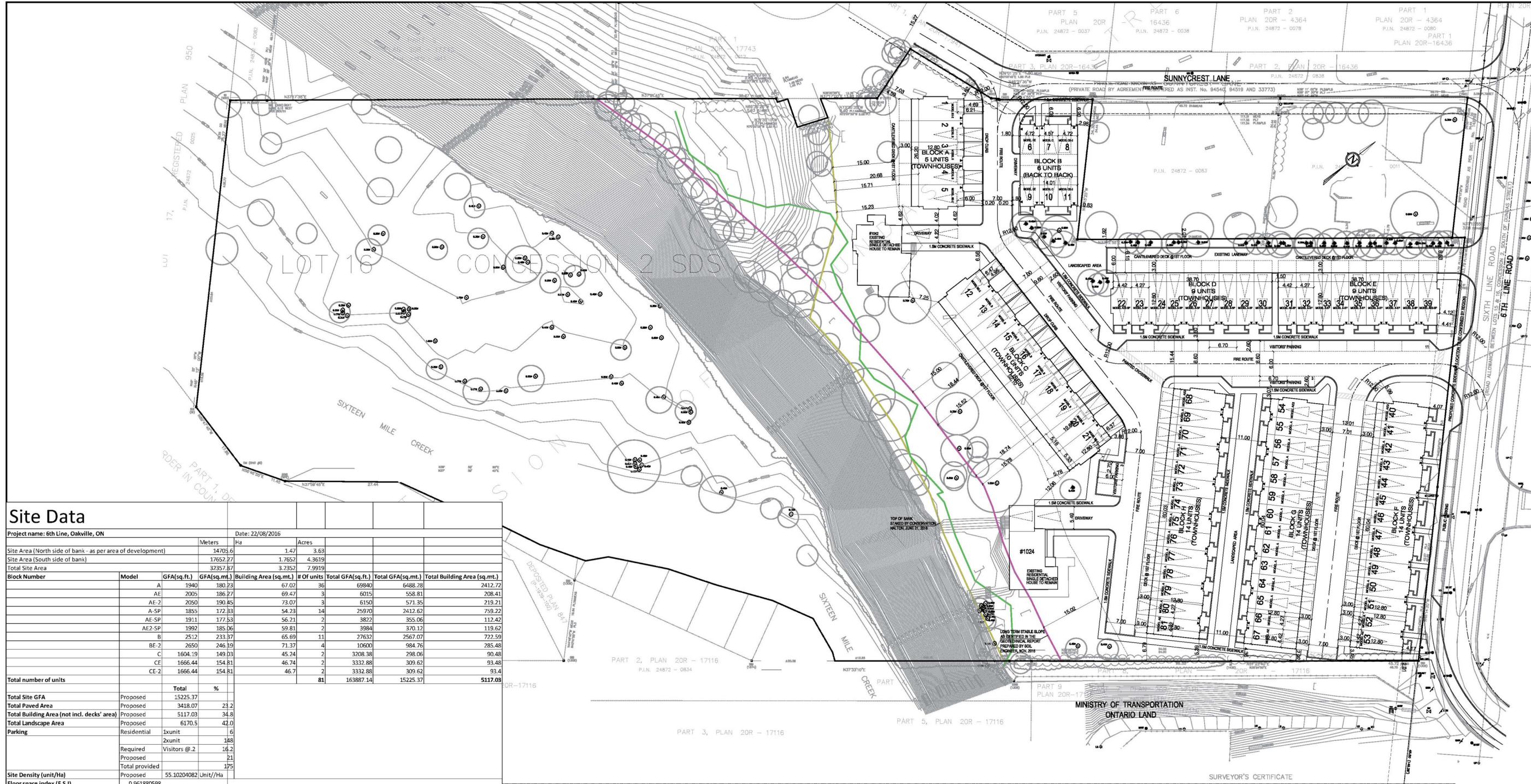


0 50 Meters

- Study Area
- Point Count Station Location
- Species At Risk Habitat







### Site Data

Project name: 6th Line, Oakville, ON Date: 22/08/2016

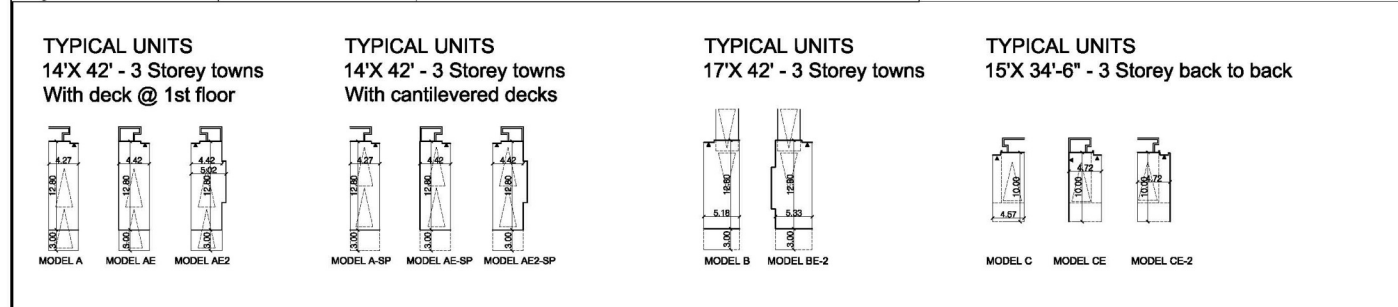
	Meters	Ha	Acres
Site Area (North side of bank - as per area of development)	14705.6	1.47	3.63
Site Area (South side of bank)	17652.77	1.7652	4.3619
Total Site Area	32357.87	3.2352	7.9919

Block Number	Model	GFA (sq.ft.)	GFA (sq.m.)	Building Area (sq.m.)	# of units	Total GFA (sq.ft.)	Total GFA (sq.m.)	Total Building Area (sq.m.)
A	A	1940	180.73	67.02	36	69840	6488.28	2412.72
	AE	2005	186.27	69.47	3	6015	558.81	208.41
AE-2	AE-2	2050	190.45	73.07	3	6150	571.35	219.21
	A-SP	1855	172.83	54.23	14	2570	2412.62	759.22
AE-SP	AE-SP	1911	177.53	56.21	2	3822	355.06	112.42
	AE-2-SP	1992	185.06	59.81	2	3984	370.12	119.62
B	B	2512	233.37	65.69	11	27632	2567.07	722.59
	BE-2	2650	246.19	71.37	4	10600	984.76	285.48
C	C	1604.19	149.03	45.24	2	3208.38	298.06	90.48
	CE	1666.44	154.81	46.74	2	3332.88	309.62	93.48
CE-2	CE-2	1666.44	154.81	46.7	2	3332.88	309.62	93.4
Total number of units					81	163887.14	15225.37	5117.09

Total Site GFA	Proposed	15225.37
Total Paved Area	Proposed	3418.07
Total Building Area (not incl. decks' area)	Proposed	5117.03
Total Landscape Area	Proposed	6170.5

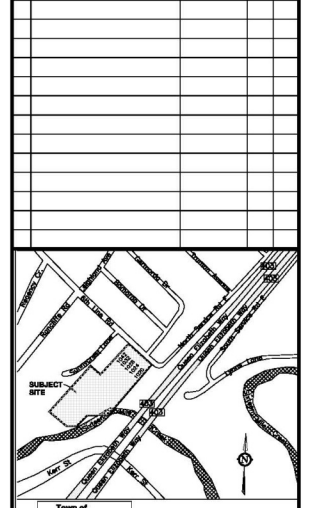
Parking	Residential	3unit	16
	Required	2unit	188
	Required	Visitors @.2	16.2
	Proposed		21
	Total provided		175

Site Density (unit/ha)	Proposed	55.10204082 Unit/ha
Floor space index (F.S.I)	Proposed	0.961880598



CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. DO NOT SCALE THE DRAWINGS.

NO.	REVISIONS	DATE	DRAWN	CHK.
1.	ISSUED FOR PRE-APPLICATION MEETING	JUL 12, 2016	SC	
2.	ISSUED FOR REVIEW	AUGUST 10, 2016	SC	
3.	ISSUED FOR REVIEW	AUGUST 15, 2016	SC	
4.	ISSUED FOR CONSULTANTS	AUGUST 23, 2016	SC	



**Figure 5 Site Plan**

**SAVANTA**

PROJECT: 6TH LINE  
1020, 1024, 1028, 1032, 1042 SIXTH LINE ROAD  
TOWN OF OAKVILLE, ONTARIO

SCALE: 1:400

DRAWING TITLE: SITE PLAN

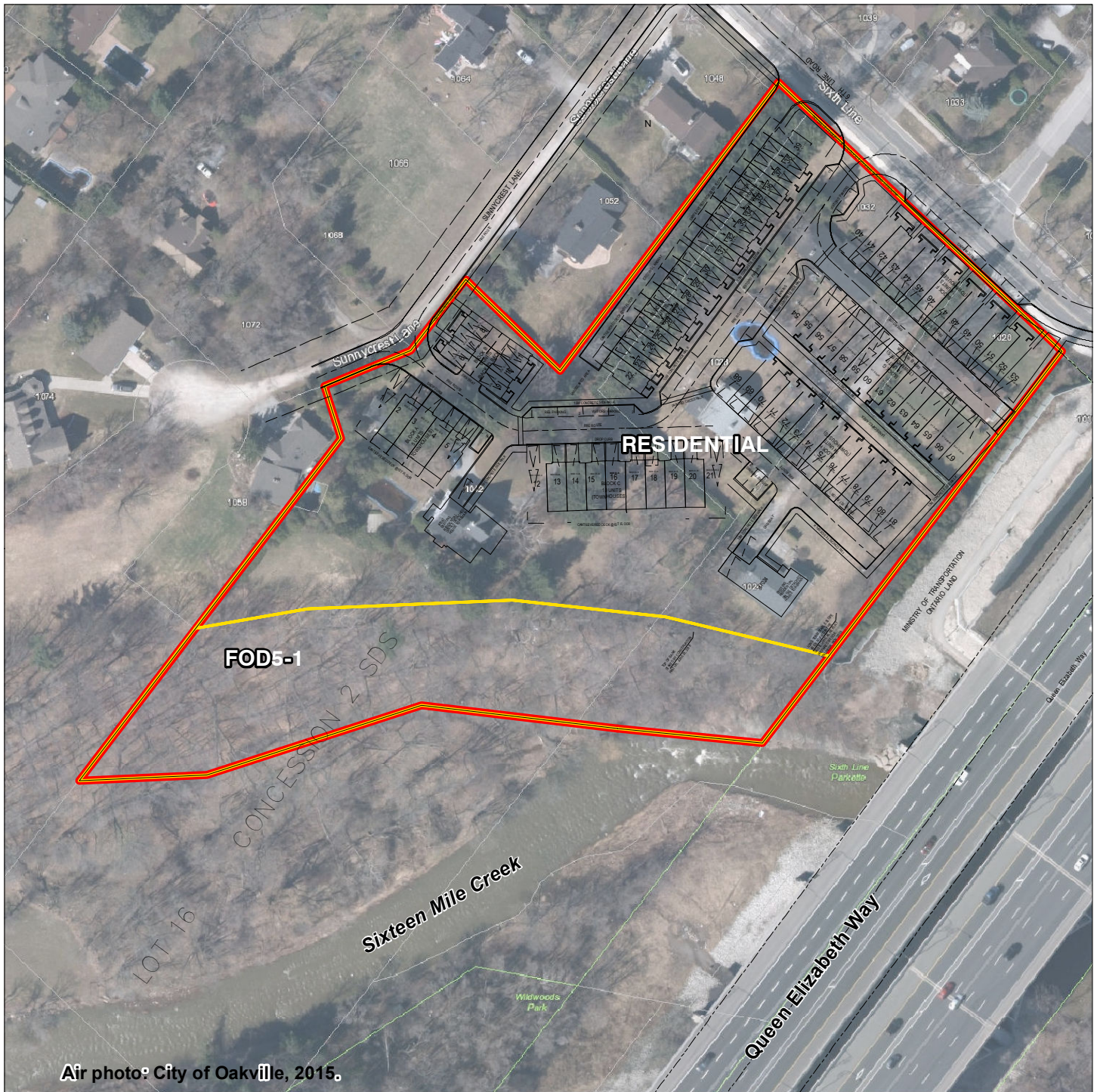
OWNER/DEVELOPER: 1659514 ONTARIO CORP. OP DESIGN INC.

108 SIX POINT ROAD TORONTO (ONTARIO), ONTARIO, M2X 3X3

PREPARED BY: SC PROJECT NO. 1659514  
CHECKED BY: DATE PAGE NO. SP-1  
ISSUED:







Air photo: City of Oakville, 2015.

Sixth Line, Scoped EIA

Figure 6  
Site Plan and Ecological Land Classification



0 50 Meters

- Study Area
- Ecological Land Classification

ELC Legend  
**FOD5-1** Dry-Fresh Sugar Maple Deciduous Forest





## **Appendix B – Tables**



Table 1. Survey Type, Dates and Surveyors

SURVEY TYPE	DATES	SURVEYOR(S)
Vegetation ELC / Botanical	May 21, 2015 October 14, 2015 September 7, 2016 May 23, 2017	C. Zoladeski
Bird and Wildlife	May 28, 2017 June 15, 2017	B. Charlton
Bat (Tree Cavity Survey)	February 27, 2017	C. Zoladeski
Bat (Acoustic Survey)	June 5, 13, 26, 2017	L. Williamson C. Zoladeski J. Leslie

Table 2. Bat Acoustic Survey Dates, Surveyors and Conditions

SURVEYORS (SURNAME, INITIAL)	SURVEY ROUND	DATE (2017)	TIME		EQUIPMENT USED	AIR TEMP (°C)	HUMIDITY (%)	CLOUD COVER (%)	BEAUFORT WIND SPEED	PRECIPITATION	MOON PHASE
			START	END							
Williamson, L. Zoladeski, C.	1	June 5	21:06	21:49	EMT	16	77	100	1	None	Waxing Gibbous (89%)
Williamson, L. Leslie, J.	2	June 13	21:09	21:44	EMT	20	70	40	1	None	Waning Gibbous (83%)
Williamson, L. Leslie, J.	3	June 26	21:06	21:41	EMT	15	77	70	1	None	Waning Crescent (12%)

Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Halton	Authority
										Crins et al., 2006	
<b>Pinaceae</b>		<b>Pine Family</b>									
<i>Picea abies</i>		Norway Spruce		5	-1	SNA			G5	X	(L.) Karsten
<i>Picea pungens</i>		Colorado Spruce				SNA			G5		Engelm.
<i>Pinus sylvestris</i>		Scots Pine		5	-3	SNA			GNA	X	L.
<b>Aceraceae</b>		<b>Maple Family</b>									
<i>Acer negundo</i>		Manitoba Maple	0	-2		S5			G5	X	L.
<i>Acer platanoides</i>		Norway Maple		5	-3	SNA			GNA	X	L.
<i>Acer saccharinum</i>		Silver Maple	5	-3		S5			G5	X	L.
<i>Acer saccharum ssp. saccharum</i>		Sugar Maple	4	3		S5			G5T5	X	Marshall
<b>Anacardiaceae</b>		<b>Sumac or Cashew Family</b>									
<i>Toxicodendron rydbergii</i>	<i>Rhus rydbergii</i> , <i>Toxicodendron radicans</i> <i>var. rydbergii</i>	Rydberg's Poison Ivy	0	0		S5			G5T	X	Small ex Rydb.
<b>Apiaceae</b>		<b>Carrot or Parsley Family</b>									
<i>Aegopodium podagraria</i>		Goutweed		0	-3	SNA			GNR	X	L.
<i>Daucus carota</i>		Wild Carrot		5	-2	SNA			GNR	X	L.
<b>Apocynaceae</b>		<b>Dogbane Family</b>									
<i>Vinca minor</i>		Periwinkle		5	-2	SNA			GNR	X	L.
<b>Asteraceae</b>		<b>Composite or Aster Family</b>									
<i>Arctium lappa</i>		Greater Burdock				SNA			GNR	X	L.
<i>Cirsium arvense</i>		Canada Thistle		3	-1	SNA			GNR	X	(L.) Scop.
<i>Cirsium vulgare</i>		Bull Thistle		4	-1	SNA			GNR	X	(Savi) Ten.
<i>Conyza canadensis</i>	<i>Erigeron canadensis</i>	Horseweed	0	1		S5			G5	X	(L.) Cronquist
<i>Erigeron strigosus</i>		Daisy Fleabane	0	1		S5			G5	X	Muhlenb. ex Willd.
<i>Senecio vulgaris</i>		Common Ragwort		5	-1	SNA			GNR	X	L.
<i>Solidago altissima</i>		Tall Goldenrod	1	3		S5			G5	X	L.
<i>Solidago flexicaulis</i>		Zig-zag Goldenrod	6	3		S5			G5	X	L.
<i>Sonchus arvensis ssp. arvensis</i>		Field Sow-thistle				SNA			GNRTNR	X	L.
<i>Sonchus oleraceus</i>		Common Sow-thistle		3	-1	SNA			GNR	X	L.
<i>Symphotrichum lateriflorum</i>	<i>Aster lateriflorus</i>	Starved Aster	3	-2		S5			G5	X	(L.) Britton
<i>Taraxacum officinale</i>		Common Dandelion		3	-2	SNA			G5	X	G. Weber
<b>Berberidaceae</b>		<b>Barberry Family</b>									
<i>Berberis thunbergii</i>		Japanese Barberry		4	-3	SNA			GNR	X	DC.
<b>Boraginaceae</b>		<b>Borage Family</b>									
<i>Hackelia virginiana</i>		Virginia Stickweed	5	1		S5			G5?	U	(L.) I.M. Johnston

Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Halton	Authority
										Crins et al., 2006	
<i>Myosotis sylvatica</i>		Woodland Forget-me-not		5	-1	SNA			G5	X	H. Hoffm.
<b>Brassicaceae</b>		<b>Mustard Family</b>									
<i>Alliaria petiolata</i>	<i>Alliaria officinalis</i>	Garlic Mustard		0	-3	SNA			GNR	X	(M. Bieb.) Cavara & Grande
<i>Barbarea vulgaris</i>		Yellow Rocket		0	-1	SNA			GNR	X	R. Br.
<i>Capsella bursa-pastoris</i>		Common Shepherd's Purse		1	-1	SNA			GNR	X	(L.) Medik.
<i>Hesperis matronalis</i>		Dame's Rocket		5	-3	SNA			G4G5	X	L.
<b>Caprifoliaceae</b>		<b>Honeysuckle Family</b>									
<i>Lonicera tatarica</i>		Tartarian Honeysuckle		3	-3	SNA			GNR	X	L.
<b>Chenopodiaceae</b>		<b>Goosefoot Family</b>									
<i>Chenopodium album</i> var. <i>album</i>	<i>Chenopodium album</i>	White Goosefoot		1	-1	SNA			G5TNR	X	L.
<b>Euphorbiaceae</b>		<b>Spurge Family</b>									
<i>Acalypha rhomboidea</i>		Three-seeded Mercury	0	3		S5			G5	X	L.
<i>Euphorbia peplus</i>		Petty Spurge		5	-1	SNA			GNR	X	L.
<b>Fabaceae</b>		<b>Pea Family</b>									
<i>Lotus corniculatus</i>		Bird's-foot Trefoil		1	-2	SNA			GNR	X	L.
<b>Fagaceae</b>		<b>Beech Family</b>									
<i>Fagus sylvatica</i>		European Beech									L.
<i>Quercus alba</i>		White Oak	6	3		S5			G5	X	L.
<i>Quercus rubra</i>		Northern Red Oak	6	3		S5			G5	X	L.
<b>Geraniaceae</b>		<b>Geranium Family</b>									
<i>Geranium robertianum</i>		Herb-robert		5	-2	SNA			G5	X	L.
<b>Guttiferae</b>		<b>St. John's-wort Family</b>									
<i>Hypericum perforatum</i>		Common St. John's-wort		5	-3	SNA			GNR	X	L.
<b>Juglandaceae</b>		<b>Walnut Family</b>									
<i>Juglans nigra</i>		Black Walnut	5	3		S4?			G5	X	L.
<b>Lamiaceae</b>		<b>Mint Family</b>									
<i>Ajuga reptans</i>		Carpet Bugle		5	-1	SNA			GNR	X	L.
<i>Glechoma hederacea</i>		Ground Ivy		5	-2	SNA			GNR	X	L.
<i>Leonurus cardiaca</i>		Common Motherwort		5	-2	SNA			GNR	X	L.
<i>Nepeta cataria</i>		Catnip		1	-2	SNA			GNR	X	L.
<i>Thymus praecox</i>		Mother-of-thyme				SNA			GNR	X	Opiz



Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Halton	Authority
										Crins et al., 2006	
<b>Moraceae</b>		<b>Mulberry Family</b>									
<i>Morus alba</i>		White Mulberry		0	-3	SNA			GNR	X	L.
<b>Oleaceae</b>		<b>Olive Family</b>									
<i>Fraxinus americana</i>		White Ash	4	3		S4?			G5	X	L.
<i>Fraxinus pennsylvanica</i>		Red Ash	3	-3		S5			G5	X	Marshall
<i>Syringa vulgaris</i>		Common Lilac		5	-2	SNA			GNR	X	L.
<b>Onagraceae</b>		<b>Evening-primrose Family</b>									
<i>Oenothera biennis</i>		Common Evening-primrose	0	3		S5			G5	?	L.
<b>Oxalidaceae</b>		<b>Wood Sorrel Family</b>									
<i>Oxalis stricta</i>		Upright Yellow Wood-sorrel	0	3		S5			G5	X	L.
<b>Papaveraceae</b>		<b>Poppy Family</b>									
<i>Chelidonium majus</i>		Greater Celandine		5	-3	SNA			GNR	X	L.
<b>Plantaginaceae</b>		<b>Plantain Family</b>									
<i>Plantago lanceolata</i>		English Plantain		0	-1	SNA			G5	X	L.
<b>Polygonaceae</b>		<b>Smartweed Family</b>									
<i>Rumex crispus</i>		Curly Dock		-1	-2	SNA			GNR	X	L.
<b>Ranunculaceae</b>		<b>Buttercup Family</b>									
<i>Ranunculus acris</i>		Tall Buttercup			-2	SNA			G5	X	L.
<b>Rhamnaceae</b>		<b>Buckthorn Family</b>									
<i>Rhamnus cathartica</i>		Common Buckthorn		3	-3	SNA			GNR	X	L.
<b>Rosaceae</b>		<b>Rose Family</b>									
<i>Fragaria vesca</i>		Woodland Strawberry	4	4		S5			G5	X	L.
<i>Fragaria virginiana</i>		Virginia Strawberry	2	1		S5			G5	X	Miller
<i>Geum aleppicum</i>		Yellow Avens	2	-1		S5			G5	X	Jacq.
<i>Prunus avium</i>		Sweet Cherry		5	-2	SNA			GNR	X	(L.) L.
<i>Rosa multiflora</i>		Multiflora Rose		3	-3	SNA			GNR	X	Thunb. ex Murray
<i>Rubus occidentalis</i>		Black Raspberry	2	5		S5			G5	X	L.
<i>Sorbus aucuparia</i>		European Mountain-ash		5	-2	SNA			G5	X	L.
<b>Scrophulariaceae</b>		<b>Figwort Family</b>									
<i>Verbascum thapsus</i>		Common Mullein		5	-2	SNA			GNR	X	L.
<i>Veronica serpyllifolia</i>	<i>Veronica serpyllifolia</i> ssp. <i>Serpyllifolia</i>	Thyme-leaved Speedwell	0	-3		SNA			G5TNR	X	L.

Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWI C Status	Global Status G-Rank	Local Status Halton	Authority
										Crins et al., 2006	
<b>Tiliaceae</b>		<b>Linden Family</b>									
<i>Tilia americana</i>		American Basswood	4	3		S5			G5	X	L.
<b>Ulmaceae</b>		<b>Elm Family</b>									
<i>Ulmus americana</i>		White Elm	3	-2		S5			G5	X	L.
<i>Ulmus pumila</i>		Siberian Elm		5	-1	SNA			GNR	X	L.
<b>Verbenaceae</b>		<b>Vervain Family</b>									
<i>Verbena urticifolia</i>		White Vervain	4	-1		S5			G5	X	L.
<b>Violaceae</b>		<b>Violet Family</b>									
<i>Viola sororia</i>	<i>Viola sororia var. affinis</i>	Woolly Blue Violet				S5			G5	X	Willd.
<b>Vitaceae</b>		<b>Grape Family</b>									
<i>Parthenocissus inserta</i>	<i>Parthenocissus vitacea</i>	Inserted Virginia-creeper	3	3		S5			G5	X	(A. Kern.) Fritsch
<i>Vitis riparia</i>		Riverbank Grape	0	-2		S5			G5	X	Michx.
<b>Cyperaceae</b>		<b>Sedge Family</b>									
<i>Carex leptonevia</i>		Finely-nerved Sedge	5	0		S5			G5	X	(Fern.) Fern.
<b>Liliaceae</b>		<b>Lily Family</b>									
<i>Convallaria majalis</i>		Lily-of-the-valley		5	-2	SNA			G5	X	L.
<i>Erythronium americanum</i>		Yellow Trout-lily	5	5		S5			G5	X	Ker Gawl.
<i>Maianthemum racemosum</i>	<i>Smilacina racemosa</i>	False Solomon's Seal	4	3		S5			G5T	X	(L.) Link
<b>Poaceae</b>		<b>Grass Family</b>									
<i>Agrostis gigantea</i>		Redtop		0	-2	SNA			G4G5	X	Roth
<i>Dactylis glomerata</i>		Orchard Grass		3	-1	SNA			GNR	X	L.
<i>Digitaria ischaemum</i>		Small Crabgrass		3	-1	SNA			GNR	X	(Schreb. ex Schwein.) Schreb. ex Muhlenb.
<i>Festuca rubra ssp. rubra</i>		Red Fescue		1	-1	SNA			G5T5	X	L.
<i>Poa annua</i>		Annual Blue Grass		1	-2	SNA			GNR	X	L.
<i>Poa nemoralis</i>		Woodland Blue Grass		0	-1	SNA			G5	X	L.

Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Halton	Authority
										Crins et al., 2006	

**STATISTICS**

**Species Richness**

Total Number of Species:	81	
Native Species:	31	38%
Exotic Species:	50	62%
S1-S3 Species:	0	0%
S4 Species:	2	6%
S5 Species:	29	94%

**Floristic Quality Indices**

Mean Co-efficient of Conservatism (CC)	2.8	
CC 0 - 3 = lowest sensitivity	17	55%
CC 4 - 6 = moderate sensitivity	14	45%
CC 7 - 8 = high sensitivity	0	0%
CC 9 - 10 = highest sensitivity	0	0%
Floristic Quality Index (FQI)	15	

**Weedy and Invasive Species**

Mean Weediness Index:	-1.9	
-1 = low potential invasiveness	16	36%
-2 = moderate potential invasiveness	16	36%
-3 = high potential invasiveness	12	27%

**Wetland Species**

Mean Wetness Index	2.4	
upland	23	31%
facultative upland	24	32%
facultative	20	27%
facultative wetland	7	9%
obligate wetland	0	0%

<b>BOTANY LIST: EXPLANATION OF TERMS</b>		
<b>Botanical and Common Name</b>	From Newmaster et. Al. 1998. Species requiring confirmation noted (cf)	
<b>Co-efficient of Conservatism</b>	This value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific habitat	
<b>Wetness Index</b>	This value, ranging from -5 (obligate wetland) to 5 (upland) provides the probability of a species occurring in wetland or upland habitats	
<b>Weediness Index</b>	This value, ranging from -1 (low) to -3 (high) quantifies the potential invasiveness of non-native plants. In combination with the percentage of non-native plants, it can be used as an indicator of disturbance	
<b>Provincial Status</b>	Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These ranks are not legal designations. S4 and S5 species are generally uncommon to common in the province. Species ranked S1-S3 are considered to be rare in Ontario	
<b>Local Status</b>	<b>X:</b>	Native species present (collection-based) and all exotic species
	<b>R:</b>	Native species locally rare (number of sites): Hamilton-Wentworth (<6 sites), Durham (<10 sites), GTA (<40 sites), Site District 6E7 (<20 sites), Oak Ridges Moraine (20 or fewer sites), Halton (<5 sites); Peterborough (suspected of being rare, 5 or fewer occurrences); CVC/Peel Region (<11 sites)
	<b>U:</b>	Native species locally uncommon Hamilton-Wentworth (6-10 sites), Durham (11-20 sites), GTA (41-80 sites), Site District 6E7 (21-40 sites), Halton (5-15 sites)
	<b>E:</b>	Presumed Extirpated
	<b>?:</b>	More work required to determine status
	<b>H:</b>	Historic record
	<b>O:</b>	Only old (>20 years) records known (Peterborough)
<b>Record Type</b>	<b>SR: -</b>	Sight record

<b>BOTANY LIST: EXPLANATION OF TERMS</b>		
	<b>SRP</b>	Sight record with photograph
<b>VARGA 2005 Rankings</b>	<b>+</b>	Introduced species
	<b>X+</b>	Native species that is introduced in that municipality
	<b>(+)</b>	Possibly introduced species or a native species that is introduced in some municipalities
	<b>X</b>	Common native species or an introduced species that is present
	<b>R</b>	Rare native species
	<b>E</b>	Extirpated native species that has not been re-found at its known locations or its habitat is gone
	<b>SR</b>	Species record based on a sight record (all other species records based on herbarium collections)
	<b>LR</b>	Species record based on a literature record
	<b>U</b>	Uncommon native species
	<b>R6</b>	Number of stations for a rare native species
	<b>H</b>	Historical species not seen since 1950, however its habitat is still present
	<b><u>X</u></b>	Species that occur only in the portion of site district 6E7 outside of the Greater Toronto Area
<b>TRCA Rankings</b>	<b>L5</b>	Able to withstand high levels of disturbance; generally secure throughout the jurisdiction, including the urban matrix. May be of very localized concern in highly degraded areas
	<b>L4</b>	Able to withstand some disturbance; generally secure in rural matrix; of concern in urban matrix
	<b>L3</b>	Able to withstand minor disturbance; generally secure in natural matrix; considered to be of regional concern

<b>BOTANY LIST: EXPLANATION OF TERMS</b>		
<b>TRCA Rankings (Cont'd)</b>	<b>L2</b>	Unable to withstand disturbance; some criteria are very limiting factors; generally occur in high-quality natural areas, in natural matrix; probably rare in the TRCA jurisdiction; of concern regionally
	<b>L1</b>	Unable to withstand disturbance; many criteria are limiting factors; generally, occur in high-quality natural areas in natural matrix; almost certainly rare in the TRCA jurisdiction; of concern regionally
	<b>LX</b>	Extirpated from our region with remote chance of rediscovery. Presumably highly sensitive
	<b>LH</b>	Hybrid between two native species. Usually not scored unless highly stable and behaves like a species (e.g. <i>Equisetum x nelsonii</i> )
	<b>L+</b>	Exotic. Not native to TRCA jurisdiction. Includes hybrids between a native species and an exotic
	<b>L+?</b>	Origin uncertain or disputed, i.e., may or may not be native
	<b>pL</b>	Found in natural cover, but only as planted, not regenerating
<b>Status in Region of Waterloo</b>	<p>* Significant but with the expectation that additional research may prove otherwise</p> <p>+ Significant only if demonstrably indigenous - most populations in Region of Waterloo are thought to be of non-indigenous origin</p> <p># Significant but known Region of Waterloo reports are treated as hypothetical</p> <p>The sensitivity of natural areas can be assessed through application of the Weediness Index. The Weediness Index quantifies the potential invasiveness of non-native plants, and, in combination with the percentage of non-native plants can be used as an indicator of disturbance. Values (ranging from -1 to -3) have been assigned to most non-native species based on the potential impact each species can have in natural areas:</p> <p>-1: little or no impact on natural areas (most non-native plants are in this category)</p> <p>-2: occasional impacts on natural areas, generally infrequent or localized</p> <p>-3: major potential impacts on natural areas</p>	



<b>BOTANY LIST: EXPLANATION OF TERMS</b>		
<b>Status in Regional Municipality of Niagara (Oldham 2010)</b>	<b>R:</b> <b>RH:</b> <b>U:</b> <b>C:</b> <b>DD:</b> <b>I:</b> <b>hyb:</b>	Rare, 10 or fewer post 1980 records Rare Historic, no records post 1980 Uncommon, 11-20 post 1980 records Common, more than 20 post 1980 records Data deficient, further work needed to determine status Introduced Hybrid, no Niagara status assigned
<b>Status in County Haldimand-Norfolk (Sutherland 1987)</b>	<b>R</b> <b>VU</b> <b>U</b> <b>C</b> <b>I</b> <b>X</b> <b>?</b>	Rare, 1-5 sites, number of sites indicated Very Uncommon, 6-8 sites Uncommon, 9-15 sites Common, more than 15 sites Introduced, not native Present in Haldimand-Norfolk, no status assigned Status uncertain
<b>Status in Wellington County (Frank and Anderson 2009)</b>	<b>R1</b> <b>R2</b> <b>R3</b> <b>FACW</b> <b>FAC</b> <b>FACU</b> <b>UPL</b>	1-3 sites 4-6 sites 7-10 sites (Facultative Wetland): usually occurs in wetlands, but occasionally found in non-wetlands (estimated 67-99% probability) (Facultative): equally likely to occur in wetlands or non-wetlands (estimated 34-66% probability) (Facultative Upland): occasionally occurs in wetlands, but usually occurs in non-wetlands (estimated 1-33% probability) (Upland): occurs almost never in wetlands under natural conditions (estimated <1% probability)  Further refinement of the Facultative categories are denoted by a "+" or "-" to express exaggerated tendencies for those

<b>BOTANY LIST: EXPLANATION OF TERMS</b>		
<b>Status in Wellington County (Cont'd)</b>		<p>species. The "+" denotes a greater estimated probability occurring in wetlands than species in the general indicator category, but a lesser probability than species occurring in the next higher category. The "-" denotes a lesser estimated probability of occurring in wetlands than species in the general indicator category, but a greater probability than species occurring in the next lower general category.</p> <p>Each wetland category has been assigned a numerical value to facilitate the quantification of the wetness index. The wetland categories and their corresponding values are as follows:</p> <p>OBL: -5            FACW+: -4            FACW: -3            FACW-: -2            FAC+: -1            FAC: 0            FAC-: 1            FACU+: 2            FACU: 3            FACU-: 4            UPL: 5</p>
<b>Provincial Status</b>		<p>Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These rankings are based on the total number of extant Ontario populations and the degree to which they are potentially or actively threatened with destruction. The ranks are as follows:</p>
	<b>S1</b>	<p><b>Critically Imperiled</b></p> <p>Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.</p>

<b>BOTANY LIST: EXPLANATION OF TERMS</b>	
<b>Provincial Status (Cont'd)</b>	<p><b>S2</b>    <b>Imperiled</b> - Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.</p> <p><b>S3</b>    <b>Vulnerable</b> - Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation</p> <p><b>S4</b>    <b>Apparently Secure</b> - Uncommon but not rare; some cause for long-term concern due to declines or other factors</p> <p><b>S5</b>    <b>Secure</b> - Common, widespread, and abundant in the nation or state/province</p> <p><b>SH</b>    <b>Possibly Extirpated (Historical)</b> - Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become NH or SH without such a 20-40 year delay if the only known occurrences in a nation or state/province were destroyed or if it had been extensively and unsuccessfully looked for. The NH or SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.</p> <p><b>SR</b>    <b>Reported</b> in Ontario, but without persuasive documentation.</p> <p><b>SX</b>    <b>Presumed Extirpated</b> - Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.</p> <p><b>SE</b>    <b>Exotic</b>; not believed to be a native component of Ontario's flora. Numerical rankings after SE follow designations described above</p> <p><b>SNA</b>    Status not assigned.</p> <p><b>SU</b>    Nation or state/province conservation status not yet assessed.</p> <p>Rank ranges (9e.g., S2S3) indicate that the rank is either S2 or S3, but that current information is insufficient to differentiate.</p> <p>"?" following a rank indicates uncertainty about the assigned rank.</p>

## BOTANY LIST: EXPLANATION OF TERMS

**Q**

**Questionable taxonomy** - Taxonomic distinctiveness of this entity is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or the inclusion of this taxon in another taxon, with the resulting taxon having a lower-priority conservation status

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- |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nomenclature</b>                                              | Newmaster, S.G., A. Lehela, P.W.C Uhlig, S. McMurray and M.J. Oldham 1998. Ontario plant list. Ontario Ministry of Natural Resources, Ontario Forest Research Institute, Sault Ste. Marie, ON, Forest Research Information Paper No. 123. 550 pp. + appendices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>Local Status</b>                                              | <p>Varga, S., editor 2005. Distribution and status of the vascular plants of the Greater Toronto Area. Ontario Ministry of Natural Resources, Aurora District. 96 pp.</p> <p>Goodban, A.G. September 1995. The vascular plant flora of the Regional Municipality of Hamilton-Wentworth, Ontario. First Edition, Hamilton Region Conservation Authority, Ancaster, Ontario. 86 pp.</p> <p>Ministry of Natural Resources February 2004. List of rare vascular plants on the Oak Ridges Moraine, excluding provincially and nationally rare species. Technical Paper 6, Appendix A-1.</p> <p>Goodban, A.G. 2003 Nature Counts Project; Hamilton Natural Areas Inventory 2003, Species Checklist. Hamilton Naturalists Club, Hamilton, Ontario.</p> |

## BOTANY LIST: EXPLANATION OF TERMS

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COMMON NAME	SCIENTIFIC NAME	SRANK	GRANK	COSSARO	COSEWIC	Local Status (Halton)	Local Status (Hamilton)	Local Status (TRCA)	Regional Status (Region of Waterloo)	SWH Indicator Species 6E	SWH Indicator Species 7E
<b>ODONATA</b>											
Ebony Jewelwing	<i>Calopteryx maculata</i>	S5	G5								
<b>BIRDS</b>											
Canada Goose	<i>Branta canadensis</i>	S4N	G5							X	X
Green Heron	<i>Butorides virescens</i>	S4B	G5			HU	m	L4	X	X	X
Spotted Sandpiper	<i>Actitis macularius</i>	S5	G5					L4		X	X
Ring-billed Gull	<i>Larus delawarensis</i>	S5B,S4N	G5					L4		X	X
Mourning Dove	<i>Zenaida macroura</i>	S5	G5					L5			
Belted Kingfisher	<i>Megaceryle alcyon</i>	S4B	G5				m	L4	X		
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	S4	G5			HU	m	L4	X		
Downy Woodpecker	<i>Picoides pubescens</i>	S5	G5					L5			
Northern Flicker	<i>Colaptes auratus</i>	S4B	G5					L4			
Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	G5	SC	SC			L4			
Eastern Phoebe	<i>Sayornis phoebe</i>	S5B	G5				m	L5			
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S4B	G5					L4			
Warbling Vireo	<i>Vireo gilvus</i>	S5B	G5					L5	X		
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B	G5					L4			
Blue Jay	<i>Cyanocitta cristata</i>	S5	G5					L5			
American Crow	<i>Corvus brachyrhynchos</i>	S5B	G5					L5			
Tree Swallow	<i>Tachycineta bicolor</i>	S4B	G5					L4			
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	G5					L5			
Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	G5			HU	m	L4	X	X	X
American Robin	<i>Turdus migratorius</i>	S5B	G5					L5			
Gray Catbird	<i>Dumetella carolinensis</i>	S4B	G5					L4			
European Starling	<i>Sturnus vulgaris</i>	SNA	G5					L+			
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	G5					L5			
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B	G5					L4			
Yellow Warbler	<i>Setophaga petechia</i>	S5B	G5					L5			
Blackpoll Warbler	<i>Setophaga striata</i>	S4B	G5								
Song Sparrow	<i>Melospiza melodia</i>	S5B	G5					L5			
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5	G5					L5			
Indigo Bunting	<i>Passerina cyanea</i>	S4B	G5					L4			
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S4	G5					L5			
Common Grackle	<i>Quiscalus quiscula</i>	S5B	G5					L5			
Brown-headed Cowbird	<i>Molothrus ater</i>	S4B	G5					L5			
Baltimore Oriole	<i>Icterus galbula</i>	S4B	G5					L5			
House Finch	<i>Carpodacus mexicanus</i>	SNA	G5					L+			
American Goldfinch	<i>Spinus tristis</i>	S5B	G5					L5			
House Sparrow	<i>Passer domesticus</i>	SNA	G5					L+			
Eastern Chipmunk	<i>Tamias striatus</i>	S5	G5					L4			
<b>MAMMALS</b>											
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	S5	G5								



COMMON NAME	SCIENTIFIC NAME	SRANK	GRANK	COSSARO	COSEWIC	Local Status (Halton)	Local Status (Hamilton)	Local Status (TRCA)	Regional Status (Region of Waterloo)	SWH Indicator Species 6E	SWH Indicator Species 7E
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**SUMMARY**

Total Odonata:	1
Total Butterflies:	0
Total Other Arthropods	0
Total Amphibians:	0
Total Reptiles:	0
Total Birds:	36
Total Breeding Birds:	29
Total Mammals:	1

**SIGNIFICANT SPECIES**

Global:	0
National: Eastern Wood-Pewee (SC)	1
Provincial: Eastern Wood-Pewee (SC)	1
Regional: Green Heron (HU), Red-bellied Woodpecker (HU), Red-breasted Nuthatch (HU)	3
Local:	

**EXPLANATION OF STATUS AND TERMS**

COSSARO: Committee on the Status of Species at Risk in Ontario  
COSEWIC: Committee on the Status of Endangered Wildlife in Canada  
S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)  
S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),  
S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)  
S4: Apparently Secure—Uncommon but not rare  
S5: Secure—Common, widespread, and abundant in the province  
SX: Presumed extirpated  
SH: Possibly Extirpated (Historical)  
SNR: Unranked  
SU: Unrankable—Currently unrankable due to lack of information  
SNA: Not applicable—A conservation status rank is not applicable because the species is not a suitable target for conservation activities.  
S#S#: Range Rank—A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species  
S#B- Breeding status rank  
S#N- Non Breeding status rank  
?: Indicates uncertainty in the assigned rank  
G1: Extremely rare globally; usually fewer than 5 occurrences in the overall range  
G1G2: Extremely rare to very rare globally  
G2: Very rare globally; usually between 5-10 occurrences in the overall range  
G2G3: Very rare to uncommon globally  
G3: Rare to uncommon globally; usually between 20-100 occurrences  
G3G4: Rare to common globally  
G4: Common globally; usually more than 100 occurrences in the overall range  
G4G5: Common to very common globally  
G5: Very common globally; demonstrably secure  
GU: Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.  
T: Denotes that the rank applies to a subspecies or variety  
Q: Denotes that the taxonomic status of the species, subspecies, or variety is questionable.  
END: Endangered

COMMON NAME	SCIENTIFIC NAME	SRANK	GRANK	COSSARO	COSEWIC	Local Status (Halton)	Local Status (Hamilton)	Local Status (TRCA)	Regional Status (Region of Waterloo)	SWH Indicator Species 6E	SWH Indicator Species 7E
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THR: Threatened  
 SC: Special Concern  
 NAR: Not At Risk  
 IND: Indeterminant, insufficient information to assign status  
 DD: Data Deficient  
 6: Rare in Site Region 6 '  
 7: Rare in Site Region 7 '  
 Area: Minimum patch size for area-sensitive species (ha) '  
 H- highly significant in Hamilton Region (i.e. rare) '  
 m- moderately significant in Hamilton Region (i.e. uncommon) '  
 L1- extremely rare locally (Toronto Region) '  
 L2- very rare locally (Toronto Region) '  
 L3- rare to uncommon locally (Toronto Region) '  
 HR- rare in Halton Region, highly significant '  
 HU- uncommon in Halton Region, moderately significant '

**LATEST STATUS UPDATE**

Odonata: August 2014  
 Butterflies: August 2014  
 Other Arthropods: August 2014  
 Amphibians: August 2014  
 Reptiles: August 2014  
 Birds: August 2015  
 Mammals: August 2014

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Table 5. NHIC Species at Risk Reported Within 1 km

COMMON NAME	SCIENTIFIC NAME	S-RANK	COSEWIC	COSSARO	DATE OBSERVED
Northern Bobwhite	<i>Colinus virginianus</i>	S1	END	END	1904
Shortnose Cisco	<i>Coregonus reighardi</i>	SH	END	END	1915-11-08
Eastern Milksnake	<i>Lampropeltis triangulum</i>	S3	SC	SC	1996-07-06
Rusty-patched Bumble Bee	<i>Bombus affinis</i>	S1	END	END	1976-07-10
Redside Dace	<i>Clinostomus elongatus</i>	S2	END	END	1960-08-25
Northern Hawthorn	<i>Crataegus pruinosa</i> var. <i>dissona</i>	S3			1982-05-26
Kansas Hawthorn	<i>Crataegus coccinioides</i>	S2			1980-08-30
Virginia Bluebells	<i>Mertensia virginica</i>	S3			1982-05-26
Lilypad Clubtail	<i>Arigomphus furcifer</i>	S3			1932-06-16
Northern Map Turtle	<i>Graptemys geographica</i>	S3	SC	SC	1990-05-25

Table 6. Bat Acoustic Survey Results

SURVEY DATES	SURVEY ROUND	TRANSECT/ POINT COUNT/SM3BAT	SPECIES CODE								
			NOBA	LACI	LANO	EPFU	LABO	PESU	MYLU	MYSE	MYLE
JU-05-2017	1	BT1	X								
JU-05-2017	1	BT2				X	X				
JU-05-2017	1	BP1	X								
JU-05-2017	1	BP2		X		X	X				X
JU-05-2017	1	BP3				X	X				
JU-13-2017	2	BT1	X								
JU-13-2017	2	BT2				X					
JU-13-2017	2	BP1	X								

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOBA	No Bats	No recorded despite survey effort
LACI	Hoary bat	<i>Lasiurus cinereus</i>
LANO	Silver-haired bat	<i>Lasionycteris noctivagans</i>
EPFU	Big Brown bat	<i>Eptesicus fuscus</i>
LABO	Eastern Red bat	<i>Lasiurus borealis</i>
PESU	Tri-coloured bat	<i>Perimyotis subflavus</i>
MYLU	Little Brown Myotis	<i>Myotis lucifugus</i>
MYSE	Northern Myotis	<i>Myotis septentrionalis</i>
MYLE	Eastern Small-footed Myotis	<i>Myotis leibii</i>

Table 6. Bat Acoustic Survey Results

SURVEY DATES	SURVEY ROUND	TRANSECT/ POINT COUNT/SM3BAT	SPECIES CODE									
			NOBA	LACI	LANO	EPFU	LABO	PESU	MYLU	MYSE	MYLE	
JU-13-2017	2	BP2	X									
JU-13-2017	2	BP3				X						
JU-26-2017	3	BT1				X						
JU-26-2017	3	BT2				X						
JU-26-2017	3	BP1				X						
JU-26-2017	3	BP2				X						
JU-26-2017	3	BP3				X						

LEGEND:

SPECIES CODE	COMMON NAME	SCIENTIFIC NAME
NOBA	No Bats	No recorded despite survey effort
LACI	Hoary bat	<i>Lasiurus cinereus</i>
LANO	Silver-haired bat	<i>Lasionycteris noctivagans</i>
EPFU	Big Brown bat	<i>Eptesicus fuscus</i>
LABO	Eastern Red bat	<i>Lasiurus borealis</i>
PESU	Tri-coloured bat	<i>Perimyotis subflavus</i>
MYLU	Little Brown Myotis	<i>Myotis lucifugus</i>
MYSE	Northern Myotis	<i>Myotis septentrionalis</i>
MYLE	Eastern Small-footed Myotis	<i>Myotis leibii</i>

Common Name	Species Code	Scientific Name	Provincial Status (S Rank)	Global Status (G Rank)	COSSARO (MNR)	COSEWIC (Federal)	SWH Indicator Species	Highest Breeding Evidence
<b>Anseriformes</b>								
<b>Anatidae</b>								
Canada Goose	CANG	<i>Branta canadensis</i>	S5	G5			X	OB-X
<b>Pelecaniformes</b>								
<b>Ardeidae</b>								
Green Heron	GRHE	<i>Butorides virescens</i>	S4B	G5			X	OB-X
<b>Charadriiformes</b>								
<b>Scolopacidae</b>								
Spotted Sandpiper	SPSA	<i>Actitis macularius</i>	S5	G5			X	OB-X
<b>Laridae</b>								
Ring-billed Gull	RBGU	<i>Larus delawarensis</i>	S5B,S4N	G5			X	OB-X
<b>Columbiformes</b>								
<b>Columbidae</b>								
Mourning Dove	MODO	<i>Zenaida macroura</i>	S5	G5				PR-T
<b>Piciformes</b>								
<b>Picidae</b>								
Red-bellied Woodpecker	RBWO	<i>Melanerpes carolinus</i>	S4	G5				PR-P
Downy Woodpecker	DOWO	<i>Picoides pubescens</i>	S5	G5				CO-CF
Northern Flicker	NOFL	<i>Colaptes auratus</i>	S4B	G5				PO-S
<b>Passeriformes</b>								
<b>Tyrannidae</b>								
Eastern Wood-Pewee	EAWP	<i>Contopus virens</i>	S4B	G5	SC	SC		PR-T
Eastern Phoebe	EAPH	<i>Sayornis phoebe</i>	S5B	G5				CO-CF
Great Crested Flycatcher	GCFL	<i>Myiarchus crinitus</i>	S4B	G5				PO-S
<b>Laniidae</b>								
<b>Vireonidae</b>								
Warbling Vireo	WAVI	<i>Vireo gilvus</i>	S5B	G5				PR-T
Red-eyed Vireo	REVI	<i>Vireo olivaceus</i>	S5B	G5				PO-S
<b>Corvidae</b>								
Blue Jay	BLJA	<i>Cyanocitta cristata</i>	S5	G5				CO-CF
American Crow	AMCR	<i>Corvus brachyrhynchos</i>	S5B	G5				OB-X
<b>Alaudidae</b>								
<b>Hirundinidae</b>								
Tree Swallow	TRES	<i>Tachycineta bicolor</i>	S4B	G5				PO-H
<b>Paridae</b>								
Black-capped Chickadee	BCCH	<i>Poecile atricapillus</i>	S5	G5				PR-T
<b>Sittidae</b>								
Red-breasted Nuthatch	RBNU	<i>Sitta canadensis</i>	S5	G5			X	PO-S
<b>Turdidae</b>								
American Robin	AMRO	<i>Turdus migratorius</i>	S5B	G5				CO-CF
<b>Mimidae</b>								
Gray Catbird	GRCA	<i>Dumetella carolinensis</i>	S4B	G5				CO-CF
<b>Sturnidae</b>								
European Starling	EUST	<i>Sturnus vulgaris</i>	SNA	G5				OB-X
<b>Bombycillidae</b>								
Cedar Waxwing	CEDW	<i>Bombycilla cedrorum</i>	S5B	G5				PO-H
<b>Parulidae</b>								
Common Yellowthroat	COYE	<i>Geothlypis trichas</i>	S5B	G5				PO-S
Yellow Warbler	YWAR	<i>Setophaga petechia</i>	S5B	G5				PR-T
Blackpoll Warbler	BLWA	<i>Setophaga striata</i>	S4B	G5				OB-X
<b>Emberizidae</b>								
Song Sparrow	SOSP	<i>Melospiza melodia</i>	S5B	G5				PR-P

<b>Cardinalidae</b>							
Northern Cardinal	NOCA	<i>Cardinalis cardinalis</i>	S5	G5			PR-P
Indigo Bunting	INBU	<i>Passerina cyanea</i>	S4B	G5			PO-S
<b>Icteridae</b>							
Red-winged Blackbird	RWBL	<i>Agelaius phoeniceus</i>	S4	G5			PR-A
Common Grackle	COGR	<i>Quiscalus quiscula</i>	S5B	G5			CO-CF
Brown-headed Cowbird	BHCO	<i>Molothrus ater</i>	S4B	G5			PO-H
Baltimore Oriole	BAOR	<i>Icterus galbula</i>	S4B	G5			PR-A
<b>Fringillidae</b>							
House Finch	HOFI	<i>Carpodacus mexicanus</i>	SNA	G5			PO-S
American Goldfinch	AMGO	<i>Spinus tristis</i>	S5B	G5			PO-S
<b>Passeridae</b>							
House Sparrow	HOSP	<i>Passer domesticus</i>	SNA	G5			PR-P

**Species Common Name and Scientific Name:** consistent with the American Ornithologists' Union. 2012. Check-list of North American Birds. Accessed May 25, 2012. Available online: [www.aou.org/checklist/north/full.php/](http://www.aou.org/checklist/north/full.php/)

**Species Code:** consistent with the American Ornithologists' Union. 2012. Species 4-Letter-Codes. Accessed May 25, 2012. Available online: [www.birdsontario.org/atlas/codes.jsp?lang=en&pg=species/](http://www.birdsontario.org/atlas/codes.jsp?lang=en&pg=species/)

**Highest Breeding Evidence:** Codes assigned for breeding evidence are consistent with the Ontario Breeding Bird Atlas (OBBA). 2012. Breeding Evidence Codes. Accessed January 25, 2014. Available online: <http://www.birdsontario.org/dataentry/codes.jsp?page=breeding/>. Several different types of breeding evidence are often recorded for any given species over the course of surveys - this table reports only the highest level of breeding evidence

**S ranks:** Provincial ranks are from the Natural Heritage Information Centre; S1 (critically imperiled), S2 (imperiled), S3 (vulnerable), S4 (apparently secure), S5 (secure); ranks were updated using NHIC species list October 2013

**G ranks:** National ranks are from the Natural Heritage Information Centre; G1 (extremely rare), G2 (very rare), G3 (rare to uncommon), G4 (common), G5 (very common); ranks were updated using NHIC species list October 2013

**COSSARO (MNRF):** Ontario Species at Risk as listed by the Committee on the Status of Species at Risk in Ontario (from NHIC Table October 2013 and updates posted on Ontario Regulation 230/08 Species at Risk in Ontario website as of May 10, 2016: <https://www.ontario.ca/laws/regulation/080230/>); END - Endangered, THR - Threatened, SC - Special Concern, NAR - Not at Risk

**COSEWIC:** Assessed Species at Risk at the national level as listed by the Committee on the Status of Endangered Wildlife in Canada (from COSEWIC May 10, 2016: [http://www.cosewic.gc.ca/eng/sct1/searchform\\_e.cfm/](http://www.cosewic.gc.ca/eng/sct1/searchform_e.cfm/)); END - Endangered, THR - Threatened, SC - Special Concern, NAR - Not at Risk

**SWH Indicator Species:** SWH refers to Significant Wildlife Habitat as defined by the MNR (2015) Significant Wildlife Habitat Criteria Schedules for Ecoregions 7E and 6E (as appropriate for the Subject Lands). SWH indicator species are identified in this table and any potential SWH is discussed in the text of this report.





## **Appendix C – Agency Correspondence**



June 17, 2015

Rava Lee  
Ecologist  
Savanta Inc.  
416-816-5715  
ravalee@savanta.ca

**Re: Request for Information for 1024 Sixth Line, Oakville**

Dear Rava Lee,

In your email dated June 9, 2015 you requested information on natural heritage features and element occurrences occurring on or adjacent to the above mentioned location. There are Species at Risk recorded for your study area. As of the date of this letter, we have records of:

Silver Shiner	THR
Chimney Swift	THR

Additionally, the species listed below have the potential to occur in your study and may require further assessment or field studies to determine presence. We have records of the following species within the vicinity of your study area:

Butternut	END
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There are no natural heritage features recorded in the vicinity of your area.

These species receive protection under the *Endangered Species Act 2007* and thus, an approval from MNRF may be required if the work you are proposing could cause harm to these species or their habitats. If the Species at Risk in Ontario List is amended, additional species may be listed and protected under the *ESA 2007* or the status and protection levels of currently listed species may change.

We require more detailed information on the proposed project in order to assess the impacts of the works on Species at Risk. *When project details have been determined*, please fill out an Information Gathering Form (IGF) for any *threatened* or *endangered* species listed in the provided letter and submit it to our office (to [ESA.Aurora@ontario.ca](mailto:ESA.Aurora@ontario.ca)). The IGF can be found [here](#) (along with its associated [guide](#)). Please include detailed descriptions of the undertakings such as proposed timing and phasing of the project and details on what is required at each phase.

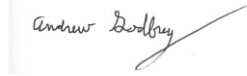
All sections and tables should be filled out in their entirety – incomplete forms will be returned and may delay the review process. Any applicable supplemental information that will assist with the review process should also be submitted with the IGF (e.g. field survey results, site plan/drawings, ELC mapping, etc.). Please note that forms are reviewed in the order in which they are received by MNRF and we will contact you with our response once the review is complete.

Absence of information provided by MNRF for a given geographic area, or lack of current information for a given area or element, does not categorically mean the absence of sensitive species or features. Many areas in Ontario have never been surveyed and new plant and animal species records are still being discovered for many localities. For these reasons, the MNRF cannot provide a definitive statement on the presence, absence or condition of biological elements in any part of Ontario.

This species at risk information is highly sensitive and is not intended for any person or project unrelated to this undertaking. Please do not include any specific information in reports that will be available for public record. As you complete your fieldwork in these areas, please report all information related to any species at risk to our office. This will assist with updating our database and facilitate early consultation regarding your project.

If you have any questions or comments, please do not hesitate to contact [ESA.aurora@ontario.ca](mailto:ESA.aurora@ontario.ca).

Sincerely,

A handwritten signature in cursive script that reads "Andrew Godfrey". The signature is written in black ink on a white background.

Andrew Godfrey  
Fish and Wildlife Technical Specialist  
Ontario Ministry of Natural Resources and Forestry, Aurora District