

**ENVIRONMENTAL IMPACT STATEMENT
NATURAL HERITAGE EVALUATION**

**Farsight Subdivision, Lakeshore Road
Ballantrae, Town of Whitchurch-Stouffville**

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EXECUTIVE SUMMARY

This report provides the necessary Natural Heritage Evaluation/Environmental Impact Statement for a proposed development on a 16.29 ha property on Lakeshore Road in Ballantrae (Town of Whitchurch-Stouffville).

The Plan of Subdivision is for 141 single family lots on 7.27 ha. The Central Woodland is set aside in a block with a buffer around it – totalling 1.79 ha. The NHS linkage through the property, including the SWM pond, totals 4.66 ha. – substantially exceeding the current linkage in width.

I anticipate no environmental impacts from the proposal and it provides benefits with the enhanced corridor:

- Increases area of woodland and improves species mix
- Retains the drainage ditch and provides an enhanced watercourse
- Buffers the features from proposed development

The subdivision is in the Settlement Area and is designated for residential development. The natural and hydrologic features on site have been precisely identified and described by comprehensive field surveys, particularly of the central woodland/wetland in the middle of the property. It is reserved and protected with buffers that average or exceed 10 metres. Substantial replanting and enhancement of the natural corridor through the property will protect and improve the Natural Heritage System of the Secondary Plan. With these provisions, the proposal meets the natural heritage requirements of the ORMCP, PPS and Town of Whitchurch-Stouffville planning documents and Lake Simcoe Region Conservation Authority considerations. Other permits from the LSRCA and Town will provide for erosion and sediment control during construction. Monitoring during construction is recommended.

1.0 INTRODUCTION

This report is to provide the necessary Natural Heritage Evaluation/Environmental Impact Statement for a proposed development on a 16.29 ha property on Lakeshore Road in Ballantrae (Town of Whitchurch-Stouffville). The existing property (Parts Lots 19 & 20, Concession 8) is vacant except for an existing residence. The lands are basically farmed with a central woodland area. It is adjacent to existing development in the Ballantrae settlement area. The property is shown on the Figure below (2016 Photography, Google Earth):



In this report I review the applicable policies, describe the natural environment and assess the conformity with environmental policies, consistent with the Oak Ridges Moraine Conservation Plan and Whitchurch Stouffville Planning requirements.

The Terms of Reference prepared by the Town to guide this report are appended.

The application is supported by the following studies which will be referred to in this report:

- Sabourin Kimble, December 2018, Functional Servicing and Stormwater Management Report.
- Alcorn Associates Limited, December 2018, Planning Report
- Schollen Associates, 2018:
 - o Master Plan
 - o Environmental Enhancement Plan
 - o Arborist's Report

2.0 POLICY BACKGROUND

The property is on the Oak Ridges Moraine and planning decisions are governed by the Oak Ridges Moraine Conservation Plan (2001, Amended 2017) which sets environmental standards for applications. This Provincial Plan is implemented through Regional and local municipal documents. In this case, there is an Official Plan for the Town of Whitchurch-Stouffville and a Secondary Plan (2014-006-OP) for the Ballantrae Musselman Lake and Environs community. This Secondary Plan area was the subject of an ecological study (Natural Resource Solutions Inc., Revised 2013) that provided further guidance on protecting the environment through the development approvals process and implements both the ORMCP, Lake Simcoe Protection Plan and the Town Official Plan.

The full planning review for this application is contained within the Alcorn Associates Limited Planning Report.

This sequence of documents and approvals establishes the framework for this subdivision development application.

The property is within the Lake Simcoe Region Conservation Authority watershed and application will be necessary to LSCRA for approval under their General Regulation (179/06).

The following five pages provide a suitable summary of the environmental planning framework provided by these documents.

The first two figures are taken from the 2013 Natural Resource Solutions Inc. study of the Ballantrae area and identify the ecological resources on the lands (first figure) and the recommendations for their protection (second figure). The Farsight property is outlined in purple.

The Farsight lands are shown to have a central wooded feature on the NRSI Figure 4 that is described as FOD (Deciduous Forest) and an LSCRA Watercourse (constructed drainage ditch) traversing the property from north to south.

These features are recommended for protection through a Natural Heritage System (NHS) designation in the Secondary Plan as shown on the NRSI Figure 5. This includes a recommended buffer (MVPZ) for the woodland feature of 10 metres and a 15 metre buffer (each side) to the ditch. The NRSI recommendations were implemented through the Secondary Plan that designated the Farsight lands as **Ballantrae Residential Area** (Schedule E, not shown here) and showing the recommended NHS on Schedule E to Amendment 136 (fourth page following) of the Official Plan.

The fifth page is the LSCRA Regulated Area under 179/06.

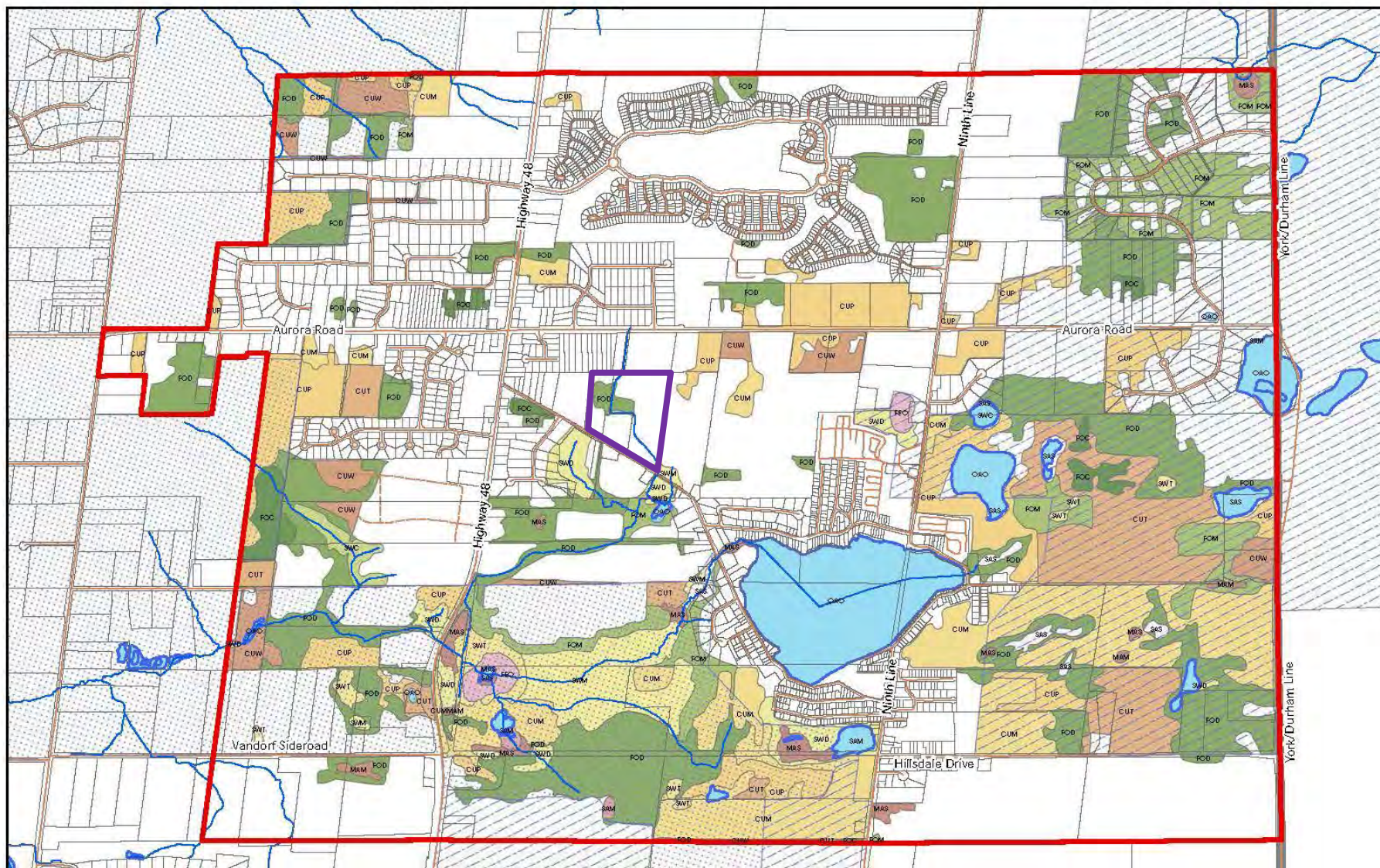
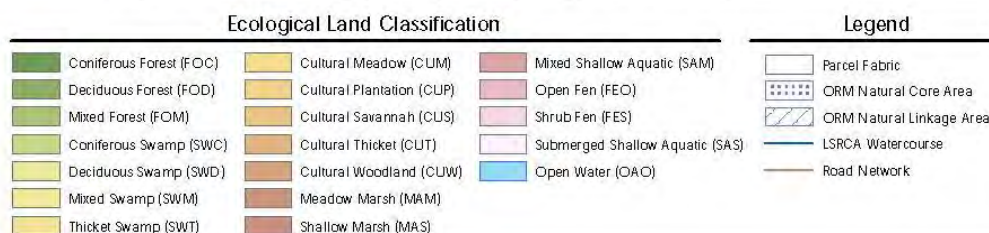


Figure 4
Vegetation Communities

Ballantrae-Musselman Lake and
Environs Secondary Plan Review
February 2012



0 250 500 1,000 m

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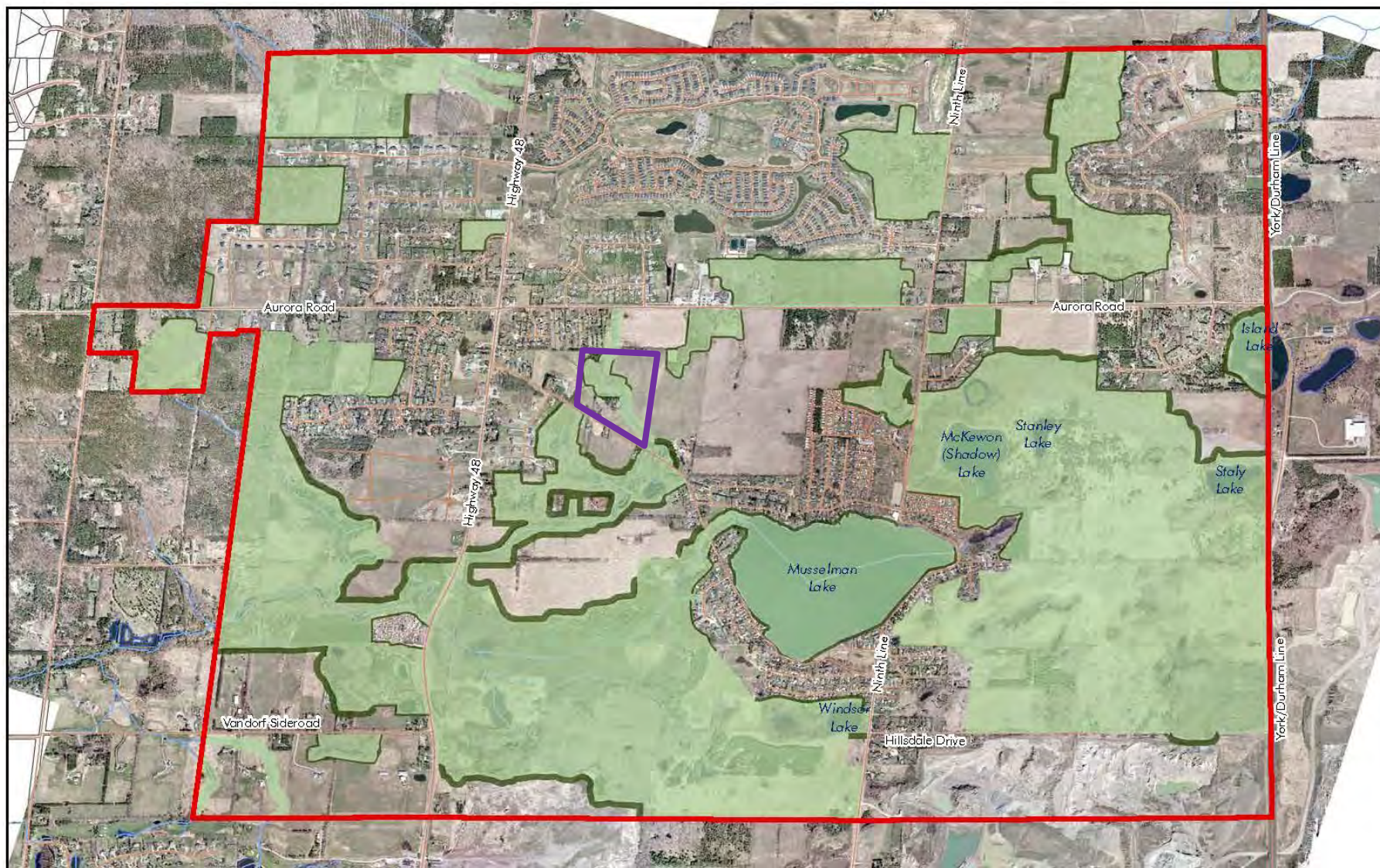


Figure 5
Natural Heritage System

Ballantrae-Musselman Lake and
Environs Secondary Plan Review
March 2013

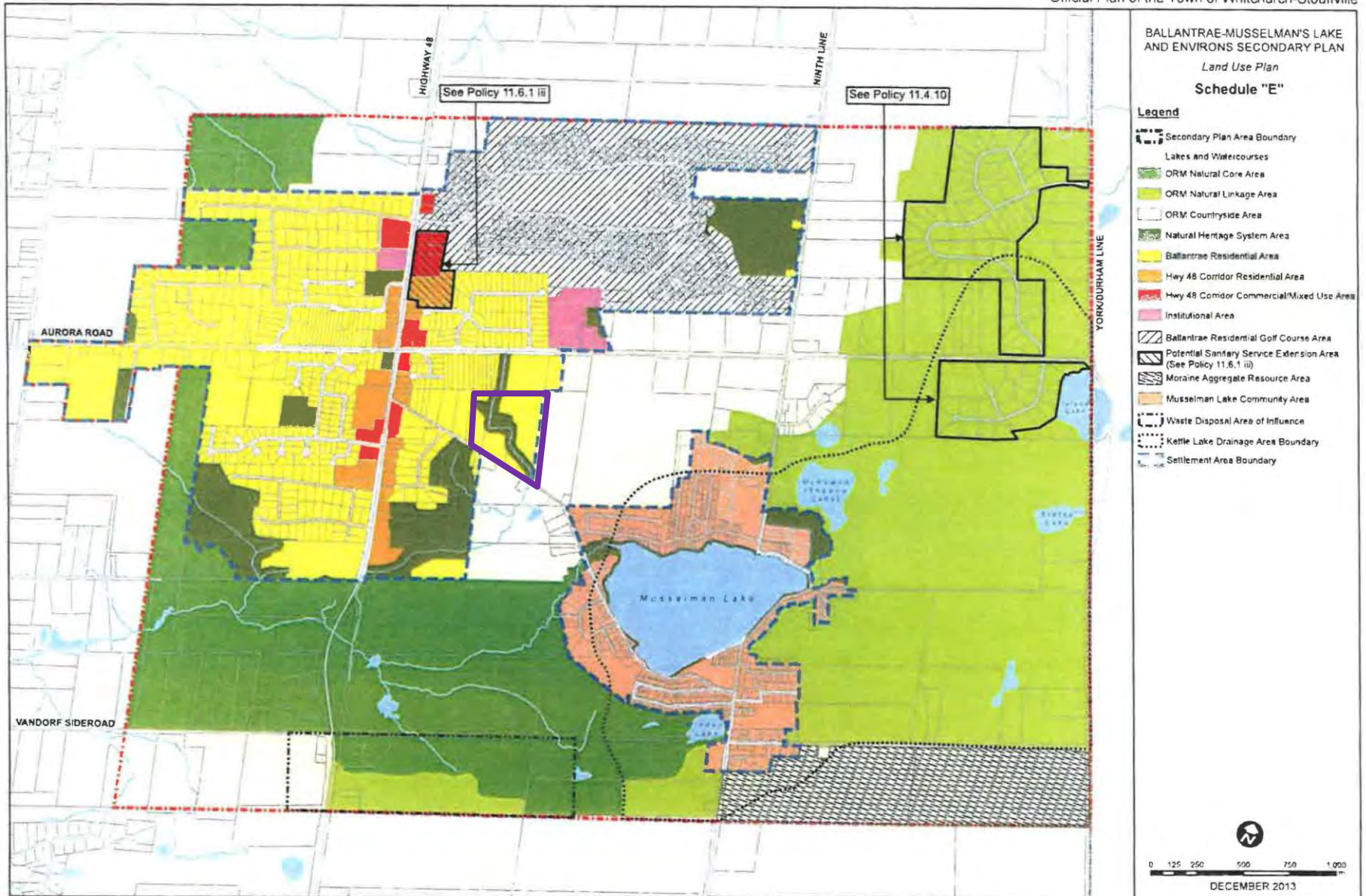
Legend

- LSRCA Watercourse
- Waterbody
- Natural Heritage System
 - Buffer (varies between 10 and 30m)
 - Core NHS

0 250 500 1,000 m

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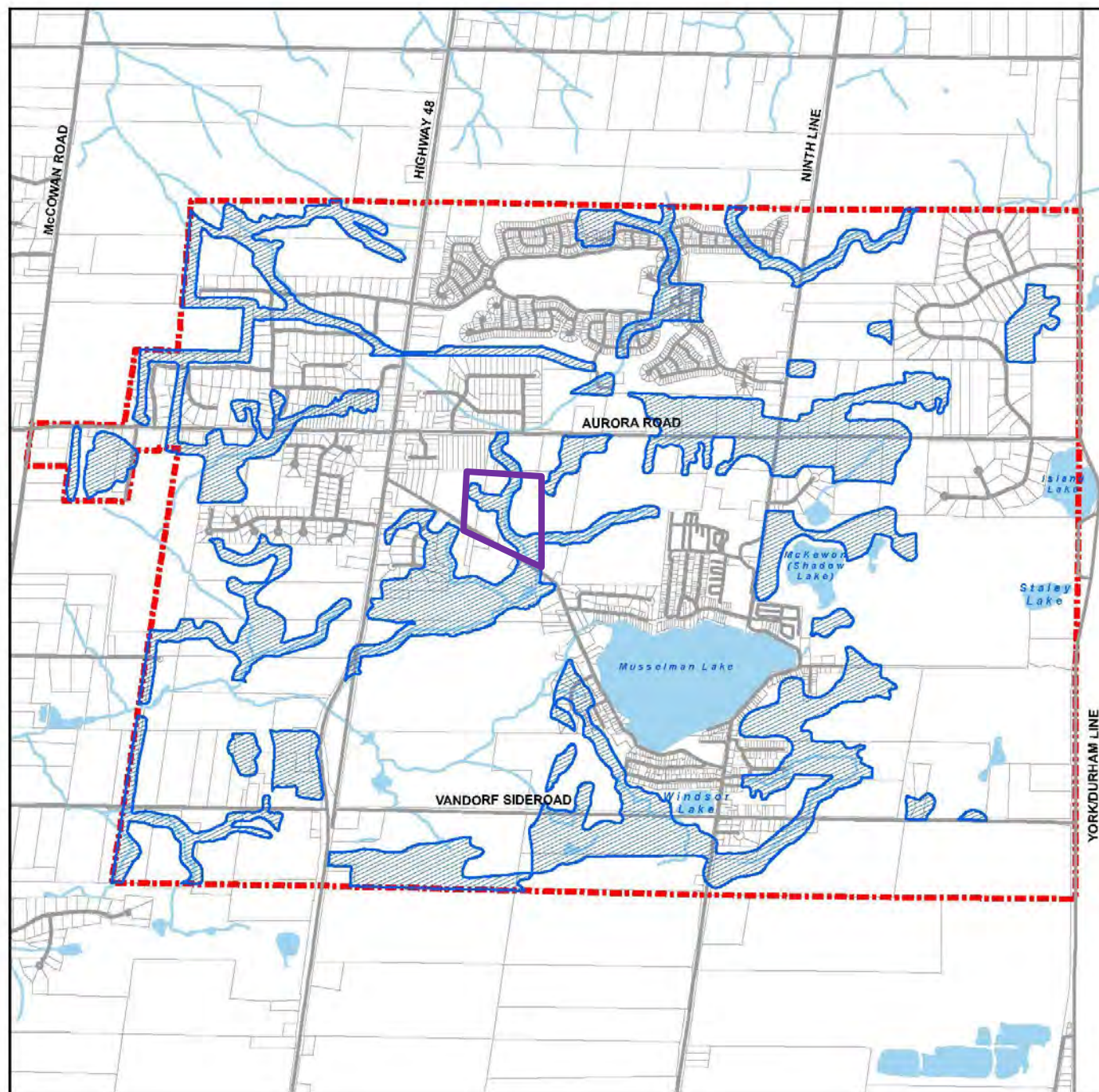




BALLANTRAE-MUSSELMAN LAKE
AND ENVIRONS SECONDARY PLAN

NATURAL FEATURE
ENHANCEMENT AREAS

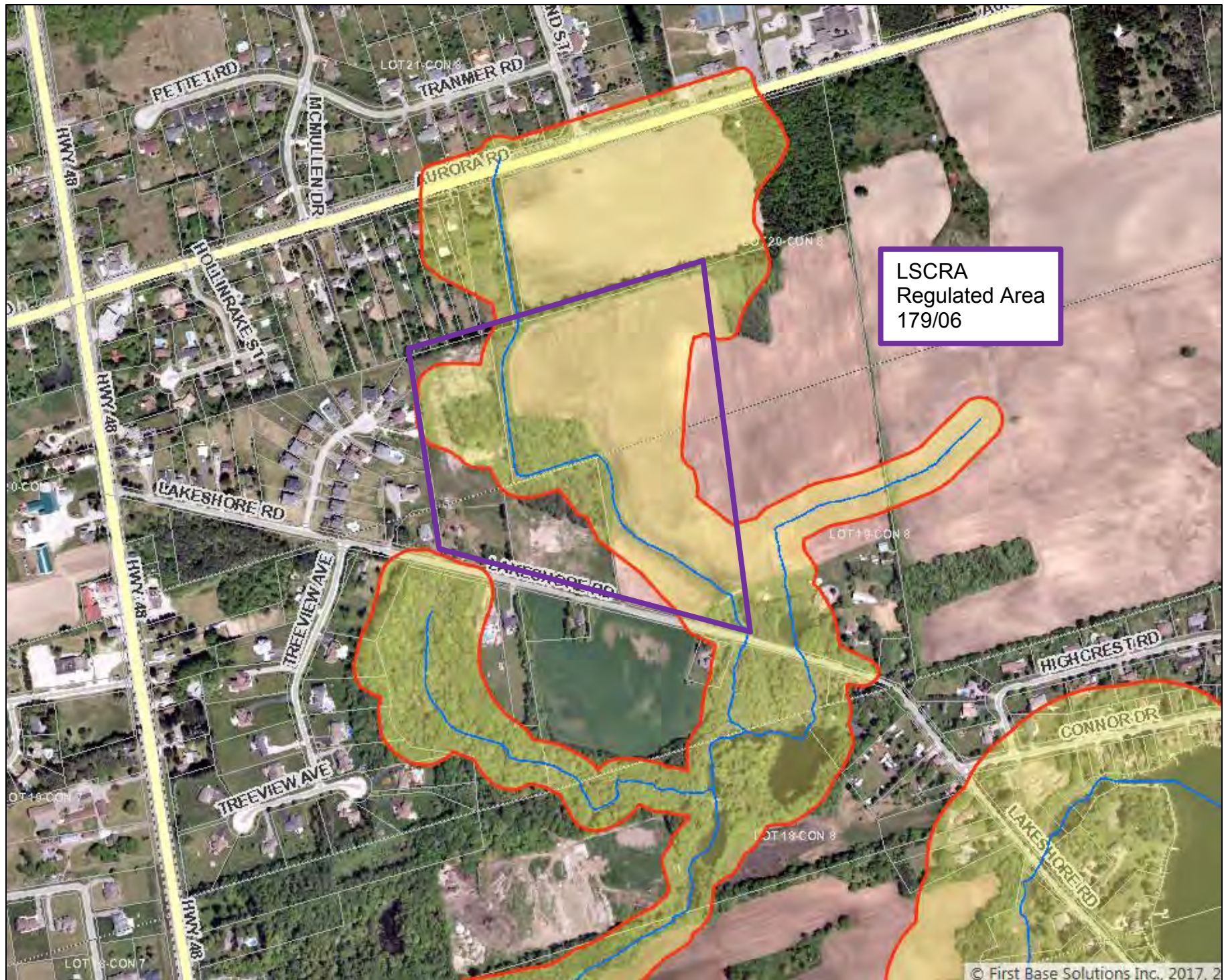
Appendix 'A'



- Secondary Plan Area Boundary
- Natural Feature Conservation Area



OCTOBER 2010



LSCRA
Regulated Area
179/06

There are two relevant policies in the Secondary Plan that I include here as they are specific to the area of the Farsight property.:

11.5.4 For lands within the Ballantrae Residential Area designation that are identified as part of the Natural Heritage System on Appendix A, Development applications shall be supported by a natural area management study to confirm the boundaries of the System shown on Appendix A be subject to the provisions of the Special Residential Land Use policies in Section 11.4.3 iv) to viii) as applicable. The results of the study will be used by the Town as a basis for assessing the need to protect and enhance the lands in the Natural Heritage System Area or the creation of linkages in such areas. The actual area to be protected may be modified, reduced in size deleted or relocated without an amendment to the Official Plan based on the results of the natural area management study and other studies submitted as part of the development application and other relevant matters identified as part of the assessment of the application to the satisfaction of the Town.

The Appendix A figure is shown on a previous page. The policy above requires a detailed study of the property and allows for feature adjustments based on that study so long as the intent of the Secondary Plan is not compromised and subject to the Town's approval.

11.4.2 ii e) essential public and private utilities, including roads sited, designed and constructed in a way that minimizes negative impacts on natural systems, subject to the provisions of Section 11.4.2 iv) but only if the need for the project has been demonstrated and there is no reasonable alternative.

The application of this policy will be evident later when the plan of subdivision is introduced as it is necessary to cross the NHS with a road and utilities to implement the plan of subdivision.

The fifth figure (preceding page) shows the LSCRA Regulated Area. The proposal involves these lands and an application is necessary to them for site alteration permits and the applications must be supported by a report such as this.

In the next section, I discuss the site-specific studies we conducted and the results for the Farsight property.

3.0 DEFINING THE NATURAL HERITAGE SYSTEM

3.1 General Site Description

The Farsight property is located on the north side of the Oak Ridges Moraine with drainage going to lake Simcoe. The geology of the general area shows the deposition of irregular layers of sands, gravels and clays that generally have been smoothed by glacial advances into a relatively flat topography with rounded highs and lower depressions with several kettle lakes (i.e. Musselman Lake). The *Soil Survey of York County* (1955) shows the property and Ballantrae area as part of a large unit of Brighton Sandy Loam, a well-drained sand with high agricultural capability.

While it is on the north side of the Moraine drainage, at the local scale it is to the south by a small unnamed watercourse that eventually reaches Musselman Lake and thence to the East Holland River and Lake Simcoe.

This general situation is shown on the following page, also from the NRSI 2013 report.

This figure also shows the identified significant environmental features in the area. There are none on or near to the Farsight property.

This information was updated by using the LIO site to generate a figure showing environmental features in the area that is included on the following page to the NRSI figure. It shows the same features in the general area with more detail on the Farsight woodland with a wetland (swamp) in the middle of it.

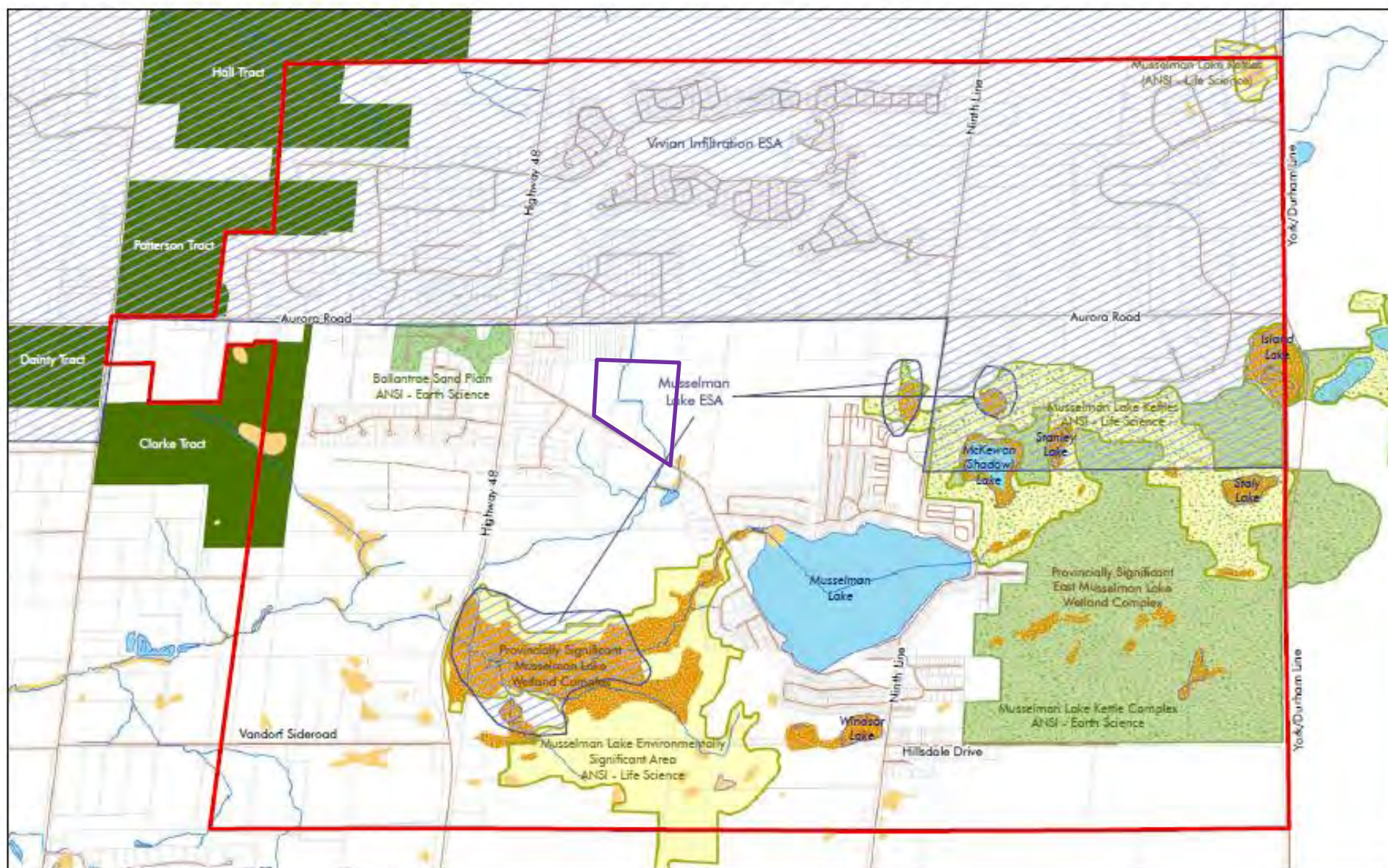


Figure 2
Designated Natural Areas

Ballantrae-Musselman Lake and
Environs Secondary Plan Review
February 2012

Designated Natural Areas

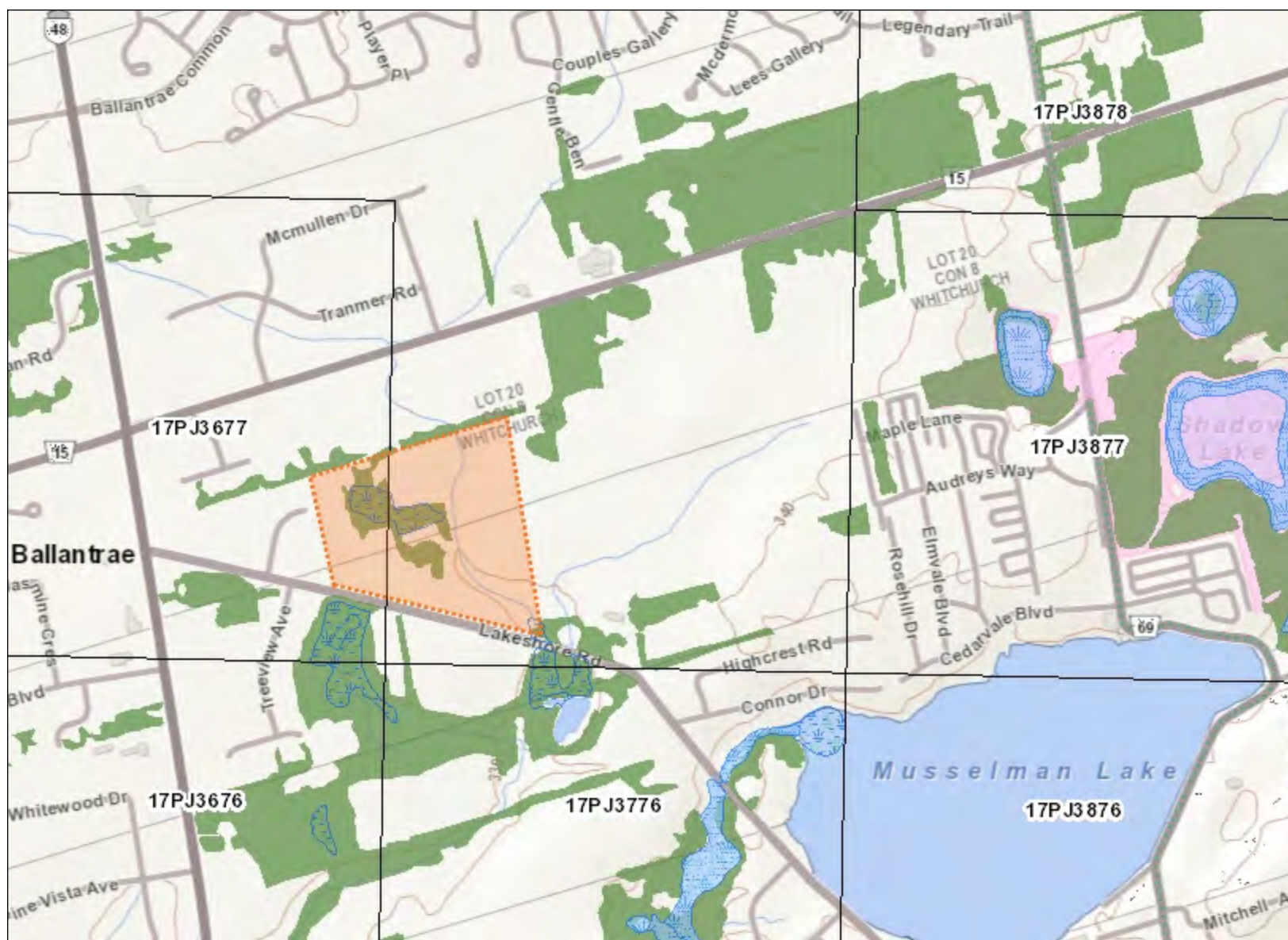
- Wetland - Local Significance
- Wetland - Provincial Significance
- ANSI - Life Science
- ANSI - Earth Science
- Regional Forest
- Environmentally Significant Area (ESA)

Legend

- Secondary Plan Boundary
- Parcel Fabric
- LSRCA Watercourse
- Road Network
- Waterbody

0 250 500 1,000 m

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Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion
- Wetland**
 - Provincially Significant Wetland Evaluated
 - Non - Provincially Significant Wetland Evaluated
 - Unevaluated Wetland
- Area of Natural Heritage & Scientific Interest (ANSI)**
 - Provincially Significant Life Science ANSI
 - Provincially Significant Earth Science ANSI
- Greenbelt Plan**
 - Boundary
 - River Valley Connections
- Land Use Designations**
 - Protected Countryside
 - Towns and Villages
 - Hamlets
 - Urban River Valley
 - Specialty Crop Area
- Niagara Escarpment Plan (NEP)**
 - Boundary
 - Parks and Open Space System
- Land Use Designations**
 - Escarpment Natural Area
 - Escarpment Protection Area
 - Escarpment Rural Area
 - Mineral Resource Extraction Area
 - Escarpment Recreation Area
 - Urban Area
 - Minor Urban Centre
- Oak Ridges Moraine Conservation Plan (ORM)**
 - Boundary
- Land Use Designations**
 - Natural Core Area
 - Natural Linkage Area
 - Countryside Area
 - Rural Settlement
 - Palgrave Estates Residential Community
 - Settlement Area

0.7 0 0.33 0.7 Kilometers



This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry (OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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3.2 Site Inventories

In preparation for the subdivision applications several specific inventories of the property were undertaken and are described in the section.

3.2.1 Vegetation

This subsection has been prepared to provide a summary of the field investigations conducted on the Ballantrae property, located at 5452 Lakeshore Road, Ballantrae, in the town of Whitechurch-Stouffville and Regional Municipality of York, Ontario. Survey details are listed below in **Table 1**.

Table 1: Survey Details and Summary

Survey Date and Time	Surveyor(s)	Type of Survey	Weather Conditions
July 3, 2015	M. Straus	Preliminary breeding bird Preliminary ELC ¹	Temperature of 13°C, no cloud, wind, or rain during survey.
June 7, 2016	B. Miller	Breeding bird Spring botanical ELC	Temperature of 14°C, 2-4 wind (Beaufort scale), 90-100% cloud cover, no rain during survey but within previous 24 hours.
June 28, 2016 09:30-12:15	M. Straus	Breeding bird Summer botanical ELC	Temperature of 16°C, no cloud, wind, or rain during survey.
September 1, 2016 11:00 – 14:00	M. Straus	Fall botanical ELC	Temperature of 18-22°C, 3 wind (Beaufort scale), 40% cloud, no rain during or within 24 hours prior to survey.

¹ – Ecological Land Classification

The purpose of these surveys was to identify natural and anthropogenic features and provide a general assessment of their significance. The work included Ecological Land Classification (ELC) of vegetation communities; a floristic survey of the Study Area and adjacent habitat; and identification of wildlife habitat features including hibernacula, bat roosts, stick nests, seeps, and vernal pools.

Identification and mapping of ELC vegetation communities follows the protocols of the ELC field guide for Southern Ontario (Lee et al., 1998). Updates to vegetation community names and codes follows the 2008 catalogue of ELC vegetation communities. Provincial significance of vegetation communities was based on the rankings assigned by the Natural Heritage Information Centre (NHIC, 2015).

Flora nomenclature for scientific names is based on VASCAN, the Database of Vascular Plants of Canada (Brouillet et al. 2010+). The provincial status of all plant species is based on the NHIC, Natural Heritage Information Centre list of vascular plants (NHIC, 2015).

Identification of invasive plant species is based on the list of Ontario invasive plant species located on the Early Detection & Distribution Mapping System website (<http://www.eddmaps.org/ontario/Species/>). Identification of potentially sensitive native plant species is based on their assigned coefficient of conservatism (C) value, as determined by Oldham et al. (1995). This C 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 C value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

Vegetation Communities

ELC mapping of the Study Area was completed and is shown on **Figure 1**.

The Ballantrae property consists of active agriculture (soy beans) across the eastern portion of the property with the western third comprised primarily of a poplar swamp that is connected to hedgerows to the north and a coniferous plantation and dogwood thicket swamp to the south.

An existing residence along Lakeshore Road, with recent disturbance evident (e.g., vegetation removal) where dilapidated cottages were demolished. A drainage ditch exists on the property located adjacent to the woodlot located on the property. The vegetation community types are briefly described in **Table 2** (below).

Table 2: Ecological Land Classification (ELC) Vegetation Types

ELC Type	Community Description
Meadow (ME)	
Graminoid Meadow (MEG)	
Mixed Meadow (MEM)	
MEMM3 Dry-Fresh Mixed Meadow Ecosite	This community included goldenrod and awnless brome, raspberry and tufted vetch.
Thicket (TH)	
Deciduous Thicket (THD)	
THDM3 Dry-Fresh Deciduous Hedgerow Thicket	Offsite thicket hedgerow assessed from Lakeshore Road, dominated by young Manitoba maple and staghorn sumac.
Forest (FO)	
Coniferous Forest (FOC)	
FOCM5 Naturalized	Norway spruce with Manitoba maple (western extent), scotch pine with trembling aspen (southern extent), and dense staghorn

Table 2: Ecological Land Classification (ELC) Vegetation Types

ELC Type	Community Description
Coniferous Hedge-row	sumac (northern extent) hedgerow located adjacent to existing drainage ditch. A portion of the central hedgerow was partially removed during vegetation removal activities in 2016.
FOCM6-2 Dry-Fresh Red Pine Naturalized Coniferous Plantation	Two adjacent parcels of red pine plantation were partially assessed, both of which consisted of regenerating plantation dominated by red pine with trembling aspen and sugar maple. A full assessment was not completed, and both areas are currently located outside of the proposed development proposal.
FOCM6-3 Dry-Fresh Scotch Pine Naturalized Coniferous Plantation	Regenerating scotch pine plantation with a shrub and ground layer, consisting of choke-cherry, strawberry, raspberry, grasses, coltsfoot and dandelion.
Deciduous Forest (FOD)	
FODM3-1 Dry-Fresh Poplar Deciduous Forest	Small inclusion within SWCM4-5.
FODM8-1 Fresh-Moist Poplar Deciduous Forest	The off-property forest was assessed from the roadside due to a lack of access, with trembling aspen dominant in the canopy and sugar maple as a minor associate. Dogwood was noted in the understory with Virginia-creeper in the ground layer. A creek crossing was noted along Lakeshore Road at the eastern boundary of this community. It appears that wetland habitat may be present further south of the road, as noted by observing pooling water.
FODM11 Naturalized Deciduous Hedgerow	Hedgerow located along the northern boundary of the property, dominated by Manitoba maple.
Cultural	
Open Agriculture (OAG)	
OAGM Open Agriculture	Unknown vegetation type, not visible.
OAGM1 Annual Row Crops	Soybeans.
Swamp (SW)	
Coniferous Swamp (SWC)	
SWCM1 White Cedar Mineral Coniferous Swamp	Off-property coniferous swamp dominated by white cedar with deciduous trees mixed in to the east. Willow, reed-canary grass, cattails, and ostrich fern were noted from the roadway during the assessment.
Deciduous Swamp (SWD)	

Table 2: Ecological Land Classification (ELC) Vegetation Types

ELC Type	Community Description
SWDM4-5 Poplar Mineral Deciduous Swamp	Swamp dominated by trembling aspen with black cherry and white birch as associates. The sub-canopy and understorey were also dominated by trembling aspen with sensitive fern, sedges, and spotted touch-me-nots in the ground layer. A small upland forest inclusion (FODM3-1) occurs within the central/northern portion of the eastern parcel. It is co-dominated by trembling aspen with black cherry. A large constructed ditch was present within the western portion of this community, although it was dry during the June 28, 2016 site visit.
Thicket Swamp (SWT)	
SWTM2 Dogwood Mineral Deciduous Thicket Swamp	Patchy thicket swamp comprised of dogwood pockets, willow pockets, and meadow marsh pockets. This community is bordered by an agricultural field to the east, coniferous plantation to the west, and poplar swamp to the north. Dogwood and willow shrubs dominate the community, with some overstorey coverage by trembling aspen and larger willows. Ground cover consists primarily of reed-canary grass, with a variety of other species such as horsetail, sensitive fern, and fowl manna grass.
Marsh (MA)	
Meadow Marsh (MAM)	
MAMM1 Graminoid Mineral Meadow Marsh	Edge-assessment due to a lack of property access, this community appeared to be dominated by reed-canary grass with spotted touch-me-nots as an associate with a Manitoba Maple fringe.

None of the vegetation communities listed above are considered rare in the province and all show signs of disturbance in their current condition.

This confirms the results from the NRSI and NHIC figures shown previously. The central feature is a generally woodland swamp. However, the southern portion of the woodland is a naturalized Scotch Pine plantation.



Legend

- Study Area
- Amphibian Monitoring Station
- Drainage Ditch, Watercourse (ephemeral)
- ELC Vegetation Community

ELC Legend	
ELC Code	Description
CVI_1	Transportation
CVR_1	Low Density Residential
CVR_2	High Density Residential
CVR_3	Single Family Residential
CVR_4	Rural Property
FOCM5	Naturalized Coniferous Hedge-row Ecosite
FOCM6-2	Dry - Fresh Red Pine Naturalized Coniferous Plantation Type
FOCM6-3	Dry - Fresh Scotch Pine Naturalized Coniferous Plantation Type
FODM3-1	Dry - Fresh Poplar Deciduous Forest Type
FODM8-1	Fresh - Moist Poplar Deciduous Forest Type
FODM11	Naturalized Deciduous Hedge-row Ecosite
MAMM1	Graminoid Mineral Meadow Marsh Ecosite
MEMM3	Dry - Fresh Mixed Meadow Ecosite
OA	Open Aquatic
OAG	Open Agriculture
OAGM1	Annual Row Crops
SWCM1	White Cedar Mineral Coniferous Swamp Ecosite
SWDM4-5	Poplar Mineral Deciduous Swamp Type
SWTM2	Dogwood Mineral Deciduous Thicket Swamp Ecosite
THDM3	Dry - Fresh Deciduous Hedgerow Thicket Ecosite
WODM5-3	Fresh - Moist Manitoba Maple Deciduous Woodland Type
*	No access and visibility

050100metres

1:3,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2018.
3. Orthoimagery © First Base Solutions, 2018. Imagery Date, 2017.

Project Location

York Region

160961008 - Ballantrae REVA

Prepared by PW on 2018-11-20

Client/Project

Farsight Homes, Lakeshore Road

Ballantrae

Figure No.

1

Title

ELC Vegetation Communities

DRAFT

V:\01609 archive\60961008-Ballantrae - Savio\drawing\MXD\Report_Fig01_ELC.mxd Revised: 2018-11-20 By: dharvey

Vascular Plant Species

A total of 168 species of vascular plants were recorded from the Study Area, of which 69 % were native. 65 % of these native plants have a rank of S5, indicating they are common and secure within Ontario. 6 species (4 %) have a rank of S4 (apparently secure).

Fourteen plants locally rare (R1-10) or uncommon (U) in York region were identified on the Ballantrae property, including:

- Thimbleweed (*Anemone cylindrical*) – R8
- Spotted water-hemlock (*Cicuta maculata*) – U
- Running strawberry-bush (*Euonymus cf. obovata*) – R6
- Virginia stickweed (*Hackelia virginiana*) – R5
- Black walnut (*Juglans nigra*) – R
- Biennial lettuce (*Lactuca biennis*) – R10
- Pennsylvania smartweed (*Persicaria pensylvanica*) – R3
- Indian-pipe (*Monotropa uniflora*) – U
- Common evening-primrose (*Oenothera cf. biennis*) – U
- Arrow-leaved aster (*Symphyotrichum urophyllum*) – R9
- Thin-leaved sedge (*Carex cephaloidea*) – R3
- Fringed sedge (*Carex crinite*) – U
- Pubescent sedge (*Carex hirtifolia*) – U
- Burreed sedge (*Carex sparganioides*) – U.

None of the species observed had a CC value of 9 or 10.

No nationally or provincially endangered, threatened, or special concern vascular plant species were found.

Habitat Assessment

Woodland and wildlife habitat assessments were completed for each vegetation community. Standing snags with (and without cavities) were infrequently observed on the property with no stick nests, reptile or bat hibernacula, seeps, springs, or vernal pools observed during site investigations.

The drainage feature that crosses the property from north to south has been relocated from its former path and into a ditch that follows the hedgerow and cuts through the centre of the woodland communities. While wet, it was never observed to be flowing during our various site visits and is described as ephemeral. It has been ploughed and used as part of the cropland in the southern portion of the property. Using the Conservation Authorities Headwater Drainage Feature Classification, it would be a “complex contributing” feature and identified as “Mitigation 1” so that its functions should be maintained and enhanced, but not necessarily in the same location.

3.3.2 Breeding Birds

A preliminary breeding bird survey was conducted on the Ballantrae lands on July 3, 2015 between 7:30 and 9:00 am. Weather conditions included a temperature of 13°C, no wind, no cloud cover, and no rain.

Surveys in 2016 occurred on June 7, 2016 between 7:34 and 9:50 am and on June 28, 2016 between 8:00 and 10:00 am. Weather conditions of the June 7th survey had approximate temperatures of 14°C, with a wind of 2-4 (Beaufort scale) and 90-100% cloud cover. The June 28th survey had approximate temperatures of 16°C, with a wind of 3 (Beaufort scale) and no cloud cover.

Breeding bird surveys were conducted by traversing the subject lands on foot, recording all species of birds that were heard or seen. A conservative approach to determining breeding status was taken; all birds seen or heard in appropriate habitat during the breeding season were assumed to be breeding. Observations were separated into five (5) areas, which included the abandoned residential area, meadow (disturbed in 2016), agricultural fields, woodland/wetland area, and the offsite adjacent properties.

A complete list of birds observed is appended. In total, 30 species of birds were observed; 29 of which are likely to be breeding on the property. Observed species not expected to be breeding within the subject lands include Turkey Vulture, which was observed foraging overhead.

All species observed are ranked S5 (Secure; common and widespread), or S4 (Apparently secure; uncommon but not rare), except for European Starling, which is ranked SNA and therefore does not have a conservation status as it is exotic and not native to Ontario.

One species of conservation concern, Eastern Wood-Pewee, was observed during the breeding bird surveys. The Eastern Wood-Pewee is ranked as S4B (apparently secure breeding status) in Ontario. It has recently been listed provincially as special concern (June 2014), however this species does not receive habitat protection under the ESA (2007).

The Eastern Wood-Pewee is a forest bird of deciduous and mixed woods. Nest-site selection favors open space near the nest, typically provided by clearings, roadways, water, and forest edges. Nests are cryptic as they are covered with lichens, typically appearing like a knot on top of a branch and little is known about nesting behavior (Cadman et al, 2007). This species was recorded offsite to the north on July 3, 2015 and on the subject lands on June 28, 2016 in the deciduous woodland.

No species observed are considered federal or provincial species at risk (endangered or threatened).

3.3.3 Amphibians and Reptiles

Amphibian surveys were carried out on the Ballantrae subject lands, located in Ballantrae, Ontario.

Guidelines provided by the Marsh Monitoring Program Participant's Handbook are applied to each station and survey (Bird Studies Canada, 2009). A survey station area is a 100 m radius semicircle. The surveyor stands at the edge of the station and listens from left to right (see field sheets for a diagram). At each survey and station, all calling toads and frogs are identified and recorded over a three-minute time period. Call levels are described using values of 1, 2, or 3. Level 1 indicates that individuals can be counted and calls are not simultaneous. Level 2 indicates that calls are distinguishable with some simultaneous calling. Level 3 indicates a full chorus where calls are continuous and overlapping (Bird Studies Canada, 2009). Calling toad or frog species from outside of the survey station, or those heard off property, are also recorded. Survey times and weather conditions are provided in **Table 1**.

Table 1: Survey timing and weather parameters

SURVEY	DATE/TIME	WEATHER				SURVEYORS
		Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	
1	April 28, 2016 20:45 – 21:30	6	0	70	None / None	A. Corrigan M. Straus
2	May 26, 2016 21:24 – 22:20	14	1	25	None / Rain	A. Corrigan N. Kopysh
3	June 18 21:10 – 10:30	22	0	5	None / Rain	S. Catton R. Dibbley

Station locations are shown on **Figure 1** with results of the call count surveys summarized in **Table 2**, with an explanation of acronyms provided in **Table 3**.

Table 2: Amphibian calling activity levels

STATION	DATE	SPECIES							NOTES
		AMTO	GRFR	GRTR	NLFR	SPPE	WOFR	CHFR	
1	April	-	-	-	-	1 ^a	-	-	
	May	-	1 ^c	-	-	-	-	-	
	June	-	-	-	-	-	-	-	
2	April	-	-	-	-	b	-	-	
	May	1 ^c	-	2 ^a	-	3 ^a	-	-	
	June	-	-	-	-	-	-	-	
3	April	-	-	-	-	b	-	-	
	May	-	-	-	-	-	-	-	
	June	-	-	-	-	-	-	-	
4	April	-	-	-	-	b	-	-	
	May	-	-	-	-	-	-	-	
	June	-	-	-	-	-	-	-	
5 ^b	April	-	-	-	-	2	-	-	
	May	2	1 ^d	1	1 ^d	2	-	-	
	June	-	1	-	-	-	-	-	
6 ^b	April	-	-	-	-	3	-	-	
	May	1	-	2	-	2	-	-	
	June	-	-	-	-	-	-	-	

^a denotes species heard outside of the 100 m station but within the subject lands.

^b denotes species heard outside of the subject lands.

^c denotes a visual observation not calling (live).

^d denotes a visual observation not calling (dead).

denotes species call code, defined above.

Table 3: Amphibian Acronyms		
Acronym	Common Name	Scientific Name
AMTO	American Toad	<i>Anaxyrus americanus</i>
GRFR	Green Frog	<i>Lithobates clamitans</i>
GRTR	Gray Treefrog	<i>Hyla versicolor</i>
	Northern Leopard	
NLFR	Frog	<i>Lithobates pipiens</i>
SPPE	Spring Peeper	<i>Pseudacris crucifer</i>
WOFR	Wood Frog	<i>Lithobates sylvatica</i>
CHFR	Western Chorus Frog	<i>Pseudacris triseriata</i>

Overall, amphibian use on the subject property was low, with station 2 experiencing the highest diversity and numbers in May. This station was located adjacent to the onsite

ditch and treed area, recording American toad (visually), as well as Gray Treefrog and a full chorus of Spring Peepers. No amphibians were documented on the property in June, with numbers generally low or lacking at all stations, including the ditch. Water was also absent from all on-site stations by the June survey.

Stations 5 and 6 were located to the east of the subject property, which contained ponds at each station. Species diversity was highest at these stations in May, both recording 3 species calling: American toad, Gray Treefrog, and Spring Peeper. Road mortalities were noted along Lakeshore Road between stations 4 and 5 in May of 2 species (Green Frog and Northern Leopard Frog).

3.4 Assessment of Features and Functions

In this section I will summarize the information on the property and identify the constraints and issues to be dealt with in preparing a development proposal.

The site inventories confirm the general nature of the features on the Farsight property. There are two issues to be dealt with – the central woodland and the linkage along the drainage ditch from north to south. The findings are summarized in the Table below.

Feature or Function	Farsight	Adjacent 120 metres
Wetlands - Significant (PSW) - Local	- None on site - Swamp in central woodland a KNHF HSF	- None adjacent - Small marshes downstream
Endangered and Threatened Species: - plants - birds - amphibians	None	None
Fish Habitat	None	None
Watercourse	Ephemeral not a KNHF or HSF	Continues downstream
Significant Woodlands	Central Woodland a KNHF	Adjacent woodlands to east and south

Feature or Function	Farsight	Adjacent 120 metres
Significant Valleylands and Landform	o None	o none
Areas of Natural and Scientific Interest	o None	o None
Significant Wildlife Habitat • Migration Corridors and linkages • Seasonal Concentration Areas • Rare or Specialized Habitat • Species of Conservation Concern	- o Corridor along watercourse - o None - o None - o Eastern-Wood Pewee	- o Corridor continues - o None - o None - o Eastern Wood-Pewee

Several notes of explanation are necessary.

First, the central woodland consists of three different communities:

- a Deciduous Swamp dominated by poplar trees
- a Swamp Thicket dominated by Dogwood
- a naturalized Scotch Pine Plantation (see below)



The criteria for Significant Woodlands in ORMCP Technical Paper #7 exclude areas that are dominated by invasive, undesirable species. This includes the Scotch Pine Plantation as it is both a host for diseases and the species invasive. A recent OMB Decision (File: PL 160206) confirmed this assessment of Scotch Pine in another location. Thus, the ELC community FOC is not a KHNF, but the remainder of the central woodland should be protected and enhanced. I note that the NRSI and Secondary Plan both treat the limits of the central woodland in this way – not including the Scotch Pine.

Secondly, the watercourse does not maintain sufficient flows to be a KNHF or HSF. It does function as a linkage through the site but is not a protected feature in itself. The development application should enhance the linkage function through the property.

The result are the constraints shown on Figure 2 that is on the following page. This includes the buffers (10 to 30 metres) required by the ORMCP and recommended by NRSI and included in the Secondary Plan.

The buffers are shown generally on this figure and more specifically on the accompanying Plan of Subdivision where the survey information is used as the base.



Title
Natural Heritage Features and Minimum
Vegetation Protection Zones

4.0 THE DEVELOPMENT PROPOSAL

4.1 Proposed Development

The proposed development plan for the property is shown on the next page, the Natural Heritage System on the second page and the Master Plan on the third

The Plan of Subdivision is for 141 single family lots on 7.27 ha. The Central Woodland is set aside in a block with a buffer around it – totalling 1.79 ha. The NHS linkage through the property, including the SWM pond, totals 4.66 ha. – substantially exceeding the current linkage in width.

There are six areas of the proposal requiring discussion/comment.

1. We are proposing removal of the Scotch Pine Community as it is an undesirable community but replanting of a greater area in the NHS linkage with native trees, shrubs and plants. This will bring a benefit. Some small parts will be retained in the buffer to the major woodland.
2. The current ditch generally will be maintained as a feature but the flow through the property will be relocated back to its previous general location as a meandering watercourse. This is an improvement.
3. The NHS linkage through the property will be enhanced over that planned in the NRSI and Secondary Plan.
4. The buffer to the central woodland will be an average 10 metres wide, meeting the NRSI recommendation.
5. The buffer to the woodland where the road is near to it is shown as dripline only, meeting the NRSI recommendation of no buffer where the feature meets a road. Here, there will be no private lots backing into the woodland. In this case, NRSI recommended this as sufficient.
6. In order to provide the functional road and services to property on both sides of the stream corridor, it is necessary to cross it. This is proposed in a less sensitive location and the crossing will be enhanced with plantings.



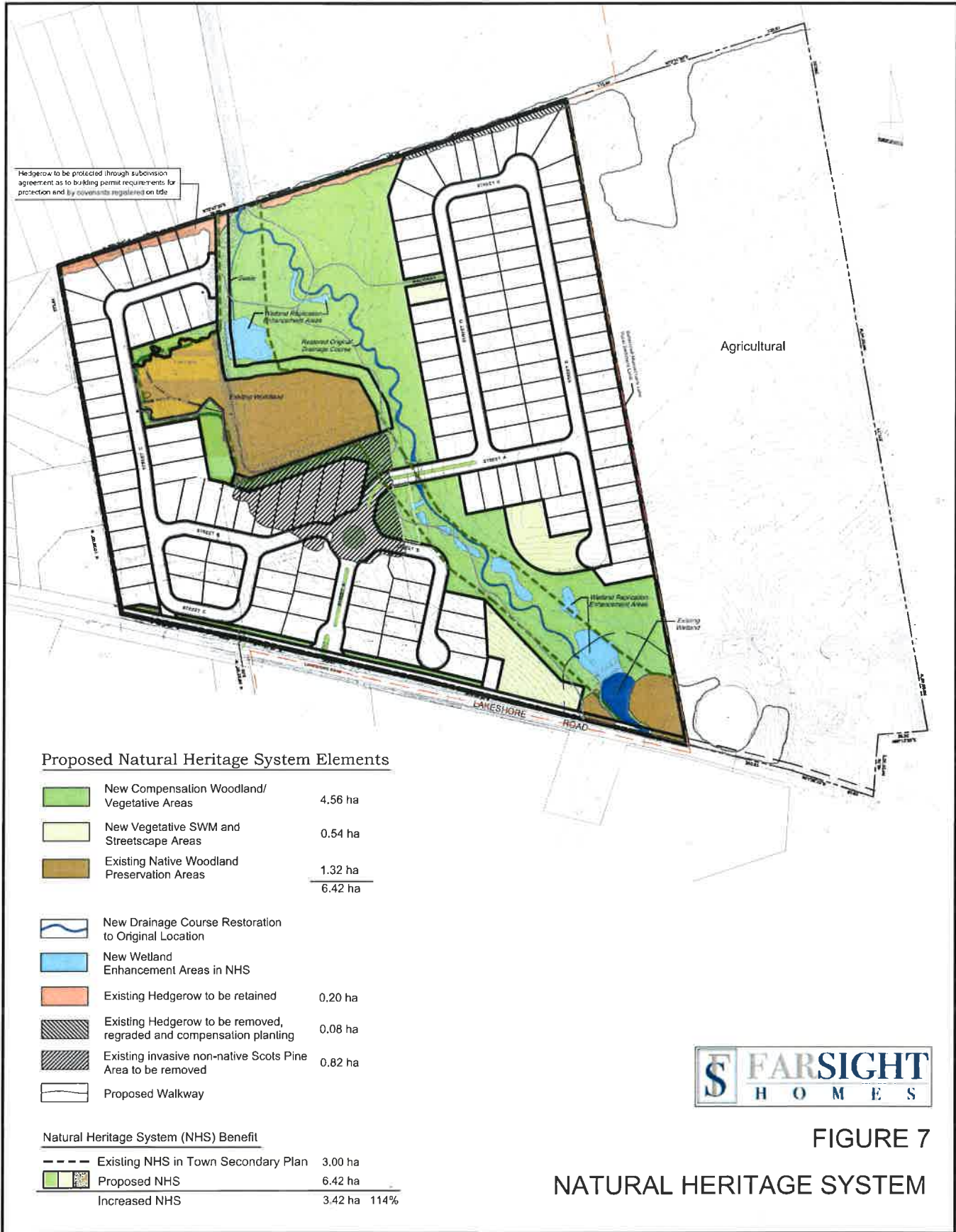
SCHEDULE OF LAND USE

Lots 1-141 - Condominium Single Detached Residential	7.27 ha	44 %
Blocks 142-144 - Storm Water Management (SWM)	0.53 ha	3 %
Block 145-146 - Open Space Conservation	4.04 ha	25 %
Block 147-149 - Open Space	0.09 ha	1 %
Block 150 - Emergency Access	0.01 ha	-
Block 151 - Pumping Station	0.03 ha	1 %
Block 152 - Private Roads (11.0m)	2.30 ha	14 %
Block 153 - Road Widening	0.23 ha	1 %
Block 154 - Woodland & Wetland Protection Area	1.13 ha	7 %
Block 155 - Woodland & Wetland 10m Buffer	0.28 ha	1 %
Block 156-158 - Woodland Buffer	0.38 ha	3 %
TOTAL	16.29 ha	100.0%



FIGURE 4

DRAFT PLAN OF SUBDIVISION



4.2 Evaluation of Ecological Impacts and Mitigation

There are five areas of potential impacts on the natural environment that require review.

1. Significant Woodland

The central woodland is a KNHF under the ORMCP Technical Papers. It will be protected by buffers from adjacent lots, save for the road frontage discussed in the previous section. It will also be substantially expanded in size with the tree plantings that are proposed that will enhance its functions. This will increase the area of the mixed woodland features on the property from a current 1.46 ha to 5.96 ha and include more desirable tree species.

The larger woodland area also will be more attractive to the Eastern Wood-Pewee – the species of conservation concern we identified.

2. Watercourse

The current ditch on the property had been relocated out of the agricultural fields and dug. While the ditch has naturalized, the proposed restoration of the watercourse will create a meandering stream with pools and will be of higher value. The excavated and wet ditch will be retained as a feature.

3. Wetlands

The central woodland is mostly a wetland (swamp) community that is both a KNHF and an HSF under the ORMCP guidelines. The feature will be retained and protected with 10 metre buffers as discussed.

Additional wetlands will be created in the NHS corridor.

The water balance for the site will be maintained to pre-development levels through the use of LID measures.

4. Natural Heritage System Linkage

The Secondary Plan and NSRI report show an enhanced linkage through the site. We accept this direction and create an NHS corridor through the site of 6.50 ha versus the Secondary Plan NHS of 3.00 ha.

5. Construction Impacts

A soil erosion and sedimentation control plan is included in the Sabourin Kimble report. Also, the cut and fill on the property will be balanced within the floodplain so as to maintain storage volumes and requires a permit from LSCRA.

4.3 Monitoring

The site disturbance will be the subject of normal applications to the LSRCA and the Town and will require control of sediments on the property during construction, as outlined by Sabourin Kimble.

In the active construction zones where the lands will be altered to provide for the development (roads, services, lots, buildings, etc.) and the SWM ponds, the disturbed areas will be defined on the ground and sediment fencing constructed as per the Sabourin Kimble specifications. The monitoring will ensure the integrity of the measures and the acceptability of the final restoration measures.

Proposed Schedule of Monitoring of the ongoing site work:

- 1- Pre-demolition/construction site inspection, and report to the Town of Whitchurch Stouffville and LSRCA confirming that all required Tree Protection fencing, sediment control measures, and required tree pruning (if any) or removals had been installed or completed.
- 2- Upon commencement of construction; conduct biweekly site inspections and provide monthly reports to the Town and CA confirming level of compliance and any required corrective measures.
- 3- Following any major rainfall events (greater than 20 mm. in 24-hour period), inspect to identify if any breaches of the sediment fencing had occurred and provide remedial direction to the contractor(s).
- 4- Conduct any required additional site inspections and reports to the Town and CA to confirm that any necessary work has been acceptably performed.
- 5- Upon completion of all exterior building construction, and associated patios, pools, decking and related grading; provide a report to the Town and CA confirming same.
- 6- Meet with the landscape contractor to review proposed landscape treatment, to ensure that tree planting equipment and final grading adjustments will not have a deleterious effect on the retained natural features.

Conduct a final site inspection and provide a Final Report to the Town and LSRCA on the level of success of the protection measures taken by the various contractors throughout the project.

As described in Sabourin Kimble overland flow from the sites will be directed into the SWM ponds for infiltration and/or treatment prior to being released to the watercourse.

5.0 POLICY CONFORMITY

As noted above, the proposed development and the buffer recommendation will meet the environmental requirements of the Ballantrae Musselman Lake Secondary Plan.

A review of the applicable Sections of the ORMCP (2017) is included below.

Section 20 (ORMCP). Supporting Connectivity

The development concept for the property protects and enhances the watercourse linkage on the property which is the key to connectivity in this landscape so that this policy is satisfied.

Section 22 (ORMCP). Key Natural Heritage Features

There is the central woodland wetland on the property that is a KNHF. It is protected and buffered to the standards in the environmental study that was input to the Secondary Plan. The downstream wetland on the south limit is similarly protected. This report identifies the KNHFs within 120 metres of the proposal and constitutes the required NHE. They are protected and enhanced.

Section 23 (ORMCP). Natural Heritage Evaluation

This report constitutes a Natural Heritage Evaluation in confirming the previous definition of the features and limits of the features within it and establishes a buffer to protect those features. Measures are proposed that will enhance the environment of the Oak Ridges Moraine in Whitchurch-Stouffville.

The drainage connectivity along the existing ditch is maintained and will be enhanced. There will be habitat removed, but the proposed restoration on-site will result in a positive improvement to the environment of Ballantrae and the Moraine.

Subsection 26 (ORMCP). Hydrologically Sensitive Features

The wetlands on the site are Hydrologically Sensitive Features and have been identified adjacent to the proposed development site and can be appropriately protected by the natural separation distance and the buffers provided. The erosion control and stormwater management reports and detailed design stage of approvals will address more specific protection measures during construction.

Subsection 30 Landform Conservation Areas

The property is within a Settlement Area so the Landform Conservation policies are limited to Subsection 31(13). With the substantial NHS, the objective to minimize disturbance is met.

Subsection 43 (1)(b) Sewage and Water Services

This report is accompanied by reports by the consulting engineer demonstrating that the quality of groundwater and surface water will be maintained.

Subsections 45 (7) and (8) Stormwater Management

The proposal does not dispose of stormwater to a kettle lake and the SWM facilities are located outside KNHFs and HSFs.

Subsection 47 Rapid Infiltration basins

RIBs are not employed in this project.

Thus, the proposal conforms to ORMCP policies and, by comparison, to those policies as implemented through the Town Official Plan and Ballantrae Secondary Plan. The ecological integrity of the Moraine has been protected and will be enhanced by the proposal.

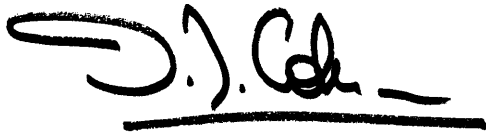
I anticipate no environmental impacts from the proposal and it provides benefits with the enhanced corridor:

- Increases area of woodland and improves species mix
- Retains drainage ditch and provides enhanced watercourse
- Buffers the features from proposed development

6.0 CONCLUSION AND RECOMMENDATIONS

The subdivision is in a Settlement Area and is designated for residential development. The natural and hydrologic features on site have been precisely identified and described by comprehensive field surveys, particularly of the central woodland/wetland in the middle of the property. It is reserved and protected with buffers that average or exceed 10 metres. Substantial replanting and enhancement of the natural corridor through the property will protect and improve the Natural Heritage System of the Secondary Plan. With this provision, the proposal meets the natural heritage requirements of the ORMCP, PPS and Town planning documents and LSRCA considerations. Other permits from the LSRCA and Town will provide for erosion and sediment control during construction. Monitoring during construction is recommended.

Per,
Ages Consultants Limited

A handwritten signature in black ink, appearing to read 'D.J. Coleman', with a horizontal line drawn underneath it.

Derek J. Coleman, PhD., R.P.P.
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519-780-8125

References

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APPENDICES

EIS Terms of Reference

Vascular Plant List

Breeding Bird List

EIS TERMS OF REFERENCE

Farsight Homes, Lakeshore Road

Ballantrae, Town of Whitchurch Stouffville

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Purpose of an EIS

While the studies for the Secondary Plan for Ballantrae included a comprehensive, broad-scale analysis of the Natural Heritage and Water Resource System within and outside of the Secondary Plan Area, the EIS will include a more detailed examination of natural features and functions and assessment of the impact that the proposed development application will have on the features and their functions within the Residential designation and Settlement Area of the ORMCP. A summary of recommended strategies for mitigating the environmental impacts of the development will be developed. The EIS shall be submitted on a site-specific basis prior to the approval of Official Plan Amendments, Zoning Bylaw Amendments, draft plan of subdivision or a site plan.

The EIS shall conform to, and expand upon, the findings and conclusions in the Secondary Plan. Furthermore, the EIS is not meant to reproduce the approved MESP, rather the EIS shall provide more detailed information and analysis on the various components such as the precise boundaries of the Natural Heritage System and an evaluation of the post development impacts on the environmental features (the list of more detailed information are provided in the terms below). For lands within the Oak Ridges Moraine Plan Area where Natural Heritage System lands are also characterized as a Key Natural Heritage Features, the EIS shall address the requirements of a Natural Heritage Evaluation as set out in Section 23(1) of the Oak Ridges Moraine Conservation Plan. For lands within the Oak Ridges Moraine Plan Area and where Natural Heritage System lands are also characterized as a Hydrologically Sensitive Feature, the EIS shall address the requirements of a Hydrological Evaluation as set out in Section 26(4) of the Oak Ridges Moraine Conservation Plan.

For lands which contain or are within 120 metres of a Provincially Significant Wetland and/or an endangered species habitat and/or if the proposed development impacts the Provincially Significant Wetland and/or endangered species habitat, the EIS will address the requirements of the Provincial Policy Statement (2014).

Part I: Defining the Natural Heritage System

1.0 Site Description

The natural heritage and water resource system on the site should be described in as much detail as possible at landscape, vegetation community and species scales. The site description should make use of existing, relevant reports and. Methodology, timing, and techniques selected and used to undertake ecological inventories and water balance assessments should be described. All primary source information collected in support of the EIS should be referenced.

Specifically, the site description should include the following:

- a) A description of the soils, landforms and surficial geology of the site based on a review of available mapping and literature.
- b) Identification of any hydrological or hydrogeological features/resources, including surface water features, recharge/discharge zones, groundwater elevations and flow directions, connections between groundwater and surface water features.
- c) A pre-development water balance analysis, which establishes the quantity and quality of existing water budget components on the site. If there are existing natural heritage features on the subject property (e.g., wetlands, woodlands, and watercourses) then a more detailed feature-based water balance will be required to determine existing flow paths and contributions to each of these features. This assessment will identify existing precipitation, evapotranspiration, runoff and infiltration volumes.
- d) A description of the present natural features on and adjacent to the subject property (i.e. wetland, ESA, ANSI, woodland, vegetation patch, geological or landform features, river, stream, or ravine corridor) including an ecological land classification. The significance of the natural features at a Provincial and Regional level with reference to standard information sources from the Province and the LSRCA should also be indicated.
- e) A biological inventory and analysis of both terrestrial and aquatic communities on site (it is expected that studies will be undertaken during the appropriate season). The significance of individual species should be evaluated using Species of Conservation Concern, COSEWIC and COSSARO lists, as well as Natural Heritage Information Centre records
- f) A determination of the precise boundaries of the Natural Heritage System including natural heritage and hydrological features with the required linkages. Any feature staking that has been done to date should also be indicated as well as the calculated hazard land limits (e.g. floodplain analysis, geotechnical review of slope stability and watercourse erosion, meander belt width analysis, etc.).

1.1 Assessment of Function

The EIS is to describe and discuss in detail the ecological, social and biophysical functions of the various components of the natural heritage and water resource systems on the subject site. Specifically, this section should:

- Analyze the inter-relationship of natural and hydrological features on the subject site and relationship to the larger local and regional ecosystem. For example, linkages between features, such as groundwater vegetation communities or groundwater-surface water relationships should be described. The investigation of the existing features should extend beyond the subject site and include adjacent areas. The level of effort may be reduced for the adjacent areas since a full investigation may be hindered by access issues, however, a remote investigation should occur as a minimum.
- Determine how each natural and hydrological feature contributes to the quality and integrity of the larger natural heritage and water resource system;
- Assess whether each natural and hydrological feature contributes to the significance of the larger natural heritage and water resource system;

Part II- The Development Proposal

Part II will outline the proposed development, impact analysis, and recommended mitigation and/or compensation. The intent of this piece of the EIS is to determine, first, whether the form of development proposed can be accommodated given the ecological sensitivities and natural hazards of the site. Secondly, if the development is not compatible on its own, whether mitigation and/or compensation measures could be proposed to ensure that negative effects are mitigated and that the development results in a net ecological gain. Although we have separated the impacts and mitigation into distinct sections below, these two pieces can be combined in the EIS report, if it makes more sense to do so. A concept plan for the proposed development, which includes existing and proposed grades, should be provided within the EIS. The concept plan should be overlaid on an aerial photograph in order to clearly illustrate opportunities and constraints. Mapping and description of the sensitivity of the features and functions.

2.0 Evaluation of the Ecological Impacts

This section of the EIS will describe and evaluate the potential environmental effects/impacts of the development proposal with reference to the natural features and functions identified in the earlier sections of the EIS. Information should be presented in tabular format. Scientific literature must be consulted and referenced in the body of the report to support all statements made. The description and evaluation of impacts should include, but not be limited to the following:

- Impacts during construction (e.g., sedimentation) and after construction (e.g., occupancy-related impacts such as increased disturbance and indirect impact from increased access, pets, lighting, noise, encroachment);
- Direct on-site effects (e.g., loss of feature or habitat) and indirect off site impacts;
- Individual and cumulative impacts;
- Irreversible and reversible impacts;
- Immediate and long-term impacts;
- Impacts to surface hydrological features, groundwater features and water balance (e.g. stream temperature changes, sedimentation of watercourses, erosion, impedance of groundwater movement, impacts to groundwater discharge areas, construction-related impacts to aquifer integrity, groundwater contamination);
- Impacts to the key characteristics of the natural areas (e.g. loss of habitat, change in habitat, edge effects and impacts to sensitive species or communities, effects on connectivity of habitat);
- The nature, extent and duration of each potential impact should be described;

and

- A post-development overall water balance assessment will be required depending on the size, form, and use of the proposed development. A post-development feature-based water balance will be required for wetlands and watercourses. The post-development scenario must be compared to the existing condition and mitigation measures will be required in order to maintain existing flow regimes on a monthly basis for both groundwater and surface water.

2.1 Description of Mitigating Measures

The description of mitigation measures must include identification and detailed explanation of alternative options and measures that would mitigate any predicted environmental impacts. Mitigation measures should be provided for impacts associated with both the construction and post-construction phases of development (i.e. mitigation measures may be temporary or permanent). This should include modifications to development proposals to avoid effects on key features or functions, and/or methods to restore features or functions that might be impacted. Of these, avoidance is preferred. Where avoidance is not possible, a rationale should be provided along with alternative options including measures to minimize impacts. Subsequent monitoring of effects to ensure successful implementation may be required. This section should include

descriptions of as many feasible and recommended mitigating measures as possible that are relevant to the potential impacts of the proposed development including:

- Buffers and setbacks;
- Timing/scheduling recommendations for specific activities;
- Low Impact Development (LID) techniques and other design techniques;
- Sediment and erosion control measures;
- Measures to reduce the impacts of occupancy;
- Ecological restoration (e.g., woodlot/wetland edge management, invasive species management, compensation planting, buffer restoration, planting to re-stabilize graded areas or to mitigate the impacts of stormwater outfall);

and

- Measures to ensure water balance or confirmation that the water management scheme (for both surface and groundwater resources) does not negatively impact on the Natural Heritage System features and functions.

2.2 Monitoring

The purpose of monitoring is to measure effects over time. Monitoring will enable planning agencies, through development agreements, to require subsequent changes to site conditions if the environmental effects are found to exceed predicted effects or targets, or if there are identifiable negative effects. Monitoring the environmental effects of developments also provides well-documented, local examples of best management practices for particular types of development and particular types of features or functions. Where mitigation is achieved through avoidance of negative impacts, a simplified monitoring plan to ascertain the success of the project is all that may be required. In these situations, the predicted net effects after mitigation may be negligible, and only the assumptions need to be tested. However, where mitigation is achieved by methods or measures to minimize but not to eliminate environmental effects, the predicted net effects after mitigation will be described and a monitoring plan designed to measure those effects may be required.

The Natural Heritage Reference Manual produced by the Ministry of Natural Resources (MNR) states that monitoring may be required where:

- The large scale of a development or the sensitivity of the key functions are such that effects may be difficult to predict and/or are relatively untested or unproven in the field;
- The mitigation technology proposed is not proven in Ontario;

- There are some long-term operations associated with a development that could facilitate some future or ongoing refinement to the mitigation strategy.

Depending on specific circumstances, monitoring may be required in pre-construction, construction/operation and post construction periods. Details of the monitoring program will be specific to the development proposal and will be determined through the review of the development application and the EIS. Monitoring may be conducted by the proponent or can be completed by others.

2.3 Recommendations

Recommended mitigation measures should be summarized in a list and drawing (i.e., Environmental Management Plan). The recommendations section of the EIS should also include summary statements regarding whether:

- The proposal should proceed as planned;
- The proposal should be revised to reduce/eliminate effects and if so, how (proposed revisions should be illustrated conceptually on the resource mapping base);
- Whether monitoring is required and if so what protocol will be followed.

It is expected that the EIS report will identify measures that will be taken to mitigate the effects on the natural heritage system. The proponent will be responsible for assessing the feasibility of the proposed mitigation measures and ensuring that they can be incorporated into the development proposal. Future reviews will ensure that these measures have been incorporated. Where applicable, a demonstration that the development meets the requirements of the York Region Official Plan, the Oak Ridges Moraine Conservation Plan and the Provincial Policy Statement are required.

PART III - Additional Requirements

3.0 Appendices

The EIS appendices should include all relevant supplementary information such as the following:

- Literature cited;
- Field collection record, flora and fauna species lists by area and by date of inventory (see Appendix A for further detail on reporting);

- List of people contacted during the study or referenced in the report.

3.1 Executive Summary

Include a summary at the front of the report that contains a description of the proposed development, the effects of the environment and all recommendations.

VASCULAR PLANT LIST FOR 5452 LAKESHORE ROAD, BALLANTRAE, ONTARIO

LATIN NAME	COMMON NAME	C VALUE	WETLAND PLANT SPECIES	INVASIVE SPECIES	PROVINCIAL STATUS (S-Rank)

PTERIDOPHYTES FERNS & ALLIES

<i>Athyrium filix-femina</i> var. <i>angustum</i>	Northern Lady Fern	4	T		S5
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	T		S5
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	5			S5
<i>Equisetum arvense</i>	Field Horsetail	0	T		S5
<i>Equisetum hyemale</i>	Scouring-rush	2	T		S5
<i>Onoclea sensibilis</i>	Sensitive Fern	4	I		S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	7	I		S5
<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	Eastern Bracken-fern	2			S5

GYMNOSPERMS CONIFERS

<i>Juniperus</i> sp.	Juniper Species				
<i>Picea abies</i>	Norway Spruce				SE3
<i>Pinus nigra</i>	Austrian Pine				SE2
<i>Pinus resinosa</i>	Red Pine	8			S5
<i>Pinus strobus</i>	Eastern White Pine	4	T		S5
<i>Pinus sylvestris</i>	Scotch Pine			YES	SE5
<i>Thuja occidentalis</i>	Eastern White Cedar	4	T		S5

DICOTYLEDONS DICOTS

<i>Acer negundo</i>	Manitoba Maple	0	T		S5
<i>Acer rubrum</i>	Red Maple	4	T		S5
<i>Acer saccharum</i>	Sugar Maple	4			S5
<i>Acer X freemanii</i>	Freeman's / Swamp Maple		I		S4?
<i>Actaea pachypoda</i>	White Baneberry	6	5		S5
<i>Actaea rubra</i>	Red Baneberry	5			S5
<i>Ageratina altissima</i>	White Snakeroot	5	T		S5
<i>Agrimonia gryposepala</i>	Tall Hairy Agrimony	2			S5
<i>Alliaria petiolata</i>	Garlic Mustard			YES	SE5
<i>Amphicarpaea bracteata</i>	Hog Peanut	4	T		S5
<i>Anemone cylindrica</i>	Thimbleweed	7			S4
<i>Anemone virginiana</i>	Thimbleweed	4			S5
<i>Antennaria</i> sp.	Pussytoes Species				
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4			S5
<i>Arctium minus</i>	Common Burdock				SE5
<i>Asclepias syriaca</i>	Common Milkweed	0			S5
<i>Betula papyrifera</i>	White Birch		T		S5
<i>Bidens cernua</i>	Nodding Beggar-ticks	2	I		S5
<i>Bidens frondosa</i>	Devil's Beggar-ticks	3	I		S5

VASCULAR PLANT LIST FOR 5452 LAKESHORE ROAD, BALLANTRAE, ONTARIO

LATIN NAME	COMMON NAME	C VALUE	WETLAND PLANT SPECIES	INVASIVE SPECIES	PROVINCIAL STATUS (S-Rank)
<i>Chenopodium album</i>	Lamb's Quarters				SE5
<i>Cicuta maculata</i>	Spotted Water-hemlock	6	I		S5
<i>Circaea canadensis</i>	Enchanter's Nightshade	3			S5
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	6			S5
<i>Cornus stolonifera</i>	Red-osier Dogwood	2	I*		S5
<i>Corylus cornuta</i>	Beaked Hazel	5			S5
<i>Crataegus</i> sp.	Hawthorn species				
<i>Cynanchum rossicum</i>	Dog Strangling Vine			YES	SE5
<i>Daucus carota</i>	Wild Carrot				SE5
<i>Echinocystis lobata</i>	Prickly Cucumber	3	T		S5
<i>Elaeagnus umbellata</i>	Autumn Olive			YES	SE3
<i>Epilobium hirsutum</i>	Great Hairy Willow-herb		I	YES	SE5
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	1	T		S5
<i>Euonymus alata</i>	Winged Spindle Tree			YES	SE2
<i>Euonymus</i> cf. <i>obovata</i>	Running Strawberry-bush	6			S5
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	2			S5
<i>Eutrochium maculatum</i>	Spotted Joe-pye-weed	3	I		S5
<i>Fagus grandifolia</i>	American Beech	6			S5
<i>Fragaria virginiana</i>	Wild Strawberry	2			S5
<i>Fraxinus americana</i>	White Ash	4			S5
<i>Galeopsis tetrahit</i>	Common Hemp-nettle				SE5
<i>Galium</i> cf. <i>palustre</i>	Marsh Bedstraw	5	I		S5
<i>Galium verum</i>	Yellow Bedstraw			YES	SE5
<i>Geranium robertianum</i>	Herb-robert				SE5
<i>Geum fragarioides</i>	Barren Strawberry	5			S5
<i>Geum urbanum</i>	Wood Avens			YES	SE2
<i>Hackelia virginiana</i>	Virginia Stickweed	5			S5
<i>Hieracium aurantiacum</i>	Devil's Paintbrush				SE5
<i>Hieracium pilosella</i>	Mouse-ear Hawkweed				SE5
<i>Hydrophyllum virginianum</i>	Virginia Water-leaf	6			S5
<i>Hypericum perforatum</i>	Common St. John's-wort			YES	SE5
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	I		S5
<i>Juglans nigra</i>	Black Walnut	5			S4
<i>Lactuca biennis</i>	Biennial Lettuce	6			S5
<i>Laportea canadensis</i>	Wood Nettle	6	T		S5
<i>Leonurus cardiaca</i>	Motherwort				SE5
<i>Leucanthemum vulgare</i>	Ox-eye Daisy				SE5
<i>Linaria vulgaris</i>	Butter-and-eggs				SE5

VASCULAR PLANT LIST FOR 5452 LAKESHORE ROAD, BALLANTRAE, ONTARIO

LATIN NAME	COMMON NAME	C VALUE	WETLAND PLANT SPECIES	INVASIVE SPECIES	PROVINCIAL STATUS (S-Rank)
<i>Persicaria pensylvanica</i>	Pennsylvania Smartweed	3	I		S5
<i>Lonicera morrowii</i>	Morrow's Honeysuckle			YES	SE3
<i>Lonicera tatarica</i>	Tartarian Honeysuckle			YES	SE5
<i>Lycopus europaeus</i>	European Water-horehound		I	YES	SE5
<i>Malus pumila</i>	Common Apple				SE5
<i>Malus</i> sp.	Apple Species				
<i>Medicago lupulina</i>	Black Medick				SE5
<i>Melilotus alba</i>	White Sweet-clover				SE5
<i>Monotropa uniflora</i>	Indian-pipe	6			S5
<i>Oenothera</i> cf. <i>biennis</i>	Common Evening-primrose	0			S5
<i>Oxalis</i> cf. <i>stricta</i>	Yellow Wood-sorrel	0			S5
<i>Parthenocissus vitacea</i>	Inserted Virginia-creeper	3			S5
<i>Populus balsamifera</i>	Balsam Poplar	4	T		S5
<i>Populus tremuloides</i>	Trembling Aspen		T		S5
<i>Potentilla recta</i>	Rough-fruited Cinquefoil				SE5
<i>Prunus pensylvanica</i>	Pin Cherry	3			S5
<i>Prunus serotina</i>	Black Cherry	3			S5
<i>Prunus virginiana</i>	Choke Cherry	2			S5
<i>Pyrola elliptica</i>	Shinleaf	5			S5
<i>Quercus rubra</i>	Red Oak	6			S5
<i>Ranunculus acris</i>	Tall Buttercup		T		SE5
<i>Ranunculus recurvatus</i>	Hooked Buttercup	4			S5
<i>Rhamnus cathartica</i>	Common Buckthorn		T	YES	SE5
<i>Rhus typhina</i>	Staghorn Sumac	1			S5
<i>Ribes americanum</i>	Wild Black Currant	4	T		S5
<i>Ribes cynosbati</i>	Prickly Gooseberry	4			S5
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	Wild Red Raspberry	0			S5
<i>Rubus occidentalis</i>	Black Raspberry	2			S5
<i>Rubus odoratus</i>	Purple Flowering Raspberry	3			S5
<i>Rubus pubescens</i>	Dwarf Raspberry	4	I*		S5
<i>Rudbeckia hirta</i>	Black-eyed Susan	0			S5
<i>Rumex acetosella</i>	Sheep Sorrel				SEU
<i>Salix amygdaloides</i>	Peach-leaved Willow	6	T		S5
<i>Salix bebbiana</i>	Long-beaked Willow	4	I		S5
<i>Salix discolor</i>	Pussy Willow	3	I		S5
<i>Salix eriocephala</i>	Missouri Willow	4	T		S5
<i>Salix euxina</i>	Crack Willow				SE
<i>Salix petiolaris</i>	Slender Willow	3	I		S5

VASCULAR PLANT LIST FOR 5452 LAKESHORE ROAD, BALLANTRAE, ONTARIO

LATIN NAME	COMMON NAME	C VALUE	WETLAND PLANT SPECIES	INVASIVE SPECIES	PROVINCIAL STATUS (S-Rank)
<i>Sambucus canadensis</i>	Common Elderberry	5	T		S5
<i>Sambucus racemosa</i>	Red-berried Elderberry	5			S5
<i>Sanguinaria canadensis</i>	Bloodroot	5			S5
<i>Saponaria officinalis</i>	Bouncing-bet				SE5
<i>Silene vulgaris</i>	Bladder Campion				SE5
<i>Solanum dulcamara</i>	Bitter Nightshade		T	YES	SE5
<i>Solidago altissima</i>	Tall Goldenrod	1			S5
<i>Solidago canadensis</i>	Canada Goldenrod	1			S5
<i>Sonchus arvensis</i>	Field Sow-thistle				SE5
<i>Sorbus aucuparia</i>	European Mountain-ash				SE4
<i>Symphotrichum lanceolatum</i>	Panicled Aster	3	I		S5
<i>Symphotrichum novae-angliae</i>	New England Aster	2			S5
<i>Symphotrichum puniceum</i>	Purple-stemmed Aster	6	I		S5
<i>Symphotrichum urophyllum</i>	Arrow-leaved Aster	6			S4
<i>Syringa vulgaris</i>	Common Lilac				SE5
<i>Taraxacum officinale</i>	Common Dandelion				SE5
<i>Tiarella cordifolia</i>	False Mitrewort	6	T		S5
<i>Tilia americana</i>	Basswood	4			S5
<i>Toxicodendron rydbergii</i>	Poison-ivy	0			S5
<i>Tragopogon dubius</i>	Doubtful Goat's-beard				SE5
<i>Tussilago farfara</i>	Coltsfoot		T	YES	SE5
<i>Ulmus americana</i>	White Elm	3	T		S5
<i>Urtica dioica</i> ssp. <i>gracilis</i>	American Stinging Nettle	2	T		S5
<i>Verbascum thapsus</i>	Common Mullein				SE5
<i>Viburnum opulus</i>	Guelder Rose			YES	SE4
<i>Vicia cracca</i>	Tufted Vetch			YES	SE5
<i>Vicia tetrasperma</i>	Slender Vetch				SE5
<i>Viola pubescens</i>	Downy Yellow Violet				S5
<i>Vitis riparia</i>	Riverbank Grape	0			S5

MONOCOTYLEDONS MONOCOTS

<i>Alisma</i> sp.	Water-plantain				
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	5	T		S5
<i>Asparagus officinalis</i>	Garden Asparagus				SE5
<i>Bromus inermis</i>	Awnless Brome			YES	SE5
<i>Carex arctata</i>	Drooping Wood Sedge	5			S5
<i>Carex cephaloidea</i>	Thin-leaved Sedge	6			S5
<i>Carex crinita</i>	Fringed Sedge	6	I		S5
<i>Carex cristatella</i>	Crested Sedge	3	I		S5

VASCULAR PLANT LIST FOR 5452 LAKESHORE ROAD, BALLANTRAE, ONTARIO

LATIN NAME	COMMON NAME	C VALUE	WETLAND PLANT SPECIES	INVASIVE SPECIES	PROVINCIAL STATUS (S-Rank)
<i>Carex deweyana</i>	Dewey's Sedge	6			S5
<i>Carex gracillima</i>	Graceful Sedge	4	T		S5
<i>Carex hirtifolia</i>	Pubescent Sedge	5			S5
<i>Carex intumescens</i>	Bladder Sedge	6	I		S5
<i>Carex peckii</i>	Peck's Sedge	6			S5
<i>Carex pedunculata</i>	Long-stalked Sedge	5			S5
<i>Carex projecta</i>	Necklace Sedge	5	I		S5
<i>Carex radiata</i>	Radiate Sedge	4	T		S4
<i>Carex rosea</i>	Stellate Sedge	5			S5
<i>Carex sparganioides</i>	Burreed Sedge	5			S5
<i>Carex stipata</i>	Awl-fruited Sedge	3	I		S5
<i>Convallaria majalis</i>	Lily-of-the-valley			YES	SE5
<i>Cyperus</i> cf. <i>esculentus</i>	Yellow Nut-grass	1	T		S5
<i>Dactylis glomerata</i>	Orchard Grass				SE5
<i>Elymus repens</i>	Quack Grass				SE5
<i>Glyceria striata</i>	Fowl Meadow Grass	3	I		S5
<i>Hemerocallis fulva</i>	Orange Day-lily			YES	SE5
<i>Leersia oryzoides</i>	Rice Cut Grass	3	I		S5
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	5			S5
<i>Maianthemum racemosum</i>	False Solomon's Seal	4			S5
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	T		S5
<i>Phleum pratense</i>	Timothy				SE5
<i>Poa pratensis</i>	Kentucky Bluegrass	0			S5
<i>Scirpus cyperinus</i>	Wool-grass	4	I		S5
<i>Smilax herbacea</i>	Herbaceous Carrion Flower	5			S4
<i>Typha latifolia</i>	Broad-leaved Cattail	3	I		S5

FLORISTIC SUMMARY & ASSESSMENT

SPECIES DIVERSITY

Total Species:		168	
Native Species:		116	69%
Exotic Species		52	31%
Regionally Significant Species		8	5%
S1-S3 Species	rare in Ontario	0	0%
S4 Species	uncommon in Ontario	6	4%
S5 Species	common in Ontario	110	65%
CO-EFFICIENT OF CONSERVATISM (C) AND FLORISTIC QUALITY INDEX (FQI)			
mean C		3.7	

VASCULAR PLANT LIST FOR 5452 LAKESHORE ROAD, BALLANTRAE, ONTARIO					
LATIN NAME	COMMON NAME	C VALUE	WETLAND PLANT SPECIES	INVASIVE SPECIES	PROVINCIAL STATUS (S-Rank)
<i>C 0 to 3</i>	<i>lowest sensitivity</i>	45	27%		
<i>C 4 to 6</i>	<i>moderate sensitivity</i>	64	38%		
<i>C 7 to 8</i>	<i>high sensitivity</i>	3	2%		
<i>C 9 to 10</i>	<i>highest sensitivity</i>	0	0%		
<i>FQI</i>		40			
PRESENCE OF INVASIVE SPECIES					
<i>Total Invasive Plant Species</i>		20	12%		
PRESENCE OF WETLAND PLANT SPECIES					
<i>Total Wetland Tolerant (T) Plant Species as identified in OWES Manual</i>		32	19%		
<i>Total Wetland Indicator (I) Plant Species as identified in OWES Manual</i>		28	17%		

COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	GLOBAL STATUS	COSSARO	COSEWIC							
AMPHIBIANS												
American Toad	Anaxyrus americanus	S5	G5									
Tetraploid Gray Treefrog	Hyla versicolor	S5	G5									
Spring Peeper	Pseudacris crucifer	S5	G5									
Northern Green Frog	Lithobates clamitans	S5	G5									
Northern Leopard Frog	Lithobates pipiens	S5	G5	NAR	NAR							
BIRDS												
Mourning Dove	Zenaidura macroura	S5	G5									
Killdeer	Charadrius vociferus	S5B, S5N	G5									
Turkey Vulture	Cathartes aura	S5B	G5									
Yellow-bellied Sapsucker	Sphyrapicus varius	S5B	G5									
Downy Woodpecker	Picoides pubescens	S5	G5									
Hairy Woodpecker	Picoides villosus	S5	G5									
Northern Flicker	Colaptes auratus	S4B	G5									
Pileated Woodpecker	Dryocopus pileatus	S5	G5									
Eastern Wood-Pewee	Contopus virens	S4B	G5	SC	SC-NS							
Eastern Phoebe	Sayornis phoebe	S5B	G5									
Great Crested Flycatcher	Myiarchus crinitus	S4B	G5									
Eastern Kingbird	Tyrannus tyrannus	S4B	G5									
Blue Jay	Cyanocitta cristata	S5	G5									
American Crow	Corvus brachyrhynchos	S5B	G5									
Common Raven	Corvus corax	S5	G5									
Black-capped Chickadee	Poecile atricapillus	S5	G5									
Red-breasted Nuthatch	Sitta canadensis	S5	G5									
House Wren	Troglodytes aedon	S5B	G5									
American Robin	Turdus migratorius	S5B	G5									
European Starling	Sturnus vulgaris	SNA	G5									
Cedar Waxwing	Bombycilla cedrorum	S5B	G5									
Mourning Warbler	Geothlypis philadelphia	S4B	G5									
Yellow Warbler	Setophaga petechia	S5B	G5									
Song Sparrow	Melospiza melodia	S5B	G5									
Northern Cardinal	Cardinalis cardinalis	S5	G5									
Indigo Bunting	Passerina cyanea	S4B	G5									
American Goldfinch	Spinus tristis	S5B	G5									
Red-winged Blackbird	Agelaius phoeniceus	S4	G5									
Brown-headed Cowbird	Molothrus ater	S4B	G5									
Baltimore Oriole	Icterus galbula	S4B	G5									
MAMMALS												
Grey Squirrel	Sciurus carolinensis	S5	G5									
Striped Skunk	Mephitis mephitis	S5	G5									
Bat species												
SUMMARY												
Total Amphibians: 5												
Total Birds: 30												
Total Breeding Birds: 29												
Total Mammals: 3												
SIGNIFICANT SPECIES												
National: 1												
Provincial: 1												
Explanation of Status and Acronyms												
COSSARO: Committee on the Status of Species at Risk in Ontario												
COSEWIC: Committee on the Status of Endangered Wildlife in Canada												
REGION: Rare in a Site Region												
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.												
GNR: Unranked—Global rank not yet assessed.												
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												
THR: Threatened												
SC: Special Concern												
2, 3 or NS after a COSEWIC ranking indicates the species is either on Schedule 2, Schedule 3 or No Schedule of the Species At Risk Act (SARA)												
NAR: Not At Risk												

IND: Indeterminant, insufficient information to assign status												
DD: Data Deficient												
LATEST STATUS UPDATE												
Amphibians: July 2016												
Reptiles: July 2016												
Birds: August 2016												
Mammals: June 2016												
S and G ranks and explanations: December 2011												
NOTE												
All rankings for birds refer to breeding birds unless the ranking is followed by N												
REFERENCES												
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