NATURAL HERITAGE

ENVIRONMENTAL IMPACT STUDY

PREPARED FOR

Barry's Construction & Insulation Ltd:

Kilsyth Residential Draft Plan of Subdivision

Part Lot 9, Concession 7, Geographic Township of Derby
Settlement of Kilsyth
Township of Georgian Bluffs
County of Grey

PREPARED BY

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Table of Contents

1 Executive Summary 2
2 Introduction 2
3 Study Works 3
3.1 Background Review 3
3.2 Field Study Methodology 3
3.3 Field Survey Dates 5
4 Vegetation Community Characterization 6

Significant Feature Analysis

Significant Feature Analysis 7
5 Habitat of Endangered and Threatened Species 7
6 Fish Habitat 8
7 Significant Valleylands 9
8 Significant Areas of Natural and Scientific Interest (A.N.S.I.) 10
9 Significant Wetlands 10
10 Significant Woodlands 11
11 Significant Wildlife Habitat 12
11.1 Seasonal Concentration Areas of Animals 13
11.2 Rare Vegetation Communities 15
11.3 Specialized Habitat for Wildlife 16
11.4 Habitat for Species of Conservation Concern 17
11.5 Animal Movement Corridors 18
11.6 Exceptions for Ecoregion 6E 19
12 Significant Feature Analysis Summary 20

Impact Assessment

13 Development Proposal 20
14 Threatened Bird Species: Bobolink & Eastern Meadowlark 21
14.1 Characterization 21
14.2 Impact Assessment and ESA Requirements 21
15 Threatened Bird Species: Barn Swallow 23
15.1 Characterization 23
15.2 Impact Assessment and ESA Requirements 23
16 Fish Habitat 23
16.1 Characterization 23
16.2 Impact Assessment 24
17 Mitigation 25
18 Conclusions 26
19 References 27
20 Figures 28

1 Executive Summary

Barry's Construction & Insulation Ltd. has proposed a Draft Plan of Residential Subdivision located within the Settlement of Kilsyth being Part Lot 9, Concession 7, geographic township of Derby, Township for Georgian Bluffs. The subject property is approximately 16.75ha with a legal description of Con 7 N Part Lot 9, Plan 117 PT; lots 71,75 & 78 lots: 72,73,74, 85, 86 &87 (County Property Parcel Report provided under Appendix 4) currently an agricultural field environment with a farm dwelling and barn structures on-site.

A Natural Heritage Environmental Impact Study (EIS) was requested through the pre-application consultation process, with an EIS-Term of Reference approved by the Grey Sauble Conservation Authority (Appendix 5) to address potential negative impacts associated with site development on the natural environment.

AWS Environmental Consulting Inc. (AWS) was retained to undertake an EIS in accordance with the environmental policies and guidelines of the Grey County Official Plan and the 2010 Provincial Natural Heritage Reference Manual (NHRM). On-site field investigations of natural heritage features and surveys of ecological functions were undertaken throughout the spring and summer growing seasons of 2017.

This EIS has demonstrated and concluded that with application and clearance approval for Species-At-Risk (SAR) birds under the Endangered Species Act plus appropriate site development mitigation, no negative impacts are anticipated to the identified significant natural heritage features or ecological functions identified within the Study Lands or its adjacent 120m lands. With the mitigative measures implemented, site development would be in compliance with the Natural Heritage Policies of the 2014 Provincial Policy Statement and the 2012 Grey County Official Plan.

2 Introduction

This EIS has been undertaken to address the Endangered Species Act 2007, 2014 Natural Heritage Provincial Policy Statement 2.1, other applicable provincial and federal applicable Acts / Legislation and the 2012 Grey County Official Plan. Technical reporting will follow the format of the Provincial Natural Heritage Reference Manual of March 2010 for natural heritage features and ecological function identification and impact assessment.

This EIS technical report shall address the seven Natural Heritage Features, as defined by the Provincial Policy Statement 2.1, with a review of available literature (reports, data files, feature maps etc.) currently available through municipal, provincial and federal agencies, augmented with field survey/inventory works for the Study Lands and adjacent lands (as applicable).

Within this technical report, the field investigation lands are referred to as the **'Study Lands'**, delineated on Figures 1 and 2. A broader review of the 120 m adjacent lands, referred to as the **'Site Lands'** also delineated on Figure 2, was undertaken through satellite image interpretation and background literature reviews to identify any off-site adjacent natural heritage features for corridor/linkage functions.

3 Study Works

3.1 Background Review

A literature review and data search was conducted to aid in the identification of Natural Heritage Features and to search for historical occurrence records for flora and fauna species of conservation concern within 5 km of the Study Lands. This background review was utilized to augment field data collection. A complete listing of reports / documents reviewed or cited is provided in the reference section. Sources include:

- 2012 Grey County Official Plan and schedule mapping, Draft January 2017 schedules for the County of Grey Natural Heritage Study (Green in Grey)
- Township of Georgian Bluffs Zoning
- OMNRF- Owen Sound Area Office; fish and wildlife records and mapping of provincial features in the Land Information Ontario database.
- Natural Heritage Information Center (NHIC) database of the Ontario Ministry of Natural Resources and Forestry (OMNRF) on the Land Information Ontario website for significant flora and fauna records.
- Grey County web site air photo imagery: 2015, 2010 and 2006

3.2 Field Study Methodology

Property location mapping for the subject lands is provided on Figure 1, with the field inventory lands or 'Study Lands' delineated on Figure 2. Historical data record searches, literature reviews and satellite image interpretation were conducted for the Site Lands, and a broader landscape review extended 5 km from the Study Lands.

Field investigations and data collection for this EIS report were primarily carried out from April to August 2017. A full list of field work dates and weather conditions is provided in Table 1.

- A qualified two-person team comprised of John Morton and Judith Jones from AWS Environmental Consulting Inc., completed natural environment field inventory and assessment works within the Study Lands. Experience and qualification are provided in Appendix 12.

Vascular Plant Surveys were conducted during the growing seasons (spring and summer) of 2017. A complete list of species with conservation ranking, status levels and Floristic Quality Scores is provided in Appendix 2. Naming and taxonomy follow the VASCAN database (Brouillet et al. 2010). Survey works followed a single standardized search method over the Study Lands given the land are cleared field and disturbed, thus a 'random' coverage approach was implemented within all habitat types, transition edges and vegetation communities, with search efforts over the entire Study Lands.

General Fauna Surveys within the Study Lands included specific searches and/or investigation for amphibians, breeding birds, hibernation emergence and gestation activity for snakes, turtles and nesting habitat, general searches for mammals and movement corridor functions. A full summary list of all fauna species recorded over the study period, with current rankings, status levels and highest bird breeding codes observed, is provided in Appendix 3.

Bird Survey work for the Study Lands followed two standardized search methods:

a) Monitoring activity included 'Point Counts' for breeding activity in accordance with the Ministry of Natural Resources and Forestry (MNRF) for Open Country-Grassland Habitat (Bobolink) Methodology. Point count locations were established to cover all habitat types within the Study Lands, with point count location approximately 100 m to 200 m apart (depending on site terrain and observation distances). Occurrences were recorded, through both sightings and calling, with Point Count location mapping provided under Appendix 3.

b) Additional bird observations of feeding adults and fledglings during summer site visits were also recorded and listed under Appendix 3 as observations outside the breeding season.

Herpetofaunal Surveys and habitat review were conducted throughout the Study Lands with the following habitat conditions noted:

a) Suitable habitat for Anuran (Amphibian-Frog) breeding activity was identified during the late April site visit within the Study Lands and an Anuran breeding call surveys were undertaken following Bird Studies Canada's Marsh Monitoring Program protocol.

b) Suitable habitat for Turtle activity was identified during the late April site visit within the Study Lands, as such survey works for basking or egg laying activity was undertaken.

c) Reptiles-Snake activity was actively searched for during the spring hibernation emergence period and summer gestation period within suitable habitat areas.

Mammal sightings or observations of habitat use (tracks, scat) were recorded during all other flora and fauna investigation work during all site visits throughout the study period. Specific searches plus random coverage was completed across the Study Lands.

Fish Habitat and fish community survey works was through visual observations within the unnamed water course, as no background literature was available for the on-site intermittent drain features.

3.3 Field Survey Dates

Table 1: Field Survey Dates and Focus of Works

Date	Survey Time & Duration	Weather Conditions (at start time)	Survey Focus
April 25, 2017	1300-1430 For 1.5 hrs	Wind Speed = 12-19 km/hr Air Temp.= 15˚ C Precipitation = 0 Cloud Cover = 25%	Hydrology, Waterfowl staging, Amphibian egg mass search, Snake hibernation emergence search, General Fauna
April 25, 2017	2130-2200 For 0.5 hrs	Wind Speed = 6-12 km/hr Air Temp.= 11˚ C Precipitation = 0, Cloud Cover = 25%	Anuran nighttime breeding calling survey (early season breeders), Bat activity
May 24, 2017	2230-2300 For 0.5 hrs	Wind Speed = 6-12 km/hr Air Temp. = 14.0˚ C Precipitation = 0, Cloud Cover = 75%	Anuran nighttime breeding calling survey (mid-season breeders), Bat activity
June 1, 2017	0600-0700 For 1.0 hrs	Wind Speed = 12-19 km/hr Air Temp. = 11.0˚ C Precipitation = 0, Cloud Cover = 75%	First breeding Bird survey, General fauna
June 13, 2017	1630-1800 2-Person Crew For 3.0 hrs	Wind Speed = 12-19 km/hr Air Temp. = 22.0˚ C Precipitation = 0, Cloud Cover = 25%	General fauna, Hydrology, Spring flora survey
June 17, 2017	0550-0620 For 0.5 hrs	Wind Speed = 12-19 km/hr Air Temp. = 18.0˚ C Precipitation = 0, Cloud Cover = 55%	Second breeding Bird survey
June 26, 2017	0800-0845 For 0.75hrs	Wind Speed = 6-12 km/hr Air Temp. = 14.0˚ C Precipitation = 0, Cloud Cover = 75% ,	Third breeding Bird survey
August 9, 2017	1600-1700 For 1.0 hrs	Wind Speed = 6-12 km/hr Air Temp. = 24.0˚ C Precipitation = 0,Cloud Cover = 25%	Snake gestation activity period search, Hydrology, General Fauna
Sept. 6, 2017	1000-1100 For 1.0 hrs	Wind Speed = 6-11 km/hr Air Temp. = 17.0˚ C Precipitation = 0 (light rain earlier) Cloud Cover = 50%	Late summer Flora inventory, Hydrology, Bird migration stop-over survey
May 24, 2018	0830-0930 For 1.0 hrs	Wind Speed = 6-12 km/hr Air Temp. = 18.0˚ C Precipitation = 0,Cloud Cover = 25%	Field review with Hydrogeologist and proponent of Groundwater upwelling's features

Total field survey work provided 10.75 hours of search /survey coverage over nine site visits during the late spring and summer seasons of 2017 and spring of 2018. All survey work site visit dates and weather conditions are in accordance with natural heritage protocol requirements for the focused field survey works.

4 Vegetation Community Characterization

Vegetation community boundaries within the Site Lands are delineated on Figure No. 7, defined based on the 'Ecological Land Classification (ELC) for Southern Ontario, First Approximation'. ELC types, ranking and characterization for each vegetation community are provided in Table 2.

Table 2: Vegetation Communities Types - ELC Codes

Vegetation Community Number	ELC Code	Type	Description	Provincial Ranking
1	None	Agricultural	1A) Cash Crop production 1B) Pasture-Grassland	None
2	CUM1-1	Cultural Wet-moist Old Field Meadow	Abandoned field environment, abundant dense grasses and sedges with scattered seasonal groundwater discharge and dug drains.	S5
3	CUP3-8	Cultural Mixed Conifer Plantation	Sapling trees recently planted within an old field, mix of Spruce, Tamarack and Pine	S5
4	FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest	Mature hardwood forest, closed canopy	S5
5	SWM4-1	White Cedar-Hardwood Organic Mixed Swamp	Mature Cedar with numerous nature Hardwoods throughout stand.	None
6	HH	Hedgerow-Hardwoods	Hardwood trees along property fence line	S5
7	HM	Hedgerow-Mixed	Mix of Conifer and Hardwood Trees	S5

Significant Feature Analysis

5 Habitat of Endangered and Threatened Species

Species are considered Endangered or Threatened based on: the provincial Species At Risk (SAR) list of the Ontario Ministry of Natural Resources and Forestry (OMNRF); the federal Species at Risk Act (SARA) and listings of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). As input to this work and in conjunction with field investigations, a literature search for historic records of endangered and threatened species was undertaken of the Natural Heritage Information Centre (NHIC) database and in the published resources of the OMNRF for the surrounding landscape extending 5 km from the Study Lands, provided under Appendix 1.

Through this background literature review, three historical records of endangered or threatened species were noted: Bobolink, Eastern Meadowlark and a Restricted Species.

The Provincial Policy Statement (PPS) section 2.1.7 states:

> *Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.*

Additionally the OMNRF documentation of historical records section states:

> *Absence of information for a specific location does not mean there are no natural areas, provincially tracked species, plant communities or wildlife concentration areas at that location. It means that on the date the MNR created the dataset there was no information for that location. These data are not a substitute for site visits.*

As such, detailed site investigations within the Study Lands were undertaken for flora and fauna currently listed under the Endangered Species Act, Species at Risk Act, or designated by COSEWIC. Appendix 2 and Appendix 3 provide an inventory of all species recorded through EIS investigations within the Study Lands for 2017 coverage period. Through intensive on-site survey works, the two noted bird species from the background review; Bobolink and Eastern Meadowlark, both currently listed as 'Threatened', were confirmed nesting within the Study Lands in 2017. In addition, Barn Swallows were confirmed to be nesting within the on-site Barn.

The Owen Sound MNRF office was contacted regarding the Restricted Species ID No. 35679 for species identification. This restricted species having an 'Endangered' status was not recorded on-site during the 2017 EIS investigations nor was any suitable habitat identified within the Study Lands to provincial habitat description.

Through the analysis of historical data and through detailed EIS flora and fauna inventory works, three Threatened bird species have been confirmed on-site. Therefore, further review and impact assessment is warranted and provided under reporting section 14 for Bobolink & Eastern Meadowlark, plus reporting section 15 for Barn Swallow, for site development requirements under the Endangered Species Act (ESA), 2007.

6 Fish Habitat

Within the eastern portion of the Study Lands there is a headwater drain area for an unnamed tributary branch to Kilsyth Creek, as shown on Figure No. 6 Conservation Authority-Regulatory Lands mapping. This watercourse section has been historically channelized within the abandoned field environment of vegetation community No. 2, to accelerate surrounding agricultural field drainage in the area. Seasonal water flows north off-site with downstream waters then piped underground through the core settlement area of Kilsyth, which creates a 'barrier' to fish movement extending more than 120m from the Study Land. Surface water flows were monitored throughout the EIS study period, with this channel observed to be dry from mid-June through to mid September (or later), thus characterized as an 'intermittent' water course feature and having a warm-water thermal designation. No fish species were observed within the Study Lands- watercourse section, nor was any fish habitat to the Federal Fisheries Act definition identifiable within the Study Land-water course section.

Within the western portion of the Study Lands there were a series of drains and seasonal groundwater discharge features (seeps) within the abandoned field environment of vegetation community No. 2. Discharged waters have been historically channelized in narrow (20cm) tilled trenches capturing seasonal runoff and directing it westward to the off-site upper reaches of Kilsyth Creek situated 120m (+/- 5m) at its closest point west of the Study Lands western boundary (see Figure No. 2). Surface water flows were monitored throughout the EIS study period within these westerly drainage channels, with spring season flows observed to be reduced to 'standing waters' throughout mid-June to mid September (or later), thus characterized as an 'intermittent' drainage area having a cool-water thermal designation. No fish species were observed within the western drain area of the Study Lands, nor was any fish habitat to the Federal Fisheries Act definition identifiable within this Study Land area. Drainage channels were typically <10cm in depth during the spring season with only 'trickle' flow rates observed. Numerous debris blockages and shallow water depths throughout these channels prevent any upstream fish movement from Kilsyth Creek.

Kilsyth Creek is a tributary branch to the Pottawatomi River (located approximately 1.5km north) both categorized by the MNRF as cold-water systems supporting resident Brook and Brown Trout populations.

The Provincial Policy Statement (PPS) Natural Heritage section 2.1.6 states:

> *Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.*

Similarly, the Grey County Official Plan policy 2.8.6 (1) in part states:

> *Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.*

With No direct Fish Habitat (as per the Federal Fisheries Act definition) confirmed to be on-site, site development would be in compliance with the PPS 2.1.6 and the County OP 2.8.6 (1). However, with both the westerly and easterly drainage areas having direct surface water linkage to the identified off-site cold water Fish Habitat of Kilsyth Creek, impacts from site development within the Study Lands could incur on these downstream and receiving waters that do support Fish Habitat. As such, the identified Study Land groundwater discharge areas (seeps) and associated watercourses/drainage channels which support downstream Fish Habitat for water quantity and quality functions are considered to be in-direct fish habitat areas requiring mitigative measures to maintain no negative off-site impacts to Fish Habitat.

The PPS Natural Heritage section 2.1.8 for Fish Habitat adjacent lands states:

> *Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

The provincial NHRM under Fish Habitat- Adjacent Lands section 11.4 lists the adjacent lands width to fish habitat as 120m. While the County of Grey OP section 6.19 list adjacent land width to Fish Habitat as 50m.

With the Study Lands located within adjacent lands to Fish Habitat and having a defined watercourse channel and seasonal discharge functions supporting downstream fish habitat, further impact assessment and mitigation is required and provided through reporting section 16.

7 Significant Valleylands

Grey County has tentatively mapped Significant Valleylands through its 'Green in Grey Natural Heritage' study of January 2017, though not yet adopted into their Official Plan. Excerpt mapping is provided under Appendix 9, for the surrounding landscape sourced from this natural heritage study, which shows no 'significant valleyland' feature within the Site Lands (Kilsyth).

The Provincial Policy Statement (PPS) section 2.1.5 (c) states:

> *Development and site alteration shall not be permitted in significant valleylands in Ecoregions 6E and 7E unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

With the Site Lands located within Ecoregion 6E, this policy is applicable.

The Provincial NHRM 2010 under Section 8.4 for Significant Valleylands states that the Adjacent Land width to said features is 120 m.

The PPS section 2.1.8 for the adjacent lands to Significant Valleylands states:

> *Development and Site Alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

With no Significant Valleyland feature confirmed within the Site Lands, the proposed site development will be incompliance with the PPS section 2.1.5 (c) and 2.1.8 for adjacent lands, and the County Official Plan policy 2.8.6 (1) for Significant Valleylands. Therefore, no further review or impact assessment is warranted for this feature.

8 Significant Areas of Natural and Scientific Interest (A.N.S.I.)

A review of Provincially Significant ANSI's was undertaken from OMNRF and Land Information Ontario web site mapping provided on Figure No. 3. This provincial mapping demonstrates that no significant ANSI features, either earth science or life science, occur within the Site Lands.
The Provincial Policy Statement (PPS) Section 2.1.5 (e) states:

> *Development and site alteration shall not be permitted in significant areas of natural and scientific interest unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

With no ANSI feature confirmed within the Study Lands, it can be concluded that site development within the subject Lot would be in compliance with the PPS 2.1.5 (e).

The 2010 Provincial NHRM, under Section 10.4 for Significant ANSI's states that the Adjacent Land Width to earth science ANSI's is 50 m while the Adjacent Lands Width to life science ANSI's is 120 m.

The PPS Natural Heritage Section 2.1.8 states:

> *Development and site alteration shall not be permitted on adjacent lands (120 m) to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

With no ANSI features confirmed within the Site Lands, it has been demonstrated and can be concluded that site development would be in compliance with the: PPS 2.1.5 (e) and PPS 2.1.8 and the Grey County Official Plan 2.8.6 (3). Therefore, no further review or impact assessment is warranted for this feature.

9 Significant Wetlands

A review of Provincially Significant Wetlands (PSW) was undertaken from OMNRF and Land Information Ontario web site mapping provided on Figure No. 3. The provincial mapping demonstrates that **no** evaluated significant wetland features occur within the Site Lands.

The Provincial Policy Statement (PPS) section 2.1.4 (a and b) states:

> *Development and site alteration shall not be permitted in significant wetlands in Ecoregions 5E, 6E and 7E and significant coastal wetlands.*

The Study Lands are within Ecoregion 6E, thus this policy is applicable. With no confirmed PSW within the Study Lands, it can be concluded that site development would be in compliance with the PPS 2.1.4 (a and b).

The Provincial NHRM, 2010 under section 6.4 for Significant Wetlands states that the Adjacent Land width to significant wetlands is 120 m. Figure 5 demonstrates that no designated Significant Wetland feature occurs within 120 m to the Study Lands.

The PPS Natural Heritage section 2.1.8 states:

> *Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

With no designated Significant Wetland feature within the Site Lands, it has been demonstrated and can be concluded that site development within the subject property would be in compliance with the PPS 2.1.8 and Grey County Official Plan 2.8.3

The Grey County Natural Heritage System Study excerpt mapping under Appendix 7 shows '**other wetland**' northwest and northeast of Kilsyth (also mapped as EIS vegetation community No. 5 on Figure No. 7) and with no 'other wetland' feature within the subject Study Lands. The Grey County Official Plan policy 2.8.6 (7) in part states:

> *No development or site alterations are permitted within the 30 metre adjacent lands to other identified wetlands unless it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

With the identified 'other wetlands' at their closest point, having a minimum separation distance of 110m from the Study Lands, site development within the subject property would not have no measurable negative impacts to these 'other wetlands'. Additionally with the Study Lands beyond the County 30m adjacent land limit, site development will be in compliance with policy 2.8.6 (6) and (7).

Therefore, with no PSW within the Site Lands and no other wetland within 30m to the Study Lands, no further review or impact assessment relating to wetlands are deemed required.

10 Significant Woodlands

The County of Grey has undertaken countywide mapping for Significant Woodlands within its Official Plan, as per policy 2.8.4. In review of the County Official Plan constraint mapping of Figure No. 4B shows that no forest cover within the Study Lands has been deemed 'Significant Woodland' under the Grey County Official Plan.

The Natural Heritage Provincial Policy 2.1.5 (b) regarding Significant Woodlands states:

> *Development and site alteration shall not be permitted in significant woodlands in Ecoregions 6E and 7E unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

The Grey County Official Plan policy 2.8.4.1 in part states:

> *No development or site alteration may occur within Significant Woodlands or their adjacent lands (50 m) unless it has been demonstrated through an Environmental Impact Study, as per section 2.8.7 of this Plan, that there will be no negative impacts on the natural features or their ecological functions.*

With no significant woodland confirmed within the Study Lands, site development will be in compliance with the PPS 2.1.5 (b) and the Grey County Official Plan policy 2.8.4.1.

The Ontario NHRM 2010, Section 7.4 for Significant Woodlands states that the Adjacent Land Width to Significant Woodlands is 120 m. While the Grey County Official Plan definitions (6.19) lists the adjacent land width at 50m for county policy purposes.

Through the analysis of Figure No. 4B, the south limit of EIS vegetation community No. 4 and 5 are 80m and 110m respectively. Thus site development within the Study Lands will be in compliance with the Grey County Official Plan 2.8.4 (1) for significant woodland adjacent lands.

The PPS Natural Heritage Section 2.1.8 states:

> *Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

Significant Woodlands have been delineated north of the Study Lands, approximately 80m at its closest point. However; in the lands between the Study Lands and this closest Significant Woodland area several existing site disturbances occur, being; Grey Road 5, agricultural fields and residential development. As such, that portion of the 'adjacent lands' which fall within the Study Lands have no identifiable ecological functions to these northerly woodlands. Plus with no direct vegetated linkage for corridor functions, site development within the Study Lands is anticipated to have no measurable negative impacts to the Significant Woodland feature. Therefore it has been concluded that no impact assessment review is warranted for mitigation purposes and site development will also be in compliance to the PPS 2.1.8.

11 Significant Wildlife Habitat

Currently, there is no mapping within the Grey County Official Plan to identify Significant Wildlife Habitat (SWH) due to its complexity and to the sub-components that require on-site survey work. Some historical OMNRF inventory and wildlife assessments within Grey County have been checked to locate any previously determined confirmed SWH to be known within these Site Lands. Additionally, EIS field inventory works carried out over the Study Lands augment historical data to aid in the determination of significance for each wildlife habitat sub-component.

The Province of Ontario is currently implementing a supplement report dated January 2015 "Significant Wildlife Habitat Eco-regional Criteria Schedules", to the original October 2000 Significant Wildlife Habitat Technical Guide (SWHTG), OMNRF technical document. This supplement Ecoregion Criteria Schedules provides a listing of criteria and threshold levels to determine confirmed presence of significant wildlife habitat within the four principal Ecoregions of central and southern Ontario.

The Study Lands are within the provincial Ecoregion 6E. The following is a review of the Provincial Ecoregion 6E Criteria Schedules and provincial threshold levels for the identification of 'confirmed' significant wildlife habitat. This analysis of SWH determination is based on detailed site inventory works for the Study Lands during the EIS study period of 2017, with identified habitat features and historical provincial data review.

11.1 Seasonal Concentration Areas of Animals

A summary review of Provincial Criteria Table 1.1 is provided below:

- Waterfowl Stopover and staging (Terrestrial)
    - No criteria waterfowl species were observed within the Study.
    - ELC criteria code: CUM1 is present with seasonal flooding occurrence.
    - Site investigations of April 25 and Sept 6, 2017 were within the typical waterfowl migration periods for Grey County (spring and fall seasons) during vegetation community No. 2 flooding conditions, with no waterfowl staging or stopover activity observed.
    - Criteria threshold for species and aggregate numbers not met and no functional habitat identified.
    - No confirmed SWH.

- Waterfowl Stopover and staging (Aquatic)
    - No criteria waterfowl species were observed within the Study Lands.
    - No ELC criteria codes are present within the Site Lands.
    - Criteria threshold for species and aggregate numbers not met and no functional habitat identified.
    - No Confirmed SWH.

- Shorebird Migratory Stopover
    - No criteria shorebird species were observed.
    - No ELC criteria codes are present within the Site Lands.
    - Criteria threshold for species and aggregate numbers not met.
    - No confirmed SWH.

- Raptor Wintering Area
    - No criteria raptor species were observed.
    - ELC forest criteria code FOD is present and open upland CUM is present
    - No historical documentation of habitat use during winter period.
    - However, Study Lands do not meet criteria threshold of habitat area >20ha and given site disturbances plus close proximity to urban settlement, no anticipated functional habitat use.
    - No confirmed or anticipated SWH.

- Bat Hibernacula
    - No criteria bat species were observed.
    - No ELC criteria codes present within the Site Lands.
    - No historical documentation of bat hibernation activity.
    - No confirmed SWH.

- Bat Maternity Colonies
    - No criteria bat species were observed.
    - ELC criteria code FOD and SWM are present within the Site Lands but no ELC criteria codes or suitable habitat within the Study Lands.
    - No historical documentation of bat maternity activity.
    - No negative impacts to off-site woodlands are anticipated (see supporting section 10)
    - No confirmed SWH within the Study Lands or off-site negative impacts.

- Turtle Wintering Areas
    - No criteria turtle species were observed.
    - ELC criteria code SW is present within the Site Lands however; no criteria codes or suitable overwintering habitat (permanent water bodies with soft mud substrate) features are present within the Study Lands.
    - No confirmed SWH.

- Reptile Hibernaculum
    - One common Gartersnake was observed during the summer 'forage' season.
    - Suitable habitat of burrows, rock piles, shallow groundwater features for hibernacula habitat was identified in the Study Lands, however no observation made or evidence of Hibernaculum function recorded.
    - With no special concern snakes recorded or numbers of common snake species, criteria thresholds are not met.
    - No confirmed SWH.

- Colonially-Nesting Bird Breeding Habitat: Bank and Cliff
    - No criteria bird species were observed.
    - No ELC criteria codes are present, and no suitable nesting habitat (banks, eroding slopes) identified within the Site Lands.
    - No confirmed SWH.

- Colonially-Nesting Bird Breeding Habitat: Tree/Shrub
    - No criteria bird species were observed.
    - No ELC criteria codes are present within the Study Lands and no visible nesting activity within edge of northerly woodlands.
    - No confirmed SWH.

- Colonially-Nesting Bird Breeding Habitat: Ground
    - No criteria bird species were observed.
    - ELC criteria code CUM is present however, no suitable habitat (rocky island or peninsula) for nesting activity is present within the Site Lands.
    - No confirmed SWH.

- Migratory Butterfly Stopover Areas
    - Criteria butterfly species were observed: Monarch and Red Admiral
    - Forest ELC criteria code FOD and Field ELC criteria code CUM are present however, Study Lands are <u>not</u> located within 5 km of Lake Ontario (criteria area in Ontario).
    - No confirmed SWH.

- Landbird Migratory Stopover Areas
    - Several migratory songbird species present within the Study Lands.
    - ELC criteria codes FOD, SWM are present within the off-site Site Lands; however, the Study lands are <u>not</u> located within 5 km of Lake Ontario (criteria area in Ontario).
    - No confirmed SWH.

- Deer Yarding Areas
    - OMNRF determines this habitat. Midhurst District has identified and mapped wintering deer yards within Grey County. A review of provincial mapping shows no such habitat has been designated within the Site Lands.
    - No confirmed SWH.

- Deer Winter Congregation Areas
    - Within Grey County, deer are typically constrained by snow depths thus yarding habitat is used rather than congregation areas. Congregation areas are typically associated with Carolinian regions, thus not a SWH function in Grey County.
    - No confirmed SWH.

11.2 Rare Vegetation Communities

A summary review of Provincial Criteria Table 1.2.1 is provided below:

- Cliffs and Talus Slopes
    - No ELC criteria code types present within the Site Lands.
    - No confirmed SWH.

- Sand Barren
    - No ELC criteria code types present within the Site Lands.
    - No confirmed SWH.

- Alvar
    - No ELC criteria code types present within the Site Lands.
    - No confirmed SWH.

- Old Growth Forest
    - ELC criteria codes FOD and SWM are present within the off-site Site Lands only.
    - Provincial habitat description criteria for 'Old Growth Forest' community are not present (tree sizes, density, etc.) within the Study Lands or identifiable within the adjacent lands.
    - No confirmed SWH.

- Savannah
    - No ELC criteria code types present within the Site Lands.
    - No confirmed SWH.

- Tallgrass Prairie
    - No ELC criteria code types present within the Site Lands.
    - No confirmed SWH.

- Other Rare Vegetation Communities
    - No identified vegetation communities with an S1, S2 or S3 ranking present within the Site Lands. See Table No. 2.
    - No confirmed SWH.

11.3 Specialized Habitat for Wildlife

A summary review of Provincial Criteria Table 1.2.2 criteria is provided below:

- Waterfowl Nesting Area
    - No criteria waterfowl species recorded within the Study Lands.
    - No ELC criteria codes are present.
    - Criteria thresholds not met for species diversity or numbers.
    - No confirmed SWH.

- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat
    - No criteria species observed.
    - ELC criteria codes FOD and SWM are present within the off-site Site Lands however, no evidence of current or historical nesting activity within the Study Lands or immediate surrounding adjacent lands.
    - Criteria thresholds not met for active use of habitat.
    - No confirmed SWH.

- Woodland Raptor Nesting Habitat
    - No criteria species observed.
    - ELC criteria codes FOD and SWM are present within the off-site Site Lands however; no woodlands are within the Study Lands and no off-site woodland (habitat) impacts are anticipated.
    - No nesting activity identified. No documented nesting activity within the Site Lands.
    - Criteria thresholds for species, numbers and habitat size plus habitat use, not met.
    - No confirmed SWH.

- Turtle Nesting Areas
    - No criteria species observed.
    - No ELC criteria codes present and no suitable habitat identified.
    - Criteria thresholds for species, numbers and habitat size plus use, not met.
    - No Confirmed SWH.

- Seeps and Springs
    - No criteria fauna species were identified within the Study Lands, being open agricultural fields or old meadows.
    - Seeps or groundwater upwelling functions were identified within vegetation community No. 2 for the Study Lands.
    - Criteria thresholds for numbers or presence were met with criteria guidelines stating: *presence of a site with 2 or more seeps/springs should be considered SWH*. However, with the seeps being within ‘open agricultural field environments’ with no treed linkage corridors and no criteria wildlife present, no significant ecological functions (other than downstream receiving fish habitat) can be attributed to these seasonal seeps for ‘wildlife’ purposes.
    - No confirmed SWH.

- Amphibian Breeding Habitat (Woodland)
    - No criteria species identified within the Study Lands.

- ELC criteria codes FOD and SWM are present within the off-site Site Lands. With no woodlands within the Study Lands, there is no woodland oriented breeding habitat within the Study Lands.
- Criteria threshold for, functional habitat, species diversity or numbers of "*at least 20 individuals*" not met (see Appendix 3).
- No confirmed SWH.

- Amphibian Breeding Habitat (Wetlands)
  - One criteria species: Northern Leopard Frog observed however; calling surveys had population estimates being well below criteria threshold level of 20 or more individuals.
  - ELC criteria code SW is present but within the off-site Site Lands.
  - Criteria thresholds with 3 or more frog/toad species not met and criteria threshold for numbers "*at least 20 breeding adults*" was not met (see Appendix 3).
  - No confirmed SWH.

- Woodland Area-Sensitive Bird Breeding Habitat
  - No criteria bird species observed.
  - ELC criteria codes FOD and SWM are present within the off-site Site Lands, no forest habitat within the Study Lands and no off-site negative impacts to woodland habitat is anticipated.
  - Criteria thresholds for species diversity, numbers, presence or interior forest habitat, not met
  - No confirmed SWH.

11.4 Habitat for Species of Conservation Concern

(Not including Endangered or Threatened Species)

A summary review of Provincial Criteria Table 1.3 criteria is provided below:

- Marsh Breeding Bird Habitat
  - No criteria bird species observed.
  - ELC criteria code MAM2 is present but no suitable nesting habitat (at the edge of streams, ponds, and marshes) identified.
  - Criteria thresholds not met for species diversity, numbers or active habitat use.
  - No confirmed SWH.

- Open Country Bird Breeding Habitat
  - Criteria bird species: Savannah Sparrow and Vesper Sparrow recorded within the Study Lands.
  - ELC criteria code CUM1 is present within the Study Lands.
  - Criteria thresholds for species diversity, numbers or active habitat use met.
  - **Confirmed SWH.**
  - **NOTE: habitat area overlaps with that identified for Threatened Bobolink & Eastern Meadowlark, vegetation community No. 2.**

- Shrub/Early Successional Bird Breeding Habitat
  - No criteria indicator or special concern species were recorded within the Study Lands.
  - No ELC criteria codes present.
  - Criteria thresholds for species diversity, numbers or active habitat use not met.
  - No confirmed SWH.

- Terrestrial Crayfish
    - No criteria species (no chimneys) observed.
    - ELC criteria code SWM is present within the off-site Site Lands; no criteria habitat within the Study Lands.
    - Criteria threshold for species diversity, numbers or active habitat use, not met.
    - No confirmed SWH.

- Special Concern and Rare Wildlife Species
    - No flora species were observed in 2017 within the Study Lands that have a ranking of Special Concern or of provincial rarity (S1, S2 or S3). See Appendix 2 listing.
    - No fauna species were observed in 2017 within the Study Lands that has a ranking of Special Concern or of provincial rarity (S1, S2 or S3). See Appendix 3 listing.
    - Historical MNRF Records (see Appendix 1) for the surrounding landscape (extending 5 km from Study Lands) identified one fauna species of conservation concern. Further review of habitat and site development impacts is provided below, with recommendation if further impact assessment is warranted:

        - Snapping Turtle
            - Provincial Habitat Description: *permanent, semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms; often uses soft soil or clean dry sand on south-facing slopes for nest sites; may nest at some distance from water; often hibernate together in groups in mud under water; home range size ~28 ha*
            - Site Assessment: Species was not recorded on-site. Though watercourse and drains are present, both were mineral based substrate, shallow & narrow with negligible forage species and no overwintering or nesting habitat present. No negative impact from site development is anticipated to this species, therefore no further review or impact assessment is deemed warranted.
    - No confirmed SWH.

11.5 Animal Movement Corridors

A summary review of Provincial Criteria Table 1.4.1 Criterion is provided below:

- Amphibian Movement Corridors
    - With no confirmed significant breeding habitat through Table 1.1 review for amphibian breeding habitat-wetland or woodland, no corridor assessment is required.

- Deer Movement Corridors
    - With no deer wintering habitat confirmed through Table 1.1 analysis, no delineation or threshold levels for deer movement corridor is required.

11.6 Exceptions for Ecoregion 6E

A summary review of Provincial Criteria Table 1.5.1 is provided below:

- Mast Producing Areas
  - Candidate areas are only within EcoDistrict 6E-14, the Upper Bruce Peninsula.
  - No confirmed SWH.

- Sharp-tailed Grouse
  - Candidate areas are only within EcoDistrict 6E-17, for Manitoulin Island.
  - No confirmed SWH.

In summary for this review of Ecoregion 6E criteria schedules, Significant Wildlife Habitat has been confirmed within the Study Lands for:

- Habitat for Species of Conservation Concern
  - Open Country Habitat for birds, which is the same overlapping habitat for Grassland oriented SAR Birds (Bobolink & Eastern Meadowlark)

The Natural Heritage Provincial Policy 2.1.5 (d) states:

> *Development and site alteration shall not be permitted in significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

The Natural Heritage Provincial Policy 2.1.8 regarding the adjacent lands (120m) for significant wildlife habitat states:

> *Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

The Grey County Official Plan 2.8.6 (1) states:

> *Development and site alteration shall not be permitted within…. significant wildlife habitat… and their adjacent lands (50m) unless it has been demonstrated through an acceptable Environmental Study in accordance with Section 2.8.6(4) of this Plan(County) that there will be no negative impacts on the natural features or their ecological functions.*

With Significant Wildlife Habitat for Open Country nesting birds being the same habitat area as the identified SAR grassland/open country Bobolink & Eastern Meadowlark habitat, site development concerns relating to this SWH feature are addressed through reporting section 14. With overlapping habitat for these SWH bird species, site development impact assessment is provided jointly to demonstrate compliance with the PPS 2.1.5 (d) and 2.1.8 and the Grey County Official Plan 2.8.6 (1).

12 Significant Feature Analysis Summary

Through the significant feature analysis, the following Natural Heritage features of provincial concern have been identified within the Study Lands or within its 120 m adjacent lands:

i. Habitat for SAR (Threatened) Bird Species
ii. Fish Habitat
iii. Significant Wildlife Habitat (SWH): Open County Grassland Birds

Further review for the identified three SAR bird species and their associated habitat in relation to requirements under the Endangered Species Act, 2007 have been provided within the 'Impact Assessment' reporting section 14 and section 15. With the identified SWH being an overlapping habitat area with the SAR Grassland Birds, no separate impact assessment is deemed warranted as mitigative measures for the SAR Grassland Birds under reporting section 14.2 shall also functions as mitigative habitat for these SWH-open county bird species as well.

Through the analysis of section 6 for Fish Habitat, site development within the Study Lands could have negative in-direct impacts to downstream cold water fish communities and fish habitat, as such further impact assessment and development constraint aspects are discussed further within the 'Impact Assessment' reporting section 16 to maintain compliance with applicable Acts, Legislation and Planning Policies.

Impact Assessment

13 Development Proposal

The proposed Draft Concept Lot Layout by GM BluePlan (Appendix 10) shows 32 Residential Lots to be created plus a new interior road connecting Grey County Road 5 (Kilsyth Main Street) to Mill Street (south of the main Kilsyth intersection). Additionally, three supporting 'Blocks' are shown within the Plan of Subdivision, two block parcels to support storm water management requirements and one block as a candidate location for a new Barn Swallow nesting structure site (as per ESA requirements). Each of the 32 new residential lots will also support individual septic treatment areas.

The central active agricultural field (vegetation community No. 1A) has a peak elevation of 253 MASL just south of the existing barn along a north-south oriented dry knoll. From this knoll lands have a gradual westerly slope dropping 4m to the wet meadow field and seep areas located at an elevation of 249 MASL. To the east, the central lands have a gradual slope drop of 5m to the wet meadow and watercourse at an elevation of 248 MASL.

14 Threatened Bird Species: Bobolink & Eastern Meadowlark

14.1 Characterization

Through on-site investigations of 2017, vegetation community No. 2 has been confirmed to support nesting and rearing habitat for Bobolink and Eastern Meadowlark, both being Species-At-Risk (SAR) birds. The critical nesting and rearing habitat for both of these bird species are protected under the Provincial Endangered Species Act (ESA), 2007. Provincial habitat categories are provided under Appendix 6.

Vegetation community No. 2, having wet to moist soils was abandoned for agricultural cash crop production several years ago. Subsequently these fields have naturally converted to meadows, dominated with a mix of dense grasses and sedges, >50cm in height with a matted duff ground layer ideal for ground nesting migratory birds.

Though the Study Land vegetation community No. 2 is below the typical habitat size for rearing activity as listed by the province, the surrounding open country landscapes of vegetation community No. 1B being livestock grass pasture lands plus grassed riparian zones areas are both suitable rearing/forage habitat lands for grassland oriented bird species.

In addition to the confirmed nesting & rearing for Bobolink and Eastern Meadowlarks within vegetation community No. 2, adult Savanna Sparrow and Vesper Sparrow were also observed during the breeding season with probable nesting rearing activities as well. Both of these sparrows are criteria species for confirmed 'Significant Wildlife Habitat (SWH)-Open Country Bird Breeding Habitat' with similar habitat requirements as the noted two SAR bird species, thus they have 'overlapping' significant habitat for life cycle functions. As such, vegetation community No. 2 within the Study Land not only supports SAR regulated grassland birds but is confirmed SWH for open country birds.

14.2 Impact Assessment and ESA Requirements

With vegetation community No. 2 being an 'overlapping' habitat area for the identified SAR birds plus SWH birds and all four noted bird species having similar habitat requirements for nesting and rearing, mitigation measures proposed for the regulated SAR birds will also address mitigation for SWH. Therefore, no separate impact assessment review or separate mitigation for SWH-Open Country Birds has been undertaken within this EIS, as the proposed mitigation measures required to address site development for SAR-Grassland birds will also suffice to mitigate Savanna and Vesper Sparrow habitat.

The applicants Draft Subdivision Concept Lot Layout for lot creation and storm water management will require site development within the ESA regulated habitat lands of vegetation community No. 2 or within 300m to this confirmed SAR habitat (covers the full property). For site development to proceed as proposed the applicant must meet the requirements and conditions set out under Ontario Regulation 242/08, Section 23.6 to address the Endangered Species Act for Bobolink & Eastern Meadowlark, as current agricultural exemptions do not apply to land use designation changes under the Planning Act process. Applicable excerpts from OR242/08 are provided under Appendix 7.

A maximum habitat size requirement is listed under OR242/08, section 23.6 (2a) for eligibility to undertake **off-site** habitat mitigation, which states:

> *the size of the area of habitat of bobolink or eastern meadowlark that is damaged or destroyed by the activity, is equal to or less than 30 hectares*

Appendix 8 provides an area calculation of the confirmed Bobolink & Eastern Meadowlark habitat within the EIS Study Lands being vegetation community No. 2 for 5.55 ha, which is well below the eligibility threshold/cutoff size of 30ha. As such, the proponent is eligible for the off-site habitat mitigation process outlined under OR242/08 with subsections 4 to 9 needing to be address through an application process with the Ministry of Natural Resources and Forestry and submission of a 'Habitat Management Plan' to demonstrate compliance with ESA.

Noteworthy aspects under OR242/08 for a 'Habitat Management Plan' which includes mitigation for off-site grassland habitat enhancement, are that said activities are to commence within 12 months of submission and to be carried out in accordance to the Habitat Management Plan by the proponent for a minimum 20 year period, with monitoring activities during this management period.

In discussion with the applicant, they do have suitable lands in habitat type, size and minimum habitat dimensions under current land holdings elsewhere to implement off-site mitigative grassland habitat enhancement works. As such, the applicant shall be pursing an ESA application process, with assistance of AWS Environmental Consulting, to permit full site development within the Kilsyth Draft Plan of Subdivision lands. However, at this time, given the long-term commitments, financial requirements and time lines involved in an ESA Habitat Management Plan, it is recommended and requested that the 'Planning Act' application process proceed prior to the ESA application process commencing. The planning process timelines can be lengthy and unknown, development designs changes could be required or potential OMB hearings could occur all cumulating to unknown timelines and final design aspects. While ESA requirements are clear and timelines for activity commencement, monitoring and management activities are givens, with financial commitments. Planning Act applications can incorporate 'Site Plan Agreement Conditions' or 'Development Holding' constraints, which do not permit site development to proceed until such time that ESA clearance has been achieved and provided to applicable planning agencies. This process route provides some flexibility (i.e. impacted habitat areas could change due to planning review) and assurance to all parties involved, including the general public, to seek Planning Act Approvals first with noted ESA Constraints prior to development proceeding, then provide said ESA clearance by the applicant, to obtain final Planning Act clearance or lifting of holding constraints.

With submission to the MNRF of a 'Habitat Management Plan' for Bobolink and Eastern Meadowlark demonstrating adherence to OG242/08 section 23.6(1) requirements, site development could proceed in accordance and compliance with ESA, the PPS 2.1.7 and applicable Official Plan policies.

15 Threatened Bird Species: Barn Swallow

15.1 Characterization

Through on-site investigations of 2017, Barn Swallows have been confirmed to be nesting and rearing young within the existing on-site old agricultural barn, as delineated on Figure No. 8. The critical nesting and rearing habitat for Barn swallow is protected under the Provincial Endangered Species Act (ESA), 2007.

Figure No. 9 outlines the Barn swallow Category 3 habitat lands (extending 200m from the barn) following the provincial habitat criteria provided under Appendix 6. Applicable excerpts from OR242/08 for Barn Swallow are provided under Appendix 7

15.2 Impact Assessment and ESA Requirements

The applicants Draft Subdivision Concept Lot Layout for lot creation and storm water management will require removal of the old barn structure and site development within the surrounding habitat lands. Similar to the ESA off-site habitat option under reporting section 14.2, the applicant can and is proposing to replace the existing identified barn structure with a suitable new structure to accommodate Barn Swallow nesting/rearing activities in accordance and in compliance with OR 242/08 Section 23.5. At this time, the applicant is considering building this new nesting/rearing structure on-site, within the suitable habitat lands of Block 34. With submission, approval and compliance under OR242/08 Section 23.5, the applicant could then remove the identified barn structure and proceed with site development works within its surrounding 200m habitat lands.

Once an applicant has made a commitment to proceed under the ESA process, requirements for timelines, building, monitoring and costs must be followed through with (legal binding under the Act). As such, similar to the discussed under reporting section 14.2, the applicant is requesting that Planning applications and review process proceed first, with agreed to Site Development Conditions to be met, including ESA clearance for Bobolink, Eastern Meadowlark and Barn Swallow, prior to any finalized planning approvals or land site alterations commencing. Said ESA clearances shall be provided to the appropriate local planning agencies for file retention and demonstration of ESA and MNRF compliance, to then obtain final Subdivision-Site Plan Conditions clearance.

16 Fish Habitat

16.1 Characterization

Through the analysis of reporting section 6, it has been demonstrated that no Fish Habitat occurs within the Study Lands, however, receiving off-site and downstream water do support fish and Fish Habitat. These downstream waters are categorized by the MNRF as cold-water systems, thus are sensitive receptors to changes in water quantity and quality (including thermal impacts). As such, site development within the Study Lands, which have direct surface water linkage to these off-site sensitive receptors and supports groundwater discharge functions, could in-directly have negative impacts to fish and Fish Habitat, without on-site mitigation.

16.2 Impact Assessment

Discharge waters from the Draft Plan of Subdivision lands will be required to meet provincial standards for storm water management (SWM) design, water quality parameters, construction sedimentation control and on-going long-term erosion control measures. In addition to those standards, for no off-site or indirect negative impacts to be maintained to off-site Fish Habitat, the SWM Plan must also demonstrate the following:

i. Surface waters leaving the Subdivision lands shall be consistent in its outlet location with the existing intermittent channels, along the property limits. Diversion of SWM waters to roadside ditches could be considered a water quantity impairment to Fish Habitat and thus requiring further Fisheries Act review.
ii. Through a Water Balance approach it shall be demonstrated for pre and post construction that surface water input to the west channels and the east watercourse will have had no significant water quantity alterations from the Subdivision.
iii. Shallow groundwater flow patterns directions should not be altered, such that existing groundwater discharge functions (seeps) continue.
iv. The SWM Plan and design shall demonstrate no measurable thermal impairment to off-site / receiving waters.

With the Subdivision design and supporting technical report(s) demonstrating consistency with the above development constraints, no off site or in-direct negative impacts to Fish Habitat would be anticipated. Therefore, with the site development constraint aspects for SWM Plan demonstrated, site development would be in compliance with the Federal Fisheries Act.

17 Mitigation

The following mitigative measures should be implemented through Site Plan Control, Development Agreement and/or Development permits/approvals. These measures are recommended to maintain the ecological functioning role and natural heritage features that have been identified within the Study Lands and are in compliance with applicable Acts, Legislation, and Natural Heritage Planning Policies of the Provincial Policy Statement, County and Town Official Plans and environmental guidelines.

17.1 No Development or Site Alterations relating to the proposed land use designation change and/or site development activity for residential dwellings shall occur within the Study Lands until such time that the applicant has demonstrated compliance with the Endangered Species Act, 2007 for Barn Swallow under Ontario Regulation 242/08 Section 23.5 and Bobolink/Eastern Meadowlark under Ontario Regulation 242/08 Section 23.6.

- A planning approval constraint through development conditions and/or holding symbols shall be put in place for the full subject property until such time that it has been demonstrated by the applicant to the local planning authority, that ESA matters have been addressed approved and proceeding in compliance with Ontario Regulation 242/08 and MNRF requirement under ESA, 2007.

17.2 No Development or Site Alterations shall occur within the Study Lands until such time that the applicant has demonstrated no off-site negative impacts to the receiving waters which support Fish Habitat through supporting technical reports and/or Subdivision design aspects which address:

a. Surface waters leaving the Subdivision lands shall be consistent in its outlet location with the existing intermittent channels out letting along the property limits.

b. No Dwellings or Septic Systems shall be within 15m to any identified groundwater upwelling site.

c. Through a Water Balance calculation approach it shall be demonstrated for pre and post site construction that surface water input to the west watercourse and the east watercourse will have had no significant water quantity alterations from the Subdivision.

d. Site development shall maintain a 1m elevation separation to that of the highest seep elevation in relation to westerly and easterly property site development. This horizontal separation is required to maintain no negative impact on groundwater flow patterns.

e. The SWM Plan and design shall demonstrate no measurable thermal impairment to off-site receiving cool-water thermal regime water courses and the SWM discharge point (s) is/are similar in location to that of existing property limit crossing points.

18 Conclusions

This EIS has demonstrated that with compliance of ESA Regulations and demonstration of on-site water quality and quantity control parameters to maintain no in-direct negative impacts to off-site Fish Habitat, no measurable negative impacts or loss of ecological function to the Natural Heritage features assessed within the Study Lands or surrounding natural environment are anticipated. Therefore, it has been concluded that with the required EIS mitigation measures as outlined under reporting section 17 satisfactorily addressed, Residential Site Development would be in compliance with the Endangered Species Act, 2007 and the Federal Fisheries Act. At which time, any Planning Condition or Holding Condition implemented could be lifted and the Draft Plan of Subdivision would subsequently be in-compliance with the Natural Heritage policies of the 2014 Provincial Policy Statement and the 2012 Grey County Official Plan for Lot creation and residential development.

All *italicized* comments contained within this report are quotes from available literature, technical reports, manuals and documents relevant to the features and/or functions observed within these Study Lands. All natural feature locations are estimates based on current Grey County satellite imagery, topographic mapping on Ontario Base Maps, plotting in the field with hand-held GPS and detailed /surveyed elevation and feature boundary mapping by GM BluePlan. The maps contained within this report should not be considered 'a legal survey' but are deemed adequate for this planning/application review process.

Respectfully Submitted,

John Morton, President
AWS Environmental Consulting Inc.

19 References

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20 Figures

Mapping Note for Clarification:

All figures below are a very close approximation for the property boundary, but given various mapping scales, boundary anomalies, etc., figures may not exactly match the survey plan dimensions to their entirety.

Figure 1……..……..……...…….……Property Location

Figure 2...…….....……...…….……Study and Site Lands, 2015 Air Photo

Figure 3……..…….…….…….…..... Provincial Natural Heritage Features

Figure 4A…….....Grey County Official Plan-Land Use Designations

Figure 4B.....…….....…...….....Grey County Official Plan- Constraints

Figure 5.....…..….....…...……....Township of Georgian Bluffs, Zoning

Figure 6…....…….....…...….....Conservation Authority Regulatory Lands

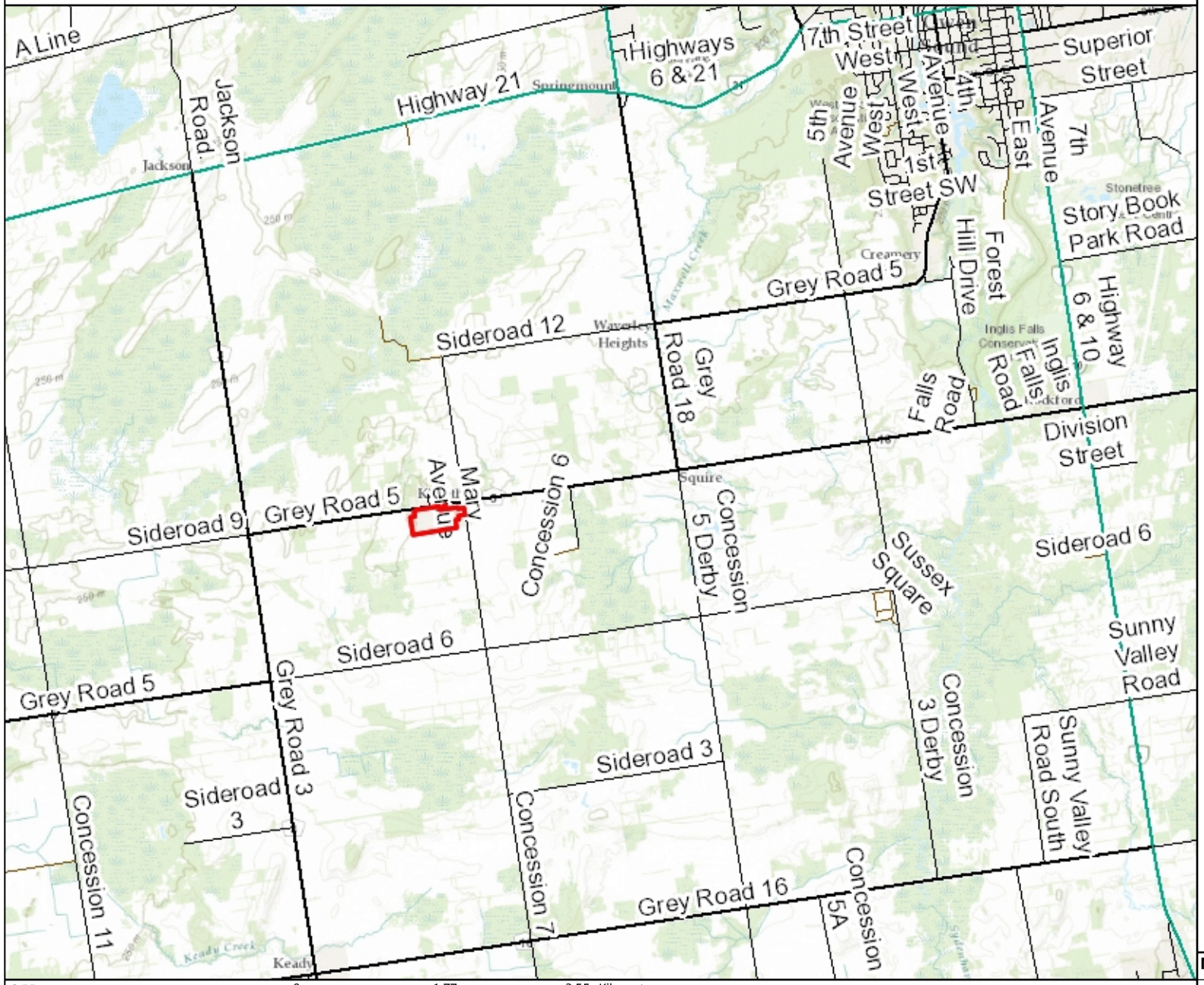
Figure 7…….....…….....Vegetation Communities

Figure 8.....Natural Heritage Features

Figure 9.....Development Constraint Lands

Grey County

Figure No. 1: Site Location, Kilsyth Subdivision



Legend

Large Scale Roads

- Provincial Highway
- County Road
- Township Road
- Seasonal Road

Site Location, Southwest corner of Settlement area of Kilsyth

Notes

3.55 0 1.77 3.55 Kilometers

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed: February 19, 2018

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Figure No. 2 : Study and Site Lands

Legend

- Parcels
- Lots & Concessions
- Study Lands
- Site Lands:
  - Study Lands + 120m
  - Adjacent Lands

0.32 0 0.16 0.32 Kilometers

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed: February 19, 2018

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Barry's Construction & Insulation Ltd.
Kilsyth Draft Plan of Subdivision

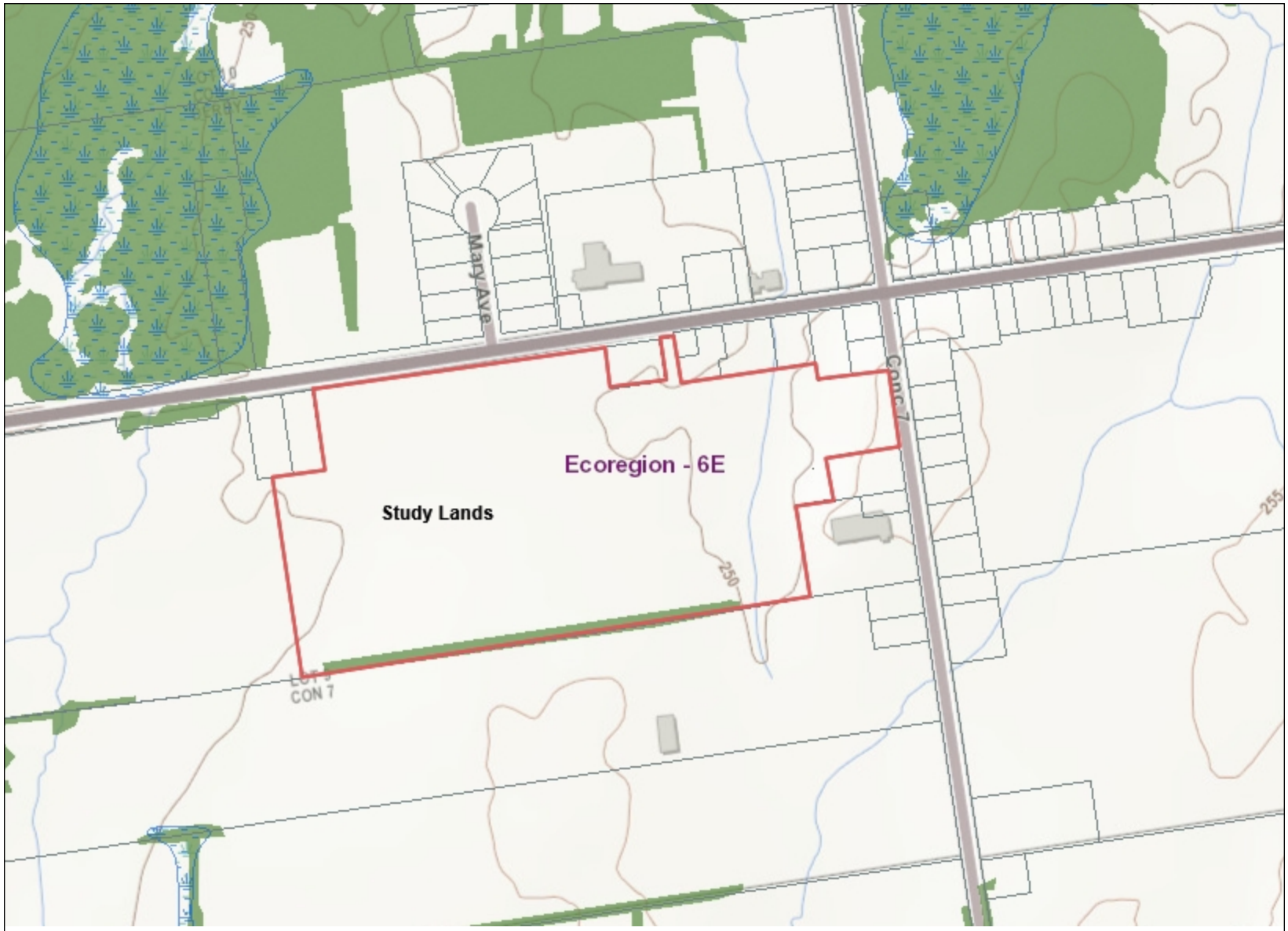
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

Figure No. 3: Provincial Features

Notes: Barry's Construction & Insulation Ltd.
Kilsyth Draft Plan of Subdivision



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

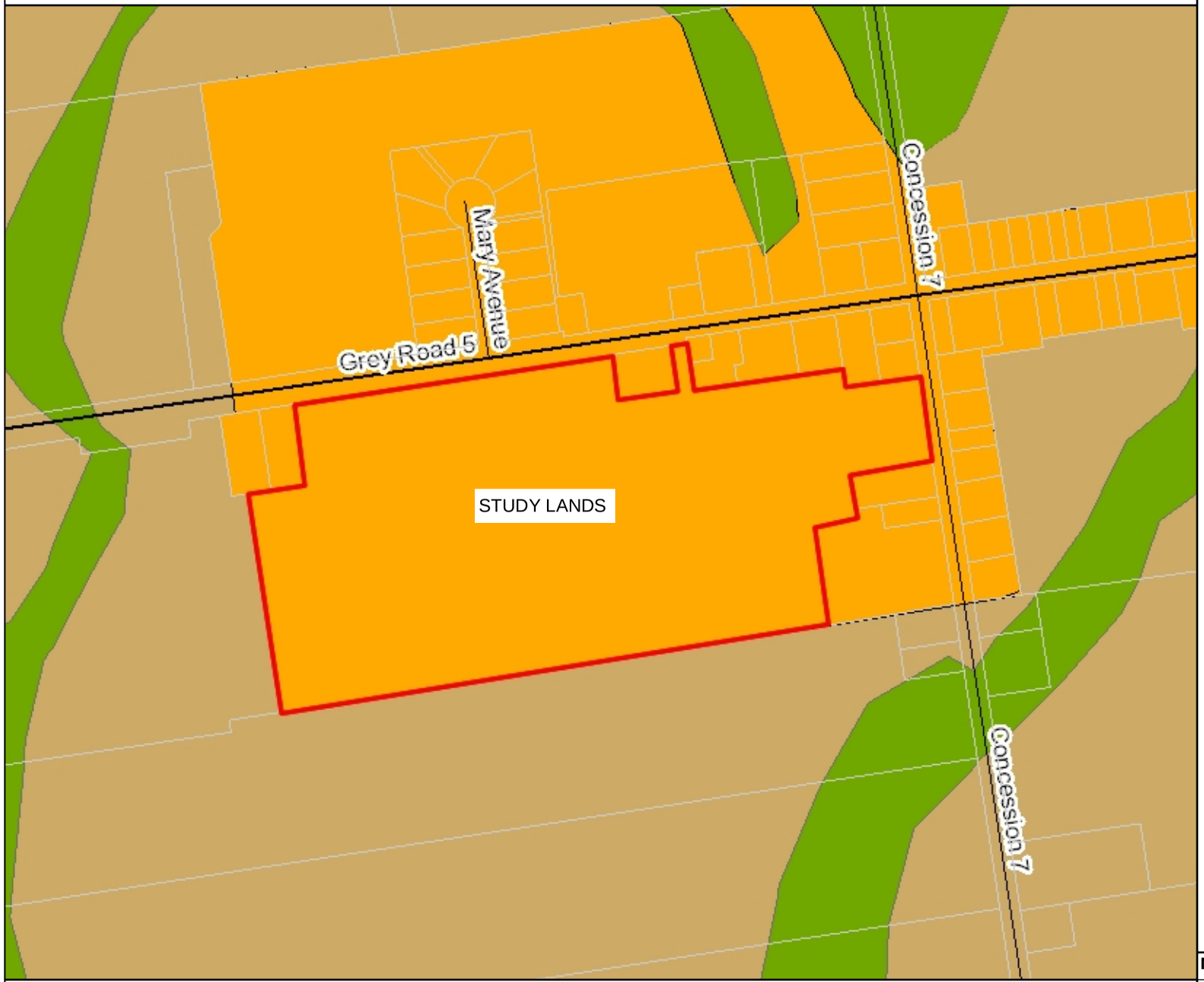
Land Use Designations
- Natural Core Area
- Natural Linkage Area
- Countryside Area
- Rural Settlement
- Palgrave Estates Residential Community
- Settlement Area

0.5 0 0.23 0.5 Kilometers

Scale: 1 : 9,027

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.

Figure No. 4A: Grey County Official Plan -Land Use Designations



Legend

- Parcels
- Large Scale Roads
  - Provincial Highway
  - County Road
  - Township Road
  - Seasonal Road
- Future Secondary Plan Area
- Land Use Classification
  - Primary Settlement Area
  - Secondary Settlement Area
  - Tertiary Settlement Area
  - Agricultural
  - Escarpment Recreation Area
  - Hazard Lands
  - Inland Lakes & Shoreline
  - Niagara Escarpment Plan Area
  - Rural
  - Space Extensive Commercial
  - Space Extensive Industrial
  - Special Agriculture
  - Wetlands
  - Recreation Resort Area

0.28 0 0.14 0.28 Kilometers

WGS_1984_Web_Mercator_Auxiliary_Sphere

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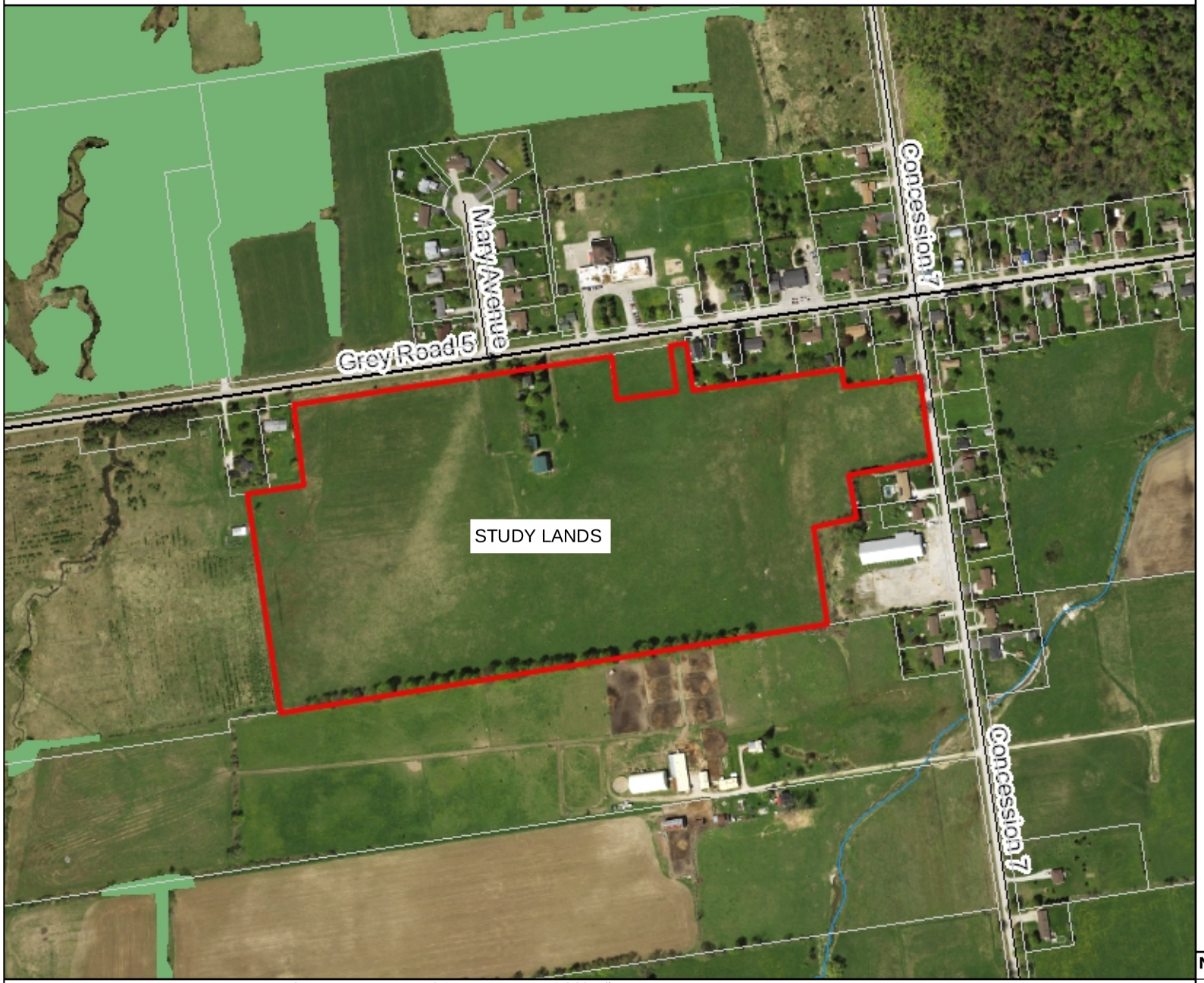
Figure No. 4B : Grey County Official Plan - Constraints



Legend

- Parcels
- Large Scale Roads
  - Provincial Highway
  - County Road
  - Township Road
  - Seasonal Road
- Landfills
  - Abandoned
  - Existing
- Intake Protection Zones
  - IPZ1
  - IPZ2
- Special Policy Karst
- Wellhead Protection
  - Zone A
  - Zone B
  - Zone C
  - Zone D
- Streams
- ANSI
  - Earth Life Science
  - Earth Science
  - Life Science
- Other Identified Wetlands
- Lakes
- Significant Woodlands
- Niagara Escarpment Plan Boundary
- National Defence Boundary
- Cobble Designations
  - Cultural Heritage Area
  - Environmental Protection
  - Open Space
  - Residential
  - Village Centre
- Hatched Policy Area

0.28 0 0.14 0.28 Kilometers

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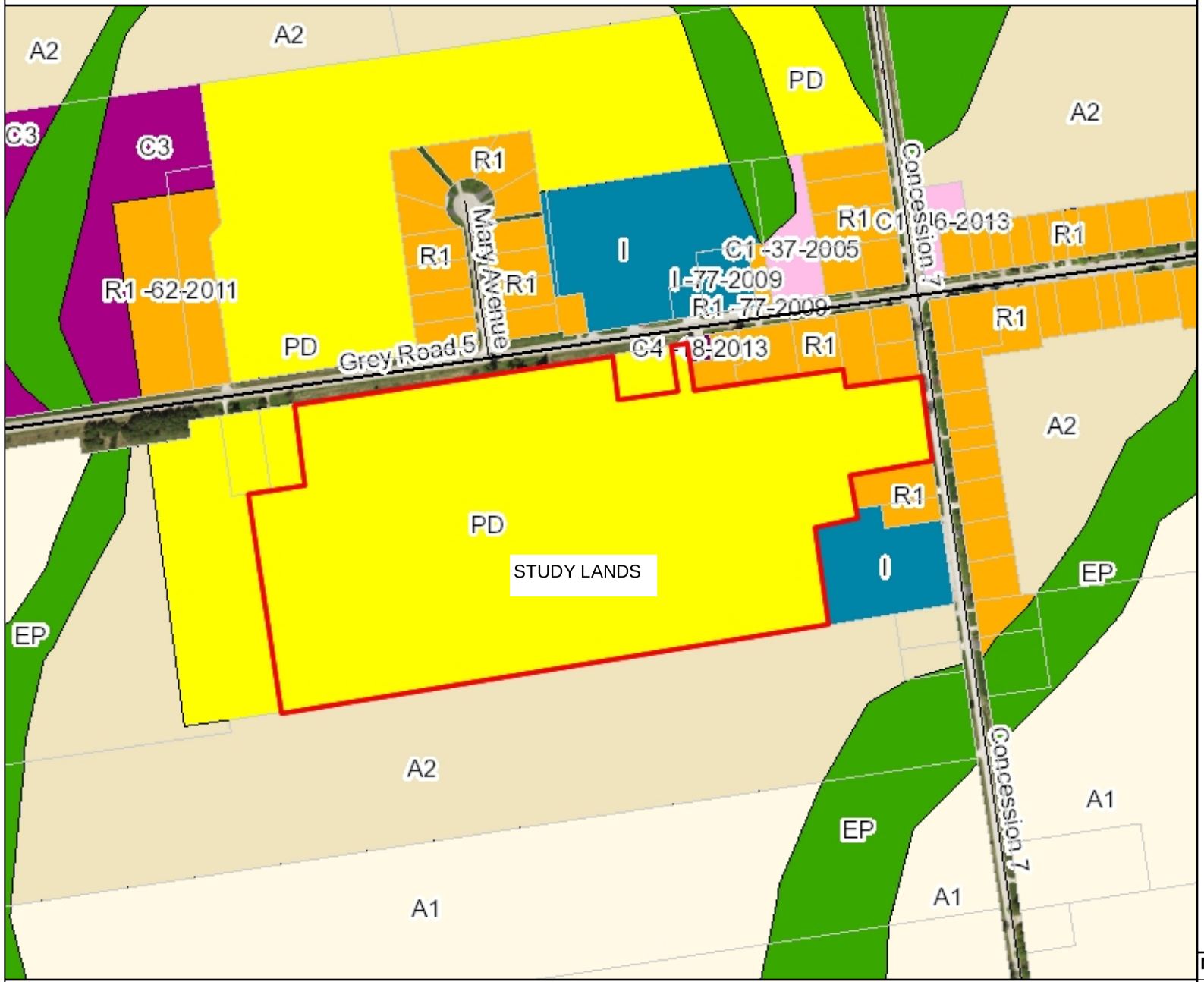
Grey County

Figure No. 5: Township of Georgian Bluffs - Zoning



Legend

- Parcels

Large Scale Roads

- Provincial Highway
- County Road
- Township Road
- Seasonal Road

Zoning - Georgian Bluffs

A1	General Rural
A2	Restricted Rural
C1	General Commercial
C2	Rural Commercial
C3	Tent & Trailer Campground
C4	Space Extensive Commercial
EP	Environmental Protection
I	Institutional
M1	General Industrial
M2	Extractive Industrial
NEC	Niagara Escarpment Developme
OS	Open Space
PD	Planned Development
R1	General Residential
R2	Inland Lake & Shoreline Residen
R4	Medium Density Residential
R5	Medium High Density Residentia
R6	Mobile Home Park
W	Wetland

0.28 0 0.14 0.28 Kilometers

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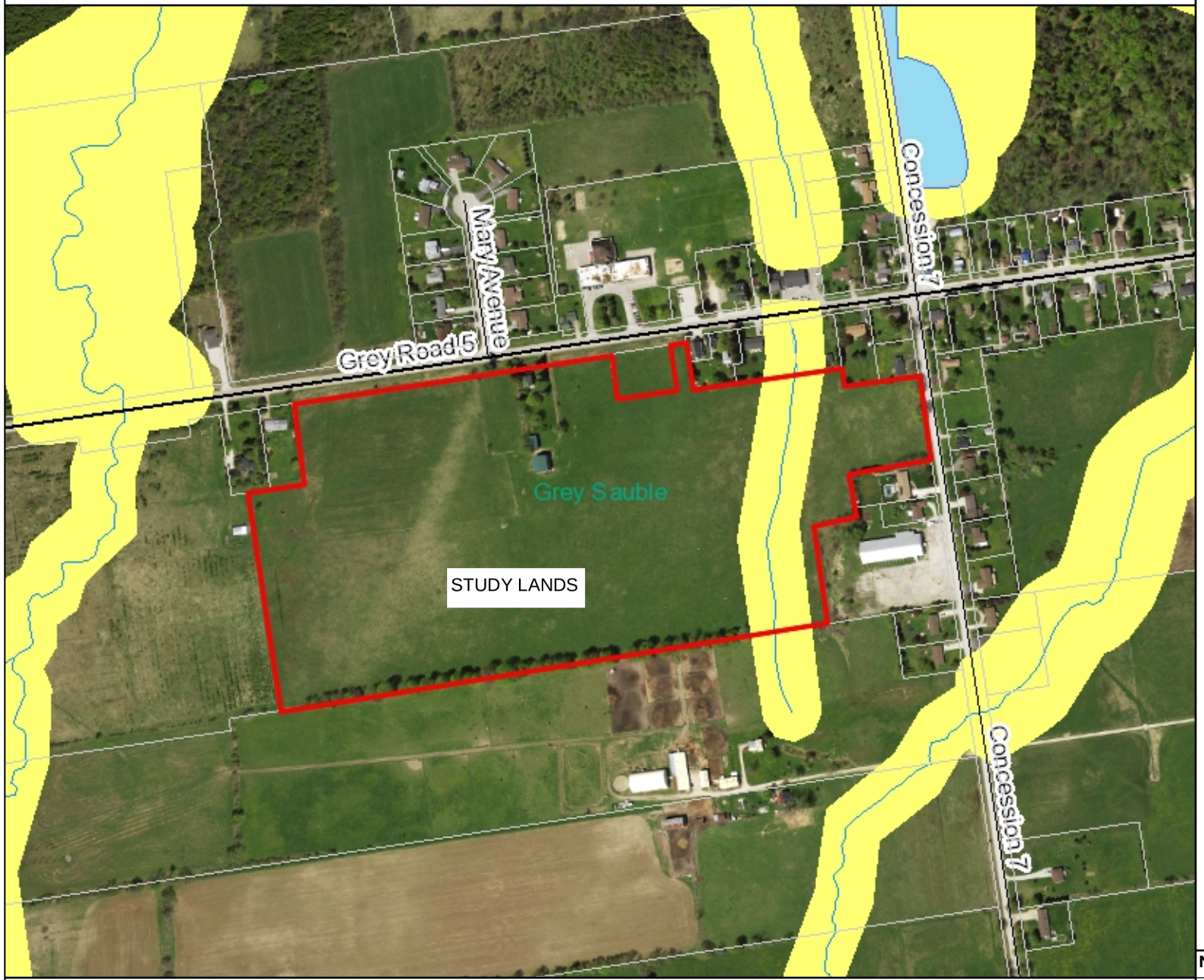
Figure No. 6: Conservation Authority Regulatory Lands



Legend

- Parcels
- Large Scale Roads
  - Provincial Highway
  - County Road
  - Township Road
  - Seasonal Road
- CA Boundaries
- Wet Areas - GSCA
- Water Features
- Watercourses
- Regulations - GSCA

0.28 0 0.14 0.28 Kilometers

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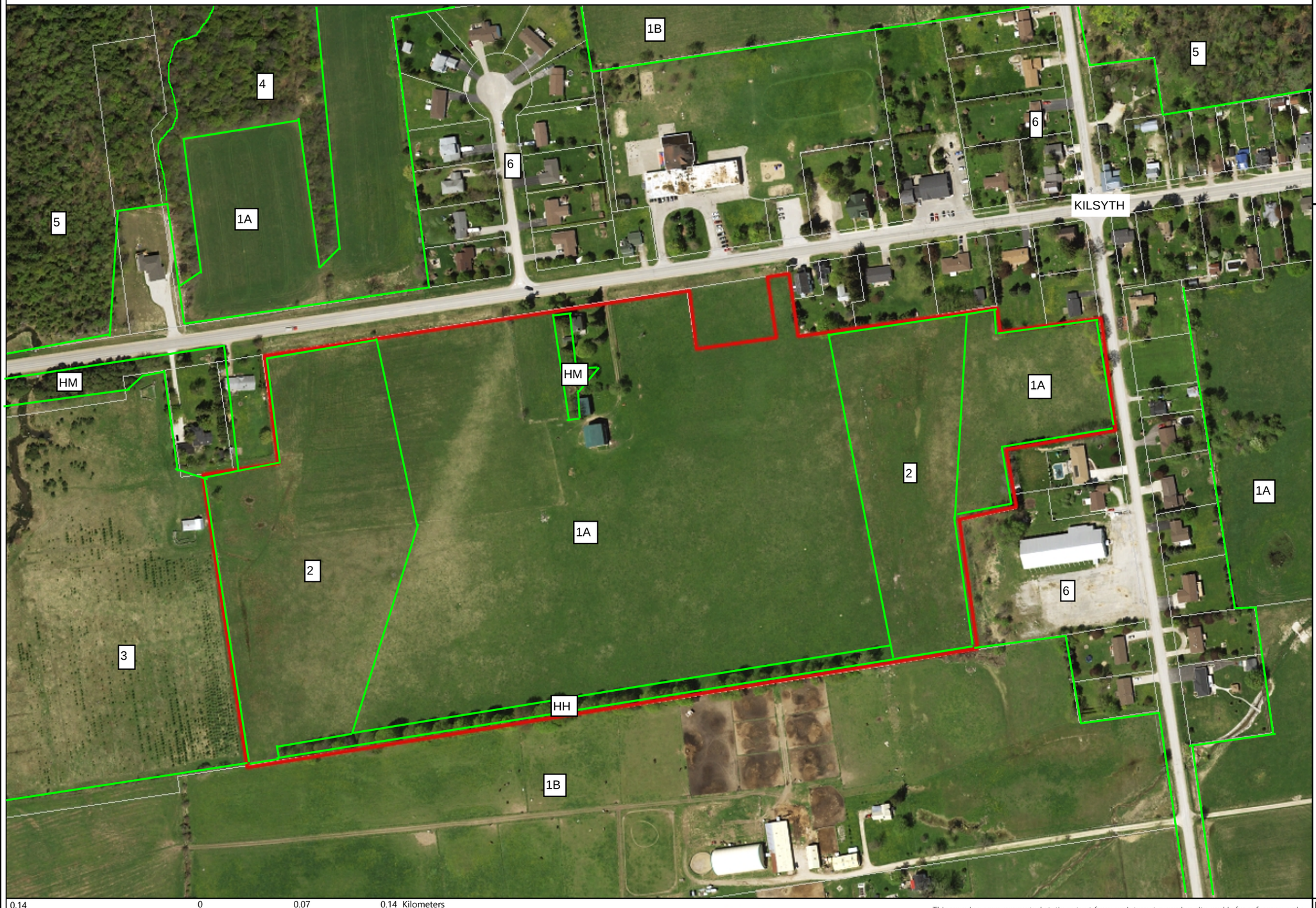
Figure No. 7: Vegetation Communities



Legend

- Parcels
- Study Lands
- Vegetation Community Boundary
- 1 — Vegetation Community Number

ELC Types

1A =	Agriculture Field: Cash Crop
1B =	Agriculture Field: Pasture
2 =	CUM1-1: Cultural Wet-Moist Old Field Meadow
3 =	CUP3-8: Cultural Mixed Conifer Plantation
4 =	FOD6-5 : Fresh-Moist Sugar Maple-Hardwood Deciduous Forest
5 =	SWM4-1: White Cedar-Hardwood Organic Mixed Swamp
6 =	Developed Lands
HH =	Hedgerow Hardwoods
HM =	Hedgerow Mixed

0.14 0 0.07 0.14 Kilometers

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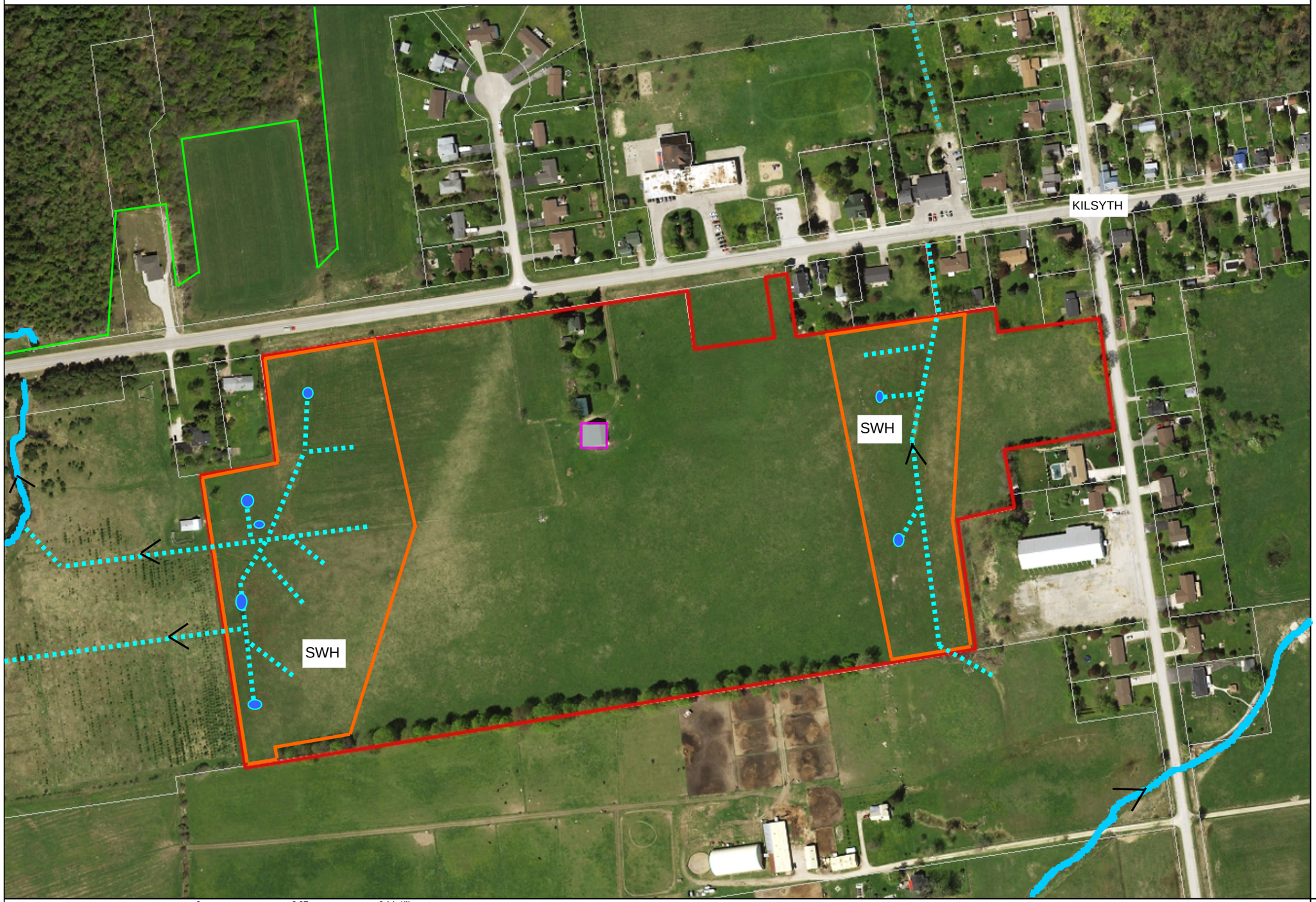
Figure No. 8: Natural Heritage Features



Legend

- Parcels
- Study Lands
- Significant Woodland
- Watercourse: Permanent, with Flow Direction. Fish & Fish Habitat
- Watercourse: Intermittent
- Seeps : Seasonal Groundwater Discharge
- SAR Bird Habitat; Grasslands for Bobolink & Eastern Meadowlark (ESA Regulated Species)
- SAR Bird Habitat; Barn Swallows (ESA Regulated Species)
- SWH — Significant Wildlife Habitat: Open Country Bird Breeding Habitat which Overlaps with the Grassland SAR Bird Habitat

0.14 0 0.07 0.14 Kilometers

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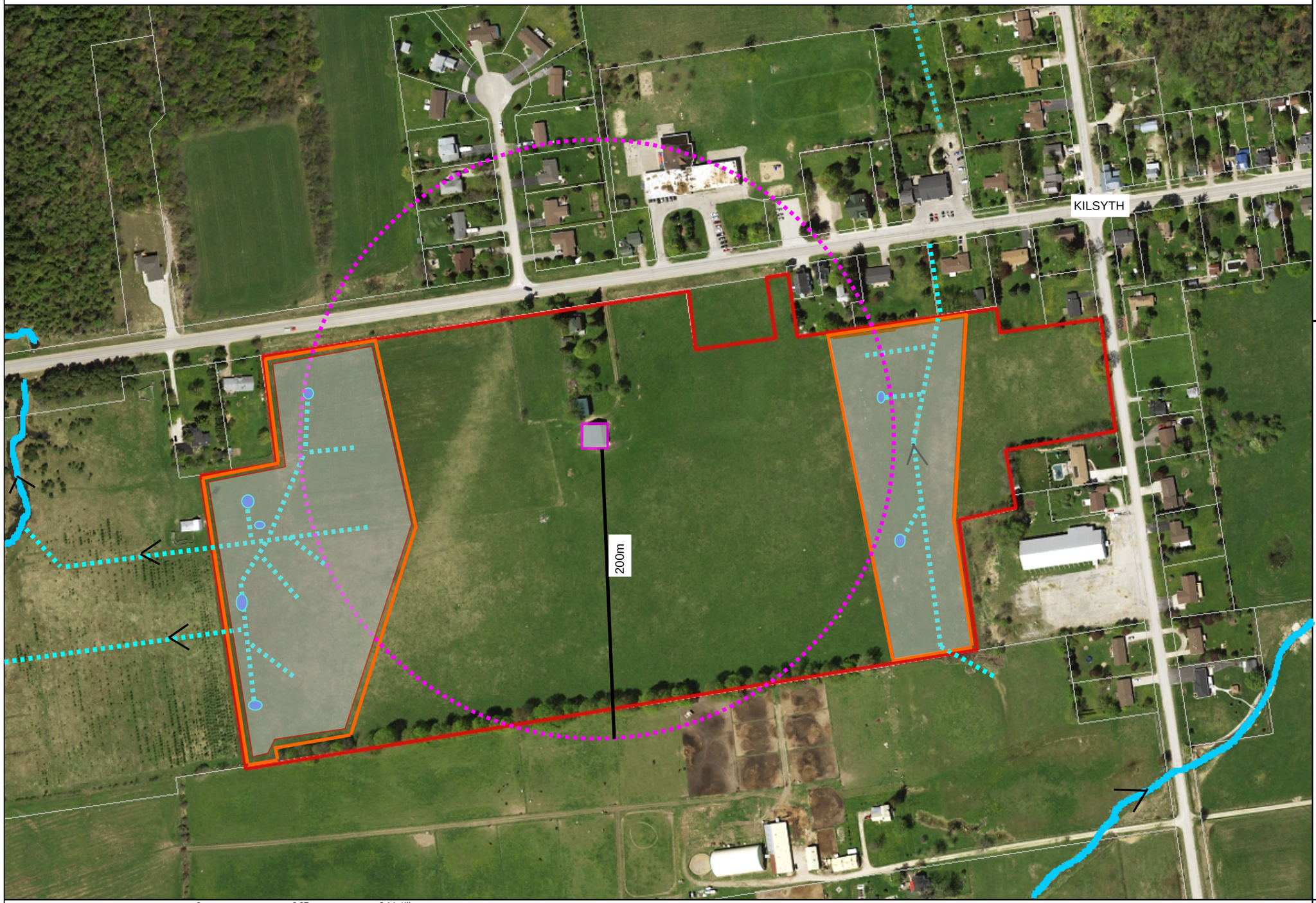
Figure No. 9: Site Development Constraints, Areas and Conditions



Legend

- Parcels
- Study Lands
- Watercourse: Permanent, with Flow Direction. Fish & Fish Habitat
- Watercourse: Intermittent
- Seeps : Seasonal Groundwater Discharge
- SAR Bird Habitat; Grasslands for Bobolink & Eastern Meadowlark (ESA Regulated Species)
- SAR Bird Habitat; Barn Swallows (ESA Regulated Species)

Site Development Constraints

Barn Structure SAR Bird Habitat: Prior to any Development or Site Alterations within the 200m to the identified Nesting Structure the Applicant must demonstrate compliance with Ontario Regulation 242/08 Section 23.5 for Barn Swallows in accordance to the Endangered Species Act, 2007

Grassland SAR Bird Habitat: Prior to any Development or Site Alterations within 300m to the identified Nesting Habitat, the Applicant must demonstrate compliance with Ontario Regulation 242/08 Section 23.2 and/or 23.6 for Bobolink and Eastern Meadowlark in accordance to the Endangered Species Act, 2007

No Dwellings or Septic System shall be constructed within 15m to the identified groundwater upwelling sites, additionally site development shall not go lower in elevation than 1m above that of the highest seep elevation which could cause groundwater flow pattern alteration impacts. SWM shall demonstrate no water quality or quantity impacts and discharge at similar property boundary locations.

0.14 0 0.07 0.14 Kilometers

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APPENDIX 1

- Historical Records Search for Significant Flora and Fauna within 5 km of the Study Lands

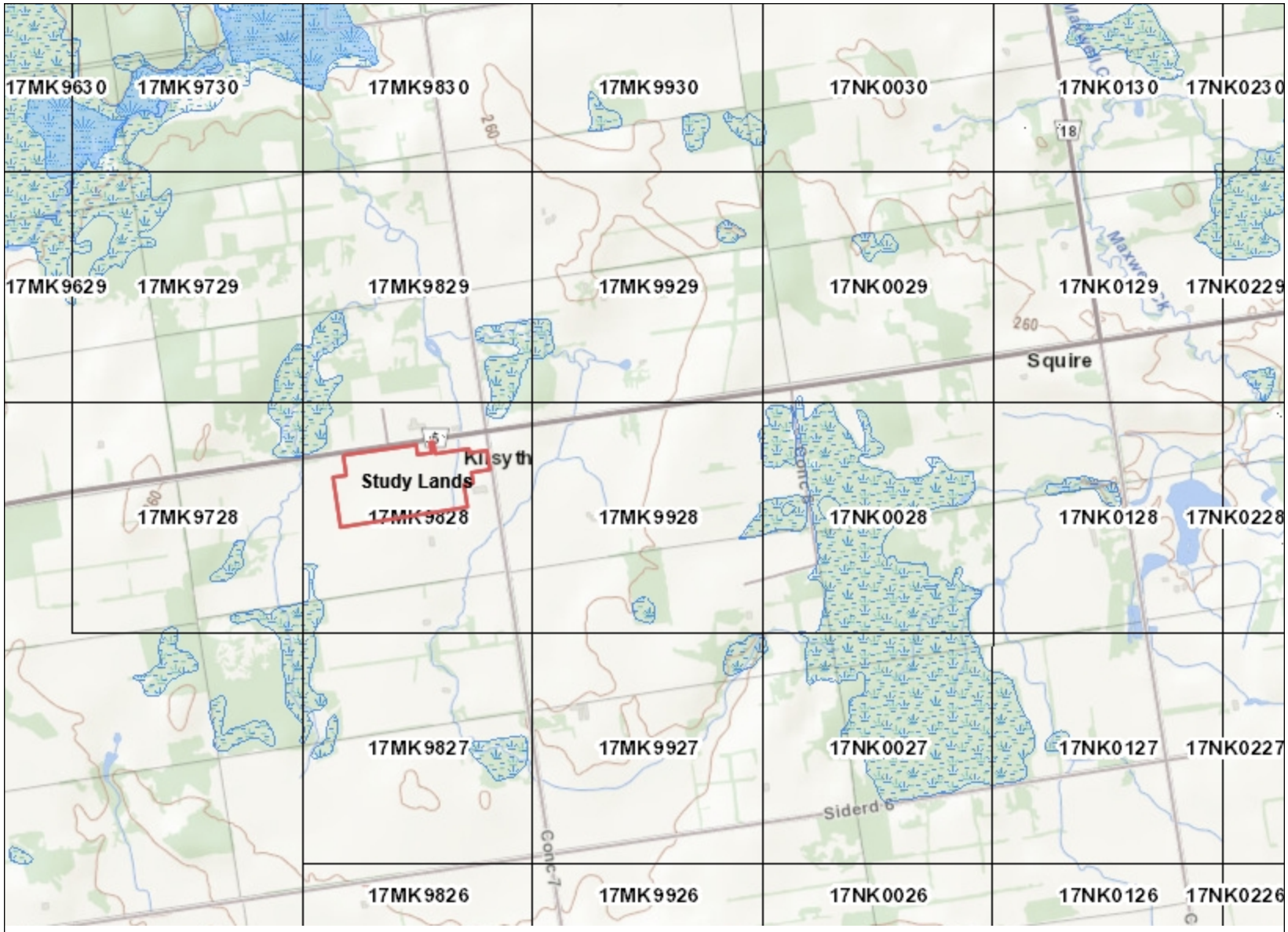
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

Historical Records Search: Significant Flora & Fauna

Notes: Barry's Construction & Insulation Ltd.
Kilsyth Draft Plan of Subdivision



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

1.8 0 0.92 1.8 Kilometers

Scale: 1 : 36,111

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Barry's Construction & Insulation Ltd.- Kilsyth Draft Plan of Subdivision:

Ontario Ministry of Natural Resources and Forestry – NHIC historical records search for Significant Flora and Fauna within 5 km's of the Study Lands

Source:
OMNRF – Natural Heritage Information Center data in the Land Information Ontario on-line databases

Restricted Species, ID No. 35679
- MNRF contacted for species identification
- Provincial Ranking = S3, Provincial Status = Endangered

Bobolink (*Dolichonyx oryzivorus*)
- Provincial Ranking = S4B, Provincial Status = Threatened
- Last recorded in the search area 2005

Eastern Meadowlark (*Sturnella magna*)
- Provincial Ranking = S4B Provincial Status = Threatened
- Last recorded in the search area 2005

Snapping Turtle (*Chelydra serpentina*)
- Provincial Ranking = S3, Provincial Status = Special Concern
- Last recorded in the search area 2008

APPENDIX 2

- Flora Listing: Rankings, Status and Floristic Quality Scoring

Barry's Construction & Insulation Ltd. - Kilsyth Subdivision: Flora Inventory

With Current Ranking, Status and Floristc Quality Assessment Scores

Part Lot 9, Concession 7, Geographic Township of Derby

1) Vegetation Community No. 1 : Wet-Moist Old Fields

No species of conservation concern found

Latin Name	Common Name	Native or Introduced	Rank		Status			FQA	
			Nat.	Prov.	Nat.	Prov.	Local	CC	CW
Agropyron repens	Twitch Grass	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Anemone canadensis	Thimbleweed	N	N5	S5	NAR	NAR	Common	3	-3
Carex bebbii	Bebb's Sedge	N	N5	S5	NAR	NAR	Common	3	-5
Carex pallescens	Pale Sedge	N	N5	S5	NAR	NAR	Common	5	3
Carex pellita	Wooly Sedge	N	N5	S5	NAR	NAR	Common	4	-5
Carex projecta	Spreading Sedge	N	N5	S5	NAR	NAR	Common	5	-4
Carex spicata	Spiked Sedge	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Carex stipata	Awl-fruited Sedge	N	N5	S5	NAR	NAR	Common	3	-5
Carex vulpinoidea	Fox Sedge	N	N5	S5	NAR	NAR	Common	3	-5
Crataegus monogyna	English Hawthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Crataegus punctata	Dotted Hawthorn	I	NNA	SNA	Exotic	Exotic	Exotic	4	5
Eleocharis intermedia	Intermediate Spikerush	N	N4	S4	NAR	NAR	Common	7	-3
Eleocharis palustris	Small's Spikerush	N	N5	S5	NAR	NAR	Common	0	0
Erigeron philadephicum	Philadelphia Fleabane	N	N5	S5	NAR	NAR	Common	1	-3
Festuca pratensis	Meadow Fescue	I	NNA	SNA	Exotic	Exotic	Exotic	0	4
Fragaria virginiana	Wild Strawberry	N	N5	S5	NAR	NAR	Common	2	1
Fraxinus pennsylvanica	Green Ash	N	N5	S4	NAR	NAR	Common	3	-3
Galium mollugo	Cleavers	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Galium palustre	Marsh Bedstraw	N	N5	S5	NAR	NAR	Common	5	-5
Geum aleppicum	Yellow Avens	N	N5	S5	NAR	NAR	Common	2	-1
Iris versicolor	Blue Flag	N	N5	S5	NAR	NAR	Common	5	-5

Juncus dudleyi	Dudley's Rush	N	N5	S5	NAR	NAR	Common	1	0
Juncus effusus	Soft Rush	N	N5	S5	NAR	NAR	Common	4	-5
Lolium arundinaceum	Tall Fescue	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Lotus corniculatus	Bird's-foot Trefoil	I	NNA	SNA	Exotic	Exotic	Exotic	0	1
Lysimachia nummularia	Moneywort	I	NNA	SNA	Exotic	Exotic	Exotic	0	-4
Phalaris arundinacea	Reed Canary Grass	N	N5	S5	NAR	NAR	Common	0	-4
Phleum pratense	Timothy	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
Poa compressa	Canada Bluegrass	I	NNA	SNA	Exotic	Exotic	Exotic	0	2
Poa palustris	Marsh Bluegrass	N	N5	S5	NAR	NAR	Common	5	-4
Poa pratensis	Kentucky Bluegrass	N	N5	S5	NAR	NAR	Common	0	1
Poa trivialis	Rough Bluegrass	I	NNA	SNA	Exotic	Exotic	Exotic	0	-3
Ranunculus acris	Common Buttercup	I	NNA	SNA	Exotic	Exotic	Exotic	0	-2
Rhamnus cathartica	Common Buckthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
Rumex crispus	Curly Dock	I	NNA	SNA	Exotic	Exotic	Exotic	0	-1
Scirpus atrovirens	Dark Green Bulrush	N	N5	S5	NAR	NAR	Common	3	-5
Solidago altissima	Tall Goldenrod	N	N5	S5	NAR	NAR	Common	1	3
Solidago canadensis	Canada Goldenrod	N	N5	S5	NAR	NAR	Common	1	3
Stellaria graminea	Lesser Stitchwort	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Symphyotrichum lanceolatum	Panicled Aster	N	N5	S5	NAR	NAR	Common	3	-3
Symphyotrichum lateriflorum	Calico Aster	N	N5	S5	NAR	NAR	Common	2	-3
Taraxacum officinale	Dandelion	I	NNA	SNA	Exotic	Exotic	Exotic	0	-5
Trifolium hybridum	Alsyke Clover	I	NNA	SNA	Exotic	Exotic	Exotic	0	1
Trifolium pratense	Red Clover	I	NNA	SNA	Exotic	Exotic	Exotic	0	2
Vicia cracca	Common Vetch	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Viburnum lentago	Nannyberry	N	N5	S5	NAR	NAR	Common	4	-1
Mean								2	-1

Total number of Native species = 26 or 57%

Total number of Introduced or Non-Native species = 20 or 43%

46

2) Hedgerow, Fence-lines

No species of conservation concern found

Latin Name	Common Name	Native or Introduced	Rank		Status			FQA	
			Nat.	Prov.	Nat.	Prov.	Local	CC	CW
Acer saccharum	Sugar Maple	N	N5	S5	NAR	NAR	Common	5	3
Agrostis gigantea	Redtop	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Alliaria petiolata	Garlic Mustard	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Anthriscus sylvestris	Wild Chervil	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Arctium minus	Burdock	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Asclepias syriaca	Common Milkweed	N	N5	S5	NAR	NAR	Common	0	5
Centaurea nigra	Black Knapweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Cerastium fontanum	Mouse-ear Chickweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
Cirsium arvense	Canada Thistle	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
Clinopodium acinos	Basil Thyme	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Daucus carota	Wild Carrot	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Erigeron philadephicum	Philadelphia Fleabane	N	N5	S5	NAR	NAR	Common	1	-3
Erucastrum gallicum	Dog Mustard	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Fraxinus pennsylvanica	Green Ash	N	N5	S4	NAR	NAR	Common	3	-3
Galeopsis tetrahit	Hemp Nettle	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Geranium robertianum	Herb Robert	N	N4	S5	NAR	NAR	Common	0	5
Geum aleppicum	Yellow Avens	N	N5	S5	NAR	NAR	Common	2	-1
Glechoma hederacea	Ground Ivy	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
Leonuris cardiaca	Motherwort	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Leucanthemum vulgare	Ox-eye Daisy	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Lonicera tatarica	Tatarian Honeysuckle	I	NNA	SNA	Exotic	Exotic	Exotic	0	-3
Malus pumila	Apple	I	NNA	SNA	Exotic	Exotic	Exotic	0	5

Medicago lupulina	Black Medick	I	NNA	SNA	Exotic	Exotic	Exotic	0	1
Nepeta cataria	Catnip	I	NNA	SNA	Exotic	Exotic	Exotic	0	1
Ostrya virginiana	Ironwood	N	N5	S5	NAR	NAR	Common	4	4
Parthenocissus inserta	Virginia Creeper	N	N5	S5	NAR	NAR	Common	3	3
Picea abies	Norway Spruce	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Picea glauca	White Spruce	N	N5	S5	N5	S5	Common	6	3
Pilosella cespitosa	Yellow Hawkweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Plantago lanceolata	English Plantain	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Plantago major	Common Plantain	N	N5	S5	NAR	NAR	Common	0	-1
Potentilla recta	Sulphur Cinquefoil	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Rhamnus cathartica	Common Buckthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
Ribes rubrum	Garden Red Currant	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Rubus occidentalis	Black Raspberry	N	N5	S5	NAR	NAR	Common	2	5
Sambucus racemosum	Red Elderberry	N	N5	S5	NAR	NAR	Common	5	2
Solanum dulcamara	Black Nightshade	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Sonchus asper	Sow Thistle	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Sorbus aucuparia	European Mountain Ash	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Tilia americana	Basswood	N	N5	S5	NAR	NAR	Common	4	3
Tragopogon dubius	Goat's Beard	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Viburnum lentago	Nannyberry	N	N5	S5	NAR	NAR	Common	4	-1
Viola canadensis	White Violet	N	N5	S5	NAR	NAR	Common	6	5
Viola pubescens	Yellow Violet	N	N5	S5	NAR	NAR	Common	5	4
Vitis riparia	Wild Grape	N	N5	S5	NAR	NAR	Common	0	-2
Mean								1	2

Total number of Native species = 17 or 38%

Total number of Introduced or Non-Native species = 28 or 62%

45

National and Provincial Rank: Based on current 2018 Ontario Natural Heritage Information Center (NHIC) listings

NNA/ NNR defined as: No Ranking	SNA defined as : Unranked
N5 defined as: Very common	S5 defined as: Secure
N4 defined as: Common	S4 defined as: Apparently Secure
N3 defined as: Rare to uncommon species	S3 defined as: Vulnerable
N2 defined as : Very Rare	S2 defined as: Imperiled
N1 defined as: Extremely Rare	S1 defined as: Critically Imperiled

NAR defined as : Not At Risk / END defined as : Endangered / THR defined as :Threatened / SC defined as : Special Concern

National Status based on: Species At Risk Act, COSEWIC 2018 Listings

Provincial Status based on: Endangered Species Act 2007, NHIC 2018 and 2018 COSSARO Listings

Regional Status based on: Bruce-Grey Plant Committee: A Checklist of Vascular Plants for Bruce and Grey Counties Ontario

Ontario Ministry of Natural Resources and Forestry, 'Floristic Quality Assessment' (**FQA**) Scoring System:

CC = Coefficient of Conservatism, ranked 0 (grows anywhere) to 10 (very specific habitat requirements)

WI = Wetness Index, values from -5 (very wet) to 5 (very dry)

Note: CC scores of 8 or higher are indicator species of candidate Significant Woodlands

APPENDIX 3

- Fauna Listing: Ranking and Status, Calling Survey's and Point Count Location Map

Barry's Construction & Insulation Ltd.- Kilsyth Draft Plan of Subdivision : Fauna Listing

with current Ranking, Status, Estimated adult numbers and highest recorded breeding Bird codes

Part Lot 9, Concession 7, Geographic Township of Derby

Three bird species of conservation concern identified: Barn Swallow, Bobolink & Eastern Meadowlark

			Ranking		Status			Breeding	Recorded in Point	Observed Range of
	Latin Name	Common Name	Nat.	Prov.	Nat.	Prov	Local	Codes	Counts	Adult Numbers
Birds	Agelaius phoeniceus	Red-winged Blackbird	N5	S4	NAR	NAR	Common	Conf	B2, B4	7
	Carduelis tristis	American Goldfinch	N5	S5	NAR	NAR	Common	Pr	B1, B4	4
	Cyanocitta cristata	Blue Jay	N5	S5	NAR	NAR	Common	Po-H	B1	2
	Dolichonyx oryzivorus	**Bobolink**	N5	S4	NAR	**Thr**	**Thr**	Conf	B2, B4	6
	Gallinago delicata	Common/Wilson's Snipe	N5	S5	NAR	NAR	Common	Po-H	B2	1
	Hirundo rustica	**Barn Swallow**	N5	S4	NAR	**Thr**	**Thr**	Conf	B1	18-24
	Melospiza melodia	Song Sparrow	N5	S5	NAR	NAR	Common	Pr	B2,B4	4
	Molothrus ater	Brown-headed Cowbird	N5	S4	NAR	NAR	Common	Po-H	B3	1
	Passerculus sandwichensis	Savanna Sparrow	N5	S4	NAR	NAR	Common	Pr	B3	3
	Pooecetes gramineus	Vesper Sparrow	N5	S4	NAR	NAR	Common	Pr	B3, B4	4
	Sayornis phoebe	Eastern Phoebe	N5	S5	NAR	NAR	Common	Po-S	B1	1
	Scolopax minor	American Woodcock	N5	S4	NAR	NAR	Common	Po-H	B2	2
	Spizella passerina	Chipping Sparrow	N5	S5	NAR	NAR	Common	Pr	B1,B3	7
	Sturnella magna	**Eastern Meadowlark**	N4	S4	NAR	**Thr**	**Thr**	Conf	B2, B4	4
	Tachycineta bicolor	Tree Swallow	N5	S4	NAR	NAR	Common	Ob-X		3
	Turdus migratorius	American Robin	N5	S5	NAR	NAR	Common	Conf	B1	3
	Zenaida macroura	Mourning Dove	N5	S5	NAR	NAR	Common	Po-H	B3	2

Condensed Breeding Codes as per Bird Studies Canada Protocol

Ob = Observed bird outside of the Breeding Season

Ob -X = Observed in breeding season but no evidence of breeding

Po-H = Possible: Observed in suitable nesting habitat

Po-S = Possible: Singing/Calls in suitable nesting habitat

Pr = Probable: pairs observed, nest building, courtship display

Conf = Confirmed: active nest, egg shells, feeding young

	Latin Name	Common Name	Ranking Nat.	Ranking Prov.	Status Nat.	Status Prov	Status Local	Observed Range of Adult Numbers
Mammals	Marmota mamax	Woodchuck	N5	S5	NAR	NAR	Common	2
	Peromysus maniculatus	Deer Mouse	N5	S5	NAR	NAR	Common	1
	Procyon lotor	Raccoon	N5	S5	NAR	NAR	Common	1
Butterflies	Euphyes vestris	Dun Skipper	N5	S5	NAR	NAR	Common	5
	Phyciodes cocyta	Northern Crescent	N5	S5	NAR	NAR	Common	2
Reptiles	Thamnophis sirtalis sirtalis	Eastern Garter Snake	N5	S5	NAR	NAR	Common	1
Amphibians	Lithobates pipiens	Northern Leapord Frog	N5	S5	NAR	NAR	Common	7
Fish	none observed							
Dragonflies & Damselflies	Anax junius	Common Green Darner	N5	S5	NAR	NAR	Common	6

National and Provincial Rank: Based on current 2018 Ontario Natural Heritage Information Center (NHIC) listings

NNA defined as: Not Ranked	SNA defined as : Unranked
N5 defined as: Secure	S5 defined as: Secure
N4 defined as: Apparently Secure	S4 defined as: Apparently Secure
N3 defined as: Vulnerable	S3 defined as: Rare to Uncommon
N2 defined as : Imperiled	S2 defined as: Very Rare
N1 defined as: Critically Imperiled	S1 defined as: Extremely Rare

NAR defined as : Not At Risk END defined as : Endangered THR defined as: Threatened SC defined as: Special Concern

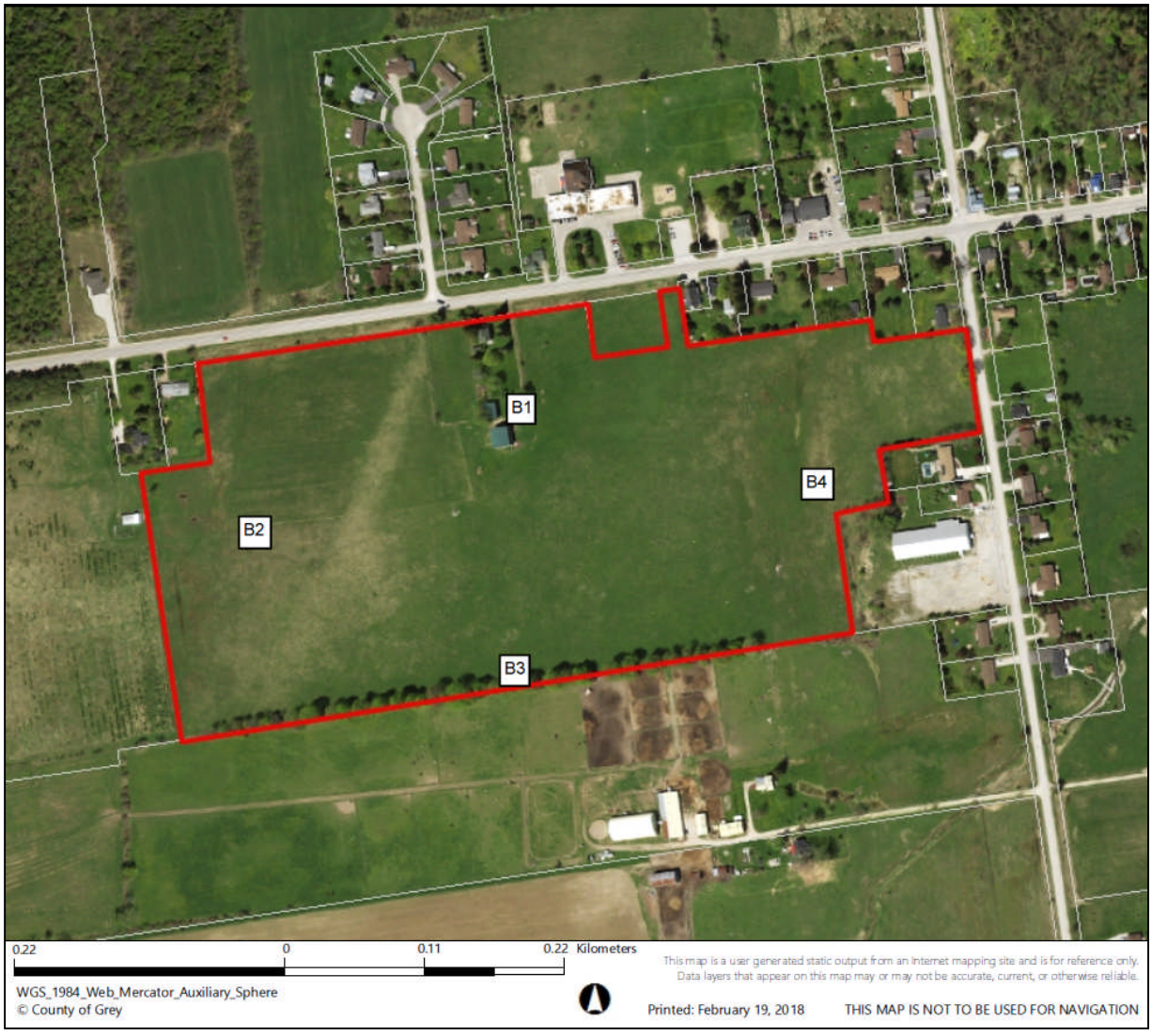
National Status based on: Species At Risk Act, and COSEWIC 2018 Listings

Provincial Status based on: Endargered Species Act 2007, NHIC 2018, COSSARO 2018 Listings

Regional Status lists based on: Birds- Region No. 9 (Grey) 'Atlas Breeding Birds of Ontario 2001-2005'
Dragonflies & Damselflies (Grey) ' Regional Lists of Ontario Odonata'

Barry's Construction & Insulation Ltd. – Kilsyth Draft Plan of Subdivision

Breeding Bird Survey: Point Count Location Map



B1 to B4 : Point Count Numbers

APPENDIX 4

- Grey County web site, Property Parcel Report

Property Report

General Information

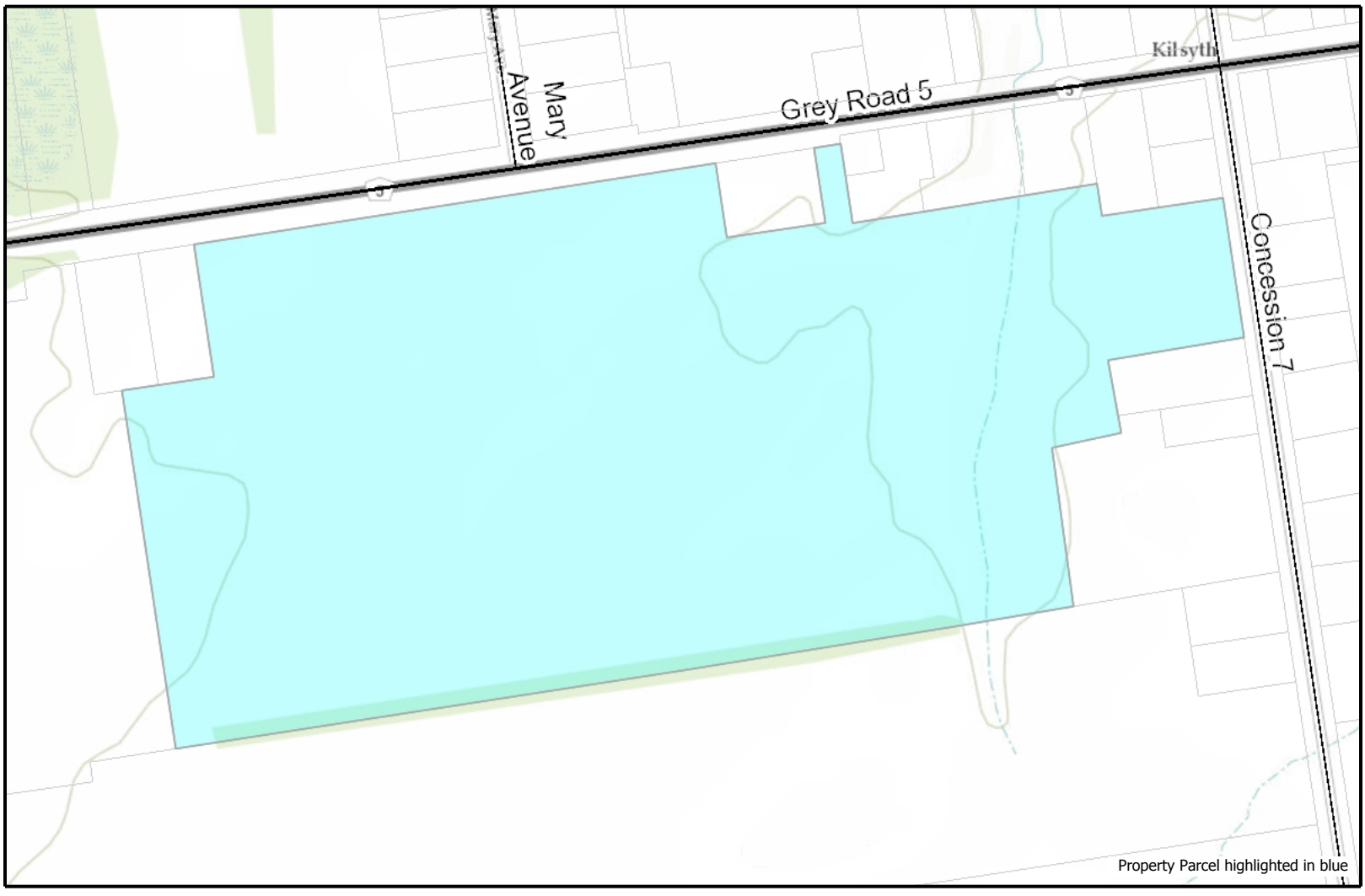
Report Generated: *2/19/2018 9:33:12 AM*

Roll Number: 420354000214400	**Acreage:**	**Assessed Property Value:** $274,000
(Interactive Map)	41.38	(May not reflect current market value- MPAC)
Civic Address: 101810 GREY ROAD 5	**NEP Designation:** (NEP Map)	Outside the Niagara Escarpment Plan Area

Legal Desc.: CON 7 N PT LOT 9 PLAN 117 PT;LOTS 71,75 & 78 LOTS;72,73,74,85,86 & 87

Property Use: Land owned by a non-farmer improved with a non-farm residence with a portion being farmed

Zoning:
A2 Restricted Rural
I Institutional
PD Planned Development
R1 General Residential



APPENDIX 5

- Preliminary comments by Grey Sauble Conservation Authority and Agreed to EIS 'Terms of Reference'

Grey Sauble Conservation

237897 Inglis Falls Road, R.R.#4, Owen Sound, ON N4K 5N6
Telephone: 519.376.3076 Fax: 519.371.0437
www.greysauble.on.ca

January 10, 2017

Barry's Construction & Insulation Ltd. c/o Stuart Doyle
7839 Hwy 21
P.O. Box 30
Allenford, ON
N0H 1A0

Dear Mr. Doyle:

RE: Pre-consultation Proposed Subdivision
Part of Lot 9, Concession 7
101810 Grey Road 5; Roll No. 42-03-540-002-144-00
Township of Georgian Bluffs, formerly Keppel Township
Our File: P12354

Subject Proposal
It is our understanding that a plan of subdivision intends to be proposed on the subject lands. The size and layout of the subdivision is still being considered by the proponent but generally we understand that it will ultimately require the construction of residential road(s) and servicing for lots that will contain single family detached dwellings with private sewage disposal and groundwater wells.

The Grey Sauble Conservation Authority (GSCA) has reviewed this property and conceptual development in accordance with our mandate and policies for natural hazards, for natural heritage issues as per the Provincial Policy Statement and relative to our policies for the implementation of Ontario Regulation 151/06. We offer the following comments.

Site Description
The approximately 42-acre property is located to the southwest of the Grey Road 5 and Concession 7 intersection within the Hamlet of Kilsyth, Township of Georgian Bluffs, former Derby Township. Existing development consists of a vacant dwelling with multiple agricultural accessory structures situated to the northcentral portion of the property. The majority of the property is utilized for agricultural purposes with two unmaintained lowland areas to the west and to the east that facilitate drainage away from the property.

GSCA Regulations
Portions of the property are regulated under Ontario Regulation 151/06: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. The regulated areas are associated with two seasonal watercourses on western and eastern portions of the property. We note, it appears that the watercourses are constructed swales that were completed prior to 1954 for the purpose of facilitating drainage to adjacent natural watercourses.

Under this regulation, a permit is required from this office prior to the construction, reconstruction, erection or placing of a building or structure of any kind; any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure or increasing the number of dwelling units in the building or structure; site grading; or, the temporary or permanent placing, dumping or removal of any material originating on the site or elsewhere, if occurring within the regulated area. Also, a permit is required for interference with a wetland, and/or the straightening, changing, diverting or in any way interfering with an existing channel of a river, lake, creek, stream or watercourse.

Given the time of year for GSCA's site inspection and the lack of flows at the time of this visit the regulation mapping may be subject to minor changes pending further evaluation of the lowland areas during spring like conditions.

Provincial Policy Statement
3.1 Natural Hazards
Potential natural hazard areas are identified on the subject property associated with the channelized seasonal watercourses.

Under Section 3.1.1 of the Provincial Policy Statement (PPS), development shall generally be directed to areas outside of hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.

Given the relatively small size of the drainage areas, it is not expected that significant flows are conveyed through these areas. However, standing water was observed adjacent to the western property boundary at the time of GSCA's site visit while the easterly area was observed as dry. As such, we recommend further evaluation of these features during spring like conditions to further understand the nature of potential flooding/drainage issues within these areas on the property. In any case, these areas remain a nuisance to residential development and should be appropriately considered in any proposal moving forward.

2.1 Natural Heritage
GSCA conducted an initial site visit in December of 2016 and subsequently reviewed existing in office information in relation to the natural heritage policies of the PPS. Through this review we have identified indirect fish habitat, potential threatened and endangered species, and adjacent lands to significant woodland.

Under Section 2.1.6 of the PPS, development and site alteration shall not be permitted in fish habitat in accordance with provincial and federal requirements.

The westerly and easterly seasonal drainage features support fish habitat indirectly by contributing seasonal flows into adjacent unnamed tributaries of the Pottawatomi River.

Under Section 2.1.7 of the PPS, development and site alteration shall not be permitted in habitat of endangered and threatened species, except in accordance with provincial and federal requirements.

A review of Natural Heritage Information Centre (NHIC) records indicates two bird species observations adjacent to the east and west of the property. The noted observations are of grassland bird species (eastern meadowlark and bobolink), which are identified as endangered by the Ministry of Natural Resources & Forestry (MNRF).

Under Section 2.1.8 of the PPS, development and site alteration shall not be permitted on adjacent lands to significant woodlands and fish habitat unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or their ecological function.

Significant woodlands are mapped in the County of Grey Official Plan on the adjacent property to the north of Grey Road 5. The mapped significant woodland feature is located in excess of 60 metres to the subject lands and separated by Grey Road 5. As such, we do not anticipate any negative impacts in this regard.

With regard to fish habitat, GSCA is of the opinion that a satisfactory stormwater management plan that addresses potential thermal impacts can be sufficient in demonstrating no negative impacts.

Given the above, GSCA recommends a scoped Environmental Impact Study (EIS). The study should consist of a vegetation inventory and a breeding bird inventory, both completed during the appropriate time of year. A Terms of Reference should be established prior to the commencement of any study work to the satisfaction of GSCA and the County of Grey.

Stormwater Management
Development of the property in the form of a plan of subdivision will alter the landscape resulting in an increase in impervious area and stormwater runoff. As such, a stormwater management plan should be prepared by a qualified professional engineer to assess the impacts of the development and to provide mitigation measures. The following criteria should be demonstrated in the plan:

1. Water quantity is controlled post-construction to pre-construction for all storm events up to and including the regional (Timmins) storm event.

2. Water quality must be controlled and provide an enhanced level of water quality as per the Ministry of the Environmental and Climate Change's Stormwater Management Planning and Design Manual.

3. As the Pottawatomi River watershed is a cold water system, thermal controls will be required to reduce any thermal impacts on flows into the stream system as a result of the development.

4. There are no negative drainage impacts to adjacent landowners.

Summary of Recommendations
Based on our preliminary review of the subject proposal and property, we recommend the following information should be submitted with the formal plan of subdivision application:

1. A stormwater management report prepared by a qualified professional engineer to the satisfaction of the GSCA, County of Grey, and Township of Georgian Bluffs.

2. A scoped EIS be completed by a qualified professional. The EIS should consist of a vegetation inventory and a breeding bird inventory.

If any questions should arise, please contact our office.

Regards,

Mac Plewes
Intermediate Planner

enclosure

GSCA: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses (Ontario Regulation 151/06)

ON Parcels (approx.)
Subject Property (approx.)
ON Regulation 151/06
Natural Hazard Area
GSC Streams

N

Scale = 1:5000

0 >25 m

Regulation Map
Lot 9, Concession 7
Roll no. 42-03-540-002-144-00
Township of Georgian Bluffs (Derby)
Our File: 12354

Tuesday, January 10, 2017

Grey Sauble Conservation

AWS Environmental Consulting Inc.

(Operating as Aquatic and Wildlife Services)

242090 Concession Rd. 3 Keppel,
R.R. # 1, Shallow Lake, Ontario, Canada, N0H 2K0

Office: 519-372-2303, Email: aws@gbtel.ca

Web site: www.awsenvironmental.ca

February 14, 2017 (By Email Only)

Grey Sauble Conservation
237897 Inglis Falls Road
R.R. # 4
Owen Sound, ON
N4K 5N6

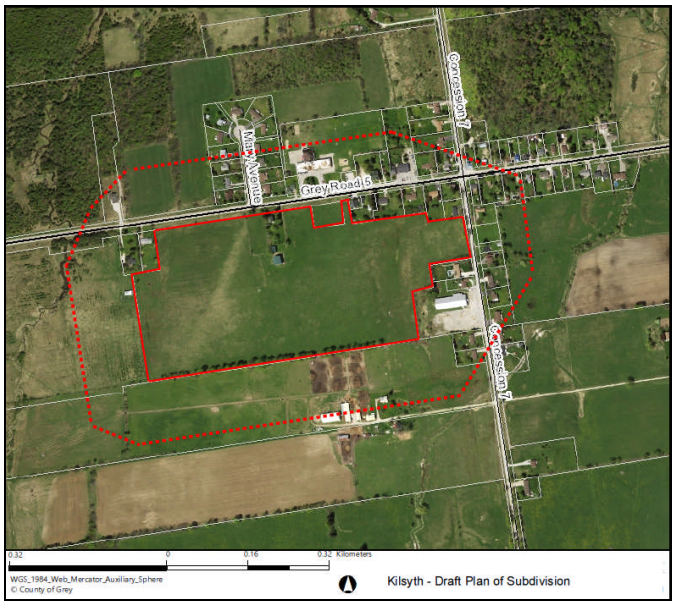
Att: Mac Plews, GSCA Intermediate Planner
File No. P12354

Natural Heritage Environmental Impact Study: Field Work 'Terms of Reference' (TOR)

For: Barry's Construction & Insulation Ltd.
Proposed Draft Plan of Subdivision-Kilsyth
Part Lot 9, Concession 7, Geographic Township of Derby
Township of Georgian Bluffs

Dear Mr. Plews:

In regards to your January 10, 2017 letter, I am providing a Natural Heritage Environmental Impact Study (EIS) - Terms of Reference, for agency review, consideration and approval prior to the 2017 EIS field work season commencement. The below mapping identifies the subject property and the EIS Field Study Lands (42 ac) outlined in red and its 120m adjacent lands referred to as the 'Site Lands', outlined in dashed red line.



A preliminary desk-top review of the Site Lands and a landscape review extending 5km's from the Study Lands for Species-At-Risk (as per MNRF-ESA requirements) identified the following significant features within the search coverage area (scoping exercise):

- Significant Woodlands present within the Site Lands
- Candidate Fish Habitat present within the Study Lands- tributaries to cold-water stream.
- Provincial historical data have recorded five significant species within 5km's to the Study Lands (some being regulated under the Endangered Species Act):
    - Bobolink: Candidate habitat-grasslands, within the Study Lands
    - Eastern Meadowlark: Candidate habitat-grasslands, within the Study Lands
    - Snapping Turtle: Candidate habitat- watercourse/drainage ditch within the Study Lands
    - Restricted 2 species (yet to be determined through MNRF): Potential habitat within the Site Lands.
- Based on air photo review, there is potential for other Species-At-Risk (SAR): Butternut within the Study Lands candidate habitat areas along fence line trees.
- Based on air photo review there is candidate habitat within the Study Lands for Significant Wildlife Habitat: Snapping Turtle, Milk Snake and vascular plants.

EIS field study timelines are outlined below to address the Natural Heritage Provincial Policy Statement, Grey County Official Plan, Grey Sauble Conservation Authority Natural Heritage review, and the Township of Georgian Bluffs environmental policies, in accordance to accepted provincial environmental methodology protocols and survey guidelines/standards.

- Minimum of 3 breeding bird survey site visits during the active breeding season for Open Country-Grassland habitat, following MNRF guidelines.
- Minimum of 1 survey site visit during the active snake hibernation emergence period and 1 site visit during the active snake gestation period.
- Minimum of 1 survey during the active turtle nesting period if suitable nesting habitat identified.
- Minimum Spring and summer season flora inventory.
- Summer season period for vegetation community mapping to Southern Ontario Ecological Land Classification system.
- Hydrology functions during both high flow period and base flow period, with Fish Habitat assessment.

EIS-Scoping

Through Official Plan mapping review, Provincial Features designation review and your letter of January 10, 2017, it has been concluded that there are no Significant Wetlands, ANSI's or Significant Valleylands within the Site Lands, thus no review or impact assessment is deemed required within the EIS reporting, for these features.

Through Official Plan mapping review, Provincial Features designation review and your letter of January 10, 2017, it has been concluded that there are Significant Woodlands and Fish Habitat within the Site Lands. Through air photo interpretation of the site features and your preliminary site visit review comments, there are no Woodland features or Wetland features within the Study Lands, limiting ecological functions within the Study Lands in relation to off-site habitat.

Additionally given the active agricultural use of the lands there is no suitable habitat for amphibian breeding and limited wildlife habitat functions within the Study Lands. However, sub-components of Significant Wildlife Habitat (SWH) i.e. rare flora, reptile hibernacula, waterfowl

nesting, seeps-springs, special concern or provincially rare status species, may be present given the surrounding historical records and/or habitat conditions within the Site Lands, as such SWH shall be included within the EIS review. Through this preliminary review, there is also candidate habitat for Endangered/Threatened species within the Study Lands.

With this Natural Heritage-scoping, the EIS shall review and provide an impact assessment in relation to the proposed draft development for: Endangered/Threatened Species, Fish Habitat, Significant Woodlands and Significant Wildlife Habitat.

EIS Field Inventory Timeline Schedule to Provincial Standards

(based on above preliminary natural heritage and air photo review of habitat features)

1) Field Period April 15th to May 15th
   (+/- 2 weeks depending on spring weather conditions)
   - Site investigations :
     - Preliminary site investigations
     - Hydrology high flow period with Fish Habitat assessment
     - Snake hibernation emergence activity, General Fauna

2) Field Period May 25th to July 7
   - Site investigations:
     - Three breeding bird nesting surveys in accordance to MNRF-Bobolink Survey
     - General Fauna, Hydrology, Reptile nesting activity
     - Spring season Flora inventory

3) Field Period July 15th to August 30th
   - Site investigations:
     - General Fauna survey
     - Snake gestation survey
     - Vegetation communities/Ecological Land Classification mapping
     - Summer season Flora inventory
     - Hydrology base flow period with Fish Habitat assessment

The above 'TOR' is for review purposes, with acceptance or additional impact assessment review aspects to be included by the GSCA as requested through this review. Approval of the 'TOR' is requested prior to EIS field work commencement.

Respectfully Submitted

_____

John Morton, President
AWS Environmental Consulting Inc.

cc Stuart Doyle, Barry's Construction and Insulation Ltd.
Township of Georgian Bluffs, Planning Department
County of Grey, Planning Department

APPENDIX 6

- MNRF publication documents on Habitat Categories for Bobolink, Eastern Meadowlark and Barn Swallow

General Habitat Description for the Bobolink (*Dolichonyx oryzivorus*)

A general habitat description is a technical document that provides greater clarity on the area of habitat protected for a species based on the general habitat definition found in the Endangered Species Act, 2007. General habitat protection does not include an area where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area to carry out their life processes. A general habitat description also indicates how the species' habitat has been categorized, as per the policy "Categorizing and Protecting Habitat Under the Endangered Species Act", and is based on the best scientific information available.

HABITAT CATEGORIZATION

1	Nest and the area within 10 m of the nest
2	The area between 10 m and 60 m of the nest or centre of approximated defended territory
3	The area of continuous suitable habitat between 60 m and 300 m of the nest or approximated centre of defended territory

Category 1

Bobolink nests and the area immediately around the nest (i.e., 10 m) are highly sensitive features supporting the species' reproduction life cycle and have the lowest tolerance to alteration. These are areas the species depends on for life processes including egg laying, incubation, feeding, resting and rearing of young. Nests are built on the ground beneath a cover of tall grasses and forbs and are used daily during the breeding season. Both males and females exhibit high breeding site fidelity (Gavin and Bollinger 1985, Wootton *et al.* 1986). The area immediately surrounding the nest (i.e., 10 m) is important to maintain the microclimate around the nest and provide cover from predators.

It is important to note that Bobolink nests are rarely identified due to their cryptic nature. It is inadvisable to search for Bobolink nests as this may inadvertently jeopardize the nesting site and/or offspring. However, if a nest is identified, it and the area within 10 m shall be categorized as Category 1.

Category 2

The area between 10 m and 60 m of the nest or centre of approximated defended territory is included in Category 2 and is considered to have a moderate level of tolerance to alteration. This area includes the species' defended territory and is depended upon for courtship, mating, rearing young, feeding, resting and bathing. Throughout the species' breeding range, defended territories have been reported to range in size from 0.33 – 2 ha (Gavin and Bollinger 1985, Wootton *et al*. 1986, Martin and Gavin 1995, Fletcher and Koford 2003, Bollinger and Gavin 2004, Moskwik and O'Connell 2006, COSEWIC 2010, Weidman and Litvaitis 2011) and are used daily throughout the breeding season. Both males and females show site fidelity to previously used breeding sites. Territory size is generally smaller in high quality habitat and larger in lower quality habitat (Wittenberger 1980, Martin and Gavin 1995, Nocera 2009). On average, territories are 1.2 ha (or approximately the area within 60 m of a nest) in size although they may vary depending on the local habitat conditions.

Category 3

The area of continuous suitable habitat between 60 m and 300 m of a nest or centre of approximated defended territory is included in Category 3 and will be considered to have a high level of tolerance to alteration. These are areas the species depends on for feeding, rearing of young, resting, dispersal and concealment from predators. It also helps maintain the function of both Category 1 and 2 habitat. Bobolinks depend on suitable grassland habitat which includes, but is not limited to, hayfields, pastures, old or abandoned fields, and remnant prairies, savannahs and alvar grasslands (McCracken *et al*. 2013).

Many studies have demonstrated that Bobolink is area sensitive, requiring grassy patches much larger than their territory size (Herkert 1991, 1994, O'Leary and Nyberg 2000, Johnson 2001, Johnson and Igl 2001, Renfrew and Ribic 2008). Minimum area requirements to support breeding habitat for the species have been reported to range from 5 ha (Nocera, pers. comm. 2012), to 10 and 30 ha (Bollinger and Gavin 1992, Herkert 1991) to 50 ha (Herkert 1994, Helzer and Jelinski 1999). These larger habitat sizes are required to reduce edge effects such as predation and brood parasitism (Johnson and Temple 1990, Renfrew and Ribic 2003, Bollinger and Gavin 2004) and maintain good quality interior grassland habitat for breeding. Encroachment or loss of habitat edges reduces the amount of suitable interior and causes loss of habitat suitability for Bobolink. Patches of 10 ha or smaller contain little, if any, interior habitat (defined as more than 100 m from an edge – Helzer and Jelinksi 1999), especially if patches are irregularly shaped. In order to maintain breeding habitat function, the entire continuous grassy patch up to 300 m from the nest or approximated centre of the defended territory is important habitat for Bobolink.

Activities in Bobolink habitat

Activities in general habitat can continue as long as the *function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed*.

Generally compatible:

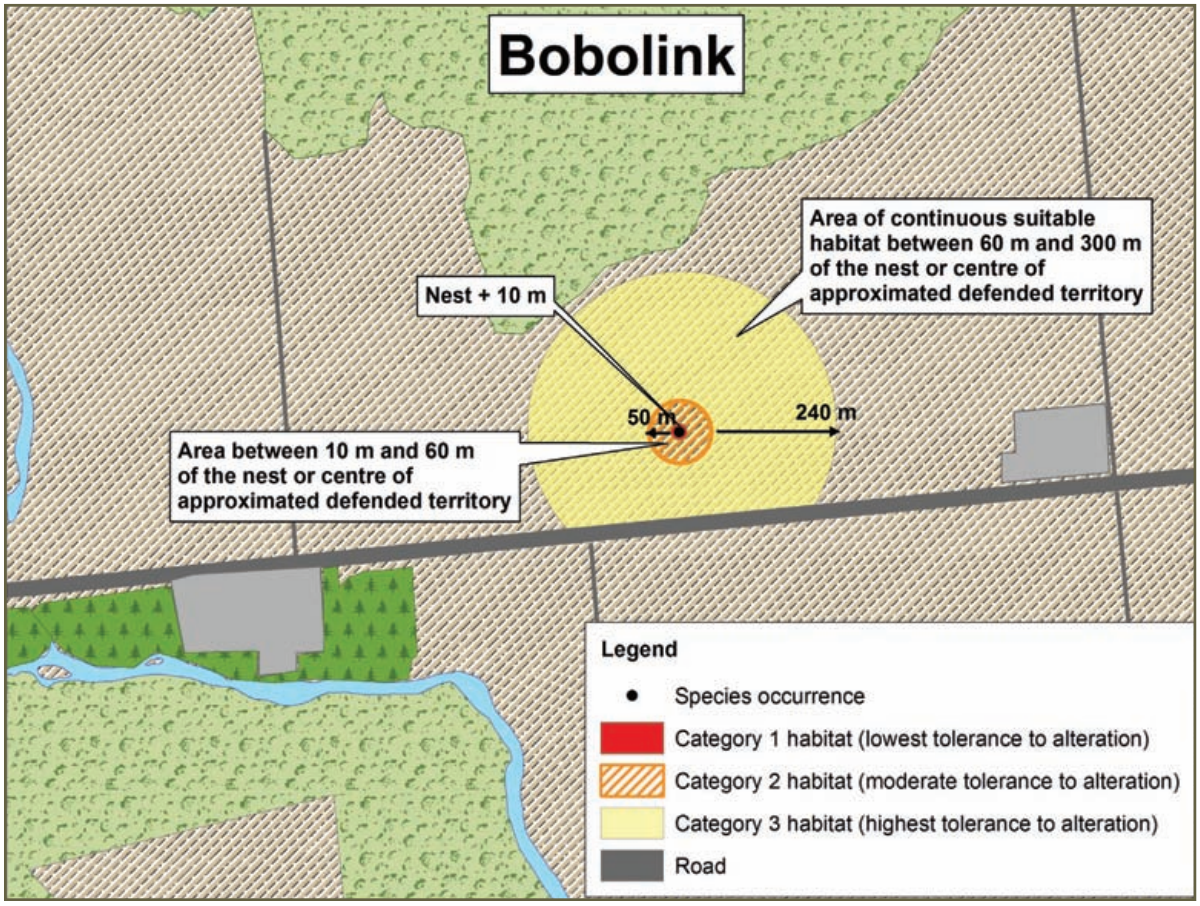
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and rotational cattle grazing.
- Hiking and non-motorized vehicle use on existing recreational trails.
- General yard work such as lawn care and gardening.

Generally not compatible:*

- Development activities that result in significant fragmentation or removal of large tracts of suitable grasslands.
- Indiscriminate application of pesticides within habitat.

* If you are considering an activity that may not be compatible with general habitat, please contact your local MNR office for more information.

Sample application of the general habitat protection for Bobolink



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McCracken, J.D., R.A. Reid, R.B. Renfrew, B. Frei, J.V. Jalava, A. Cowie, and A.R. Couturier. 2013. DRAFT Recovery Strategy for the Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. viii + 86 pp.

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Nocera, J.J., Forbes, G.J., and L Giraldeau. 2009. Aggregations from using inadvertent social information: a form of ideal habitat selection. Ecography 32: 143-152.

O'Leary, C.H. and D.W. Nyberg. 2000. Treelines between fields reduce the density of grassland birds. Natural Areas Journal 20(3): 243-249.

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Wootton, J.T., Bollinger, E.K., and C.J. Hibbard. 1986. Mating systems in homogeneous habitats: the effects of female uncertainty, knowledge cost, and random settlement. The American Naturalist 128(4): 499-512.

General Habitat Description for the Eastern Meadowlark (*Sturnella magna*)

A general habitat description is a technical document that provides greater clarity on the area of habitat protected for a species based on the general habitat definition found in the Endangered Species Act, 2007. General habitat protection does not include an area where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area to carry out their life processes. A general habitat description also indicates how the species' habitat has been categorized, as per the policy "Categorizing and Protecting Habitat Under the Endangered Species Act", and is based on the best scientific information available.

HABITAT CATEGORIZATION

1	Nest and the area within 10 m of the nest
2	The area between 10 m and 100 m of the nest or centre of approximated defended territory
3	The area of continuous suitable habitat between 100 m and 300 m of the nest or approximated centre of defended territory

Category 1

Eastern Meadowlark nests and the area immediately around the nest (i.e., 10 m) are highly sensitive features supporting the species' reproduction life cycle and have the lowest tolerance to alteration. These are areas the species depends on for egg laying, incubation, and rearing of young. Nests are used daily during the nesting season (~20-30 days). Juveniles continue to receive parental care for 2 weeks following fledging. During the first week after fledging, juveniles are not capable of extended flights and rely on areas surrounding the nest site to gain experience flying and to obtain food. At 1-3 days post-fledging, juvenile movements are restricted to hopping through grass and short flights or glides between 5 and 10 m (Kershner 2004). The area immediately surrounding the nest (i.e., 10 m) is important to maintain the microclimate around the nest and provide cover from predators.

It is important to note that Eastern Meadowlark nests are rarely identified due to their cryptic nature. It is inadvisable to search for nests as this may inadvertently jeopardize the nesting site and/or offspring. However, if a nest is identified, it and the area within 10 m shall be categorized as Category 1.

Category 2

The area between 10 m and 100 m of the nest or centre of approximated defended territory is included in Category 2 and is considered to have a moderate level of tolerance to alteration. This area includes the species' defended territory and is depended on daily for courtship, mating, rearing of young, feeding, resting, and bathing. Suitable habitat for this species includes but is not limited to pastures, hayfields, old or abandoned fields, and native prairies and savannahs (McCracken *et al*. 2013). Breeding males demonstrate strong territoriality during the breeding season (COSEWIC 2011). Eastern Meadowlark defended territories range from 1.2-6.1 ha and are on average 2.8-3.2 ha in size (or approximately the area within 100 m of a nest) (Lanyon 1995). Due to the polygynous nature of Eastern Meadowlarks, one territory may support multiple females and their nests. Both males and females show site fidelity to previously used breeding sites (Lanyon 1957, 1995).

Category 3

The area of continuous suitable habitat between 100 m and 300 m of a nest or centre of approximated defended territory is included in Category 3 and will be considered to have a high level of tolerance to alteration. Eastern Meadowlarks depend on this area for feeding, rearing of young, resting, dispersal and concealment from predators. This area also helps maintain the function of both Category 1 and 2 habitat. Suitable habitat for this species includes but is not limited to pastures, hayfields, old or abandoned fields, and native prairies and savannahs (McCracken *et al*. 2013).

Eastern Meadowlarks are grassland-dependent species but may not be strongly area-sensitive (McCracken *et al.* 2013). Studies in the U.S. have shown that breeding density was not influenced by patch size and the species was not affected by edge density, distance to another patch of grassland or forest, cover, patch size or core area of grassland (Bollinger 1995, Winter 1998, Horn *et al.* 2000, McCracken *et al*. 2013). Nevertheless, other studies have suggested that large tracts of grasslands are preferred over smaller fragments (Herkert 1991, Vickery *et al*. 1994) and that there may be regional differences in the degree of sensitivity to habitat fragmentation (O'Leary and Nyberg 2000, Hull 2003, Renfrew and Ribic 2008). Minimum patch area requirements to support breeding habitat for the species have been reported at 5 ha (Herkert 1994) however abundance and productivity are higher in larger patches and in patches surrounded by other open habitats (Herkert *et al*. 2003, Bollinger and Gavin 2004, Ribic and Sample 2005, Keyel *et al*. 2011, McCracken *et al*. 2013).

Activities in Eastern Meadowlark habitat

Activities in general habitat can continue as long as the *function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed*.

Generally compatible:

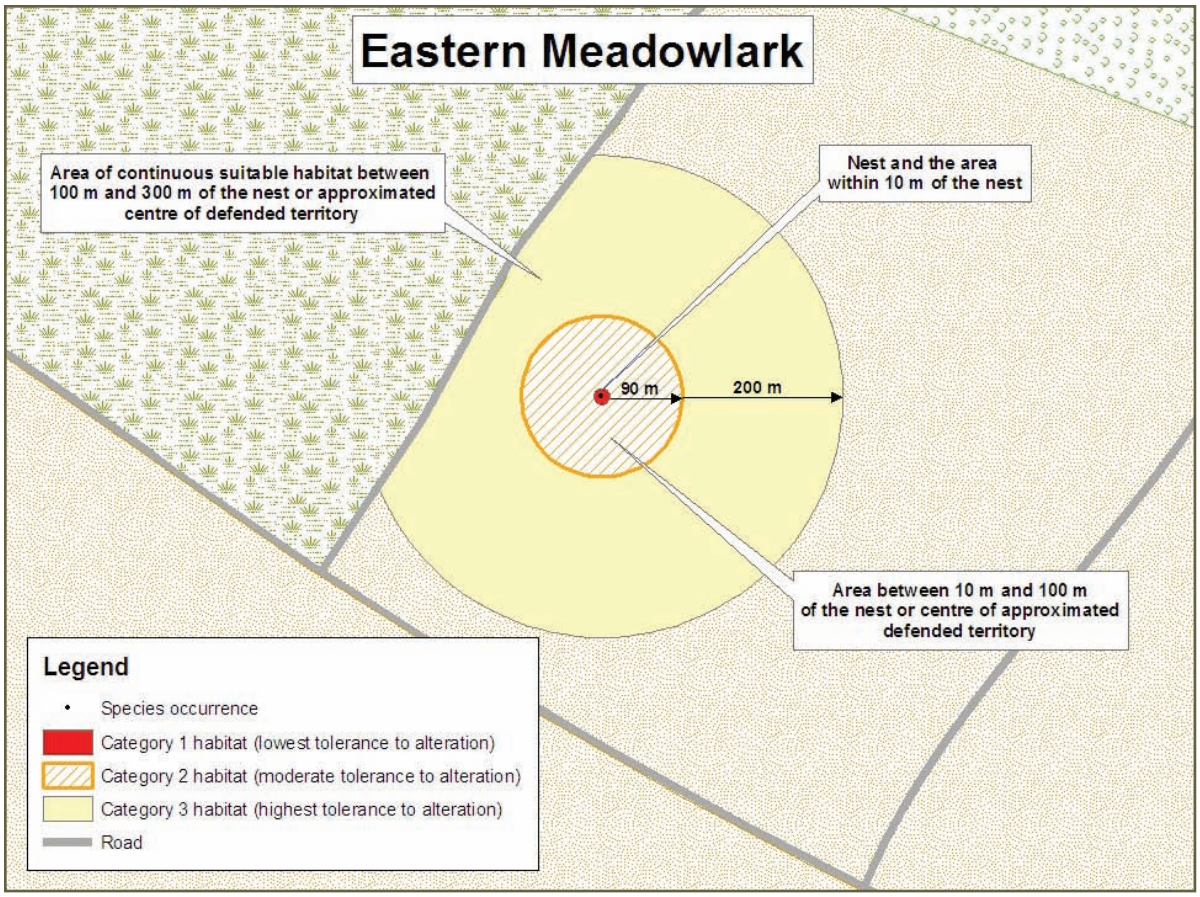
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and rotational cattle grazing.
- Hiking and non-motorized vehicle use on existing recreational trails.
- General yard work such as lawn care and gardening.

Generally not compatible:*

- Development activities that result in significant fragmentation or removal of large tracts of suitable grasslands.
- Indiscriminate application of pesticides within habitat.

* If you are considering an activity that may not be compatible with general habitat, please contact your local MNR office for more information.

Sample application of the general habitat protection for Eastern Meadowlark



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General Habitat Description for the Barn Swallow (*Hirundo rustica*)

A general habitat description is a technical document that provides greater clarity on the area of habitat protected for a species based on the general habitat definition found in the Endangered Species Act, 2007. General habitat protection does not include an area where the species formerly occurred or has the potential to be reintroduced unless existing members of the species depend on that area to carry out their life processes. A general habitat description also indicates how the species' habitat has been categorized, as per the policy "Categorizing and Protecting Habitat Under the Endangered Species Act", and is based on the best scientific information available.

HABITAT CATEGORIZATION

1	Nest
2	The area within 5 m of the nest
3	The area between 5 m and 200 m of the nest

Category 1

Barn Swallow nests are key features used in the reproduction life process and will be considered to have the lowest level of tolerance to alteration. These are areas the species depends on for egg laying, incubation, feeding, resting and rearing of young. The Barn Swallow will also accept artificial nest cups and nesting platforms (Brown and Brown 1999, Mercadante and Stanback 2011). Nests are often reused from year to year and can support multiple broods within the same year (Barclay 1988). Each individual, intact nest has the potential to support the reproductive success of a high number of individuals (Shield 1984, Barclay 1988, Safran 2004, 2006).

Category 2

The area within 5 m of the nest represents the area defended by male Barn Swallows during the breeding season and has a moderate tolerance to alteration. Barn Swallows depend on this area for roosting, feeding, rearing of young, and resting. Barn Swallows defend relatively small areas around their nests as compared to territories by other species. The size of the defended territory varies depending on the breeding stage. During the pair formation and egg laying stages, it is approximately 78 m^2 (i.e., the area within 5 m of the nest) (Møller 1990). That area declines to 4 m^2 during chick rearing. During the breeding season, females will roost on the nest while their partners roost and perch nearby (Thompson 1992). Once young fledge, they generally remain in or around the nest for about a week (Thompson 1992).

Category 3

Category 3 includes the area between 5 m and 200 m of the nest and has a high tolerance to alteration. Barn Swallows depend on this area for various life processes including rearing, feeding, and resting. Barn Swallows are insectivores, foraging in relatively low airspace on the wing (Waugh 1978). They feed at lower altitudes than most other North American swallows, usually no more than 10 m above ground and often lower than 1 m from ground (Brown and Brown 1999). They depend on nearby open areas that provide good sources of flying insects, such as waterbodies, pastures with livestock, and woodland edges (Brown and Brown 1999, Evans *et al.* 2007). The stage of the nesting cycle influences foraging distance. The period of greatest energy demand for a swallow is during nestling rearing (Bryant and Westerterp in Turner 1980). Turner (1980) found the average distance traveled by Barn Swallows while feeding the first brood to be 188 m and 138 m for the second. Weather plays an important role in the variation in food availability for swallows and therefore also influences foraging distance. Turner (1980) found the average distance traveled by Barn Swallows during the breeding season was 148 m when the temperature was above 20°C but increased to 203 m when it was 16°C or less.

Activities in Barn Swallow habitat

Activities in general habitat can continue as long as the *function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed*.

Generally compatible:

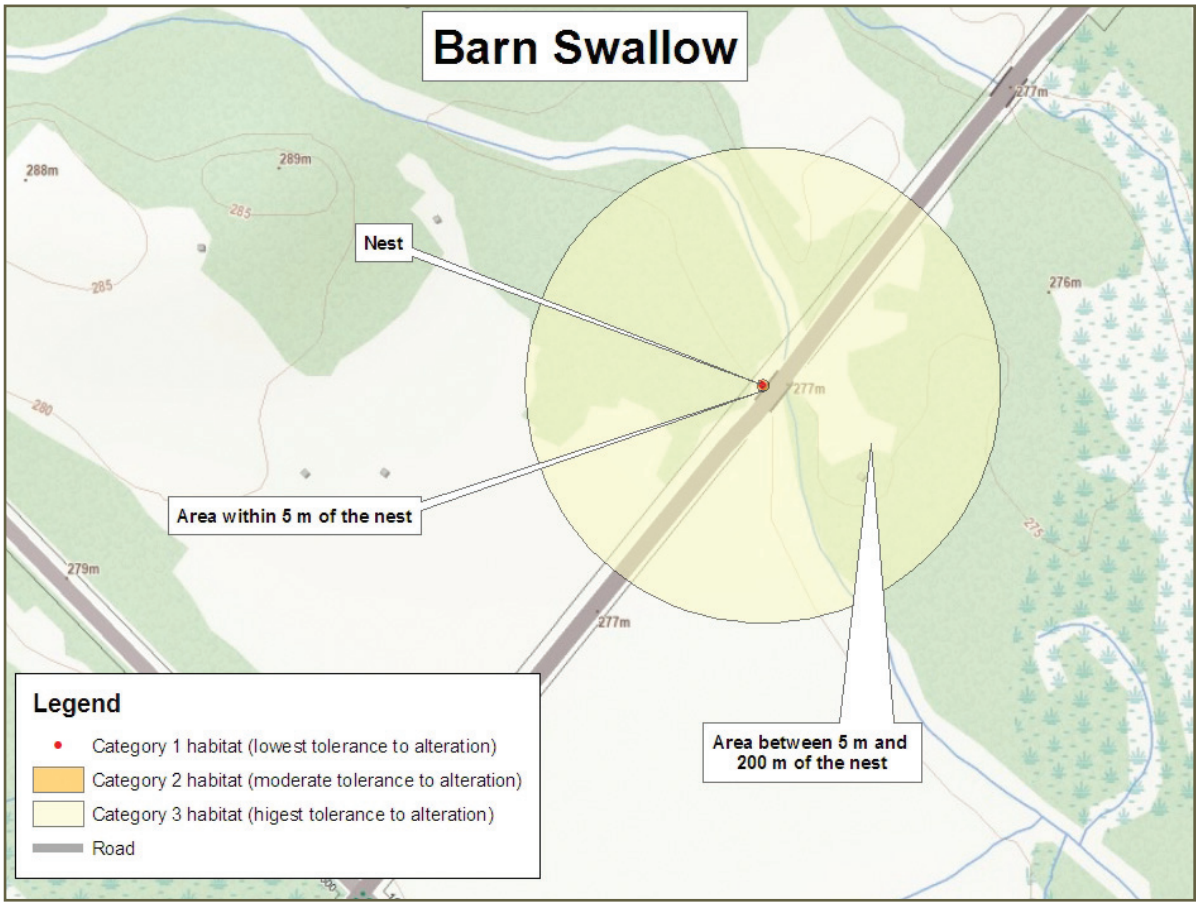
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and cattle grazing.
- General building use and building improvements that do not impair the function of the habitat.

Generally not compatible:*

- Significant modifications to structures such as buildings and bridges where nests are found, which would render the nesting habitat unsuitable.
- Development activities that result in significant fragmentation or removal of large tracts of suitable habitat.

* If you are considering an activity that may not be compatible with general habitat, please contact your local MNR office for more information.

Sample application of the general habitat protection for Barn Swallow



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APPENDIX 7

- Ontario Regulation 242/08 excerpt for Bobolinks-Eastern Meadowlark and Barn Swallow

Applicable excerpt sections for Bobolink/Eastern Meadowlark habitat and Barn Swallow habitat

Ontario Regulation 242/08 (most current-September 14, 2016)

Development — bobolink, eastern meadowlark

23.2 (1) This section applies to a person who carries out any of the following development activities in an area where it is likely to damage or destroy the habitat of bobolink or eastern meadowlark:

1. Development of land designated as an area of settlement in an official plan of a municipality approved under the Planning Act before January 1, 2013.
2. Development of land within a plan of subdivision, including a plan of subdivision registered under the Registry Act or the Land Titles Act, if,

i. the land is within a draft plan of subdivision that was approved under the Planning Act before November 1, 2014,

ii. the approval has not lapsed, and

iii. the development is not prohibited by any zoning by-law passed under subsection 34 (1) of the Planning Act or by any order made under section 47 of that Act.

For Barry's Construction & Insulation Ltd:

- The subject 'Kilsyth Draft Plan of Subdivision' is located within the Settlement Limits of 'Kilsyth' with said settlement lands approved on June 25, 2012 through OPA 80 by the Ontario Municipal Board.
- However, the subject property has not been within a Draft Plan of Subdivision or having continuous approval since November 1, 2014.
- Therefore, Section 23.2 is not applicable. Thus for Site Development to proceed the applicant must follow Section 23.6 of OR242/08 for Bobolink & Eastern Meadowlark, with requirements provided below.
- Additionally, with Barn swallow nesting and rearing habitat confirmed on-site, for Site Development to proceed the applicant must follow Section 23.5 of OR242/08 for Barn Swallow, with requirements provided below.

Barn swallow

23.5 (1) In this section,

"barn swallow active season" means the period of each year when barn swallow carry out life processes relating to breeding, nesting and rearing, and that begins around the beginning of May and ends around the end of August, the exact dates varying according to the area of the Province in which the barn swallow are located and the climate conditions of each year; ("saison active de l'hirondelle rustique")

"nest cup" means a container, receptacle or vessel that may be used as a nest by barn swallow. ("nid artificiel") O. Reg. 176/13, s. 14.

(2) Clause 9 (1) (a) and subsection 10 (1) of the Act do not apply to a person who harms or harasses a barn swallow, or who damages or destroys its habitat, while carrying out the maintenance, repair, modification, replacement or demolition of a building or structure that provides barn swallow habitat, if the person satisfies the conditions set out in subsections (3) to (12). O. Reg. 176/13, s. 14.

(3) The following are the conditions that a person who carries on an activity described in subsection (2) must satisfy for the purposes of subsection (2):

1. Before commencing the activity, the person must,

i. give the Minister notice of the activity by submitting a notice of activity form available on the Registry to the Minister through the Registry,

ii. ensure that the notice includes,

A. a description of the activity,

B. the proposed start and end dates for the activity,

C. the location of the building or structure that will be the object of the activity, and

D. notice of the fact that the activity will impact barn swallow habitat,

iii. prepare a barn swallow mitigation and restoration record in accordance with subsection (4).

2. The person must follow the requirements of section 23.3 with respect to the completion of the notice of activity form referred to in subparagraph 1 i, the keeping of records relating to the notice of activity form and the updating of the information on the Registry.

3. Before, during and after carrying out the activity described in subsection (2), the person must,

i. follow the steps set out in subsections (5) to (9) to minimize the adverse effects of the activity on barn swallow and its habitat, and

ii. update the barn swallow mitigation and restoration record to include the steps referred to in subparagraph i.

4. The person must carry out the monitoring and record keeping activities described in subsections (10) to (12).

5. Every year that the person is required to monitor barn swallow habitat under subsection (10), the person must notify the Ministry of barn swallow observed during the monitoring by completing, within three months following the completion of the monitoring, the Natural Heritage Information Centre Rare Species

Reporting Form available on the Ministry website detailing the species, number of barn swallows, the date and location of observation and any other information requested on that form. O. Reg. 176/13, s. 14.

(4) A barn swallow mitigation and restoration record referred to in subparagraph 1 iii of subsection (3) shall, when first prepared, include the following information:

1. The name and contact information of the person who is proposing to carry out an activity described in subsection (2).
2. A description of the activity the person proposes to carry out, including the proposed start and completion dates.
3. A description of the building or structure that is the object of the activity.
4. The number, location, and description of barn swallow nests located on the building or structure, and the amount of area suitable for nesting that the building or structure provides. O. Reg. 176/13, s. 14.

(5) The following are the measures a person who proposes to carry out an activity described in subsection (2) must follow to minimize the adverse effects of the activity on barn swallow and its habitat:

1. If any part of the activity is to be carried out during the barn swallow active season, the person must ensure that barn swallow are excluded from any part of the building or structure that is the object of the activity by doing the following before the barn swallow active season begins:

i. removing from the building or structure any existing barn swallow nests that may be impacted by the activity, and

ii. installing tarps and netting or taking other such measures to prevent barn swallow from accessing any part of the building or structure that is the object of the activity.

2. If, despite following the measures described in paragraph 1, barn swallow enter the building or structure to establish nests, any part of the activity that would harm or harass barn swallow while nesting must be suspended until the end of the barn swallow active season.
3. If, as a result of carrying out the activity or the requirements of paragraph 1, barn swallow nests on a building or structure will be removed, damaged or destroyed, the person must create habitat for barn swallow as follows:

i. for each nest that was removed, damaged or destroyed, the person must substitute one nest cup,

ii. the substitute nest cup must be installed,

A. in the building or structure that was the object of the activity and in any area of the building or structure that continues to provide conditions that are suitable for barn swallow nesting,

B. in any building or structure that exists within one kilometre of the building or structure that was the object of the activity if it provides conditions that are suitable for barn swallow nesting, or

C. in any building or structure that the person constructs within one kilometre of the building or structure that was the object of the activity, that meets the requirements of subsection (8),

iii. the substitute nest cup must be installed within the time period set out in subsection (6).

4. The person must create habitat for barn swallow in accordance with subsections (7), (8) and (9) and within the time period set out in subsection (6) if, as a result of carrying out the activity, a building or structure that provides barn swallow habitat,

i. will be destroyed, or

ii. will be altered so that it no longer provides suitable conditions for barn swallow nesting or provides a smaller area for barn swallow nesting.

5. The person must maintain a building or structure constructed or modified under paragraph 4 for a period of three years after the habitat is created. O. Reg. 176/13, s. 14.

(6) A person who proposes to carry out an activity described in subsection (2) must create habitat for barn swallow under paragraph 3 or 4 of subsection (5) within one of the following time frames:

1. If the activity will begin outside of the barn swallow active season, before the beginning of the next barn swallow active season.
2. If the activity will begin during the barn swallow active season, before the beginning of that barn swallow active season. O. Reg. 176/13, s. 14.

(7) A person who is required to create habitat for barn swallow under paragraph 4 of subsection (5) must do so,

(a) in one of the following ways:

(i) by constructing one or more structures that meet the requirements of subsection (8), or

(ii) by modifying one or more existing buildings or structures that do not provide habitat for barn swallow so that they meet the requirements of subsection (8); and

(b) in a location that is within one kilometre of the building or structure that will be the object of the activity described in subsection (2) and within 200 metres of an area that provides suitable foraging conditions for barn swallow and that is accessible to barn swallow. O. Reg. 176/13, s. 14; O. Reg. 323/13, s. 3.

(8) A building or structure constructed or modified under clause (7) (a) must provide suitable conditions for barn swallow nesting and must,

(a) provide horizontal ledges or rough vertical surfaces with a sheltered overhang;

(b) provide surface areas suitable for nest attachment at a height that minimizes disturbances to barn swallow and in a location that minimizes predation;

(c) allow barn swallow to freely enter and exit nests;

(d) provide suitable area to accommodate appropriate spacing between nests; and

(e) be structurally sound and capable of providing habitat for barn swallow on a long term basis. O. Reg. 176/13, s. 14.

(9) The amount of habitat provided by a building or structure constructed or modified under clause (7) (a) must be greater than the amount of habitat that was lost in the building or structure that was the object of the activity described in subsection (2). O. Reg. 176/13, s. 14.

(10) For a period of three years after a person has created habitat for barn swallow under paragraph 3 or 4 of subsection (5), the person shall monitor the use of the habitat by barn swallow during the barn swallow active season of each year and shall record information collected during monitoring, including the following information:

1. The number, description and location of new nests created by barn swallow.
2. An estimate of the number of barn swallow using the building or structure. O. Reg. 176/13, s. 14.

(11) A person who carries out an activity described in subsection (2) shall retain the barn swallow mitigation and restoration record created under subsection (4) for a period of two years after the monitoring required under subsection (10) is completed and shall update the record from time to time to include the following information:

1. A description of the steps followed by the person in accordance with subsection (5) to minimize the adverse effects of the activity on barn swallow and its habitat, including details of,

i. nest cups installed on buildings or structures in accordance with paragraph 3 of subsection (5), and

ii. buildings or structures constructed or modified in accordance with paragraph 4 of subsection (5), the amount of nesting area created in the buildings or structures and their location.

2. The information recorded during monitoring activities described in subsection (10).

3. Any change to the information included in the record under subsection (4). O. Reg. 176/13, s. 14.

(12) A person who carries out an activity described in subsection (2) shall provide a copy of the barn swallow mitigation and restoration record to the Ministry within 14 days of receiving a request for it. O. Reg. 176/13, s. 14.

Section 23.6: Bobolink & Eastern Meadowlark

23.6 (1) This section applies with respect to any activity to develop land, such as the construction of buildings, structures, roads or other infrastructure and the excavation and landscaping of land, in an area that is the habitat of bobolink or eastern meadowlark, but does not apply to an activity to which section 23.2 applies. O. Reg. 176/13, s. 14.

(2) Clause 9 (1) (a) and subsection 10 (1) of the Act do not apply to a person who, while carrying out an activity described in subsection (1), kills, harms, harasses, captures or takes a bobolink or an eastern meadowlark, or damages or destroys its habitat, if,

(a) the size of the area of habitat of bobolink or eastern meadowlark that is damaged or destroyed by the activity is equal to or less than 30 hectares; and.

(b) the person satisfies all of the conditions set out in subsection (4). O. Reg. 176/13, s. 14.

(3) Subclauses 9 (1) (b) (i) and (ii) of the Act do not apply to the possession or transport of a bobolink or an eastern meadowlark if, pursuant to subsection (2), clause 9 (1) (a) of the Act did not apply with respect to the bobolink or eastern meadowlark. O. Reg. 176/13, s. 14.

(4) The following are the conditions that a person who carries out an activity described in subsection (1) must satisfy for the purposes of clause (2) (b):

1. Before commencing the activity, the person must,

i. give the Minister notice of the activity by submitting a notice of activity form available on the Registry to the Minister through the Registry

ii. prepare a habitat management plan in accordance with subsections (5) and (6), and

iii. give the Minister a written undertaking to continue, after the end of the five-year period referred to in paragraph 7, to manage any habitat created or enhanced in accordance with paragraph 6 by carrying out the measures described in subsection (9) until the earlier of,

A. the end of the 20-year period that follows the creation or enhancement of the habitat under paragraph 6, or

B. if the area of habitat that was destroyed by the activity is eventually returned to a suitable state to be used by bobolink or eastern meadowlark, the day on which the area reaches that state.

2. The person must ensure that the notice of activity form submitted under subparagraph 1 i includes

i. a description of the activity,

ii. the proposed start and end dates of the activity and the area in which it will be carried out, and

iii. an indication as to whether the activity will be carried out on land that is habitat for bobolink, for eastern meadowlark, or for both, as the case may be.

3. The person must follow the requirements of section 23.3 with respect to the completion of the notice of activity form, the keeping of records relating to the notice of activity form and the updating of the information on the Registry.

4. Once a habitat management plan is prepared under subparagraph 1 ii, the person must,

i. comply with any provisions in the habitat management plan with respect to the manner in which,

A. the activity should be carried out, and

B. the habitat for bobolink or eastern meadowlark referred to in paragraph 6 should be created or enhanced, as the case may be, and managed,

ii. retain a copy of the habitat management plan for at least five years after the activity is complete, and

iii. provide a copy of the habitat management plan to the Ministry within 14 days of receiving a request for it.

5. While carrying out the activity, the person must,

i. not perform any part of the activity that is likely to damage or destroy the habitat of bobolink or eastern meadowlark or kill, harm or harass bobolink or eastern meadowlark, between May 1 and July 31 of any year, and

ii. take reasonable steps to minimize adverse effects of the activity on bobolink and eastern meadowlark, including, if applicable, routing access roads along existing fencerows or hedgerows if possible.

6. The person must either create new habitat for bobolink or eastern meadowlark or enhance an already existing habitat for bobolink or eastern meadowlark as follows:

i. the area of the new or enhanced habitat must,

A. be located outside of the area where the activity is carried out but within the same ecoregion as that area or in an ecoregion that is adjacent to that area, and

B. meet the requirements of subsection (7) with respect to its size and dimensions

ii. within 12 months after the day the activity described in subsection (1) is commenced, the work of creating or enhancing the habitat must be completed in a manner that ensures that the habitat meets the requirements of subsection (8) with respect to the types of vegetation it provides.

7. For five years after habitat is created or enhanced in accordance with paragraph 6, the person must do the following annually:

i. manage the habitat by carrying out the measures described in subsection (9), and

ii. monitor the area in which the habitat was created or enhanced by conducting at least three surveys every year at a time when bobolink or eastern meadowlark are likely to be present, to determine if the species are in fact present and, if so, to assess fledgling success

8. The person must prepare and maintain a record in respect of the activity and the habitat created or enhanced under paragraph 6 and ensure that the record meets the requirements of subsection (10) and the person must,

i. retain the record until December 31 of the final year of the five-year period during which the person must manage and monitor the new or enhanced habitat, and

ii. provide a copy of the record to the Ministry within 14 days of receiving a request for it. O. Reg. 176/13, s. 14.

(5) A habitat management plan shall be prepared by one or more persons with expertise in relation to bobolink or eastern meadowlark, or both, as the case may be, using the best available information on steps that may help minimize or avoid adverse effects on the species to which the plan relates, which includes consideration of information obtained from the Ministry, aboriginal traditional knowledge and community knowledge if it is reasonably available. O. Reg. 179/14, s. 3.

(6) A habitat management plan shall include the following information:

1. The name and contact information of the person on whose behalf the activity described in subsection (1) is being carried out.

2. With respect to the area of bobolink or eastern meadowlark habitat that is likely to be damaged or destroyed by the activity described in subsection (1),

i. a description of the area's location, including a detailed map,

ii. the ecoregion in which the area is located, and

iii. the size of the area in hectares.

3. With respect to the activity described in subsection (1) that the person proposes to carry out,

i. a description of the activity, and

ii. the proposed start date of the activity,

4. With respect to the area intended as new or enhanced habitat under paragraph 6 of subsection (4),

i. a description of the area's location, including a detailed map,

ii. the ecoregion in which the area is located,

iii. the size of the area in hectares,

iv. the composition of the soils covering the area, and

v. the percentage of the area covered by grass species at the time the habitat management plan is prepared.

5. A description of how the area intended as new or enhanced habitat under paragraph 6 of subsection (4) will be created or enhanced and managed for eastern meadowlark or bobolink, including,

i. a description of the areas to be seeded, and of the composition of the seed mixture such as the species and their relative percentage within the seed mixture,

ii. phasing and times of the year for site preparation, planting, seeding, tending and maintenance, and

iii. a description of the practices that will be undertaken for site preparation, planting, seeding, tending and maintenance, including the requirements set out in subsections (8) and (9). O. Reg. 176/13, s. 14.

(7) An area that will be converted into new or enhanced habitat for bobolink or eastern meadowlark must meet the following requirements as to its size and dimensions:

1. The area must be larger than the area of the habitat for bobolink or eastern meadowlark that is damaged or destroyed by the activity.

2. The area may be made up of separate parcels of land, but the minimum size of any individual parcel must be no less than four hectares.

3. No portion of the area shall be less than 200 metres in width. O. Reg. 176/13, s. 14.

(8) Habitat for bobolink or eastern meadowlark that has been created or enhanced under paragraph 6 of subsection (4) must meet the following requirements with respect to the types of vegetation it provides:

1. A minimum of 60 to 80 per cent of the habitat must be covered with at least three different grass species and any remaining part of the habitat that is not covered with grass species must be covered with forbs or legumes.

2. Among the grass species referred to in paragraph 1, at least one must grow greater than 50 centimetres high under normal growing conditions. O. Reg. 176/13, s. 14.

(9) The following are the requirements to manage habitat for bobolink or eastern meadowlark that has been created or enhanced under paragraph 6 of subsection (4):

1. The area shall not be harvested, mowed or cut between April 1 and July 31 of any year.

2. If the habitat is used for pasture, grazing farm animals must be excluded from at least 50 per cent of the habitat from April 1 until July 31 of each year.

3. In each of the five years following the creation or enhancement of the habitat, take such actions as are necessary to maintain the grass species, forbs and legumes in the area in the proportions described in paragraph 1 of subsection (8) and remove woody vegetation and invasive species. O. Reg. 176/13, s. 14.

(10) The record required under paragraph 8 of subsection (4) shall,

(a) document the steps taken by the person under subparagraph 5 ii of subsection (4) to minimize adverse effects of the activity described in subsection (1) on bobolink or eastern meadowlark;

(b) document the steps taken by the person to create or enhance habitat under paragraph 6 of subsection (4) and to manage that habitat under subparagraph 7 i of subsection (4);

(c) include photographs of the area created or enhanced as habitat under paragraph 6 of subsection (4) that show the area prior to and after the habitat is created or enhanced;

(d) include data and information collected during monitoring under subparagraph 7 ii of subsection (4); and

(e) include details of any encounters with the species. O. Reg. 176/13, s. 14.

APPENDIX 8

- SAR: Bobolink & Eastern Meadowlark habitat area calculations for ESA

Bobolink & Eastern Meadowlark Habitat Area Calculation

Legend

- Parcels
- Large Scale Roads
  - Provincial Highway
  - County Road
  - Township Road
  - Seasonal Road

Notes

0.16 0 0.08 0.16 Kilometers

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed: February 22, 2018

THIS MAP IS NOT TO BE USED FOR NAVIGATION

County of Bruce

Barry's Construction & Insulation Ltd. Land Holding: Candidate SAR Bird Habitat Compensative Lands Under ESA for Kilsyth Draft Plan of Subdivision

Legend

- Property Parcel
  - Assessment Parcel
  - Condominium Unit or Common Ele
  - First Nation Parcel
- Wetland
- Body of Water
- Stream
- Built-up area
- Adjacent County

Notes

0.3 0 0.13 0.3 Kilometers

NAD_1983_UTM_Zone_17N

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Candidate Mitigation SAR Habitat for Kilsyth Subdivision

Legend

- Parcels
- Lots & Concessions
- Large Scale Roads
  - Provincial Highway
  - County Road
  - Township Road
  - Seasonal Road

Notes

Barry's Construction & Insulation

0.32 0 0.16 0.32 Kilometers

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed: March 6, 2018

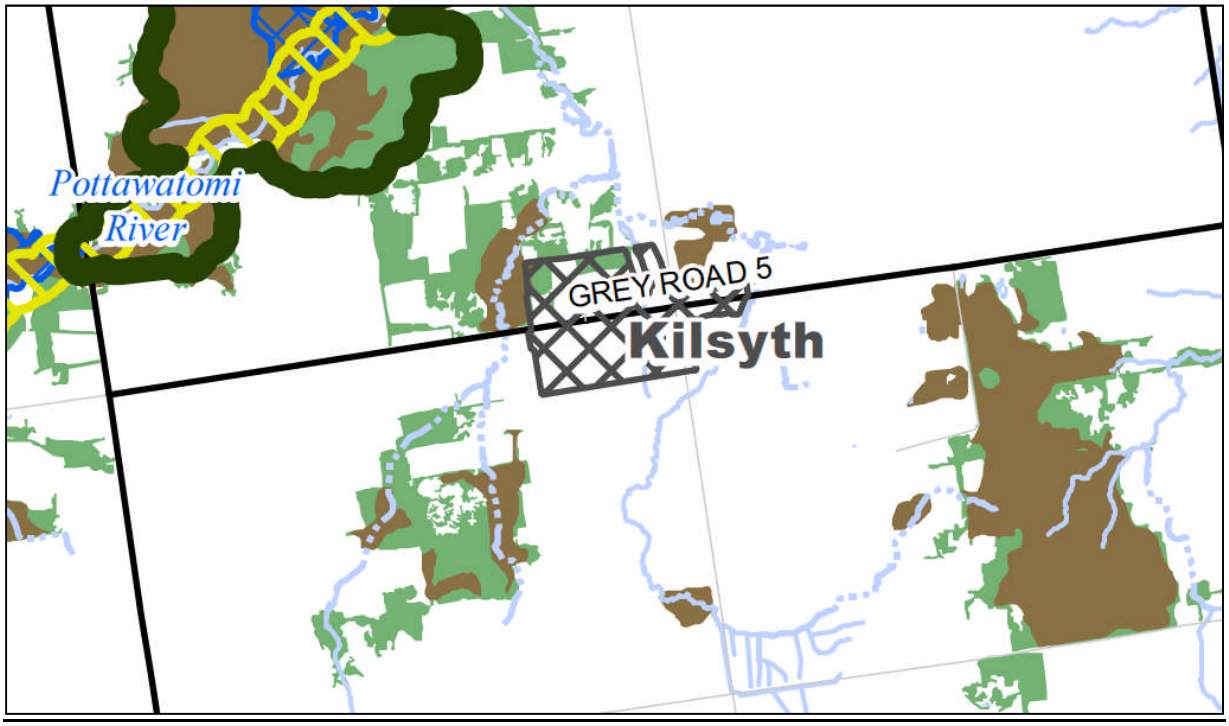
THIS MAP IS NOT TO BE USED FOR NAVIGATION

APPENDIX 9

- Grey County Natural Heritage Study & Draft New County Official Plan excerpts

Barry's Construction & Insulation Ltd. – Kilsyth Draft Plan of Subdivision

- **Grey County Natural Heritage System Study, Map 7**



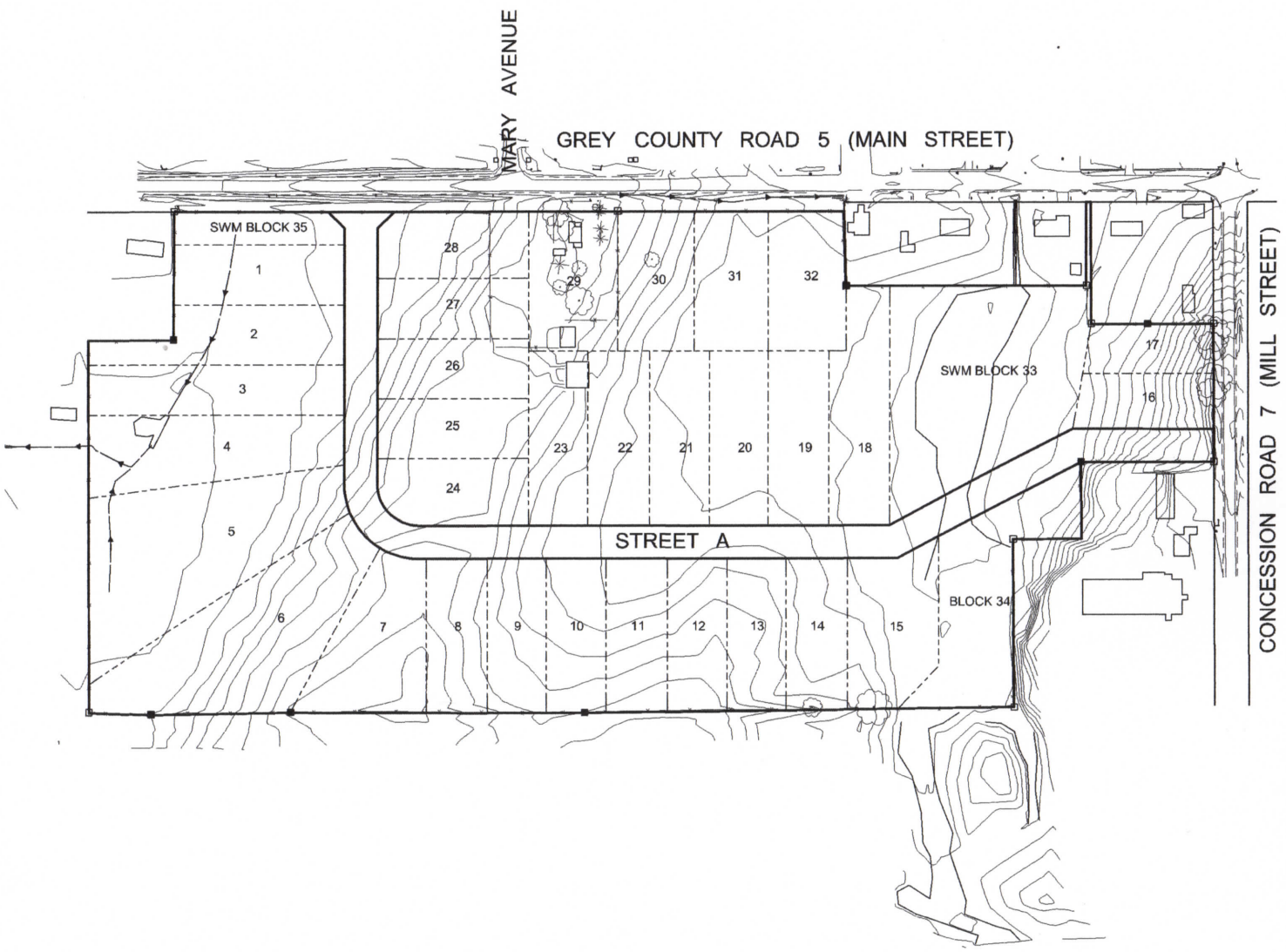
LEGEND

- Permanent Watercourse (CA)
- Intermittent Watercourse (CA)
- Waterbody (CA)
- Wetlands >= 2ha
- Provincially Significant Wetland (PSW)(MNRF)
- Significant Woodland (County)
- Significant Valleylands
- ANSI, Life Science
- Deer Yard (Stratum 1) and Deer Wintering Area (Stratum 2)
- Core Area
- Linkage

N

APPENDIX 10

- Concept Subdivision Design by GM BluePlan



216070
Kilsyth Subdivision
Town of Georgian Bluffs

LEGEND

SCALE = 1:2,500
NOVEMBER 2017

CONCEPTUAL LOT LAYOUT

PART LOT 9, CONCESSION 7 &
PART LOTS 71, 75, 78, 85-87,
UNNAMED STREET & LOTS 72-74,
PLAN 117 GEOGRAPHIC
TOWNSHIP OF DERBY

Figure No. L-1

BluePlan ENGINEERING

APPENDIX 11

- Site Photographs, 2017

Photo No. 1: Development lands on left, SAR Grassland Constraint Habitat on right, June

Photo No. 2: On-site Barn showing some of the active Barn Swallow Nests

Photo No. 3: Groundwater upwelling site along west side of property, June

Photo No. 4: Groundwater upwelling site along west side of property, April 2017

Photo No. 5: SAR Grassland Habitat, west property side, June

Photo No. 6: SAR Grassland Habitat, east property side, June

APPENDIX 12

- AWS Qualifications & EIS Experience

AWS

AWS Environmental Consulting Inc.
(Operating as Aquatic and Wildlife Services)
242090 Concession Rd. 3 Keppel,
R.R. # 1, Shallow Lake, Ontario, Canada, N0H 2K0

Office: 519-372-2303, Email: aws@gbtel.ca
Web site: www.awsenvironmental.ca

C.V. Summary: John D. Morton

Education

- 1985: Graduate Sault College, Forestry Technician
- 1986: Honors Graduate Sault College, Fish & Wildlife Technologist
- 15 years training and experience with Ontario Ministry of Natural Resources as a contract & full time employee for Natural Heritage Programs and Biology/Ecology

Work Experience Summary

- 1997 to Present: Sole Proprietorship of **Aquatic and Wildlife Services**, specializing in Natural Heritage
  Studies and Development Impact Assessments:
  - Over 250 Natural Heritage and Natural Environment Impact Study Reports for Land Use development proposals throughout Southwestern and Central Ontario in accordance to Legislation and Regulation for Federal and Provincial Agencies, Government and Niagara Escarpment Plan Policies and Conservation Authority Regulatory Lands.
    - Impact assessment technical reports ranging from: Single Residential Lot creations to Plan of Subdivisions for 100+ Lots, and Aggregate applications ranging from 5ha Wayside Gravel Pits to120 ha Quarry Operations for both above and below groundwater table.
  - Design and Monitoring technical reports for Marina Development, , Water Crossings, Recreational Pond designs, Fish & Wildlife Habitat Restoration Plans and Managed Forest Plans.
  - Species At Risk Surveys for flora and fauna with study areas encompassing 20ha to 7000ha
  - Ontario Municipal Board expert witness testimony on Natural Heritage Features, Ecology, Development Impacts and Mitigation Techniques.

- 1986 to 1997 : Resource Technician with the Ontario Ministry of Natural Resources, responsibilities included:
  - Backfill positions for Owen Sound Area Office District Biologist (Fisheries and Wildlife), and District Fish & Wildlife Management Officer.
  - Review and commenting on Provincial interests through Planning Review for development proposals.
  - Deputy Conservation Officer with completion of 5-week Enforcement Training Program, Provincial Offenses charges, court evidence presentation and convictions.
  - Fish & Wildlife Population and Habitat surveys and Rehabilitation Designs.

- Midhurst District Administrator and Program Coordinator of Wetlands and CFWIP Programs with annual budgeting and auditing roles.
- Fisheries Research Technician and Fish Culture Technician, Chatsworth Fish Culture Station.

- 1982 to 1986 : Contract Resource Technician With Ontario Ministry of Natural Resources, Grey-Sauble and Saugeen Conservation Authorities, responsibilities included:

  - Wetland Inventory Technician, Fish and Wildlife Population and Habitat Surveys.

Project Related Experience Summary

- Fauna population and habitat surveys:

  - Salmonid biomass surveys through seining and Electrofishing.
  - Stream/Watershed surveys for habitat quality/conditions, fish passage/barriers, water quality assessment including Benthic Macro Invertebrate sampling.
  - Genetic research survey work on Chinook Salmon, Saugeen Muskellunge, Backcross Lake Trout.
  - Inland Lake surveys for water quality, thermal regimes, fisheries qualitative assessments through seining, trap netting, creel survey.
  - Stream/River/Lake Fisheries habitat enhancement and rehabilitation Plans.
  - Wintering Deer Yard mapping, quality assessment, carrying capacity calculations, herd health monitoring and natural reproduction rates.
  - Genetic research work on Bruce Peninsula Eastern Massassagua Rattlesnake and Black Bears including radio telemetry.
  - Breeding Bird surveys including waterfowl nesting surveys and natural recruitment success, Bald Eagle monitoring and banding, mapping of Owen Sound area significant production/staging areas.
  - Amphibian qualitative assessment within sensitive environments and monitoring population trends for wetland habitat conditions.
  - Species At Risk Surveys with habitat mapping and Ecological Land Classification community mapping for Copeland Forest, Shallow Lake Wetland, Meaford National Defense Training Centre, Grey County Pretty River Forest Tract and Oliphant Fens

- Flora species and habitat surveys:

  - Provincially Certified Wetland evaluator to Book 2 and 3 standards, with over 150 wetland evaluations and desktop upgrades completed. Wetland Evaluation instructor to former book 2 standards with successful training of 30+ candidates.
  - Southern Ontario Ecological Land Classification- Vegetation Community Mapping for sensitive and/or rare habitat types including fens, bogs, natural beaches, and alvars plus common woodland community types.
  - Botanical qualitative inventory works including identification, mapping of species of conservation concern with status levels and habitat types/condition assessments.
  - Tree marking for sustainable harvesting and rotational management of fuel wood and/or saw logs.
  - Native tree and shrub nursery operation with annual seedling production and retail sales of deciduous and conifer seedlings and saplings.

Certification & Training Courses:

- Provincially Certified Wetland Evaluator to Book 2 and Book 3 Standards
- Provincial Class 1 Electrofishing Certification
- Provincial workshop training for Natural Heritage Environmental Impact Studies, Natural Hazard Studies and Non-Renewable (Aggregates) Impact Studies
- Level '1' OMNR Law Enforcement training
- Advanced Fish Habitat training and Habitat Impact Assessment
- Fluvial Geomorphology Workshop
- Stream Bioengineering Restoration training
- Cyprinidae Identification Workshop
- Wetland Restoration Techniques Training
- Provincial Managed Forest Tax Incentive Plan Approver
- Species-At-Risk Ontario Mussel Identification
- Bruce Peninsula Eastern Massassagua Rattlesnake Habitat Identification Training through Radio Telemetry work with Parks Canada
- Ecological Land Classification System for Southern Ontario
- Provincial Tree Making Course
- WHMIS
- Ontario Courts Evidence Collection and Presentation Training
- Department of Fisheries and Oceans South Georgian Bay Fish Habitat Issues Workshop
- Provincial Butternut Health Assessor
- Biotechnical Slope Stabilization Workshop.

Recipient of Provincial -OMNR Award for Fish Habitat Restoration Works & Stewardship

C.V. SUMMARY: Judith Jones

Education

B.S. Botany, University of Michigan, Ann Arbor 1980
M.S. Cell Biology, University of Illinois, Chicago 1983
Ontario Provincial Wetland Evaluator--certified 1999
Canadian Environmental Assessment Agency—screening training, 2007
Certificate of Proficiency in Spanish, Ryerson University, 2012

Areas of Expertise

Plant identification and classification
Vegetation identification and mapping (Ecological Land Classification; VSP; other protocols)
Identification and mapping of Species at Risk and their habitats
Life science inventories
Field mapping of other natural features

Judith Jones has been a consulting biologist since 1994. She has worked for AWS since 2005.

Highlights of Recent Projects

SURVEYS FOR ENVIRONMENTAL IMPACT STUDIES (Subdivisions, Aggregates, etc.)

Aquatic and Wildlife Services since 2005
Robin Craig Consulting since 2013
M.K. Ince and Associates (2006)
CEAA screening, Beausoleil First Nation (2007-8)

LIFE SCIENCE INVENTORIES

- 58 acres on Manitoulin Island for a species at risk farm plan.
- Ecological survey for an ecogift transfer.
- Copeland Forest
- Oliphant Shoreline
- Degrassi Point Prairie Remnant
- Carden Alvar ANSI
- 4 provincial parks on Manitoulin Island
- 4 conservation reserves on the Georgian Bay Coast
- Alvars of the Manitoulin District
- Manitoulin Island Escarpment ecosystem
- Field work: NCC's Ecological Survey of the Georgian Bay Coast.

RESEARCH

- Life history of Hill's Thistle (threatened)
- Demographics of Pitcher's Thistle (thr.)
- Niagara Escarpment: 50 years of forest change, VSP and point-quarter sampling.
- Sustainable harvest levels for Canada Yew (*Taxus canadensis*)
- Fire history of Oak Savannah vegetation
- Fire history of Manitoulin alvars

SPECIES AT RISK SURVEYS

- SAR surveys & mapping: Wikwemikong First Nation, Serpent River First Nation, Beausoleil First Nation, United Chiefs and Councils of M'nidoo M'nissing.
- Trent-Severn Waterway (Parks Canada)
- Fort St. Joseph National Historic Site
- Sault Canal National Historic Site
- Survey and mapping of Pitcher's Thistle and dune grasslands on Lake Huron

RECOVERY OF SPECIES AT RISK

- Author of more than 25 recovery strategies, action plans, management plans, and COSEWIC reports for endangered, threatened, and special concern species.
- Monitoring design and implementation for several species at risk and for prairie and alvar habitats.
- Coordinator of SAR monitoring by volunteers on Manitoulin Island

OTHER

- Gathering traditional ecological knowledge (TEK): Wikwemikong, Sagamok Anishnaabek, and elsewhere.
- Workshops about SAR for schools, Christian Island, Manitoulin Island
- Spring flora courses for non-biologists
- Layout and construction of trails (Misery Bay Provincial Park; other locations)
- Nature and environment columnist for the Manitoulin Expositor (1992-2004)

Natural Heritage Environmental Impact Studies and Experience 1997-2017

Residential Subdivisions & Commercial Development

Grey County (16)

- Andpet 16th Ave Comm Deve.-Owen Sound
- Loucks Subdivision- Chatsworth
- Langen Subdivision-Shallow Lake
- Boulter Subdivision- Keppel
- Hilton Head Subdivision- Meaford
- Oak Meadows Subdivision-Meaford
- Mannerow Estates- Owen Sound
- Georgian Shores Subdivision-Sarawak
- Sutacriti Park Phase III- Sarawak
- Debrincat Subdivision- Holland
- Ferraro Subdivision- McCullough Lake
- Andpet Bothwells Corner Comm.- Owen Sound
- HSC Alvanley Comm. Cement Plant-Keppel
- MacKinnon-Smart Subdivision-Francis Lake
- Saugeen Cedar Heights-Hanover
- Sunvale Homes-Durham

Bruce County (23)

- Lakeside Woods Subdivision-Saugeen
- Weatherhead Development- Eastnor
- Maple Ridge Development-Amabel
- Good Acres Development-Eastnor
- Brown Subdivision- Kincardine
- Sundance Estates- Bruce
- Walker Estates Phase II-Amabel
- Mystic Cove Subdivision-Kincardine
- Black Subdivision-Kincardine
- Mary Rose Subdivision-Saugeen
- Gray Mildmay Development- Carrick
- Lake Huron Escape-Bruce
- MacKenzie Development-Saugeen
- Harkins Harbour Development- Lindsay
- Pegasus Trails-Saugeen
- Lorne Beach Development- Kincardine
- Mulholland Division St-Southampton
- Chippewa Golf & Country Club-Saugeen
- Leslie Subdivision-Saugeen
- McMillan Subdivision-Saugen
- Peacock's Meats and Groceries Inc-Tobermory
- Karen Investment Ltd-Port Elgin
- Dent Dubdivision-Mildmay

Wellington County (2)

- Murphy Subdivision - Mount Forest
- South Saugeen Development-Mount Forest

Perth County (1)

- Maitland River Estates - Listowel

Infrastructure Projects & Industrial Development

Bruce County (16)

- Barrow Bay North Shore Road
- Bruce Road 21-Stoney Creek
- Bruce Road 25
- Kincardine-Park Street
- Bruce Road 9
- Bruce Road 12
- Southampton Sanitary Sewers
- Arran Landfill Expansion
- Calhouan Drain
- Bruce County Line Road Upgrades
- Otter Creek-Dam Removal
- McClure's Bridge
- Silver Creek Bridges-Walkerton
- Saugeen Shores 10th Line Drain
- Mildmay Elora Street Dam Removal
- South Bruce Carrick-Normanby Meux Cr Bridge

Grey County (19)

- Owen Sound 7th Street Drain
- Highway 4 Hanover-Stream Crossing
- Owen Sound 6th Ave Stream Course
- Sarawak Carney Street SWM
- Southgate- Camp Creek Crossing
- Owen Sound 9th St. Bridge
- Owen Sound 10th St. Extension
- Grey County Line
- Greir Creek Bridge
- Chatsworth- Sewage Upgrade
- Southgate-Stream Realignment
- Mill Creek Crossing
- Dipple Drain
- West Grey-Traverston Creek Realignment
- Owen Sound-Sydenham River Stabilization
- Minnihill Creek Fish Habitat Improvements
- Town of Hanover Business Park
- Viking-Cives Ltd - Mount Forest
- Sydenham Heights-Owen Sound Servicing

Huron County (2)

- Wingham Force main
- Goderich Pier Stabilization

Wellington County (2)

- Town of Minto-Coon Creek 5-Year Monitoring
- Town of Minto-Palmerston Industrial Park

Natural Heritage Environmental Impact Studies and Experience 1997-2017

Recreational and Energy Land Use Development

Grey County (29)

Monterra Plateau Stream Realignment
Devils Glen Ski Hill Expansion
Morris Wetland Creation
Rocky Saugeen Campground Expansion
Sobiski Property Shoreline Stabilization
Pesnail Property Shoreline Stabilization
Carmicheal Pond Cleanout
Overton Pond Design
Beaver River Bank Stabilization
Andrews Pond Design
Hrodzicki Storage Building
Klages Tree Retention Plan
Cedar Run Horse Park Expansion
Osler Bluff Shi Club-Storage Building
Osler Bluff Ski Club-Water Reservoir
Blue Mount. Orchard Run Ski Hill Expansion
Walters Falls Hydro Facility Proposal
Blue Mount Resort-Roller
Blue Mount. Resort Stream Monitoring
AndPet Commercial Development
East West Exchange Retreat Camp
Lahman Comm. Development
Blue Mount. Resort SWMP Outlet Monitoring
Lee Pond Design
Morrison Marina
Meaford-Cemetery Creek Realignment
Goodyear-Effluent Monitoring
Miller Group Ltd, -Owen Sound Indus. Park
Parker-Nature Retreat Resort

Bruce County (13)

Blue Heron Parking Lot
Home Hardware-Sauble Beach
Mystic Cove Stream Realignment
Casey Property-Bank Stabilization
Wells Trucking-Mildmay
MacKenzie Marina Dredging
Pike Bay Marina Dredging
Chesley Lake Cottagers Assoc. Dredging
Miller Property Shoreline Dredging
Hood Property Shoreline Dredging
Smith Com. Expansion
LEED Tree Retention Plan
Mildmay-Hamel's Pond and Elora Street Dam

Simcoe County (3)

Hamilton Brothers Ltd.-Stream Restoration
Devils Glen Stream Realignment
Devils Glen Club House Expansion
Robitaille Wind Farm-Cedar Point

Dufferin County (2)

Bowman Comm. Development
Cedar Highlands Ski Club

Wellington County (1)

White's Creek Restoration

Manitoulin Island (2)

Manitoulin Streams Association
Municipality Official Plan

Natural Heritage Environmental Impact Studies and Experience 1997-2017

Lot Severances & Building Envelopes

Grey County (91)

Zaferis Building Envelope
Clancy- 20th Street Building Envelope
Emmerson Building Envelope
Shantz Building Envelope
Fligg Building Envelope
Todd Severance
Underwood Building Envelope
Klages Severances
Beacock Building Envelope
McNeil Building Envelope
Gilbert Severances
Dillman Severance
Thom Severances
DiFransco Severances
Farnenhorst Building Envelope
Biesinger Severances
Love Building Envelope
Braun Severances
Legge Building Envelope
Wilcox Building Envelope
HSC Clavering Severances
Holmes Building Envelope
Brulette Severances
Philipp Severances
Sheppard Severance
Pfaff Building Envelope
Wilmer Severances
Doherty Building Envelope
Menaul Severance
McNabb Building Envelope
Toombs Building Envelope
McGowan Building Envelope
Lobban Severance

Hughes Building Envelope
Wilson Building Envelope
Smith Severance
Currie Building Envelope
Volette Building Envelope
Robinson Severance
Taylor Building Envelope
Lowe Building Envelope
Donavon Building Envelope
Lupia Building Envelope
Zeggil Severances
McNeil Severance
Byers Building Envelope
Gilmour Building Envelope
Martindill Severance
Peach Severance
Ryan Severance
J. Martin Building Envelope
Shrek Building Envelope
James Severance
Maxwell Severance
Harris Severance
R. Martin Building Envelope
Philipp Building Envelope
Bauman Building Envelope
Berg Building Envelope
Shrek Severance
Yoder Severance
Hollingshead Severance
McKay Building Envelope
Molner Severance
Detzier Severance
Baragar Building Envelope

Wiley Severance
Davies Severance
Stewart Severances
Irwin Building Envelope
Valent Building Envelope
Barfoot Building Envelope
Voisin Building Envelope
Colborne Building Envelope
Tengler Building Envelope
Langeraap Building Envelope
Wattie Building Envelope
Hall Severance
Hrodzicki Building Envelope
Nicholls Dwelling Expansion
NEC-Caframo Tree Preservation Plan
Elliott Building Envelope
Spaleta Building Envelope
Haslam Severance
Bethune Severance
O'Sullivan Building Envelope
McGlynn Building Envelope
Edgar Lot Severances

Natural Heritage Environmental Impact Studies and Experience 1997-2017

Lot Severances & Building Envelopes continued

Bruce County (38)

Lee Building Envelopes
Hall Building Envelope
Vespasiano Severance
Matheson Severances
Seeman Severance
P. MacDonald Severances
Arcaro Building Envelope
Goetz Severances
Chippewa Golf Course Severances
S. MacDonald Severances
Zepf Severances
Porto Severance
B. Elliot Severances
Royal Homes-Kincardine
Ferguson Point Severances
CAW-Saugeen Beach Severances
Siekierski Building Envelope
Murray Severance
Walker Severances
Janssen Building Envelope
Knight Building Envelope
Thorn Severance
Kramer Building Envelope
Smith Severances
D. Elliot Severance
O'Conner Severances
McLay Severances
Burley Building Envelope
Hamiton Severances-Saugeen
Miramichi Shores-Copway St, Saugeen
Barclay Site Development-Saugeen
Collins Severance- Kincardine
NEC - Weiss Tree Preservation Plan
Town of Saugeen Shores Building Envelope
Bennett Severance
Voison-Southamton
Robinson Family-Southampton
Rudell-Fishing Islands
Kempton Building Envelope
Sauble Christian Felowship-Parking Lot Exp.

Huron County (2)

Wingham Golf Course Severances
Kraemer Building Envelope

Simcoe County (2)

Wilbert Severances
Alliance Homes Building Envelopes

Dufferin County (1)

Preist Severance

Wellington County (2)

Town of Erin-Weber Building Envelope
Town of Erin-Langen Severance

Species At Risk and Biological Surveys

Bruce County (12)

Rankin River-Sky Lake SAR Study
Rankin River-Boat Lake SAR Study
Rankin River-Isaac Lake SAR Study
Beatty Saugeen River-Thermal
Grey/Bruce Wetland Evaluation Upgrades
Spring Creek Fish Habitat
Saugeen River-Muskellunge Habitat
Beatty Saugeen River-Smolt Passage
Chesley Lake Angling Winter Creel
Peninsula Black Bear Radio Tag-Dens
Peninsula Winter Yard Deer Browse
Denny's Dam Fishway Monitoring

Grey County (3)

Shallow Lake SAR Study
Meaford National Defence SAR Study
Pretty River Valley County Forest SAR Study

Simcoe County (1)

Copeland Forest SAR Study

Region of Peel (1)

Rattray Marsh SAR Study

Natural Environment Impact Assessment Reports for Aggregate Applications

Southern & Central Ontario: 100+ Technical Reports for Pits and Quarries, above and below watertable with scuccesful representation at Ontario Muncipal Board Hearing, Niagara Escarpment Hearings, County and Municipal Council Presentation and Legal Court Proceedings