

NATURAL HERITAGE ENVIRONMENTAL IMPACT STUDY

PREPARED FOR

**Value Stream Productions Ltd.
(Ron Taylor):**

**Two Lot Severances with
Development Envelopes**

**North Part Lot 19 & 20, Concession 18,
Geographic Township of Keppel
Township of Georgian Bluffs
County of Grey**

PREPARED BY

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1 Executive Summary

Value Stream Productions Ltd. (Mr. Ron Taylor) has proposed two Lot Severances within his land holding fronting Mountain Lake, having Assessment Roll Number 420362000506000 being the north part of Lot 19 & 20, concession 18 in the geographic township of Keppel, Township of Georgian Bluffs, Grey County. The development proposal is to sever by consent, the western portion and eastern portion of his 32.14 ha (79.42 ac) property, retaining the central-Lot having the existing single residential dwelling. Through proponent pre-application consultation with the Township of Georgian Bluffs staff, it was requested of the proponent to provide a Natural Heritage Environmental Impact Study (EIS) to demonstrate if suitable residential building areas could be identified within the proposed two new Lots to address applicable natural heritage policies.

AWS Environmental Consulting Inc. (AWS) was retained by the proponent in late April 2018 to complete the required EIS technical report for Development Envelope delineation for the West Lot and East Lot severances. Field investigations for assessment of natural heritage features and ecological functions were carried out from May through to August 2018 for two season coverage. Through inventory data analysis and impact assessment, this technical report has demonstrated and concluded that with focused and mitigated site development, a 'Development Envelope' area within each new Lot has been identified which meet recommended EIS mitigation measures. Site development within these Development Envelopes would have no anticipated negative impacts to the identified natural heritage features or ecological functions for the two Study Lands. Through mitigative measures implemented, site development would be in compliance with the Natural Heritage Policies of the 2014 Provincial Policy Statement and the County of Grey Official Plan policies for Natural Heritage for both the West Lot and East Lot severances. As such, from a natural environment perspective, the Lot severances could be approved pending acceptance of this EIS report and submission of EIS mitigation measure of a detailed dimensioned Site Plan as a 'Next Step' approach.

2 Introduction

This Natural Heritage 'Environmental Impact Study' (EIS) has been undertaken to address the 2014 Natural Heritage Provincial Policy Statement 2.1, 2012 Grey County official Plan, Township of Georgian Bluffs Zoning, Grey Sauble Conservation Authority Regulatory Lands and other applicable Provincial and Federal Acts / Legislation / Regulations. Technical reporting will follow the Provincial Natural Heritage Reference Manual of March 2010 for natural heritage feature, ecological function identification and impact assessment format.

Reporting analysis shall address the seven Natural Heritage Features, as defined by the Provincial Policy Statement 2.1, with a review of literature reports, data files, feature maps etc. currently available through Municipal, Provincial and Federal agencies, augmented with field inventory works and air photo interpretation of the surrounding landscape.

Within this technical report, the field investigation lands are referred to as the '**Study Lands**' delineated on Figure No. 3A for the 'West Lot' and Figure No. 3B for the 'East Lot'. A broader review of the 120m adjacent lands to the Study Lands, referred to as the '**Site Lands**' is also delineated on Figure No. 3A and No. 3B. The Site Lands were accessed on-site for those within the same landownership and those off-site through air photo interpretation, property or road side observations and background literature review to identify any off-site natural environment 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 historical occurrence records for Flora and Fauna species of conservation concern within 5km's to the Study Lands (see Appendix 2). This background review was utilized to augment field data collection, with a full listing of reports / documents reviewed or cited provided within the reference section.

- Natural Heritage Information Center (NHIC) web site of the Ontario Ministry of Natural Resources and Forestry (MNRF) for significant flora and fauna records.
- MNRF- Owen Sound Area Office; fish and wildlife records and maps and Land Information Ontario data bank and maps.
- 2012 Grey County Official Plan and schedule mapping.
- 2018 Draft Grey County OP and Natural Heritage System 'Green in Grey'
- Township of Georgian Bluffs Zoning

3.2 Field Study Methodology

Property location mapping has been provided on Figure No. 1, with the field inventory lands or 'Study Lands', delineated on Figure No. 3A and No. 3B. Historical data record searches, literature reviews and air photography interpretation encompassed the Site Lands plus a broader landscape review extending 5km from the Study Lands.

Field investigations and data collection for this EIS reporting were carried out from May to late August 2018, with a full listing of field work dates and weather conditions provided under Table No. 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.

Vascular Plant Surveys were conducted during the growing seasons (spring and summer) of 2018, with a full species listing, ranking, status levels and Floristic Quality Scores provided within Appendix 3. Given the small land base of the Study Lands, inventory works followed a random coverage search method.

General Fauna Surveys within the Study Lands included specific searches and/or investigation for amphibians, breeding birds, activity for snakes, general searches for mammals and movement corridor functions. A full summary list of all recorded fauna species over the study period has been provided under Appendix 4 with current rankings, status levels and highest bird breeding codes observed.

Breeding Bird Surveys for the Study Lands followed two standardized search methods:

- a) Monitoring activity included a 'Point Count' methodology for breeding activity in accordance to Bird Studies Canada for Woodland habitat and for the grasslands in accordance to MNR/Bobolink/Meadowlark Survey Protocols. Point Count Locations were established to cover all habitat types within the Study Lands, with no point count location closer than 100m (limited overlapping of potential territories). Occurrences were recorded through both sightings and calling for a total of 5-10 minutes at each point count location in the early morning hours (dusk to 10:30am). Point Count location mapping have been provided within Appendix 4.
- b) Additional bird observations of feeding adults and fledglings during summer site visits were also recorded and listed under Appendix 4 as observations outside the breeding season.
- c) No overwintering habitat was identified that meets provincial -significant wildlife habitat criteria for Raptors within the Site Lands, thus no specific search required.

Herpetofaunal Surveys were conducted within the Study Lands but were focused within suitable habitat areas.

- a) Intensive amphibian (Anuran) calling survey works were undertaken during the early and mid season breeding periods.
- b) Reptiles- Turtle activity survey works were carried out during the hibernation emergence activity period and nesting period within suitable habitat areas of the Study Lands.
- c) Reptiles-Snake activity was actively searched for during the hibernation emergence period and summer gestation period within suitable habitat areas of the Study Lands.

Mammal sightings or observations of habitat use (tracks, scat) were recorded during all other flora and fauna investigation work during site visits in 2018.

Fish Habitat and community survey works were deemed to be unnecessary as no flowing water courses or natural surface water features supporting fish were identified within the Study Lands.

The EIS field survey works and technical reporting follows recommended/standard provincial guidelines, protocols and techniques.

3.3 Field Survey Dates

Table No. 1: Field Survey Dates and Focus of Works

Date	Survey Time & Duration	Weather Conditions (at start time)	Survey Focus
May 2, 2018	1100 to 1500 For 4.0 hrs	Wind Speed = 19-24 km's/hr Air Temp. = 19.0 C Precipitation = 0, Cloud Cover = 80%	Reptile hibernation emergence activity period, Tree cavity search, General Fauna, Hydrology
May 2, 2018	2100 to 2130 For 0.5 hrs	Wind Speed = 3-6 km's/hr Air Temp. = 13.0 C Precipitation = 0, Cloud Cover = 25%	First night time Anuran calling survey
May 11, 2018	1100 to 1500 For 4.0 hrs	Wind Speed = 6-11 km's/hr Air Temp. = 10.0 C Precipitation = 0, Cloud Cover = 25%	Second Reptile hibernation emergence activity period, Tree cavity search, Stick nests, General fauna
May 29, 2018	2130 to 2200 For 0.5 hrs	Wind Speed = 3-6 km's/hr Air Temp. = 14.0 C Precipitation = 0, Cloud Cover = 50%	Second night time Anuran calling survey
May 30, 2018	0700-0830 For 1.5 hrs	Wind Speed = 3-6 km's/hr Air Temp. = 16.0 C Precipitation = 0, Cloud Cover = 50%	First breeding Bird survey
June 17, 2018	0930 to 1100 For 1.5 hrs	Wind Speed = 12-19 km's/hr Air Temp. = 26.0 C Precipitation = 0, Cloud Cover = 75%	Second breeding Bird survey
June 23, 2018	0900-1200 2-person crew For 6.0 hours	Wind Speed = 6-11 km's/hr Air Temp. = 19.0 C Precipitation = 0, Cloud Cover = 25%	Spring season flora inventory, General Fauna
July 17, 2018	0930 to 1030 For 1.0 hrs	Wind Speed = 12-19 km/hr Air Temp. = 20.0 C Precipitation = 0, Cloud Cover = 25%	General Fauna, Snake gestation activity
August 24, 2018	1230 to 1700 For 4.5 hours	Wind Speed = 12-19 km/hr Air Temp. = 25.0 C Precipitation = 0, Cloud Cover = 50%	Summer Flora inventory, Snake gestation activity, General Fauna, ELC community assessment, Wetland Boundary-Hydrology

Total field survey search effort provided 23.5 hours of coverage over nine site visits during the spring and summer seasons of 2018 for two-season coverage.

4 Vegetation Community Characterization

Vegetation community boundaries within the Site Lands are depicted on Figure No. 8A and No. 8B, which was mapped and defined in the field based upon the 'Ecological Land Classification (ELC) for Southern Ontario, First Approximation'. ELC types, ranking and characterization for each vegetation community is provided in Table No. 2.

Table No. 2: Vegetation Communities Type - ELC Codes

Veg. Comm. Number	ELC Code	Type	Description	Provincial Ranking
1	None	Agricultural Fields	Cash Crop, Corn and Soy Bean in 2018	S5
2	CUW1-1	White Cedar Cultural Woodland	Scattered young and mid-aged cedar trees with early successional hardwoods, <60% coverage, open grass meadow lands	S5
3	FOD5-6	Dry-Fresh Sugar Maple-Basswood Deciduous Forest	Closed canopy with mature hardwood trees, Avg. for stand: 28cm dbh, upper canopy ht. of 18m, B.A. = 34sq.m/ha, ground cover patchy avg. 65%	S5
4	FOC2-2	Dry-Fresh White Cedar Coniferous Forest	Closed canopy with mature White Cedar. Avg. for stand: 18cm dbh, upper canopy ht. of 13m, B.A. = 48sq.m/ha, ground cover sparse avg. 15%	S5
5	SWD6-1	Red Maple Organic Deciduous Swamp	Semi-open tree canopy, flooded during spring conditions, dominated with hardwoods, abundant sapling growth.	S5
6	SWT3-2	Willow Organic Thicket Swamp	High stem density (thicket) of Willows with scattered Maple & Ash saplings. Flooded during spring season.	S5
7	MAS3-1	Cattail Organic Shallow Marsh	Mix of cattails, reeds and tall shrubs	S5
8	SWM4-1	White Cedar-Hardwood Organic Mixed Swamp	Semi-open canopy of mature White Cedar, Red Maple and Poplar with scattered pockets of grasses/reeds	S5
9	SWC3-1	White Cedar Organic Swamp	Semi-open canopy of mature White Cedar, high stem density, dense ground cover of mosses	S5
HH	None	Hardwood Hedgerow	Scattered mature hardwoods, Maple, Basswood and Ash.	None

Significant Feature Analysis

5 Habitat of Endangered and Threatened Species

A literature search for historic records of Endangered and Threatened species has been undertaken for the surrounding landscape extending 5 km's from the Study Lands utilizing the Species At Risk in Ontario (SARO) listings maintained by the Ontario Ministry of Natural Resources and Forestry (MNR); and the national lists maintained by Environment Canada (i.e. Committee on the Status of Endangered Wildlife in Canada (COSEWIC)), has been provided under Appendix 1.

Through this background literature review, two bird species and one flora species with an Endangered or Threatened Status are noted. A review of provincial habitat description, on-site habitat and recommended impact assessment approach is provided below for each.

- Bobolink:
 - Provincial habitat description requirements state: *Open, grassy meadows, farmlands, pastures, hayfields or grasslands with elevated singing perches; cultivated land > 30 ha in size*
 - On-site habitat investigations: Field habitat assessment works confirmed that there was no suitable habitat within the West or East Lot-Study Lands or identifiable within their Site Lands. 2108 EIS breeding Bird survey works did not record bobolink within the Study Lands. Therefore it has been concluded that Lot creation and site development will have no negative impact to this bird species and no further review or impact assessment is required.
- Eastern Meadowlark:
 - Provincial habitat description requirements state: *Open, grassy meadows, farmlands, pastures, hayfields or grasslands with elevated singing perches; cultivated land and weedy areas with trees; old orchards with adjacent open grassy areas > 10 ha in size*
 - On-site habitat investigations: Field habitat assessment works confirmed that there was no suitable habitat within the West or East Lot- Study Lands or identifiable within their Site Lands. 2108 EIS breeding Bird survey works did not record eastern meadowlark within the Study Lands. Therefore it has been concluded that Lot creation and site development will have no negative impact to this bird species and no further review or impact assessment is required.
- Restricted species # 68188
 - The Own Sound MNR office was contacted for species identification. This flora species was not identified within either of the Study Lands during the 2018 EIS study coverage period, nor was any suitable habitat identified within the Site Lands.

The 2014 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.

MNRF documentation of historical records 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 two Study Lands were undertaken for flora and fauna that are currently listed under the Endangered Species Act (ESA). Appendix 3 and Appendix 4 provide an inventory of species listing recorded through EIS investigations for both Study Lands. Through intensive on-site survey works, **no** Species-At-Risk (SAR) were identified within either Study Lands or within the accessible Site Lands or property line observations of the off-site adjacent Site Lands.

Through this analysis of historical data and on-site investigations it has been confirmed that no species currently having an Endangered or Threatened status are present within or immediately adjacent to either Study Lands. Thus, it can be concluded that site development would be in compliance with the Endangered Species Act (ESA) 2007, the 2014 PPS 2.1.7 and the 2012 Grey County Official Plan policy 2.8.6.2. Therefore, it has been concluded that no further impact assessment for this feature is deemed warranted.

6 Fish Habitat

No watercourses are identifiable within the Study Lands as researched through available mapping and air photo interpretation. This was confirmed through on-site investigations. A watercourse does bisect through the central area of the full property which flows south into Mountain Lake, as seen on figure air photos' and identified on Figure No. 7. However, this watercourse is >120m from the proposed development areas or Study Lands as shown on Figure No. 3A and 3B. As such site development will be well beyond the recommended provincial and county setbacks for watercourses supporting fish habitat. Therefore it has been concluded that no further review regarding this watercourse is required.

The West Lot-Study Lands south limit is the shoreline area of Mountain Lake. The Ministry of Natural Resources and Forestry (MNRF) Owen Sound Area office has documented Mountain Lake as supporting a 'warm water' fish community. On-site investigations confirmed that suitable fish habitat was present for warmwater fish species (Northern Pike, Pumpkinseed, Largemouth Bass etc.) within the EIS vegetation community No. 6 being part of the in-shore littoral zone of Mountain Lake waters. Within the southeast study area corner of the West Lot there is a constructed pond near the Lake shoreline. This pond has no surface water connection with Mountain Lake water thus is isolated and has no fish or native fish habitat within the pond feature.

Within the southwest corner of the East Lot-Study Lands there is a seasonally flooded swamp environment, vegetation community No. 5 and No. 6. These two vegetation communities were separated from Mountain Lake waters by vegetation community No. 8 and No. 9 which showed

no evidence of flooding or providing surface water linkages. On-site observations did not identify any fish or anticipate any seasonal fish habitat functions within vegetation community No. 5 or No. 6.

The 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.

With confirmation of Fish Habitat within the West Lot-Study Lands associated with Mountain Lake, further review is warranted and provided under reporting section 13 with mitigative measures recommended for site development to maintain compliance with the Federal Fisheries Act, the 2014 PPS 2.1.6 and 2.1.8, and the 2012 Grey County Official Plan policy 2.8.6.5.

7 Significant Valleylands

Grey County has recently identified Significant Valleylands within its Natural Heritage System-Green in Grey. Applicable area mapping is provided on Figure No. 5E, which demonstrates that **No** Significant Valleyland features occur within the full property or EIS Site Lands.

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.

The Provincial NHRM, 2010 under section 8.4 for Significant Valleylands states that the adjacent land width to said feature is 120m. 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 two Study or Site Lands, proposed site development would be in compliance with the PPS section 2.1.5 (c) and 2.1.8 and the County of Grey Official Plan policy 2.8.6.1. Therefore, it can be concluded that no further impact assessment for this feature is deemed warranted.

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

A review of Provincially Significant ANSIs was undertaken and provided on Figure No. 4, sourced through the MNRF web site mapping. This provincial mapping demonstrates that **no** provincially significant ANSI feature, either earth science or life science, occurs within the full property or EIS 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.

The Provincial NHRM, 2010 under section 10.4 for ANSI's states that the adjacent land width to earth science ANSI's is 50m while life science ANSI's is 120m. The PPS section 2.1.8 for the adjacent lands to ANSI's 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 ANSI feature confirmed within the two Study or Site Lands, site development will be in compliance with the PPS 2.1.5 (e), 2.1.8 and the County of Grey Official Plan policy 2.8.6.3.

9 Significant Wetlands

A review of Provincially Significant Wetlands (PSW) was undertaken and provided on Figure No. 4, sourced through the MNRF web site mapping. This provincial mapping demonstrates that a significant wetland features does occur within the Study and Site Lands to both the West and East Lots.

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 Provincial NHRM, 2010 under section 6.4 for Significant Wetlands states that the adjacent land width to said feature is 120m. The PPS section 2.1.8 for the adjacent lands to Significant Wetlands 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 a Significant Wetland feature confirmed, further review and impact assessment is required and provided under reporting section 15 to demonstrate compliance with applicable policies.

10 Significant Woodlands

The County of Grey has undertaken countywide mapping for Significant Woodlands within its current Official Plan-Appendix B, as per policy 2.8.4 and provided under Figure No. 5B. Recently county wide woodland mapping has been updated and revised through its Draft 2018 Official Plan-Appendix B and provided under Figure No. 5E.

West Lot

Figure No. 5B demonstrates there is no Significant Woodland (SW) feature within the Study Lands, but there is a SW designation within the southeast corner of the Site Lands (adjacent lands to the Study Lands-severance boundary).

Figure No. 5E however, no longer shows the riparian watercourse trees bisecting through the field environment nor the woodlands west of the watercourse, as meeting criteria for SW designation i.e. there is no longer a SW designation within the West Lot-Site Lands, based on the 2018 SW revised mapping. It is anticipated the watercourse treed strip through the field area is <20m in width, thus no longer meets this minimum width threshold for treed linkage corridor. Once this watercourse enters the wetland the direct riparian zone feature changes from tree canopy to shrubs and cattail marsh, thus creating a width separation >20m between the west and east woodlands. This west to east woodland block separation width exceeds the threshold criteria for continuous tree cover, thus making the west woodlot separate and no longer meeting SW criteria designation.

East Lot

Figure No. 5B demonstrates there is Significant Woodlands (SW) within the Study and Site Lands.

Figure No. 5E shows the revised updated SW mapping which is fairly consistent with the original SW designation.

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.

Similar policy wording for Significant Woodlands is within the County Official Plan 2.8.4.

The Provincial NHRM, 2010 under section 7.4 for Significant Woodlands (SW) states that the adjacent land width to said feature is 120m. The PPS section 2.1.8 for the adjacent lands to SW 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 a Significant Woodland feature confirmed within the East Lot-Study and Site Lands only, further review and impact assessment is required and provided under section 16, to demonstrate compliance with the PPS 2.1.5 (b) and Grey County Official Plan 2.8.4

11 Significant Wildlife Habitat

Currently no mapping has been undertaken within Grey County to identify Significant Wildlife Habitat (SWH) due to its complexity and sub-component aspects requiring on-site survey works. Some historical Provincial MNR inventory and wildlife assessment works within Grey County has been sourced to aid in determination of confirmed SWH within these Study Lands and within the County's Natural Heritage System. Additionally EIS field inventory works carried out over the Study Lands will augment this historical data to aid in the determination of significance for each wildlife habitat sub-component.

The Ontario Ministry of Natural Resources and Forestry published in January 2015 'Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E' as a supplement document to the 2000 Significant Wildlife Habitat Technical Guide (SWHTG). This supporting document provides a listing of candidate and criteria or threshold levels to confirm the presence of significant wildlife habitat within Ecoregion 6E with MNR-Land Information Ontario identifying that the subject lands are situated within Ecoregion 6E. Some historical Provincial MNR inventory and wildlife assessment works within Grey County has been sourced to aid in determination of confirmed SWH. Additionally EIS field inventory works carried out over the Study Lands will augment this historical data to aid in the determination of significance for each wildlife habitat sub-component.

With the two Study Lands confirmed to be situated within the provincial Ecoregion 6E, provided below is a review of Ecoregion 6E criteria for candidate SWH, for candidate habitat within both Site Lands and criteria threshold levels for confirmed SWH within either Study Lands. This review follows the Natural Heritage Reference Manual, 2010 (NHRM), flow chart of Figure No. 9-1 for the identification and confirming Significant Wildlife Habitat.

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 during the staging period of early spring or late summer migration period.
 - 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.
- Waterfowl Stopover and staging (Aquatic)
 - No criteria waterfowl species were observed.
 - ELC criteria code: SWD6 is 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 present within the Site Lands.
 - Criteria threshold for species and aggregate numbers not met.
 - No confirmed SWH.

- Raptor Wintering Area
 - No criteria raptors were observed during the site investigation period.
 - ELC criteria codes: FOC and FOC are present and criteria semi-open ELC type CUW present within East Lot Study Lands but habitat area is below 15ha size threshold.
 - No historical documentation of habitat use during winter period.
 - No confirmed 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 codes: FOD, SWD and SWM are present within the Site Lands.
 - Field assessment did identify 1 large diameter cavity tree within vegetation community No. 3 which is 0.2ha in stand size.
 - This equates to a density of 5 cavity trees/ha, below the provincial density threshold level of 10 cavity trees/ha, plus given the stand size is <1ha, the stand is open to adverse wind influences on bat roosting functions.
 - No confirmed SWH.

- Turtle Wintering Areas
 - No criteria turtle species were observed.
 - ELC criteria code: SW and MA are present within the Site Lands.
 - Suitable overwintering habitat is situated within the Provincially Significant Wetland and/or Mountain Lake substrate, where no development is permissible and buffer zone shall be implemented for PSW ecological function maintenance if this habitat area is utilized
 - No confirmed SWH.

- Reptile Hibernaculum
 - One common Eastern Gartersnake observed during the summer season only.
 - No activity observed during the spring emergence period nor any suitable habitat identified (no dens, burrows or rock fractures, not suitable for hibernation functions).
 - No confirmed SWH.

- Colonially-Nesting Bird Breeding Habitat: Bank and Cliff
 - No criteria bird species were observed.
 - No ELC criteria codes are present within the Site Lands.
 - No confirmed SWH.

- Colonially-Nesting Bird Breeding Habitat: Tree/Shrub
 - No criteria bird species were observed.
 - ELC criteria code: SWD6 is present but no nesting activity noted.
 - No confirmed SWH.

- Colonially-Nesting Bird Breeding Habitat: Ground
 - No criteria bird species were observed.
 - No ELC criteria codes are present within the Site Lands.
 - No confirmed SWH.

- Migratory Butterfly Stopover Areas
 - No criteria butterfly species were observed.
 - Study Lands are not located within 5 km of Lake Ontario (provincial criteria location).
 - No confirmed SWH.

- Landbird Migratory Stopover Areas
 - Several migratory songbird species present within the Study Lands.
 - Study lands are not located within 5 km of Lake Ontario (provincial criteria location).
 - 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. Confirmed on-site that there is no suitable deer overwintering habitat.
 - 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: FOC, FOM, FOD, SWD, SWC and SWM are present.
 - Provincial habitat description criteria for 'Old Growth Forest' community is not present (tree sizes, density, etc.) within the Site 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.
 - 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 were observed within the Study Lands.
 - ELC criteria codes: MAS3 is present within the West Lot-Site Lands.
 - Criteria thresholds not met for species diversity, or breeding pair numbers.
 - No confirmed SWH.
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat
 - No criteria species observed.
 - ELC criteria codes: SWD, FOD, FOC, SWC and FOM are present and West Lot Study Lands with an open Lake feature.
 - No evidence of current or historical nesting activity within the Site Lands.
 - Criteria thresholds not met for active use of habitat.
 - No confirmed SWH.
- Woodland Raptor Nesting Habitat
 - No criteria species observed.
 - ELC criteria codes: FOC, FOM, SWC, SWM and SWD are present.
 - No documented or observed 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 within the Site Lands.
 - Criteria thresholds for species, numbers and habitat size plus use, not met.
 - No Confirmed SWH.

- Seeps and Springs
 - Criteria fauna species: White-tailed Deer and Wild Turkey were identified within the Study Lands.
 - No seeps or groundwater upwelling functions are present in the Study Lands.
 - Criteria thresholds for numbers or presence not met.
 - No confirmed SWH.

- Amphibian Breeding Habitat (Woodland)
 - One criteria species, Wood Frog was identified within the Study Lands.
 - ELC criteria codes: FOD, FOC, SWM and SWD are present, with SWD supporting flooded vernal pools (breeding habitat) within vegetation community No. 5.
 - No ephemeral ponds or suitable breeding habitat was identified within vegetation community No. 1, 2, 3 or 4.
 - Criteria threshold for species diversity or numbers of "*at least 20 individuals*" was not met (see Appendix 4).
 - No confirmed SWH.

- Amphibian Breeding Habitat (Wetlands)
 - Two criteria species were identified: Northern Leopard Frog and Green Frog.
 - ELC criteria codes: SW and MA are present within the Site Lands.
 - Criteria thresholds with 2 or more frog/toad species met and criteria threshold for numbers "*at least 20 breeding adults*" was met (see Appendix 4) within vegetation community No. 5 and No. 6.
 - Note: With the wetland feature deemed SWH from the early and mid breeding season, late spring season breeding survey works were redundant and thus not undertaken.
 - **Confirmed SWH within vegetation community No. 5 and No. 6 and candidate habitat within vegetation community No. 7, No. 8 and No.9**

- Woodland Area-Sensitive Bird Breeding Habitat
 - No criteria bird species were recorded within the Study Lands.
 - ELC criteria codes: FOD, FOC, SWC, SWM and SWD are present; however no forest interior habitat present within the Site Lands.
 - Criteria thresholds for species diversity and numbers 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.
 - No ELC criteria codes are present within the Site Lands.
 - Criteria thresholds not met for species diversity, numbers or active habitat use.
 - No confirmed SWH.

- Open Country Bird Breeding Habitat
 - No criteria bird species observed.
 - No ELC criteria codes are present within the Study Lands.

- Criteria thresholds for species diversity, numbers or active habitat use, not met.
- No confirmed SWH.
- Shrub/Early Successional Bird Breeding Habitat
 - No Indicator criteria species or Common criteria species were recorded within the Study Lands.
 - ELC criteria code: CUW1 is present but well below criteria threshold size of >10ha.
 - Criteria thresholds for species diversity, numbers and habitat size not met.
 - No confirmed SWH.
- Terrestrial Crayfish
 - No criteria species (no chimneys) observed.
 - ELC criteria code: MAS3, SWD, SWT and SWM are present within the Site 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 2018 within either Study Lands that have a ranking of Special Concern or of provincial rarity (S1, S2 or S3). See Appendix 3 listing.
 - **No** fauna species were observed in 2018 within either Study Lands that have a ranking of Special Concern or of provincial rarity (S1, S2 or S3). See Appendix 4 listing.
 - Historical MNRF records (Appendix 2) for the surrounding landscape (extending 5 km from Study Lands) identified for fauna and three flora species with Special Concern or provincial rarity status. A review of each for habitat requirements, on-site habitat features, potential impacts and/or warranted further impact assessment is provided below:
 - 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 Land habitat: Suitable habitat for forage activity was observed within the Study Lands vegetation community No. 5 and No. 6. No nesting habitat was identifiable along the natural wetland boundary portion. On-site investigations did not record this species (see Appendix 4). Candidate habitat areas are all situated within the protected Significant Wetland feature. With no negative impacts to the wetland feature and no ecological functions noted along the bordering natural wetland transition edge, no further review or impact assessment is deemed required.

- Black Tern
 - Provincial habitat description: *wetlands, coastal or inland marshes; large cattail marshes, marshy edges of rivers, lakes or ponds, wet open fens, wet meadows; returns to same area to nest each year in loose colonies; must have shallow (0.5 to 1 m deep) water and areas of open water near nests; requires marshes >20 ha in size; feeds over adjacent grasslands for insects; also feeds on fish, crayfish and frogs.*
 - Site Land habitat: significant nesting and rearing habitat is associated with the open water marsh environment of Mountain Lake, which is all protected being part of the significant wetland feature. On-site investigations did not record this species (see Appendix 4). No significant habitat identified within the Study Lands. With no negative impacts to the wetland feature and no ecological functions noted along the bordering natural wetland transition edge, no further review or impact assessment is deemed required.

- Eastern Wood-pewee
 - Provincial habitat description: *Open, deciduous, mixed or coniferous forest, predominantly by oak with little understory, forest clearings, edges, farm woodlots, parks*
 - Site Land habitat: No suitable habitat within the Site Lands. On-site investigations did not record this species (see Appendix 3). Therefore no negative impacts are anticipated and no further review or impact assessment is deemed required.

- Wood Thrush
 - Provincial habitat description: *Carolinian and Grey Lakes-St. Lawrence forest zones; undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12m*
 - Site Land habitat: No suitable habitat within the Site Lands. On-site investigations did not record this species (see Appendix 3). Therefore no negative impacts are anticipated and no further review or impact assessment is deemed required.

- Hart's-tongue Fern
 - Provincial habitat description: *shaded calcareous rock (limestone and dolostone)*
 - Site Land habitat: No suitable habitat within the Site Lands. On-site investigations did not record this species (see Appendix 3). Therefore no negative impacts are anticipated and no further review or impact assessment is deemed required.

- Beaked Spikerush
 - Provincial habitat description: *a rhizomatous perennial herb growing up to 1.2 meters tall with spongy, compressible stems. A wetland plant, the beaked spike rush occurs primarily in alkaline habitats such as saline, brackish or calcareous fens and marshes. It frequently occurs on tidal flats and along the coast, as well as by stream banks, alkaline seeps, lake margins and around hot springs*
 - Site Land habitat: Suitable habitat along the immediate Mountain Lake shoreline area which is part of the protected significant wetland feature within the Site Lands. Therefore no negative impacts are anticipated and no further review or impact assessment is deemed required.

- Laurentian Bladder Fern
 - Provincial habitat description: *cliffs, rock outcroppings, and talus slopes, especially on limestone or other alkaline rock.*
 - Site Land habitat: No suitable habitat within the Site Lands. Therefore no negative impacts are anticipated and no further review or impact assessment is deemed required.

- 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
 - Confirmed significant breeding habitat through Table 1.1 review for amphibian breeding habitat-wetland, thus corridor assessment required.

- Deer Movement Corridors
 - No deer wintering habitat was confirmed through Table 1.1 analysis, thus 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 criterion schedule, Significant Wildlife Habitat has been confirmed within the Study Lands for: Amphibian breeding habitat and amphibian movement corridor functions.

The Natural Heritage PPS 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.

With Significant Wildlife Habitat confirmed within the Study Lands, further review and impact assessment is required and provided under section 14, to demonstrate compliance with the PPS 2.1.5 (d) and the Grey County Official Plan policy 2.8.6.1.

12 Significant Feature Analysis Summary

Through the significant feature analysis, three natural heritage feature listed under the PPS, 2014 have been confirmed within the Study and/or Site Lands: Fish Habitat, Significant Wetland, Significant Woodland and Significant Wildlife Habitat, with associated ecological functions for each feature.

Further review of these identified features and their ecological functions have been provided within the 'Impact Assessment' component of the EIS. Site development constraints with recommended mitigation measures in relation to the proposed development activity have also been provided to maintain compliance with applicable Planning Policies.

Impact Assessment

13 Fish Habitat

13.1 Habitat Characterization

Mountain Lake has been identified by the MNRF (Owen Sound District Fisheries Management Plan) to support both a warm and cool water fish community. Mountain Lake is thermally considered a 'warm water' system, with much of the lakes average depths being <2m.

For the West Lot-Study Lands, vegetation community No. 5 and No. 6 are seasonally inundated with lake surface waters, providing early spring spawning habitat for Northern Pike. Portions of vegetation community No. 6 also provide juvenile fish rearing habitat throughout the spring and fall seasons. No fish habitat was identifiable within the East Lot-Study Lands.

13.2 Impact Assessment

No development or site alterations are proposed within the identified Fish Habitat of Mountain Lake or its seasonally flooded wetland-shoreline areas. As such, lot creation and associated development envelopes will be in compliance with the Federal Fisheries Act and the PPS 2.1.6 and the County Official Plan 2.8.6.1. Site development has been proposed within 120m to Mountain Lake, being the adjacent lands to Fish Habitat.

The provincial Natural Heritage Reference Manual (NHRM) for Fish Habitat, Table 11-3 recommends a 30 m or 15m vegetated setback from warmwater systems.

The Grey County Official Plan policy 2.8.6.5 recommends a 30 m setback from in-land lakes.

For the West Lot, site development shall maintain a minimum separation distance of 30m from the outer edge of vegetation community No. 5 (wetland feature and seasonal fish habitat), maintaining compliance with provincial and county recommended setbacks.

With a minimum 30m separation distance and this being a vegetated buffer zone to the identified Fish Habitat environment, no negative impacts from adjacent land development to fish habitat within Mountain Lake is anticipated. Therefore it has been demonstrated and concluded that Lot creation and focused site development would be in compliance with the PPS 2.1.8 and the Grey County Official Plan 2.8.6.5.

14 Significant Wildlife Habitat

14.1 Amphibian Breeding Habitat Characterization

Vegetation community No. 5 and No.6, being flooded swamp features are part of the Provincially Significant Wetland feature (see section 15). On-site investigations have confirmed these two wetland communities support significant breeding habitat for the locally common frogs.

Wetland community No. 5 is dominated with standing hardwood trees, primarily Red Maple at mid-maturity age (avg. 18 cm dbh) with an upper semi-closed canopy. Mid level canopy cover was also abundant with a high stem density of hardwood saplings and tall shrubs abundant. Groundcover was patchy between flooded areas be assessed at high density with abundant grasses, sedges, ferns and woody debris. Portions of this vegetation community did exhibit evidence of past disturbances from tree and shrub cutting.

Wetland community No. 6 is dominated by tall shrubs with scattered clumps of hardwood saplings with scattered patches of emergent cattails/bulrushes throughout. Portions of this vegetation community did exhibit evidence of past disturbances from vegetation clearing and fill placement. The proponent is currently rehabilitating portions of this community through other works for wetland ecological restoration.

14.1.1 Impact Assessment

The Provincial Policy Statement (PPS) 2.1.4 does not permit development or site alterations within a significant wetland. Additionally the Grey County Official Plan policy 2.8.3.1 does not permit development or site alterations within a significant wetland. Therefore site development or site alterations are not permitted within the EIS vegetation community numbers 5, 6, 7, 8 or 9, considered to be part of the Significant Wetland feature. As such, no direct negative impacts from the proposed Lot Severances or associated new single residential dwellings shall occur on the identified significant amphibian breeding habitat. Therefore Lot creation and site development beyond the noted EIS wetland vegetation communities would be in compliance for Significant Wildlife Habitat under the PPS 2.1.5 (d) and the Grey County Official Plan policy 2.8.6.1.

The PPS 2.1.8 and the Grey County Official Plan policy 2.8.3.2 do permit site development and/or site alterations within the adjacent 120m lands to a significant wetland or significant wildlife habitat, provided it has been demonstrated that there will be no negative impacts on the identified habitat or its ecological functions.

Through the impact assessment of section 13.2, a 30m development setback from vegetation community No. 5 and No. 6 has already been recommended to maintain no negative impact on surface water quality and fish habitat. Significant amphibian breeding occurs within these same habitat areas, an overlapping ecological function to the wetland feature. It is recommended that this 30m wide Buffer Zone for no development be extended to incorporate wetland vegetation community numbers 7, 8 and 9 as well.

In addition to surface water quality concern, Figure No. 5D sourced from the draft County Official Plan constraints shows that all of the East Lot-Study Lands area within the Special Policy

Karst designation lands, defined under policy 2.8.5. On-site observations noted pockets of surface fractures and shallow overburden, within vegetation community No. 2, indicative of the presence of Karst topography. To meet the County policy 2.8.5 requirements, the proponent or future landowner of the East Lot, shall be required to undertake further investigative works to address this Special Policy Area relating to septic treatment requirements/location/design, pending agency/town approval of this EIS report findings and mitigation measures, as part of the next step –Site Plan preparation.

With a 30m wide buffer zone/development setback, from the outer limit of the EIS delineated wetland communities, the wetland feature itself and its identified ecological functions of significant wildlife habitat are anticipated to incur no negative impacts from focused site development within its adjacent lands. Therefore Lot creation and site development within the adjacent lands to the identified SWH would be in compliance with the PPS 2.1.8 and the Grey County Official Plan policy 2.8.6.1, for Significant Wildlife habitat

14.2 Amphibian Movement Corridor Characterization

West Lot

Given that vegetation community No. 1 is in active cash crop production with no linkage to other off-site natural environments amphibian movement activity would be negligible. Portions of vegetation community No. 1B has had site alteration occur and is primarily a cut grass lawn area. Amphibian movement between the Study Land vegetation community No. 5 and No. 6 will be in an east-west orientation, along the lake shoreline or through the dug pond area towards vegetation community No. 7, No. 8 and No. 9.

East Lot

EIS investigations throughout the spring and summer season only noted 3 amphibian sightings within vegetation community No. 2, No. 3 or the separated stand of community No. 4. The primary amphibian activity observed during the summer season was still oriented within the wetland feature itself. Vegetation community No. 1 being ‘bare ground’ during the early spring season –adult mating activity period, restricts amphibian movement to nighttime use only, if it occurs.

For the eastern stand of vegetation community No. 3, 90% is situated within the unopened road allowance, which could be legally cleared at any time; as such no off-site vegetated linkages occur within the Site Lands. Noting that the westerly watercourse riparian zone would be the primary linkage area for fauna movement, is situated outside of the Site Lands (>120m from the Study Lands). Vegetation community No. 2 is too sparse to function as amphibian summer range habitat, and the separated stand of vegetation community No. 4 being closed canopy white cedar, had no suitable habitat for amphibians (dry and barren understory).

14.2.1 Impact Assessment

West Lot

The 30m wide Buffer Zone to the wetland edge shall maintain sufficient natural vegetation to support and maintain west-east amphibian movement activity within the Study Lands.

Currently the proponent is undertaking restorative measures (in agreement with GSCA) within the disturbed lands along the west side of the dug pond. The tree and shrub planting activity will aid in rehabilitating wetland ecological functions for amphibian movement activity between vegetation community No. 5 and No. 6, west of the pond to summer range habitat within vegetation community No. 7, No. 8 and No. 9 east of the pond. Lot creation and site development 30m beyond the wetland perimeter will have no measurable negative impacts to this significant wildlife habitat area or ecological functions of the wetland as a whole. As such, with this buffer zone and a separate restoration project undergoing, no additional mitigation measures are deemed required specific to significant wildlife habitat.

East Lot

Through the impact assessment section 15.2 below, a 30m wide buffer zone for no development to the wetland boundary has been recommended. With no linkage functions identified within the East Site Lands, this buffer zone width is sufficient to maintain amphibian movement activity along the wetland/upland transition zone. Thus no additional mitigation measures are deemed required specific to significant wildlife habitat.

With the aforementioned mitigative measures directing future site development to be 30m beyond the wetland boundary and tree/shrub plantings occurring in the dug pond area to restore amphibian movement habitat, it has been demonstrated and concluded that the proposed constrained and focused site development within the adjacent lands to Significant Wildlife Habitat would be in compliance with the PPS 2.1.8 and the County of Grey Official Plan policy 2.8.6.1.

15 Significant Wetland

15.1 Characterization

The significant wetland within the Study Lands is part of the larger Provincially Significant (PSW) Mountain Lake – Skinners Marsh Wetland Complex, a Class 1 wetland feature.

Figure No. 4 shows the PSW feature for the full property, additionally other wetlands are also shown on Figure numbers 4, 5B, 5E and 7, all with differing wetland boundaries.

Through on-site investigation works, AWS followed provincial guidelines for the determination of wetland boundaries as per the Southern Ontario Wetland Evaluation manual, being the 50/50 vegetation rule to delineate the EIS-Wetland boundary as mapped on Figure No. 9A and No. 9B. In comparison to the Provincial wetland mapping boundary and the additional ‘other wetlands’ of the County Official Plan and GSCA regulatory lands, the EIS has delineated the wetland to be

larger and encompassing more lands. All of the mapped PSW designated lands are within the EIS Wetland defined boundary, as are the 'other wetlands'. As such any recommended buffer zone widths to the EIS Wetland boundary will be greater than to the mapped PSW designation and/or other wetlands under the County Official Plan. Given that the EIS-Wetland boundary is greater (more encompassing) than the designated PSW, it was not deemed to be necessary to have MNRF approve this boundary correction on-site, as all impact assessment measures are based on the larger/greater EIS –Wetland boundary. Therefore, all of the designated PSW lands and 'other wetland' are contained within the EIS vegetation community No. 5, No. 6, No. 7, No. 8 and No. 9 meet the provincial definition of wetland and for EIS purposes and deemed to be part of the full PSW feature (though not accurately mapped as such on the Provincial, County, CA or Township mapping). If the EIS wetland boundary mapping determined sections of a PSW were in-fact not wetland which could alter the proposed site development plan, then MNRF would need to be contacted for on-site confirmation and the PSW boundary revised, as per the County Official Plan 2.8.3.3. However, as noted that was not the case at this site, the EIS wetland boundary was beyond that of the provincial delineation for the specific two Study Lands. Thus, development impact assessment based on the delineated EIS-Wetland boundary, is more accurate and consistent with the intent of wetland related land use policies through greater protection or mitigation measures for the Significant Wetland feature.

Description of each wetland community is provided under Section 4, Table No. 2, with supportive wetland-ecological functions discussed under section 13 for Fish Habitat and section 14 for significant wildlife habitat and section 16 for parts of the wetland also being a significant woodland feature.

15.2 Impact Assessment

The 2014 PPS section 2.1.4 states:

Development and site alteration shall not be permitted in:
(a) significant wetlands in Ecoregions 5E, 6E and 7E, and
(b) significant coastal wetlands.

The subject property is within Ecoregion 6E (see Figure No. 4 Provincial Mapping) thus policy 2.1.4 is in effect.

The Grey County Official Plan policy 2.8.3.1 states in part:

No development or site alteration is permitted within the Provincially Significant Wetlands designation....

Therefore, though Lot/Property lines can bisect through significant wetlands, no development or site alterations are permissible within the EIS delineated vegetation community No. 5, No. 6, No. 7, No.8 or No. 9, being the EIS-Wetland feature and extended PSW feature.

The PPS 2.1.8 permits development and site alterations within the 120m adjacent lands to a significant wetland (as noted under report section 9) provided it has been demonstrated that there will be no negative impacts on the natural feature or on its ecological functions. Similar adjacent land policy wording and intent is under the Grey County Official Plan policy 2.8.3.2.

Site development for septic system treatment within the 120m to a significant wetland with surface water flooding, could negatively impact water quality within the wetland and/or its

identified ecological functions. Reporting section 13 has addressed potential water quality impairment concerns to Fish Habitat (an overlapping wetland ecological function within this feature) from site development, recommending a 30m buffer zone width of no development. Reporting section 14.1.1 and 14.2.1 for Significant Wildlife Habitat (an overlapping wetland ecological function) has recommended continuation of this 30m wide vegetated buffer zone be extended along the full wetland boundary perimeter.

On-site detailed survey works did not identify any other key ecological functions of the wetlands adjacent lands associated with the wetland feature. Minor site alterations to the wetland feature relating to the dug pond are being addressed separately through restoration activity, under GSCA review. Thus, no additional mitigative measures specific to wetland-adjacent lands are deemed required for the Two Lot Severances or Development Envelope delineation to maintain no negative impact on the extended PSW feature or it's identified adjacent land ecological functions.

Therefore with the aforementioned mitigative measures of wetland avoidance, other wetland restorative works on-going, and vegetated buffer zone focusing site development, it has been demonstrated and concluded that the proposed Lot Severances would be in compliance with the PPS 2.1.4, PPS 2.1.8 and the County of Grey Official Plan policy 2.8.3.1 and 2.8.3.2 for Significant Wetland.

16 Significant Woodland

16.1 Characterization

Through the section 10 analysis of the two Study Lands it has been confirmed that the Draft 2018 County Official Plan has revised significant woodland features on the full property. Significant Woodlands have been confirmed to be within the East Lot-site Lands as per Figure No. 5E, with no significant woodlands in the West Lot-Site lands.

Based on site investigations and ecological land classification delineation of Figure No. 8B, the Significant Woodland designation within the East Lot-Study Lands is represented in part, by vegetation community No. 3, No. 4, No. 5, No. 8 and No. 9. Through the section 15 wetland impact assessment, no development is permitted within the forested swamps of vegetation community No. 5, No. 8 and No. 9, which have an overlapping Significant Woodland designation.

A general characterization of the on-site vegetation within the two Site Lands has been provided in Section 4, Table 2. Appendix 3 provides a combined flora listing for the 'native upland' portions of the two Study Lands, with a break down into the three main native vegetation communities. Vegetation community No. 2 though classified as Cultural Woodland given past site disturbances and cleared lands, does not meet the provincial definition of a 'Forest' nor does it have sufficient native tree cover to meet a natural woodland classification, as confirmed through county GIS mapping not including this community as part of the abutting vegetation community No. 3 and No. 4 stands within the East Lot-Study Lands. Appendix 3 demonstrates that no flora 'species of conservation concern' were found within vegetation community No. 2, for impact assessment concern.

For Significant Woodland impact assessment purposes, further analysis of the native flora within vegetation community No. 3 and No. 4 (being the upland woodland feature) using provincial Floristic Quality Assessment tools has been provided below. The complete list of flora species under Appendix 3 provides their individual values within the 'Floristic Quality Assessment (FQA) for Southern Ontario', utilized to assess specialized habitat types, plant diversity and plants degree of tolerance to habitat alterations.

16.2 Floristic Quality Scoring

Within vegetation community No. 3 a total of 38 vascular plant species were identified with 25 being native and 13 considered non-native, this reflects a non-native flora composition of 34%. Within Southern Ontario, the average non-native composition ranges between 20 to 30%, as per M. Oldham of OMNR Natural Heritage Information Center, FQA manual. Vegetation community No. 3 has a non-native flora percentage composition above the provincial range, reflecting a level of botanical species composition that is considered disturbed for a woodland feature.

Floristic Quality Assessment values for the 'coefficient of conservatism' (FQA-CC) scoring ranks for **native** flora are based on a plants degree of fidelity to a range of synecological parameters established by the province and can represent a flora species tolerance to site disturbances. An analysis of this scoring for native species within vegetation community No. 3 is provided in Table 3 below.

Table No. 3: Native Flora Coefficient of Conservatism (CC) breakdown-Upland Environment

Scoring	Provincial Description	Study Lands Plant Numbers
0 to 3	<i>Plants found in a wide variety of plant communities including disturbed sites</i>	8 species or 32%
4 to 6	<i>Plants typically associated with a specific plant community, but tolerate moderate disturbances</i>	17 species or 68%
7 to 8	<i>Plants associated with a plant community in an advanced successional stage that has undergone minor disturbance</i>	0 species or 0%
9 to 10	<i>Those plants with high degrees of fidelity to a narrow range of synecological parameters</i>	0 species or 0%

Table No. 3 demonstrates that 100 % of the native vascular plants within vegetation community No. 3 occupy a wide range of habitat types and tolerate high to moderate degrees of disturbances. No species of conservation concern or any vascular plants requiring specialized habitat types were identified.

Within vegetation community No. 4 a total of 12 vascular plant species were identified with 7 being native and 5 considered non-native, this reflects a non-native flora composition of 42%. Vegetation community No. 4 has a non-native flora percentage composition well above the provincial range, reflecting a level of botanical species composition that is considered highly disturbed for a woodland feature.

An analysis of the native species within vegetation community No. 4 is provided in Table 4 below.

Table No. 4: Native Flora Coefficient of Conservatism (CC) breakdown-Upland Environment

Scoring	Provincial Description	Study Lands Plant Numbers
0 to 3	<i>Plants found in a wide variety of plant communities including disturbed sites</i>	1 species or 32%
4 to 6	<i>Plants typically associated with a specific plant community, but tolerate moderate disturbances</i>	6 species or 68%
7 to 8	<i>Plants associated with a plant community in an advanced successional stage that has undergone minor disturbance</i>	0 species or 0%
9 to 10	<i>Those plants with high degrees of fidelity to a narrow range of synecological parameters</i>	0 species or 0%

Table No. 4 demonstrates that 100 % of the native vascular plants within vegetation community No. 4 occupy a wide range of habitat types and tolerate high to moderate degrees of disturbances. No species of conservation concern or any vascular plants requiring specialized habitat types were identified.

16.3 Woodland Ecological Function

For the East Lot-Study Lands, soil depths within much of vegetation community No. 2, No.3 and the separate stand of No. 4 were variable with pockets of shallow soils having underlying bedrock. Old rock based field-bush transition lines can provide suitable snake gestation habitat. Through intensive on-site survey works during the active gestation period, only one sighting of an Eastern Common Garter snake was noted, considered to be negligible habitat activity use. During summer investigations only 3 adult frogs were noted within the vegetation community No. 2 and No. 3, with no observations in the separate stand No. 4, considered to be negligible habitat activity use. Breeding bird investigations did confirm nesting/rearing habitat for common birds throughout vegetation community No. 3 and No. 4 plus the non-forested land of vegetation community No. 2.

The woodland-wetland environment of vegetation community No. 4, No. 5, No. 8 and No. 9 were observed to support significant numbers of amphibians along with breeding birds and game trails for mammals.

16.4 Impact Assessment

No significant woodland associated ecological functions could be identified to vegetation community No. 3 or the separate stand of vegetation community No. 4. With much of vegetation community No. 3 being situated within an unopened road allowance, tree cutting for road opening could be undertaken by the Township at any time. This would create fragmented woodland for much of the East Lot-Study Lands, with no forested linkage corridor to other features and remove the significant woodland designation for this ‘isolated’ portion, all outside of the proponent’s property limits. To maintain no negative impacts to breeding birds and site development remain

in-compliance with the Federal Migratory Birds Act, it is recommended that no tree cutting or vegetation clearing occur May 1 to July 31.

With the wetland-woodland environment being part of the significant woodland feature, no development or site alterations are permissible and as such, no woodland ecological impacts would be anticipated.

Therefore with the aforementioned mitigative measures of wetland-woodland avoidance and constrained tree cutting/vegetation clearing period, it has been demonstrated and concluded that the proposed Lot Severances would be in compliance with the PPS 2.1.5 (b), PPS 2.1.8 and the County of Grey Official Plan policy 2.8.4 for Significant Woodlands.

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 and the County of Grey Official Plan.

- 17.1 Upon agency acceptance of this EIS technical report, the proponent/applicant shall provide to applicable agencies, a dimensioned Site Plan which shows the Lot Severance Lines, Natural Heritage Buffer Zone Limit and the Development Envelopes Lands consistent with the EIS recommendations for future single residential dwelling use for each Lot.
- 17.2 Tree cutting and/or vegetation clearing for site development activity within the Development Envelope Lands should not occur from May 1st to July 30th, during the active nesting and rearing period for migratory birds, in compliance with the Federal Migratory Birds Act. If said activities are deemed to be required during this period the proponent shall undertake bird nesting deterrence measures and bird nesting monitoring activity in accordance with the Migratory Birds Act.
- 17.3 Through the Site Plan submission process, the applicant shall address the County of Grey Official Plan 2.8.5 Special Policy Area relating to Karst and final septic treatment area location for the East Lot; provide findings to applicable agencies and inclusion of the septic treatment area mapping in the East-Lot Site Plan.

18 Conclusions

Through the Impact Assessment component, key natural heritage features and ecological functions have been identified within the two Study Lands in accordance to provincial natural heritage standards and County EIS guidelines. This EIS has recommended development avoidance areas, buffer zone implementation or development setbacks, constrained and focused tree cutting and/or vegetation clearing activity period. Through these recommendations, site development could proceed as it has been demonstrated and concluded that with recommended mitigated measures site development would have no anticipated negative impacts or loss of ecological function to the Natural Heritage features assessed within the two Study Lands or surrounding natural environment.

Therefore, with a detailed Site Plan (s) that demonstrates compliance with the EIS mitigation measures, Lot Severances and two new single residential dwellings would be in compliance with the Natural Heritage policies of the 2014 Provincial Policy Statement and the 2012 County of Grey Official Plan.

All comments contained within this report '*italicized*' are quotes pertaining to 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 or Province of Ontario air photo imagery and plotting by hand held GPS unit for significant features and through site topographic mapping on Ontario Base Maps. 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 below Figures are a very close approximation for the Property Boundary but given various Mapping Scales, Boundary anomalies etc., Figures may not match the Survey Plan Dimensions etc. to its entirety.

Figure No. 1.....	Property Location
Figure No. 2.....	Approximate Lot Severances
Figure No. 3A.....	West Lot, Study and Site Lands
Figure No. 3B.....	East Lot, Study and Site Lands
Figure No. 4.....	Provincial Natural Heritage Features
Figure No. 5A.....	Grey County Official Plan – Land Use Designations
Figure No. 5B.....	Grey County Official Plan – Natural Heritage Constraints
Figure No. 5C.....	Draft 2018 Grey County Official Plan – Land Use Designations
Figure No. 5D.....	Draft 2018 Grey County Official Plan – Karst Special Policy
Figure No. 5E.....	Draft 2018 Grey County Official Plan – Natural Heritage
Figure No. 6.....	Township of Georgian Bluffs Zoning
Figure No. 7.....	Conservation Authority Regulatory Lands
Figure No. 8A.....	West Lot-Vegetation Communities
Figure No. 8B.....	East Lot-Vegetation Communities
Figure No. 9A.....	West Lot- Natural Heritage Features
Figure No. 9B.....	East Lot- Natural Heritage Features
Figure No. 10A.....	West Lot- Buffer Zone and Development Envelope Concept
Figure No. 10B.....	East Lot- Buffer Zone and Development Envelope Concept



Figure No. 1 : Property Location

Legend

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



Notes

Ron Taylor
 Part Lot 19 & 20, Con 18, Keppel
 Twp. of Georgian Bluffs

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1.28 Kilometers





Figure No. 2 : Approximate Lot Creation/Severance Limits



Legend

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

Property Boundary

.....
Approximate Severance
Limit for New : West Lot
and East Lot

Notes

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0.64 Kilometers

0.32

0





Legend

- Parcels
- Large Scale Roads**
 - Provincial Highway
 - County Road
 - Township Road
 - Seasonal Road
- Property Boundary
- Severance Limit: West Lot
- Study Lands: West Lot
- Site Lands: West Lot

Notes

Ron Taylor
 Part Lot 19 & 20, Con 18, Keppel
 Twp. of Georgian Bluffs

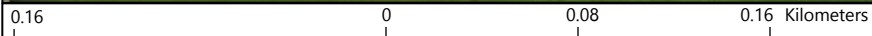
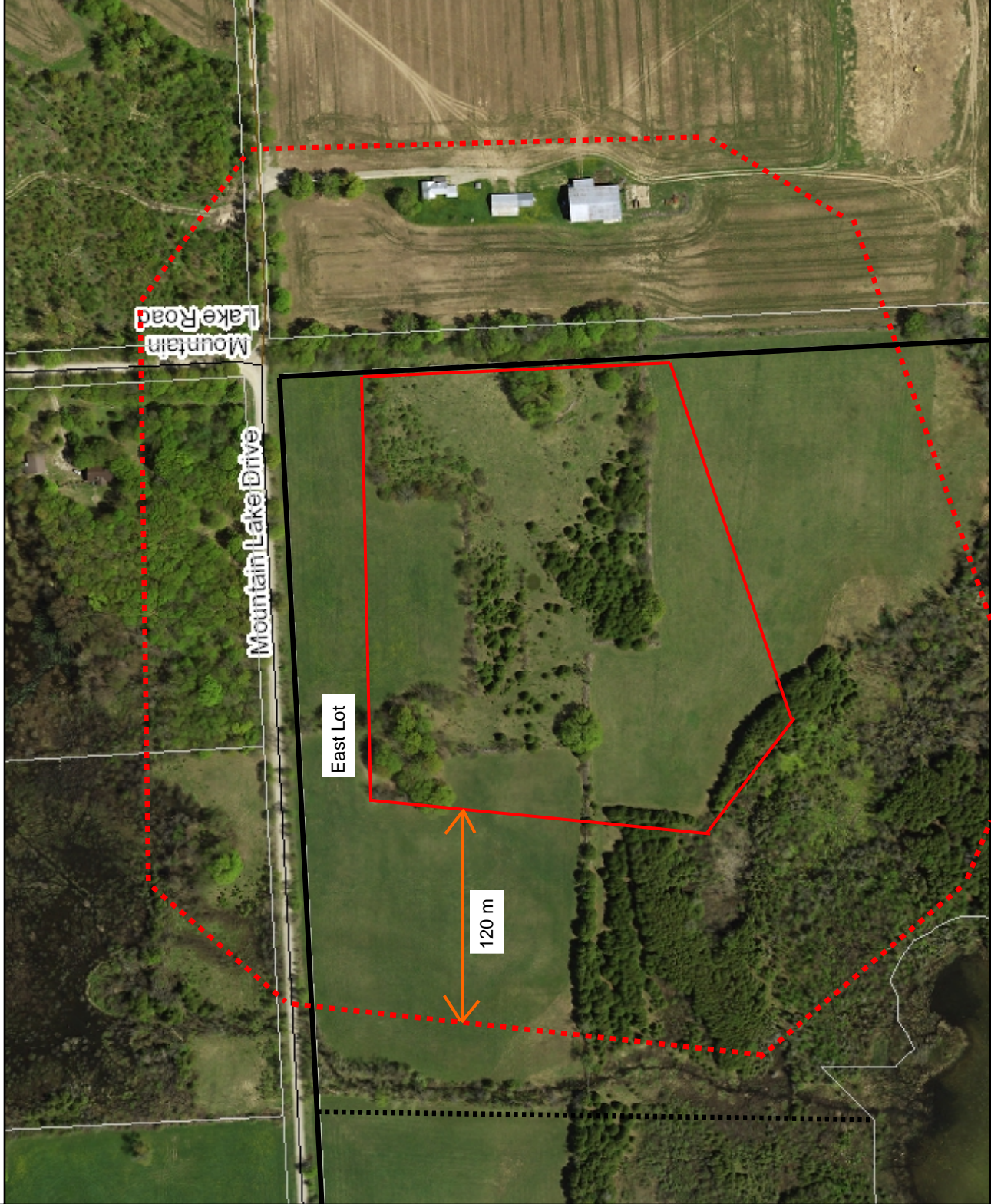




Figure No. 3B: East Lot, Study and Site Lands



Legend

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

Property Boundary

Severance Limit:
East Lot

Study Lands:
East Lot

Site Lands:
East Lot

Notes

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Part Lot 19 & 20, Con 18, Keppel
Twp. of Georgian Bluffs

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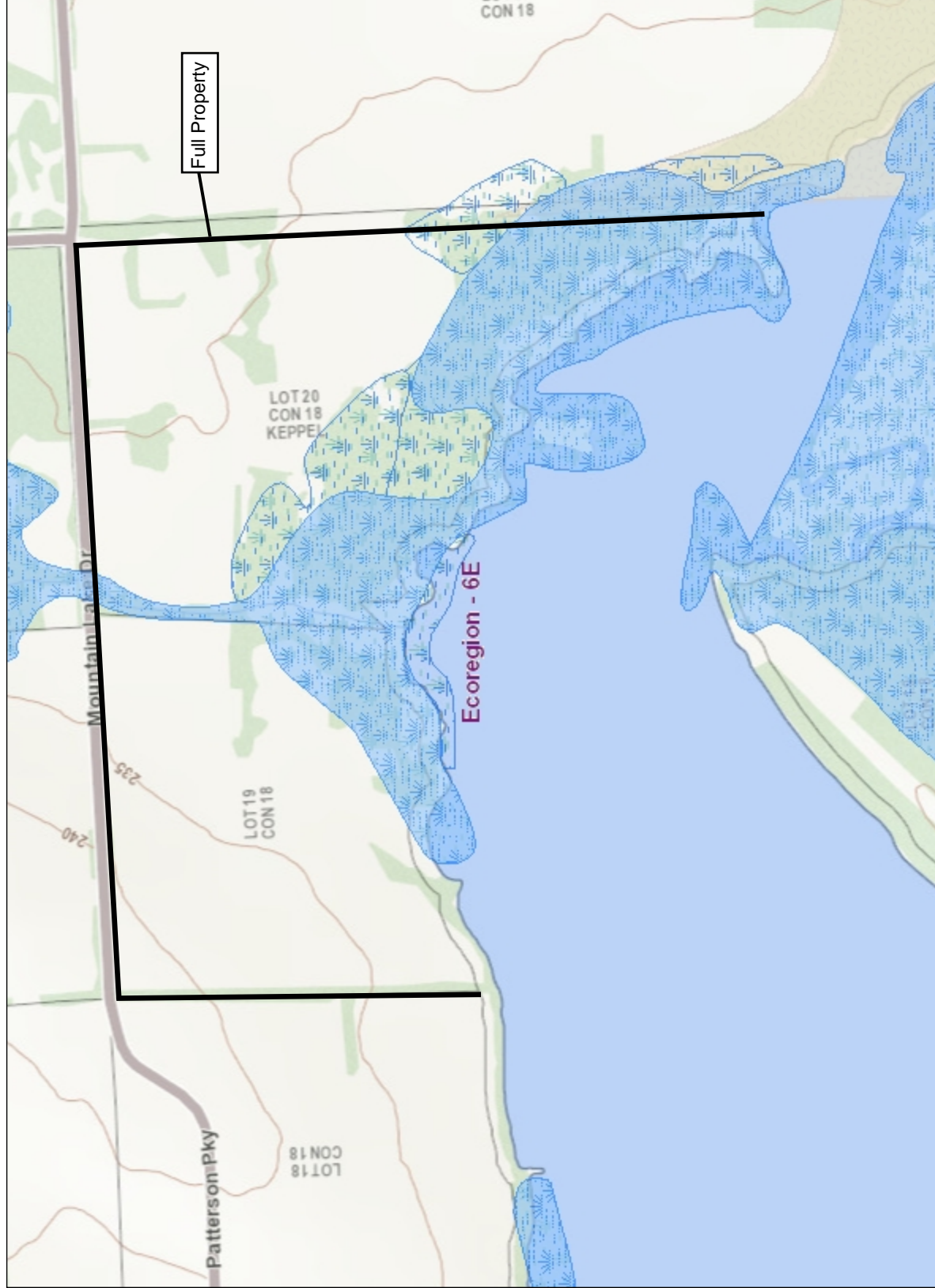
0.16 Kilometers





Figure No. 4: Provincial Features

Notes: Ron Taylor Severances
Part Lot 19 & 20, Con 18, Keppel



Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion
- Wetland
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unrated Wetland
- Area of Natural Heritage & Scientific Interest (ANHS)
 - Provincially Significant Life Science ANHS
 - Provincially Significant Earth Science ANHS
- 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



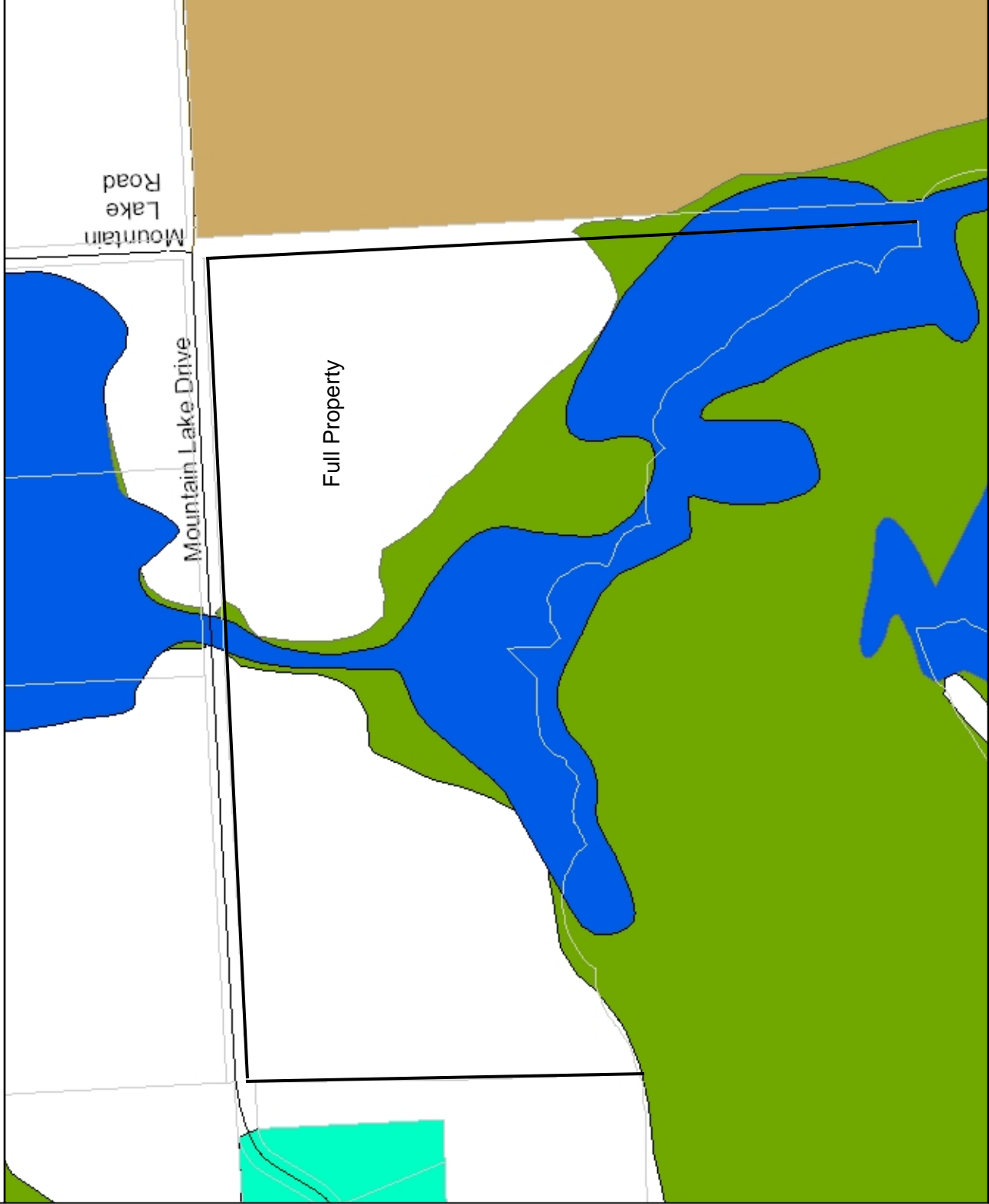
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Figure No. 5A: County Official Plan - Land Use Designations



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

Notes

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0 0.14 0.28 Kilometers

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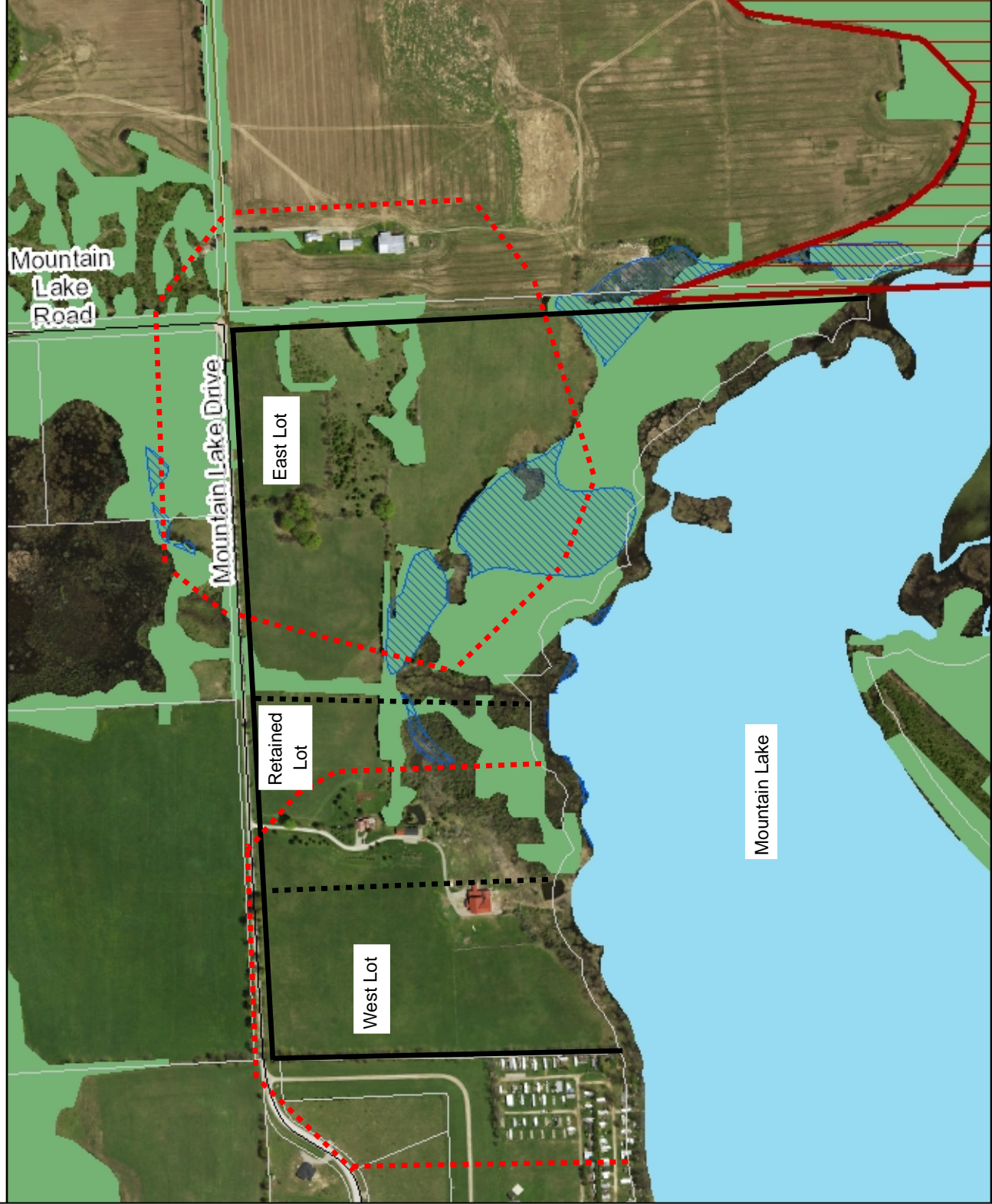
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Part Lot 19 & 20, Con 18, Keppel
Twp. of Georgian Bluffs



Figure No. 5B : County Official Plan -Natural Heritage Constraints



Legend

- Parcels
- Large Scale Roads
 - Provincial Highway
 - County Road
 - Township Road
 - Seasonal Road
- Streams
- ANSI
 - Earth Life Science
 - Earth Science
 - Life Science
- Other Identified Wetlands
- Lakes
- Significant Woodlands
- Site Lands
- Approximate Lot Severance Lines

Notes

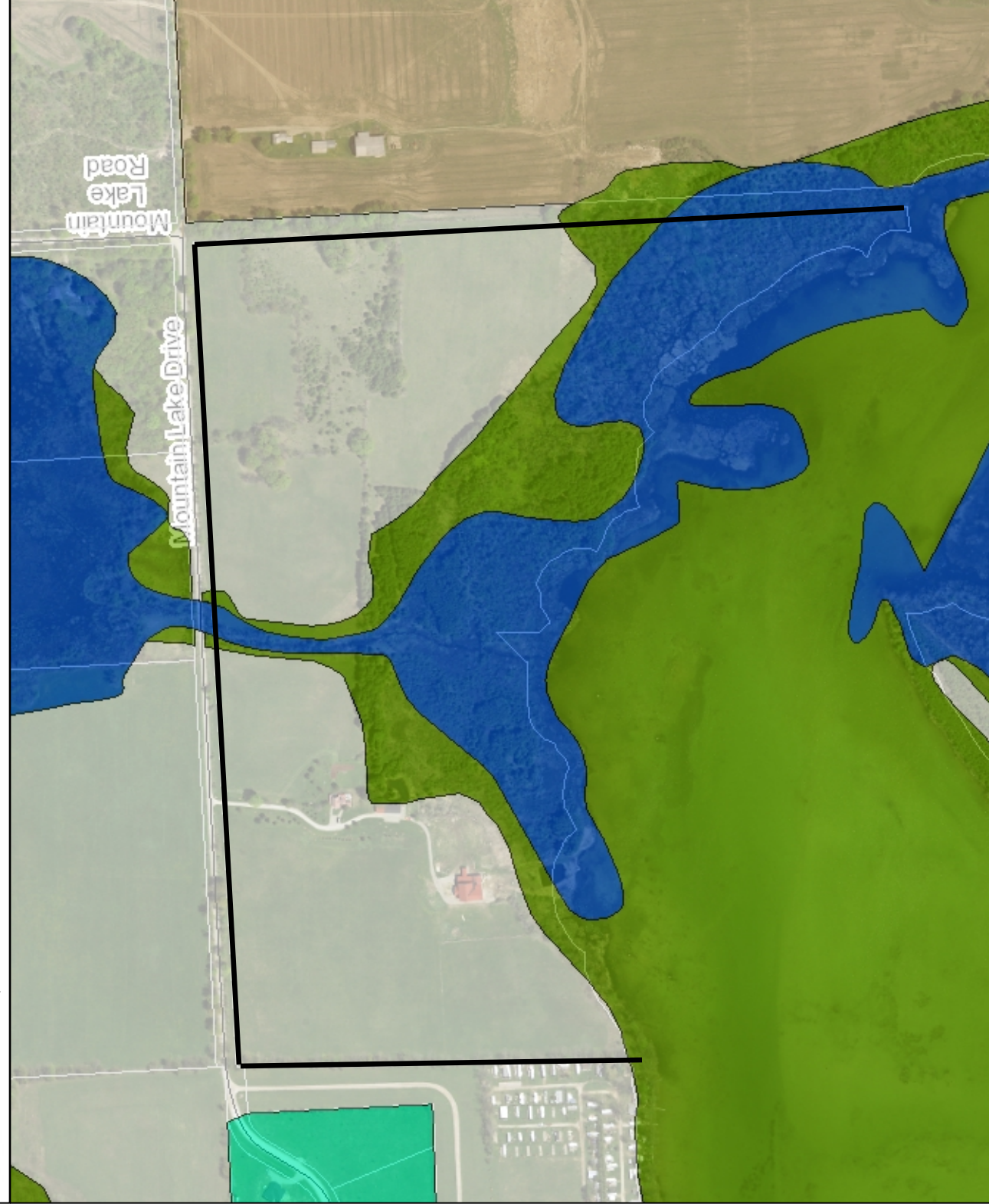
Ron Taylor
 Part Lot 19 & 20, Con 18, Keppel
 Twp. of Georgian Bluffs

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Figure No. 5C : Draft 2018 County OP - Schedule A Land Use Designations



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Legend

- Future Secondary Plan Area
- Land Use**
- Primary Settlement Area
- Secondary Settlement Area
- Agricultural
- Escarpment Recreation Area
- Hazard Lands
- Inland Lakes & Shoreline
- Niagara Escarpment Plan Area
- Rural
- Space Extensive Industrial and Commercial
- Sunset Strip Area
- Industrial Business Park
- Special Agriculture
- Provincially Significant Wetlands
- Recreation Resort Area
- Parcels**
- Large Scale Roads
- Provincial Highway
- County Road
- Township Road
- Seasonal Road

Notes

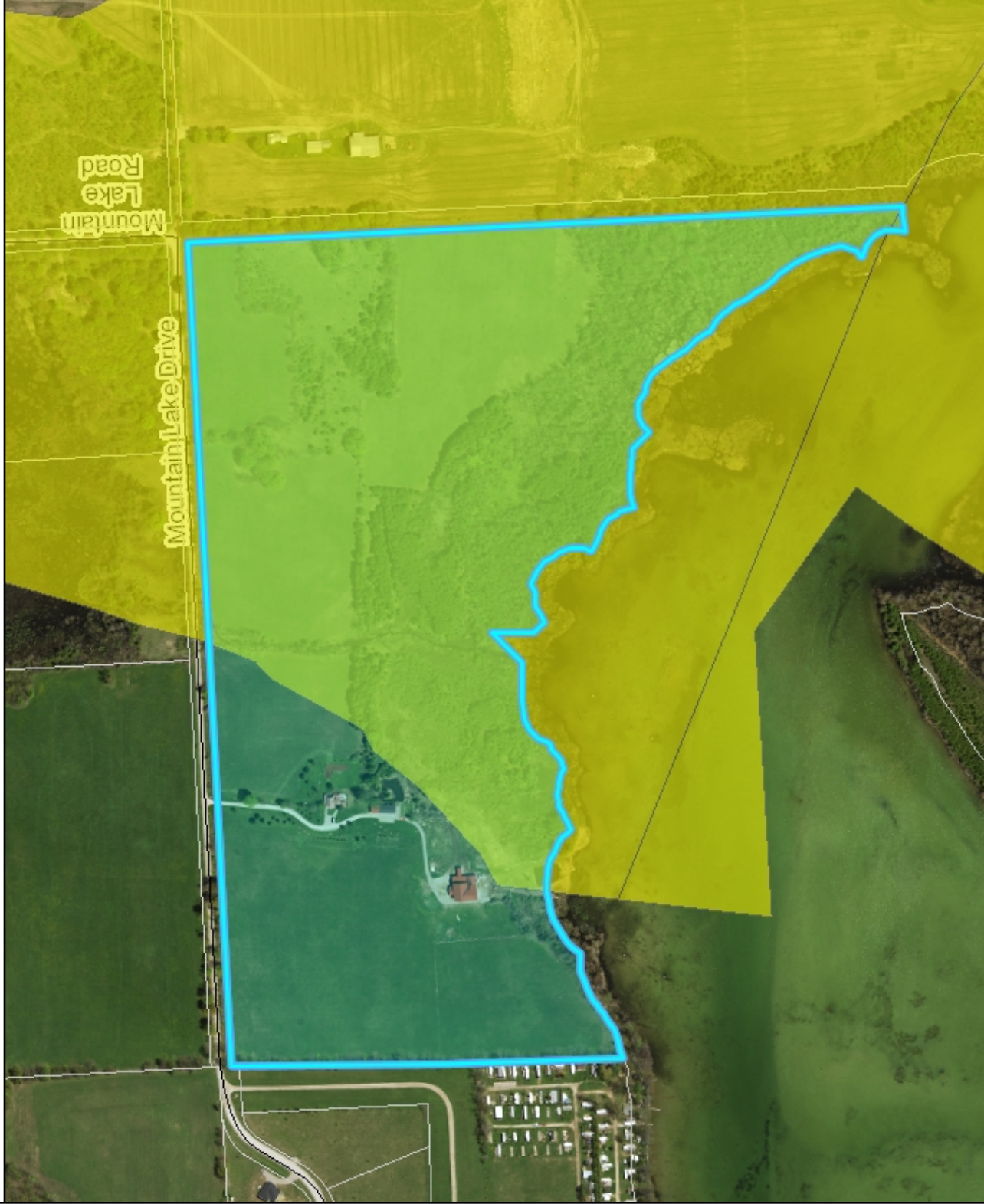
Ron Taylor
Part Lot 19 & 20, Con 18, Keppel
Twp. of Georgian Bluffs



Figure No. 5D : Draft 2018 County OP- Appendix A - Karst

Legend

- Hazardous Forest Types for Wildlar
 - Extreme ■
 - High ■
- Karst Area ■
- Parcels ■
- Large Scale Roads
 - Provincial Highway —
 - County Road —
 - Township Road —
 - Seasonal Road —



0.28 Kilometers
0 0.14 0.28

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Notes

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Twp. of Georgian Bluffs



Figure No. 5E : Draft 2018 County OP - Appendix B - Natural Heritage Constraints



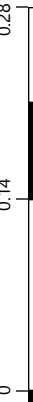
Legend

- ANSI
- ANSI, Earth Life Science
- ANSI, Earth Science
- ANSI, Life Science
- Streams
- Lakes and Rivers
- Other Wetlands
- Significant Valleylands
- Significant Woodlands
- Parcels
- Large Scale Roads
- Provincial Highway
- County Road
- Township Road
- Seasonal Road

Notes

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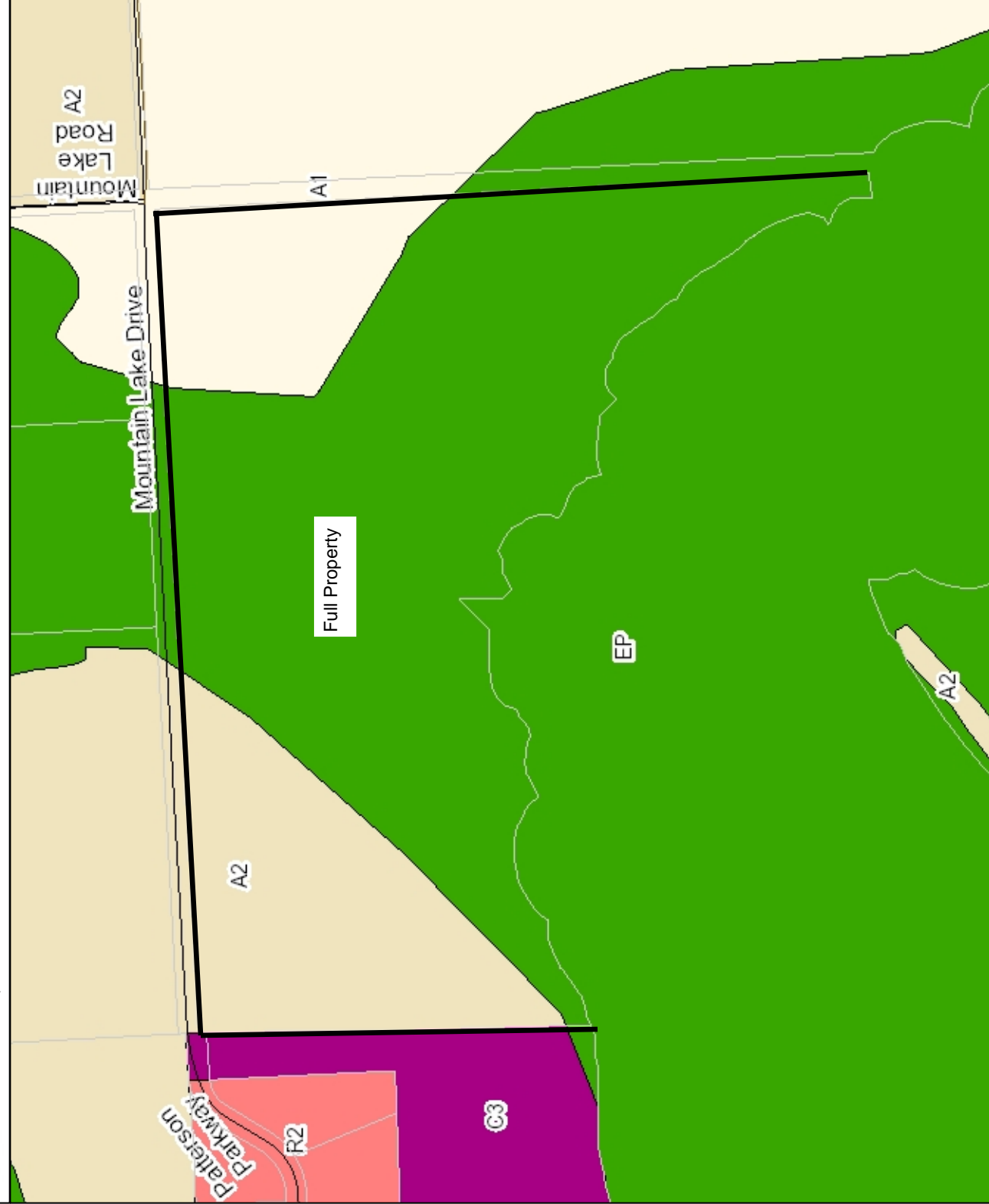


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Ron Taylor
 Part Lot 19 & 20, Con 18, Keppel
 Twp. of Georgian Bluffs



Figure No. 6 : 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

Notes

Ron Taylor
 Part Lot 19 & 20, Con 18, Keppel
 Twp. of Georgian Bluffs

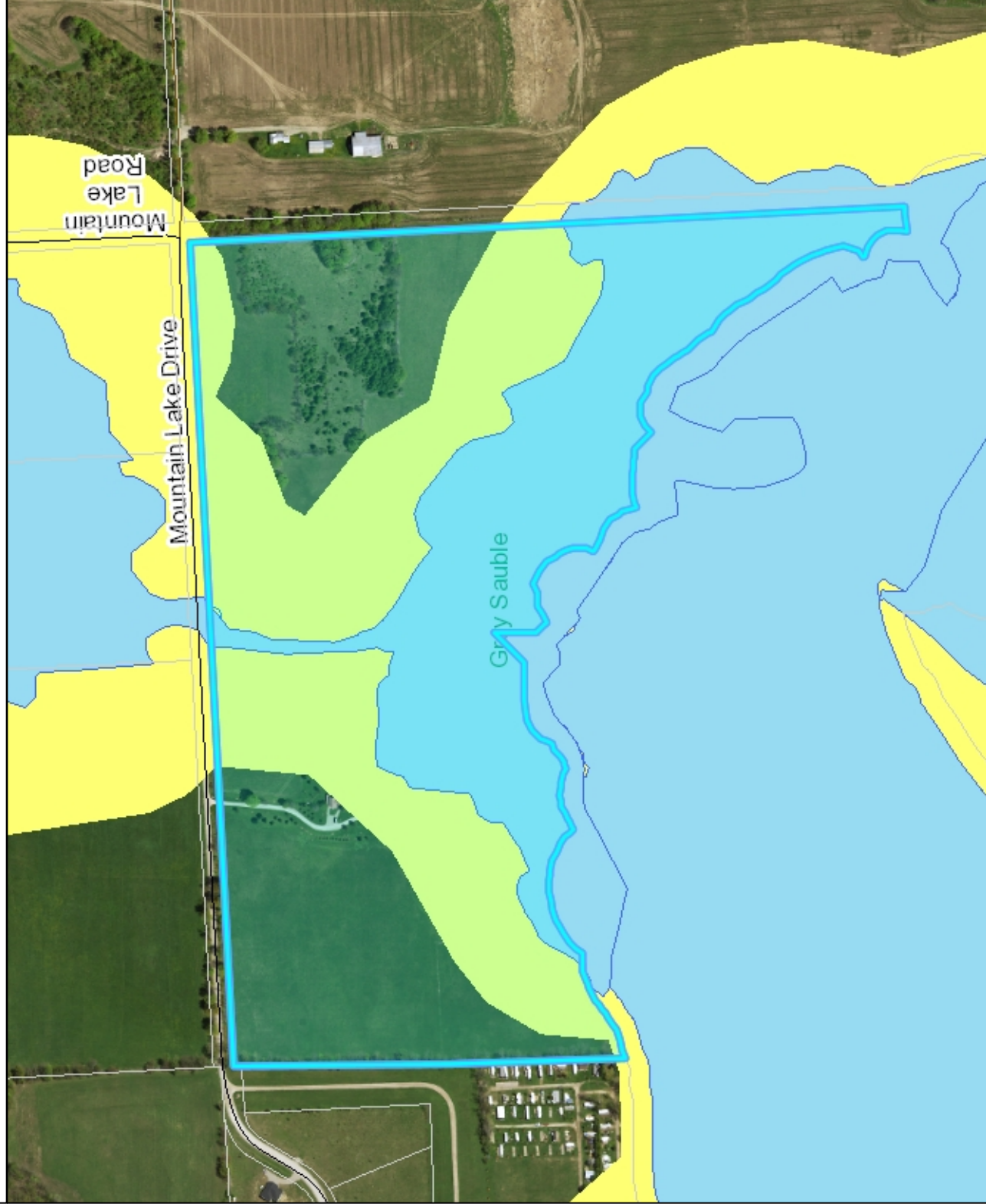
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Figure No. 7 : Conservation Authority Regulatory Lands



Legend

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

Notes

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 Part Lot 19 & 20, Con 18, Keppel
 Twp. of Georgian Bluffs



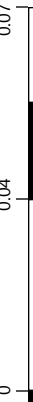
Figure No. 8A : West Lot - Vegetation Communities



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0.07 Kilometers



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Legend

West Lot

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

Ecological Land Classifications

- 1 = Agricultural Fields Cash Crop
- 1B = Developed / Disturbed Lands
- 5 = SWD6-1: Red Maple Organic Deciduous Swamp
- 6 = SWT3-2: Willow Organic Thicket Swamp
- 7 = MAS3-1: Cattail Organic Shallow Marsh
- 8 = SWM4-1: White Cedar- Hardwood Organic Mixed Swamp
- 9 = SWC3-1: White Cedar Organic Swamp
- HH = Hardwood-Hedgerow

Notes

Ron Taylor
 Part Lot 19 & 20, Con 18, Keppel
 Twp. of Georgian Bluffs



Figure No. 8B : East Lot- Vegetation Communities



Legend

East Lot



Study Lands



Vegetation Community Boundary



Vegetation Community Number

Ecological Land Classifications

- 1 = Agricultural Fields
Cash Crop
- 2 = CUW1-1:
Cedar Cultural Woodland
- 3 = FOD5-6:
Dry-Fresh Sugar Maple-Basswood Deciduous Forest
- 4 = FOC2-2:
Dry-Fresh White Cedar Coniferous Forest
- 5 = SWD6-1:
Red Maple Organic Deciduous Swamp
- 6 = SWT3-2:
Willow Organic Thicket Swamp
- 8 = SWM4-1:
White Cedar-Hardwood Organic Mixed Swamp
- 9 = SWC3-1:
White Cedar Organic Swamp

Notes

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0.14 Kilometers

0.07

0



Figure No. 9A : West Lot - Natural Heritage Features



Legend

West Lot



Study Lands



Provincially Significant
Wetland Boundary
(MNRF)



Wetland Boundary (EIS)
Plus Significant
Wildlife Habitat

Notes

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0.07 Kilometers



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Ron Taylor
Part Lot 19 & 20, Con 18, Keppel
Twp. of Georgian Bluffs



Figure No. 9B : East Lot - Natural Heritage Features



Legend

East Lot



Study Lands

Provincially Significant Wetland (MNRF)

Wetland Boundary (EIS) Plus Significant Wildlife Habitat

Significant Woodland (County OP)

Notes

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Figure No. 10A : West Lot - Buffer Zone and Concept Development Envelope



West Lot

Study Lands

Wetland Boundary (EIS) Plus Significant Wildlife Habitat

30m wide Buffer Zone, No Development

Concept Development Envelope

Wetland Restoration Lands (Separate Project under GSCA)

Notes

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0 0.04 0.07 Kilometers

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Ron Taylor
Part Lot 19 & 20, Con 18, Keppel
Twp. of Georgian Bluffs



Figure No. 10B : East Lot - Buffer Zone and Concept Development Envelope



Legend

East Lot



Study Lands

Wetland Boundary (EIS)
Plus Significant
Wildlife Habitat



30m wide Buffer
Zone, No Development



Concept Development
Envelope



Notes

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0.14 Kilometers

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Ron Taylor
Part Lot 19 & 20, Con 18, Keppel
Twp. of Georgian Bluffs

APPENDIX 1

- Property Parcel information, Grey County web site

General Information

Report Generated: 4/14/2018 3:05:57 PM

Roll Number: 420362000506000

[\(Interactive Map\)](#)

Acreeage:

79.42

Assessed Property Value: \$328,000

(May not reflect current market value- [MPAC](#))

Civic Address: 132 MOUNTAIN LAKE DRIVE

NEP Designation: Outside the Niagara Escarpment Plan Area

[\(NEP Map\)](#)

Legal Desc.: CON 18 N PT LOT 19 N PT LOT;20

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

Zoning:

A1 General Rural

C3 Tent and Trailer Campground

W Wetland



APPENDIX 2

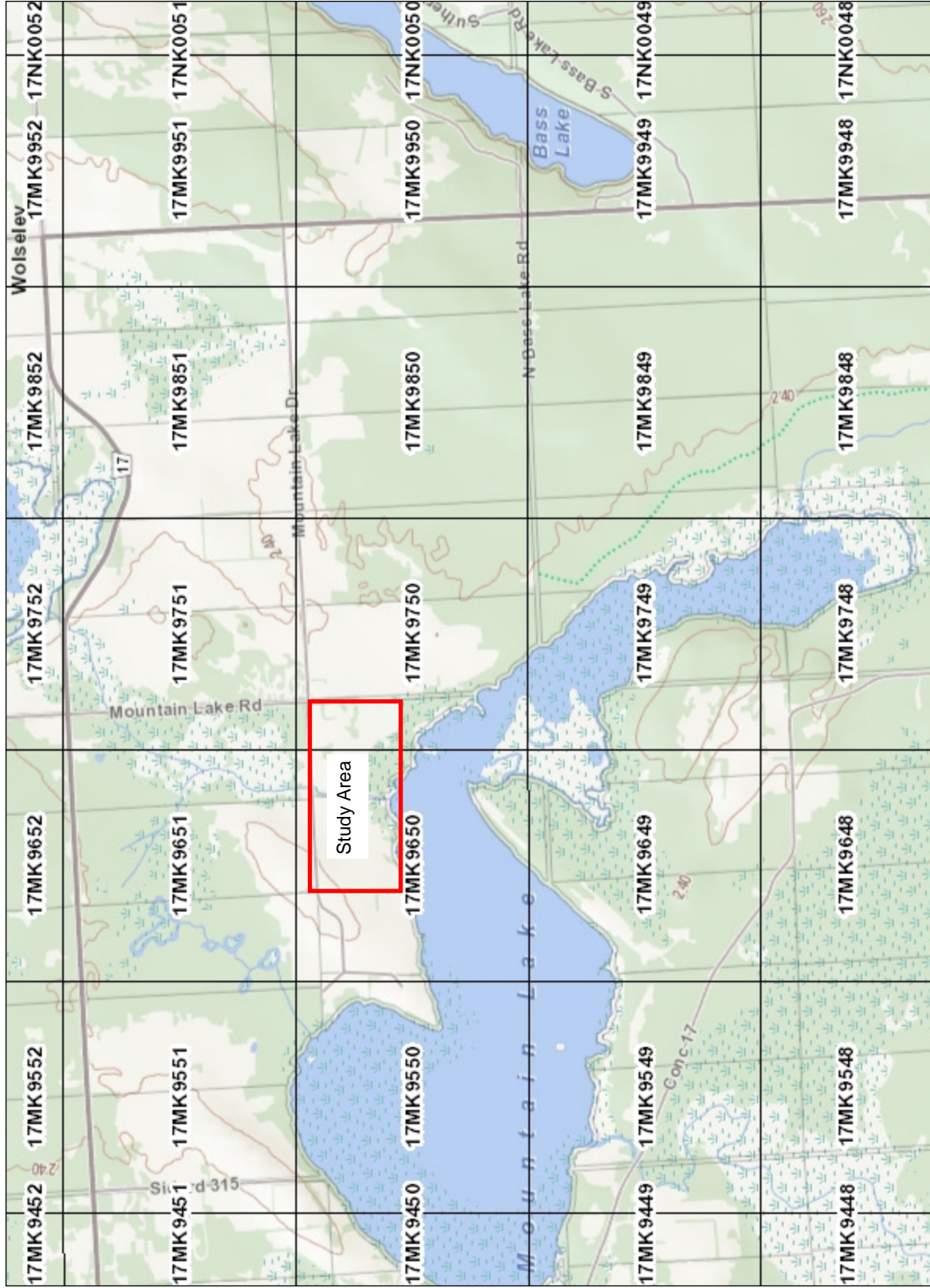
- **MNRF- Natural Heritage Center data search for historical records of significant Flora and Fauna, with search coverage map of surrounding 5km area**



Ministry of Natural Resources and Forestry
 Make-a-Map: Natural Heritage Areas

Historical Records Search within 5 km's for Significant Flora & Fauna

Notes: Ron Taylor Severances
 Part Lot 19, Con 18, Keppel
 Twp., of Georgian Bluffs



Legend

- Assessment Parcel
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System
- Ecoregion
- Wetland
 - Provincially Significant Wetland Evaluated
 - Non-Provincially Significant Wetland Evaluated
 - Unrated Wetland
- Area of Natural Heritage & Scientific Interest (ANHS)
 - Provincially Significant Life Science (PLS)
 - Provincially Significant Earth Science (PES)
- 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
 - Countyside Area
 - Rural Settlement
 - Palgrave Estates
 - Residential Community
 - Settlement Area



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Ron Taylor Severances: Mountain Lake Property

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

Source:

OMNRF – Natural Heritage Information Center data in the Land Information Ontario on-line databases with ten species records.

Bobolink (*Dolichonyx oryzivorus*)

- Provincial Ranking = S4, Provincial Status = Threatened
- Last recorded in the search area 2002

Eastern Meadowlark (*Sturnella magna*)

- Provincial Ranking = S4, Provincial Status = Threatened
- Last recorded in the search area 2002

Snapping Turtle (*Chelydra serpentina*)

- Provincial Ranking = S3, Provincial Status = Special Concern
- Last recorded in the search area 2008

Black Tern (*Chilodactylus niger*)

- Provincial Ranking = S3, Provincial Status = Special Concern
- Last recorded in the search area 1991

Eastern Wood-pewee (*Contopus virens*)

- Provincial Ranking = S4, Provincial Status = Special Concern
- Last recorded in the search area 2002

Wood Thrush (*Hylocichla mustelina*)

- Provincial Ranking = S4, Provincial Status = Special Concern
- Last recorded in the search area 2002

Hart's-tongue Fern (*Asplenium scolopendrium*)

- Provincial Ranking = S3, Provincial Status = Rare
- Last recorded in the search area 1993

Beaked Spikerush (*Elocharis rostellata*)

- Provincial Ranking = S3, Provincial Status = Rare
- Last recorded in the search area 1987

Laurentian Bladder Fern (*Cystopteris laurentiana*)

- Provincial Ranking = S3, Provincial Status = Rare
- Last recorded in the search area 2001

Restricted species #68188

- Species where access to the information is restricted to protect it from poaching or other damage. AWS confirmed species ID with MNRF.

APPENDIX 3

- Flora Listing: Rankings, Status and Floristic Quality Scoring

Ron Taylor- Lot Severances: Flora Listing

with current Ranking, Status and S. Ontario Floristic Quality Scoring
Part Lot 19, Concession 18, Geographic Township of Keppel

No species of conservation concern identified

1) Vegetation community No. 2

Latin Name	Common Name	Native or Introduced	Rank		Status			FQA	
			Nat.	Prov.	Nat.	Prov.	Local	CC	CW
<i>Acer saccharum</i>	Sugar Maple	N	N5	S5	NAR	NAR	Common	5	-3
<i>Achillea millefolium</i>	Yarrow	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Acinos arvensis</i>	Mother of Thyme	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Agrimonia gyrosepala</i>	Agrimony	N	NNR	S5	NAR	NAR	Common	2	2
<i>Amelanchier arborea</i>	Serviceberry	N	N5	S5	NAR	NAR	Common	5	3
<i>Asclepias syriaca</i>	Common Milkweed	N	N5	S5	NAR	NAR	Common	0	5
<i>Bromus inermis</i>	Smooth Brome	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Carex gracillima</i>	Graceful Sedge	N	N5	S5	NAR	NAR	Common	4	3
<i>Carex granularis</i>	Meadow Sedge	N	N5	S5	NAR	NAR	Common	3	-4
<i>Carex spicata</i>	Spiked Sedge	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Centaurea nigra</i>	Black Knapweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Cirsium arvense</i>	Canada Thistle	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	N	NNR	S5	NAR	NAR	Common	6	5
<i>Cornus amomum</i>	Silky Dogwood	N	NNR	S5	NAR	NAR	Common	5	-4
<i>Cornus stolonifera</i>	Red Osier Dogwood	N	NNR	S5	NAR	NAR	Common	2	-3
<i>Crataegus monogyna</i>	English Hawthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Crataegus punctata</i>	Dotted Hawthorn	N	N5	S5	NAR	NAR	Common	4	5
<i>Dactylis glomerata</i>	Orchard Grass	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Elymus repens</i>	Twitchgrass	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Festuca pratensis</i>	Meadow Fescue	I	NNA	SNA	Exotic	Exotic	Exotic	0	4
<i>Fragaria virginiana</i>	Wild Strawberry	N	NNR	S5	NAR	NAR	Common	2	1
<i>Fraxinus americana</i>	White Ash	N	NNR	S4	NAR	NAR	Common	4	3

Galium mullugo	Cleavers	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Juniperus communis	Common Juniper	N	N5	S5	NAR	NAR	Common	4	3
Leucanthemum vulgare	Ox-eye Daisy	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Lotus corniculatus	Bird's-foot Trefoil	I	NNA	SNA	Exotic	Exotic	Exotic	0	1
Malus pumila	Apple	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Medicago lupulina	Black Medick	I	NNA	SNA	Exotic	Exotic	Exotic	0	1
Parthenocissus inserta	Virginia Creeper	N	NNR	S5	NAR	NAR	Common	3	3
Pilosella officinarum	Mouse-ear Hawkweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Plantago lanceolata	English Plantain	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
Poa compressa	Canada Bluegrass	I	NNR	SNA	Exotic	Exotic	Exotic	0	2
Potentilla recta	Sulpher Cinquefoil	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Prunella vulgaris	Heal-all	N	N5	S5	NAR	NAR	Common	5	5
Prunus domestica	Plum	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Prunus virginiana	Chokecherry	N	NNR	S5	NAR	NAR	Common	2	1
Ranunculus acris	Common Buttercup	I	NNA	SNA	Exotic	Exotic	Exotic	0	2
Ribes cynosbati	Prickly Gooseberry	N	NNR	S5	NAR	NAR	Common	4	5
Solidago altissima	Tall Goldenrod	N	NNR	S5	NAR	NAR	Common	1	3
Syringa vulgaris	Lilac	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Taraxacum officinale	Dandelion	I	N5	SNA	Exotic	Exotic	Exotic	0	3
Thuja occidentalis	White Cedar	N	N5	S5	NAR	NAR	Common	4	-3
Tragopogon dubius	Goat's Beard	I	SNA	SNA	Exotic	Exotic	Exotic	0	5
Trifolium pratense	Red Clover	I	NNA	SNA	Exotic	Exotic	Exotic	0	2
Ulmus americana	American Elm	N	NNR	S5	NAR	NAR	Common	3	-2
Viburnum lentago	Nannyberry	N	NNR	S5	NAR	NAR	Common	4	-1
Vicia cracca	Cow Vetch	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Vitis riparia	Wild Grape	N	N5	S5	NAR	NAR	Common	0	-2
Mean								2	2

Total number of Native species = 22 or 46 %
Total number of Introduced or Non-Native species = 26 or 54 %

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2) Vegetation community No. 3

Latin Name	Common Name	Native or Introduced	Rank		Status			FQA	
			Nat.	Prov.	Nat.	Prov.	Local	CC	CW
<i>Acer saccharum</i>	Sugar Maple	N	N5	S5	NAR	NAR	Common	5	-3
<i>Acinos arvensis</i>	Mother of Thyme	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Actaea pachypoda</i>	Doll's Eyes	N	NNR	S5	NAR	NAR	Common	6	5
<i>Arctium minus</i>	Burdock	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Carex granularis</i>	Meadow Sedge	N	N5	S5	NAR	NAR	Common	3	-4
<i>Carex spicata</i>	Spiked Sedge	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Centaurea nigra</i>	Black Knapweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Circaea lutetiana</i>	Enchanter's Nightshade	N	N5	S5	NAR	NAR	Common	3	3
<i>Cirsium arvense</i>	Canada Thistle	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	N	NNR	S5	NAR	NAR	Common	6	5
<i>Cornus amomum</i>	Silky Dogwood	N	NNR	S5	NAR	NAR	Common	5	-4
<i>Crataegus monogyna</i>	English Hawthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Dactylis glomerata</i>	Orchard Grass	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Dryopteris carthusiana</i>	Spinulose Woodfern	N	N5	S5	NAR	NAR	Common	5	-2
<i>Fragaria virginiana</i>	Wild Strawberry	N	NNR	S5	NAR	NAR	Common	2	1
<i>Fraxinus pennsylvanica</i>	Green Ash	N	N5	S4	NAR	NAR	Common	3	-3
<i>Galium palustre</i>	Marsh Bedstraw	N	NNR	S5	NAR	NAR	Common	5	-5
<i>Geranium robertianum</i>	Herb Robert	N	N4	S5	NAR	NAR	Common	0	5
<i>Geum aleppicum</i>	Yellow Avens	N	NNR	S5	NAR	NAR	Common	2	-1
<i>Geum canadense</i>	White Avens	N	NNR	S5	NAR	NAR	Common	3	0
<i>Hydrophyllum virginianum</i>	Virginia Water-leaf	N	NNR	S5	NAR	NAR	Common	6	-2
<i>Hypericum perforatum</i>	Common St. John's Wort	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Juglans nigra</i>	Black Walnut	N	N4	S4	NAR	NAR	Common	5	3
<i>Juniperus communis</i>	Common Juniper	N	N5	S5	NAR	NAR	Common	4	3
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	I	SNA	NNA	Exotic	Exotic	Exotic	0	1
<i>Maianthemum canadense</i>	Mayflower	N	N5	S5	NAR	NAR	Common	5	0
<i>Maianthemum stellatum</i>	Starry False Solomon's Seal	N	N5	S5	NAR	NAR	Common	6	1
<i>Parthenocissus inserta</i>	Virginia Creeper	N	NNR	S5	NAR	NAR	Common	3	3
<i>Potentilla recta</i>	Sulpher Cinquefoil	I	NNA	SNA	Exotic	Exotic	Exotic	0	5

Prunus serotina	Black Cherry	N	N5	S5	NAR	NAR	Common	3	3
Prunus virginiana	Chokecherry	N	NNR	S5	NAR	NAR	Common	2	1
Ranunculus acris	Common Buttercup	I	NNA	SNA	Exotic	Exotic	Exotic	0	-2
Ribes cynosbati	Prickly Gooseberry	N	NNR	S5	NAR	NAR	Common	4	5
Sambucus racemose	Red Elderberry	N	N5	S5	NAR	NAR	Common	5	2
Taraxacum officinale	Dandelion	I	N5	SNA	Exotic	Exotic	Exotic	0	3
Thuja occidentalis	White Cedar	N	N5	S5	NAR	NAR	Common	4	-3
Tilia americana	Basswood	N	N5	S5	NAR	NAR	Common	4	3
Viburnum opulus ssp. trilobum	High-bush Cranberry	N	NNR	S5	NAR	NAR	Common	5	-3
Vicia cracca	Cow Vetch	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
Viola labradorica	Dog Violet	N	NNR	S5	NAR	NAR	Common	4	-2
Mean									
Total number of Native species =		27		or 68%					
Total number of Introduced or Non-Native species =		13		or 32%					
		<u>40</u>							

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

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

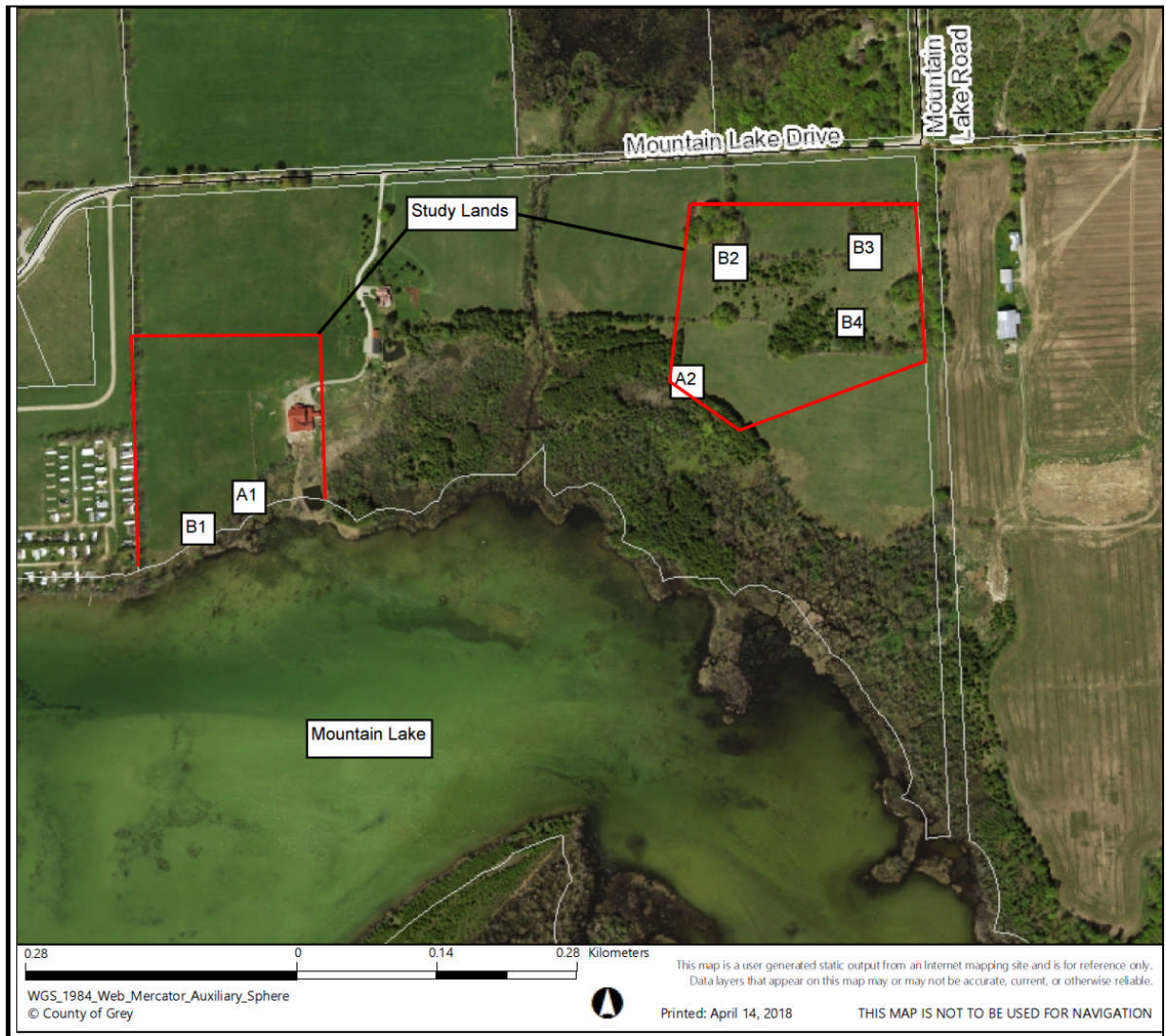
Note: CC scores of 8 or higher are indicator species of candidate Significant Woodlands

APPENDIX 4

- Fauna Listing: Ranking and Status

Ron Taylor, Mountain Lake Property

Fauna Point Count Survey Locations



- Anuran (frog/toad) night time calling survey: A1, A2
- Breeding bird day time calling survey: B1, B2, B3, B4

Ron Taylor- Lot Severances: Fauna Inventory

with Current Ranking, Status and Observed Numbers

Part Lot 19, Concession 18, Geographic Township of Keppel

No species of conservation concern identified

Latin Name	Common Name	Ranking		Status			Breeding Codes	Recorded in Point Counts	Observed Range of Adult Numbers
		Nat.	Prov.	Nat.	Prov.	Local			
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	N5	S4	NAR	NAR	Common	Conf	B1, B4	4
<i>Bombycilla cedrorum</i>	Cedar Waxwing	N5	S5	NAR	NAR	Common	Po-H	B4	2
<i>Bonasa umbellus</i>	Ruffed Grouse	N5	S4	NAR	NAR	Common	Po-S	B2	2
<i>Cardinalis cardinalis</i>	Northern Cardinal	N5	S5	NAR	NAR	Common	Po-H	B2,B3	1
<i>Carduelis tristis</i>	American Goldfinch	N5	S5	NAR	NAR	Common	Pr	B2,B3,B4	7
<i>Colaptes auratus</i>	Northern Flicker	N5	S4	NAR	NAR	Common	Po-H	B3	2
<i>Cyanocitta cristata</i>	Blue Jay	N5	S5	NAR	NAR	Common	Pr	B2,B4	4
<i>Meleagris gallopavo</i>	Wild Turkey	N5	S5	NAR	NAR	Common	Conf	B4	7
<i>Molothrus ater</i>	Brown-headed Cowbird	N5	S4	NAR	NAR	Common	Po-S	B3	2
<i>Picoides pubescens</i>	Downy Woodpecker	N5	S5	NAR	NAR	Common	Po-H	B1,B2,B4	5
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	N5	S4	NAR	NAR	Common	Po-H	B3	2
<i>Poecie atricapillus</i>	Black-capped Chickadee	N5	S5	NAR	NAR	Common	Pr	B2,B4	5
<i>Sayornis phoebe</i>	Eastern Phoebe	N5	S5	NAR	NAR	Common	Po-S	B3	1
<i>Setophaga petechia</i>	Yellow Warbler	N5	S5	NAR	NAR	Common	Po-S	B3	1
<i>Scolopax minor</i>	American Woodcock	N5	S4	NAR	NAR	Common	Ob-X	B1	1
<i>Sialia sialis</i>	Eastern Bluebird	N4	S5	NAR	NAR	Common	Po-H	B3, B4	2
<i>Spizella passerina</i>	Chipping Sparrow	N5	S5	NAR	NAR	Common	Po-H	B1, B3	4
<i>Tachycineta bicolor</i>	Tree Swallow	N5	S4	NAR	NAR	Common	Po-H	B1,B3,B4	5
<i>Turdus migratorius</i>	American Robin	N5	S5	NAR	NAR	Common	Conf	B2,B3,B4	5+
<i>Zenaidura macroura</i>	Mourning Dove	N5	S5	NAR	NAR	Common	Po-H	B4	1

Birds

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		Status			Observed Range of Adult Numbers
		Nat.	Prov.	Nat.	Prov	Local	
<i>Canis latrans</i>	Coyote	N5	S5	NAR	NAR	Common	1
<i>Lepus americanus</i>	Snowshoe Hare	N5	S5	NAR	NAR	Common	2
<i>Odocoileus virginianus</i>	White-tailed Deer	N5	S5	NAR	NAR	Common	2
<i>Peromyscus maniculatus</i>	Deer Mouse	N5	S5	NAR	NAR	Common	3
<i>Procyon lotor</i>	Raccoon	N5	S5	NAR	NAR	Common	1
<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	N5	S5	NAR	NAR	Common	3
<i>Tamias striatus</i>	Eastern Chipmunk	N5	S5	NAR	NAR	Common	2

Mammals

<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake	N5	S5	NAR	NAR	Common	1
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Reptiles

<i>Lithobates clamitans</i>	Green Frog	N5	S5	NAR	NAR	Common	20+
<i>Lithobates pipiens</i>	Northern Leopard Frog	N5	S5	NAR	NAR	Common	20+
<i>Lithobates sylvaticus</i>	Wood Frog	N5	S5	NAR	NAR	Common	8--10

Amphibians

None Observed							
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Fish

<i>Cercyonis pegala</i>	Common Wood-Nymph	N5	S5	NAR	NAR	Common	3
<i>Colias philodice</i>	Clouded Sulphur	N5	S5	NAR	NAR	Common	1
<i>Euphyes vestris</i>	Dun Skipper	N5	S5	NAR	NAR	Common	4

Butterflies

<i>Anax junius</i>	Common Green Darner	N5	S5	NAR	NAR	Common	3
<i>Amphagrion saucium</i>	Eastern Pondhawk	N5	S5	NAR	NAR	Common	1
<i>Calopteryx maculata</i>	Ebony Jewelwing	N5	S5	NAR	NAR	Common	5
<i>Pachydiplax longipennis</i>	Blue Dasher	N4	S5	NAR	NAR	Common	2

Dragonflies & Damselflies

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

NNA defined as: Not Ranked
 N5 defined as: Secure
 N4 defined as: Apparently Secure
 N3 defined as: Vulnerable
 N2 defined as : Imperiled
 N1 defined as: Critically Imperiled

SNA defined as : Unranked
 S5 defined as: Secure
 S4 defined as: Apparently Secure
 S3 defined as: Rare to Uncommon
 S2 defined as: Very Rare
 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: Endangered 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'

Anuran (Frog and Toad) Point Count Calling Survey Results:

Survey Date	Point Count No.	Species Code / Calling Code / Numbers
2-May-18	A1	WF / 1 / 4
	A2	WF / 2 / 7-8
29-May-18	A1	NLF / 2 / 10-12
	A2	NLF / 3 / 20+
		NLF / 1 / 3
		NLF / 1 / 3
		GF / 2 / 6-8
		GF / 2 / 14-15

North American / Bird Studies Canada - Marsh Monitoring Frog Calling Abundance Codes:
 Code 0 = No calling Activity Recorded
 Code 1 = Individual calls do not overlap and calling individuals can be discreetly counted
 Code 2 = Calls of individuals sometimes overlap, but numbers of individuals can still be estimated
 Code 3 = Overlap among calls seems continuous (full chores) and count estimate is impossible

Frog Species Codes:
 GT = Gray Treefrog SP = Spring Peepers GF = Green Frog
 NLF = Northern Leopard Frog WF = Wood Frog AT = American Toad

APPENDIX 5

- Site Photographs



Photo No. 1: Vegetation community No. 1, August 2018 (West Lot Development Envelope)

Photo No. 2: Vegetation community No. 2, June 2018 (East Lot Development Envelope)





Photo No. 3: Vegetation community No. 3, August 2018

Photo No. 4: Vegetation community No. 4, June 2018





Photo No. 5: Vegetation community No. 5, West Lot, May 2018

Photo No. 6: Vegetation community No. 5, East Lot, May 2018





Photo No. 7: Vegetation community No. 6, May 2018

Photo No. 8: Vegetation community No. 7, May 2018



APPENDIX 6

- AWS Qualifications & EIS Experience



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@gbteel.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 to 120 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 Offences 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 1997-2018

Residential Subdivisions & Commercial Development

Grey County (16)	Bruce County (27)
<p>Andpet 16th Ave Comm Deve.-Owen Sound Loucks Subdivision- Chatsworth Langen Subdivision-Shallow Lake Boulder 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</p>	<p>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 Karen Investment Ltd-Port Elgin Dent Dubdivision-Mildmay</p>
	<p>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 John Webster-Southampton John Innes-Southampton Moravian Subdivision-Southampton Barry's Walkerton Subdivision</p>
	Wellington County (2)
	<p>Murphy Subdivision - Mount Forest South Saugeen Development-Mount Forest</p>
	Perth County (1)
	<p>Maitland River Estates - Listowel</p>

Infrastructure Projects & Industrial Development

Bruce County (16)	Grey County (19)
<p>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</p>	<p>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</p>
	<p>Town of Hanover Business Park Viking-Cives Ltd - Mount Forest Sydenham Heights-Owen Sound Servicing</p>
	Huron County (2)
	<p>Wingham Force main Goderich Pier Stabilization</p>
	Wellington County (2)
	<p>Town of Minto-Coon Creek 5-Year Monitoring Town of Minto-Palmerston Industrial Park</p>

Natural Heritage Environmental Impact Studies and Experience 1997-2018

Recreational and Energy Land Use Development

Grey County (29)	Bruce County (13)	Simcoe County (3)
<p>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</p>	<p>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</p>	<p>Hamilton Brothers Ltd.-Stream Restoration Devils Glen Stream Realignment Devils Glen Club House Expansion Robitaille Wind Farm-Cedar Point</p> <p>Dufferin County (2)</p> <p>Bowman Comm. Development Cedar Highlands Ski Club</p> <p>Wellington County (1)</p> <p>White's Creek Restoration</p> <p>Manitoulin Island (2)</p> <p>Manitoulin Streams Association Municipality Official Plan</p>

Natural Heritage Environmental Impact Studies and Experience 1997-2018

Lot Severances & Building Envelopes

Grey County (94) and NEC		
Zaferis Building Envelope	Hughes Building Envelope	Wiley Severance
Clancy- 20th Street Building Envelope	Wilson Building Envelope	Davies Severance
Emmerson Building Envelope	Smith Severance	Stewart Severances
Shantz Building Envelope	Currie Building Envelope	Irwin Building Envelope
Fligg Building Envelope	Valette Building Envelope	Valent Building Envelope
Todd Severance	Robinson Severance	Barfoot Building Envelope
Underwood Building Envelope	Taylor Building Envelope	Voisin Building Envelope
Klages Severances	Low Building Envelope	Colborne Building Envelope
Beacock Building Envelope	Donavon Building Envelope	Tengler Building Envelope
McNeil Building Envelope	Lupia Building Envelope	Langerap Building Envelope
Gilbert Severances	Zeggil Severances	Wattie Building Envelope
Dillman Severance	McNeil Severance	Hall Severance
Thom Severances	Byers Building Envelope	Hrodzicki Building Envelope
DiFranco Severances	Gilmour Building Envelope	Nicholls Dwelling Expansion
Farnenhorst Building Envelope	Martindill Severance	NEC-Caframo Tree Preservation Plan
Biesinger Severances	Peach Severance	Elliott Building Envelope
Love Building Envelope	Ryan Severance	Spaleta Building Envelope
Braun Severances	J. Martin Building Envelope	Haslam Severance
Legge Building Envelope	Shrek Building Envelope	Bethune Severance
Wilcox Building Envelope	James Severance	O'Sullivan Building Envelope
HSC Clavering Severances	Maxwell Severance	McGlynn Building Envelope
Holmes Building Envelope	Harris Severance	Edgar Lot Severances
Brulette Severances	R. Martin Building Envelope	Moore Building Envelope
Philipp Severances	Philipp Building Envelope	Dr. Bond Lot Severance
Sheppard Severance	Bauman Building Envelope	Craig Building Envelope
Pfaff Building Envelope	Berg Building Envelope	Godwin Building Envelope
Wilmer Severances	Shrek Severance	
Doherty Building Envelope	Yoder Severance	
Menaul Severance	Hollingshead Severance	
McNabb Building Envelope	McKay Building Envelope	
Toombs Building Envelope	Molner Severance	
McGowan Building Envelope	Detzier Severance	
Lobban Severance	Baragar Building Envelope	

Natural Heritage Environmental Impact Studies and Experience 1997-2018

Lot Severances & Building Envelopes continued		Species At Risk and Biological Surveys
	Bruce County (38) and NEC	Bruce County (12)
Lee Building Envelopes	Hamiton Severances-Saugeen	Rankin River-Sky Lake SAR Study
Hall Building Envelope	Miramichi Shores-Copway St, Saugeen	Rankin River-Boat Lake SAR Study
Vespasiano Severance	Barclay Site Development-Saugeen	Rankin River-Isaac Lake SAR Study
Matheson Severances	Collins Severance- Kincardine	Beatty Saugeen River-Thermal
Seeman Severance	NEC - Weiss Tree Preservation Plan	Grey/Bruce Wetland Evaluation Upgrades
P. MacDonald Severances	Town of Saugeen Shores Building Envelope	Spring Creek Fish Habitat
Arcazo Building Envelope	Bennett Severance	Saugeen River-Muskellunge Habitat
Goetz Severances	Voison-Southampton	Beatty Saugeen River-Smolt Passage
Chippewa Golf Course Severances	Robinson Family-Southampton	Chesley Lake Angling Winter Creel
S. MacDonald Severances	Rudell-Fishing Islands	Peninsula Black Bear Radio Tag-Dens
Zepf Severances	Kempton Building Envelope	Peninsula Winter Yard Deer Browse
Porto Severance	Sauble Christian Fellowship-Parking Lot Exp.	Denny's Dam Fishway Monitoring
B. Elliot Severances		Grey County (3)
Royal Homes-Kincardine		Shallow Lake SAR Study
Ferguson Point Severances		Meaford National Defence Base SAR Study
CAW-Saugeen Beach Severances		Pretty River Valley County Forest SAR Study
Siekierski Building Envelope		Simcoe County (1)
Murray Severance	Huron County (2)	Copeland Forest SAR Study
Walker Severances	Wingham Golf Course Severances	Region of Peel (1)
Janssen Building Envelope	Kraemer Building Envelope	Rattray Marsh SAR Study
Knight Building Envelope	Simcoe County (2)	
Thorn Severance	Wilbert Severances	
Kramer Building Envelope	Alliance Homes Building Envelopes	
Smith Severances	Dufferin County (1)	
D. Elliot Severance	Preist Severance	
O'Conner Severances	Wellington County (2)	
McLay Severances	Town of Erin-Weber Building Envelope	
Burley Building Envelope	Town of Erin-Langen Severance	

Natural Environment Impact Assessment Reports for Aggregate Applications

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