

NATURAL HERITAGE ENVIRONMENTAL IMPACT STUDY

PREPARED FOR

Bayou Cable Park Inc.

Water-ski Wakeboard Cable Park

**Recreational Facility Development
Part Lot 30, Concession 9,
Geographic Township of Collingwood
Town of The Blue Mountains
County of Grey**

PREPARED BY

AWS

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Operating as Aquatic and Wildlife Services

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1 Executive Summary

Bayou Cable Park Inc. has proposed to develop a recreational facility referred to as 'Water-ski Wakeboard Cable Park' within a portion of the former Cedar Run Horse Park in the Town of Thornbury, located at Part Lot 30, concession 9, Geographic Township of Collingwood, Town of The Blue Mountains. Much of the proposed site development lands are within disturbed/altered landscape of: open grass fields (horse training / competing area) with corrals and sand riding rings, filled /excavated/draind wet swale areas and tree cleared lands. The proposed concept site development consists of constructing three separate 'cable systems'; sets of overhead high –tensile cables, powered by an electric drive motor similar to a chair lift at a ski hill) which would tow participants along a series of new isolated ponds. Also included in the plan are internal roads, servicing buildings, sewage disposal area and future overnight cabins. A Natural Heritage Environmental Impact Study (EIS) was requested through the pre-application consultation process to address potential negative impacts associated with site development on the natural environment.

AWS Environmental Consulting Inc. (AWS) was retained in late April 2017 to undertake an EIS in accordance with the environmental policies and guidelines of the Grey County Official Plan and Town of The Blue Mountains. On-site field investigations of natural heritage features and surveys of ecological functions were undertaken for the EIS throughout the late spring to early fall growing seasons of 2017 providing three season coverage. Additionally, AWS completed extensive water course and fish habitat assessment for the former landowner in 2012, in anticipation of a watercourse realignment project which the current new landowner is now proposing to undertake as part of this new development proposal.

This EIS has demonstrated and concluded that with application and clearance approval for Species-At-Risk (SAR) birds under the Endangered Species Act plus appropriate site development mitigation, no negative impacts are anticipated to the identified significant natural heritage features or ecological functions identified within the Study Lands or its adjacent 120m lands. With the mitigative measures implemented, site development would be in compliance with the Natural Heritage Policies of the 2014 Provincial Policy Statement, the 2012 Grey County and 2016 Town of The Blue Mountains Official Plans.

2 Introduction

This EIS has been undertaken to address the Endangered Species Act 2007, 2014 Natural Heritage Provincial Policy Statement 2.1, other applicable provincial and federal applicable Acts / Legislation and the 2012 Grey County Official Plan and the 2016 Town of The Blue Mountains Official Plan. Technical reporting will follow the format of the Provincial Natural Heritage Reference Manual of March 2010 for natural heritage features and ecological function identification and impact assessment.

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

Within this technical report, the field investigation lands are referred to as the '**Study Lands**', delineated on Figures 1 and 2. The Study Lands represent the proposed Site Development Lands only. A broader review of the 120 m adjacent lands, referred to as the '**Site Lands**' also delineated on Figure 2, was undertaken through satellite image interpretation and background literature reviews to identify any off-site 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 to search for historical occurrence records for flora and fauna species of conservation concern within 5 km of the Study Lands. This background review was utilized to augment field data collection. A complete listing of reports / documents reviewed or cited is provided in the reference section. Sources include:

- 2012 Grey County Official Plan and schedule mapping, Draft January 2017 schedules for the County of Grey Natural Heritage Study (Green in Gray)
- 2016 Town of The Blue Mountains Official Plan schedule mapping
- OMNRF- Owen Sound Area Office; fish and wildlife records and mapping of provincial features in the Land Information Ontario database.
- Natural Heritage Information Center (NHIC) database of the Ontario Ministry of Natural Resources and Forestry (OMNRF) on the Land Information Ontario website for significant flora and fauna records.

3.2 Field Study Methodology

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

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

- A qualified two-person team comprised of John Morton and Judith Jones from AWS Environmental Consulting Inc., completed natural environment field inventory and assessment works within the Study Lands. Experience and qualification are provided in Appendix 11.

Vascular Plant Surveys were conducted during the growing seasons (spring and summer) of 2017. A complete list of species with conservation ranking, status levels and Floristic Quality Scores is provided in Appendix 2. Naming and taxonomy follow the VASCAN database (Brouillet et al. 2010). Survey works followed a single standardized search method over the Study Lands given its disturbed coverage area:

- a) A 'random' coverage approach was implemented within all habitat types, transition edges and vegetation communities, with search efforts over the entire Study Lands.

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

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

- a) Monitoring activity included 'Point Counts' for breeding activity in accordance with Bird Studies Canada methodology for Woodland habitat and MNRF Grassland (Bobolink) methodology for the Open Grassland habitat. Point count locations were established to cover all habitat types within the Study Lands, with no point count location closer than 100 m to another (limited overlapping of potential territories). Occurrences were recorded, through both sightings and calling. Point Count undertaking times and location mapping are provided in Appendix 3.
- b) Additional bird observations of feeding adults and fledglings during summer site visits were also recorded and listed under Appendix 3 as observations outside the breeding season.

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

- a) Suitable habitat for Anuran (Amphibian-Frog) breeding activity was identified during the early May site visit within the Study Lands and an Anuran breeding call surveys were undertaken following Bird Studies Canada's Marsh Monitoring Program protocol.
- b) No suitable habitat for Turtle activity was identified during the early May site visit within the Study Lands or immediate adjacent lands, as such no detailed survey works for basking or egg laying activity were undertaken.
- c) Reptiles-Snake activity was actively searched for during the spring hibernation emergence period and summer gestation period within suitable habitat areas.

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

Fish Habitat and fish community survey works was updated through visual observations to the 2012 AWS- Fish Habitat Assessment within the unnamed water course and adjacent Indian Brook stream.

3.3 Field Survey Dates

Table 1: Field Survey Dates and Focus of Works

Date	Survey Time & Duration	Weather Conditions (at start time)	Survey Focus
May 30, 2017	0730-1000 For 2.5 hrs	Wind Speed = 12-19 km/hr Air Temp.= 15° C Precipitation = 0 Cloud Cover = 25%	Hydrology, Breeding Bird Survey, Amphibian egg mass search, General Fauna
May 31, 2017	2130-2200 For 0.5 hrs	Wind Speed = 6-12 km/hr Air Temp.= 10° C Precipitation = 0 Cloud Cover = 50%	Amphibian breeding calling survey, Bat activity
June 12, 2017	0730-1030 2-Person Crew For 6.0 hrs	Wind Speed = 6-12 km/hr Air Temp. = 22.0° C Precipitation = 0 Cloud Cover = 25%	Breeding bird survey, General fauna, Spring flora survey
June 24, 2017	0715-0815 For 1.0 hrs	Wind Speed = 6-12 km/hr Air Temp. = 16.0° C Precipitation = 0 Cloud Cover = 75%	Breeding bird survey, General fauna
July 17, 2017	0900-1100 For 2.0 hrs	Wind Speed = 3-6 km/hr Air Temp. = 20.0° C Precipitation = 0 Cloud Cover = 75%	Vegetation Community delineation, Snake gestation activity, General Fauna
August 10, 2017	1130-1300 For 1.5 hrs	Wind Speed = 3-6 km/hr Air Temp. = 25.0° C Precipitation = 0 Cloud Cover = 75% ,	Summer Flora inventory, Snake gestation activity, General Fauna
September 25, 2017	1300-1500 For 2.0 hrs	Wind Speed = 3-6 km/hr Air Temp. = 28.0° C Precipitation = 0 Cloud Cover = clear,	Snake hibernation submergence activity, Hydrology, General Fauna

Total field survey work provided 15.5 hours of search /survey coverage over seven site visits during the late spring, summer and fall seasons of 2017. All survey work site visit dates and weather conditions are in accordance with natural heritage protocol requirements for the focused field survey works.

4 Vegetation Community Characterization

Vegetation community boundaries within the Site Lands are delineated on Figure No. 6, defined based on the 'Ecological Land Classification (ELC) for Southern Ontario, First Approximation'. ELC types, ranking and characterization for each vegetation community are provided in Table 2.

Table 2: Vegetation Communities Types - ELC Codes

Vegetation Community Number	ELC Code	Type	Description	Provincial Ranking
1	None	Agricultural	Open grassland fields with scattered fenced corrals with sand base and small scattered man-made ponds. A former Equestrian Competition/Training Park	None
2	FOC2-2	Dry-Fresh White Cedar Coniferous Forest	White Cedar, mature trees having a closed canopy. Little to Nil understory growth or ground cover.	S5
3	None	Hedgerow	Mixed deciduous trees ranging in age from mature to saplings, sparse with several grass openings.	None
4	FOM7-2	Fresh-Moist White Cedar-Hardwood Mix	Riparian vegetation cover along a natural watercourse, several site disturbances	S5
5	None	Hedgerow	Mixed conifers, mature trees	None
6	CUM1	Dry-Moist Old Field Meadow	Mix of Grasses, Sedge with abundant non-native species, site disturbances (fill)	S5
7	MAM2-10	Forb Mineral Meadow Marsh Type	Mix of forbs, grasses, sedges, low shrubs. Site disturbances (excavation, drainage, fill).	S4S5
8	SWT2-2	Willow Mineral Thicket Swamp Type	Dominated with tall shrubs with scattered patches of grasses & sedges. Site disturbances (excavation, drainage, fill).	S5

Significant Feature Analysis

5 Habitat of Endangered and Threatened Species

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

Through this background literature review, four historical records of endangered or threatened species were noted: Gypsy Cuckoo Bumble Bee, Bobolink, Eastern Meadowlark and Barn Swallow.

The Provincial Policy Statement (PPS) section 2.1.7 states:

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

Additionally the OMNRF documentation of historical records section states:

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

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

Provincial habitat descriptions for Gypsy Cuckoo Bumble Bee and Barn Swallow are provided below:

Gypsy Cuckoo Bumble Bee

- *Occurs in diverse habitats such as open meadows, agricultural and urban areas, boreal forest and woodlands. This bumble bee is thought to eat the pollen and nectar of a wide variety of plants. Gypsy Cuckoo Bumble Bees are a parasitic species which follows the life cycle pattern and therefore, in part, the habitat of its hosts which are other bumble bees (e.g., the Rusty-patched and Yellow-banded Bumble Bees). In Ontario, the Gypsy Cuckoo Bumble Bee was historically found throughout most of the province; however in recent years it is known only to occur in Pinery Provincial Park.*

- Study Lands Habitat Assessment: All of the Study Land vegetation community types provide suitable habitat however; there have been no recorded sightings of this species since 1967 within the search coverage area and as per current provincial description, this bumble bee species is only known to currently occur within the Pinery, approximately 150km's southwest of the Study Lands.

Barn Swallow

- *Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts. The species is attracted to open structures that include ledges where they can build their nests, which are often re-used from year to year. They prefer unpainted, rough-cut wood, since the mud does not adhere as well to smooth surfaces.*
- Study Lands Habitat Assessment: No suitable nesting structures or features are present within the Study Lands, The surrounding barns and non-dwelling structures are intensively used for agricultural (commercial apple orchard operations) or are well maintained enclosed barns, having negligible noted barn swallow nesting habitat.

Through the analysis of historical data and through detailed EIS flora and fauna inventory works, two Threatened bird species have been confirmed on-site. Therefore, further review and impact assessment is warranted and provided under reporting section 14 for site development conditions required under the 2007 Endangered Species Act (ESA). With said conditions met, site demonstrate would be in compliance with the Endangered Species Act 2007 and thus the PPS 2.1.7 the Grey County Official Plan 2.8.6(2) and goal of the Town of The Blue Mountains Official Plan policy A3.2.

6 Fish Habitat

Within the Study Lands, fish and fish habitat was confirmed within the unnamed watercourse bisecting through the Study Lands, from west to east. Detailed on-site Fish Habitat investigations and reporting was undertaken by AWS Environmental Consulting in 2012 for the former landowner of the Cedar Run Horse Park. Proposed at that time was to realign this watercourse further southward and becoming a permanent feeder tributary to Indian Brooke. Said technical reporting confirmed there would be no net loss of fish habitat within this watercourse plus the receiving waters of Indian Brooke would receive a net gain in water quantity and quality supporting increased fish production and carrying capacity within the lower Indian Brook stretch. This technical report was reviewed and approved by the Grey Sauble Conservation Authority at that time. The previous landowner never undertook the watercourse realignment project which the current landowner is now proposing to complete and follow the same earlier engineered Site Plan design for the watercourse realignment.

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

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

The PPS Natural Heritage section 2.1.8 states:

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

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

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

Fish Habitat was confirmed on-site by AWS in 2012 and 2017, no new findings or watercourse changes have occurred since the initial watercourse realignment proposal. As such, the engineering Site Plan Design for the current site development, being consistent with the earlier reviewed and approved watercourse realignment, would be in compliance with the PPS 2.1.6 and 2.1.8, the Federal Fisheries Act and the applicable County of Grey and Town of The Blue Mountains Official Plan policies. Additional historical information and current Fish Habitat policy review is provided under Appendix 8. As such, it is deemed that no further review or EIS impact assessment is warranted for this feature.

7 Significant Valleylands

Grey County has tentatively mapped Significant Valleylands through its 'Green in Grey Natural Heritage' study of January 2017, though not yet adopted into their Official Plan. Excerpt mapping is provided under Appendix 5, for the surrounding landscape sourced from this natural heritage study, which shows no 'significant valleyland' feature within the 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.

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

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

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

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

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

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

A review of Provincially Significant ANSI's was undertaken from OMNRF and Land Information Ontario web site mapping, Figure No. 3. This provincial mapping demonstrates that no significant ANSI features, either earth science or life science, occur within the Site Lands.

The Provincial Policy Statement (PPS) Section 2.1.5 (e) states:

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

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

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

The PPS Natural Heritage Section 2.1.8 states:

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

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

9 Significant Wetlands

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

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

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

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

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

The PPS Natural Heritage section 2.1.8 states:

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

With no designated Significant Wetland feature within the Site Lands, it has been demonstrated and can be concluded that site development within the subject property would be in compliance with the PPS 2.1.8 and Grey County Official Plan 2.8.3. Policy section B5.3 of the Towns Official Plan for 'Wetlands' is not applicable as per the policy statement "*The purpose of the Wetlands designation is to recognize and protect Provincially Significant Wetlands*". Similarly, with no hazard designation, policy B5.3.3 for 'Hazard Lands' is not applicable within the noted EIS vegetation communities of 7 and No. 8. Therefore, no further review or impact assessment is warranted for provincially significant wetlands.

Ontario Base Mapping (Figure No. 2B) shows a wetland environment (symbols) within the Study Lands, identified on-site as being part of vegetation community numbers 2, 6, 7 and 8. On-site investigations characterized only vegetation community No. 7 and 8 as 'wetland environment' as per section 4, Table No. 2. The Grey County Official Plan constraint mapping of Figure No. 4B shows **no 'other'** wetlands designation within the Study Lands. Within the Towns Official Plan, Figure 5A does not delineate or identify any wetland environment as a hazard designation, plus the Towns Official Plan-Constraint Mapping shown on Figure No 5B, does not show any 'other' wetland designation within the Study Lands, consistent to the County OP. The Town of Blue Mountains policy 5.2.1 9 (f) states "*Constraint Appendix 1 is intended to identify the following other features and areas;...other wetlands as identified in the County official Plan*". As such, site development within the Study Lands is in compliance to the current County Official Plan and Town of Blue Mountains Official Plans for 'other' wetlands.

In further review, the County of Grey recently completed in January 2017 a County Natural Heritage Study which is a background document to the Draft November 2017 New Grey County Official Plan (OP). Site area mapping in relation to mapping under the Natural Heritage Study and Draft new County OP Constraint mapping has been provided under Appendix 5, which does delineate the subject small wetland environment in the northeast Study Lands corner as 'other wetlands', following the Ontario Base Mapping features delineation. This County NH Study feature mapping being based on Ontario Base Mapping features and having limited ground truthing, is subsequently prone to errors, as is the wetland feature for the Study Lands (i.e. Appendix 4, 2006 air photo imagery shows the Town's Fire Hall building within this OBM wetland feature and subsequently is still shown on the 2017 Draft OP constraint mapping for 'other' wetlands).

The Nov. 2017 Draft New County Official Plan titled 'Recolour Grey' under draft policy 6.4.2 (1) for 'Other Wetlands' it states in part:

No development or site alterations are permitted within other wetlands or their adjacent lands, shown on Appendix B, unless it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

Further in review, this subject 'other' wetland environment has undergone extensive historical alterations; excavations, tree clearing, fill, road construction, fragmentation and water diversion/channelization. Additionally, the approved municipal realignment of Clarke Street south of the Fire Hall, through the north portion of the wetland vegetation community No. 7, will see further hydrology changes, flora alterations and fragmentation of this wetland environment.

The proposed development would see a portion of this wetland environment converted to a recreation pond which will still support wetland hydrogeological functions and values such as water infiltration, water quality maintenance and flood control capacity. Identified ecological functions within the wetland environment can and have been mitigated through reporting section 16 that are associated with wildlife habitat. Given the history of site alterations within this small wetland feature, Land Use Type designation being 'Primary Settlement Area', the area being Zoned for Future Development, and the type of site development proposed within these communities, no significant ecological function changes are anticipated. Therefore in conclusion, site development will still be in compliance for the Draft County OP natural heritage system intent in relation to 'other wetlands' and through mitigation of wildlife habitat it has been concluded that the proposed site development would have no negative impact on the overall wetland feature or its limited ecological functions identified. Thus, no further review or impact assessment relating specifically to 'other' wetlands or 'wetland-hazard', are deemed required for natural heritage assessment.

10 Significant Woodlands

The County of Grey has undertaken countywide mapping for Significant Woodlands within its Official Plan, as per policy 2.8.4. In review of the County Official Plan constraint mapping of Figure No. 4B shows that no forest cover within the Study Lands has been deemed 'Significant Woodland' under the Grey County Official Plan. Similarly the Towns Official Plan constraint mapping of Figure No. 5B shows that no forest cover within the Study Lands has been deemed 'Significant Woodland' under the Towns Official Plan.

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

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

The Grey County Official Plan policy 2.8.4.1 in part states:

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

The Site is within Ecoregion 6E; thus, this policy is in effect. The Ontario NHRM 2010, Section 7.4 for Significant Woodlands states that the Adjacent Land Width to Significant Woodlands is 120 m.

The PPS Natural Heritage Section 2.1.8 states:

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

With **no** Significant Woodland within the Study Lands, site development will be in compliance with the PPS 2.1.5 (b).

Significant Woodlands have been delineated beyond the Study Lands, approximately 25m east side of Grey Rd 2). As such, the Study Lands fall within the 120m adjacent lands to a Significant Woodland feature. Therefore, further review and impact assessment is required to address the 'adjacent lands' policies to Significant Woodlands, with such provided under section 15 of this report, to demonstrate compliance with the PPS 2.1.8, and Grey County Official Plan 2.8.4.1 and the Town of Blue Mountains Official Plan policy B5.2.1 (b)(i).

11 Significant Wildlife Habitat

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

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

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

11.1 Seasonal Concentration Areas of Animals

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

- Waterfowl Stopover and staging (Terrestrial)
 - No criteria waterfowl species were observed within the Study Lands, 3 Mallards were observed within the adjacent man-made ponds in the spring 2017 season.
 - ELC criteria code: CUM1 is present but no flooding occurrence.
 - Criteria threshold for species and aggregate numbers not met and no functional habitat identified.
 - No confirmed SWH.

- Waterfowl Stopover and staging (Aquatic)
 - No criteria waterfowl species were observed within the Study Lands, 5 adult Canada Geese were observed within the adjacent man-made ponds in the spring 2017 season.
 - No ELC criteria codes are present within the Site Lands.
 - Criteria threshold for species and aggregate numbers not met and no functional habitat identified.
 - No Confirmed SWH.

- Shorebird Migratory Stopover
 - No criteria shorebird species were observed.
 - One ELC criteria code: MAM2 is present however no habitat use identified within the Study Lands over the study period.
 - Criteria threshold for species and aggregate numbers not met.
 - No confirmed SWH.

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

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

- Bat Maternity Colonies
 - No criteria bat species were observed.
 - ELC criteria code FOM is present within the Site Lands, however this is a narrow forested strip of riparian cover open to winds and full sun light, thus not permitting thermal regulation, as necessary for bat roosting.
 - No historical documentation of bat maternity activity.
 - No confirmed SWH.

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

- Reptile Hibernaculum
 - One common Gartersnake was observed during the summer ‘forage’ season.
 - No burrows, rock crevices, rock piles, or other listed suitable features for hibernacula habitat were identified in the Study Lands.
 - No confirmed SWH.

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

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

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

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

- Landbird Migratory Stopover Areas
 - Several migratory songbird species present within the Study Lands.
 - ELC criteria codes FOC and FOM are present; however, the Study lands are not located within 5 km of Lake Ontario (criteria area in Ontario).
 - No confirmed SWH.

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

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

11.2 Rare Vegetation Communities

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

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

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

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

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

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

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

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

11.3 Specialized Habitat for Wildlife

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

- Waterfowl Nesting Area
 - Criteria waterfowl species: Mallard was observed, but only 1 pair + 1 additional juvenile male recorded within the immediate adjacent lands.
 - ELC criteria code MAM2 and SWT2 are present.
 - Criteria thresholds not met for species diversity or numbers.
 - No confirmed SWH.

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

- Woodland Raptor Nesting Habitat
 - No criteria species observed.
 - ELC criteria codes FOC and FOM are present however; no forest interior habitat was identified within the Site Lands or stick nests within the Study Lands.
 - No nesting activity identified. No documented nesting activity within the Site Lands.
 - Criteria thresholds for species, numbers and habitat size plus habitat use, not met.
 - No confirmed SWH.

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

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

- Amphibian Breeding Habitat (Woodland)
 - No criteria species identified within the Study Lands.
 - ELC criteria codes FOC and FOM are present however; no vernal pool or ephemeral pond breeding habitat identified within the Study Lands.
 - Criteria threshold for species diversity or numbers of "*at least 20 individuals*" not met (see Appendix 3).
 - No confirmed SWH.

- Amphibian Breeding Habitat (Wetlands)
 - Two criteria species identified: Northern Leopard Frog and Green Frog however; calling surveys had population estimates <20 individuals.
 - ELC criteria codes MA and SW are present within the Study Lands.
 - Criteria thresholds with 3 or more frog/toad species not met and criteria threshold for numbers "*at least 20 breeding adults*" was not met (see Appendix 3).
 - No confirmed SWH.

- Woodland Area-Sensitive Bird Breeding Habitat
 - No criteria bird species observed.
 - ELC criteria codes FOC and FOM are present however; no forest interior habitat (>200 m from forest edge) identified within the Study Lands woodland feature.
 - Criteria thresholds for species diversity, numbers, presence or interior forest habitat, not met
 - No confirmed SWH.

11.4 Habitat for Species of Conservation Concern

(Not including Endangered or Threatened Species)

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

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

- Open Country Bird Breeding Habitat
 - Criteria bird species: Grasshopper Sparrow and Vesper Sparrow recorded within the Study Lands.
 - ELC criteria code CUM1 is present along with Grassland environment.
 - Criteria thresholds for species diversity, numbers or active habitat use met.
 - **Confirmed SWH.**
 - **NOTE: habitat area overlaps with that identified for Threatened Bobolink + Eastern Meadowlark.**

- Shrub/Early Successional Bird Breeding Habitat
 - Criteria indicator species: Clay-coloured Sparrow and Common species: Field Sparrow and Willow Flycatcher recorded within the Study Lands.
 - No ELC criteria codes present however; given site disturbance to community type SWT2 it is evolving into more CUT1 type (drainage & fill)
 - Criteria thresholds for species diversity, numbers or active habitat use met.
 - **Confirmed SWH.**

- Terrestrial Crayfish
 - No criteria species (no chimneys) observed.
 - ELC criteria codes MAM2 is present however; no habitat use recorded
 - Criteria threshold for species diversity, numbers or active habitat use, not met.
 - No confirmed SWH.

- Special Concern and Rare Wildlife Species
 - No flora species were observed in 2017 within the Study Lands that have a ranking of Special Concern or of provincial rarity (S1, S2 or S3). See Appendix 2 listing.
 - One fauna species: Monarch Butterfly was observed in 2017 within the Study Lands that has a ranking of Special Concern. See Appendix 3 listing.
 - Historical MNRFP Records (see Appendix 1) for the surrounding landscape (extending 5 km from Study Lands) identified three fauna and two flora species of conservation concern. Further review of habitat and site development impacts is provided below for each, with recommendation if further impact assessment is warranted:
 - Eastern Ribbonsnake
 - Provincial Habitat Description: *sunny grassy areas with low dense vegetation near bodies of shallow permanent quiet water; wet meadows, grassy marshes or sphagnum bogs; borders of ponds, lakes or streams; hibernates in groups.*
 - Site Assessment: Species was not recorded on-site or within the adjacent riparian zone or man-made ponds. No negative impact from site development is anticipated to this species, no further review deemed warranted.

 - Snapping Turtle
 - Provincial Habitat Description: *permanent, semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms; often uses soft soil or clean dry sand on south-facing slopes for nest sites; may nest at some distance from water; often hibernate together in groups in mud under water; home range size ~28 ha*

- Site Assessment: Species was not recorded on-site or within the adjacent riparian zone or man-made ponds. No negative impact from site development is anticipated to this species, no further review deemed warranted.
- Variegated Meadowhawk
 - Provincial Habitat Description: *Ponds and slow streams, preferably with sandy or cobble bottoms, but occasionally including brackish water*
 - Site Assessment: Species was not recorded on-site or within the adjacent riparian zone or man-made ponds. No negative impact from site development is anticipated to this species, no further review deemed warranted.
- Smith's Bulrush
 - Provincial Habitat Description: *wet shores and beaches*
 - Site Assessment: Species was not recorded on-site or within the adjacent riparian zone or man-made ponds. No negative impact from site development is anticipated to this species, no further review deemed warranted.
- Shrubby St. John's-wort
 - Provincial Habitat Description: *fields, prairies and open woods*
 - Site Assessment: Species was not recorded on-site or within the adjacent open field or woodlands. No negative impact from site development is anticipated to this species, no further review deemed warranted.
- **Confirmed SWH for Monarch.**

11.5 Animal Movement Corridors

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

- Amphibian Movement Corridors
 - No Confirmed significant breeding habitat through Table 1.1 review for amphibian breeding habitat-wetland or woodland, thus no 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 criteria schedules, Significant Wildlife Habitat has been confirmed within the Study Lands for:

- Habitat for Species of Conservation Concern
 - Open Country and Shrub Early Successional Habitat for birds
 - Monarch Butterfly

The Natural Heritage Provincial Policy 2.1.5 (d) states:

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

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

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

The Grey County Official Plan 2.8.6(1) and in part the Town of The Blue Mountains Official Plan B5.2.1 state:

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

With Significant Wildlife Habitat confirmed within the Study Lands, further review and impact assessment is required and provided under section 16 of this report, to demonstrate site development would be in compliance with the PPS 2.1.5 (d) and 2.1.8 and the Grey County Official Plan 2.8.6(1) and the Town of Blue Mountains Official Plan policy B5.2.1 (b)(iii).

12 Significant Feature Analysis Summary

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

- i. Habitat for Threatened Species
- ii. Fish Habitat
- iii. Significant Woodlands: Forested areas within the Eastern Site Lands, none within the Study Lands
- iv. Significant Wildlife Habitat: Habitat for Species of Concern

Through section 6 analysis for Fish Habitat, it has been noted that other supporting documentation for the watercourse realignment had been submitted (2012), reviewed and approved, as such, no further impact assessment for Fish Habitat is deemed necessary for this site development project, other than development setback limits in accordance to provincial recommendations and official plans.

Further review of the additional 3 natural heritage features noted above and their ecological functions is provided in the 'Impact Assessment' component of this EIS. Site development with recommended mitigation measures in relation to the proposed development activity is also provided to maintain compliance with applicable Acts, Legislation and Planning Policies.

Impact Assessment

13 Development Proposal

The proposed Recreational Development of a water-ski wakeboard cable park, has undergone several design concept changes and may undergo some minor additional revision through the planning process. At this current time, the primary development aspect is for the creation of single large isolated pond with smaller trough like ponds all having overhead cable mechanisms to 'pull' water-skiers/wake boarders around the new pond features. The existing in-line ponds, constructed by the former landowner-Cedar Run Horse Park, are too small for this proposed recreational activity. To support this recreational park design there will be required internal servicing roads, parking areas, small servicing structures, interim on-site sewage disposal area and small overnight cabins also proposed.

14 Threatened Bird Species: Bobolink & Eastern Meadowlark

14.1 Habitat Characterization

Through on-site investigations of 2017, much of vegetation community No. 1 and No. 6 have been confirmed to support nesting and rearing habitat for Bobolink and Eastern Meadowlark, both being Species-At-Risk (SAR) birds. The critical nesting and rearing habitat for both of these bird species is regulated under the Provincial 2007 Endangered Species Act (ESA).

Vegetation community No. 1 includes the grass pasture lands, grass corral riding areas and grassed equestrian obstacle course, all of which have been primarily idle since 2012, but still part of the designated agricultural land use activity. Grass species within this community are dominate and diverse, with a mix of native forbs all having a high stem density, grasses achieve heights >50cm and groundcover has a dense well established duff layer, almost prairie like habitat , providing ideal open country grassland oriented bird nesting habitat. This habitat area is extensive in size, extending beyond the Study Land limits.

Vegetation community No. 6 is an area of past fill site disturbances in the low wetland area. Grasses and forbs have become established and dominate this area, with scattered patches of exposed bare ground (aggregate fill). Grass density or diversity is not to the extent of vegetation community No. 1 and groundcover is more sporadic, but this community does function as nesting/rearing habitat primarily for Eastern Meadowlark, given its smaller habitat area.

14.2 Impact Assessment and ESA Requirements

For Site Development to proceed within or adjacent to these two vegetation communities, requirements and conditions under the Endangered Species Act for Bobolink & Eastern Meadowlark must be addressed and met, as current agricultural exemptions do not apply to land use designation changes under the Planning Act process.

Ontario Regulation 242/08 (OR242/08) dated September 14, 2016 (most recent consolidated updated document) under the Endangered Species Act, 2007 outlines the eligibility and requirements for development activities to proceed in compliance with ESA.

Under OR242/08, section 23.6 (1) subsection (2a) it discusses *development which proposes to kill, harm, harasses, captures or takes bobolink or eastern meadowlark when the size of the habitat area of bobolink or eastern meadowlark that is damaged or destroyed by the activity, is equal to or less than 30 hectares*, development can proceed provided that required elements outlined under OR242/08 are followed and submitted to the Ministry of Natural Resources and Forestry (MNR), through a 'Habitat Management Plan' which includes mitigation for off-site grassland habitat enhancement, and said activities are implemented within 12 months of submission and carried out in accordance to the Habitat Management Plan by the proponent for a minimum 20 year period.

Appendix 7 provides an area calculation of the confirmed SAR bird habitat within the EIS Study Lands, with vegetation community No. 1 = 6.15ha and vegetation community No. 2 = 1.32ha, for a total habitat area of 7.47ha, well below the Habitat Management Plan eligibility threshold size of 30ha to be damaged or destroyed. As such, the proponent is eligible for this process outlined under OR242/08 to address and be in compliance with ESA, permitting on-site development to proceed in accordance to a 'Habitat Management Plan (HMP)' which meets OR242/08 section 23.6 (1) requirements..

In review of the proponents land holding's, suitable lands in both habitat type, size and minimum habitat dimensions are available in the full properties southwest corner (see Appendix 7, Lot 29, Concession 9 farm fields) for off-site mitigative grassland habitat enhancement works, as an optional location. As such, the proponent shall be pursuing an ESA application process, with assistance of AWS Environmental Consulting, to permit site development and demonstrate compliance with ESA and applicable planning policies. However, at this time, given the long-term commitments, financial requirements and time lines involved in an ESA application process, it is recommended that the 'Planning Act' application process proceed prior to the ESA application process commencing. The planning process timelines can be lengthy and unknown, development designs changes could be required or potential OMB hearings could occur, while ESA requirements are clear and timelines for activity commencement, monitoring and management activities are given with financial commitments. Planning Act applications can incorporate 'Site Plan Agreement Conditions' or 'Development Holding' constraints, which does not permit site development to proceed until such time that ESA clearance has been achieved and provided to applicable planning agencies. This process route provides some flexibility (i.e. impacted habitat areas could change due to planning review) and assurance to all parties involved, including the general public, to seek Planning Act Approvals first with noted ESA Constraints prior to development proceeding, then provide said ESA clearance, to obtain final Planning Act clearance or lifting of holding constraints.

With submission to the MNR of a 'Habitat Management Plan' for Bobolink and Eastern Meadowlark demonstrating adherence to OG42/08 section 23.6(1) requirements, site development could proceed in accordance and compliance with ESA, the PPS 2.1.7 and applicable Official Plan policies.

15 Significant Woodland

15.1 Characterization

Through the analysis of section 10, the Study Lands are situated within the 'adjacent lands' only, to significant woodland east of Grey County Road 2, as there is no significant woodland designation within the Study Lands.

At its closest point, the Study Lands are 30m from the significant woodland designation, with Grey Road 2 and road frontage development being a significant ecological separation barrier. On-site investigation did not identify any ecological functions or terrestrial linkages from the Study Lands natural environment to the noted Significant Woodland feature.

15.2 Impact Assessment

The Town of The Blue Mountains Official Plan policy B5.2.1 (c) in part states:

..adjacent lands are defined as all lands within the specified distance of the boundary of natural heritage features and areas as set out in the following Table... (Significant woodlands, 120m).... No development or site alteration shall be permitted on these adjacent lands unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated, through an Environmental Impact Study (EIS), that there will be no negative impact on the natural features or their ecological functions.

Through on-site EIS investigations, no terrestrial ecological functions of the Study Lands can be linked or support the significant woodland feature east of Grey Road 2. Indian Brooke which runs along the south boundary of the Study Lands and flows eastward towards Georgian Bay through the noted significant woodland is an aquatic environment linkage, were that woodland provides supporting ecological functions to the watercourse, not the Study Lands.

Site development within the Study Lands will have no direct negative impacts to tree health or vegetation growth within the Significant Woodlands, given the separation distance and existing fragmentation and development between to the two areas. With no identified supporting ecological functions of the adjacent lands within the Study Lands, no in-direct negative impacts are anticipated from site development in the Study lands.

Thus it has been demonstrated and can be concluded that site development within the Study Lands would be in compliance with the PPS 2.1.8, the County of Grey Official plan policy 2.8.4 (1) and the Town of The Blue Mountains Official Plan policy B5.2.1(c).

16 Significant Wildlife Habitat

16.1 Open Country Bird Habitat Characterization

Two indicator species: Grasshopper Sparrow and Vesper Sparrow were confirmed within the grassland environment of vegetation community No. 1 and vegetation community No. 6. Both of these vegetation units have also been identified as also supporting habitat for SAR bird (14.1), as their habitat requirements are similar and within the Study Lands, overlap.

Provincial habitat descriptions for both species are provided below.

Grasshopper Sparrow:

Often associated with areas of poor soils such as abandoned gravel pits or areas where bedrock is close to the surface (Vickery 1996); appears to prefer areas where vegetation is sparse, yet where there is a thick thatch cover from previous year's vegetation (Patterson and Best 1996; Smith 1963; Vickery 1996; Wiens 1969); prefers grassy areas, but will tolerate 10 to 20% shrub cover (Vickery 1996); prefers scattered shrubs or tall, sturdy, herbaceous vegetation stalks that can be used as singing perches (Swanson 1996; Vickery 1996); more inclined to occupy large tracts of habitat than small fragments (Herkert 1994, Vickery et al. 1994); minimum area requirements in Maine about 100 ha (Vickery et al. 1994), in Illinois about 30 ha (Herkert 1994); often associated with areas of poor soils such as abandoned gravel pits or areas where bedrock is close to the surface (Vickery 1996); nests are built on the ground (Vickery 1996); may nest singly or in small colonies of one or two dozen pairs; occurs in habitats as small as 10 ha when a single pair is nesting (Herkert 1991; Swanson 1996), but colonies are often associated with habitat patches 100 ha or larger and the size of patch that it requires varies regionally (Davis 2004; Johnson and Igl 2001; Vickery et al. 1994).

Vesper Sparrow:

Prefers dry grass fields, with some shrubs or similar structure, and is found in open habitats, including old fields, shrubsteppe, grasslands, reclaimed surface mines, crop and haylands, weedy roadsides, and natural meadows (Jones and Cornely 2002). Breeds in dry habitats with short, sparse, and patchy herbaceous vegetation; some bare ground; and low to moderate shrub or tall forb cover (Jones and Cornely 2002). Nests located on the ground under or at base of vegetation, including grass, forbs, weeds, grass tussocks, shrubs, small trees; beside logs and dead branches; and under dead branches (Jones and Cornely 2002).

- On-site habitat assessment: Vegetation community No. 6 does not provide a suitable thick thatch or duff ground cover layer for nesting, ground cover is sparse and light. Community is only 1.5ha, will be below minimum area requirement for sustainable nesting/rearing.

16.2 Impact Assessment

The primary habitat area for these two bird species is associated with vegetation community No. 1. Though site development is being proposed within the two noted supporting habitat vegetation communities, through requirements under the Endangered Species Act (section 14.2), habitat enhancement shall be implemented elsewhere in accordance to Ontario Regulation 242/08 for grassland habitat, to mitigate impacts from the proposed site development. As such, no net loss or negative impact to the population numbers or reduced habitat capacity for open country bird habitat or species is anticipated.

16.3 Shrub/Early Succession Bird Habitat Characterization

Three species: Willow Flycatcher, Clay-coloured Sparrow and Field Sparrow were confirmed within vegetation community 8. These bird species are typically associated with drier habitat lands like Ecosites CUT, CUS or CUW not wetland shrub thickets. With these bird species present, it is a reflection of the changing on-site conditions of these two vegetation communities, presently characterized as wetland, but evolving to become drier with an increasing density and numbers of terrestrial oriented trees and shrubs or early successional vegetation and feature conditions.

These three bird species, though indicators for this habitat type, are all common with no rarity status or having regulated habitat.

The 2005 Atlas of the Breeding Birds of Ontario provides a general population trend through proportional changes between atlas data, considered to be a good indicator of bird population trends. For the general regions of Southern and Central Ontario, population trends exhibited: Willow Flycatcher at +6%, Clay-coloured Sparrow at +144% while Field Sparrow is at -4%. This data shows that the overall population for shrub/early sectional oriented bird species is stable (typically 10% fluctuations are considered normal trends) with pocket areas of significant increasing numbers.

Provincial habitat descriptions for both species are provided below.

Willow Flycatcher:

In general, prefers moist, shrubby areas, often with standing or running water. In central and eastern U.S. and Canada, uses both wet sites and dry, brushy upland sites (Campbell 1936, Aldrich 1953). Breeds in a variety of usually shrubby, often wet habitat (Sedgwick 2000). Nests sites are selected within the same territory every year and are generally located at outer edge of shrub or thicket and near edges of shrub clumps close to water (Berger and Parmalee 1952). Across its range, willow shrubs are frequently selected for nesting, but many other species of shrubs, and occasionally trees are used (Sedgwick 2000).

Field Sparrow:

Prefers successional old fields, woodland openings and edges, roadsides and railroads near open fields. Field Sparrows breed in brushy pastures and second growth scrub of the eastern United States and southern Canada (Carey et al. 1994). Does not breed close to human habitation, but is occasionally found in Christmas tree farms, orchards, and nurseries (Peterjohn and Rice 1991, in Carey et al. 1994). Will nest in old fields directly after a burn or within a year of cultivation, but only if there is scattered woody vegetation with elevated perches in the territory.

Clay-coloured Sparrow:

Found in open shrubland, thickets along edges of waterways, second-growth areas, and forest edges and burns (Root 1968 in Knapton 1994). Occupies willow and birch shrubbery in montane meadows and forest-grassland interfaces (Semenchuk 1992 in Knapton 1994). In East, occupies broad range of habitat types, from young pine plantations to abandoned fields grown up to shrubs and small trees, regenerating burns, and forest openings (Knapton 1987). Birds are occasionally found in suitable habitat in cities (McNicholl 1977 in Knapton 1994). Substantial preference for locating nest sites in snowberry (Knapton 1994).

16.4 Impact Assessment

The Bayou Cable recreational development has proposed site alterations within vegetation community No. 7 and 8, primarily through the construction of an isolated pond for recreational activity.

The MNRF-SWH Ecoregion 6 Criteria Schedules for this habitat type states:

Shrub thickets habitats (greater than 10ha) are most likely to support and sustain a diversity of these species

This habitat type within the Study Lands, has been measured to be 5.5 ha in size, below the noted target provincial threshold level for sustainable species diversity and cumulative positive population breeding activity.

Additionally, the MNRF-SWH Ecoregion 6 Criteria Schedules for this habitat type also states:

Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.

The subject lands and vegetation community No. 7 & No. 8 have been documented to have had site alterations in the past through filling, drainage, road construction and excavation from past land use activity. Additionally, the northeast habitat area of vegetation community No. 7 (adjacent to the Study Lands) is currently proposed to be developed for municipal infrastructure works through Clarke Street realignment, thus fragmenting this habitat type further.

Through the habitat type analysis of size criteria and past land use history, it can be concluded that though SWH occurs for shrub/early successional bird breeding habitat due to 'presence of indicator birds', this habitat type within the Study Lands does not support a significant breeding population. With mitigative shrub habitat replacement within the subject property through planting efforts, site development within the Study Lands is anticipated to have no long-term negative impact on the overall breeding population, locally or regionally, for these three noted bird species.

The concept design for site development activity within vegetation community No. 7 and No. 8 is primarily the construction of an isolated recreational pond. Internal roads and other development footprints within these two vegetation communities can be minimized, to reduce shrub thicket habitat type loss. Figure No. 9 shows an area along the west side of the property adjacent to the watercourse and in-line ponds. Terrain in this area is low lying with suitable soils suitable for rehabilitative measures of shrub thicket habitat creation. Additionally, given this mitigation-restoration areas close proximity to the existing in-line ponds and shrubby riparian habitat, a net gain for water quality improvement and other fauna species (reptiles and amphibians) can be achieved. With site-specific rehabilitation habitat and mitigative measures in place, no measurable long-term negative impacts to the ecological functions attributed to this SWH area are anticipated from site development.

16.5 Monarch Butterfly Habitat Characterization

Four adult Monarchs were observed within vegetation community No. 3 during on-site investigations of 2017. This community is a narrow road side area, sparsely treed with abundant graminoids and forbs, including milkweed. This habitat type is abundant throughout the area and much of Southern Ontario. Specific to this species, the primary habitat and declining population concern is associated with its overwintering grounds in Mexico. Within Ontario, roadside cutting and herbicide spraying has had the greatest impact on its forage base, milkweed.

16.6 Impact Assessment

Vegetation community No. 3 is <0.5ha in area, with scattered pockets of milkweed throughout. Given its small land base size and low numbers observed, it is anticipated site development will have no measurable impact on the overall Monarch butterfly population. It is anticipated that as more vegetation growth occurs and matures within vegetation community No. 6, milkweed will also begin to seed in naturally within this area. Additionally, pocket areas within the immediate surrounding lands were also observed to have milkweed (Clark Street and Grey Rd 2 ditches) providing milkweed seed source. Figure No. 9 shows an area of vegetation community No. 6 to be retained in a natural condition, left in a dry meadow like state which can support milkweeds, so no long-term loss of habitat functionality is anticipated.

In summary for Significant Wildlife Habitat, the following mitigative measures can maintain no negative impact on the supporting habitat and/or population numbers:

- 1) Through SAR bird ESA requirements for grassland enhancement works, the carrying capacity for all open country grassland related birds shall be increased, with no anticipated net loss from site development.
- 2) Through reduced road, structure development footprints and rehabilitated lands for shrub thickets, impacts to supporting habitat will be minimized with no long-term population net loss from site development.
- 3) Through construction best management techniques and pocket habitat of dry meadow lands maintained, no net loss to the habitat type or local monarch butterfly population is anticipated to occur from site development.

Therefore it has been demonstrated and concluded that with best management construction practices and land use operations, mitigated habitat enhancement areas, mitigated shrub and dry meadow type habitat areas, site development could occur with no cumulative or long-term negative impacts to the identified Significant Wildlife Habitat areas or its ecological functions. As such, mitigated site development would be in compliance with the PPS 2.1.5(d), the Grey County Official Plan policy 2.8.6 (2) and the Town of The Blue Mountains Official Plan policy B5.2.1 (b)(iii).

17 Mitigation

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

- 17.1 Tree/Shrub clearing within the hedgerows, woodlands, riparian zone or shrub environments for site development activity, shall not occur from April 1st to August 15th and vegetation stripping of suitable nesting/rearing habitat within the grassland environment proposed for site development, shall not occur from April 1st to August 31st during the active nesting period for migratory and protected birds, in accordance to the Federal Migratory Birds Act.
- 17.2 Prior to any site alterations or development related activities within vegetation community No. 1 or No. 6 commencing, Provincial requirements under the Ontario Regulations 242/08 section 23.6 shall be undertaken to demonstrate compliance with the Endangered Species Act 2007. Planning Act application and process could commence at this time, with recognition of a development constraint for the subject lands, through the use of a Holding Symbol or Site Plan Agreement Condition. Said constraint condition would be lifted / removed, once ESA clearance has been obtained and provided to the County and Town.
- 17.3 Road and building structure design and development within the EIS delineated vegetation community numbers 6, 7 and 8 shall be kept to a minimum, to limit habitat alterations to these vegetation communities.
- 17.4 Prior to site alterations occurring within vegetation community No. 7 and/or No. 8 the identified Shrub Thicket Mitigation Areas shown on Figure No. 9 shall be planted with a minimum mix of six native family shrub species, at a minimum density of 1 shrub for every 1sq/m or estimated at approximately 2500 shrubs.
 - o Suitable family shrub species: Bebb's Willow (*Salix bebbiana*), Pussy Willow (*salix discolor*), Redosier Dogwood (*Cornus sericea*), Silky Dogwood (*Cornus amomum*), Alternate Dogwood (*Cornus alternifolia*), Speckled Alder (*Alnus rugosa*), Nannyberry (*Viburnum lentago*), American Elderberry (*Sambucus Canadensis*), American Highbush Cranberry (*Viburnum triloba*) and Arrowwood (*Viburnum dentatum*)
- 17.5 Figure No. 9 identifies an area within vegetation community No. 6, that shall be left in a natural state, managed for native dry meadow grasses and milkweed.
- 17.6 No additional site development or site alterations shall occur within 30m to Indian Brook 'top-of-bank', other than the proposed new water course realignment and related maintenance activities. Water course realignment construction shall incorporate water quality maintenance and sedimentation control measures to provincial standards, being in place until such time that all disturbed lands are seeded down and stabilized.

18 Conclusions

This EIS has demonstrated that with constrained site development, retained vegetated buffer zones, mitigative shrub planting and rehabilitated disturbed lands to natural environment state, it has been concluded that the proposed site development for a recreation water-ski and wakeboard cable park and associated facilities would have no measurable negative impacts or loss of ecological function to the Natural Heritage features assessed within the Study Lands or surrounding natural environment. Thus, it has been concluded that this concept Site Development would be in compliance with the Natural Heritage policies of the 2014 Provincial policy Statement, the 2012 Grey County Official Plan and the environmental policies of the 2016 Town of The Blue Mountain Official Plan.

All *italicized* comments contained within this report are quotes from available literature, technical reports, manuals and documents relevant to the features and/or functions observed within these Study Lands. All natural feature locations are estimates based on current Grey County satellite imagery, topographic mapping on Ontario Base Maps, plotting in the field with hand-held GPS and detailed /surveyed elevation and feature boundary mapping by C.C. Tatham & Associates Ltd. 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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www.mnr.gov.on.ca/mnr/speciesatrisk

Town of The Blue Mountains Official Plan, June 2016

20 Figures

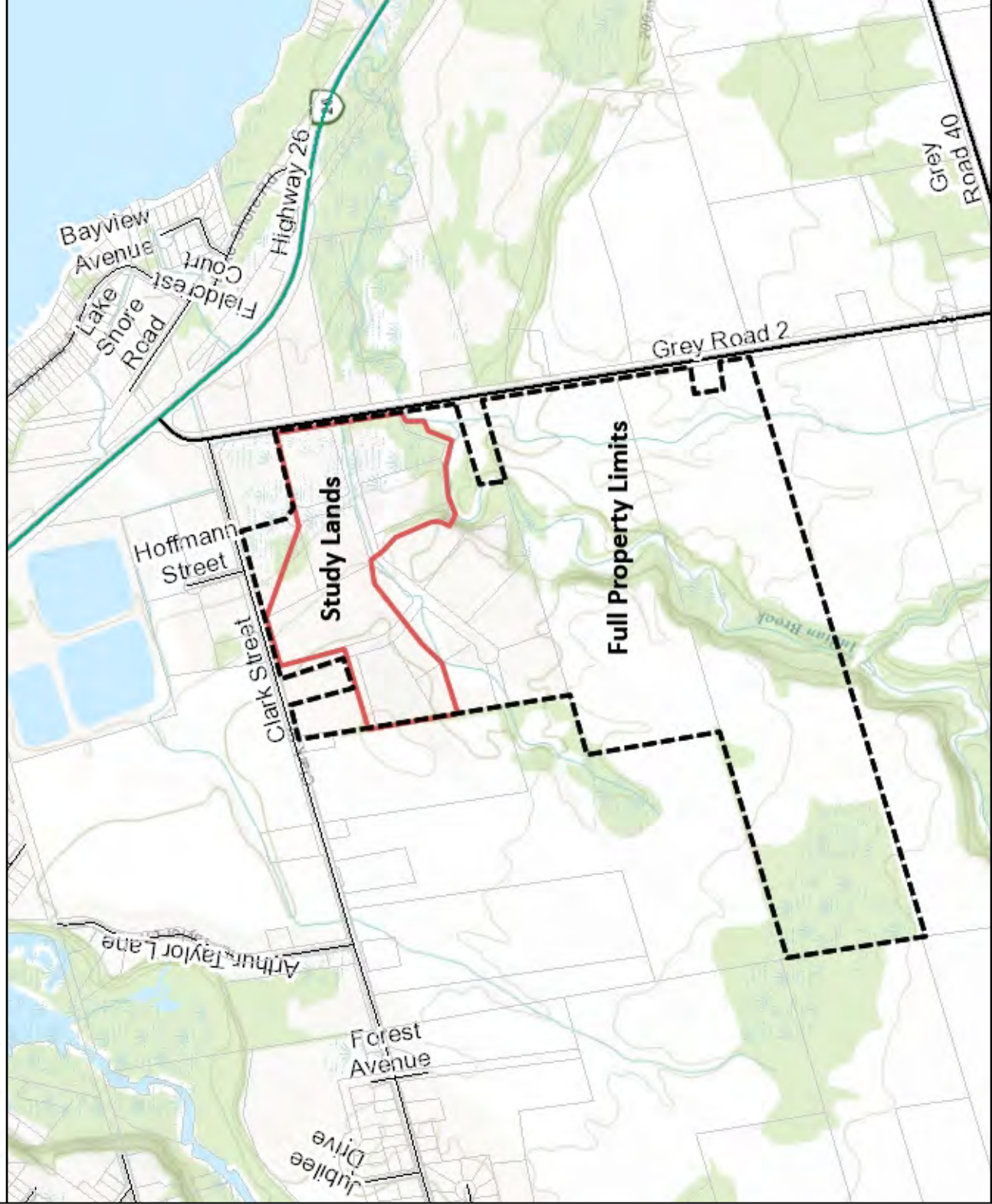
Mapping Note for Clarification:

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

Figure 1.....	Property Location
Figure 2.....	Study and Site Lands, 2015 Air Photo
Figure 2A.....	Study and Site Lands, OBM Features
Figure 3.....	Provincial Natural Heritage Features
Figure 4A.....	Grey County Official Plan-Land Use Designations
Figure 4B.....	Grey County Official Plan- Constraints
Figure 4C.....	Conservation Authority Regulatory Lands
Figure 5A.....	Town of The Blue Mountains Official Plan-Land Use Designations
Figure 5B.....	Town of The Blue Mountains Official Plan-Constraints
Figure 6.....	Vegetation Communities
Figure 7.....	Natural Heritage Features
Figure 8.....	Natural Heritage Buffer Zone & Development Constraint Areas
Figure 9.....	Watercourse Realignment and SWH Mitigation Areas



Figure No. 1: Property Location



Legend

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

Notes

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

0.64 Kilometers

0.32

0





Figure No. 2: Study and Site Lands



Legend

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

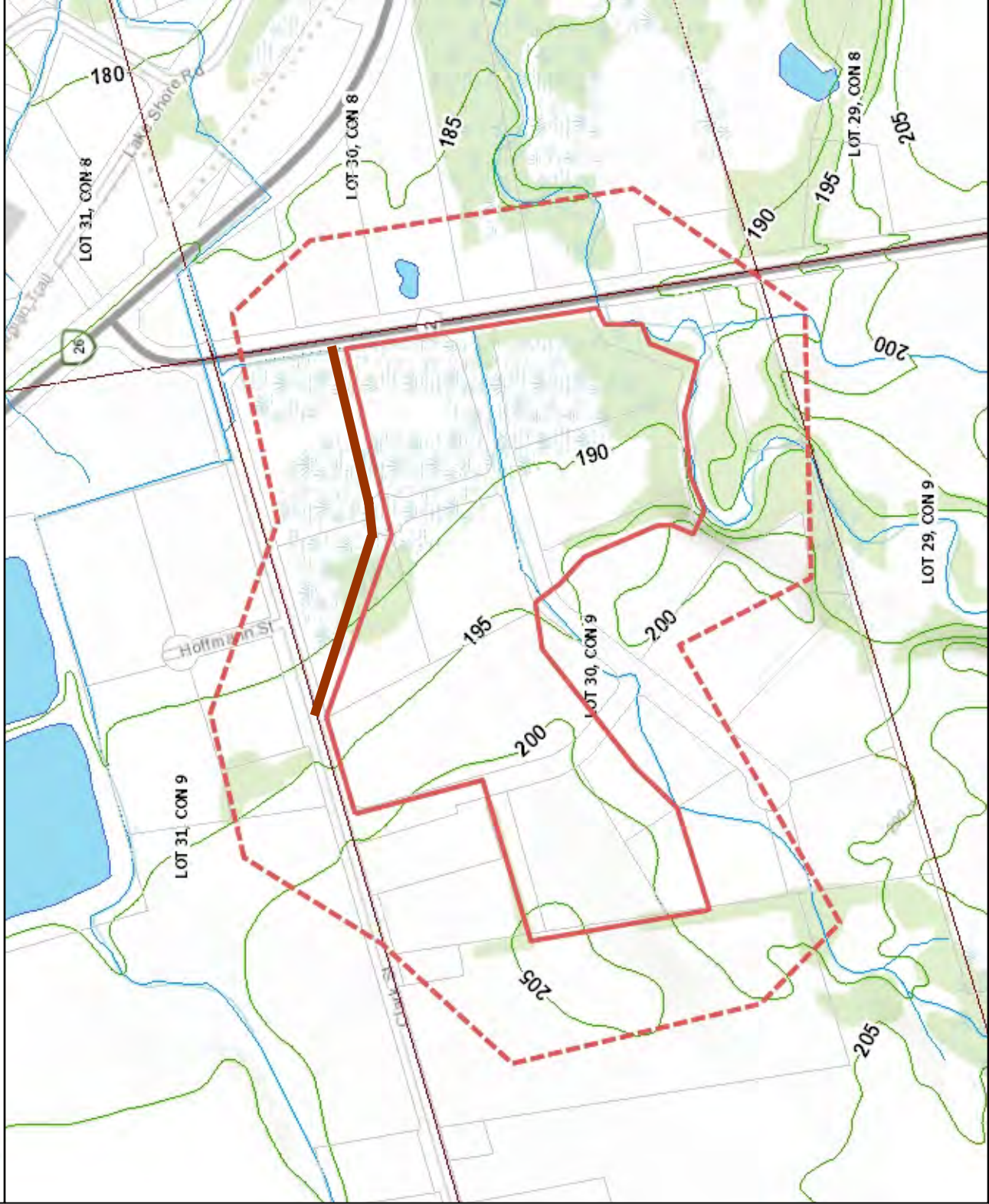
Notes

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Figure No. 2B: Parcel Lot Lines and Ontario Base Map Features



Legend

- Parcels
- Lots & Concessions
- Contours (Metres ASL)
 - 180-250m
 - 255-300m
 - 305-350m
 - 355-400m
 - 405-450m
 - 455-500m
 - 505-540m
- Wet Areas - GSCA
- Water Features
- Watercourses
- Study Lands
- Site Lands
- Proposed Clark Street Realignment

Notes

Water-ski Wakeboard Cable Park
Thornbury, ON

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Printed: November 14, 2017 THIS MAP IS NOT TO BE USED FOR NAVIGATION





Figure No. 3: Provincial Features



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 (AES)
- 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



Scale: 1 : 18,055

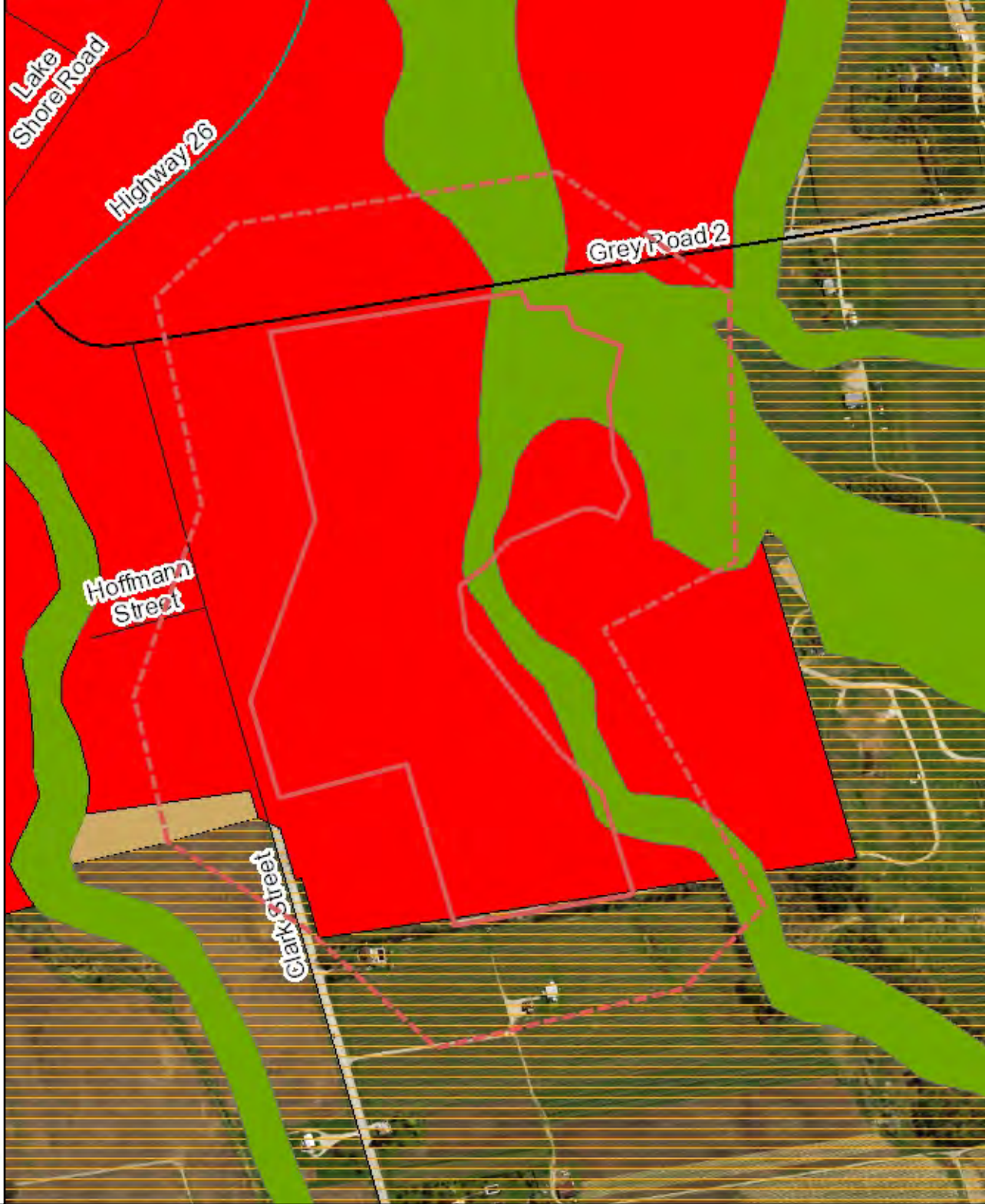


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Figure No. 4A: County Official Plan - Land Use Designations



Legend

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

Water-ski Wakeboard Cable Park
Thornbury, ON

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0.32 Kilometers

0.16

0





Figure No. 4B: County Official Plan - Constraints



Legend

- 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

Notes

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 Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

0.32 Kilometers

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0

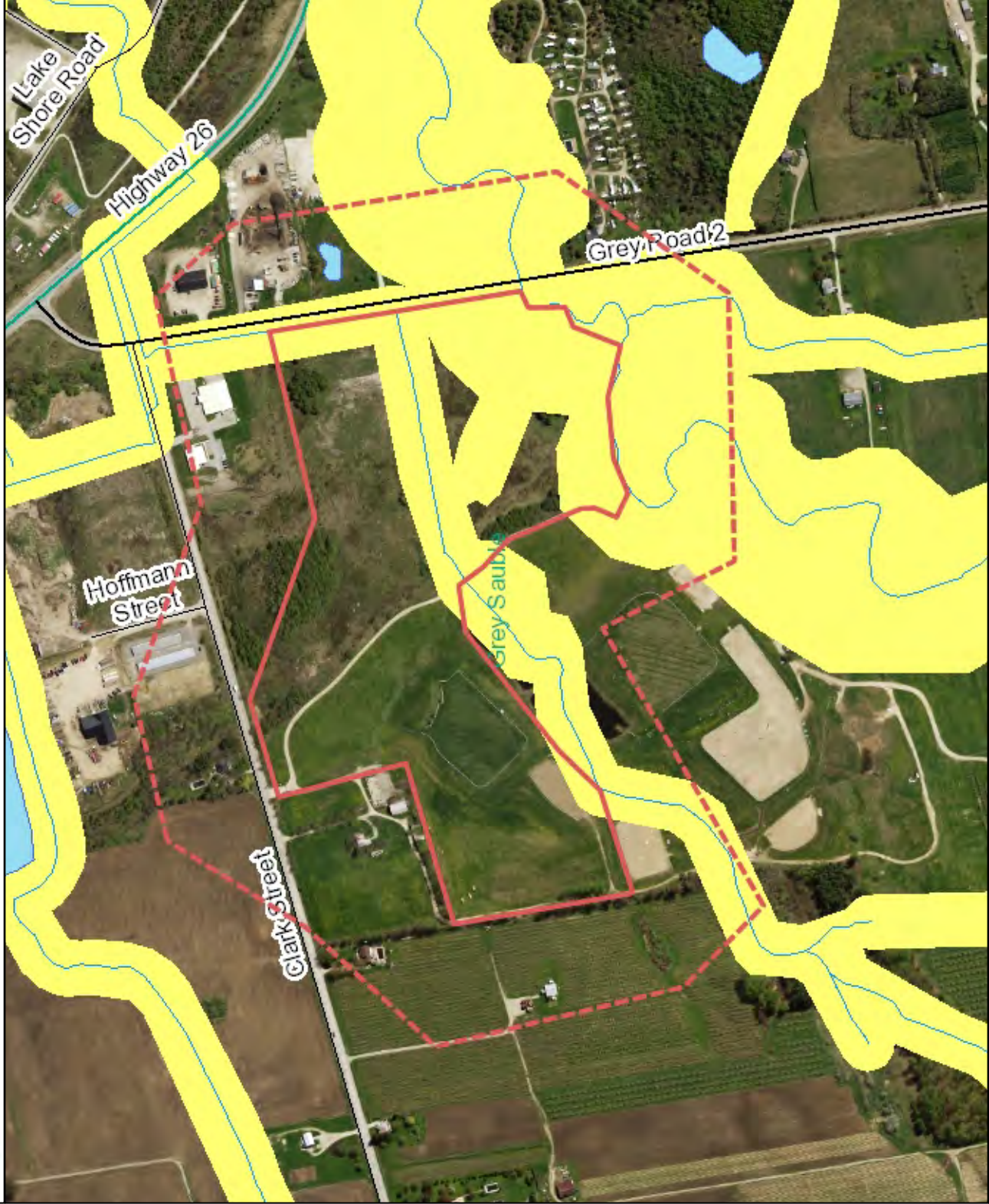




Conservation Authority Regulatory Lands

Legend

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



Notes

This map is a user generated static output from an Internet mapping site and is for reference only.
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0.32 Kilometers

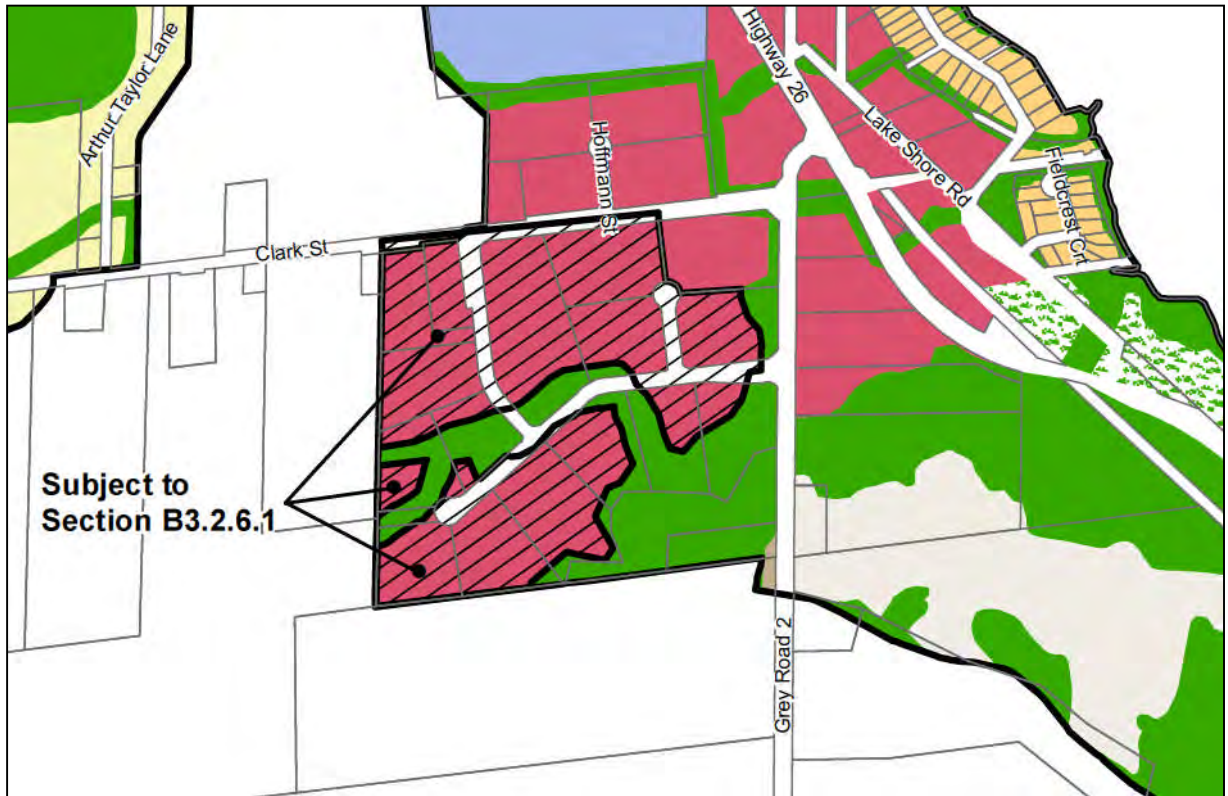
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Figure No.5A: Town Official Plan – Land Use Designations

- Base map source: Schedule 'A-2'

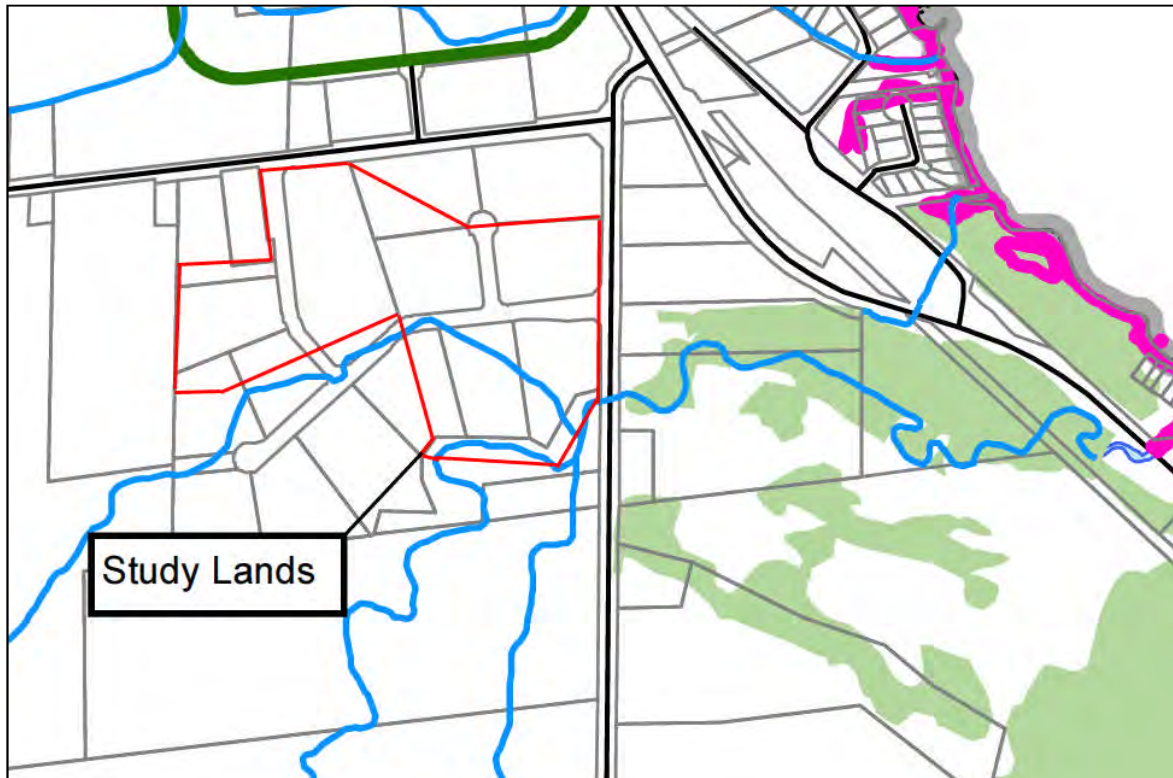


Designations

★ Former Landfill	Harbour Area
▭ Bruce St./Marsh St. Corridor	Hazard
▭ Niagara Escarpment Plan Boundary	Institutional Area
▭ Agricultural	Major Open Space
▭ Commercial Corridor	Residential Recreational Area
▭ Community Living Area	Rural
▭ Downtown Area	Urban Employment Area
▭ Future Secondary Plan Area	

Figure No.5B: Town Official Plan – Constraints

- Base map source: Appendix 1



Designations














 100 Year Flood Elevation	 Mineral Resource Extraction
 Stream / River	 Permanent Water Area
 Aggregate Resource Area	 Provincially Significant Wetlands
 ANSI	 Other Wetlands
 Deer Wintering Area	 Sewage Treatment Plant Buffer
 Escarpment Plan Boundary	 Significant Woodlands
 Karst	

Figure No. 6: Vegetation Communities and E.L.C. Types



Legend

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

Study Lands



Natural Heritage Legend

Vegetation Community Boundary



Vegetation Community No.



E.L.C. Types

- 1= No ELC Type, Agricultural Fields with scattered site disturbances
- 2= FOC4-2; Fresh-Moist White Cedar Coniferous Forest
- 3= No ELC, Hedgerow with Mixed Hardwoods
- 4= FOM7-2; Fresh-Moist White Cedar Hardwood Mixed Riparian
- 5= No ELC; Hedgerow with Mixed Conifers
- 6= CUM1; Dry-Moist Old Field Meadow with site disturbances
- 7 = MAM2-10; Forb Mineral Meadow Marsh with site disturbances
- 8= SWT2-2; Willow Mineral Thicket Swamp with site disturbances

0.14 0 0.07 0.14 Kilometers



Notes

Water-ski Wakeboard Cable Park
Thornbury, ON



Legend

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

Study Lands



Natural Heritage Legend

- SAR Bird Habitat Regulated Under E.S.A. And, SWH Open Country Bird Habitat
- SWH Shrub Thicket Bird Habitat
- SWH Monarch Butterfly Habitat
- Fish Habitat: Cold-water Stream Indian Brooke
- Fish Habitat: Intermittent Creek Flows
- Fish Habitat: Intermittent Creek Flows Channel section to be realigned

0.14 0 0.07 0.14 Kilometers



Notes

Water-ski Wakeboard Cable Park
Thornbury, ON

Figure No. 8: Natural Heritage Setbacks and Development Constraint Areas



Legend

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

Study Lands



Natural Heritage Legend

SAR Bird Habitat
Regulated Under E.S.A.
Site Development will require E.S.A.
Application and Clearance prior to
any Development or Site Alterations



SWH Shrub Thicket
Bird Habitat

SWH Monarch
Butterfly Habitat



SWH : Constrained Development
Area, Pockets of Retained Monarch
and Thicket Habitat plus Rehabilitated
Habitat Lands -Pond Island

Fish Habitat:
Cold-water Stream
(Indian Brook)



30m Development and
Pond Construction Setback,
from Indian Brook 'top-of-bank'
excluding the Intermittent Flow
Watercourse Channel
Realignment Section



Fish Habitat:
Intermittent Creek Flows



15m Development Setback

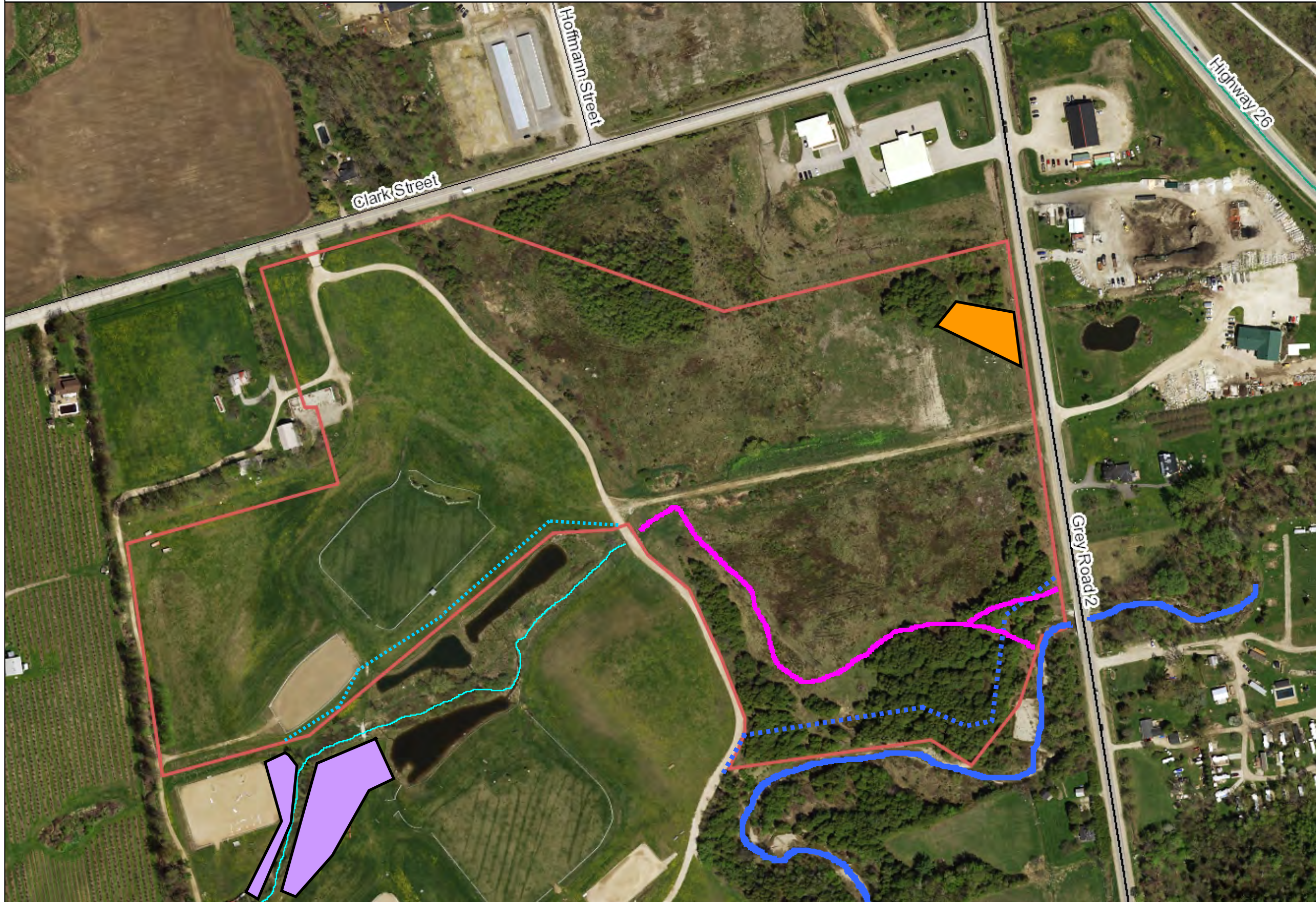


0.14 0 0.07 0.14 Kilometers



Notes

Water-ski Wakeboard Cable Park
Thornbury, ON



Legend

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

Study Lands



Natural Heritage Legend

Shrub Thicket Planting:
Mitigative Habitat



Retained Natural Lands:
Veg. Comm. No. 6 for
Monarch



Watercourse Channel
Realignment



Fish Habitat:
Cold-water Stream
(Indian Brook)



30m Development and
Pond Construction Setback,
from Indian Brook 'top-of-bank'
excluding the Intermittent Flow
Watercourse Channel
Realignment Section



Fish Habitat:
Intermittent Creek Flows



15m Development Setback



0.14 0 0.07 0.14 Kilometers



Notes

Water-ski Wakeboard Cable Park
Thornbury, ON

APPENDIX 1

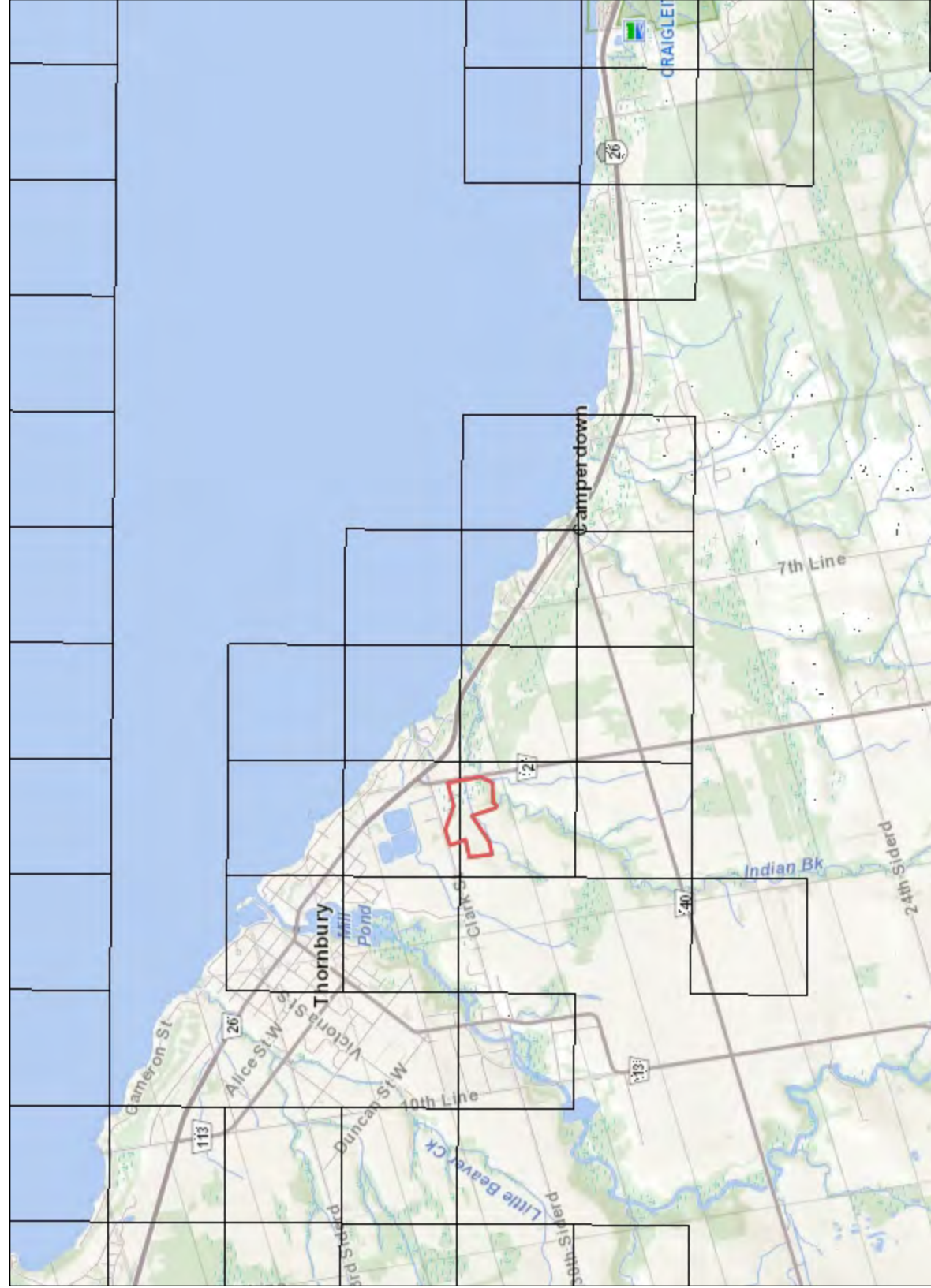
- Historical Records Search for Significant Flora and Fauna within 5 km of the Study Lands



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

Historical Records Search 5 km Radius for Significant Flora & Fauna

Notes: Water-ski Wakeboard Cable Park
Thornbury, ON



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 (ANS)
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 - Natural Linkage Area
 - Countryside Area
 - Rural Settlement
 - Palgrave Estates Residential Community
 - Settlement Area

3.7 Kilometers

Scale: 1 : 72,223



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Water-ski Wakeboard Cable Park: Thornbury, Town Of The Blue Mountains

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

Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*)

- Provincial Ranking = S1S2, Provincial Status = Endangered
- Last recorded in the search area 1967

Barn Swallow (*Hirundo rustica*)

- Provincial Ranking = S4, Provincial Status = Threatened
- Last recorded in the search area 2005

Bobolink (*Dolichonyx oryzivorus*)

- Provincial Ranking = S4, Provincial Status = Threatened
- Last recorded in the search area 2004

Eastern Meadowlark (*Sturnella magna*)

- Provincial Ranking = S4, Provincial Status = Threatened
- Last recorded in the search area 2004

Eastern Ribbonsnake (*Thamnophis sauritus*)

- Provincial Ranking = S4, Provincial Status = Special Concern
- Last recorded in the search area 1938

Snapping Turtle (*Chelydra serpentina*)

- Provincial Ranking = S3, Provincial Status = Special Concern
- Last recorded in the search area 1989

Variiegated Meadowhawk (*Sympetrum corruptum*)

- Provincial Ranking = S3, Provincial Status = Rare
- Last recorded in the search area 1927

Smith's Bulrush (*Schoenoplectiella smithii*)

- Provincial Ranking = S2S3, Provincial Status = Rare
- Last recorded in the search area 1943

Shrubby St. John's-wort (*Hypericum prolificum*)

- Provincial Ranking = S2, Provincial Status = Rare
- Last recorded in the search area 1943

APPENDIX 2

- Flora Listing: Rankings, Status and Floristic Quality Scoring

Water-ski Wakeboard Cable Park, Thornbury: Flora Inventory

With Current Ranking, Status and Floristic Quality Assessment Scores

Part Lot 30, Concession 9, Geographic Township of Collingwood

1) Vegetation Community No. 1 : Field environment

No species of conservation concern found.

Latin Name	Common Name	Native or Introduced	Rank		Status			FQA	
			Nat.	Prov.	Nat.	Prov.	Local Status	CC	CW
<i>Achillea millefolium</i>	Yarrow	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Arctium minus</i>	Burdock	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<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>Centaurea jacea</i>	Brown Knapweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Centaurea nigra</i>	Black Knapweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Cirsium arvensis</i>	Canada Thistle	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Dactylis glomerata</i>	Orchard Grass	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Daucus carota</i>	Wild Carrot	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Dipsaus Fullonum</i>	Teasel	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Equisetum arvensis</i>	Field Horsetail	N	N5	S5	NAR	NAR	Common	0	0
<i>Erigeron annuus</i>	Annual Fleabane	N	N5	S5	NAR	NAR	Common	0	1
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	N	N5	S5	NAR	NAR	Common	1	-3
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	N	N5	S5	NAR	NAR	Common	2	-2
<i>Festuca pratensis</i>	Meadow Fescue	I	NNA	SNA	Exotic	Exotic	Exotic	0	4
<i>Fraxinus americana</i>	White Ash	N	N5	S4	NAR	NAR	Common	4	3
<i>Impatiens capensis</i>	Touch-Me-Not	N	N5	S5	NAR	NAR	Common	4	-3
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Lolium perenne</i>	Perennial Rye Grass	I	NNA	SNA	Exotic	Exotic	Exotic	0	3

<i>Lotus corniculatus</i>			I		NNA	SNA	Exotic	Exotic	Exotic	0	1
<i>Medicago lupulina</i>	Black Medick		I		NNA	SNA	Exotic	Exotic	Exotic	0	1
<i>Medicago officinalis</i>	Alfalfa		I		NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Phleum pratense</i>	Timothy		I		NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Pilosella cespitosa</i>	Yellow Hawkweed		I		NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Plantago lanceolata</i>	English Plantain		I		NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Plantago major</i>	Common Plantain		I		NNA	SNA	Exotic	Exotic	Exotic	0	1
<i>Poa pratensis</i>	Kentucky Bluegrass		N		N5	S5	NAR	NAR	Common	0	1
<i>Rhannus cathartica</i>	Common Buckthorn		I		NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Solidago altissima</i>	Tall Goldenrod		N		N5	S5	NAR	NAR	Common	1	3
<i>Solidago canadensis</i>	Canada Goldenrod		N		N5	S5	NAR	NAR	Common	1	3
<i>Stellaria media</i>	Lesser Stitchwort		I		NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Symphotrichum novae-angliae</i>	New England Aster		N		N5	S5	NAR	NAR	Common	2	-3
<i>Taraxacum officinale</i>	Dandelion		I		NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Thuja occidentalis</i>	White Cedar		N		N5	NS	NAR	NAR	Common	4	-3
<i>Trifolium pratense</i>	Red Clover		I		NNA	SNA	Exotic	Exotic	Exotic	0	2
<i>Trifolium repens</i>	White Clover		I		NNA	SNA	Exotic	Exotic	Exotic	0	2
<i>Tusselago farfara</i>	Colt's Foot		I		NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Verbascum thapsis</i>	Mullein		I		NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Vicia cracca</i>	Common Vetch		I		NNA	SNA	Exotic	Exotic	Exotic	0	5
MEAN										0	2

Total number of Native species = 12 or 40%

Total number of Introduced or Non-Native species = 18 or 60%

30

2) Vegetation Community No. 2, 3 and 5 : Upland environment
No species of conservation concern found

Latin Name	Common Name	Native or Introduced	Rank		Status			FQA	
			Nat.	Prov.	Nat.	Prov.	Local Status	CC	CW
<i>Acer negundo</i>	Manitoba Maple	N	N5	S5	NAR	NAR	Common	0	-2
<i>Acer saccharum</i>	Sugar Maple	N	N5	S5	NAR	NAR	Common	5	-3
<i>Arctium minus</i>	Burdock	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Asclepias syriaca</i>	Common Milkweed	N	N5	S5	NAR	NAR	Common	0	5
<i>Betula papyrifera</i>	Paper Birch	N	N5	S5	NAR	NAR	Common	2	2
<i>Carex vulpinoidea</i>	Fox Sedge	N	N5	S5	NAR	NAR	Common	3	-5
<i>Cirsium arvensis</i>	Canada Thistle	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Convallaria majus</i>	Lily of the Valley	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Cornus stolonifera</i>	Red Osier Dogwood	N	N5	S5	NAR	NAR	Common	2	-3
<i>Cystopteris bulbifera</i>	Bulblet Fern	N	N5	S5	NAR	NAR	Common	5	-2
<i>Dactylis glomerata</i>	Orchard Grass	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Daucus carota</i>	Wild Carrot	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Equisetum arvense</i>	Field Horsetail	N	N5	S5	NAR	NAR	Common	0	0
<i>Festuca pratensis</i>	Meadow Fescue	I	NNA	SNA	Exotic	Exotic	Exotic	0	4
<i>Fraxinus americana</i>	White Ash	N	N5	S4	NAR	NAR	Common	4	3
<i>Fraxinus pennsylvanica</i>	Green Ash	N	N5	S4	NAR	NAR	Common	3	-3
<i>Gallium palustre</i>	Marsh Bedstraw	N	N5	S5	NAR	NAR	Common	5	-5
<i>Geranium robertianum</i>	Herb Robert	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Maianthemum stellatum</i>	Starry False Solomon's Seal	N	N5	S5	NAR	NAR	Common	6	1
<i>Malus pumila</i>	Apple	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Pilosella cespitosa</i>	Yellow Hawkweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	0

<i>Populus balsamifera</i>	Balsam Poplar	N	N5	S5	NAR	NAR	Common	4	-3
<i>Potentilla recta</i>	Sulphur Cinquefoil	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Ranunculus acris</i>	Common Buttercup	I	NNA	SNA	Exotic	Exotic	Exotic	0	-2
<i>Rhamnus cathartica</i>	Common Buckthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Rosa multiflora</i>	Multi-flora Rose	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Rumex crispus</i>	Curly Dock	I	NNA	SNA	Exotic	Exotic	Exotic	0	-1
<i>Salix discolor</i>	Pussy Willow	N	N5	S5	NAR	NAR	Common	3	-3
<i>Salix fragilis</i>	Crack Willow	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Prunus serotina</i>	Black Cherry	N	N5	S5	NAR	NAR	Common	3	3
<i>Ranunculus acris</i>	Common Buttercup	I	NNA	SNA	Exotic	Exotic	Exotic	0	-2
<i>Rhamnus cathartica</i>	Common Buckthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Taraxacum officinale</i>	Dandelion	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Thuja occidentalis</i>	White Cedar	N	N5	S5	NAR	NAR	Common	4	-3
<i>Typha angustifolia</i>	Narrow-leaf Cattail	I	NNA	SNA	Exotic	Exotic	Exotic	3	-5
<i>Veronica officinalis</i>	Common Speedwell	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Viola labradorica</i>	Dog Violet	N	N5	S5	NAR	NAR	Common	4	-2
<i>Vitis riparia</i>	Wild Grape	N	N5	S5	NAR	NAR	Common	0	-2
	MEAN							2	1

Total number of Native species =

18 or 47%

Total number of Introduced or Non-Native species =

20 or 53%

38

2) Vegetation Community No. 4, 6, 7 and 8: Riparian Zone, Thickets Disturbed-Hazard/Wetland

No species of conservation concern found

Latin Name	Common Name	Native or Introduced	Rank		Status			FQA	
			Nat.	Prov.	Nat.	Prov.	Local	CC	CW
<i>Acer negundo</i>	Manitoba Maple	N	N5	S5	NAR	NAR	Common	0	-2
<i>Acer saccharum</i>	Sugar Maple	N	N5	S5	NAR	NAR	Common	4	3
<i>Achillea millefolium</i>	Yarrow	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Arctium minus</i>	Burdock	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Asclepias syriaca</i>	Common Milkweed	N	N5	S5	NAR	NAR	Common	0	5
<i>Asparagus officinalis</i>	Asparagus	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Carex albusina</i>	White Bear Sedge	N	N5	S5	NAR	NAR	Common	7	5
<i>Carex aurea</i>	Golden Sedge	N	N5	S5	NAR	NAR	Common	10	3
<i>Carex granularis</i>	Meadow Sedge	N	N5	S5	NAR	NAR	Common	3	-4
<i>Carex gracillima</i>	Graceful Sedge	N	N5	S5	NAR	NAR	Common	4	3
<i>Carex hystericina</i>	Porcupine Sedge	N	N5	S5	NAR	NAR	Common	5	-5
<i>Carex leptoneuria</i>	Fine-nerved Sedge	N	N5	S4	NAR	NAR	Common	5	0
<i>Carex lupulina</i>	Hop-like Sedge	N	N5	S5	NAR	NAR	Common	6	-5
<i>Carex pallescens</i>	Pale Sedge	N	N5	S5	NAR	NAR	Common	5	3
<i>Carex spicata</i>	Spiked Sedge	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Carex stipata</i>	Awl-fruited Sedge	N	N5	S5	NAR	NAR	Common	3	-5
<i>Carex vulpinoidea</i>	Fox Sedge	N	N5	S5	NAR	NAR	Common	3	-5
<i>Centaurea jacea</i>	Brown Knapweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Centaurea nigra</i>	Black Knapweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Clinopodium vulgare</i>	Wild Basil	N	N5	S5	NAR	NAR	Common	4	5
<i>Cornus amomum</i>	Silky Dogwood	N	N5	S5	NAR	NAR	Common	5	-4
<i>Cornus stolonifera</i>	Red Osier Dogwood	N	N5	S5	NAR	NAR	Common	2	-3
<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>Daucus carota</i>	Wild Carrot	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Dipsacus fullonum</i>	Teasel	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Eleocharis palustris</i>	Small's Spikerush	N	N5	S5	NAR	NAR	Common	0	0
<i>Epilobium hirsutum</i>	Downy Willow-herb	I	NNA	SNA	Exotic	Exotic	Exotic	0	-4
<i>Equisetum arvense</i>	Field Horsetail	N	N5	S5	NAR	NAR	Common	0	0
<i>Equisetum fluviatile</i>	Water Horsetail	N	N5	S5	NAR	NAR	Common	7	-5
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	N	N5	S5	NAR	NAR	Common	1	-3
<i>Eutrochium maculatum</i>	Joe-Pye-Weed	N	N5	S5	NAR	NAR	Common	3	-5
<i>Festuca pratensis</i>	Meadow Fescue	I	NNA	SNA	Exotic	Exotic	Exotic	0	4
<i>Fragaria virginiana</i>	Wild Strawberry	N	N5	S5	NAR	NAR	Common	2	1
<i>Fraxinus pennsylvanica</i>	Green Ash	N	N5	S4	NAR	NAR	Common	3	-3
<i>Galium mollugo</i>	Cleavers	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Galium palustre</i>	Marsh Bedstraw	N	N5	S5	NAR	NAR	Common	5	-5
<i>Glyceria striata</i>	Fowl Manna Grass	N	N5	S4S5	NAR	NAR	Common	3	-5
<i>Hypericum perforatum</i>	Common St. John's Wort	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Impatiens capensis</i>	Touch-Me-Not	N	N5	S5	NAR	NAR	Common	4	-3
<i>Juglans nigra</i>	Black Walnut	N	N4	S4	NAR	NAR	Common	5	3
<i>Juncus balticus</i>	Baltic Rush	N	N5	S5	NAR	NAR	Common	5	-5
<i>Juncus dudleyi</i>	Dudley's Rush	N	N5	S5	NAR	NAR	Common	1	0
<i>Leersia oryzoides</i>	Rice Cut Grass	N	N5	S5	NAR	NAR	Common	3	-5
<i>Lepidium campestre</i>	Field Peppergrass	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	I	NNA	SNA	Exotic	Exotic	Exotic	0	-3
<i>Lycopus americanus</i>	Water Horehound	N	N5	S5	NAR	NAR	Common	4	-5
<i>Lythrum salicaria</i>	Purple Loosestrife	I	NNA	SNA	Exotic	Exotic	Exotic	0	-5
<i>Medicago lupulina</i>	Black Medick	I	NNA	SNA	Exotic	Exotic	Exotic	0	1
<i>Myosotis arvensis</i>	Field Forget-me-not	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Nasturtium officinale</i>	Watercress	I	NNA	SNA	Exotic	Exotic	Exotic	0	-5

<i>Oxalis stricta</i>	Common Yellow Sorrel	N	N5	S5	NAR	NAR	Common	0	3
<i>Phalaris arundinacea</i>	Reed Canary Grass	N	N5	S5	NAR	NAR	Common	0	-4
<i>Phragmites australis</i>	European Common Reed	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Pilosella cespitosa</i>	Yellow Hawkweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Pinus sylvestris</i>	Scotch Pine	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Poa compressa</i>	Canada Bluegrass	I	NNA	SNA	Exotic	Exotic	Exotic	0	2
<i>Poa palustris</i>	Marsh Bluegrass	N	N5	S5	NAR	NAR	Common	5	-4
<i>Populus balsamifera</i>	Balsam Poplar	N	N5	S5	NAR	NAR	Common	4	-3
<i>Populus tremuloides</i>	Trembling Aspen	N	N5	S5	NAR	NAR	Common	2	0
<i>Poterium sanguisorba</i>	Salad Burnet	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Potentilla recta</i>	Sulphur Cinquefoil	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Ranunculus acris</i>	Common Buttercup	I	NNA	SNA	Exotic	Exotic	Exotic	0	-2
<i>Rhamnus cathartica</i>	Common Buckthorn	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Rhus typhina</i>	Staghorn Sumac	N	N5	SSS5	NAR	NAR	Common	1	5
<i>Ribes cynosbati</i>	Prickly Gooseberry	N	N5	S5	NAR	NAR	Common	4	5
<i>Ribes hirtellum</i>	Gooseberry	N	N5	S5	NAR	NAR	Common	6	-3
<i>Rosa multiflora</i>	Multi-flora Rose	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Rubus occidentalis</i>	Black Raspberry	N	N5	S5	NAR	NAR	Common	2	5
<i>Rumex crispus</i>	Curly Dock	I	NNA	SNA	Exotic	Exotic	Exotic	0	-1
<i>Rumex obtusifolius</i>	Broad-leaved Dock	I	NNA	SNA	Exotic	Exotic	Exotic	0	-3
<i>Salix discolor</i>	Pussy Willow	N	N5	S5	NAR	NAR	Common	3	-3
<i>Salix euxina</i>	Crack Willow	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Salix purpurea</i>	Basket Willow	I	NNA	SNA	Exotic	Exotic	Exotic	0	-3
<i>Scirpus atrovirens</i>	Dark Green Bulrush	N	N5	S5	NAR	NAR	Common	3	-5
<i>Shepherdia canadensis</i>	Buffaloberry	N	N5	S5	NAR	NAR	Common	7	5
<i>Solidago altissima</i>	Tall Goldenrod	N	N5	S5	NAR	NAR	Common	1	3
<i>Solidago canadensis</i>	Canada Goldenrod	N	N5	S5	NAR	NAR	Common	1	3
<i>Sorbus aucuparia</i>	European Mountain Ash	I	NNA	SNA	Exotic	Exotic	Exotic	0	5

<i>Stellaria media</i>	Lesser Stitchwort	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Symphotrichum cordifolium</i>	Heart-leaved Aster	N	N5	S5	NAR	NAR	Common	5	5
<i>Symphotrichum lanceolatum</i>	Panicled Aster	N	N5	S5	NAR	NAR	Common	3	-3
<i>Symphotrichum lateriflorum</i>	Calico Aster	N	N5	S5	NAR	NAR	Common	3	-2
<i>Symphotrichum novae-angliae</i>	New England Aster	N	N5	S5	NAR	NAR	Common	2	-3
<i>Symphotrichum puniceum</i>	Purple-stemmed Aster	N	N5	S5	NAR	NAR	Common	6	-5
<i>Symphytum officinalis</i>	Comfrey	I	NNA	SNA	Exotic	Exotic	Exotic	0	0
<i>Thalictrum pubescens</i>	Meadow Rue	N	N5	S5	NAR	NAR	Common	5	-2
<i>Thuja occidentalis</i>	White Cedar	N	N5	S5	NAR	NAR	Common	4	-3
<i>Toxicodendron rydbergii</i>	Poison Ivy	N	N5	S5	NAR	NAR	Common	0	0
<i>Trifolium pratense</i>	Red Clover	I	NNA	SNA	Exotic	Exotic	Exotic	0	2
<i>Trifolium repens</i>	White Clover	I	NNA	SNA	Exotic	Exotic	Exotic	0	2
<i>Tussetago farfara</i>	Colt's Foot	I	NNA	SNA	Exotic	Exotic	Exotic	0	3
<i>Typha angustifolia</i>	Narrow-leaf Cattail	I	NNA	SNA	Exotic	Exotic	Exotic	3	-5
<i>Typha latifolia</i>	Cattail	N	N5	S5	NAR	NAR	Common	3	-5
<i>Verbascum thapsis</i>	Mullein	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Veronica officinalis</i>	Common Speedwell	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Vicia cracca</i>	Common Vetch	I	NNA	SNA	Exotic	Exotic	Exotic	0	5
<i>Vitis riparia</i>	Wild Grape	N	N5	S5	NAR	NAR	Common	0	-2
MEAN								2	0

Total number of Native species =

55 or 55%

Total number of Introduced or Non-Native species =

45 or 45%

100

National and Provincial Rank: Based on current 2017 Ontario Natural Heritage Information Center (NHIC) listings

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

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

National Status based on: Species At Risk Act, COSEWIC 2017 Listings

Provincial Status based on: Endangered Species Act 2007, NHIC 2017 and 2017 COSSARO Listings

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

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

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

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

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

APPENDIX 3

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

Water-ski Wakeboard Cable Park, Thornbury: Fauna Inventory

With Current Ranking, Status and Observed Numbers

Part Lot 30, Concession 9, Geographic Township of Collingwood

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	S5	NAR	NAR	Common	Conf	4,5,6,8,10	10+
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	N4	S4	NAR	NAR	Common	Conf	2, 3	4 to 6
<i>Anas platyrhynchos</i>	Mallard	N5	S5	NAR	NAR	Common	Ob-X	Pond-Foraging	3
<i>Archilochus colubris</i>	Ruby-throated Hummingbird	N5	S5	NAR	NAR	Common	Po-S	4, 6	3
<i>Ardea alba</i>	Great Egret	N3	S2	NAR	NAR	Rare	Ob	Pond-Foraging	1
<i>Branta canadensis</i>	Canada Goose	N5	S5	NAR	NAR	Common	Ob-X	Pond-Foraging	5
<i>Bombycilla cedrorum</i>	Cedar Waxwing	N5	S5	NAR	NAR	Common	Po-S	9	2
<i>Cardinalis cardinalis</i>	Northern Cardinal	N5	S5	NAR	NAR	Common	Po-S	4, 10	3
<i>Carduelis tristis</i>	American Goldfinch	N5	S5	NAR	NAR	Common	Conf	4,6,7,10	10+
<i>Colaptes auratus</i>	Northern Flicker	N5	S4	NAR	NAR	Common	Po-S	2,7	2
<i>Corvus brachyrhynchos</i>	American Crow	N5	S5	NAR	NAR	Common	Ob		7
<i>Cyanocitta cristata</i>	Blue Jay	N5	S5	NAR	NAR	Common	Pr	4,5,6,10	8 to 10
<i>Dolichonyx oryzivorus</i>	Bobolink	N5	S4	NAR	Thr	Common	Conf	1,2,3	10+
<i>Dendroica petechia</i>	Yellow Warbler	N5	S5	NAR	NAR	Common	Po-S	4, 8	3
<i>Dumetella carolinensis</i>	Gray Catbird	N5	S4	NAR	NAR	Common	Po-H	5, 10	2
<i>Empidonax traillii</i>	Willow Flycatcher	N5	S5	NAR	NAR	Common	Po-S	4, 8, 10	5
<i>Geothlypis trichas</i>	Common Yellowthroat	N5	S5	NAR	NAR	Common	Conf	4, 6, 8	8 to 10
<i>Melospiza melodia</i>	Song Sparrow	N5	S5	NAR	NAR	Common	Po-S	10	1
<i>Passer domesticus</i>	House Sparrow	NNA	SNA	NAR	NAR	Common	Po-S	4	1
<i>Picoides pubescens</i>	Downy Woodpecker	N5	S5	NAR	NAR	Common	Po-S	5, 9	2
<i>Poecite atricapillus</i>	Black-capped Chickadee	N5	S5	NAR	NAR	Common	Pr	5, 9	10+
<i>Poocetes gramineus</i>	Vesper Sparrow	N5	S4	NAR	NAR	Common	Po-S	3,4,7	5
<i>Quiscalus quiscula</i>	Common Grackle	N5	S5	NAR	NAR	Common	Po-S	2, 7	3
<i>Sayornis phoebe</i>	Eastern Phoebe	N5	S5	NAR	NAR	Common	Po-H	5	1
<i>Setophaga pensylvanica</i>	Chesnut-sided Warbler	N5	S5	NAR	NAR	Common	Po-H	5, 6	2
<i>Spizella pallida</i>	Clay-Coloured Sparrow	N5	S4	NAR	NAR	Common	Po-S	7,8	4
<i>Spizella passerina</i>	Chipping Sparrow	N5	S5	NAR	NAR	Common	Conf	4, 5, 6, 7	10+
<i>Spizella pusilla</i>	Field Sparrow	N5	S4	NAR	NAR	Common	Po-H	6, 8	3
<i>Sturnella magna</i>	Eastern Meadowlark	N5	S4	NAR	Thr	Common	Conf	3, 7	5
<i>Sturnus vulgaris</i>	European Starling	NNA	SNA	NAR	NAR	Common	Po-S	6	4

Birds

Tachycineta bicolor	Tree Swallow	N5	S4	NAR	NAR	NAR	Common	Pr	2,3,4,6	7
Troglodytes aedon	House Wren	N5	S5	NAR	NAR	NAR	Common	Po-H	5	1
Turdus migratorius	American Robin	N5	S5	NAR	NAR	NAR	Common	Conf	4,5,6,9,10	8 to 10
Tyrannus tyrannus	Eastern Kingbird	N5	S4	NAR	NAR	NAR	Common	Po-S	4, 6, 8	3
Zenaidura macroura	Mourning Dove	N5	S5	NAR	NAR	NAR	Common	Po-S	3	2
Zonotrichia albicollis	White-throated Sparrow	N5	S5	NAR	NAR	NAR	Common	Pr	3,4,6	5 to 7

Note: Bird species which were only observed within the adjacent (south boundary) constructed Ponds, not within the Study Lands

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

Mammals

Latin Name	Common Name	Ranking			Status			Observed Range of Adult Numbers
		Nat.	Prov.	Nat.	Prov.	Local		
Marmota flaviventris	Woodchuck	N5	S5	NAR	NAR	Common	1	
Odocoileus virginianus	White-tailed Deer	N5	S5	NAR	NAR	Common	5	
Peromyscus maniculatus	Deer Mouse	N5	S5	NAR	NAR	Common	2	
Procyon lotor	Raccoon	N5	S5	NAR	NAR	Common	1	
Sylvilagus floridanus	Eastern Cottontail	N5	S5	NAR	NAR	Common	1	
Tamiasciurus hudsonicus	Red Squirrel	N5	S5	NAR	NAR	Common	>10	
Tamias striatus	Eastern Chipmunk	N5	S5	NAR	NAR	Common	2	
Sciurus carolinensis	Eastern Gray Squirrel	N5	S5	NAR	NAR	Common	3	
Vulpes vulpes	Red Fox	N5	S5	NAR	NAR	Common	1	

Reptiles

Thamnophis sirtalis sirtalis	Eastern Gartersnake	N5	S5	NAR	NAR	Common	1
------------------------------	---------------------	----	----	-----	-----	--------	---

Amphibians

Lithobates pipiens	Northern Leopard Frog	N5	S5	NAR	NAR	Common	9--10
Lithobates clamitans	Green Frog	N5	S5	NAR	NAR	Common	3 to 5

Fish

Minnows	Cyprinid Family						20 to 25
---------	-----------------	--	--	--	--	--	----------

Butterflies

<i>Celastrina neglecta</i>	Summer Azure	N5	S5	NAR	NAR	Common	5 to 10
<i>Cercyonis pegala</i>	Common Wood-Nymph	N5	S5	NAR	NAR	Common	10+
<i>Colias philodice</i>	Clouded Sulphur	N5	S5	NAR	NAR	Common	10+
<i>Danaus plexippus</i>	Monarch	N4N5B	S2NS4B	SC	SC	SC	4
<i>Euphyes vestris</i>	Dun Skipper	N5	S5	NAR	NAR	Common	5 to 10
<i>Nymphalis antiopa</i>	Mourning Cloak	N5	S5	NAR	NAR	Common	3
<i>Phyciodes coccyta</i>	Northern Crescent	N5	S5	NAR	NAR	Common	10+
<i>Vanessa atalanta</i>	Red Admiral	N5	S5	NAR	NAR	Common	2

**Dragonflies
& Damselflies**

<i>Amphiagrion saucium</i>	Eastern Red Damselfly	N5	S4	NAR	NAR	Uncommon	10+
<i>Anax junius</i>	Common Green Darner	N5	S5	NAR	NAR	Common	10+
<i>Calopteryx maculata</i>	Ebony Jewelwing	N5	S5	NAR	NAR	Common	5 to 10
<i>Libellula pulchella</i>	Twelve-spotted Skimmer	N5	S5	NAR	NAR	Common	5 to 10
<i>Pachydiplax longipennis</i>	Blue Dasher	N5	S5	NAR	NAR	Common	10+

National and Provincial Rank: Based on current 2017 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 2017 Listings

Provincial Status based on: Endangered Species Act 2007, NHIC 2017, COSSARO 2017 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
31-May-17	A1	No activity: Code 0
	A2	NLF/ Code 1 / 3-4 GF/Code 1/ 1
	A3	NLF/ Code 1 / 3

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:
 NLF = Northern Leopard Frog GF = Green Frog

SAR Bird Survey - Open Field Grasslands

Survey Date	Point Count No.	Species & Numbers	Species & Numbers
30-May-17	1	Bobolink: 2 males	
	2	Bobolink: 1 male	
	3	Bobolink: 3 males + 1 female	
	7	No activity	
12-Jun-17	1	Bobolink: 3 males + 2 females	
	2	Bobolink: 2 males	
	3	Bobolink: 4 males + 3 females	Eastern Meadowlark: 1 males + 1 female
	7	Bobolink: 1 male	
24-Jun-17	1	Bobolink: 2 males	
	2	Bobolink: 3 males+ 2 females	
	3	Bobolink: 3 males + 2 females	Eastern Meadowlark: 1 male
	7	Bobolink :1 male	Eastern Meadowlark: 2 males + 1 female



Water-ski Wakeboard Cable Park, Thornbury: Point Count Location Mapping

Legend

Large Scale

Provincial Highway

County Road

Municipal Road

Municipal Road - (No Winter Maintenance)



Notes

1

A1

Breeding Bird Survey Point Counts (1-10)

Anuran (Frog/Toad) Night time Calling Survey Point

Counts (1-3)

0.28 Kilometers

0.14

0



APPENDIX 4

- 2010 and 2006 Site Air Photos



2010 Air Photo of Study & Site Lands

Legend

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



0.32 Kilometers

0.16

0

0.32

WGS_1984_Web_Mercator_Auxiliary_Sphere
© County of Grey

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

Printed: November 14, 2017 THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

Water-ski Wakeboard Cable Park
Thornbury, On



2006 Air Photo of Study & Site Lands

Legend

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



0.32 Kilometers

0.16

0



WGS_1984_Web_Mercator_Auxiliary_Sphere
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This map is a user generated static output from an Internet mapping site and is for reference only.
 Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

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Notes

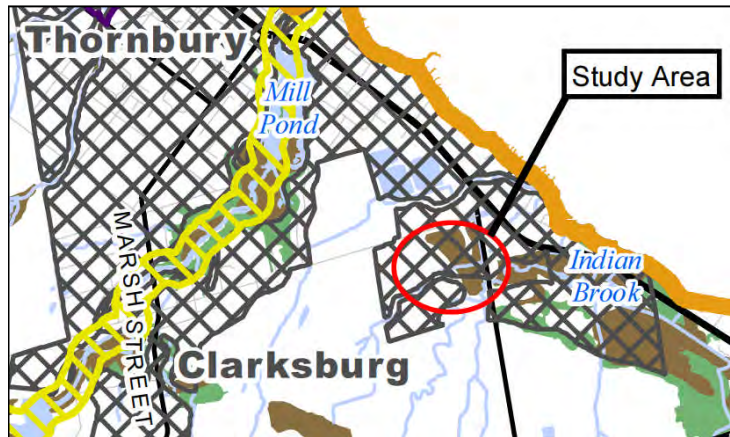
Water-ski Wakeboard Cable Park
 Thornbury, On

APPENDIX 5

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

Grey County- Green in Grey Natural Heritage Study

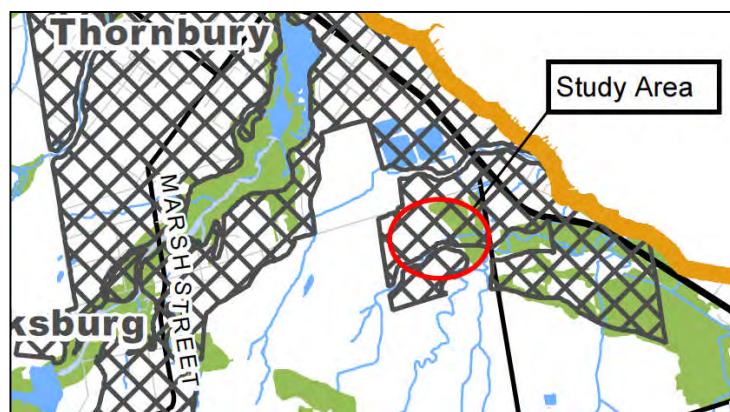
- Base map source: Grey County Natural Heritage System Study, Map 7 & 8 excerpts



**Significant Natural Features,
Core Areas, and Linkages**

LEGEND

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



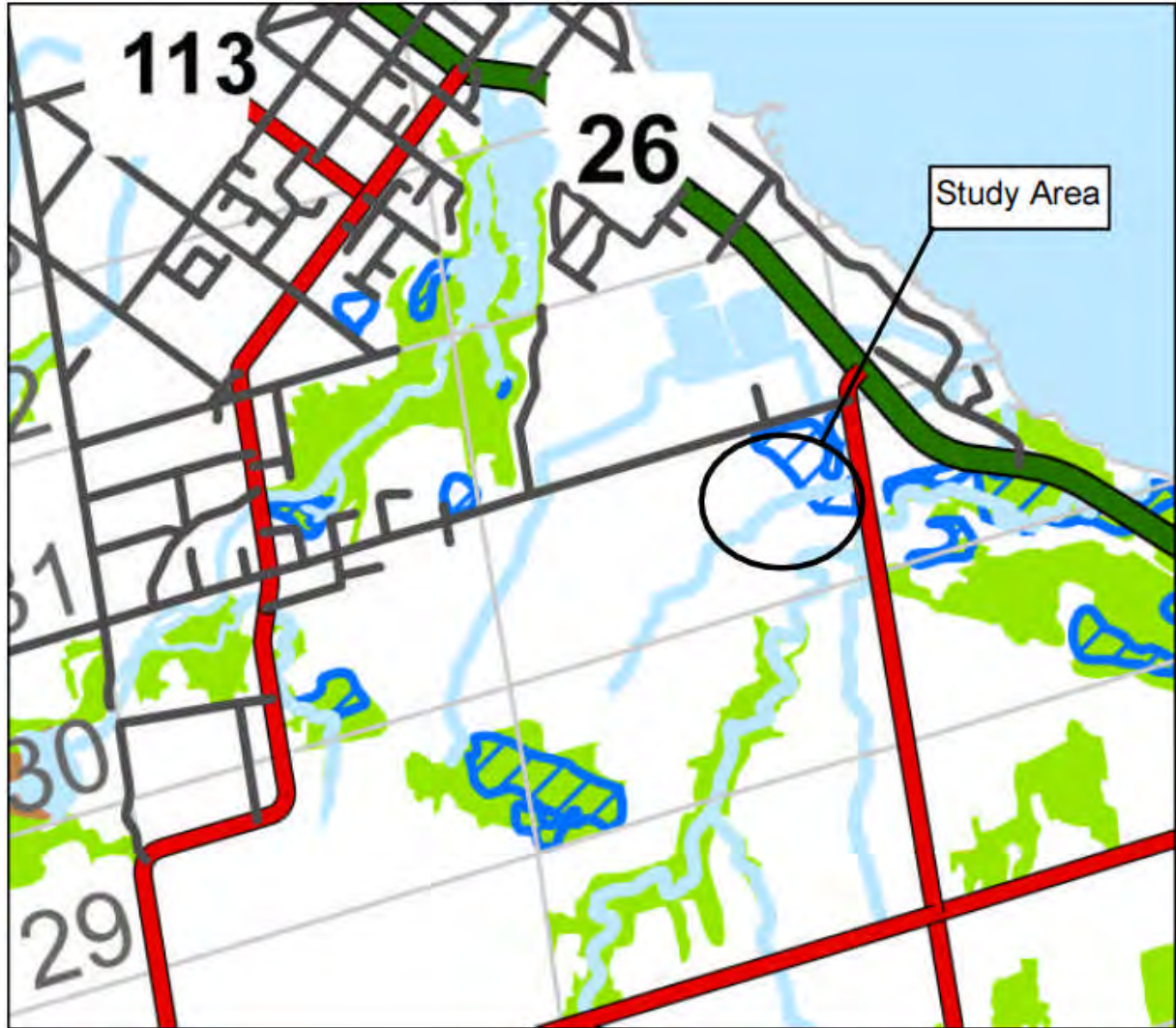
Natural Heritage System

LEGEND

Core Areas and Linkages
Significant Natural Features
Aquatic Features

Draft November 2017 New Grey County Official Plan

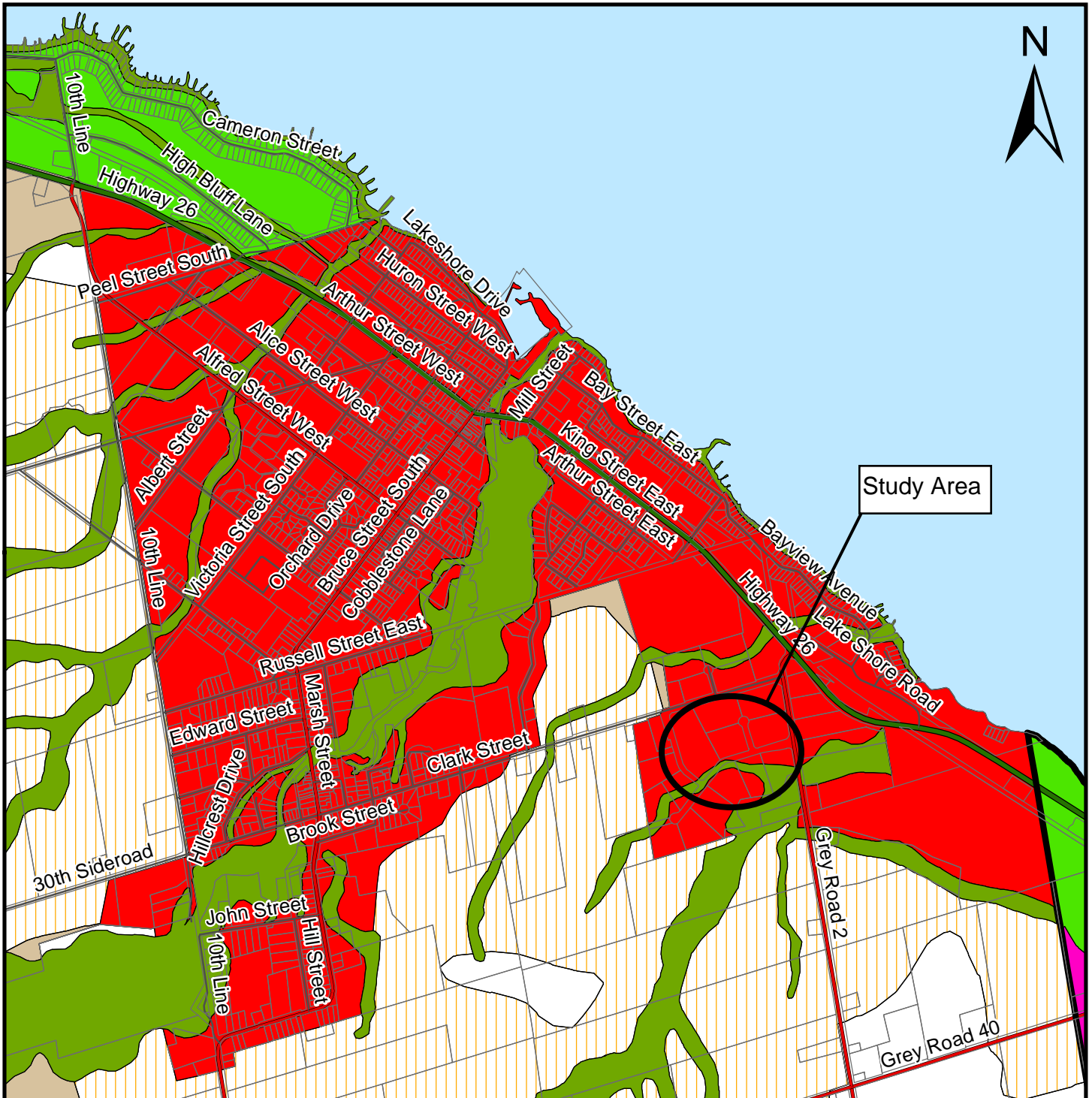
- Base Map source: Appendix 'B' Constraint Mapping, Map 2



LEGEND

- | | |
|--|---|
|  Provincial Highway |  Earth & Life ANSI |
|  County Road |  Earth ANSI |
|  Local Road |  Life ANSI |
|  Seasonal Road |  Significant Valleylands |
|  Stream / River |  Significant Woodlands |
|  Lakes | |
|  Other Wetlands | |

Water-ski Wakeboard Cable Park, Thornbury: EIS January 2018
Part Lot 30, Concession 9, Geographic Township of Collingwood



LEGEND

- Provincial Highway
- County Road
- Local Road
- Seasonal Road
- Agricultural
- Special Agricultural
- Rural
- Primary Settlement Area
- Secondary Settlement Area
- Inland Lakes & Shoreline
- Recreational Resort Area
- Sunset Strip Area
- Industrial Business Park
- Space Extensive Industrial and Commercial
- Niagara Escarpment Plan Boundary **
- Niagara Escarpment Development Control Area
- Escarpment Recreation Area
- Hazard Lands
- Provincially Significant Wetlands

** certain settlement areas within the Niagara Escarpment Plan Boundary may be subject to Development Control.

THE COUNTY OF GREY OFFICIAL PLAN

**SECONDARY SCHEDULE
Land Use Types**

MAP 2a

THORNBURY - CLARKSBURG

SCALE 1:25 000

INTERACTIVE MAP: geo.grey.ca
DOWNLOAD PDF: grey.ca/planning-development

GR_OP_SecSched_Map2aThornbury-ClarksburgX11.mxd

APPENDIX 6

- **MNRF Reference Documents for SAR Grassland Birds**

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

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

HABITAT CATEGORIZATION

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

Category 1

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

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

Category 2

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

Category 3

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

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

Activities in Bobolink habitat

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

Generally compatible:

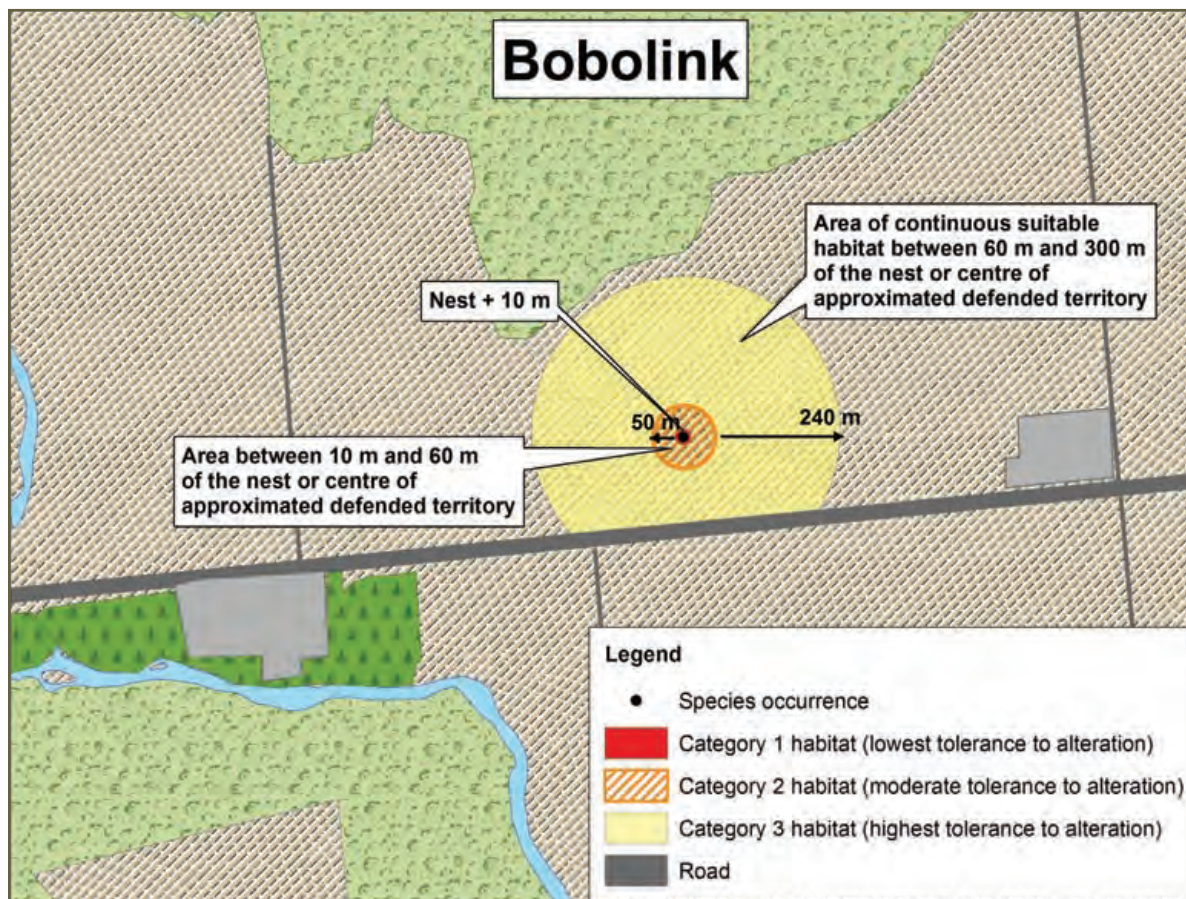
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and rotational cattle grazing.
- Hiking and non-motorized vehicle use on existing recreational trails.
- General yard work such as lawn care and gardening.

Generally not compatible*:

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

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

Sample application of the general habitat protection for Bobolink



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

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

HABITAT CATEGORIZATION

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

Category 1

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

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

Category 2

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

Category 3

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

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

Activities in Eastern Meadowlark habitat

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

Generally compatible:

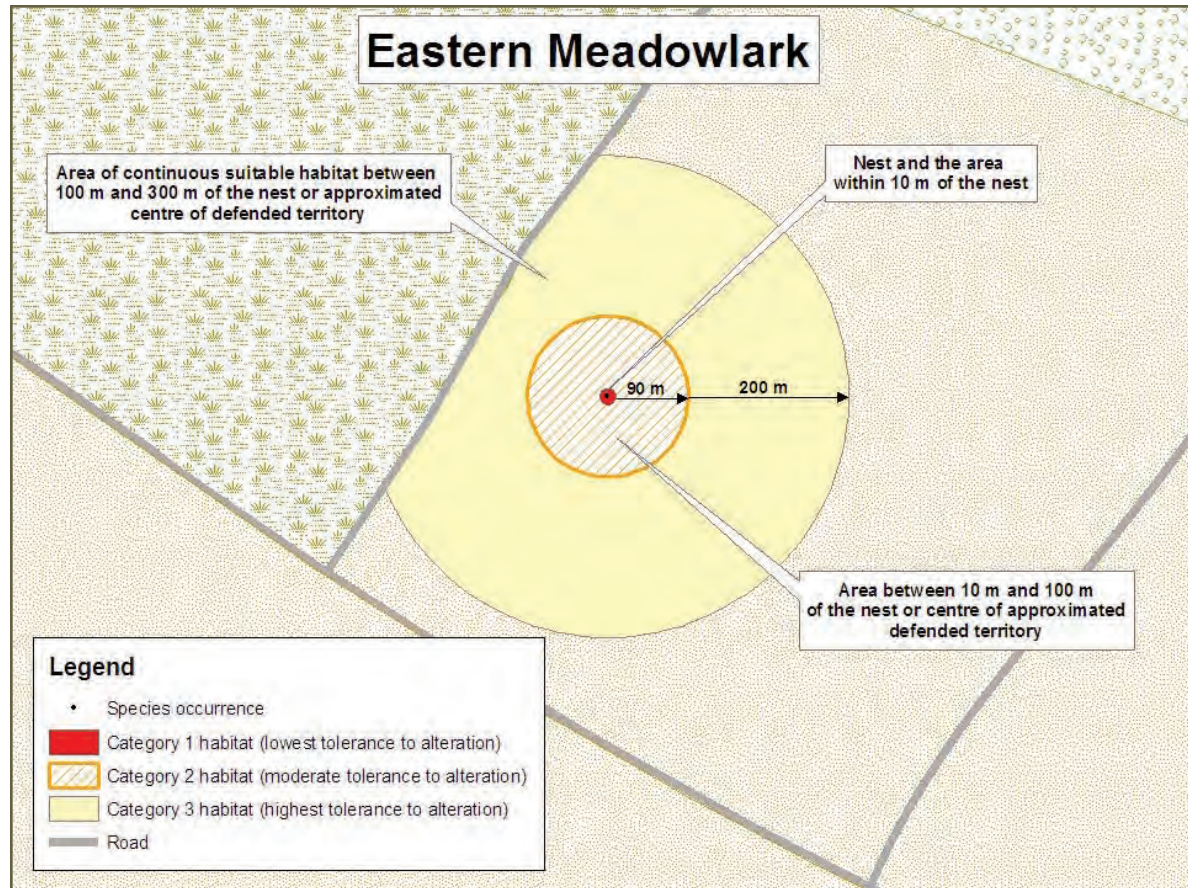
- Continuation of existing agricultural practices and planned management activities such as annual harvest, mowing, and rotational cattle grazing.
- Hiking and non-motorized vehicle use on existing recreational trails.
- General yard work such as lawn care and gardening.

Generally not compatible*:

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

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

Sample application of the general habitat protection for Eastern Meadowlark



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APPENDIX 7

- Ontario Regulations excerpt for Bobolinks & Eastern Meadowlark
 - Property habitat area calculations

Endangered Species Act, 2007

ONTARIO REGULATION 242/08

GENERAL

Consolidation Period: From September 14, 2016 to the [e-Laws currency date](#).

Last amendment: O. Reg. 308/16.

AWS Download: October 2017

Bobolink, Eastern Meadowlark

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

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

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

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

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

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

1. Before commencing the activity, the person must,

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

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

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

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

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

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

i. a description of the activity,

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

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

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

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

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

A. the activity should be carried out, and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- i. retain the record until December 31 of the final year of the five-year period during which the person must manage and monitor the new or enhanced habitat, and
- ii. provide a copy of the record to the Ministry within 14 days of receiving a request for it. O. Reg. 176/13, s. 14.

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

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

1. The name and contact information of the person on whose behalf the activity described in subsection (1) is being carried out.
2. With respect to the area of bobolink or eastern meadowlark habitat that is likely to be damaged or destroyed by the activity described in subsection (1),

- i. a description of the area's location, including a detailed map,
- ii. the ecoregion in which the area is located, and
- iii. the size of the area in hectares.

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

- i. a description of the activity, and
- ii. the proposed start date of the activity,

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

- i. a description of the area's location, including a detailed map,
- ii. the ecoregion in which the area is located,
- iii. the size of the area in hectares,
- iv. the composition of the soils covering the area, and
- v. the percentage of the area covered by grass species at the time the habitat management plan is prepared.

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

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

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

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

1. The area must be larger than the area of the habitat for bobolink or eastern meadowlark that is damaged or destroyed by the activity.
2. The area may be made up of separate parcels of land, but the minimum size of any individual parcel must be no less than four hectares.
3. No portion of the area shall be less than 200 metres in width. O. Reg. 176/13, s. 14.

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

1. A minimum of 60 to 80 per cent of the habitat must be covered with at least three different grass species and any remaining part of the habitat that is not covered with grass species must be covered with forbs or legumes.
2. Among the grass species referred to in paragraph 1, at least one must grow greater than 50 centimetres high under normal growing conditions. O. Reg. 176/13, s. 14.

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

1. The area shall not be harvested, mowed or cut between April 1 and July 31 of any year.
2. If the habitat is used for pasture, grazing farm animals must be excluded from at least 50 per cent of the habitat from April 1 until July 31 of each year.
3. In each of the five years following the creation or enhancement of the habitat, take such actions as are necessary to maintain the grass species, forbs and legumes in the area in the proportions described in paragraph 1 of subsection (8) and remove woody vegetation and invasive species. O. Reg. 176/13, s. 14.

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

- (a) document the steps taken by the person under subparagraph 5 ii of subsection (4) to minimize adverse effects of the activity described in subsection (1) on bobolink or eastern meadowlark;
- (b) document the steps taken by the person to create or enhance habitat under paragraph 6 of subsection (4) and to manage that habitat under subparagraph 7 i of subsection (4);
- (c) include photographs of the area created or enhanced as habitat under paragraph 6 of subsection (4) that show the area prior to and after the habitat is created or enhanced;
- (d) include data and information collected during monitoring under subparagraph 7 ii of subsection (4); and
- (e) include details of any encounters with the species. O. Reg. 176/13, s. 14.



Water-ski Wakeboard Cable Park: SAR Bird Habitat Area Calculations

Legend



Notes

Thornbury

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

Printed: November 21, 2017 THIS MAP IS NOT TO BE USED FOR NAVIGATION



Potential SAR Bird Habitat Enhancement Area for ESA : Property South West

Legend

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



Notes

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

0 0.08 0.16 Kilometers



WGS_1984_Web_Mercator_Auxiliary_Sphere
© County of Grey

Printed: November 10, 2017 THIS MAP IS NOT TO BE USED FOR NAVIGATION

Water-ski Wakeboard Cable Park
Thornbury, ON

APPENDIX 8

- Fish Habitat Review; Fisheries Policy and former GSCA Permit



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

August 16, 2012

Daniel Twigger
C.C. Tatham and Associates Ltd.
115 Sandford Fleming Drive, Suite 200
Collingwood, ON
L9Y 5A6

Dear Mr. Twigger:

RE: Issuance of Grey Sauble Conservation Authority Permit GS12-192 for 2 temporary (removable) crossings, construction of stream channel diversion, 2 stormwater management ponds, event feature ponds, remediation of existing ponds, access road improvements. (Cedar Run Corporation c/o Peter Lush) Part of Lot 29, 30, Concession 9 Town of the Blue Mountains

Please find enclosed a permit for your "2 temporary (removable) crossings, construction of stream channel diversion, 2 stormwater management ponds, event feature ponds, remediation of existing ponds, access road improvements." project. Also enclosed is a green and white sign that must be posted on the property near the point of access to the project location while construction is taking place. Additionally, a letter of advice in regards to fish habitat is also enclosed.

Please read the conditions of your permit carefully prior to starting your project.

Please inform our office when you plan to start the project and upon completion of the project.

If any questions should arise, please feel free to contact me.

Regards,

Andrew Sorensen
Environmental Planning Coordinator

Encl.

CC Michael Martin, Authority Director, Town of the Blue Mountains
Building Department, Town of the Blue Mountains
Cedar Run Corporation c/o Peter Lush, owner
D.C. Slade

Member of



Watershed Municipalities

Arran-Elderslie, Chatsworth, Georgian Bluffs, Grey Highlands,
Meaford, Owen Sound, South Bruce Peninsula, Blue Mountains





**GREY SAUBLE
CONSERVATION AUTHORITY**

PERMIT NUMBER	GS12-192
DATE ISSUED	16-Aug-12

R.R.#4, Inglis Falls Road, Owen Sound, Ontario, N4K 5N6 (519)376-3076 Fax (519)371-043

**DEVELOPMENT, INTERFERENCE with WETLANDS, ALTERATIONS
to SHORELINES and WATERCOURSES PERMIT**

In accordance with Ontario Regulation 151/06, permission is hereby granted to:

Owner Cedar Run Corporation
c/o Peter Lush

Agent Daniel Twigger
C.C. Tatham and Associates Ltd.

20 Balsam Street, Suite 14
Collingwood, ON
L9Y 4H7

115 Sandford Fleming Drive, Suite 200
Collingwood, ON
L9Y 5A6

- to PLACE/REMOVE FILL ALTER A WETLAND
 CONSTRUCT/RECONSTRUCT A BUILDING or STRUCTURE ALTER, ADD TO, RENOVATE A BUILDING
 ALTER A WATERCOURSE ALTER A LAKE SHORELINE

at the following location:

Lot 30 Conc 9 Town of the Blue Mountains, formerly Collingwood Township
 Lot Number Registered Plan Number

Existing Landuse: Horse Park

Roll#:

For the following works: 2 temporary (removable) crossings, construction of stream channel diversion, 2 stormwater management ponds, event feature ponds, remediation of existing ponds, access road

on the above described property, during the period of 16-Aug-12 to 16-Aug-14

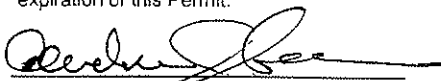
The applicant, by acceptance of and in consideration of the issuance of this Permit, agrees to the "Specific and General" conditions as listed below. If the applicant wishes to appeal these conditions to the Authority's board of directors, the Authority must be notified in writing prior to commencement of the project. Once the appeal process has been initiated, this permit becomes null and void and no work shall commence.

SPECIFIC CONDITIONS

- 1) The proposed work must be completed in accordance with the project description outlined in the Thornbury Horse Park, Approval Submission and Technical Report, Proposed 2012 Works dated March 2012 and the attached approved plans (PP-1, PP-2, DE-4, DE-5 dated Aug. 7, 2012).
- 2) The new channel is to be constructed and stabilized prior to diversion of flow.
- 3) In-stream works must be completed during dry conditions or periods of low flow and must be completed in a manner that will prevent transport of sediment to downstream reaches of the Indian Brook and its tributaries.
- 4) Appropriate sediment controls must be utilized to ensure that no sediment and/or other deleterious materials enter the downstream areas.
- 5) All disturbed areas must be re-vegetated and/or stabilized immediately following construction to prevent the release of sediment to downstream reaches.
- 6) Any changes to project design within our regulated area must be approved by this office.
- 7) The enclosed green and white sign must be posted at a visible point of access to the project location.

GENERAL CONDITIONS

1. Approvals, permits, etc. may be required from other agencies prior to undertaking the work proposed. Authority permission, if granted for the proposed work, does not exempt the owner/agent from complying with any or all other approvals, laws, statutes, ordinances, directives, regulations, etc. that may affect the property or the use of same.
2. Authorized representatives of the Grey Sauble Conservation Authority may, at any time, enter onto the lands which are described herein to make surveys, examinations or inspections which are required for the purpose of ensuring that the work(s) authorized by this Permit are being carried out according to the terms of this Permit.
3. **The applicant agrees:**
 - (a) to indemnify and save harmless on a solicitor and client basis, the Grey Sauble Conservation Authority and its officers, employees or agents, from or against all damage, loss, claims, demands, actions and proceedings, arising out of or resulting from any act or omission of the owner and/or applicant or any of his agents, employees or contractors relating to any particulars, terms or conditions of this Permit;
 - (b) that this Permit shall not release the applicant from any legal liability or obligation and remains in force subject to all limitations, requirements and liabilities imposed by law;
 - (c) that all complaints arising from the execution of the works authorized under this Permit shall be reported prior to the expiration of this Permit.


(Officer of the Authority)

PLEASE CONTACT **Andrew Sorensen**
BEFORE AND AFTER THE WORK IS COMPLETED



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

August 16, 2012

Cedar Run Corporation
c/o Peter Lush
20 Balsam Street, Suite 14
Collingwood, ON
L9Y 4H7

Dear Mr. Lush:

Re: Issuance of GSCA Permit # GS12192 for 2 temporary (removable) crossings, construction of stream channel diversion, 2 stormwater management ponds, event feature ponds, remediation of existing ponds, access road improvements. Part of Lot 30, Concession 9 Town of The Blue Mountains

The Grey Sauble Conservation Authority received on May 16, 2012, your proposal described as "2 temporary (removable) crossings, construction of stream channel diversion, 2 stormwater management ponds, event feature ponds, remediation of existing ponds, access road improvements.". Based on our review of your permit application, our office is prepared to issue our permit (# GS12192 – see attached). Please ensure a copy of this letter and permit is available on site during construction activities.

As detailed in our Level II fish habitat agreement with Fisheries and Oceans Canada (DFO), the Grey Sauble Conservation Authority is responsible to evaluate proposed works as to their impact on fish habitat within the Grey Sauble Conservation Authority's watershed. Based on the information provided and my inspection of the project location, I have determined that the proposal will be "low risk" to fish habitat and that it will **NOT** result in the harmful alteration, disruption or destruction of fish habitat if completed as per our permit's conditions and following the general mitigation measures as described below. The harmful alteration, disruption or destruction of fish habitat is prohibited unless authorized by Fisheries and Oceans Canada (DFO) pursuant to Section 35(2) of the Fisheries Act. In keeping with DFO's "Policy for the Management of Fish Habitat", no such authorizations are issued unless acceptable measures for the habitat loss are developed and implemented by the proponent.

General Mitigation Measures

- All work should be completed in the dry if possible.
- In-water work should not occur from September 15 to June 30 to protect local fish populations during their spawning and nursery periods.
- In-water work should be kept to a minimum if required and appropriate sediment controls installed to prevent sediment from reaching downstream reaches.
- Riparian vegetation should be established on the new channel.
- All materials and equipment used for the purpose of site preparation and project completion should be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum products, silt, etc.) from entering the water.
 - Any stockpiled materials should be stored and stabilized away from the water.

Member of



Watershed Municipalities

Arran-Elderslie, Chatsworth, Georgian Bluffs, Grey Highlands,
Meaford, Owen Sound, South Bruce Peninsula, Blue Mountains



- Vehicle and equipment re-fuelling and maintenance should be conducted away from the water.
- Any part of equipment entering the water should be free of fluid leaks and externally cleaned/degreased to prevent any deleterious substance from entering the water.
- Sediment and erosion control measures should be implemented prior to work and maintained during the work phase, to prevent entry of sediment into the water.
 - All sediment and erosion control measures should be inspected daily to ensure that they are functioning properly and are maintained and/or upgraded as required.
 - If the sediment and erosion control measures are not functioning properly, no further work should occur until the sediment and/or erosion problem is addressed.
 - All disturbed areas on the work area should be stabilized as soon as possible after project completion.
 - All disturbed areas should be stabilized and re-vegetated as required upon completion of work and restored to a pre-disturbed state or better.
- At no time should water flows to downstream sections be interrupted.

If the proposed work is carried out as described in the plans provided to the Grey Sauble Conservation Authority and as per the "General Mitigation Measures", it will not be considered as contravening Section 35(1) of the Fisheries Act which states:

"No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat."

Please note that this letter of advice and the issuance of the GSCA permit does not release the proponent of the responsibility for obtaining other permits that may be required under federal, provincial or municipal legislation. Please ensure that you contact me prior to the start of the project and when the project is completed.

If you have any questions or should there be any changes to the proposed work, please contact the undersigned at (519) 376-3076.

Yours truly,



Andrew Sorensen
Environmental Planning Coordinator

Enclosures

cc: Daniel Twigger, C.C. Tatham and Associates Ltd.
Michael Martin, GSCA Director, Town of the Blue Mountains
Town of The Blue Mountains



**Grey Sauble
Conservation Authority**

R.R.#4, 237897 Inglis Falls Road
Owen Sound, Ontario
N4K 5N6 (519) 376-3076
www.greysauble.on.ca

A Permit for this site has been issued for:

**for the construction of a diversion
channel, two temporary crossings, 2
stormwater management ponds and
associated site alterations**

**under the Grey Sauble Conservation
Authority: Regulation of Development,
Interference with Wetlands and Alterations
to Shorelines and Watercourses
(Section 28 Conservation Authorities Act)**

Permit No. GS12-192

Approved Aug. 16, 2012 Expires Aug. 16, 2014



AWS Environmental Consulting Inc.
(Operating as Aquatic and Wildlife Services)

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

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

Web site: www.awsenvironmental.ca

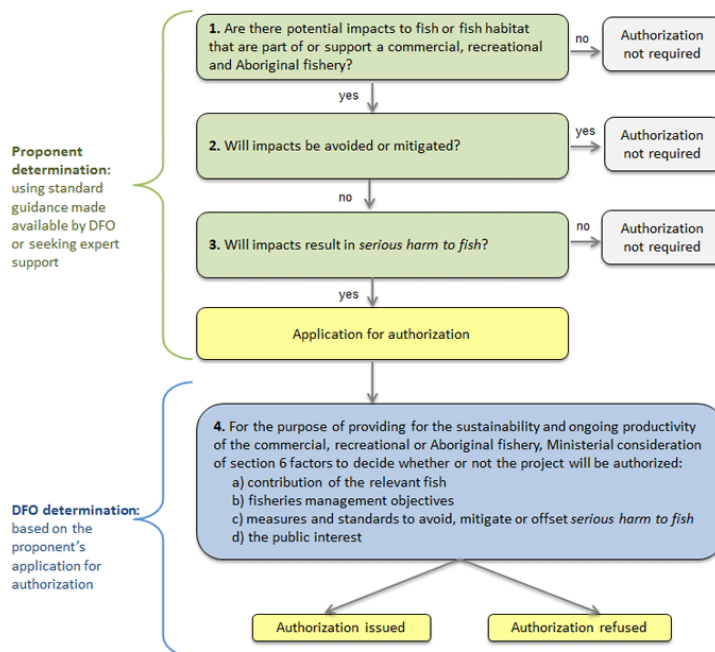
December 18, 2017

Re: Water Ski Wakeboard Cable Park- Thornbury
 Proposed Water Course Realignment

With the Conservation Authorities no longer having decision making agreements in place with the Federal Department of Fisheries and Oceans (DFO), reflected in the recent revision to the Conservation Authority Act (section 28), a review of the current Fisheries Protection Policy Statement decision-making process (section 8.5 of policy) has been provided below.

Field observations in 2017 did not identify any water course changes or noted any ecological functions within this water course, to that identified in the 2012 intensive Fish Habitat Assessment report by AWS.

Fisheries Protection Policy Statement: Flow Chart, Figure No. 2 excerpt



Note: Italic written texts below are direct wording from the above Federal Fisheries Act policy statement and decision making flow chart.

1. *Are there potential impacts to fish or fish habitat that are part of or support a commercial, recreational and Aboriginal fishery?*

- No.
- Mitigative measures are in place and the proposed Site Plan Design will have no short-term or long-term negative impacts to the receiving recreational fishery waters of Georgian Bay. Potential minor impacts during construction period and watercourse realignment have been avoided and/or mitigated in step 2 of decision making process.
- ***Authorization not Required***

2. *Will impacts be avoided or mitigated?*

- Yes.
- Potential impacts could occur without mitigation measures being implemented. The 2012 supporting technical report and Site Plans have outlined potential impacts with accepted mitigation measures for fish habitat. Potential negative impacts are both avoided in design parameter and mitigated for in-stream habitat aspects.
- ***Authorization not Required***

3. *Will impacts result in serious harm to fish?*

- No.
- Potential watercourse realignment is anticipated to have no negative impacts to the identified downstream environment, with an overall net gain in fish habitat through realignment of this water course to flow into Indian Brook then to the same receiving waters of Georgian Bay. Through in-stream channel design, downstream velocity impacts have been mitigated with no loss or negative impact to fish habitat features or ecological functions.
- ***Authorization not Required***

Conclusion

Based on the 2012 supporting technical report, Site Plan and through the earlier GSCA review process in 2012 which at that time, the CA did have Fish Habitat assessment protocols, guidelines and DFO consultation agreement in place and site condition observation of 2017 by AWS, the proposed water course realignment is in compliance with the Federal Fisheries Act. It is this professional environmental consultants, whom has received DFO training in Fish Habitat and having over 30 years of Fish and Fish Habitat experience, that no serious impacts to fish or fish habitat would occur from the proposed water course realignment, which the Conservation Authorities supported in 2012.

Following the current Federal Fish Habitat Review process, where it is 'proponent driven', the DFO decision making flowchart outlined above, demonstrates that no Authorization Permit from DFO is deemed required for this project. Said mitigation measures and design recommendations are in keeping with best management practices and follow DFO recommended measures for the identified fishery resources for this watercourse and on-site fish habitat features.

Yours Truly



John Morton, President
AWS Environmental Consulting Inc.

APPENDIX 9

- Water-ski Wakeboard Cable Park Concept Design shown Overlain on to the EIS Vegetation Community Mapping

Legend

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

Study Lands

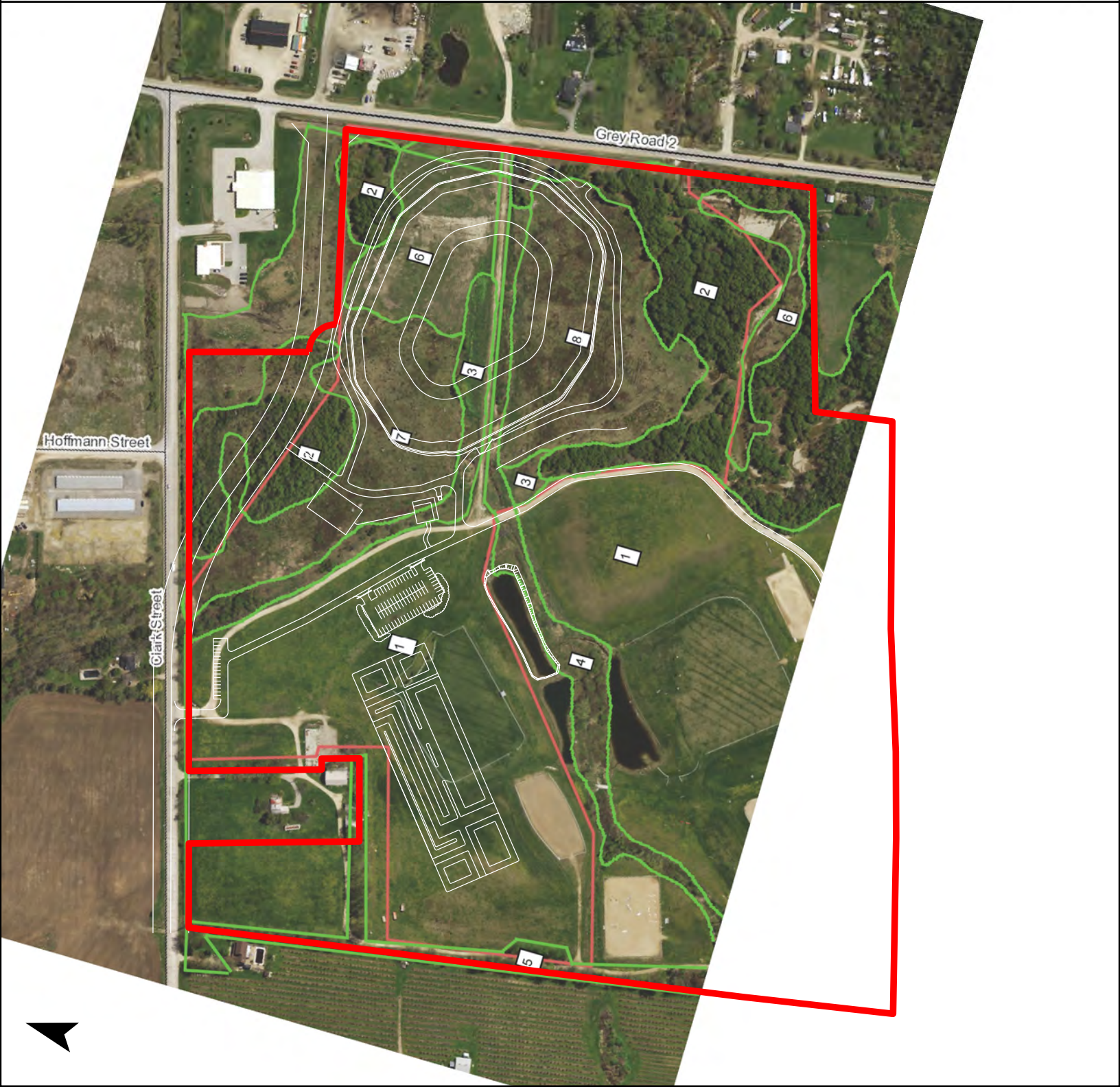
Natural Heritage Legend

Vegetation Community Boundary

Vegetation Community No. 1

E.L.C. Types

- 1= No ELC Type, Agricultural Fields with scattered site disturbances
- 2= FOC4-2; Fresh-Moist White Cedar Coniferous Forest
- 3= No ELC, Hedgerow with Mixed Hardwoods
- 4= FOM7-2: Fresh-Moist White Cedar Hardwood Mixed Riparian
- 5= No ELC; Hedgerow with Mixed Conifers
- 6= CUM1; Dry-Moist Old Field Meadow with site disturbances
- 7 = MAM2-10; Forb Mineral Meadow Marsh with site disturbances
- 8= SWT2-2; Willow Mineral Thicket Swamp with site disturbances



APPENDIX 10

- Site Photographs, 2017



Photo No. 1: Vegetation community No. 1, SAR bird habitat area

Photo No. 2: Vegetation community No. 2, closed canopy cedar





Photo No. 3: Vegetation community No. 3, with milkweed, monarch butterfly habitat

Photo No. 4: Vegetation community No. 4, riparian and existing in-line pond





Photo No. 5: Vegetation community No. 6, old field and SAR bird habitat

Photo No. 6: Vegetation community No. 7, meadow marsh





Photo No. 7: Vegetation community No. 8, thicket swamp

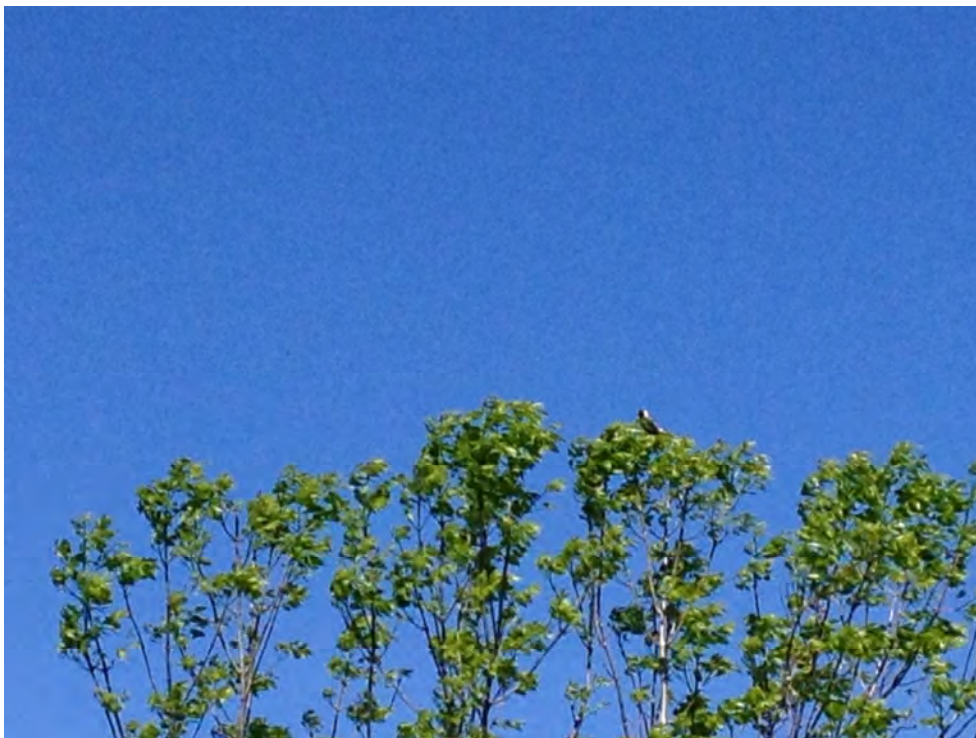
Photo No. 8: Portion of watercourse to be realigned, June 2017 flows





Photo No. 9: Indian Brook, outlet area for watercourse realignment

Photo No. 10: Roosting male Bobolink (top of shrub) along edge of vegetation community No. 1 and No. 4



APPENDIX 11

- 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 1997-2016

Residential Subdivisions & Commercial Development

Grey County (14)	Bruce County (21)
Andpet 16th Ave Comm Deve.-Owen Sound Loucks Subdivision- Chatsworth Langen Subdivision-Shallow Lake Boulter Subdivision- Keppel Hilton Head Subdivision- Meaford Oak Meadows Subdivision-Meaford Mannerow Estates- Owen Sound Georgian Shores Subdivision-Sarawak Sutacriti Park Phase III- Sarawak Debrincat Subdivision- Holland Ferrato Subdivision- McCullough Lake Andpet Bothwells Corner Comm.- Owen Sound HSC Alvanley Comm. Cement Plant-Keppel MacKinnon-Smart Subdivision-Francis Lake	Lakeside Woods Subdivision-Saugeen Weatherhead Development- Eastnor Maple Ridge Development-Amabel Good Acres Development-Eastnor Brown Subdivision- Kincardine Sundance Estates- Bruce Walker Estates Phase II-Amabel Mystic Cove Subdivision-Kincardine Black Subdivision-Kincardine Mary Rose Subdivision-Saugeen Gray Mildmay Development- Carrick Lake Huron Escape-Bruce MacKenzie Development-Saugeen Harkins Harbour Development- Lindsay
	Pegasus Trails-Saugeen Lorne Beach Development- Kincardine Mulholland Division St-Southampton Chippewa Golf & Country Club-Saugeen Leslie Subdivision-Saugeen McMillan Subdivision-Saugen Peacock's Meats and Groceries Inc-Tobermory Wellington County (1) Murphy Subdivision - Mount Forest Perth County (1) Maitland River Estates - Listowel

Infrastructure Projects & Industrial Development

Bruce County (16)	Grey County (19)
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	Owen Sound 7th Street Drain Highway 4 Hanover-Stream Crossing Owen Sound 6th Ave Stream Course Sarawak Carney Street SWM Southgate- Camp Creek Crossing Owen Sound 9th St. Bridge Owen Sound 10th St. Extension Grey County Line Greir Creek Bridge Chatsworth- Sewage Upgrade Southgate-Stream Realignment Mill Creek Crossing Dipple Drain West Grey-Traverston Creek Realignment Owen Sound-Sydenham River Stabilization Minnihill Creek Fish Habitat Improvements
	Town of Hanover Business Park Viking-Cives Ltd - Mount Forest Sydenham Heights-Owen Sound Servicing Huron County (2) Wingham Force main Goderich Pier Stabilization Wellington County (2) Town of Minto-Coon Creek 5-Year Monitoring Town of Minto-Palmerston Industrial Park

Natural Heritage Environmental Impact Studies and Experience 1997-2016

Recreational and Energy Land Use Development

Grey County (28)	Bruce County (13)	Simcoe County (3)
Monterra Plateau Stream Realignment	Blue Heron Parking Lot	Hamilton Brothers Ltd.-Stream Restoration
Devils Glen Ski Hill Expansion	Home Hardware-Sauble Beach	Devils Glen Stream Realignment
Morris Wetland Creation	Mystic Cove Stream Realignment	Devils Glen Club House Expansion
Rocky Saugene Campground Expansion	Casey Property-Bank Stabilization	Robitaille Wind Farm-Cedar Point
Sobiski Property Shoreline Stabilization	Wells Trucking-Mildmay	
Pesnail Property Shoreline Stabilization	MacKenzie Marina Dredging	Dufferin County (2)
Carmicheal Pond Cleanout	Pike Bay Marina Dredging	Bowman Comm. Development
Overton Pond Design	Chesley Lake Cottagers Assoc. Dredging	Cedar Highlands Ski Club
Beaver River Bank Stabilization	Miller Property Shoreline Dredging	
Andrews Pond Design	Hood Property Shoreline Dredging	Wellington County (1)
Hrodzicki Storage Building	Smith Com. Expansion	White's Creek Restoration
Klages Tree Retention Plan	LEED Tree Retention Plan	
Cedar Run Horse Park Expansion	Mildmay-Hamel's Pond and Elora Street Dam	Manitoulin Island (2)
Osler Bluff Shi Club-Storage Building		Manitoulin Streams Association
Osler Bluff Ski Club-Water Reservoir		Municipality Official Plan
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		

Natural Heritage Environmental Impact Studies and Experience 1997-2016

Lot Severances & Building Envelopes

Grey County (89)		
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	
HSC Clavering Severances	Maxwell Severance	
Holmes Building Envelope	Harris Severance	
Brulette Severances	R. Martin Building Envelope	
Philipp Severances	Philipp Building Envelope	
Sheppard Severance	Bauman Building Envelope	
Pfaff Building Envelope	Berg 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	

