



Species at Risk Assessment
105 Toronto Street South (Markdale)
Municipality of Grey Highlands

Prepared for:
Matson Planning and Development Inc.

Prepared by:
Azimuth Environmental
Consulting, Inc.

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Environmental Assessments & Approvals

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Matson Planning and Development Inc.
2430A Bloor Street West
Toronto, Ontario
M6S 1P9

Attention: Chris Matson

Re: **Species at Risk Assessment - 105 Toronto Street South (Lot 102/Lot 103,
Concession 1, Municipality of Grey Highlands, County of Grey)**

Dear Mr. Matson:

Azimuth Environmental Consulting, Inc. was retained by Rayville Developments (Markdale) Inc. to provide a Species at Risk Assessment report for proposed construction of the Centre Point South residential development at 105 Toronto Street South in the Municipality of Grey Highlands. The purpose of this Species at Risk Assessment is to provide the Ministry of Natural Resources and Forestry with an understanding of existing natural environmental conditions in the study area, to assess impacts of the proposed development to Species at Risk within the study limits, and to assign appropriate mitigation measures as necessary. This report documents the natural environmental features present within the study area and adjacent lands as they relate to Species at Risk and their habitats. Our study finds that no negative impact to SAR or their habitats is expected as a result of the proposed development, providing recommendations presented in this report are followed.

Certainly, should you have any questions or require additional information feel free to contact the undersigned.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Dan Stuart, H.B.Sc.
Terrestrial Ecologist



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1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by Rayville Developments (Markdale) Inc. to provide a Species at Risk (SAR) Assessment for a proposed residential development in the settlement of Markdale (Municipality of Grey Highlands, County of Grey), referred to as Centre Point South. The proposed development consists of detached and townhouse residences, parks, a stormwater management facility, and a commercial development node at the property described above (Figure 1). The purpose of this assessment is to evaluate potential habitat for species listed under Ontario's *Endangered Species Act, 2007* (ESA), provide an impact assessment based on the proposed development plan (Appendix A), and to provide recommendations for avoidance of impacts where potential for SAR habitat has been identified.

A SAR Information Request Letter (Appendix B) was submitted to the Ministry of Natural Resources and Forestry (MNR; Midhurst District) on April 11, 2017. A follow-up telephone conversation with MNR took place on April 25, 2017 to discuss provisions for candidate bat habitat mitigation within the woodlot on the subject property (discussed in this report below).

2.0 BACKGROUND INFORMATION

A review of the following background documents provided information on site characteristics, habitat, wildlife, rare species and communities and general cultural/historic aspects of the property:

- MNR's Natural Heritage Information Center (NHIC);
- Atlas of the Breeding Birds of Ontario (OBBA);
- Ontario Reptile and Amphibian Atlas;
- MNR's Species at Risk Ontario list;
- Air photos available for the Project Area (Google, VuMap);
- Government of Canada's Species at Risk Public Registry; and
- Atlas of the Mammals of Ontario (Dobbyn, 1994).

3.0 STUDY APPROACH

Azimuth staff attended the property on April 14, 2017 to carry out an assessment of the natural areas of the property. A follow-up wetland staking exercise took place on June 29, 2017, focusing on delineation of the wetland limit along the eastern property edge. Prior to undertaking the field studies, an initial classification of habitats was undertaken



using recent air photo imagery for an area encompassing the property and adjacent lands (*i.e.* lands within approximately 250 m). Vegetation boundaries were then checked in the field and confirmed as depicted in Figure 2. Vegetation community types were classified using the Ecological Land Classification for Southern Ontario: First Approximation (ELC: Lee *et al.*, 1998).

The SAR screening undertaken for the scope of this assignment compares the habitat requirements of species with potential to occur in the overall planning area with habitat types that occur on the property. The screening is based on air photo interpretation combined with onsite evaluation of the habitat as described below.

4.0 EXISTING CONDITIONS

4.1 Land Use

The majority of the property consists of active agricultural land that was bare during the time of the site investigation (April 2017), evidently managed as a graminoid row crop (wheat, barley, rye, or similar) during the 2016 season, and planted with a similar graminoid crop in 2017. The northwest corner of the property features a mature remnant deciduous forest unit (closed canopy), with evidence of historical community degradation/disturbance in the understory layer by extensive selective logging. The southern portion of the property consists of sparsely-vegetated meadow with vegetation approximately 10-15 centimetres (cm) in height, and a remnant hedgerow. Wetland encroachments (Meadow Marsh, Deciduous Swamp, and Mixed Swamp) are present along the eastern boundary of the property. A depiction of existing vegetation communities located within the property is illustrated in Figure 2.

No intermittent or permanent watercourses are located within the limits of the property. The Mixed Swamp feature in the northeast corner drains in a southeast direction beyond the property limit and was flooded at the time of the April and June site investigations. This unit contains an open water inclusion, existing as permanent pond along the property boundary. A Meadow Marsh and Deciduous Swamp feature is located in the central-east portion of the property, also draining in a southeast direction beyond the property limit. This feature appears to channelize as a permanent watercourse approximately 200 metres (m) east of the east property boundary, flowing southward through a culvert beneath Toronto Street as a permanent watercourse approximately 300 m southeast of the property boundary.

Adjacent lands generally consist of active agriculture to the east, west, and north of the property boundary. A section of moderately to heavily grazed open pasture is located



beyond the northern boundary of the property. Residences and other buildings associated with the community of Markdale are located beyond the southern and western property boundaries. As discussed above, continuations of Deciduous Swamp and Mixed Swamp units are located beyond the eastern property boundary, draining in a southeast direction. An isolated remnant deciduous forest unit is located immediately beyond the northeast property boundary, and a Swamp Thicket feature with an open water component is located approximately 100 m beyond the northwest property boundary.

4.2 Land-Use Mapping

The Municipality of Grey Highlands Official Plan Policy (2010) identifies the area as a “Neighbourhood Area” under the “Urban Areas’ designation within the Village of Markdale. The County of Grey Official Plan (2013) identifies the study area as “Primarily Settlement Area” with a section of “Hazard Lands” associated with wetland units along the eastern edge of the property.

Natural Heritage Information Centre (NHIC; MNRF, 2017) resources depict mapped unevaluated wetlands along the eastern property edge, consistent with the limits of Hazard Lands described above. The Flesherton Swamp Provincially Significant Wetland (PSW) is located approximately 4 kilometres (km) east of the study area at its closest point, and is the closest PSW feature to the property.

4.3 Vegetation

A field survey was undertaken to confirm vegetation community types and plant species compositions to the extent that seasonal conditions permitted on April 14, 2017, and a follow-up wetland delineation exercise was conducted along the eastern property boundary on June 29, 2017. Property access was granted within the property boundary only (Figure 2), and therefore alternative survey techniques (*i.e.* “fenceline”/binocular surveys) were required for lands located beyond the property line. The site visit was undertaken by a qualified Terrestrial Ecologist with existing knowledge related to rare, Threatened, and Endangered plant species with potential to occur in the area.

There are no elements of occurrence (EO_ID) within the property or adjacent lands for provincially Endangered or Threatened, or provincially rare vegetation species according to the MNRF NHIC database (NHIC, 2017). No Threatened, Endangered, or provincially rare species were observed during the site investigation. A detailed survey was undertaken to identify Butternut trees, however none were observed within or adjacent to the property limits.



The property consists of Row Crop Agriculture, sparse Cultural Meadow (bare ground visible between individual grass/forb stems), Deciduous Forest, Deciduous Swamp, Mixed Swamp, and Meadow Marsh (as defined by the ELC system), all of which are very common locally and regionally. One vegetation community not defined by the ELC system, a Mixed Hedgerow, was also identified during the site investigation. Vegetation communities are mapped on Figure 2 and described in their relation to the property in Section 4.1 above.

4.4 Aquatic Habitat

The Meadow Marsh community located in the central-east portion of the property contained 0-2 cm of standing water at the time of the April 2017 site investigation, and was completely dry by the June 2017 wetland delineation exercise. The adjacent Deciduous Swamp feature contained 0-10 cm of standing water in April 2017, however was similarly dry by June 2017. It is expected that within these features flow is limited to conveyance of water during spring runoff and high-flow events such as summer storms.

The Mixed Swamp community located in the northeast portion of the property contained an open water inclusion that exists as a permanent pond during the summer months, although fluvial connections with wetland/watercourse units to the southeast are likely limited to spring runoff and high-flow events such as summer storms.

There was no evidence of seepage/groundwater outflow within any portion of the property.

5.0 SPECIES AT RISK HABITAT ASSESSMENT

Based on a review of background data, all SAR species that have the potential to occur in the area were considered in our assessment and are presented in Table 1. For species of Special Concern, presence of candidate Significant Wildlife Habitat for Special Concern species as defined by the Significant Wildlife Habitat Technical Guide (SWHTG; OMNR, 2000) and Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015) was also evaluated as a part of this assessment.

Within the SWHTG, Wildlife Habitat is defined as:

- Areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter, and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a



vulnerable point in their life cycle; and areas which are important to migratory or non-migratory species.

The definition of significant is:

- Ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system.

Based on the assessment of the property undertaken, no SAR have been confirmed within the property or adjacent lands, however species-specific follow-up studies were not undertaken to confirm presence/absence of SAR within the property limit. The following vegetation communities on the property and adjacent lands have the potential to function as habitat for SAR:

Open Agriculture (Row Cropping; OAGM1):

- Potential aerial foraging habitat function for **Barn Swallow** (Threatened) and **Chimney Swift** (Threatened) which receive individual and General Habitat protection under the ESA; and
- Candidate Significant Wildlife Habitat for one species of Special Concern – **Common Nighthawk**.

Deciduous Forest (FOD):

- Potential summer roosting habitat function for bat species including **Little Brown Myotis** (Endangered), **Northern Myotis** (Endangered), and **Tri-colored Bat** (Endangered) which receive individual and General Habitat protection under the ESA; and
- Candidate Significant Wildlife Habitat for two species of Special Concern – **Easten Wood-pewee** and **Wood Thrush**.

Mixed Swamp (SWM):

- Potential foraging, basking, and nesting habitat function for **Blanding's Turtle** (Threatened) which receives individual and General Habitat protection under the ESA;
- Potential habitat function for **Massasauga** (Threatened) which receives individual and General Habitat protection under the ESA; and
- Candidate Significant Wildlife Habitat for three species of Special Concern – **Canada Warbler**, **Eastern Ribbonsnake** and **Snapping Turtle**.



Deciduous Swamp (SWD):

- Potential foraging habitat function for **Blanding's Turtle** (Threatened) which receives individual and General Habitat protection under the ESA;
- Potential habitat function for **Massasauga** (Threatened) which receives individual and General Habitat protection under the ESA; and
- Candidate Significant Wildlife Habitat for two species of Special Concern – **Eastern Ribbonsnake** and **Snapping Turtle**.

Meadow Marsh (MAM):

- Potential foraging habitat function for **Blanding's Turtle** (Threatened) which receives individual and General Habitat protection under the ESA;
- Potential habitat function for **Massasauga** (Threatened) which receives individual and General Habitat protection under the ESA;
- Potential aerial foraging habitat function for **Barn Swallow** (Threatened) and **Chimney Swift** (Threatened) which receive individual and General Habitat protection under the ESA; and
- Candidate Significant Wildlife Habitat for three species of Special Concern – **Common Nighthawk**, **Eastern Ribbonsnake** and **Snapping Turtle**.

Cultural Meadow (CUM):

- Potential aerial foraging habitat function for **Barn Swallow** (Threatened) and **Chimney Swift** (Threatened) which receive individual and General Habitat protection under the ESA; and
- Candidate Significant Wildlife Habitat for three species of Special Concern – **Grasshopper Sparrow**, **Common Nighthawk** and **Monarch Butterfly**.

Pasture/hay field (OAGM4; Adjacent lands):

- Potential aerial foraging habitat function for **Barn Swallow** (Threatened) and **Chimney Swift** (Threatened) which receive individual and General Habitat protection under the ESA; and
- Candidate Significant Wildlife Habitat for one species of Special Concern – **Common Nighthawk**.



6.0 PROPOSED DEVELOPMENT

The proposed development involves construction of a residential subdivision consisting of detached and semi-detached dwellings, townhouses, parks, a stormwater management facility (adjacent to natural wetland communities), and a commercial node adjacent to Toronto Street at the southern property boundary. The proposed development serves to expand and further service the settlement of Markdale.

The proposed development will result in the removal of vegetation communities as follows:

CUM (Cultural Meadow): 3.4 hectares (ha)

FOD (Deciduous Forest): 0.52 ha (1.35 ha retained)

FOREST TOTAL: 0.52 ha

MAM (Meadow Marsh): 0 ha

SWD (Deciduous Swamp): 0 ha

SWM (Mixed Swamp): 0 ha

WETLAND TOTAL: 0 ha

A site plan for the proposed development is presented in Appendix A.

7.0 IMPACT ASSESSMENT

7.1 Habitat for Threatened and Endangered Species

Impacts with regards to the ESA and Habitat of Threatened or Endangered Species are covered under Section 9 and 10 of the ESA. Section 9 deals directly with killing, harming, or harassing living members of a species while Section 10 covers destruction or damage to habitat of Threatened or Endangered species. The following Threatened and Endangered species have the potential to occur within the limits of the property and on adjacent lands:

- Little Brown Myotis, Northern Myotis, Tri-colored Bat (Endangered)
- Blanding's Turtle (Threatened)
- Masassauga (Threatened)
- Barn Swallow (Threatened)
- Chimney Swift (Threatened)



7.1.1 Little Brown Myotis, Northern Myotis, Tri-colored Bat (Endangered)

Little Brown Myotis, Northern Myotis, and Tri-colored Bat may utilize forests as maternity roost sites, utilizing trees >10 cm diameter at breast height, with evidence of cracks, holes, splits, lifted bark, etc. (called “snags”) to provide refuge for the rearing of young during the late spring and early summer months (approximately June).

During the site investigation, a limited number of snags were observed within SWM and SWD communities (1 snag in each community). A total of 45 snags were observed within the FOD community.

An earlier draft of the development plan involved the removal of the entire FOD feature, including the 45 snag trees (potential maternity roosting habitat) located within the polygon limits. Continued consultation with MNR (Midhurst District) and the client following the survey resulted in a decision to reduce vegetation removal within the FOD feature from a total 1.97 ha (with no retained forest) to 0.52 ha (with 1.35 ha of retained forest). Removal of 0.52 ha of the FOD feature would also include removal of 8 snag trees, although the remaining 37 snag trees within the polygon limits would be retained (Figure 3). The revised draft site plan (Appendix A; Figure 3) was issued to MNR and it was agreed that the revised draft site plan incorporates adequate consideration for conservation of potential bat habitat, and providing that conformance is demonstrated for environmental considerations and mitigation described in Section 8 of this report (below), no contravention of the ESA is expected as a result of the proposed development. A Letter of Advice confirming this approach was provided on October 31, 2017, and is included in Appendix B.

7.1.2 Blanding’s Turtle (Threatened) and Massasauga (Threatened)

Blanding's Turtles are a primarily aquatic species that prefer wetland habitats, lakes, ponds, slow-moving streams, *etc.*, however they may utilize upland areas to search for suitable basking and nesting sites. In general, preferred wetland sites are eutrophic and characterized by shallow water, organic substrates, and a high density of aquatic vegetation (COSEWIC, 2005).

The MAM and SWD features may provide foraging and transitory habitat for Blanding’s Turtle during spring runoff and high-flow events, however habitat is considered marginal due to the lack of eutrophic shallow water. The SWM feature including the internal open water unit have the potential to provide foraging, basking, and overwintering habitat.

Similarly, MAM, SWD, and SWM features may provide habitat for Massasauga and their life processes, although the species’ preferred habitat (bedrock barrens, conifer swamps,



beaver meadows, fens, bogs, and shoreline habitats) is not present within the property limits.

No portion of any wetland feature (SWM, SWD, MAM) will be subject to vegetation removals or disturbance as a result of the proposed development. A stormwater management facility will be constructed within agricultural lands (OAGM1) directly adjacent to wetland features that will provide an additional buffer between wetland units on the subject property and structures (*i.e.* residences) associated with the proposed development. Further, a setback of 10 m will be implemented between the limits of residential lots and the staked limit of the wetland boundary. A 3.0 m wide pedestrian trail is proposed within the 10 m setback for the sole purpose of passive recreational use (Appendix A).

Mitigation measures to further minimize disturbance to wetlands within the subject property limit are detailed in Section 8. It is Azimuth's assessment that if assumed to be present, the proposed works are expected to have no negative effect upon Blanding's Turtle, Massasauga or the ability for these species to carry out their life processes, provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

7.1.3 Barn Swallow (Threatened) and Chimney Swift (Threatened)

No structures that could provide nesting habitat for either Barn Swallow or Chimney Swift were identified within the property limits. Aerial foraging habitat for Barn Swallow and Chimney Swift may be present over CUM, OAGM1, and MAM portions of the property and within pasture/hay field (OAGM4) on adjacent lands, where vegetation has the capacity to support sufficient insect populations for Barn Swallow and Chimney Swift foraging purposes.

The area around the settlement of Markdale is characterized but an abundance of similarly suitable foraging habitat (*e.g.* meadows and agricultural fields). Further, no vegetation is to be removed within the limits of the MAM feature as a result of the proposed development. As such, removal of a portion of open country vegetation (described above) to facilitate the development is not expected to have a negative effect upon Barn Swallow, Chimney Swift or the ability for these species to carry out their life processes, provided that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.



7.2 Special Concern Species

Species-specific surveys to target presence/absence of Special Concern species were not conducted as a part of this assessment. For the purposes of this assessment, presence of Special Concern species (for which suitable habitat may be present) is assumed in lieu of conducting appropriate screenings for these species, as it is conceivable any of these species could be encountered within the property or adjacent lands during the appropriate season:

- Canada Warbler
- Eastern Ribbonsnake
- Snapping Turtle
- Common Nighthawk
- Monarch Butterfly
- Grasshopper Sparrow
- Eastern Wood-pewee
- Wood Thrush

Canada Warbler

Canada Warbler prefer wet, mixed deciduous-coniferous forests with a well developed shrub layer, which may include shrub marshes, Red Maple stands, Cedar stands, Black Spruce Swamps, Larch and riparian woodlands along rivers and lakes (COSEWIC, 2008b). Potential habitat for this species may be located within SWM feature on the property. Wetlands (including the SWM) will not be subject to vegetation removals or directly adjacent disturbance as a result of the proposed development.

No negative impact to the species or its habitat is expected to occur as a result of the proposed development.

Eastern Ribbonsnake

This species prefers to live in close proximity to water, particularly marshes and areas with shallow water where opportunities to hunt frogs and fish are possible (MNR, 2016). Potential foraging habitat for this species may be located within wetland units (SWM, SWD, MAM) on the property. Wetlands will not be subject to vegetation removals or directly adjacent disturbance as a result of the proposed development.

No negative impact to the species or its habitat is expected to occur as a result of the proposed development.



Snapping Turtle

The MAM and SWD features may provide foraging and transitory habitat for Snapping Turtle during spring runoff and high-flow events. The SWM feature including the internal open water unit have the potential to provide foraging, basking, and overwintering habitat. Wetlands will not be subject to vegetation removals or directly adjacent disturbance as a result of the proposed development.

No negative impact to the species or its habitat is expected to occur as a result of the proposed development.

Common Nighthawk

Traditional Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings. Although the species also nests in cultivated fields, orchards, urban parks, and along gravel roads, large gravel roofs, and railways, they tend to occupy natural sites (MNRF, 2016). Open lands including CUM, OAGM1, and MAM units within the property limit and the pasture/hay field (OAGM4) on adjacent lands may provide habitat for Common Nighthawk.

Habitat for this species is well represented in the general area and as such, no negative impact to the species or their habitat is anticipated as a result of the proposed works.

Monarch Butterfly

While the Monarch Butterfly can generally be identified in any old field or cultural meadow habitat often including disturbed ditches along road right of ways, the key habitat is typically associated with tracts of old-field meadow habitat containing an abundance of Common Milkweed. The CUM community present within the property limit and the pasture/hay field (OAGM4) on adjacent lands may provide habitat for Monarch Butterfly.

Habitat for this species is highly represented in the general area however, and as such, no negative impact to the species or its habitat is anticipated as a result of the proposed works.

Grasshopper Sparrow

Grasshopper Sparrow typically breed in large human-created grasslands (≥ 5 ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by low, sparse perennial herbaceous vegetation (COSEWIC,



2013). Cultural Meadow (CUM) units within the property limit and the pasture/hay field (OAGM4) on adjacent lands may provide habitat for Grasshopper Sparrow.

Habitat for this species is well represented in the general area and as such, no negative impact to the species or their habitat is anticipated as a result of the proposed works.

Eastern Wood-pewee and Wood Thrush

Eastern Wood-pewee are typically associated with deciduous and mixed forests with little understory vegetation, often found in clearings or on edges of deciduous and mixed forests (MNR, 2017). Wood Thrush are typically associated with mature deciduous and mixed forests with a well-developed understory. The FOD feature within the property limit may provide habitat for Eastern Wood-pewee and Wood Thrush.

The proposed development will result in the removal of 0.52 ha of the FOD unit, however a total of 1.37 ha of the FOD will be retained in the post-construction environment, and further, habitat for these species is well represented in the greater landscape. As such, no negative impact to either species or their habitats is anticipated as a result of the proposed works.

8.0 RECOMMENDATIONS

8.1 Species at Risk

It should be noted that the absence of a protected species within the property does not indicate that they will never occur within the area. Given the dynamic character of the natural environment, there is a constant variation in habitat use. Care should be taken in the interpretation of presence of species of concern including those listed under the ESA. Changes to policy, or the natural environment, could result in shifts, removal, or addition of new areas to the list of areas currently considered candidate Significant Natural Heritage Features. This report is intended as a point in time assessment of the potential to impact SAR; not to provide long term 'clearance' for SAR. While there is no expectation that the assessment should change significantly, it is the responsibility of the proponent to ensure that they are not in contravention of the ESA at the time that site works are undertaken. A review of the assessment provided in this report by a qualified person should be sufficient to provide appropriate advice at the time of the onset of future site works.

8.2 Worker Training

Worker training would assist the on-site workers in the identification of the SAR with potential to occur in the area. Workers should be instructed to stop work immediately



and contact the local MNRF office immediately if any SAR are encountered within the work area. Individuals working on site should ensure that SAR are not harmed during construction or killed by heavy machinery, vehicles or other equipment.

The contractor should seek to ensure that all personnel are educated to ensure that, if identified, the SAR are not wantonly injured or killed, and to ensure that damage to features which could constitute habitat is avoided. Information conveyed through this education should include:

- Species habitat and identification;
- Requirements under the ESA including avoidance of harm to the species and damage to relevant habitat;
- Appropriate action to take if the species is encountered;
- How to record sightings and encounters; and
- That care should be taken when undertaking construction activities in order to avoid harming the species or damaging/destroying habitat.

The expert should be a qualified biologist who specializes in ecology/biology, or SAR.

8.3 Bats and Bat Habitat

Mitigation measures were recommended by MNRF within their Letter of Advice (Appendix B) as a means of offsetting potential impacts to SAR bats. The following should be implemented by the proponent to avoid potential contravention of the ESA:

- A maximum of 0.52 ha vegetation and trees should be removed of the existing 1.87 ha woodlot retaining the 37 snag trees; and
- all vegetation clearing and tree removal should be completed between October 1 and April 30.

8.4 Wetlands

The following recommendations for mitigation measures are proposed for works within the vicinity of wetlands (MAM, SWM, SWD) on the property:

- Diligent application of sediment and erosion controls is recommended for all future construction activities to minimize the extent of accidental or unavoidable impacts to wetland units located adjacent to the development area;
- Prior to vegetation removal, silt fencing should be applied along the length of the wetland boundaries, and routine inspection/maintenance of the silt fencing should occur throughout construction;



- Once construction is complete, exposed/disturbed soils should be restored immediately to limit erosion and sediment into nearby drainage features;
- All maintenance activities required during future construction should be conducted 30 m away from wetland edges to prevent accidental spillage of deleterious substances that may harm natural environments;
- Snow fencing or equivalent should be installed at the limit of the work area to prevent the accidental intrusion of machinery operations into adjacent undisturbed natural areas;
- Permanent exclusion fencing (*e.g.* 2.4 m chain link fence) should be installed along the wetland boundary adjacent to residential lots, to prevent disturbance to adjacent wetland communities; and
- A native wetland seed mix should be applied to all lands within 10 m of the wetland limit (except pedestrian footpaths) at a rate of 15 kilograms/ha, the composition of which is subject to approval by a qualified ecologist. The seed mix should be applied between April 1 and June 1, or September 15 and October 30 of any given year.

9.0 CONCLUSIONS

Based upon our analysis, it is concluded that candidate SAR habitat is not limiting to the implementation of proposed works through incorporation of the environmental protection measures and criteria as described throughout this report. Should these recommendations be followed, no negative impact to SAR or their habitats is expected as a result of the proposed development, and as such there is no expectation that a contravention of the ESA would occur as a result of the proposed development.

In the future, should SAR be identified on the property, mitigation measures must be adopted by the proponent in order to avoid contravention of Ontario's ESA. Mitigation measures are not always adequate to avoid contraventions. Additional consideration may be required to ensure that any proposed works do not result in contraventions to the ESA.



10.0 REFERENCES

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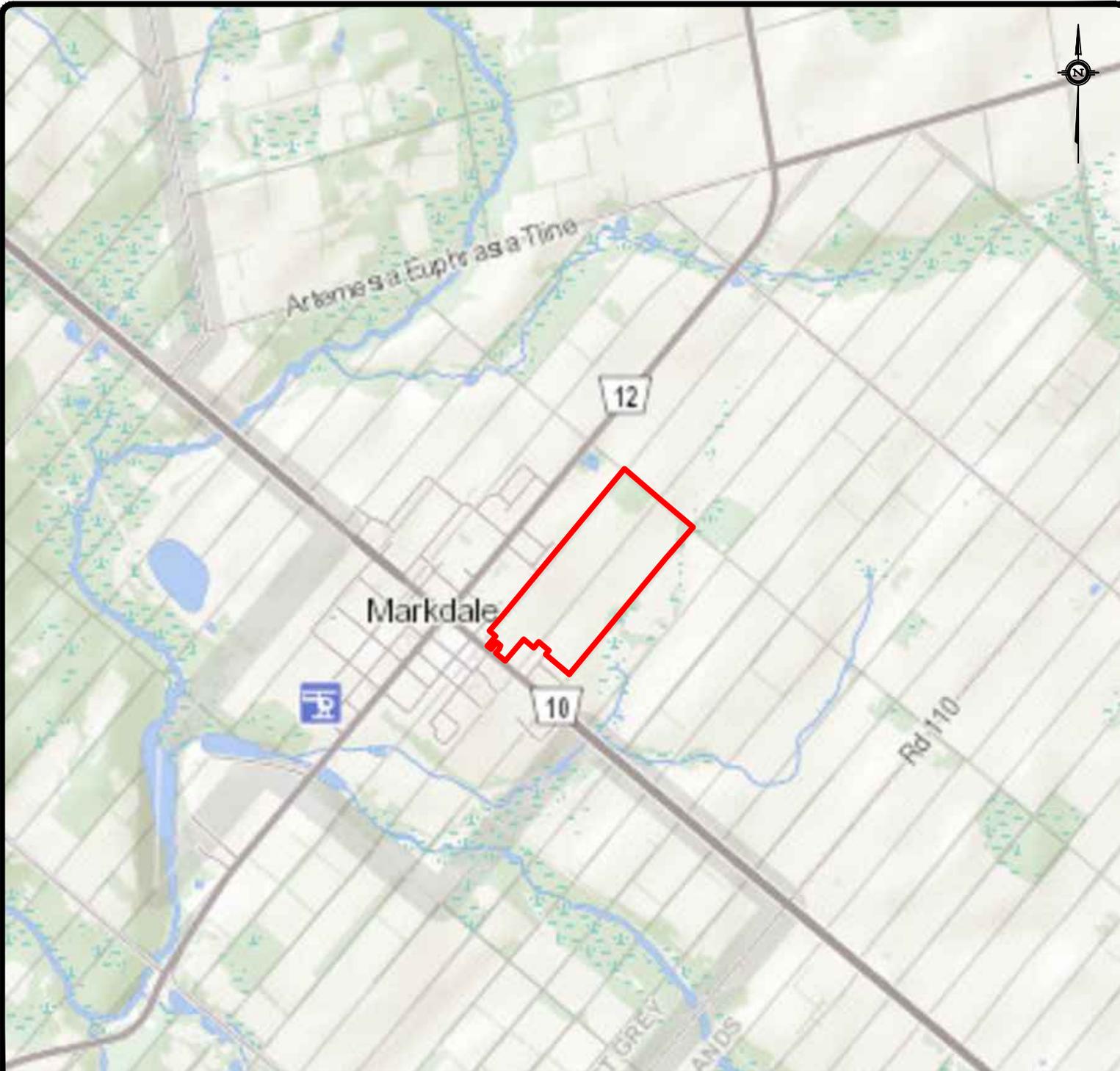
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Species at Risk Public Registry. Government of Canada. (<https://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1>)

Plotted by: MCCARTNEY on April 18, 2017 at 11:06am
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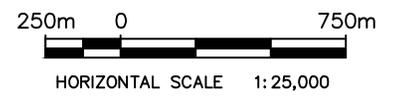


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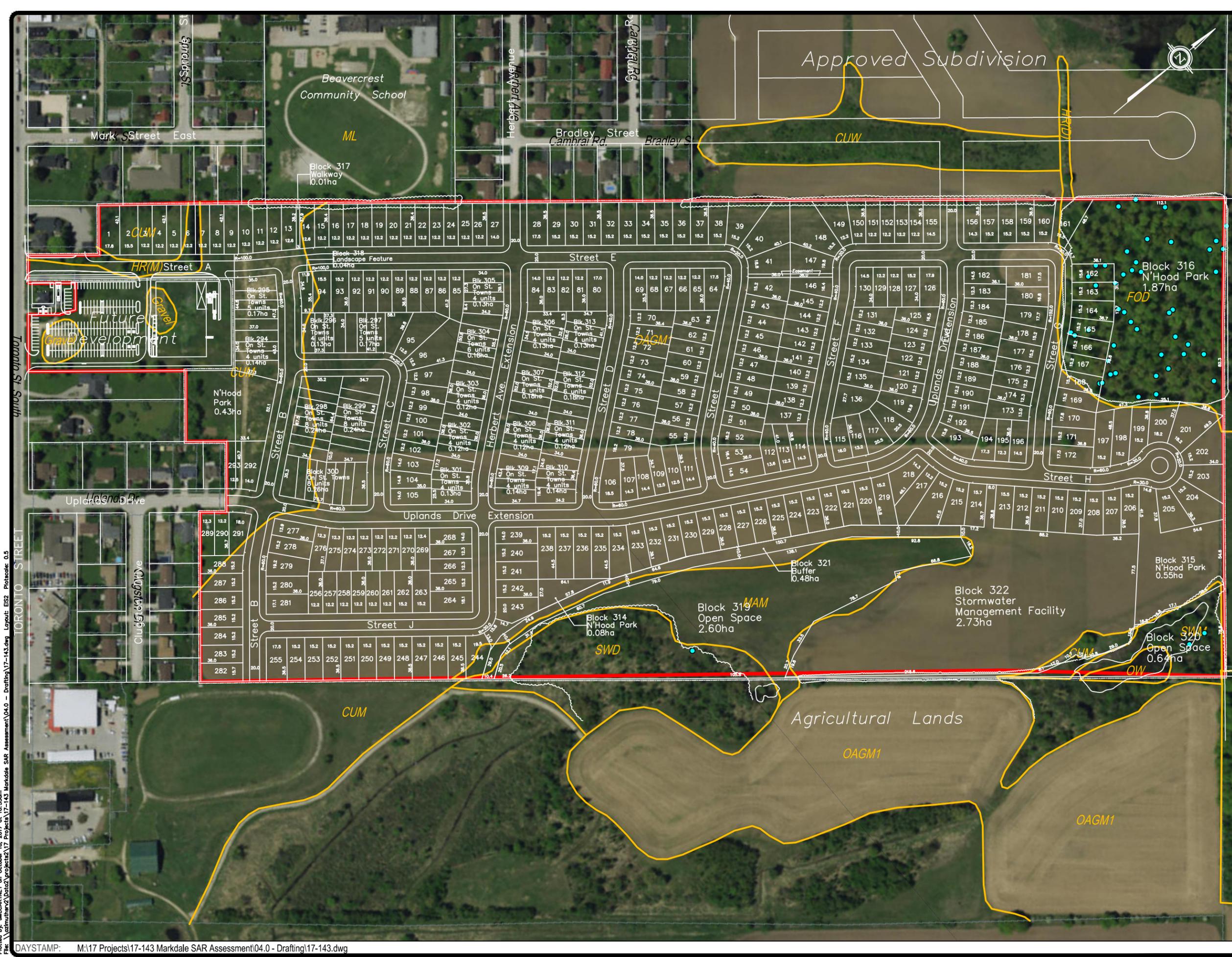
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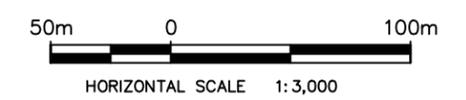
Study Area Location

Markdale SAR Assessment,
Markdale, ON

DATE ISSUED: April 2017	Figure No.
CREATED BY: JLM	
PROJECT NO.: 17-143	
REFERENCE: MNR	1



- LEGEND:**
- Approx. Property Boundary
 - Candidate Bat Maternity Roosting Trees
 - Vegetation Communities
 - CUM Cultural Meadow
 - FOD Deciduous Forest
 - HR(D) Deciduous Hedgerow
 - HR(M) Mixed Hedgerow
 - MAM Meadow Marsh
 - ML Maintained Lands
 - OAGM1 Row Crop Agriculture
 - OAGM4 Pastureland Agriculture (heavy grazing)
 - OW Open Water
 - SWD Deciduous Swamp
 - SWM Mixed Swamp



Environmental Features

Markdale SAR Assessment,
Markdale, ON

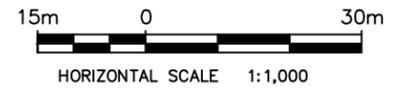
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CREATED BY:	JLM	2
PROJECT NO.:	17-143	
REFERENCE:	MNRF	

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- LEGEND:**
- Approx. Property Boundary
 - Candidate Bat Maternity Roosting Trees
 - Vegetation Communities
 - CUM Cultural Meadow
 - FOD Deciduous Forest
 - HR(D) Deciduous Hedgerow
 - HR(M) Mixed Hedgerow
 - MAM Meadow Marsh
 - ML Maintained Lands
 - OAGM1 Row Crop Agriculture
 - OAGM4 Pastureland Agriculture (heavy grazing)
 - OW Open Water
 - SWD Deciduous Swamp
 - SWM Mixed Swamp



Environmental Features
North FOD

Markdale SAR Assessment,
Markdale, ON

DATE ISSUED:	August 2017	Figure No. 3
CREATED BY:	JLM	
PROJECT NO.:	17-143	
REFERENCE:	MNRF	

Table 1: Species at Risk Habitat Summary

AEC17-143

Common Name	Species Name	MNRF	SARA	Key Habitats Used By Species ¹	Initial Habitat Assessment
American Badger (Southwestern Ontario population)	<i>Taxidea taxus jacksoni</i>	END	END	Non-forested grassland and shrubland biomes. Agricultural areas support badgers provided there is sufficient hedgerows, fencerows and field edges. Are also known from alpine areas and wetlands. Soil and prey availability are key defining habitat features (COSEWIC, 2012d). ESA Protection: Species and regulated habitat protection	American Badger burrows not observed within property limits. Soils consist of loam (Harriston Loam) and muck within wetland units, not considered suitable for the species. No developed old-field or prairie grassland or shrubland present within property limits. Field edges and fencerows present along property edges. No suitable habitat present within property limits.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	No status	Nests are typically found near the shoreline of lakes or large rivers, often on forested islands (Cadman et al., 2007). ESA Protection: N/A	No suitable habitat located within property limit or adjacent lands. No active or inactive Bald Eagle nest structures observed within property limits or on adjacent lands.
Bank Swallow	<i>Riparia riparia</i>	THR	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Colonies commonly found in sand or gravel pits, lakeshores, and along river banks (COSEWIC, 2013b). ESA Protection: Species and general habitat protection	No suitable habitat located within property limit or adjacent lands.
Barn Swallow	<i>Hirundo rustica</i>	THR	No status	Ledges and walls of man-made structures such as buildings, barns, boathouses, garages, culverts and bridges. Also nest in caves, holes, crevices and cliff ledges (COSEWIC, 2011d). ESA Protection: Species and general habitat protection	No structures present within property limits. No suitable nesting habitat within property limits. Potentially suitable foraging habitat for Barn Swallow located within open meadow (CUM), Meadow Marsh (MAM), and agricultural lands (OAGM1) on property or open pasture (OAGM4) located on adjacent lands.
Black Tern	<i>Chlidonias niger</i>	SC	No status	Colonial nesters typically found within marshes. Its preferred nesting habitat is a hemi-marsh (i.e. a wetland with 50:50 open water and emergent vegetation). Nests are usually built on an upturned cattail root, floating vegetation mat or patch of mud (Cadman et al., 2007). ESA Protection: N/A	Swamp unit SWM contains permanent pooling, however it is enclosed by tree and shrub vegetation with limited emergent vegetation and primarily wetland shrub cover along the boundaries of the pooled water area. No suitable habitat for Black Tern within the property limits or on adjacent lands.
Blanding's Turtle	<i>Emydoidea blandingii</i>	THR	THR	Blanding's Turtles are a primarily aquatic species that prefer wetland habitats, lakes, ponds, slow-moving streams, etc., however they may utilize upland areas to search for suitable basking and nesting sites. In general, preferred wetland sites are eutrophic and characterized by clear, shallow water, with organic substrates and high density of aquatic vegetation (COSEWIC, 2005a). ESA Protection: Species and general habitat protection	Swamp unit SWM contains permanent pooling enclosed by tree and shrub vegetation. Ephemeral pooling observed in MAM and the Deciduous Swamp (SWD) unit. MAM, SWM, and SWD units may provide foraging habitat. Pooled areas within SWM unit may provide suitable basking habitat. Permanent pooling within SWM unit may provide suitable over-wintering habitat for the species. Blanding's Turtle not observed during site visits.
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	No Status	Nests primarily in forage crops (e.g. hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. Also occurs in wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops (e.g. corn, soybeans, wheat) or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010a). ESA Protection: Species and general habitat protection	Open areas within property consist primarily of OAGM1, comprised of bare soils with cut stalks of former grass row crop (barley, rye, wheat, or similar). Adjacent lands are similarly managed, with exception of short pasture at northeast corner of property (OAGM4) with evidence of regular grazing. Sufficient thatch layer is not present within these units and does not support breeding or nesting habitat for Bobolink. The MAM unit features dense Reed Canary Grass (<i>Phalaris arundinacea</i>), not considered to provide suitable breeding or nesting habitat for the species. Southern portion of property consists of a sparsely-vegetated mixed CUM, consisting of thin grasses and forbs (bare soil visible between individual herbaceous stems) and no discernible thatch layer. The CUM polygon measures 3.4 hectares in size. Due to the immature nature of the CUM community and lack of thatch layer throughout the polygon, there is no suitable breeding or nesting habitat for the species.
Butternut	<i>Juglans cinerea</i>	END	END	Commonly found in riparian habitats, but is also found in rich, moist, well-drained loams, and well-drained gravels. Butternut is intolerant of shade (COSEWIC, 2003b). ESA Protection: Species and general habitat protection	Butternut not observed within property limit or adjacent lands (>50 metres).
Canada Warbler	<i>Wilsonia canadensis</i>	SC	THR	Wet, mixed deciduous-coniferous forests with a well developed shrub layer. Shrub marshes, red-maple stands, cedar stands, black spruce swamps, larch and riparian woodlands along rivers and lakes. (COSEWIC, 2008b) ESA Protection: N/A	SWM feature may provide suitable habitat for Canada Warbler.
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	Nests primarily in chimneys though some populations (i.e. in rural areas) may nest in cavity trees (Cadman 2007). Recent changes in chimney design and covering of openings to prevent wildlife access may be a significant factor in recent declines in numbers (Adams and Lindsey 2010). ESA Protection: Species and general habitat protection	No structures are located within the property limit. Chimneys on structures within the village of Markdale may provide habitat for Chimney Swift. Potentially suitable foraging habitat for Chimney Swift located within CUM, MAM, and OAGM1 on property or OAGM4 located on adjacent lands.
Common Nighthawk	<i>Chordeiles minor</i>	SC	THR	Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas. (COSEWIC, 2007c). ESA Protection: N/A	Potentially suitable foraging and nesting habitat for Common Nighthawk located within CUM, MAM, and OAGM1 on property or OAGM4 located on adjacent lands.
Eastern Meadowlark	<i>Sturnella magna</i>	THR	No status	Most common in grassland, pastures, savannahs, as well as anthropogenic grassland habitats, including hayfields, weedy meadows, young orchards, golf courses, restored surface mines, etc. Occasionally nest in row crop fields such as corn and soybean, but there are considered low-quality habitat. Large tracts of grassland are preferred over smaller fragments and the minimum area required is estimated at 5ha (COSEWIC, 2011c). ESA Protection: Species and general habitat protection	Open areas within property consist primarily of OAGM1, comprised of bare soils with cut stalks of former grass row crop (barley, rye, wheat, or similar). Adjacent lands are similarly managed, with exception of short pasture at northeast corner of property (OAGM4) with evidence of regular grazing. Sufficient thatch layer is not present within these units and does not support breeding or nesting habitat for Eastern Meadowlark. The MAM unit features dense Reed Canary Grass (<i>Phalaris arundinacea</i>), not considered to provide suitable breeding or nesting habitat for the species. Southern portion of property consists of a sparsely-vegetated mixed CUM, consisting of thin grasses and forbs (bare soil visible between individual herbaceous stems) and no discernible thatch layer. The CUM polygon measures 3.4 hectares in size. Due to the immature nature of the CUM community and lack of thatch layer throughout the polygon, there is no suitable breeding or nesting habitat for the species.
Eastern Prairie Fringed-orchid	<i>Platanthera leucophaea</i>	END	END	It is a species primarily of mesic prairies, fens and old fields (COSEWIC, 2003a). ESA Protection: Species and general habitat protection	Mesic prairie, fen, and old-field habitats not present within property limits. MAM features dense Reed Canary Grass (<i>Phalaris arundinacea</i>) and does not provide good quality habitat for the species. Species not observed during June 2017 wetland delineation exercise.

Table 1: Species at Risk Habitat Summary

AEC17-143

Common Name	Species Name	MNRF	SARA	Key Habitats Used By Species ¹	Initial Habitat Assessment
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	SC	SC	Found in wetland habitats with both flowing and standing water such as marshes, bogs, fens, ponds, lake shorelines and wet meadows. Most sightings occur near the water's edge (COSEWIC, 2012b). ESA Protection: N/A	Wetland units including SWM, SWD, and MAM may provide suitable habitat for Eastern Ribbonsnake.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	END	END	Generally occurs in mountainous or rocky regions as well as in buildings, on the face of rock bluffs and beneath slabs of rock and stones. Hibernation is typically confined to caves and old mines (Best and Jennings, 1997). ESA Protection: Species and general habitat protection	No rocky areas, caves, bluffs, or old mines observed within subject property limits or adjacent lands. No suitable habitat for Eastern Small-footed Myotis.
Eastern Wood-pewee	<i>Contopus virens</i>	SC	SC	Typically associated with deciduous and mixed forests with little understory vegetation. Often found in clearings or on edges of deciduous and mixed forests (MNRF, 2017). ESA Protection: N/A	Deciduous Forest (FOD) feature may provide suitable habitat for the species.
Grasshopper Sparrow <i>pratensis</i> subspecies	<i>Ammodramus savannarum pratensis</i>	SC	No status	Typically breeds in large human-created grasslands (≥ 5ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by low, sparse perennial herbaceous vegetation (COSEWIC, 2013c). ESA Protection: N/A	Open areas within property consist primarily of row crop agricultural (OAGM1), comprised of bare soils with cut stalks of former grass row crop (barley, rye, wheat, or similar). Adjacent lands are similarly managed, with exception of short pasture at northeast corner of property (OAGM4) with evidence of regular grazing. Sufficient vegetation is not present within the property limits however the OAGM4 unit beyond the northern boundary may support breeding or nesting habitat for Grasshopper Sparrow. The MAM unit features dense Reed Canary Grass (<i>Phalaris arundinacea</i>), not considered to provide suitable breeding or nesting habitat for the species. Southern portion of property consists of a sparsely-vegetated mixed CUM, consisting of thin grasses and forbs (bare soil visible between individual herbaceous stems) and no discernible thatch layer. The CUM polygon potentially demonstrates potentially suitable breeding/nesting conditions for the species.
Hart's-tongue Fern	<i>Asplenium scolopendrium</i> var. <i>americanum</i>	SC	SC	Grows on calcareous rocks in deep shade on slopes in deciduous forest. Most occurrences are in maple-beech forest (MNRF, 2017).	Hart's-tongue Fern not observed within subject property limits during survey program.
Henslow's Sparrow	<i>Ammodramus henslowii</i>	END	END	Requires grassland habitat and occurs more frequently and at higher densities in large patches of suitable habitat. Nests in tallgrass prairie, wet meadow, and marsh habitats as well as agricultural grasslands, lightly grazed pasture and grasslands on reclaimed surface mines (COSEWIC, 2011a). ESA Protection: Species and general habitat protection	Open areas within property consist primarily of row crop agricultural (OAGM1), comprised of bare soils with cut stalks of former grass row crop (barley, rye, wheat, or similar). Adjacent lands are similarly managed, with exception of short pasture at northeast corner of property (OAGM4) with evidence of regular grazing. Sufficient thatch layer is not present within these units and does not support breeding or nesting habitat for Henslow's Sparrow. The MAM unit features dense Reed Canary Grass (<i>Phalaris arundinacea</i>), not considered to provide suitable breeding or nesting habitat for the species. Southern portion of property consists of a sparsely-vegetated mixed CUM, consisting of thin grasses and forbs (bare soil visible between individual herbaceous stems) and no discernible thatch layer. The CUM polygon measures 3.4 hectares in size. Due to the immature nature of the CUM community and lack of thatch layer throughout the polygon, there is no suitable breeding or nesting habitat for the species.
King Rail	<i>Rallus elegans</i>	END	END	Wide variety of freshwater marsh habitat types with cattails. Large marshes, especially those that contain a range of water level conditions and a mosaic of habitats, are preferred (COSEWIC, 2011b). ESA Protection: Species and general habitat protection	Freshwater marsh habitat not observed within subject property limits. Open water present within SWM unit, however unit is limited in size with very limited emergent wetland vegetation such as cattails. No suitable habitat for King Rail located within the subject property limits or on adjacent lands.
Least Bittern	<i>Ixobrychus exilis</i>	THR	THR	Breed strictly in marshes of emergents (usually cattails) that have relatively stable water levels and interspersed areas of open water (COSEWIC, 2009a). ESA Protection: Species and general habitat protection	Freshwater marsh habitat not observed within subject property limits. Open water present within SWM unit, however unit is limited in size with very limited emergent wetland vegetation such as cattails. No suitable habitat for Least Bittern located within the subject property limits or on adjacent lands.
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	Forests and regularly aging human structures as maternity roost sites. Regularly associated with attics of older buildings and barns for summer maternity roost colonies. Overwintering sites are characteristically mines or caves, but can often include buildings (MNRF, 2014) (COSEWIC, 2013a). ESA Protection: Species and general habitat protection	Overwintering habitat such as mines or caves not present within subject property limits or on adjacent lands. Wooded vegetation units (FOD, SWM, SWD) were surveyed for candidate bat maternity roosting tree densities. Candidate bat maternity roost tree densities were recorded as 24.06 per hectare for FOD, 3.63 per hectare for SWM, and 1.23 per hectare for SWD. Woodland units within the subject property may provide roosting habitat for the species.
Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	END (<i>mirgrans</i> subspecies)	Breeding habitat characterized by open areas dominated by grasses and/or forbs, interspersed with scattered shrubs or small trees and bare ground. Suitable habitat includes pasture, old fields, prairie, savannah, pinyon-juniper woodland, shrub-steppe and alvar (COSEWIC, 2014a). ESA Protection: Species and general habitat protection	Southern portion of property consists of a sparsely-vegetated mixed CUM, consisting of thin grasses and forbs (bare soil visible between individual herbaceous stems) and no discernible thatch layer. The CUM polygon measures 3.4 hectares in size. Due to the immature nature of the CUM community and lack of thatch layer throughout the polygon, there is no suitable breeding or nesting habitat for the species. No suitable habitat for Loggerhead Shrike located within the subject property limit or on adjacent lands.
Louisiana Waterthrush	<i>Parkesia motacilla</i>	SC	SC	Occupies specialized habitat, showing a strong preference for nesting and wintering along relatively pristine headwater streams and wetlands situated in large tracts of mature forest. Prefers running water, but also inhabits heavily wooded swamps and vernal or semi-permanent pools (COSEWIC, 2015a). ESA Protection: N/A	Wetland units do not contain running water, are relatively small in size and isolated in their landscape contexts, adjacent to large tracts of open farmland. No suitable habitat for Louisiana Waterthrush located within the property limits or on adjacent land.
Massasauga (Great Lakes - St. Lawrence population)	<i>Sistrurus catenatus</i>	THR	THR	In Georgian Bay, Massasaugas use bedrock barrens, conifer swamps, beaver meadows, fens, bogs, and shoreline habitats. On the upper Bruce Peninsula, forested habitats are used during hibernation and open, wetland, and edge habitat with canopy closure <50% in mid-late summer (COSEWIC, 2012a). ESA Protection: Species and general habitat protection	Wetland units including SWM, SWD, and MAM may provide marginally-suitable habitat for Massasauga.
Monarch	<i>Danaus plexippus</i>	SC	SC	Breeding habitat is confined to sites where milkweeds, the sole food of caterpillars, grow. Milkweeds grow in a variety of environments, including meadows in farmlands, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairie, river banks, irrigation ditches, arid valleys, and south-facing hills (COSEWIC, 2010b). ESA Protection: N/A	CUM in the southern portions of the subject property may provide habitat for Milkweed and therefore suitable habitat conditions for Monarch.
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	SC	SC	Inhabits clear, coolwater streams. Adults are found in fast flowing riffles comprised of rock or gravel (MNRF, 2017). ESA Protection: N/A	No permanent or intermittent watercourses located within the property limits. No suitable habitat for Northern Brook Lamprey located within the property limits or on adjacent lands.

Table 1: Species at Risk Habitat Summary

AEC17-143

Common Name	Species Name	MNRF	SARA	Key Habitats Used By Species ¹	Initial Habitat Assessment
Northern Myotis	<i>Myotis septentrionalis</i>	END	END	Maternity roost sites are generally located within deciduous and mixed forests and focused in snags including loose bark and cavities of trees. Overwintering sites are characteristically mines or caves (COSEWIC, 2013a). ESA Protection: Species and general habitat protection	Overwintering habitat such as mines or caves not present within subject property limits or on adjacent lands. Wooded vegetation units (FOD, SWM, SWD) were surveyed for candidate bat maternity roosting tree densities. Candidate bat maternity roost tree densities were recorded as 24.06 per hectare for FOD, 3.63 per hectare for SWM, and 1.23 per hectare for SWD. Woodland units within the subject property may provide roosting habitat for the species.
Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC	Inhabits rivers and lakes where it basks on emergent rocks, banks, logs and fallen trees. Prefer shallow, soft-bottomed aquatic habitats with exposed objects for basking (COSEWIC, 2012c). ESA Protection: N/A	Rivers and lakes with deep water, emergent rocks, and/or defined banks not located within subject property limits or on adjacent lands. No suitable habitat for Northern Map Turtle located within the property limits or on adjacent lands.
Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC (<i>anatum/tundrius</i>)	Most nest on cliff ledges or crevices, but some will use tall buildings or bridges near good foraging areas. Nests are typically close to bodies of water (COSEWIC, 2007b). ESA Protection: N/A	Cliff ledges and other rocky features, tall buildings, etc. not located within property limits or on adjacent lands. No suitable habitat for Peregrine Falcon located within the property limits or on adjacent lands.
Redside Dace	<i>Clinostomus elongatus</i>	END	SC	Found in pools and slow-flowing sections of relatively small, clear headwater streams with both pool and riffle habitats and a moderate to high gradient. These streams typically flow through meadows, pasture or shrub overstory, and have abundant overhanging riparian vegetation (COSEWIC, 2007a). ESA Protection: Species and general habitat protection.	No permanent or intermittent watercourses located within the property limits. No suitable habitat for Redside Dace located within the property limits or on adjacent lands.
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	Habitat is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several of these wetland habitats (COSEWIC, 2008a). ESA Protection: N/A	Wetland units including SWM, SWD, and MAM may provide suitable habitat for Snapping Turtle. Open water and adjacent flooded swamp within SWM unit provide particularly good quality candidate habitat for Snapping Turtle.
Tri-colored Bat	<i>Perimyotis subflavus</i>	END	END	Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013a). ESA Protection: Species and general habitat protection	Overwintering habitat such as mines or caves not present within subject property limits or on adjacent lands. Wooded vegetation units (FOD, SWM, SWD) were surveyed for candidate bat maternity roosting tree densities. Candidate bat maternity roost tree densities were recorded as 24.06 per hectare for FOD, 3.63 per hectare for SWM, and 1.23 per hectare for SWD. Woodland units within the subject property may provide roosting habitat for the species.
Tuberous Indian-plantain	<i>Arnoglossum plantagineum</i>	SC	SC	Prefer open sunny areas in wet, calcareous meadows or shoreline fens (COSEWIC, 2002a). ESA Protection: N/A	Soils (Harriston Loam) are not calcareous and are not likely to provide suitable conditions for this species. Not identified within the subject property limits. No suitable habitat located within the property limits.
Whip-poor-will	<i>Caprimulgus vociferus</i>	THR	THR	Whip-poor-will prefer areas with a mix of open and forested habitat, open woodlands, or openings in mature forests (MNRF, 2017). ESA Protection: Species and general habitat protection	Deciduous Forest (FOD) feature consists of mature trees with unbroken closed canopy, not characteristic of immature woodland habitat typically utilized by the species. Lands beyond FOD feature consist of open agricultural land in all directions, and not complex habitat consisting of forest/open habitat mix preferred by the species. No suitable habitat for Whip-poor-will located within the property limit.
Wood Thrush	<i>Hylocichla mustelina</i>	SC	THR	Typically associated with moist mature deciduous and mixed forests with a well developed understory. <i>ESA Protection: N/A</i>	Deciduous Forest (FOD) feature consists of mature trees with closed canopy. Suitable habitat for Wood Thrush may be located within the FOD feature.

1. MNRF's Species at Risk in Ontario List (November 2, 2017), or Species Specific COSEWIC Reports referenced in this document.
Best, T., and J. Jennings. 1997. Mammalian Species, *Myotis leibii*. The American Society of Mammalogists. No. 547, pp. 1-6, 5 figs.
Cadman, M., D. Sutherland, G. Beck, D. Lepage and A. Couturier. 2007. Atlas of the Breeding Birds of Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field
COSEWIC. 2002a. COSEWIC assessment and update status report on the Tuberous Indian-plantain *Arnoglossum plantagineum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 11 pp.
COSEWIC. 2003a. COSEWIC assessment and update status report on the Eastern Prairie Fringed-orchid *Platanthera leucophaea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 27 pp.
COSEWIC 2003b. COSEWIC assessment and status report on the Butternut *Juglans cinerea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 32 pp.
COSEWIC. 2005a. COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. viii + 40 pp.
COSEWIC. 2007a. COSEWIC assessment and update status report on the Redside Dace *Clinostomus elongatus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 59 pp.
COSEWIC. 2007b. COSEWIC assessment and status report on the Peregrine Falcon *Falco peregrinus* (*pealei* subspecies - *Falco peregrinus* and *pealei anatum/tundrius* - *Falco peregrinus anatum/tundrius*) in Canada. Committee on the Status of Endangered Wild
COSEWIC 2007c. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. Vi + 25 pp.
COSEWIC. 2008a. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.
COSEWIC. 2008b. COSEWIC assessment and status report on the Canada Warbler *Wilsonia canadensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 35 pp.
COSEWIC. 2009a. COSEWIC assessment and update status report on the Least Bittern *Ixobrychus exilis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 36 pp.
COSEWIC. 2010a. COSEWIC assessment and update status report on the Bobolink *Dolichonyx oryzivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp.
COSEWIC. 2010b. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 43 pp.
COSEWIC. 2010c. COSEWIC assessment and status report on the Rusty-patched Bumble Bee *Bombus affinis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 34 pp.
COSEWIC. 2011a. COSEWIC assessment and update status report on the Henslow's Sparrow *Ammodramus henslowii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 37 pp.
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COSEWIC. 2011c. COSEWIC assessment and update status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.
COSEWIC. 2011d. COSEWIC assessment and update status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.
COSEWIC. 2012a. COSEWIC assessment and update status report on the Massasauga *Sistrurus catenatus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 84 pp.
COSEWIC. 2012b. COSEWIC assessment and status report on the Eastern Ribbonsnake *Thamnophis sauritus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 39 pp.
COSEWIC. 2012c. COSEWIC assessment and status report on the Northern Map Turtle *Graptemys geographica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 63 pp.
COSEWIC. 2012d. COSEWIC assessment and update status report on the American Badger *Taxidea taxus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. iv + 63 pp.
COSEWIC. 2013a. COSEWIC assessment and update status report on the Little Brown Myotis *Myotis lucifugus*, Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subflavus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.
COSEWIC. 2013b. COSEWIC assessment and update status report on the Bank Swallow. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 48 pp. + ix.
COSEWIC. 2013c. COSEWIC assessment and status report on the Grasshopper Sparrow *pratinensis* subspecies *Ammodramus savannarum pratinensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 36 pp.
COSEWIC. 2014a. COSEWIC assessment and update status report on the Loggerhead Shrike *Lanius ludovicianus* ssp. and the Prairie subspecies *Lanius ludovicianus excubitorides* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii
COSEWIC. 2015a. COSEWIC assessment and status report on the Louisiana Waterthrush *Parkesia motacilla* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 58 pp.
Ministry of Natural Resources and Forestry (MNRF). 2014. Eastern Small-footed Bat. Queen's Printer for Ontario. <https://www.ontario.ca/environment-and-energy/eastern-small-footed-bat>
Ministry of Natural Resources and Forestry (MNRF). 2017. Species at Risk in Ontario. <http://www.ontario.ca/environment-and-energy/species-risk>



APPENDICES

Appendix A: Proposed Site Plan

Appendix B: MNRF Correspondence



APPENDIX A

Appendix A: Proposed Site Plan

MAIN STREET EAST

Beavercrest
Community School

Herbert Avenue

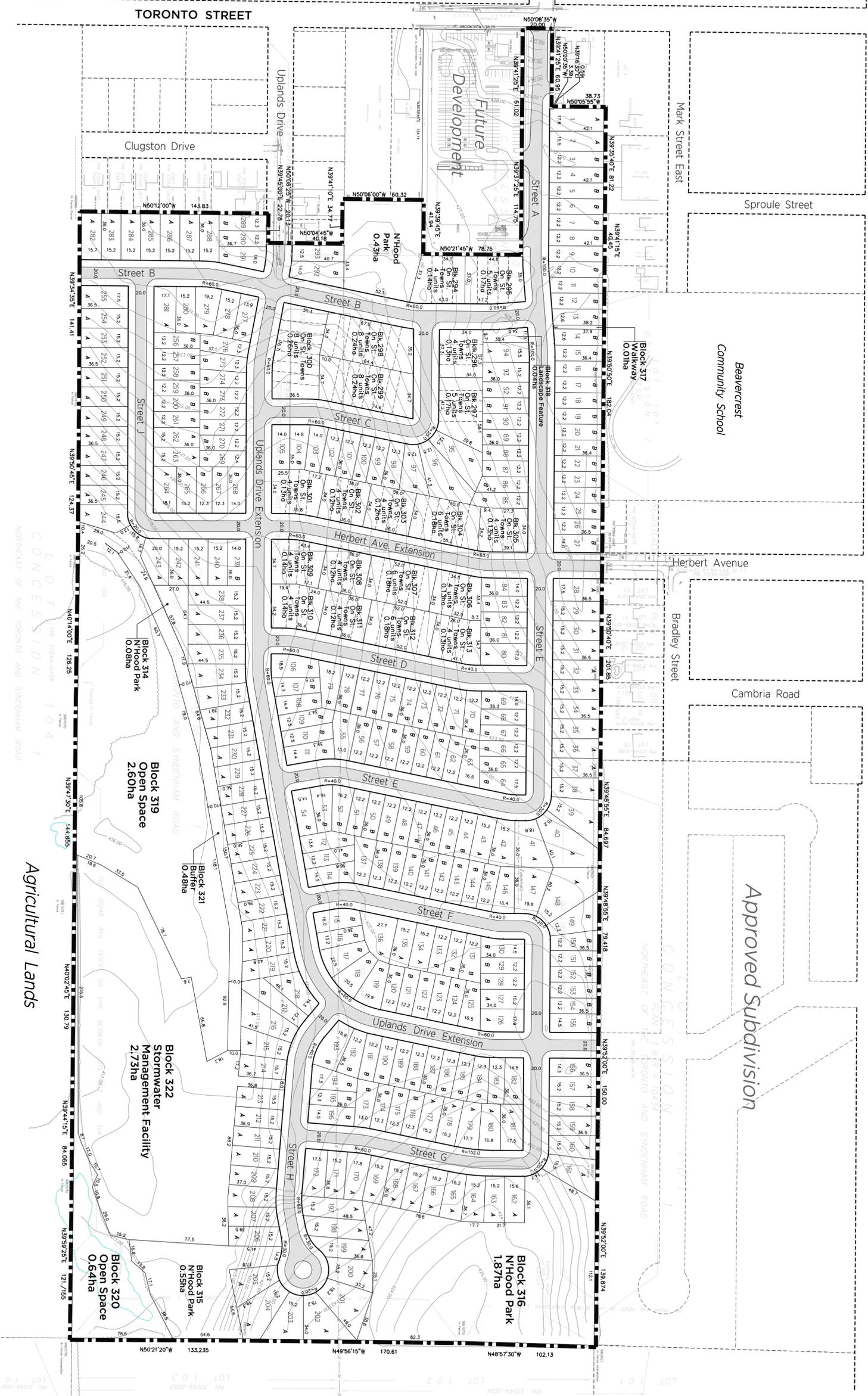
Approved Subdivision

Cambria Road

Mark Street East

Bradley Street

Herbert Avenue



Agricultural Lands

CONCESSION 1
NORTHWEST OF THE TORONTO AND SNEDEHAM ROAD

TORONTO STREET

Clugston Drive

Street B

Street J

Block 314
Nhood Park
0.08ha

Block 319
Open Space
2.60ha

Block 321
Buffer
0.48ha

Block 322
Stormwater
Management Facility
2.73ha

Block 315
N Hood Park
0.53ha

Block 320
Open Space
0.64ha

Uplands Drive

Street B

Street C

Herbert Ave Extension

Street D

Street E

Street F

Uplands Drive Extension

Street G

Street H

Future
Development

N Hood
Park
0.43ha

Block 298
Nhood Park
0.43ha

Block 299
Nhood Park
0.43ha

Block 300
Nhood Park
0.43ha

Block 301
Nhood Park
0.43ha

Block 302
Nhood Park
0.43ha

Block 303
Nhood Park
0.43ha

Block 304
Nhood Park
0.43ha

Block 305
Nhood Park
0.43ha

Block 306
Nhood Park
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Nhood Park
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Block 308
Nhood Park
0.43ha

Block 309
Nhood Park
0.43ha

Block 310
Nhood Park
0.43ha

Block 311
Nhood Park
0.43ha

Block 312
Nhood Park
0.43ha

Block 313
Nhood Park
0.43ha

Block 314
Nhood Park
0.43ha

Block 315
Nhood Park
0.43ha

Block 316
N Hood Park
1.87ha



AREA TABLE

Detached Single Family Lots 1-293	15.92ha±
On Street Townhouses Blocks 294-313	3.17
Neighbourhood Parks & Walkways Blocks 314-317	2.93
Landscape Feature Block 318	0.04
Open Space Blocks 319 & 320	3.24
Buffer Block 321	0.48
Stormwater Management Facility Block 322	2.73
Public Roads	7.20
Total	35.77ha±

UNIT COUNT

15.2m (50') Single	A	120u
12.2m (40') Single	B	173
8.0m (26') On St. Townhouse		100
Total		393u

ROAD LENGTH

20.0m (66') R.O.W. **3,595m**

ADDITIONAL INFORMATION REQUIRED UNDER THE PLANNING ACT

- D Residential single family, on street townhouses, parks, walkways, landscape feature, open space and stormwater management facility.
- H Piped water to be provided.
- I Primarily clay loam soil.
- K Sanitary and storm sewers to be provided.

SURVEYOR'S CERTIFICATE

I hereby certify that the boundaries of the lands to be subdivided as shown on this plan, and their relationship to the adjacent lands are accurately and correctly shown.

Signature _____ Day _____ Month _____ Year _____

OWNERS AUTHORIZATION

I, **RAYVILLE DEVELOPMENTS (Markdale) INC.**, hereby authorize **DESIGN PLAN SERVICES INC.** to prepare and submit a draft plan of subdivision for approval.

Signature _____ Day _____ Month _____ Year _____

DRAFT PLAN of PROPOSED SUBDIVISION PART of LOT 102, CON. 1 Village of Markdale (Geographic Township of Artemesia) County of Grey

GEORGIAN PLANNING SOLUTIONS

DESIGN PLAN SERVICES INC.
Town Planning Consultants

900 The East Mall, Suite 100
Etobicoke, Ontario M9B 6K2
Telephone (416) 626-5445
Fax: (416) 620-6665
www.designplan.ca

Scale 1:2000
Date Oct. 18/17
Drawing Number 1758-20
Rev. Drawn Design

DESIGN PLAN SERVICES INC.
TOWN PLANNING CONSULTANTS

KEY PLAN

Subject Property

LEGEND

- Boundary of Subdivision
- Pavement (Diagrammatic Only)

NOTES

All measurements are in metres.
All elevations refer to Geodetic Datum.

DESIGN PLAN SERVICES INC.
TOWN PLANNING CONSULTANTS

900 The East Mall, Suite 100
Etobicoke, Ontario M9B 6K2
Telephone (416) 626-5445
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Scale 1:2000
Date Oct. 18/17
Drawing Number 1758-20
Rev. Drawn Design

DESIGN PLAN SERVICES INC.
TOWN PLANNING CONSULTANTS



APPENDIX B

Appendix B: MNRF Correspondence



Environmental Assessments & Approvals

April 11, 2017

AEC 17-143

Ministry of Natural Resources and Forestry
Midhurst District
2284 Nursery Road
Midhurst, Ontario L0L 1X0

Attn: Graham Findlay, Management Biologist

**RE: Species at Risk Information Request for 105 Toronto Street South
(Markdale), Municipality of Grey Highlands, County of Grey**

Dear Mr. Findlay:

Azimuth Environmental Consulting (Azimuth) has been retained to prepare a Species at Risk (SAR) Assessment to characterize existing conditions and provide an assessment of the potential for Species at Risk habitat on the property described above (please see attached mapping illustrating the study area limits). The purpose of this letter is to request additional information regarding Species at Risk and any other sensitive areas associated with or adjacent to the study area, and to request any background information that may be relevant to our study.

EXISTING CONDITIONS

The Township of Grey Highlands Official Plan Policy identifies the area as a “Neighbourhood Area” under the “Urban Areas” designation within the Village of Markdale. The County of Grey Official Plan identifies the study area as “Primary Settlement Area” with a section of “Hazard Lands” along the eastern edge of the property. Air photo interpretation indicates that within the study area, current land use is primarily row crop agriculture (2016 season) with a section of meadow marsh and/or swamp thicket within Hazard Lands along the eastern property edge, and natural/naturalized woodland in the northwestern corner of the property. Agricultural lands are present beyond the northern and eastern boundaries of the property, and a continuation of the wetland feature is located beyond the southeastern and northeastern property limits. The settlement of Markdale is present beyond the western and southern property limits.

A review of Natural Heritage Information Centre (NHIC) mapping depicts mapped unevaluated wetlands along the eastern property edge, consistent with the Hazard Land



limits described above. Flesherton Swamp Provincially Significant Wetland (PSW) is located approximately 4 kilometres east of the study area at its closest point. There are no mapped watercourses located on the subject property, however mapped wetlands on the subject property appear to drain southward channelizing on the south side of Highway 10 in settlement of Markdale, approximately 350 metres southeast of the property limit.

BACKGROUND SAR DATA

A search of the Ontario Breeding Bird Atlas (OBBA) has been completed. Square 17NK20 was queried and it was determined that SAR bird species have been recorded demonstrating probable or confirmed breeding evidence within the 10 x 10 kilometre (km) data square, including Common Nighthawk (Threatened), Whip-poor-will (Threatened), Chimney Swift (Threatened), Bank Swallow (Threatened), Barn Swallow (Threatened), Bobolink (Threatened), and Eastern Meadowlark (Threatened), Eastern Wood-pewee (Special Concern), Wood Thrush (Special Concern), Canada Warbler (Special Concern) and Grasshopper Sparrow (Special Concern).

Available information from the NHIC indicates that SAR recorded within the 1 km of the study area includes a Restricted Species (1973/1975). A search for Butternut (Endangered) will also occur during the site investigation.

If the District's files contain additional or contradictory information, we would appreciate your input at this time. It is generally our intention to append this correspondence in the resulting SAR Assessment. If any "Restricted" species occur in the area and the MNR determines that restricted species need to be considered in our review, please provide two copies of the response - one with the species name replaced with (Restricted Species) for inclusion in within Azimuth's SAR Assessment, and the other retaining the identity of the species for Azimuth's internal use only.

Thank you very much for your assistance in this matter. If you have any questions regarding this project please do not hesitate to contact us.

Yours truly,

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Daniel Stuart, H.B.Sc.
Terrestrial Ecologist

Attach: 17-143 Property Limits (Markdale)
17-143 Background Mapping
17-143 Ontario Breeding Bird Atlas Data Summary (17NK20)

Legend

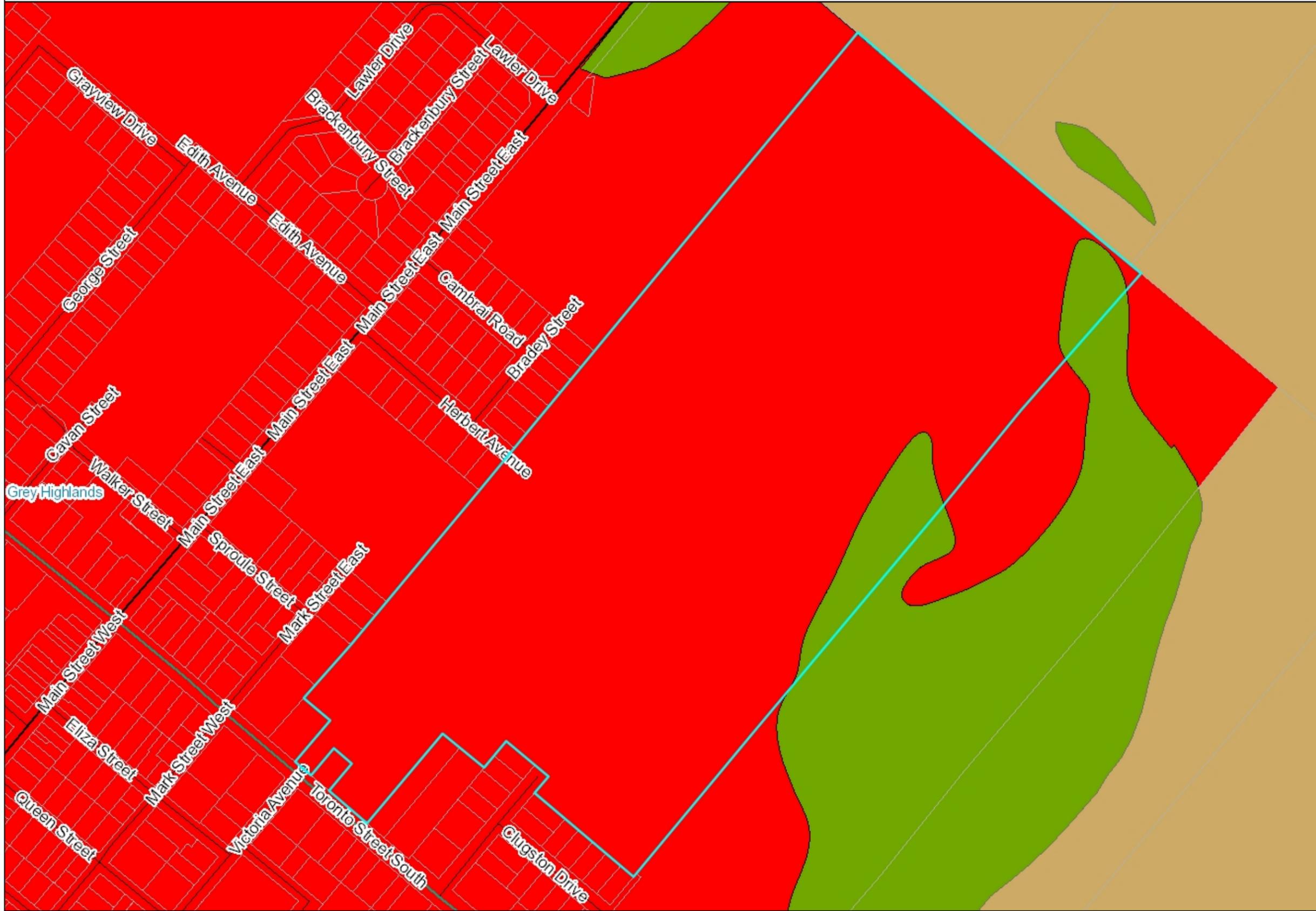
-  Municipality Boundary
-  Parcels
- Roads 125k**
 -  Provincial Highway
 -  County Road
 -  Township Road
 -  Seasonal Road



0.21 0 0.11 0.21 Kilometers



Notes



Legend

- Municipality Boundary
- Parcels
- Roads 125k**
 - 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
 - Hazard Lands
 - Inland Lakes & Shoreline
 - Niagara Escarpment Plan Area
 - Rural
 - Space Extensive Commercial
 - Space Extensive Industrial
 - Special Agriculture
 - Wetlands
 - Recreation Resort Area

0.21 0 0.11 0.21 Kilometers



Notes

Square Summary (17NK20)

#species (1st atlas)				#species (2nd atlas)				#hours		#pc done	
poss	prob	conf	total	poss	prob	conf	total	1st	2nd	road	offrd
41	23	37	101	20	49	52	121	48	175	62	0

Region summary (#9: Grey)

#squares	#sq with data		#species		#pc done	target #pc
	1st	2nd	1st	2nd		
36	36	35	165	169	815	450

Target number of point counts in this square: 20 road side, 5 off road (3 in deciduous forest, 1 in coniferous forest, 1 in mixed forest). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Code		%	
	1st	2nd	1st	2nd
Canada Goose	FY	NE	61	97
Wood Duck		AE	66	85
Gadwall			8	5
American Wigeon ‡			2	0
American Black Duck			33	11
Mallard	NY	FY	97	97
Blue-winged Teal			80	34
Northern Pintail ‡			5	0
Green-winged Teal			0	8
Ring-necked Duck ‡			2	0
Hooded Merganser	H	AE	25	51
Common Merganser		P	44	51
Red-breast Merganser			19	14
Ruddy Duck †	H		2	0
Ring-necked Pheasant			16	2
Ruffed Grouse	NE	NE	86	88
Wild Turkey		FY	0	85
Common Loon	S	FY	63	62
Pied-billed Grebe		H	36	45
American Bittern			47	42
Least Bittern †			8	5
Great Blue Heron §	H	AE	97	80
Great Egret †			2	2

SPECIES	Code		%	
	1st	2nd	1st	2nd
Cooper's Hawk	NY	FY	19	48
Northern Goshawk	H	AE	22	14
Red-should Hawk †	FY	AE	22	28
Broad-winged Hawk	A	CF	25	31
Red-tailed Hawk	S	CF	97	100
American Kestrel	CF	T	91	94
Merlin		T	11	17
Virginia Rail	P		75	60
Sora		H	44	37
Common Moorhen		S	13	8
American Coot ‡		S	0	2
Coot/Moorhen			0	2
Sandhill Crane ‡		T	0	2
Killdeer	AE	FY	100	97
Rock Dove	P	AE	94	94
Spotted Sandpiper	DD	P	100	71
Upland Sandpiper		AE	75	40
Common Snipe	D	AE	94	82
American Woodcock	S	T	97	71
Ring-billed Gull §			2	14
Herring Gull §		H	30	22
Black Tern † §			5	2
Common Tern ‡§			5	2

SPECIES	Code		%	
	1st	2nd	1st	2nd
Barred Owl ‡			2	11
Long-eared Owl ‡			2	2
North Saw-whet Owl		P	33	14
Common Nighthawk		T	33	20
Whip-poor-will		T	25	14
Chimney Swift	AE	H	58	34
Ruby-thr Hummingbird	H	FY	88	88
Belted Kingfisher	CF	CF	97	88
Red-headed Woodpecker †			52	14
Red-bell Woodpecker ‡		H	0	2
Yellow-bellied Sapsucker	A	T	94	97
Downy Woodpecker	S	P	100	91
Hairy Woodpecker	H	A	94	91
Black-backed Woodpecker ‡			2	0
Northern Flicker	FY	NY	100	97
Pileated Woodpecker	P	N	75	82
Olive-sided Flycatcher ‡			5	2
Eastern Wood-Pewee	S	T	94	97
Yellow-bellied Flycatcher			8	2
Alder Flycatcher	S	T	72	74
Willow Flycatcher	H		30	42
Least Flycatcher	S	S	97	97
Eastern Phoebe	AE	NY	94	94

Green Heron §	A	H	83	65
Black-crown N.-Heron † §			25	5
Turkey Vulture	P	NY	91	88
Osprey ‡		H	2	17
Northern Harrier	S	AE	86	74
Sharp-shinned Hawk		H	33	48

Mourning Dove	AE	FY	100	100
Yellow-billed Cuckoo		S	30	14
Black/Yell-billed Cuckoo			0	31
Black-billed Cuckoo		H	69	68
Eastern Screech-Owl	S	S	91	80
Great Horned Owl	NU	H	97	62

Gr Crested Flycatcher	AE	NY	97	97
Eastern Kingbird	AE	NE	100	100
Loggerhead Shrike †			25	0
Yellow-throated Vireo			38	22
Blue-headed Vireo	A	S	16	42
Warbling Vireo	S	T	97	100

Ontario Breeding Bird Atlas - Summary Sheet for Square 17NK20 (page 2 of 2)

SPECIES	Code		%	
	1st	2nd	1st	2nd
Red-eyed Vireo	S	T	100	100
Blue Jay	FY	FY	100	100
American Crow	FY	FY	100	100
Common Raven		D	11	88
Horned Lark	S		83	60
Purple Martin			36	17
Tree Swallow	AE	AE	100	100
North Rgh-wing Swallow	H	CF	80	60
Bank Swallow §	NY	AE	80	62
Cliff Swallow §	NY	AE	86	74
Barn Swallow	NY	AE	100	97
Black-capped Chickadee	FY	AE	100	100
Red-breast Nuthatch	P	T	75	82
White-breast Nuthatch	S	T	97	91
Brown Creeper	S	P	61	65
House Wren	A	N	100	100
Winter Wren	S	T	77	91
Sedge Wren			13	22
Marsh Wren		T	36	22
Golden-crown Kinglet		P	16	34

SPECIES	Code		%	
	1st	2nd	1st	2nd
Brown Thrasher	S	T	97	94
European Starling	CF	NE	97	100
Cedar Waxwing	A	CF	100	100
Golden-winged Warbler			8	31
Blue/Gold-wing Warbler			0	11
Tennessee Warbler ‡			5	0
Nashville Warbler	CF	T	77	88
Northern Parula ‡			2	2
Yellow Warbler	CF	S	100	100
Chestn-sided Warbler	S		69	88
Magnolia Warbler	S		22	51
Black-thr Blue Warbler	A	T	33	80
Yellow-rumped Warbler	A	NB	55	82
Black-thr Green Warbler	S	T	50	94
Blackburnian Warbler	S	T	25	48
Pine Warbler		S	16	57
Cerulean Warbler †			2	2
Black-white Warbler	CF	T	88	94
American Redstart	S	T	86	97
Ovenbird	A	A	91	97

SPECIES	Code		%	
	1st	2nd	1st	2nd
Vesper Sparrow	S	T	91	80
Savannah Sparrow	S	CF	91	97
Grasshopper Sparrow	S	T	47	60
Henslow's Sparrow †			2	8
Song Sparrow	CF	CF	100	100
Swamp Sparrow	S	T	86	97
White-throat Sparrow	A	T	88	91
Dark-eyed Junco			19	20
Scarlet Tanager		S	77	65
Northern Cardinal	H	AE	75	88
Rose-breast Grosbeak	A	A	97	97
Indigo Bunting	S	CF	97	94
Bobolink	P	DD	97	97
Red-wing Blackbird	CF	NE	100	97
Eastern Meadowlark	S	CF	100	97
Western Meadowlark			11	2
Rusty Blackbird ‡			2	2
Common Grackle	CF	NE	100	100
Brown-head Cowbird	FY	P	100	100
Orchard Oriole ‡			5	5

Blue-gr Gnatcatcher ‡			2	0	North Waterthrush	FY	T	80	82	Baltimore Oriole	AE	AE	100	97
Eastern Bluebird	NE	NY	72	91	Louis Waterthrush †			5	8	Purple Finch	S	H	66	82
Veery	A	T	97	91	Mourning Warbler	S	T	72	71	House Finch		D	2	77
Swainson's Thrush			8	0	Common Yellowthroat	A	T	100	100	Pine Siskin			8	8
Hermit Thrush		P	8	37	Canada Warbler	A	CF	33	42	American Goldfinch	P	AE	100	100
Wood Thrush	S	T	83	88	Eastern Towhee	S	T	77	65	Evening Grosbeak			11	2
American Robin	NY	CF	100	100	Chipping Sparrow	FY	CF	100	100	House Sparrow	AE	P	94	94
Gray Catbird	A	AE	100	97	Clay-colored Sparrow ‡			5	31					
Northern Mockingbird			11	2	Field Sparrow	S	T	94	94					

This list includes all species found during the Ontario Breeding Bird Atlas (1st atlas: 1981-1985, 2nd atlas: 2001-2005) in the region #9 (Grey). Underlined species are those that you should try to add to this square. They have not yet been reported during the 2nd atlas, but were found during the 1st atlas in this square or have been reported in more than 50% of the squares in this region during the 2nd atlas so far. In the species table, "BE 2nd" and "BE 1st" are the codes for the highest breeding evidence for that species in square 17NK20 during the 2nd and 1st atlas respectively. The % columns give the percentage of squares in that region where that species was reported during the 2nd and 1st atlas (this gives an idea of the expected chance of finding that species in region #9). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), or † (provincially rare). Current as of 11/04/2017. An up-to-date version of this sheet is available from <http://www.birdsontario.org/atlas/summaryform.jsp?squareID=17NK20>

Special Concern

Threatened

Endangered

**Ministry of Natural
Resources and Forestry**

Owen Sound Field Office
1450 7th Ave East
Owen Sound, ON N4K 2Z1
Tel: 519-376-3860
Fax: 519-372-3305

**Ministère des Richesse naturelles
et des Forêts**

Bureau du secteur d'Owen Sound
1450 ave 7 est
Owen Sound, ON N4K 2Z1
Tél: 519-376-3860
Télé: 519-372-3305



October, 31 2017

Mr. Andrew Kidd
675 Riddell Road
Orangeville, ON L9W 4Z5

Dear Mr. Kidd:

**RE: Markdale Subdivision - Part of 105 Toronto Street South, Markdale Ontario
Part Lots 102 and 103 Concession 1 NETSR ARTEMESIA as in R465394, Grey
Highlands in the County of Grey**

The Ministry of Natural Resources and Forestry (MNRF) received the information pertaining to the above noted project submitted on October 26, 2017 and has reviewed the information to assess the potential impacts of the proposal on Little Brown Myotis, Northern Myotis, and Tri-coloured Bat endangered bat species protected under *Endangered Species Act, 2007* (ESA 2007). Based on the information provided, it is MNRF understands that the proposed project falls within the following parameters:

- a) The construction of a residential subdivision
- b) The construction of associated semi-detached dwellings, townhouses, parks, storm water management pond, and a commercial node adjacent to Toronto Street at the southern boundary

Based on a review of the information you provided, MNRF staff recommends the implementation of the following measures to minimize impact to the species:

1. A maximum of 0.52ha vegetation and trees will be removed of the existing 1.87ha woodlot retaining the 37 snag trees
2. All vegetation clearing and tree removal will be completed between October 1, 2017 and April 30, 2018.

Please be advised that it is your responsibility to be aware of and comply with all other relevant provincial or federal legislation, municipal by-laws, other MNRF approvals or required approvals from other agencies.

Should any of the project parameters change, please notify the MNRF Midhurst District Office immediately to obtain advice on whether the changes may require authorization

under the ESA 2007. Failure to carry out these projects as describe above could result in contravention of the ESA 2007.

If you have any questions, please contact Jody Scheifley at 519-371-8471 or jody.scheifley@ontario.ca .

Sincerely,

Tracy Allison
Resource Management Supervisor
Owen Sound Field Office- Midhurst District

cc. Dan Stuart, Azimuth Environmental Consulting (via email)