

COLAND DEVELOPMENT CORPORATION

# 16928 HIGHWAY 12, MIDLAND, ON ENVIRONMENTAL IMPACT STUDY (EIS)

FEBRUARY 4, 2019





**16928 HIGHWAY 12,  
MIDLAND, ON  
ENVIRONMENTAL IMPACT  
STUDY (EIS)**

**COLAND DEVELOPMENT CORPORATION**

PROJECT NO.: 18M-01620-00  
DATE: FEBRUARY 2019

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**Subject: 16928 HIGHWAY 12, MIDLAND, ON. Environmental Impact Study**

An Environmental Impact Study (EIS) has been prepared for the Phase I development at the site described as Lot 100 Con East of Penetanguishene Road, with a municipal address of 16928 Highway 12, Midland, Ontario. Please find the document attached for your review.

The study outlines the proposed development and recommends mitigative measures to help maintain and/or improve, to the extent possible, the form and function of the natural features found on and within the area of influence of the proposed development.

Please contact the undersigned if you have any questions.

Yours truly,

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SR/JW

WSP ref.: 18M-01620-00

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# SIGNATURES

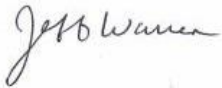
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# 1 INTRODUCTION

WSP Canada Inc. was retained by Coland Development Corporation to complete a Environmental Impact Study (EIS). An EIS assesses the impacts of the proposed development on Natural Heritage Features (NHF) found on the site and presents mitigation measures. It also identifies if the proposed works, as described within this report, conform to the NHF requirements laid out by the Town of Midland in their Official Plan January 2017 (Town of Midland, 2017), County of Simcoe Official Plan Consolidated December 2016 (County of Simcoe, 2016) and the *Planning Act 1990 - Provincial Policy Statement (PPS)* (OMMAH, 2014).

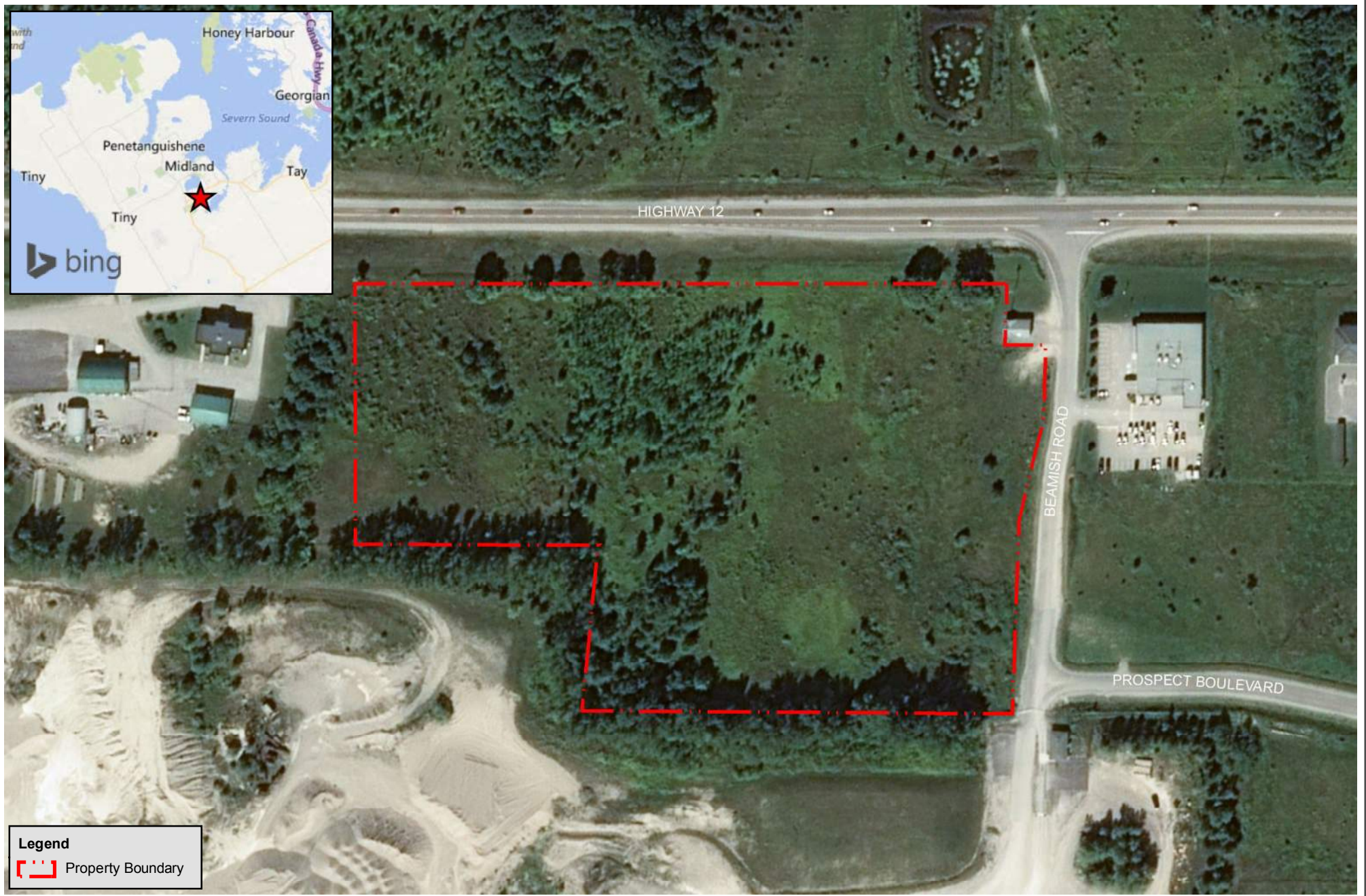
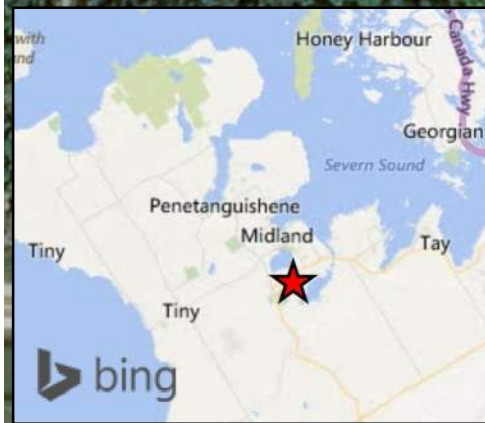
The property is described as Lot 100 Con East of Penetanguishene Road, with a municipal address of 16928 Highway 12, Midland, Ontario (Figure 1). The property is proposed to be developed in two phases referred to as Phase I and Phase II. Phase I is the subject of this EIS and is the south portion of the property. The COLAND DEVELOPMENT CORPORATION is seeking to construct 5 story hotel, conference center and 329 space parking lot totaling a footprint of 58,706.42 m<sup>2</sup>.

An EIS will be prepared under separate cover for the development plan on the Phase II portion. Natural environment investigations carried out for the property included both Phases but the results are presented for Phase I only and reference to the Phase II portion presented where applicable.

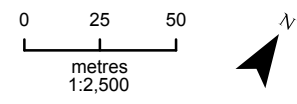
# 2 INFORMATION RESOURCES

A list of information resources consulted for this study are provided below. References for publications used in this report are provided in the Bibliography.

- County of Simcoe Official Plan (Consolidated December 2016)
- Endangered Species Act (2007);
- Natural Heritage Areas Mapping (Ontario Ministry of Natural Resources and Forestry (OMNRF), 2014);
- Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (OMNRF, 2010);
- Provincial Policy Statement (OMMAH, 2014);
- Satellite Photographs;
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (OMNRF, 2015);
- Significant Wildlife Habitat Technical Guide (OMNR, 2000);
- Species at Risk in Ontario (SARO) List (2018);
- Town of Midland in their Official Plan Office Consolidation November 2017 (Town of Midland, 2017);



COLAND DEVELOPMENT CORPORATION  
HIGHWAY 12 EIS – MIDLAND, ONTARIO  
**Site Location**



Date: January 2019  
Project No: 18M-01620-00  
Figure No: 1



# 3 POLICY ENVIRONMENTAL CONTEXT AND REVIEW

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## 3.1 TOWN OF MIDLAND OFFICIAL PLAN

Town of Midland in their Official Plan Office January 2017 (Town of Midland, 2017) has been prepared in accordance with the *Planning Act 1990* and must adhere to all Provincial Planning Policies, as well as those policies of the County of Simcoe. The site is located within an Employment Area as identified on the Official Plan Land Use (Schedule A) mapping November 2017 (Town of Midland, 2017). There are no environmental sensitive areas identified on the site on the Official Plan Green Mapping (Schedule B) mapping November 2017 (Town of Midland, 2017).

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## 3.2 COUNTY OF SIMCOE OFFICIAL PLAN

The County of Simcoe Official Plan Consolidated December 2016 (County of Simcoe, 2016), has been prepared under the *Planning Act 1990*, to provide a policy context for land use planning taking into consideration the economic, social, and environmental impacts of land use and development decisions.

The site is designated as a Settlement on the Land Use Designation Schedule 5.1 mapping (County of Simcoe, 2016). Additional designations have been obtained through the County of Simcoe online mapping application (<https://maps.simcoe.ca/public/>) and are as follows.

### LAND USE PLANNING – PITS AND QUARRIES

The site is located adjacent to a quarry as identified on the County Official Plan OMB Licenced Pits and Quarries (County of Simcoe, 2016). In areas adjacent to mineral aggregate resource areas, development for alternate land uses, in accordance with other policies within the official plan, may be permitted where:

- It would not preclude or hinder the establishment of new operations or access to the resources;
- Utilization of the resource is not feasible because of natural physical or existing man-made constraints;
- Or the proposal serves a greater long-term public interest; and
- Provided any issues of public health, public safety and environmental impact are addressed (County of Simcoe, 2016).

Assessment of development feasibility adjacent to a mineral aggregate resource area is not part of the scope of this EIS and is not discussed further in this report.

## NATURAL HERITAGE FEATURES

An EIS is required to determine the likelihood of negative impacts occurring on the NHF and areas, and ecological functions. The site is not located within the boundary of a significant feature or environmental sensitive area as identified on County of Simcoe online mapping application (<https://maps.simcoe.ca/public/>) or in the Official Plan mapping (County of Simcoe, 2016).

## HYDROLOGICAL FEATURES

The site is located adjacent to small Water Treatment Plant (Pumphouse) and Municipal Well (Well 7a). The site also falls within the boundary of Wellhead Protection Area, Significant Ground Water Recharge Area and is in a Highly Vulnerable Aquifer Area (County of Simcoe, 2016). Ecological considerations require that the applicant must demonstrate, to the extent possible, that the development will not adversely affect the ecological and hydrological integrity of the site (County of Simcoe, 2016).

The site is located on significant hydrologic functions and is adjacent to NHF as defined by the PPS (OMMAH, 2014), which warrants an EIS.

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## 3.3 PROVINCIAL POLICY STATEMENT

The PPS (OMMAH, 2014) recognizes that Ontario's long-term prosperity, environmental health, and social well-being depend on conserving biodiversity, protecting the health of the Great Lakes, and protecting natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits. Development and site alteration within Natural Heritage Systems is controlled under this legislation.

### **Natural Heritage System is defined as:**

*A system made up of NHF and areas, and linkages intended to provide connectivity (at the regional or site level) and support natural processes which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include NHF and areas, federal and provincial parks and conservation reserves, other NHF, lands that have been restored or have the potential to be restored to a natural state, areas that support hydrologic functions, and working landscapes that enable ecological functions to continue.*

(OMMAH, 2014)

## NATURAL HERITAGE EVALUATION

NHF under the PPS (OMMAH, 2014) include:

- Fish habitat;
- Significant Areas of Natural and Scientific Interest (ANSI);

- Habitat of Species at Risk - endangered species and threatened species;
- Significant wetlands, significant coastal wetlands, other coastal wetlands in Ecoregions 5E, 6E and 7E,
- Significant woodlands and valleylands in Ecoregions 6E and 7E; and
- Significant wildlife habitat (SWH);

The site was found not to be located within the boundary of a significant feature, including Fish Habitat, ANSI, Provincially Significant Wetland (PSW), Significant Woodland, Significant Valleyland, SWH as defined by the PPS (OMMAH, 2014). There is potential for Species at Risk bat and Monarch (*Danaus plexippus*) habitat to be present on the site, which is discussed in Section 5, with impacts described in Section 7.

### HYDROLOGICAL FEATURES

Water features are also protected under the PPS (OMMAH, 2014) where restrictions on development and site alteration may occur to:

- Protect all municipal drinking water supplies and designated vulnerable areas; and
- Protect, improve or restore vulnerable surface and ground water, sensitive surface water features and sensitive ground water features, and their hydrologic functions.

A short discussion describing site water features identified on site is provided in Section 5, with impacts described in Section 7.

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## 3.4 ENDANGERED SPECIES ACT, 2007

Species at Risk (SAR) are species designated under the provincial *Endangered Species Act, 2007* (ESA) or under the federal *Species at Risk Act, 2002* (SARA) as either Extirpated (EX), Endangered (END), Threatened (THR) or Special Concern (SC) depending on level of risk. Under Federal and/or Provincial legislation, species and their habitat are required to be protected if classified as END or THR. There is no legal protection for species ranked as SC, however, their preservation, when found, is encouraged to assist with preserving Ontario's biodiversity.

No SAR were identified at the site during field investigation, which was expected given the time of year of the investigation (October 2018). The likelihood of SAR on or within the vicinity of the site has been identified using a SAR Screen Table (Appendix B), based on the review of habitat present determined during field investigation and historical occurrence data. Any species identified in the databases reviewed where there is no habitat available, those species are not considered in the SAR screening table. Those likely to be on, or in the vicinity of, the site are discussed in Section 5, with impacts discussed in Section 7.

## 4 AGENCY CONSULTATION

The OMNRF were consulted through a Request of Information submission on November 5, 2018 regarding the site's historic and present natural features. A response was received on December 9, 2018 (Appendix C). No new data beyond what is available online through the Land Information Ontario and Make a Map: Natural Heritage Areas was provided by the OMNRF. Based on the habitat types present on and near the site and SAR occurrence data, the OMNRF recommended that SAR Eastern Meadowlark (*Sturnella magna*) and Bobolink (*Dolichonyx oryzivorus*) should be considered in the EIS (Appendix C). The OMNRF was also consulted via a teleconference on January 22, 2019 to request advice on potential SAR bat habitat within the site's hedgerow. A summary points of this discussion is provided in Section 5, with impacts discussed in Section 7.

## 5 EXISTING CONDITIONS

A site visit was conducted on October 17, 2018, to document vegetation, investigate the potential for the presence of species of conservation concern (SCC) or their habitats, and define the presence and extent of NHF on or near the site. Focus of the field investigation include defining natural features boundaries (e.g. vegetation types), determining presence of SWH and determining SAR habitat potential.

Prior to the site visit, satellite images of the property, land use and topographical maps were reviewed to identify the potential for NHFs on and adjacent to the site. The results of the background review and field investigation are discussed below.

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### 5.1 OVERVIEW

The site is located Lot 100 Con East of Penetanguishene Road, with a municipal address of 16928 Highway 12, Midland, Ontario. The site is approximately 19, 579.71 m<sup>2</sup> rectangular-shaped parcel bounded by hedgerow and aggregate pit to the south; cultural meadow and residential property to the west; a small gravel road (Beamish Rd) to the east; and cultural meadow and a cultural meadow and Highway 12 to the north.

The site is currently vacant, and the meadow has been left largely unmaintained, allowing for the unhindered growth of meadow species and sparse woodland plants. The site has been altered in the past, with scraping and grading having occurred as 2006 (Google Earth imagery).

The property slopes gently towards Beamish Rd., with a steeper hill located in the site's northwest corner. The hill allows surface water northwest of the site to flow east, down the hill, to a flat treed area on the site's north side. There is also a ditch that runs along the west side of Beamish Rd. This ditch transports surface water to a small wetland depression located in the site's southeast corner. The depression is also connected to a culvert under Beamish Rd. The location of the culvert was not identified during field investigations. Review of aerial imagery shows drainage associated with the

culvert may be connected to a ditch that runs parallel to Prospect Blvd. The drainage path travels south into a large forest and Wye Marsh wetland. Surface water to the site is expected to be intermittent as the depression contained no standing water at the time of the field investigation.

The site contained a continuous hedgerow of mature recorded trees, which are suitable for providing refuge for rural wildlife, including SAR bats and migratory birds.

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## 5.2 NATURAL HERITAGE FEATURES

Potential habitat of SAR bats was identified during the site visit and is discussed in Section 5.5

No additional NHF as listed in the PPS (OMMAH, 2014) were observed during the site visit. Background review indicates that the site is not located within the boundary of a NHF as identified on County of Simcoe online mapping application (<https://maps.simcoe.ca/public/>), Town of Midland Official Plans (Town of Midland, 2017) or on Natural Heritage Areas Mapping (OMNRF, 2014).

Review of the Natural Heritage Areas Mapping (OMNRF, 2014) indicated that there are a number of NHFs in the surrounding area including:

- Wye Marsh (T2A) PSW located ~ 800 m south east of the site;
- Midland Little Lake Wetland PSW located ~700 m north of the site;
- A Natural Heritage System defined in the Growth Plan for the Greater Golden Horseshoe (OMMAH, 2017) located ~ 600 m south east of the site; and
- Large woodlands located ~400 to 500 m north and south of the site. These large continuous sections of this forest likely qualify for Significant Woodland status under Natural Heritage Reference Manual (OMNRF, 2010).

Impacts are expected to be minimal to none for the above listed features and is further discussed in Section 7.

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## 5.3 VEGETATION

The dominant vegetation features on the site are comprised of historically disturbed sites that are now overgrown with vegetation types that are heavily influenced by anthropogenic activities (e.g. garbage, introduced species, and grading/earthmoving). Vegetation types include lowland deciduous forest, cultural meadows and a small thicket swamp. These features are mapped in Appendix D.

This species composition of each ELC vegetation type is presented below. The species recorded are based on a fall 2018 survey. The list of species will be updated following the results of a spring 2019 survey.

### MINERAL CULTURAL MEADOW CUM1-1

A Mineral Cultural Meadow vegetation type (CUM1-1) makes up the center of the site. The CUM1-1 also makes up a large area found north of the site extending to Highway 12. Vegetation of this



community was found transitioning into the groundcover of adjoining vegetation types. The dominant cover was observed to be Smooth Brome (*Bromus inermis*) with dense abundance of Wild Bergamot (*Monarda fistulosa*), Arrow-leaved Aster (*Symphyotrichum urophyllum*), Giant Goldenrod (*Solidago gigantea*), Canada Goldenrod (*Solidago canadensis* var. *canadensis*) and Eastern Poison Ivy (*Toxicodendron radicans* var. *radicans*). There was also the occasional occurrence of Ontario Aster (*Symphyotrichum ontarionis* var. *ontarionis*), New England Aster (*Symphyotrichum novae-angliae*), Rayless Alkali Aster (*Symphyotrichum ciliatum*), Black Raspberry (*Rubus occidentalis*), Purple Crown-vetch (*Securigera varia*) and Common Milkweed (*Asclepias syriaca*). The lower groundcover was abundant with Field Horsetail (*Equisetum arvense*), Eastern Poison Ivy, Wild Strawberry (*Fragaria virginiana* ssp. *virginiana*), Common Plantain (*Plantago major*), Butter-and-eggs (*Linaria vulgaris*) with the occasional occurrence of Hoary Alyssum (*Berteroa incana*), Smooth Bedstraw (*Galium mollugo*) and Common St. John's-wort (*Hypericum perforatum*). There was also rare occurrence of Common Speedwell (*Veronica officinalis*).

#### WILLOW MINERAL THICKET SWAMP (SWT2-2)

This vegetation type was found as a small depression in the southeast corner of the site. The extent of this thicket was observed to be controlled by Beamish Rd. to the east, a small upland berm to the west, and the hedgerow to the south. The dominant vegetation consisted of Meadow Willow (*Salix petiolaris*) followed by Pussy Willow (*Salix discolor*) and the rare occurrence of Hybrid White Willow (*Salix* × *fragilis*). The understory consisted of an abundance of Red-osier Dogwood (*Cornus sericea*), Riverbank Grape (*Vitis riparia*) and Reed Canarygrass (*Phalaris arundinacea* var. *arundinacea*). The groundcover consisted of Arrow-leaved Aster, Panicked Aster (*Symphyotrichum lanceolatum* ssp. *lanceolatum*) Purple-stemmed Aster (*Symphyotrichum puniceum*) and a variety of wet tolerant sedges (*Carex* sp.) including Awl-fruited Sedge (*Carex stipata*).

#### HEDGEROW (HR)

A hedgerow was located at the south and west edges of the site and serves as a buffer for the activities of the aggregate quarry immediately to the south. The hedgerow was observed to be middle-aged with a few old growth Northern Red Oak (*Quercus rubra*). The mature Northern Red Oak were found to have a range of diameter at breast height (DBH) of between 80 to 120 cm and were found in healthy condition. The hedgerow width was determined to be moderate at 8 m. Vegetation diversity (e.g. variety of trees species present), linkage to adjoining natural spaces, and disturbance (e.g. invasive species, debris, tree damage) was also observed to also be moderate. The hedgerow was observed to have minimal to no gaps present. Mature trees were found closer to Beamish Rd.

In addition to Northern Red Oak the hedgerow had abundant occurrences of Eastern White Pine (*Pinus strobus*), Balsam Poplar (*Populus balsamifera*) and the occasional occurrence of Trembling Aspen (*Populus tremuloides*), Staghorn Sumac (*Rhus typhina*) and Red Pine (*Pinus resinosa*). The understory consisted of Glossy Buckthorn (*Frangula alnus*), Green Ash (*Fraxinus pennsylvanica*), Red-osier Dogwood, Hawthorn sp. (*Crataegus* sp.) and Black Cherry (*Prunus serotina*).

#### FRESH-MOIST ASH LOWLAND DECIDUOUS FOREST TYPE (FOD7-2)

This vegetation type is located at the west side of the site. The canopy was found to be dominant young Green Ash with an understory of Red-osier Dogwood. The groundcover was CUM1-1 species. The south section of this vegetation site transitions into the Hedgerow and was found to contain a number of Hedgerow species.

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## 5.4 WILDLIFE

Wildlife noted during the field survey are consistent with common species that occur in meadow, thicket or treed hedgerows in the fall period. Although some of the sightings occurred on Phase II lands, it is highly likely the species would also use Phase I lands since habitats there are similar and therefore are included in this EIS where similar habitat is present in the Phase I site.

Bird species recorded area included American Robin (*Turdus migratorius*), American Tree Sparrow (*Spizella arborea*), Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), Hermit Thrush (*Catharus guttatus*), Killdeer (*Charadrius vociferus*), Turkey Vulture (*Cathartes aura*) and American Woodcock (*Scolopax minor*). One bird nest found in a young Sugar Maple provided evidence of bird breeding use.

Black-capped Chickadee and Blue Jay are likely year-round residents that breed in forests in the vicinity and feed in treed hedgerows and thickets at the site and nearby. American Tree Sparrow may inhabit the site through the winter but would travel north to breed. The remaining birds are migratory species that were using the area for foraging and/or shelter on their way to wintering grounds farther south. Of those, American Robin, American Woodcock, Hermit Thrush and Killdeer may return to the area to breed. American Robin nests in forest edges and isolated trees, and American Woodcock nests in open areas on the ground; both species may nest on the Phase I site. Hermit Thrush nests on or near the ground but prefers open areas within a forest and is unlikely to nest at the site. Killdeer, another ground nester, builds its nest on very exposed, bare ground or gravel surfaces. These conditions exist on the Phase I site. Turkey Vulture may forage over the area during the breeding season but would not breed here; they nest in isolated locations far from human disturbance.

The only mammal observed was an Eastern Cottontail (*Sylvilagus floridanus*), which was in the hedgerow along the west property line. Mammal trails provided evidence of wildlife movement through the site. There was also evidence of a 'deer bed' that would have been left by White-tailed Deer (*Odocoileus virginianus*). There were numerous mature trees in the site with features that may provide habitat for roosting bats. No bats were observed, which was expected given the time and date of the visit (daylight hours, October 2018).

All of the bird species recorded during the survey except two are protected under the federal *Migratory Birds Convention Act, 1994* (MBCA); Blue Jay and Turkey Vulture are protected under the provincial *Fish and Wildlife Conservation Act, 1997* (FWCA).

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## 5.5 SPECIES OF CONSERVATION CONCERN

SCC species as defined above refer to species that are provincially rare and are designated as S1 to S3 under ranking protocols used by the OMNRF Natural Heritage Information Centre. It also includes those groups identified as Special Concern (SC) Threatened (THR) or Endangered (END) under the provincial ESA as recommended for listing by the Committee on the Status of Species at Risk in Ontario (COSSARO), and under the federal SARA as recommended for listing by the Committee on the

Status of Endangered Wildlife in Canada (COSEWIC). Under federal and/or provincial legislation, species and their habitat are required to be protected if classified as END or THR.

The Natural Heritage Areas Mapping (OMNRF, 2014) was reviewed to determine if there are known rare, THR or END species on or within 120 m of the site. Four (4) one-kilometre squared quadrats (988626, 988616, 988627, and 988617) encompassing the site and 1 km surrounding area were searched to ensure potential SAR with the potential to be in the general area were accounted for in the search.

Element occurrences for the area searched include:

- Massasauga Rattlesnake (*Sistrurus catenatus*) (THR) last observed 1969
- Least Bittern (*Ixobrychus exilis*) (THR)
- Snapping Turtle (*Chelydra serpentina*) (SC)
- Giant lacewing (*Polystoechotes punctatus*) (SH) last observed 1941
- Black Tern (*Chlidonias niger*) (THR)
- Eastern Musk Turtle (*Sternotherus odoratus*) (SC)
- Northern Map Turtle (*Graptemys geographica*) (SC)

The likelihood of impacts on SAR was assessed using the SAR Screening Table (Appendix B). Species' presence was based on NHIC occurrence data listed above; species' range maps on the OMNRF SAR website and in COSEWIC reports; field investigation information; and through consultation with the OMNRF (Appendix C). No SAR individuals were observed; however, the trees with bat habitat potential may contain roosting habitat for three SAR bats; Little Brown Myotis, Northern Myotis and Tricolored Bat. The attributes of these trees were gathered and are listed in Appendix E and a summary of the results is provided in Section 5.5.1. Also found was potential breeding habitat for the SAR butterfly, Monarch. Common Milkweed, a host plant for Monarch, was found along Beamish Road. Monarch is designated Special Concern under the ESA.

The following are SAR species that have at least moderate likelihood of being impacted by the proposed Phase I development.

- Monarch (*Danaus plexippus*) (SC provincially, END under COSEWIC)
- Eastern Small-footed Bat (*Myotis leibii*) (END)
- Little Brown Bat (Little Brown Myotis) (*Myotis lucifugus*) (END)
- Northern Long-eared Bat (Northern Myotis) (*Myotis septentrionalis*) (END)
- Tri-colored Bat (*Perimyotis subflavus*) (END)

#### MONARCH

This butterfly forages on a variety of flowering plants and uses milkweed species (*Asclepias* sp.) as breeding host plants. A number of flowering plants were observed during the field investigations and Common Milkweed was found in meadow along Beamish Road and may occur at other locations in the site. Monarch may forage and breed in the site.

#### EASTERN SMALL-FOOTED MYOTIS

This species roosts in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees but they prefer talus slopes and rock fields (Humphrey 2017). There were trees in the site that may provide maternity roosting opportunities for this species.

#### LITTLE BROWN MYOTIS

Maternity roosts of Little Brown Myotis are commonly found in buildings and attics but also under bridges, in rock crevices and tree cavities (COSEWIC 2013). There were tree cavities in the site that may provide maternity roosting opportunities for this species.

#### NORTHERN MYOTIS

Maternity roosting in Northern Myotis is closely associated with tree density and characteristics (height, diameter, age, decay class). This species rarely roosts in human structures. There were trees in the site that may provide maternity roosting opportunities for this species.

#### TRICOLORED BAT

This species roosts in trees and in dead clusters of leaves on trees. They forage over watercourses and streamside vegetation and roost in adjacent forests (COSEWIC 2013). They may forage over Midland Little Lake Wetland PSW or Wye Marsh PSW and roost trees found on the site.

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### 5.5.1 SAR BAT HABITAT ASSESSMENT

Field surveys to assess potential SAR bat habitat were undertaken in accordance with protocols and guidance provided by MNRF (Guelph and Aurora Districts).

The following has informed this assessment of bat habitat and presence surveys:

- Correspondence with MNRF Guelph and MNRF Aurora staff on multiple dates 2015-2018;
- Technical Note: Species at Risk (SAR) Bats. Regional Operations Division (MNRF, June 2015); and,
- Bat and Bat Habitat Surveys of Treed Habitats (MNRF Guelph District, April 2017).

Current guidance regarding surveys focuses on identification of the maternity roost habitat, though all SAR bat habitat (i.e., day roosting habitat, foraging habitat, hibernacula) are protected under the ESA. Tree general locations and condition is provided in Appendix E.

To determine if impacts to these trees conflict with the ESA, the OMNRF was consulted via a teleconference on January 22, 2019. Based on this teleconference it was determined that potential habitat trees (e.g. trees with cavities or loose bark) may be used for navigation purposes. Maternity or hibernacula habitat is unlikely to be present on site, with trees possibly providing day roosting during bat's active period (April to October). By applying timing windows for vegetation removals, impacts to these trees is not expected to impact SAR bats. However, mature trees where preservation is possible is encouraged due to their size and quality. Timing windows for vegetation removal is provided in Section 8.

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## 5.6 HYDROLOGICAL FEATURES

The site falls within the boundary of Wellhead Protection Area Zone and Wellhead Protection Area, which are municipality protected (Town of Midland, 2017). The site falls within the boundary of a Significant Ground Water Recharge Area and a Highly Vulnerable Aquifer Area, which are protected under the PPS (OMNRF, 2014).

A small depression (Willow Mineral Ticket Swamp (SWT2-2) Appendix D) was observed during the field investigation. This depression is expected to hold water intermittently as there was no standing water observed. Connected to this depression is an intermittent drainage feature that runs north-south along Beamish Rd and west under Beamish Rd by a culvert (Appendix D). The feature that is connected to a ditch that runs parallel to Prospect Blvd. and Macdonald Rd, which then travels south into a large forest and Wye Marsh PSW. General impact assessment is provided in Section 7, with generally mitigation provided in Section 8.

A hydrological assessment of how development may impact existing ground and surface water systems including the Highly Vulnerable Aquifer area is provided in the 16928 Highway 12 Stormwater Management report by WSP under a separate cover.

## 6 PROPOSED DEVELOPMENT

The Coland Development Corporation is seeking to construct a 5 story hotel, conference center and 329 space parking lot totaling a footprint of 19,579.71 m<sup>2</sup>. The site plan is shown provided in Appendix A.

## 7 IMPACT ASSESSMENT

An assessment of the impacts to the site existing conditions is provided below.

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### 7.1 NATURAL HERITAGE FEATURES

The ensuing assessment discusses the potential impacts of the proposed development on NHF features. Relevant mitigation measures are provided in Section 8 to ensure that the functions and linkages between NHF are preserved.



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### **7.1.1 FISH HABITAT**

Under the Department of Fisheries and Ocean (DFO) Fish Habitat is described in the *Fisheries Act, 1985 c.F-14* as, “spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly to carry out their life processes” with a broader definition for fish being defined as “shellfish, crustaceans, and marine animals, at all stages of their life cycles” (Government of Canada, 2016).

No fish habitat was identified on, or adjacent to, the site. Fish habitat is not expected to be impacted by the proposed development.

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### **7.1.2 SIGNIFICANT AREAS OF NATURAL AND SCIENTIFIC INTEREST**

Under the PPS (OMMAH, 2014) Significant ANSI are defined as areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education (OMMAH, 2014).

There were no ANSIs present on, or within 120 m of, the site. ANSIs are not expected to be impacted by the proposed development.

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### **7.1.3 HABITAT OF SPECIES AT RISK**

Habitat of a SAR is defined under subsection 2. (1) of the ESA as the area prescribed by a regulation made under clause 55 (1) (a) of the ESA for an extirpated, endangered or threatened species; or, in the case of other species, as “an area on which the species depends, directly or indirectly, to carry on its life processes, including life processes such as reproduction, rearing, hibernation, migration or feeding”. Habitat of SAR designated Special Concern is not protected under the ESA.

Habitat protection is provided under the ESA for five of the SAR assessed as potentially occurring in the site. These included four potentially occurring SAR bats: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tricolored Bat, and Monarch butterfly. Removal of trees to implement the proposed development may impact SAR bat day roosting habitat. Development of the land would also result in a loss of Monarch breeding and foraging habitat. Impacts of these species is expected to be low with the implementation of mitigation measures provided in Section 8.

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### **7.1.4 SIGNIFICANT WETLANDS**

Wetlands are defined as swamp, marsh, bog or fen (not including land that is being used for agricultural purposes and no longer exhibits wetland characteristics) that is:

- Seasonally or permanently covered by shallow water or has the water table close to or at the surface and;

- Has hydric soils and vegetation dominated by hydrophytic or water-tolerant plants; and, Has been further identified by the OMNRF or by any other person, according to evaluation procedures (OMMAH, 2014).

The Natural Heritage Areas Mapping (OMNRF, 2014) and field observations indicated there are no significant wetlands on, or within 120 m of, the site. The hydrology of Wye Marsh PSW, located ~ 800 m southeast of the site, may be intermittently connected to the small Willow Mineral Ticket Swamp (SWT2-2) on the site by ditch drainage feature (Appendix D). During times of heavy rain, unwanted substances (e.g. silt, construction materials, etc.) may have potential to indirectly travel into the PSW, impacting water quality.

Given the size of the ditch system and distance to the PSW it is unlikely that this connectivity to the PSW will increase the likelihood of species using this ditch as a travel corridor, such as by turtles, to the site.

Mitigation measures to limit impacts are provided in Section 8.

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### **7.1.5 SIGNIFICANT WOODLANDS**

Significant Woodlands are treed, woodlot, or forested areas, other than a cultivated fruit or nut orchard or a Christmas tree plantation and is identified as significant by the OMNRF, using evaluation procedures established by that Ministry (Ontario, 2005).

No Significant Woodlands occur within 120 m of the site but are likely common in the surrounding area given Natural Heritage System located ~ 600 m southeast of the site. Significant Woodland are not expected to be impacted by the proposed development.

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### **7.1.6 SIGNIFICANT VALLEYLANDS**

Significant Valleylands are defined as natural area that occurs in a valley or other landform depression that has water flowing through or standing for some period of the year and is identified as significant by the (OMMAH, 2014).

There are no valleylands on, or within 120 m, of the site. Significant Valleyland are not expected to be impacted by the proposed development.

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### **7.1.7 SIGNIFICANT WILDLIFE HABITAT**

SWH is identified through review of Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (OMNRF, 2015) and applying these criteria to the site. This schedule is composed of habitat criteria for plants, animals and other organisms considered SCC, but not listed as an END or THR species under clause 55(1)(a) of the ESA. Habitat criteria focuses what is required for this species to live and find

adequate amounts of food, water, shelter, and space to sustain their population, including an area where a species concentrates at the vulnerable point in its annual life cycle.

SWH are not generally mapped by the OMNRF or municipalities and are greatly dependent on field investigations and assessment. When mapped, the majority of SWH fall within the boundaries of other NHF (e.g. woodlands and wetlands), and as such, they are already afforded protection.

Potential SAR bat habitat was identified on site as is further discussed in Section 7.4. There were no other SWH present on, or within 120 m of, the site. SWH is not expected to be impacted by the proposed development.

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## 7.2 VEGETATION

The Hedgerow on the site was found to contain a number of mature trees including a few Northern Red Oak of significant size and ecological importance. Trees within in Hedgerow are expected to be impacted based on the footprint of the site Plan (Appendix A). Discussion on tree protection consideration is provided in Section 7.2.1.

The site's dominant vegetation features are comprised of historically disturbed sites that are now overgrown with vegetation types that are heavily influenced by anthropogenic activities. The vegetation community types observed are considered common in Southern Ontario, with no SCC (federally, provincially, regional or locally rare) observed during the field investigation. The likelihood of species under legislative protection (ESA and SARA) have been screened using the SAR table (Appendix B). Presence of these species is unlikely given the existing environmental characteristics of the site.

Occurrence of locally rare species is possible, and presence could not be confirmed or denied given the field investigation occurred in the late fall period. Through agency consultation (Appendix C) and background review no locally rare species have been historically identified on the site (OMNRF, 2014). There is no legal protection for regionally or locally rare species, however, if found, their preservation is encouraged to assist with preserving Ontario's biodiversity.

Removal of the Willow Mineral Thicket Swamp Type (SWT2-2) and Dry-Moist Old Field Meadow Type (CUM1-1) is expected to have negligible impacts on significant vegetation in the area. Timing windows for vegetation removals apply to protect Migratory Birds under the MBCA, and potential SAR bats under the ESA. Timing windows are further discussed in Section 8.

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### 7.2.1 TREE PROTECTION CONSIDERATION

The Hedgerow on Site was found to containing several mature trees including Northern Red Oak of significant size and ecological importance. Trees within the Hedgerow are expected to have root damage, limb damage or be removed based on the development the footprint.

The Town of Midland in their Official Plan Office January 2017 (Town of Midland, 2017) encourages the protection of mature trees of an aesthetic and heritage value and recommends trees to be preserved

(Town of Midland, 2017). Trees which directly impede construction of buildings and services shall be replaced by trees of a sufficient maturity (Town of Midland, 2017).

Based on the size of the Hedgerow trees and proximity to the propose site limits, further investigation has been recommended. It is proposed that a locational survey be carried out to identify the location of the large hedgerow trees relative to the development limit to identify the opportunity to retain the trees as part of the development.

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## 7.3 WILDLIFE

Vegetation clearing, and grubbing may impact birds protected under the MBCA. This impact can be mitigated by conducting vegetation clearing and grubbing outside the season when most birds in the area breed (September 1 to March 31).

Wildlife may travel into the construction zone and be impacted, a risk that can be minimized through a general awareness of wildlife and cessation of work while wildlife are in the work zone.

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## 7.4 SPECIES OF CONSERVATION CONCERN

Impacts to SAR bats and Monarchs relate to the removal of their habitat and is discussed in Section 7.1.3.

Based on consultation with the OMNRF, there are no special requirements related to the cavity trees recorded at the site and a permit or further review under ESA is not required. Removal of Monarch habitat can be reduced through host plant replacement plantings, which are also discussed in Section 8.

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## 7.5 HYDROLOGICAL FEATURES - AQUIFER VULNERABILITY

A small depression Willow Mineral Ticket Swamp (SWT2-2) was observed during the field investigation (Appendix D). This depression is expected to intermittently hold water and be connected to a ditch that runs into Wye Marsh PSW. This connectivity to a quality ecosystem (Wye Marsh PSW) may increase the likelihood siltation traveling into the PSW. Mitigation for this impact is provided in Section 8.

Hydrological assessment of how development may impact existing ground and surface water systems, such as the aquifer is provided the 16928 Highway 12 Stormwater Management report, by WSP under a separate cover.

Generally, the following uses are prohibited in areas of high aquifer vulnerability:

- Generation and storage of hazardous waste or liquid industrial waste;

- Waste disposal sites and facilities, organic soil conditioning sites, and snow storage and disposal facilities;
- Underground and above-ground storage tanks that are not equipped with an approved secondary containment device; and
- Storage of a contaminant listed in Schedule 3 (Severely Toxic Contaminants) of Reg. 347 of the Revised Regulations of Ontario, 1990.

It is not anticipated that the proposed development will involve uses that would violate the above mentioned criteria. Suggested mitigation measures are provided in Section 8.

## 7.6 SIGNIFICANT FEATURE ASSESSMENT SUMMARY

The results of the assessment of the NHF identified on, or adjacent to, the site are provided in Table 1, below.

**Table 1: Natural Feature Summary**

FEATURE	PRESENT	COMMENT
Fish Habitat	No	There is no fish habitat on or within 120 m of the site.
Significant ANSI	No	There are no ANSIs on or within 120 m of the site.
Habitat for SAR	Yes	There is potential Monarch habitat on site. Based on OMNRF consultation, the hedgerow does not need to be protected/retained as SAR habitat.
Significant Wetland	No	There are no wetlands on or within 120 m of the site.
Significant Wildlife Habitat (SWH)	No	SWH was not identified on or within 120 m of the site. (Bat and Monarch habitat is presented under Habitat for SAR)
Significant Woodland	No	There are no woodlands on or within 120 m of the site.
Significant Valleyland	No	There are no valleylands on or within 120 m of the site.
Sand Barrens, Savannahs	No	Not applicable. There are no sand barrens or savannahs within 120 m of the site.
Vegetation including mature trees	Yes	There are no rare vegetation species or vegetation types on site. There are mature trees on site.
Wildlife	Yes	Migratory birds will likely be present during nesting season. Common wildlife in the area may access the site during construction.
Species of Conservation Concern	Yes	Potential for SAR bats and Monarch on site
Hydrological Features	Yes	The site occurs within the boundary of an Highly Vulnerable Aquifer area



# 8 MITIGATION MEASURE DISCUSSION

The following sections provide recommendations to protect the environmental features on or within 120 m of the site, or if required for features located a greater distance off-site but are directly connected to the site.

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## 8.1 GENERAL MITIGATION

The following general recommendations are proposed to reduce impacts to local wildlife on and within 120 m of the site:

- Wildlife incidentally encountered during construction shall not be knowingly harmed and shall be allowed to move away from the construction area on its own. All nests will be protected, and a qualified ecologist shall be contacted to determine nest type and actions required.
- In the event that wildlife encountered during construction does not move from the construction zone on its own, the contractor shall contact the OMNRF Midhurst District to move the animal to a safe area.
- If an active mammal den is encountered, appropriate wildlife services will be contacted to humanely trap and remove the animals.
- To limit disturbance to the migratory birds, tree removal (and limbing) and grading should be carried out between September 1 and March 31, unless a survey by a qualified biologist confirms that there are no active nests within the tree to be removed or ground cover to be altered.
- The Contractor shall not destroy the active bird nests (nests with eggs or young birds), or wound or kill birds, of species protected under the Migratory Birds Convention Act, 1994 and/or Regulations under that Act. When active nests are encountered the contractor shall contact a qualified biologist and/or the OMNRF Midhurst District for direction.

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## 8.2 NATURAL HERITAGE FEATURE - PSW

The following is recommended to ensure that impacts to the Wye Marsh PSW and associated watercourse do not occur:

- Temporary SiltSoxx™ should be employed between the proposed development culvert in the south-east corner of the site to reduce or eliminate the transport of sediment, nutrients, and contaminants into the ditch and associated drainage to the PSW.
- Fencing should be properly installed before work on the site begins and should be inspected at regular intervals and after significant rain events to confirm it is functioning properly. If any section is found to be damaged or non-functional it should be replaced immediately. Fencing should be regularly cleared of silt/sand accumulation to ensure the integrity of erosion prevention/sediment containment measures.

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## 8.3 HYDROLOGICAL FEATURES

The following is recommended to ensure that impacts to the surface and ground water do not occur:

- Ensure a Spills Management Plan (including materials, instructions regarding their use, education of contract personnel, emergency contact numbers) is onsite always for implementation in the event of an accidental spill during the remedial activities. Adequate measures to prevent or capture and contain debris and spills resulting from remedial activities should be kept onsite in sufficient quantities. Staff should be orientated as to the location of materials and their proper use and disposal. Measures and procedures should conform to pertinent provincial requirements.
- Temporarily store, handle, and dispose of materials used or generated (e.g. organics, soils, woody debris, and temporary stockpiles) during site preparation in a manner that prevents their entry into naturalized areas in the vicinity of the grading site, including the ditch systems.
- Operating, refuelling and maintenance of equipment and the handling and storage of toxic materials (e.g. fuel, lubricants, and other chemicals) must be carried out in such a way as to avoid contamination of soils, groundwater and surface waters. Storage of large quantities of fuel should not be permitted on the site. Emergency spill kits also should be maintained at the site.
- All parts of equipment shall be free of fluid leaks and externally cleaned/degreased offsite, in a contained environment.
- All sediment-laden waters are to be passed through filter bags and released over a vegetated area for a distance of 30 m before re-entering a surface water feature. Any areas devoid of vegetation post-remediation should be re-vegetated through plantings to minimize the potential for overland siltation. SiltSoxx™ should remain in place until a minimum of 75% vegetation coverage has been established.

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## 8.4 SPECIES OF CONSERVATION CONCERN

The following general recommendations are proposed to reduce impacts to SAR on, and within 120 m of, the site:

- If a SAR is encountered within or adjacent to the construction site, work shall stop, and the administrative ministry for the ESA shall be contacted immediately.
- Re-vegetation plantings in open areas shall include Common Milkweed to replace the loss of breeding habitat for Monarch.
- Tree removal shall occur between November 1 and April 1 to avoid harming SAR bats.

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## 8.5 TREE PRESERVATION

The following mitigation measures are recommended to reduce or eliminate impacts caused the removal of site trees.

- Any tree with a diameter of over 10 cm DBH shall be identified and assessed if preservation is reasonably possible. Dead, diseased, or hazardous trees are exempt unless identified as potential habitat features (e.g. roosting for SAR Bats).
- A landscape plan should be developed which incorporates as many trees and shrubs as reasonable possible to increase buffers between the site footprint and natural areas (e.g. the Hedgerow).
- Tree and shrubs selected to be planted is recommended to be native species and not a cultivar or variety.

## 9 CONCLUSIONS

The proponent of 16928 Highway 12, Midland, ON wishes to construct 5 story hotel, conference center and 329 space parking lot totaling a foot print of 19,579.71 m<sup>2</sup> (Appendix A).

The site is development may impact SAR bat day roosting habitat, however, this can be alleviated if vegetation timing removals are implemented. Timing windows for vegetation removal should also be implemented to protect Migratory Birds under the MBCA. Monarch habitat, and potential siltation of the Wye Marsh PSW may also be impacted by the proposed development. These impacts will be greatly reduced with the implementation of mitigation measures provided in Section 8. There are no other impacts, on or adjacent to the site, expected for any other NHFs as defined in the PPS (OMMRA, 2014).

The dominant vegetation features on the site comprised of historically disturbed sites of the Willow Mineral Ticket Swamp Type (SWT2-2) and Dry-Moist Old Field Meadow Type (CUM1-1). Removal of these vegetation types are expected to have negligible impacts on significant vegetation in the area. The Hedgerow on Site was found to containing several mature trees including Northern Red Oak of significant size and ecological importance. Further investigation on ways to preserve these trees is reasonably possible has been recommended.

The site also falls within the boundary several Hydrological Features including being situated in a Highly Vulnerable Aquifer Area, which is protected under the PPS (OMNRF, 2014). A hydrological assessment of these impacts and mitigation measures is provided in the 16928 Highway 12 Stormwater Management report, by WSP under a separate cover.

Based upon the results of the background review and site investigation, as well as consultation with the client and regulating agencies, it is our opinion that the proposed development will not adversely affect the ecological integrity of the area and is considered feasible with the implementation of the recommendations in Section 8 of this report.

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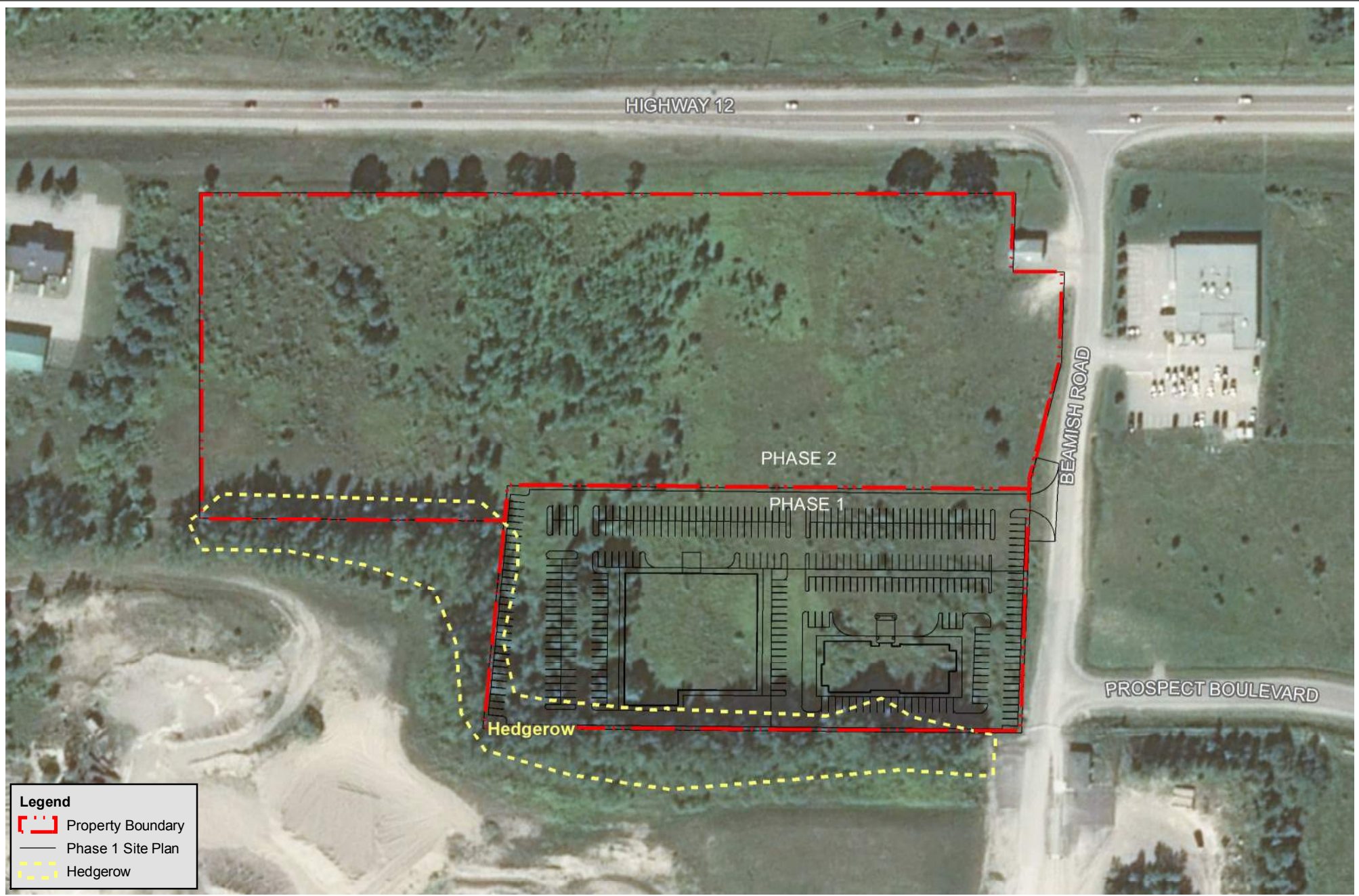
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# APPENDIX

**A**

SITE PLAN

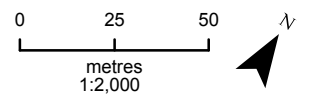




**Legend**  
- - - Property Boundary  
— Phase 1 Site Plan  
- - - Hedgerow



COLAND DEVELOPMENT CORPORATION  
HIGHWAY 12 EIS – MIDLAND, ONTARIO  
**Site Plan**



Date: January 2019  
Project No: 18M-01620-00  
Appendix A Figure 1



# APPENDIX

**B**

SAR SCREENING  
TABLE



Species	ESA Status <sup>1</sup> and Regional Occurrence	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Likelihood and Magnitude of Impacts to Species or Habitat
Birds				
<b>Bank Swallow</b> ( <i>Riparia riparia</i> )	THR	It nests in a wide variety of naturally and anthropogenically created vertical banks, which often erode and change over time including aggregate pits and the shores of large lakes and rivers (MNRF Guelph - Waterloo List, 2014)	Low- suitable nesting habitat was not identified on site although this species may use the property as foraging grounds. Nesting habitat may be available in adjacent aggregate site	Minimal - Possible removal of foraging grounds.
<b>Bobolink</b> ( <i>Dolichonyx oryzivorus</i> )	THR	Generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
<b>Eastern Meadowlark</b> ( <i>Sturnella magna</i> )	THR	Generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
<b>Short-eared Owl</b> ( <i>Asio flammeus</i> )	SC	Generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields (MNRF Guelph - Waterloo List, 2014)	Low- This species may use the site as foraging grounds but the site is too small to support nesting.	Minimal - Possible removal of foraging grounds.
<b>Common Nighthawk</b> ( <i>Chordeiles minor</i> )	SC	Generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops) (MNRF Guelph - Waterloo List, 2014)	Low- May use the site as foraging grounds, but not for nesting.	Minimal - Possible removal of foraging grounds.
<b>Eastern Whip-poor-will</b> ( <i>Caprimulgus vociferus</i> )	THR	Generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas (MNRF Guelph - Waterloo List, 2014)	None- This species may nest in the general area, but suitable habitat was not identified on site.	None- species would not be present.
<b>Chimney Swift</b> ( <i>Chaetura pelagica</i> )	THR	Historically found in deciduous and coniferous, usually wet forest types, all with a well-developed, dense shrub layer; now most are found in urban areas in large uncapped chimneys (MNRF Guelph - Waterloo List, 2014)	Low- May use the site as foraging grounds, but not for nesting.	Minimal - Possible removal of foraging grounds.
<b>Red-headed Woodpecker</b> ( <i>Melanerpes erythrocephalus</i> )	SC	Generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks (MNRF Guelph - Waterloo List, 2014)	Low- This species may nest in the general area and use the site as foraging grounds.	Minimal - Possible removal of foraging grounds.

Species	ESA Status <sup>1</sup> and Regional Occurrence	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Eastern Wood-pewee</b> ( <i>Contopus virens</i> )	SC	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
<b>Barn Swallow</b> ( <i>Hirundo rustica</i> )	THR	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc. (MNRF Guelph - Waterloo List, 2014)	Low- This species may use the site as foraging grounds, but suitable nesting area did not exist on the property.	Minimal - Possible removal of foraging grounds.
<b>Canada Warbler</b> ( <i>Cardellina canadensis</i> )	SC	Generally prefers wet coniferous, deciduous and mixed forest types, with a dense shrub layer. Nests on the ground, on logs or hummocks, and uses dense shrub layer to conceal the nest (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
<b>Cerulean Warbler</b> ( <i>Setophaga cerulea</i> )	THR	Generally found in mature deciduous forests with an open understory; also nests in older, second-growth deciduous forests (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
<b>Evening Grosbeak</b> ( <i>Coccothraustes vespertinus</i> )	SC	During the breeding season, the Evening Grosbeak is generally found in open, mature mixed-wood forests dominated by fir species, White Spruce and/or Trembling Aspen. Its abundance is strongly linked to the cycle of its primary prey, the Spruce Budworm. Outside the breeding season, the species depends mostly on seed crops from tree species in the boreal forest such as firs and spruces. It is also attracted to ornamental trees that have seeds or fruit, and may visit bird feeders (MECP, 2019).	None- Habitat not present.	None- species would not be present.
<b>Golden-winged Warbler</b> ( <i>Vermivora chrysoptera</i> )	SC	Generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
<b>Grasshopper Sparrow</b> ( <i>Ammodramus savannarum</i> )	SC	Medium to large grasslands with grasses of intermediate height in both native and tame grasslands including agricultural fields and cattle pastures (COSEWIC 2013b)	None- Habitat not present.	None- species would not be present.
<b>Henslow's Sparrow</b> ( <i>Ammodramus henslowii</i> )	END	Generally found in old fields, pastures and wet meadows. They prefer areas with dense, tall grasses, and thatch, or decaying plant material (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
<b>Loggerhead Shrike</b> ( <i>Lanius ludovicianus</i> )	END	Generally prefer a combination of pasture or other grassland with scattered low trees and shrubs. They build their nests in small trees or shrubs (MNRF Guelph - Wellington List, 2015).	Low – There are small patches of meadow and, low trees and shrubs but species' range is currently extremely limited.	None- species unlikely to occupy site.
<b>Olive-sided Flycatcher</b> ( <i>Contopus cooperi</i> )	SC	Generally prefers natural forest edges and openings adjacent to rivers or wetlands. Commonly nest in conifers such as White and Black Spruce, Jack Pine and Balsam Fir. (MNRF Guelph - Wellington List, 2015)	None- Habitat not present.	None- species would not be present.

Species	ESA Status <sup>1</sup> and Regional Occurrence	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Wood Thrush</b> ( <i>Hylocichla mustelina</i> )	SC	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
Insects				
<b>Monarch</b> ( <i>Danaus plexippus</i> )	SC	Exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces (MNRF Guelph - Waterloo List, 2014)	High- Milkweed was observed during field investigations and the species may breed and forage on site.	High – It is likely that foraging and reproductive sites will be removed.
<b>West Virginia White</b> ( <i>Pieris virginiensis</i> )	SC	Generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort ( <i>Cardamine diphylla</i> ), which is a small, spring-blooming plant of the forest floor (MNRF Guelph - Waterloo List, 2014)	None- Habitat not present.	None- species would not be present.
Mammals				
<b>Eastern Small-footed Bat</b> ( <i>Myotis leibii</i> )	END	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark (MNRF Guelph - Waterloo List, 2014)	Moderate - Trees with loose bark were identified on site.	Moderate- Possible loss of roost habitat from tree removal.
<b>Little Brown Bat</b> (Little Brown Myotis) ( <i>Myotis lucifugus</i> )	END	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh) (MNRF Guelph - Waterloo List, 2014)	Moderate- Suitable trees with roost features were identified on site.	Moderate- Possible loss of day roost habitat from tree removal.
<b>Northern Long-eared Bat</b> (Northern Myotis) ( <i>Myotis septentrionalis</i> )	END	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Often associated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.) (MNRF Guelph - Waterloo List, 2014)	Moderate- Suitable trees with roost features were identified on site.	Moderate- Possible loss of day roost habitat from tree removal.
<b>Tri-colored Bat</b> ( <i>Perimyotis subflavus</i> )	END	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius. Maternal Roosts: Manmade structures or tree cavities. Foraging over still water, rivers, or in forest gaps (COSEWIC 2013f)	Moderate- Suitable trees with roost features including dead leaf clusters were identified on site.	Moderate- Possible loss of day roost habitat from tree removal.
Plants				
<b>Butternut</b> ( <i>Juglans cinerea</i> )	END	Generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows (MNRF Guelph - Waterloo List, 2014).	Moderate - may occur on well-drained portions of the site.	None- no species observed during field investigations.

Species	ESA Status <sup>1</sup> and Regional Occurrence	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Eastern Prairie Fringed Orchid</b> ( <i>Platanthera leucophaea</i> )	END	Grows in wetlands, fens, swamps and tallgrass prairie. It has been found in ditches and railroad rights of way. (MNRF Species Profile Online 2014).	Low - Although not ideal, this species may be supported by the CUM community on the site.	Minimal - It is unlikely that this species may find suitable habitat on site.
<b>Hill's Thistle</b> ( <i>Cirsium pumilum</i> )	THR	In Ontario, Hill's Thistle is found in open alvar grasslands, surrounded by forests of Jack Pine, White Spruce, and Eastern White Cedar. Alvars are flat areas of limestone bedrock with very shallow soil and vegetation consisting of scattered trees, shrubs and grasses. This sun-loving thistle is also found in prairie and sand dunes. These are all rare habitats in Ontario, characterized by open and sunny conditions (MNRF Species Profile Online 2014).	None- Habitat not present.	None- species would not be present.
<b>Spotted Wintergreen</b> ( <i>Chimaphila maculata</i> )	END	Generally grows in sandy habitats in dry-mesic oak-pine woods. In Canada, they grow very close to the Great Lakes (MNRF Guelph - Hamilton List, 2013).	None- Habitat not present.	None- species would not be present.
<b>Forked Three-awned Grass</b> ( <i>Aristida basiramea</i> )	END	Grows on open, bare ground or in sparsely-covered grassy areas, often in bare spots between patches of other species of grasses. The maintenance of this type of habitat requires periodic disturbances, such as fire or drought, to prevent other plants from dominating the area. However, some forms of disturbance facilitate the establishment of invasive plant species that can outcompete Forked Three-awned Grass (MNRF Species Profile Online 2014).	Low - Was found in habitat near Awenda Provincial Park. Open and sandy areas are not present on site.	None- species would not be present.
Reptiles				
<b>Snapping Turtle</b> ( <i>Chelydra serpentina</i> )	SC	Generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits (MNRF Guelph - Waterloo List, 2014)	Low - Was found in Midland Little Lake Wetland PSW in 2006. Unlikely to travel from this wetland to nest in in the study area due to distance and poor habitat connectivity.	Minimal: May travel to the site to nest, may impact adult or young. Unlikely to occur.
<b>Massasauga</b> ( <i>Sistrurus catenatus</i> )	THR	Generally occur in habitats ranging from tall grass prairie to cedar bogs to shorelines. All habitats require canopies that are not too open, but they also require access to spots where they can get warm enough to effectively digest their food and reproduce. Sufficient moisture is also required for them to survive the winter, so they are often associated with wetlands or small, wet depressions in the terrain. Hibernation is underground in crevices in bedrock, sphagnum swamps, tree root cavities and animal burrows (MNRF Species Profile Online, 2014).	None- The last observation record date was from 1969 and the species is no longer considered present in the county (COSEWIC 2012).	None- species would not be present.

Species	ESA Status <sup>1</sup> and Regional Occurrence	Key Habitats Used by Species in Ontario	Reasonable Likelihood of Presence in Study Area	Likelihood and Magnitude of Impacts to Species or Habitat
<b>Northern Map Turtle</b> <i>(Graptemys geographica)</i>	SC	Generally inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day (MNRF Guelph - Waterloo List, 2014)	Low - Was found in Midland Little Lake Wetland PSW in 2006. Unlikely to travel from this wetland to nest in in the study area due to distance and poor habitat connectivity.	Minimal: May travel to the site to nest, may impact adult or young. Unlikely to occur
<b>Eastern Hog-nosed Snake</b> <i>(Heterodon platirhinos)</i>	THR	Generally prefer habitats with sandy, well-drained soil and open vegetative cover, such as open woods, brushland, fields, forest edges and disturbed sites. The species is often found near water (MNRF Guelph - Hamilton List, 2013)	None- Suitable habitat not observed on site.	None- species would not be present.
<b>Blanding's Turtle</b> <i>(Emydoidea blandingii)</i>	THR	Generally occur in freshwater lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults are generally found in open or partially vegetated sites, and juveniles prefer areas that contain thick aquatic vegetation including sphagnum, water lilies and algae. They dig their nest in a variety of loose substrates, including sand, organic soil, gravel and cobblestone. Overwintering occurs in permanent pools that average about one metre in depth, or in slow-flowing streams (MNRF Guelph - Waterloo List, 2014)	Low- May occur in Midland Little Lake Wetland PSW and travel to the Hwy 12 embankment in the study area, but the last observation record date was from 1986.	Minimal- species unlikely to be present.
<b>Stinkpot (Eastern Musk Turtle)</b> <i>(Sternotherus odoratus)</i>	SC	Found in ponds, lakes, marshes and rivers that are generally slow-moving, have abundant emergent vegetation, and muddy bottoms. Nesting is in soil, decaying vegetation and rotting wood close to the water and exposed to direct sunlight (MNRF Species Profile Online 2014).	None- Site is not close enough to habitat that would support this species.	None- species would not be present.
<b>Eastern Foxsnake (Georgian Bay)</b> <i>(Pantherophis gloydi)</i>	THR	Generally prefers forests, early successional (old field, prairie, marsh, dune-shoreline) habitat during the active season. Hedgerows bordering farm fields and riparian zones along drainage canals are regularly used. The species is most often found near water (MNRF Guelph - Haldimand List 2015).	None - Not historically observed in area	None- species would not be present.



# APPENDIX

C

AGENCY

CORRESPONDENCE



## Ritchie, Shannon

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**From:** Shirley, Brent (MNRF) <brent.shirley@ontario.ca>  
**Sent:** Friday, November 09, 2018 11:06 AM  
**To:** Ritchie, Shannon  
**Subject:** RE: Request for Information Form for 16928 Hwy 12, Midland

Hi Shannon,

Thank you for inquiry into MNRF's data holdings. Please consider the following.

The province has centralized and made publicly available digital and species data that lends to inform data needs such as the information requests we receive. Given the volume of information requests we receive there is an expectation you would demonstrate some effort in compiling available information from these sources. Going forward your requirements can largely be met through the use of the following data sources and reference documents.

Digital data for natural heritage features (e.g. wetland and ANSI mapping, fish community data) can be obtained through Land Information Ontario and/or through the Make a Map: Natural Heritage Areas tool through LIO at ...

Land Information Ontario: <https://www.ontario.ca/page/land-information-ontario>

Make a Map: Natural Heritage Areas:

[http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR\\_NHLUPS\\_NaturalHeritage&viewer=NaturalHeritage&locale=en-US](http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US). NHIC data is also available through this interactive map tool.

Other resources to consider,

*"Atlas of the Breeding Birds of Ontario"*

*"Ontario Reptile and Amphibian Atlas"*

We do not have data for additional occurrences of species at risk beyond what you will find through the NHIC/LIO in the immediate area of your study area. However, as you are likely aware the species at risk records found in the NHIC database are not exhaustive and are based on **known** occurrences only. As a result, although there may be no record (or confirmation) of a species at risk on site it does not mean that they are not present if appropriate habitat exists. Due diligence is therefore still required and would include an appropriate consideration of what species could be present based on available habitat on and adjacent to your study site. Your field work should inform you on what species on the SARO list could possibly be encountered based on available habitats in the area of the study and the possible survey methodologies required during your site assessments.

Based on the habitat available on site and SAR occurrence date you should consider eastern meadowlark and bobolink in the EIS.

Evaluating for other natural heritage values for example candidate significant wildlife habitats (SWH) will be informed by direction in the Natural Heritage Reference Manual, the Significant Wildlife Habitat Technical Guide and SWH Criteria Schedule for Ecoregion 6E. Similarly to SAR occurrence reports, that mapping for natural heritage features might not be available is not indicative they are not on site, rather the assessments to identify them have not been done. Your field work will inform your review of the property for natural heritage features and functions.

If you require specific information with respect to species and natural heritage features identified in your preliminary review please [midhurstinfo@ontario.ca](mailto:midhurstinfo@ontario.ca) with the specific request.

Threatened and endangered species and their habitat are protected under the Endangered Species Act (ESA). Avoidance and mitigation measures may need to be considered for the project. The proponent should be aware that approvals under the ESA may be required for this project. Additional information on Species at Risk including guides, resources, permits, authorizations and overall benefit information can be obtained at: <https://www.ontario.ca/page/species-risk>

Thanks for your inquiry.

Regards,

*Brent Shirley*

A/ Management Biologist  
Midhurst District Ministry of Natural Resources & Forestry  
2284 Nursery Rd  
Midhurst, ON  
L9X 1N8

Phone- 705-725-7547

Fax- 705-725-7584

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**From:** Ritchie, Shannon [<mailto:shannon.ritchie@wsp.com>]  
**Sent:** November-05-18 4:47 PM  
**To:** MIDHURSTINFO (MNRF)  
**Subject:** Request for Information Form for 16928 Hwy 12, Midland

Hello,

Please find the attached Request for Information Form for 16928 Hwy 12, Midland.

Happy to answer any questions or concerns you may have.

Kind Regards,  
Shannon

**Shannon Ritchie, M.Sc., ENV SP.**  
Terrestrial Ecologist  
Ecology & Environmental Impact Assessment (EIA)



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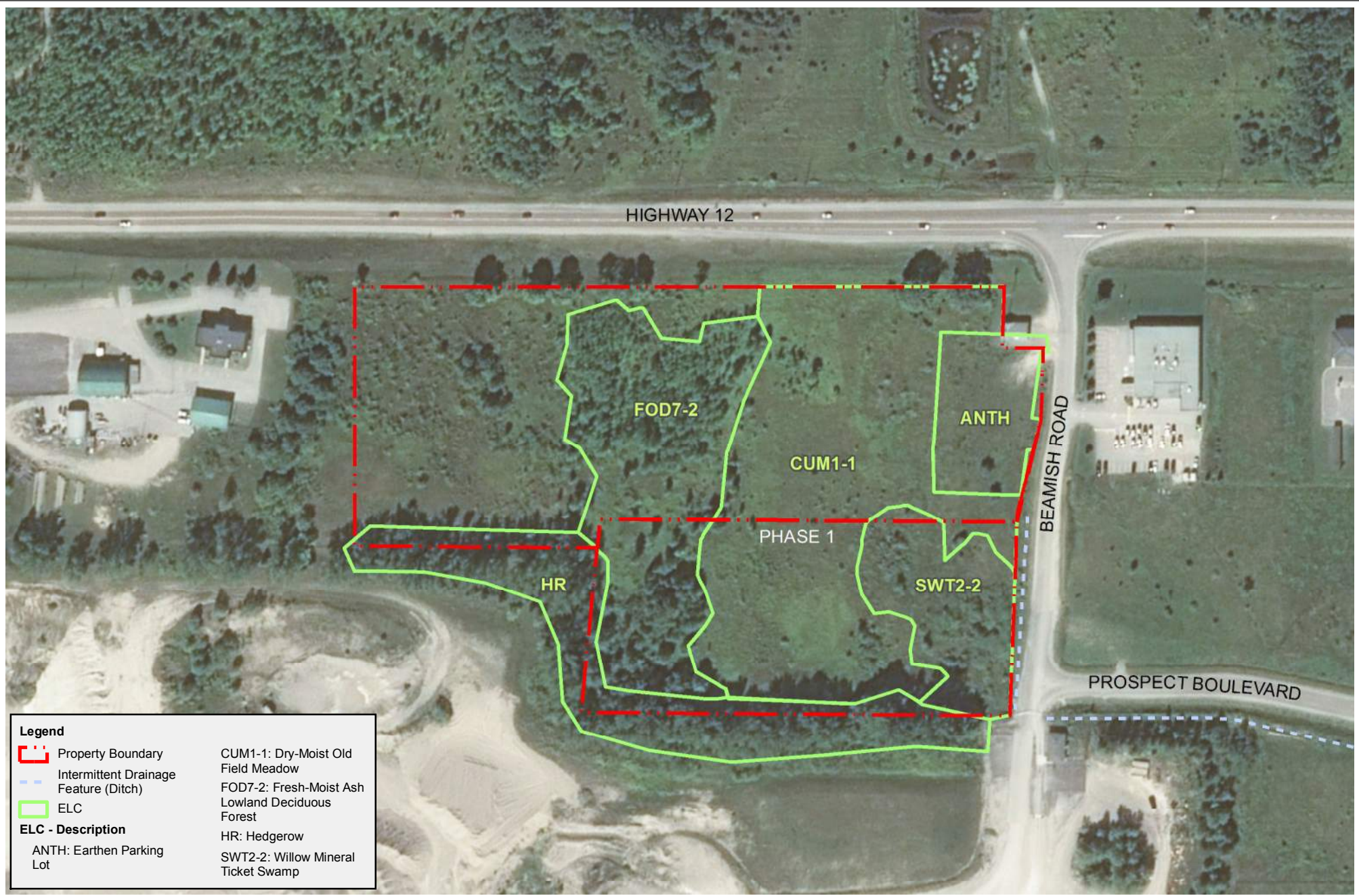
-LAEmHhHzdJzBITWfa4Hgs7pbKl

# APPENDIX

**D**

ECOLOGICAL LAND  
CLASSIFICATION





**Legend**

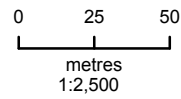
- - - Property Boundary
- - - Intermittent Drainage Feature (Ditch)
- ELC

**ELC - Description**

- ANTH: Earthen Parking Lot
- CUM1-1: Dry-Moist Old Field Meadow
- FOD7-2: Fresh-Moist Ash Lowland Deciduous Forest
- HR: Hedgerow
- SWT2-2: Willow Mineral Ticket Swamp



**COLAND DEVELOPMENT CORPORATION  
HIGHWAY 12 EIS – MIDLAND, ONTARIO  
Ecological Land Classification**



Date: January 2019  
Project No: 18M-01620-00  
Appendix D Figure 1



# FIGURES

**E**

SAR BAT HABITAT  
ASSESSMENT



# Maternity Roost Trees for

## Little Brown Myotis / Northern Myotis

Include all live and dead standing trees  $\geq 10$ cm DBH.

Project Name: Highway 12, Midland NHE

Survey Date(s): October 17, 2018

Project Number: 18M-01620-00-EC1-EIS

Time (Start / End): 1:30 p.m. – 5:00 p.m.

ELC Ecosite / Site Name: Cultural Woodland / Cultural Meadow

Observer(s): Patricia Mohr and Shannon Ritchie

Tree #	Tree Species ID	DBH (cm)	Height Class <sup>1</sup>	Snag Attributes & Decay Class	Easting	Northing	Notes (include photo # and cavity heights <sup>3</sup> )
1M	Northern Red Oak	149.0	1	Cavity; loose bark; decay <3	588750	4952942	3-stem; 7164, 7166-7; Photo page Figure 1 to 3
2M	Northern Red Oak	72.0	1	Cavity; decay <3	588727	4952922	10m high; 7168 Photo page Figure 4 to 5
3M	American Basswood	59.0	1	Cavity; decay <3	588727	4952918	2m to 9m high; 7172-4 Photo page Figure 6 to 8
4M	Northern Red Oak	70.0	1	Cavity; loose bark; decay <3	588679	4952892	5m high; 7176-81 Photo page Figure 9 to 13
5M	Northern Red Oak	67.0	1	Cavity; decay <3	588665	4952891	At base + 4m high; 7183-90 Photo page Figure 14 to 15
6M	Northern Red Oak	78.5	2	Cavity; loose bark; decay <3	588653	4952878	5m high; 7191-5 Photo page Figure 16 to 19
7M	American Basswood	160.0	1	Cavity; decay <3	588643	4952928	5-stem; 5m high; 7206-8 Photo page Figure 20 to 21
8M	Sugar Maple	85.0	1	Cavity; decay <3	588471	4952860	4m high; 7211-14 Photo page Figure 22 to 24
9M	Sugar Maple	31.0	1	Cavity; knothole; decay <3	588484	4953015	2-stem, other stem 48 cm dbh; 2m, 4m high; 2717-9
10M	Sugar Maple	71.0	1	Cavity; decay <3	588513	4953030	5m high; 7220-1 Photo page Figure 25 to 26

<sup>1</sup> **Height Class:** 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy);

<sup>2</sup> **Decay Class:** 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact; 4 = Recently dead, bark peeling, only large branches intact; 5 = Older dead tree, 90% of bark lost, few branch stubs, broken top; 6 = Very old tree, advanced decay, no branches, parts of stem have rotted away.

<sup>3</sup> The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".



# Maternity Roost Trees for

## Little Brown Myotis / Northern Myotis

Include all live and dead standing trees  $\geq 10$ cm DBH.

Project Name: Highway 12, Midland NHE

Survey Date(s): October 17, 2018

Project Number: 18M-01620-00-EC1-EIS

Time (Start / End): 1:30 p.m. – 5:00 p.m.

ELC Ecosite / Site Name: Cultural Woodland / Cultural Meadow

Observer(s): Patricia Mohr and Shannon Ritchie

Tree #	Tree Species ID	DBH (cm)	Height Class <sup>1</sup>	Snag Attributes & Decay Class	Easting	Northing	Notes (include photo # and cavity heights <sup>3</sup> )
11M	Northern Red Oak	87.0	1	Loose bark; decay <3	588681	4953123	170406-7
12M	American Basswood	32.0	1	Loose bark; crack; decay <3	588668	4953128	170409-10
13M	American Basswood	37.0, 36.0	1	Cavity; crack; knothole; decay <3	588657	4953123	2m & 1m high; 2-stem; 170412-5
14M	American Basswood	35.0	1	Loose bark; knothole; decay <3	588568	4953068	170419-21
15M	Sugar Maple	35, 35, 35	1	Cavity; loose bark; crack; decay <3	588544	4953052	5m, 5m & 2m high; 3-stem; 170423-7
16M	Sugar Maple	35, 35	1	loose bark; decay >3	588541	4953048	170429-33
17M	American Basswood	40.0	1	Cavity; decay <3	588537	4953041	5m & 2m high; 170435-6
18M	Snag (species unknown)	24.0	3	Loose bark; decay >3	588534	4953037	170435-40

<sup>1</sup> **Height Class:** 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy);

<sup>2</sup> **Decay Class:** 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact; 4 = Recently dead, bark peeling, only large branches intact; 5 = Older dead tree, 90% of bark lost, few branch stubs, broken top; 6 = Very old tree, advanced decay, no branches, parts of stem have rotted away.

<sup>3</sup> The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".



# Maternity Roost Trees for Tri-colored Bat

Include all oak trees  $\geq 10\text{cm}$  DBH (if present). If oaks are absent, include maples  $\geq 10\text{cm}$  DBH IF dead/dying leaf clusters are present; and maples  $> 25\text{cm}$  DBH if no dead/dying leaf clusters are present.

Project Name: Highway 12, Midland NHE

Survey Date(s): October 17, 2018

Project Number: 18M-01620-00-EC1-EIS

Time (Start / End): 1:30 p.m. – 5:00 p.m.

ELC Ecosite / Site Name: Cultural Woodland / Cultural Meadow

Observer(s): Patricia Mohr and Shannon Ritchie

Tree #	Tree Species ID	Tree Status (live/dead)	DBH (cm)	Tree Attributes	Easting	Northing	Notes (include photo #)
1T	Northern Red Oak	Live	70.0	Dead/dying leaf cluster; open area	See Page 1, Tree 4M		
2T	Northern Red Oak	Live	78.5	Dead/dying leaf cluster; open area	See Page 1, Tree 6M		
3T	Northern Red Oak	Live	19.0	Dead/dying leaf cluster; open area	588631	4952885	7196
4T	Northern Red Oak	Live	12.0	Dead/dying leaf cluster; open area	588631	4952885	7197
5T	Northern Red Oak	Live	25.0	Dead/dying leaf cluster; open area	588630	4952879	7198
6T	Northern Red Oak	Live	23.0	Dead/dying leaf cluster; open area	588630	4952879	2-stem, both same dbh; 7199
7T	Northern Red Oak	Live	18.0	Dead/dying leaf cluster; open area	588638	4952898	7200
8T	Northern Red Oak	Live	32.0	Dead/dying leaf cluster; open area	588638	4952898	7201-3
9T	Northern Red Oak	Live	28.0	Dead/dying leaf cluster; open area	588638	4952898	
10T	Northern Red Oak	Live	25.0	No leaf cluster; open area	588642	4952923	7204-5
11T	Northern Red Oak	Live	15.0	No leaf cluster; open area	588640	4952925	7209

Incidental Observations / Comments:



# Maternity Roost Trees for Tri-colored Bat

Include all oak trees  $\geq 10$ cm DBH (if present). If oaks are absent, include maples  $\geq 10$ cm DBH IF dead/dying leaf clusters are present; and maples  $> 25$ cm DBH if no dead/dying leaf clusters are present.

Project Name: Highway 12, Midland NHE

Survey Date(s): October 17, 2018

Project Number: 18M-01620-00-EC1-EIS

Time (Start / End): 1:30 p.m. – 5:00 p.m.

ELC Ecosite / Site Name: Cultural Meadow

Observer(s): Patricia Mohr and Shannon Ritchie

Tree #	Tree Species ID	Tree Status (live/dead)	DBH (cm)	Tree Attributes	Easting	Northing	Notes (include photo #)
12T	Northern Red Oak	Live	19.0	No leaf cluster; open area	588629	4952933	7210
13T	Northern Red Oak	Live	149.0	No leaf cluster; open area	See Page 1, Tree 1M		
14T	Northern Red Oak	Live	72.0	No leaf cluster; open area	See Page 1, Tree 2M		
15T	Northern Red Oak	Live	67.0	No leaf cluster; open area	See Page 1, Tree 5M		
16T	Northern Red Oak	Live	87.0	No leaf cluster; open area	See Page 1, Tree 11M		

Incidental Observations / Comments:





Figure 1: Tree 1M/13T, lower portion.



Figure 2: Tree 1M/13T, cavity.



Figure 3: Tree 1M/13T, loose bark.





Figure 4: Tree 2M/14T, lower portion.



Figure 5: Tree 2M/14T, upper portion.





Figure 6: Tree 3M, lower portion.



Figure 7: Tree 3M, cavity.



Figure 8: Tree 3M, upper portion.





Figure 10: Tree 4M/1T, loose bark.



Figure 12: Tree 4M/1T, upper canopy.



Figure 9: Tree 4M/1T, lower portion.



Figure 11: Tree 4M/1T, dead leaf cluster.



Figure 13: Tree 4M/1T, dead leaf clusters.





Figure 14: Tree 5M/15T, upper portion.



Figure 15: Tree 5M/15T, cavity in lower





Figure 17: Tree 6M/2T, upper portion.



Figure 18: Tree 6M/2T, loose bark.



Figure 16: Tree 6M/2T, lower portion.

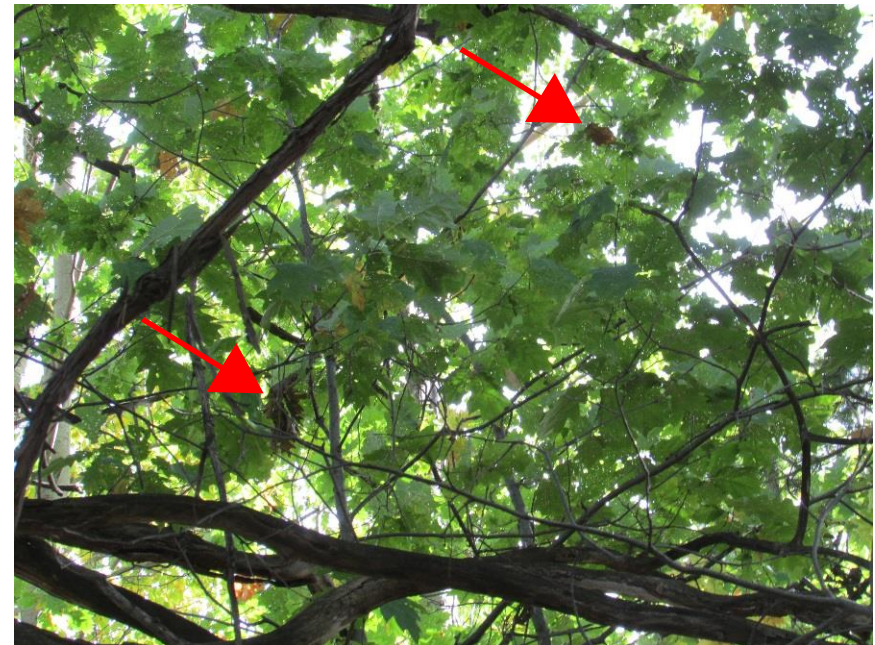


Figure 19: Tree 6M/2T, dead leaf clusters.





Figure 20: Tree 7M, lower portion.



Figure 21: Tree 7M, cavity.





Figure 22: Tree 8M.



Figure 23: Tree 8M, cavities.



Figure 24: Tree 8M, cavities.



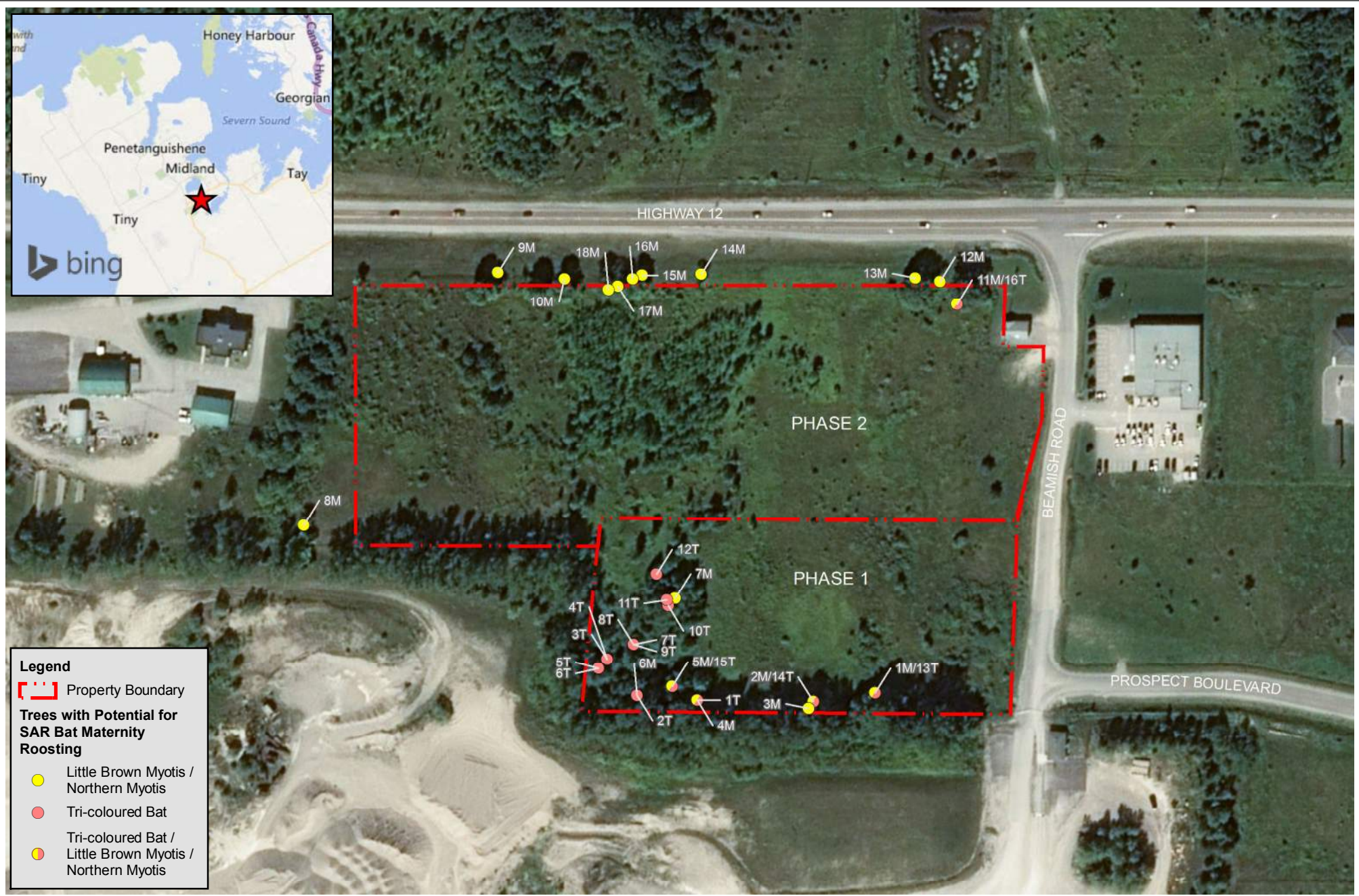


*Figure 25: Tree 10M, upper portion.*

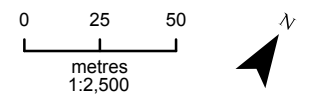


*Figure 26: Tree 10M, cavity.*





COLAND DEVELOPMENT CORPORATION  
 HIGHWAY 12 NHE – MIDLAND, ONTARIO  
**SAR Bat Maternity Roosting Potential**



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 Figure No: 1