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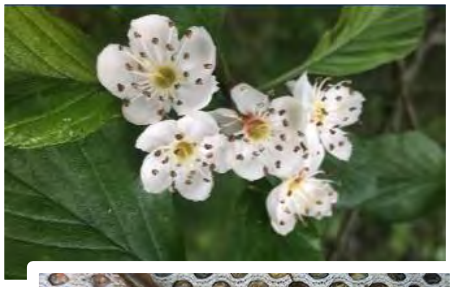
Species at Risk

Project Management

Environmental Impact Assessment

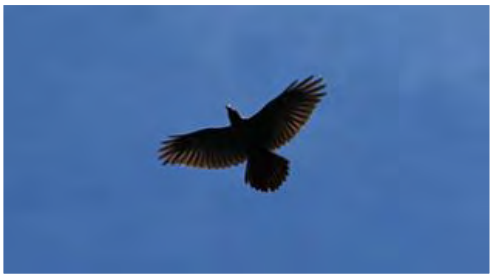
Water and Wastewater Engineering

Environmental Site Inspection / Construction Monitoring











Scoped Environmental Impact Study (Version 2)

316 Grange Road

City of Guelph

Prepared for 1001232683 Ontario Inc.

AEC Project No. 25-341 | October 2026

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

October 20, 2026 AEC 25-341

1001232683 Ontario Inc.

Attention: Joe Harris, Project Director, Land Development

Re: **Scoped Environmental Impact Study for a Proposed Development on 316 Grange Road, City of Guelph**

Joe Harris:

Azimuth Environmental Consulting, Inc. was retained to provide a Scoped Environmental Impact Study (EIS) report for the proposed development of a residential subdivision at 316 Grange Road, City of Guelph. The purpose of this report is to provide the City and other review agencies with an understanding of natural environmental conditions and potential for impacts related to the proposed development on significant natural heritage features and functions of the property and adjacent lands. This report also documents the natural environmental features present within the property and adjacent lands with regard to Species at Risk and their habitats. The purpose of this EIS Version 2 (October 2026) is to address comments provided by the City of Guelph following its review of the initial EIS submission (January 2026). This revised version incorporates the requested updates and supersedes the original submission in its entirety.

Should you have any questions or require additional information please do not hesitate to contact the undersigned.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

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1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by 1001232683 Ontario Inc. (the "proponent") to undertake a Scoped Environmental Impact Study (EIS) for a proposed residential subdivision development on 316 Grange Road within the City of Guelph (the "City"). A map illustrating the limits of the proposed development in its regional context is shown on Figure 1. It is our understanding that the City has requested that a EIS be undertaken to document natural features within the property and on adjacent lands. The purpose of this EIS Version 2 (October 2026) is to address comments provided by the City of Guelph following its review of the initial EIS submission (January 2026). This revised version incorporates the requested updates and supersedes the original submission in its entirety.

The purpose of this EIS is to identify the candidate natural heritage features and functions present within the study area and address potential impacts to candidate natural heritage features and functions. A review of background information in combination with a single site visit was undertaken in November 2025 to identify significant natural heritage features and functions. This report also examines potential for Species at Risk (SAR) protected under the *Endangered Species Act,* 2007 (ESA) within the study area. The potential for negative impacts to natural heritage features resulting from the proposed development is considered and recommendations for avoidance and mitigation are provided.

For the purposes of this EIS, the study area described in this report includes the proposed development area and adjacent lands (within approximately 120 metres (m)) of the proposed development limits. Natural features in the overall planning area beyond the defined study area limits are discussed where applicable throughout this report.

2.0 PLANNING CONTEXT

2.1 Provincial Planning Statement (2024)

The Provincial Planning Statement (PPS) (MMAH, 2024) outlines policies related to natural heritage features (Section 4.1) and water resources (Section 4.2). Ontario's *Planning Act*, (1990) requires that planning decisions shall be consistent with the PPS. The study area for this assessment is located entirely within **Ecoregion 6E**. According to the PPS development and site alteration shall not be permitted in:

- *Significant wetlands* in Ecoregions 5E, 6E and 7E; and,
- *Significant coastal wetlands*.

Similarly, Section 4.1.5 of the PPS states that, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions, development and site alteration shall not be permitted within:

a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E; and 7E;
b) *significant woodlands* in Ecoregions 6E; and 7E;
c) *significant valleylands* in Ecoregions 6E; and 7E;
d) *significant wildlife habitat*;
e) *significant areas of natural and scientific interest*; and,
f) *coastal wetlands* in Ecoregions 5E, 6E; and 7E that are not subject to policy 4.1.4(b).

It is ultimately the responsibility of the Province and/or the Municipality to designate areas identified within Section 4.1.4 and 4.1.5 of the PPS as "significant".

Section 4.1.6 of the PPS states that development and site alteration is not permitted in fish habitat except in accordance with federal and provincial requirements.

Section 4.1.7 of the PPS states that development and site alteration shall not be permitted in the habitat of Threatened and Endangered species, except in accordance with provincial and federal requirements.

Furthermore, under Section 4.1.8 of the PPS, no development or site alteration will be permitted on lands adjacent to natural heritage features and areas identified in policies 4.1.4, 4.1.5 and 4.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated there will be no negative impacts on the natural features and their ecological functions.

2.2 Endangered Species Act, 2007

Ontario's *Endangered Species Act,* 2007 (ESA) provides regulatory protection to Endangered and Threatened species prohibiting harm and/or killing of individuals and destruction of their habitats. On June 4, 2025, the province of Ontario adopted *Bill 5, Protect Ontario by Unleashing Our Economy Act, 2025* ("Bill 5"), which received Royal Assent the following day. Bill 5 amends the provincial ESA and provides a modified definition of "habitat" under the provincial ESA, as follows:

"*"habitat" means, subject to subsection (3),*

(a) in respect of an animal species,

(i) a dwelling-place, such as a den, nest or other similar place, that is occupied or habitually occupied by one or more members of a species for the purposes of breeding, rearing, staging, wintering or hibernating, and

(ii) the area immediately around a dwelling place described in subclause (i) that is essential for the purposes set out in that subclause.

(b) in respect of a vascular plant species, the critical root zone surrounding a member of the species, and

(c) in respect of all other species, an area on which any member of a species directly depends in order to carry on its life processes; ("habitat")".

The various schedules of the ESA included under O. Reg. 230/08 identify SAR in Ontario. These include species listed as Extirpated, Endangered, Threatened and Special Concern. As noted above, only species listed as Endangered and Threatened receive protection from harm and destruction to habitat on which they depend.

2.3 City of Guelph

The City of Guelph Official Plan ("Guelph OP"; 2024) illustrates the property as "Low Density Residential" designation with lands just off the northwest corner identified as "Significant Natural Areas & Natural Areas" as per Schedule 2-Land Use Plan (Appendix A).

Schedule 4A – ANSIs and Wetlands does not map any ANSI or wetland within the study area, however does map a watercourse to the northwest of the property (Appendix A). Schedule 4B – Fish Habitat and Permanent and Intermittent Streams maps this watercourse as cool water fish habitat with associated buffers (Appendix A).

Schedule 4C- Significant Woodlands does not identify any Significant Woodlands within the study area. As per Schedule 4D – Significant Valleylands & Significant Landforms the watercourse to the northwest of the property is identified as Significant Valleyland – Undeveloped Portion of the Regulatory Floodplain.

2.4 Grand River Conservation Authority (GRCA)

Regulated lands are subject to O. Reg. 41/24 – "Prohibited Activities, Exemptions and Permits" under the *Conservation Authorities Act*. Under O. Reg. 41/24, the GRCA may require that

approvals be obtained for a proposed development or site alteration within areas regulated under the Conservation Authority's jurisdiction.

The GRCA regulated lands extend onto the northwestern corner of the property, however, through correspondence the GRCA has indicated they have no concerns with the development proposal and have declined to comment on the contents of this EIS (Appendix B).

2.5 Federal Fisheries Act

The *Fisheries Act* includes protections for fish and fish habitat in the form of standards, codes of practice, and guidelines for projects near water. The *Fisheries Act* provides protection against the "death of fish, other than by fishing", (Section 34.4(1)) and the "harmful alteration, disruption or destruction of fish habitat", (Section 35(1)), otherwise known as HADD. In cases where impacts to fish and fish habitat cannot be avoided, and the project does not fall within waterbodies where Fisheries and Oceans Canada (DFO) review is not required, proponents are asked to submit a request for review to their Fish and Fish Habitat Protection Program regional office to determine approval requirements. All projects are encouraged to avoid causing the death of fish and a HADD of fish habitat, using measures to protect fish and fish habitat that include standards and codes of practice for common works, undertakings and activities.

3.0 STUDY APPROACH

3.1 Field Program Summary

Azimuth attended the property on November 13, 2025 to carry out an assessment of the natural features within the study area. Prior to undertaking the field studies, an initial classification of vegetation communities was undertaken using recent air photo imagery for an area encompassing the study area. Vegetation community boundaries were then investigated in the field on November 13, 2025 and delineated as illustrated in Figure 2 shortly beyond the end of the growing season, when emergent ground cover vegetation layer was still present and snowfall had not yet occurred. Vegetation community types were classified using the Ecological Land Classification for Southern Ontario: First Approximation (ELC; Lee *et al*., 1998; Lee, 2008).

A SAR screening was undertaken for the scope of this assignment that 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 was based on air photo interpretation combined with onsite evaluation of habitats within the study area. Habitat requirements and appropriate designations (Endangered, Threatened, or Special Concern) are outlined in Table 1.

3.2 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 study area:

- Guelph OP;
- Clythe Creek Subwatershed Study Update (City of Guelph, 2025);
- Ministry of Natural Resources (MNR) Ontario Geohub, Land Information Ontario: Wildlife Values Area (MNR, 2026a);
- Ministry of Natural Resources (MNR) Ontario Geohub, Land Information Ontario: Areas of Natural and Scientific Interest (MNR, 2026b);
- MNR Natural Heritage Information Centre (NHIC; MNR, 2026c);
- MNR Fish On-Line (MNR, 2026d);
- MNR Ontario Geohub, Land Information Ontario: Aquatic resource area line segment (MNR, 2026e);
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman *et al.*, 2007);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2020);
- Ministry of the Environment, Conservation and Parks (MECP)'s Species at Risk Ontario list (MECP, 2026);
- iNaturalist (NHIC) Rare Species of Ontario (iNaturalist, 2026);
- Government of Canada's Species at Risk Public Registry; and,
- Atlas of the Mammals of Ontario (Dobbyn, 1994).

3.3 Agency Correspondence

A Terms of Reference for the above field program was provided to the City and GRCA on October 27, 2025, a record of which is available in Appendix B. The City indicated that the Terms of Reference presented by Azimuth was acceptable, while the GRCA indicated that they would be providing no comment on the study.

4.0 EXISTING CONDITIONS

4.1 Land Use

The property features lands that exhibit signs of historical agricultural use and further disturbance as a result of adjacent residential development in subsequent years. The southern portion of the property features an existing residential dwelling that is currently uninhabited and inaccessible. Surrounding the dwelling, the property is largely comprised of historically agricultural lands that are now routinely mowed. These lands feature hedgerows that follow

the property boundary on all sides. Lands to the north, east, south and west are comprised of existing residential developments, with Hadati Creek adjacent to the property on the west side. The construction of the proposed residential subdivision will occur on the entirety of the property.

A photographic record of environmental features within the study area is presented in Appendix C.

4.2 Terrestrial Resources

4.2.1 Vegetation

A field survey was undertaken to evaluate vegetation community types including representative plant species compositions on November 13, 2025. Property access was granted within the property boundary only (Figure 2), and therefore alternative survey techniques (*i.e.*"fenceline"/binocular surveys) were completed for lands located beyond the property line. Lands along the public access corridor associated with Hadati Creek were also reviewed. The site visit was undertaken by a qualified ecologist with existing knowledge related to rare, Special Concern, Threatened, and Endangered plant species with potential to occur in the area. The site assessment was focused during ELC work to ensure that appropriate effort was made to detect any federally or provincially designated species, notably SAR as identified under the ESA.

There are two (2) Elements of Occurrence (EO_ID) within 1 kilometre (km) of the study area for provincially Endangered or Threatened, or provincially rare vegetation species according to the NHIC database (MNR, 2025c).

- Butternut (Endangered); and,
- Black Ash (Endangered).

No plant species considered Endangered or Threatened were identified during the site investigation, including Butternut (*Juglans cinerea*) or Black Ash (*Fraxinus nigra*) trees. Further, no provincially rare (S1-S3) species were observed during the field program.

Vegetation communities within the study area were determined in accordance with the ELC system, and are summarized as observed below and illustrated on Figure 2.

<u>OAG: Open Agriculture</u>

The property where the proposed development is to occur is comprised of historically agricultural lands with an existing residential dwelling. The southern portion of the property features a treed hedgerow (Hedgerow A) along Grange Road comprised of White Spruce (*Picea glauca*), Eastern White Cedar (*Thuja occidentalis*), Sugar Maple (*Acer saccharum*), White Poplar (*Populus alba*) and European Buckthorn (*Rhamnus cathartica*). The ground cover features common cool season grass species, with Riverbank Grape (*Vitis riparia*), Garlic Mustard (*Alliaria petiolata*), Common Burdock (*Arctium minus*) and Tall Goldenrod (*Solidago altissima*). The adjacent hedgerow (Hedgerow B) to the north is comprised of European Buckthorn with the occasional Black Walnut (*Juglans nigra*) over maintained lands.

The northern portion of the property features a treed hedgerow (Hedgerow C) that is comprised of European Buckthorn and Manitoba Maple (*Acer negundo*), with the occasional Black Walnut. The ground cover features Riverbank Grape, Tall Goldenrod, Garlic Mustard, and Smooth Brome (*Bromus inermis*). Hedgerow (D) occurs in the north eastern portion of the property and features a sparse canopy layer comprised of Basswood (*Tilia americana*), Manitoba maple, Common Apple (*Malus pumila*) and Green Ash (*Fraxinus pennsylvanica*). The understory here is dense, dominated by European Buckthorn with a sparsely vegetated ground layer.

MEM: Mixed Meadow

This community features a meadow that appears to be historically used for agricultural purposes, but has been allowed to re-establish in recent years. It is comprised of various grass species, Wild Carrot (*Daucus carota*) and Tall Goldenrod with a small vegetated hedgerow on the west side comprised largely of Riverbank Grape with the occasional Black Walnut and Manitoba Maple.

4.2.2 Wildlife

Direct and indirect observations of wildlife (*e.g.* tracks, scat, fur) were collected as a matter of course during the November 13, 2025 site investigation. The following species and signs thereof were observed within the study area limits during the site investigation:

- Birds: Dark-eyed Junco, Blue Jay, Northern Cardinal, Mourning Dove
- Mammals: Gray Squirrel

4.3 Species at Risk

The SAR assessment (Table 1) fully considers SAR with potential to occur in the planning area. Based on this assessment in combination with vegetation communities and other

environmental features observed during the site investigation, the following species are considered below in this report:

- **Threatened or Endangered**:
  - SAR Bats (Little Brown Myotis, Northern Myotis, Tri-colored Bat, Eastern Small-footed Myotis, Eastern Red Bat, Hoary Bat, Silver-haired Bat)
- **Special Concern:**
  - Snapping Turtle
  - Yellow-banded Bumble Bee

Only species designated Threatened or Endangered receive individual and habitat protection under Section 9 and Section 10 of the ESA. Special Concern species are further discussed in the context of Significant Wildlife Habitat (Habitat for Special Concern and Rare Wildlife Species) below.

4.4 Wetlands

There are no wetlands located within the study area limits in accordance with provincial or municipal mapping resources (Appendix A).

However, the City has provided Azimuth with the Clythe Creek Subwatershed Study Update (City of Guelph, 2025) that provides current information on natural heritage and water resources in the Clythe Creek subwatershed. This study maps the addition of an Other Wetland feature to the west of the subject property (Appendix A). The Other Wetland feature was verified during the site investigation as a riparian meadow marsh (MAM) feature that occurs along the west site of Hadati Creek, west of the property boundary.

No other wetlands were documented within the study area during the field investigation.

4.5 Candidate Significant Woodland

There are no Significant Woodlands located within the study area limits in accordance with provincial or municipal mapping resources (Appendix A).

Section 4.1.3.6 of the Guelph OP defines Significant Woodlands as the following:

- *Woodlands (not identified as cultural woodlands or plantation) of 1 hectare or greater in size;*

- *Woodlands 0.5 hectare in size or greater consisting of Dry-Fresh Sugar Maple Deciduous Forest; or,*
- *Woodland types ranked as S1 (Critically Imperiled), S2 (Imperiled), or S3 (Vulnerable) by the provincial government Natural Heritage Information Centre.*

Section 12 (Glossary) of the Guelph OP defines a Hedgerow as "*Trees left standing or planted along the edge of a former or existing agricultural field or laneway to create a physical and/or visual barrier. Hedgerows also typically include trees along former fence lines*." Based on the site investigation, it is Azimuth's opinion that treed areas on the property are consistent with the definition of a Hedgerow in the Guelph OP. Section 12 of the Guelph OP also specifies that Woodlands are treed features exceeding 0.2ha in size, noting that none of the individual Hedgerows (A through D) on the property exceed the minimum size threshold for consideration as Woodland. Hedgerows identified within the study area therefore do not meet the requirements of the Guelph OP to be considered Significant Woodlands, and will not be considered Significant Woodlands throughout this assessment.

4.6 Significant Valleyland

Schedule 4D – Significant Valleylands & Significant Landform illustrates the areas associated with Hadati Creek within the study area as "Undeveloped Portions of the Regulatory Floodplain" (Appendix A). This designation is part of the Significant Valleylands mapping of the Guelph OP. Therefore, Hadati Creek and its associated Significant Valleyland will be considered as such for the purposes of this assessment.

4.7 Candidate Significant Wildlife Habitat

An assessment of the potential for Significant Wildlife Habitat (SWH) within study area was conducted, using the criteria outlined in the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the accompanying the Ecoregion 6E Criteria Schedules (MNRF, 2015). The following candidate SWH types were determined or have potential to be present within the study area based on the results of the field program, based on the SWH assessment presented in Table 2:

- Amphibian Breeding Habitat (Wetlands) & Amphibian Movement Corridors;
- Marsh Breeding Bird Habitat;
- Terrestrial Crayfish;
- Special Concern and Rare Wildlife Species:
    - Snapping Turtle
    - Yellow-banded Bumble Bee

4.8 Areas of Natural and Scientific Interest

There are no Areas of Natural and Scientific Interest associated with the study area in accordance with municipal or provincial mapping resources (Appendix A).

4.9 Fish and Fish Habitat

Hadati Creek runs adjacent to the proposed development area at the northwest corner of the property on adjacent lands. This feature is mapped as cool water fish habitat within the Guelph OP (Appendix A).

However, the City has provided Azimuth with the Clythe Creek Subwatershed Study Update that provides current information on natural heritage and water resources in the Clythe Creek subwatershed. This study maps Hadati Creek as warm water fish habitat, which is consistent with provincial mapping resources that indicate that this warm water fish habitat supports species like Blacknose Dace, Brook Stickleback, Central Mudminnow, Common Shiner and Creek Chub, among others (Appendix A).

For the purposes of this study Azimuth is acknowledging the recently updated mapping in the Clythe Creek Subwatershed Study that is consistent with provincial mapping, indicating that Hadati Creek features warm water fish habitat.

There are no records of aquatic SAR in this watershed or within 1km of the study area (DFO, 2025.

5.0 NATURAL HERITAGE FEATURES AND FUNCTIONS

The results of Azimuth's field studies combined with review of background information indicate the potential for the following candidate KNHFs within the study area:

- Habitat for Threatened and Endangered Species
    - SAR Bats (Little Brown Myotis, Northern Myotis, Tri-colored Bat, Eastern Small-footed Myotis, Eastern Red Bat, Hoary Bat, Silver-haired Bat)
- Other Wetlands
- Significant Valleyland
- Candidate Significant Wildlife Habitat
    - Amphibian Breeding Habitat (Wetlands) & Amphibian Movement Corridors;
    - Marsh Breeding Bird Habitat;
    - Terrestrial Crayfish;

- Special Concern and Rare Wildlife Species
  - Snapping Turtle
  - Yellow-banded Bumble Bee
- Fish Habitat (Hadati Creek)
- Ecological Linkages (Hadati Creek Corridor)

6.0 PROPOSED DEVELOPMENT

The proposed development includes the construction of a 82-unit residential subdivision consisting of 2 single-detached units, 20 semi-detached units and 60 row townhouse units, with a block at the southern portion of the development to be dedicated as parkland. It is anticipated that the entrances will originate from Grange Road where the existing driveway is located, as well as eastern entrances off of Marks Avenue and Kemp Crescent located within the existing adjacent subdivision. The proposed construction will occur throughout the entirety of the lot 316 Grange Road, encompassing an area of approximately 2.63 ha. A proposed development concept is presented in Appendix D, and overlain on environmental features mapping in Figure 3.

7.0 IMPACT ASSESSMENT

This impact assessment is prepared with regards to the proposed development plan, as described above and illustrated in Figure 3 and presented in Appendix D.

7.1 Habitat for Threatened or 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 or harming living members of a species while Section 10 covers destruction or damage to habitat of Threatened or Endangered species. The following Threatened or Endangered species are treated as present or confirmed to occur within the limits of the study area:

- SAR Bats (Little Brown Myotis, Northern Myotis, Tri-colored Bat, Eastern Small-footed Myotis, Eastern Red Bat, Hoary Bat, Silver-haired Bat)

7.1.1 Little Brown Myotis, Northern Myotis, Tri-colored Bat, Eastern Small-footed Myotis Eastern Red Bat, Hoary Bat, Silver-haired Bat

Little Brown Myotis, Northern Myotis, Tri-colored Bat, Eastern Small-footed Myotis, Eastern Red Bat, Hoary Bat, and Silver-haired Bat (SAR bats) were not directly observed throughout the course of the field investigation, however these species are treated as present in lieu of conducting detailed ecological studies to verify presence/absence. Caves, karst topography,

and/or abandoned mines are absent within the study area, therefore potential hibernacula are not located within the study area limits.

With regards for potential roosting habitat, the unoccupied dwelling within the study area exhibits minor evidence of cracks and crevices that could conceivably be utilized by Little Brown Myotis, Tri-colored Bat, and Silver-haired Bat for roosting purposes during the active period. However, no bat guano or other signs of recent bat roosting activity were observed on or around the structure. As such, the potential for the species to occupy the structure for roosting purposes should be considered **low**.

It is the responsibility of the proponent to comply with Section 9 and Section 10 of the ESA protecting individuals and habitats of Threatened and Endangered species respectively. Restricting demolition activities to outside of the active period for bats between **April 1 – September 30** inclusive, would suitably limit the potential for impacts to individual SAR bats, as discussed in Section 8 below.

SAR bats may utilize treed areas as maternity roost sites, preferring trees >25cm 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). Although larger trees are preferred, trees of any size with suitable access features have potential to be occupied by bats during the active period.

During the site investigation, which included a general screening of the property for snags and snag clusters such that potential cracks, holes, splits, *etc.* could be viewed by the site investigator, potentially suitable snags were observed within the wooded areas on the property and in the greater landscape beyond the property boundaries. Hedgerows on the property were largely comprised of more immature (<25cm DBH) trees, featuring Snag trees that were observed to be occasional and relatively evenly distributed with no snag clusters noted.

For projects of a similar scope, Azimuth has engaged the MECP regarding potential impacts to woodland bat habitat. Guidance was provided via the Bat Survey Standards Note (MECP, 2022), which clarifies the following:

"If a proposed activity will avoid impairing or eliminating the function of habitat for supporting bat life processes (e.g. remove, stub, etc. a proportionally small number of potential maternity or day roost trees in treed habitats which would not result in fragmentation/barriers) and the

timing of tree removal will avoid the bat active season (April 1-September 30 in Southern Ontario)"…"then there is no need to conduct species at risk bat surveys of treed habitats."

The above is consistent with Azimuth's understanding when suitable habitat availability is not limiting, a mitigation approach that restricts vegetation removals during the active period for bats is a suitable approach to avoid a contravention to SAR bat individuals or habitats under Section 9 and Section 10 of the ESA.

The proposed development would involve tree/limb clearance of scattered trees and hedgerows on the property to facilitate the subdivision development. A functional quantity of trees would be retained along the Hadati Creek corridor that would allow for the continuation of potential bat roosting function post development. The hedgerows onsite do not provide a linkage function (i.e. are on a property bordered by residences to the east, north and south), as the principle axis for wildlife movement is expected to be the Hadati Creek corridor that will be retained post-construction. There is no expectation that such minor removals would undermine potential bat maternity and/or day roosting function, and such habitat functions would persist in the post-development setting. In Azimuth's opinion, a suitable mitigation approach that would avoid potential impacts to SAR bats includes a no-cut window from **March 15-November 30**.

With regard for the assessment provided above, providing works occur in accordance with mitigation and other recommendations detailed in Section 8 below, there is no expectation that the proposed development would negatively impact Little Brown Myotis, Northern Myotis, Tri-colored Bat, Eastern Small-footed Myotis, Eastern Red Bat, Hoary Bat, and Silver-haired Bat, or the habitat upon which the species depend.

7.2 Other Wetlands

With regard for the proposed development, all future works are to be located a minimum of 15m from the limit of the Other Wetland identified by the Clythe Creek Subwatershed Study.

The subject property is currently separated from the Other Wetland by the Laura Bailey Memorial Trail and an existing residential development. This separation, combined with the 15m buffer would be expected to maintain natural heritage features and functions of the Other Wetland. Based on the above assessment, there is no expectation the proposed development would result in negative impact upon the natural features or functions of the Other Wetland, providing conformance is demonstrated for recommendations and mitigation measures described in Section 8 of this report.

7.3 Significant Valleyland

The proposed subdivision development occurs to the east of lands associated with Hadati Creek that are designated as Undeveloped Portions of the Regulatory Floodplain by the Guelph OP (Appendix A). As per Table 4.1 Minimum Buffers, Established Buffers and Adjacent Lands to natural heritage features and areas of the Guelph OP, Significant Valleylands have no minimum buffer requirement and thus must be established through an EIS or EA (Guelph OP, 2024).

The subject property is currently separated from the Significant Valleyland by the Laura Bailey Memorial Trail and an existing residential development. This separation, combined with a 6m buffer would be expected to maintain natural heritage features and functions of the Significant Valleyland should the recommendations and mitigation described in Section 8 of this report be adhered to. Based on this assessment, there is no expectation the proposed development would result in negative impacts upon the natural features or function of the Significant Valleyland, providing conformance is demonstrated for recommendations and mitigation measures described in Section 8 of this report.

7.4 Candidate Significant Wildlife Habitat

According to the PPS development and site alteration are not permitted within SWH located in Ecoregion 6E, unless it can be demonstrated there will be no negative impacts upon the feature and its ecological functions. For the purposes of this assessment, Candidate SWH listed in Section 5 above is treated as significant.

7.4.1 Amphibian Breeding Habitat (Wetlands) & Amphibian Movement Corridors

Amphibian Breeding Habitat (Wetlands) is defined as wetlands or pond >500m^2 (about 25m diameter) isolated from woodland ecosites. Dedicated amphibian breeding surveys were not undertaken as part of the field investigation, therefore this SWH and associated Amphibian Movement Corrdiors are treated as present for the purposes of this assessment due to the presence of candidate SWH mapped in the Clythe Creek Subwatershed Study associated with the addition of the Other Wetland southwest of the property.

The proposed development and related works will not involve encroachment or disturbance to vegetation within the potentially suitable amphibian breeding habitat (wetlands), Amphibian Movement Corridors, or lands within 15m of such features. These features are separated from the development area by the Laura Bailey Memorial Trail and existing residential development which represents a functional barrier to the suitable habitat on the west side of Hadati Creek. Due to this barrier, the conveyance function for Amphibian Movement Corridors would be focused to lands associated with Hadati Creek. Based on the setback and separation of the

property from the Other Wetland, there is no expectation that the proposed development would negatively impact amphibian breeding habitat (wetlands) or Amphibian Movement Corridors within the study area limits.

7.4.2 Marsh Breeding Bird Habitat

Marsh Breeding Bird Habitat occurs in wetlands as long as there is shallow water and emergent aquatic vegetation. Dedicated nesting surveys were not undertaken as part of the field investigation, therefore this SWH is treated as present for the purposes of this assessment due to the presence of candidate SWH mapped in the Clythe Creek Subwatershed Study associated with the addition of the Other Wetland southwest of the property.

The proposed development and related works will not involve encroachment or disturbance to vegetation within the potentially suitable marsh breeding bird habitat or lands within 15m of such features. It is also separated by the Laura Bailey Memorial Trail and existing residential development which represents a functional barrier to the suitable habitat. Based on this setback and separation of the property from the Other Wetland, there is no expectation that the proposed development would negatively impact marsh breeding bird habitat within the study area limits.

7.4.3 Terrestrial Crayfish

Terrestrial Crayfish habitat is defined as wet meadow edges of shallow marshes, mudflats, and meadows that feature ground that is not too moist for the species. Dedicated surveys were not undertaken as part of the field investigation, therefore this SWH is treated as present for the purposes of this assessment due to the presence of candidate SWH mapped in the Clythe Creek Subwatershed Study associated with the addition of the Other Wetland southwest of the property.

The proposed development and related works will not involve encroachment or disturbance to vegetation within the potentially suitable Terrestrial Crayfish habitat or lands within 15m of such features. It is also separated by the Laura Bailey Memorial Trail and existing residential development which represents a functional barrier to the suitable habitat. Based on this setback and separation of the property from the Other Wetland, there is no expectation that the proposed development would negatively impact Terrestrial Crayfish habitat within the study area limits.

7.4.4 Habitat for Special Concern and Rare Wildlife Species

Snapping Turtle

Snapping Turtle 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, 2008). No turtle nesting activity or signs thereof was observed during the field investigation.

Hadati Creek within the study area may provide potential foraging, basking, and/or conveyance function for Snapping Turtle.

The proposed development and related works will not involve new encroachment or disturbance to vegetation within Hadati Creek or lands within 15m of such features. Therefore, no direct or indirect impacts to Snapping Turtle foraging, basking or conveyance habitat would occur as a result of the proposed development.

Yellow-banded Bumble Bee

The Yellow-banded Bumble Bee is a habitat generalist and inhabit mixed woodlands for nesting and overwintering, and a variety of open habitats for foraging including meadows, grasslands, agricultural areas, and urban areas (COSEWIC, 2015). The property contains open areas that may provide foraging opportunities for the species, and occurs within the development footprint. However, habitat and potential foraging opportunities for Yellow-banded Bumble Bee will remain extensive in the surrounding landscape and the corridor associated with Hadati Creek will continue to function and provide conveyance opportunities. As such, there is no expectation that the proposed development will result in a negative impact to the species; providing conformance demonstrated for environmental considerations and mitigation described in Section 8 below.

7.5 Fish Habitat

No direct in-water works are proposed as a result of development and would not result in the direct impact of fish habitat. However, indirect impacts to fish habitat can still occur as a result of adjacent or nearby works. All works as a result of the proposed development are occurring greater than 15m from Hadati Creek, which is sufficient to protect the adjacent warm water fish habitat features from development if standard mitigation measures recommended in Section 8 are applied during site works. As per Table 4.1 Minimum Buffers, Established Buffers and Adjacent Lands to natural heritage features and areas of the Guelph OP, warm water Fish Habitat have a 15m buffer requirement (Guelph OP, 2024). As all works associated with the

proposed development are occurring greater than 15m from Hadati Creek, no significant impacts are anticipated to fish habitat within the study area.

7.6 Servicing and Stormwater Management

Since the initial EIS submission (January 2026), updates to the proposed Functional Servicing & Stormwater Management Report (FSR) prepared by C.F. Crozier & Associates Inc. (2026) have occurred that identifies Hadati Creek as the outlet for the site, most notably Catchment 203. Azimuth reviewed a draft version of the report dated October 2026, but it is our understanding that the conclusions of the report will remain the same. Azimuth has reviewed the City of Guelph EIS Review comments prepared following their review of the aforementioned report (Ryan Hamelin (Guelph); March 31, 2026).

7.6.1 Water Balance Assessment

As per the FSR, "Low Impact Development (LID) measures are proposed on site to mitigate infiltration reduction due to the increased imperviousness of the site from pre-development conditions, thereby maintaining water balance on the site." Specifically, LIDs will consist of infiltration galleries within the drainage swales on the boundaries of the site. Overall, the water balance prepared by Crozier demonstrates there will be no significant changes or impacts to on-site infiltration post-development.

7.6.2 Water Quality Controls

An Oil Grit Separator (OGS) unit within the site will service the development to ensure Enhanced (80%) Total Suspended Solids (TSS) removal in conjunction with the existing downstream wetland facility that was designed for the development of the subject lands. As per the FSR, it is our understanding that stormwater quality controls for the site will provide an Enhanced Level of Protection according to the Ministry of the Environment (MOE)(March 2003) guidelines.

7.6.3 Water Quantity Controls

Stormwater runoff from the driveways and front yards of the development will be collected by the proposed storm sewer system and will drain uncontrolled towards the existing Grange Road storm sewer system for minor events and the Grange Road right-of-way for major events, which will ultimately drain to Hadati Creek via the downstream water quality facility. The downstream water quality facility consists of offline wetland features that were constructed to receive storm flows during 25mm+ storm events from the upland catchment area (i.e., Hadati Creek upstream of the CN railway), therefore protecting the water quality downstream of the CN railway from any erosive forces. It is our understanding that this water quantity and quality

control system was designed for the larger subcatchment area, and was designed to control storm flows up to the 100-year event. The water quality is further controlled by the on-site OGS mentioned above, and LIDs are proposed to further mitigate quantity/quality concerns.

7.6.4 Erosion Concerns Related to Hadati Creek

It is our understanding that the downstream wetland facility and Hadati Creek were constructed with the intent to receive storm flows from the subcatchment area. Therefore, it is assumed they were constructed in a manner to withstand storm events and the erosive forces associated with those events. Any impacts to Hadati Creek downstream of the wetland facility should be mitigated by the wetland facility itself, assuming it is functioning as intended. As per the FSR, this approach to erosion controls is consistent with the previously approved neighbouring sites which rely on the wetland facility downstream to provide erosion controls. Azimuth did not complete an erosion assessment for Hadati Creek or the wetland facility. Should there be erosion concerns, which can occur naturally over time, those would have to be assessed by others.

7.7 Ecological Linkages

Lands within the property boundary are routinely mowed/maintained and are bordered on all side by existing residential development and roadways. It is anticipated that the primary opportunities for wildlife conveyance on the local landscape exists within the lands associated with Hadati Creek that runs along the western side of the study area and located beyond the boundaries of the property. The proposed development would not be anticipated to interfere with potential wildlife conveyance associated with the naturalized features of Hadati Creek and associated lands as development will occur outside of these areas and associated setback. Further, the property is contained on all sides by existing anthropogenic development that further limits the properties potential ecological linkage function.

Based on the assessment above the proposed development would not be expected to impede the potential present function of Hadati Creek for wildlife conveyance.

8.0 RECOMMENDATIONS

8.1 Species at Risk

It should be noted that the absence of a protected species within the study area 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 SAR habitat. This report is intended as a point in time assessment of the potential to impact SAR; not to provide long term "clearance" for SAR. A review of the assessment provided in this report by a qualified person is expected to be sufficient to provide appropriate advice at the time of the onset of future site works.

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. Activities must occur in conformity with Section 9 and Section 10 under the ESA that afford individual and habitat protection, respectively, to species listed as Threatened or Endangered in Ontario. The MECP has provided Azimuth with specific direction that the agency no longer issues Letters of Advice (LOAs) nor does MECP "sign off" on every proposed development. The roles and responsibilities of the proponents are outlined in the Draft Client's Guide to Preliminary Screening for SAR (MECP, 2019), which advises that the proponent should consider whether a proposed activity is likely to contravene the ESA prior to initiating correspondence with MECP. Where an assessment determines a proposed activity is not expected to contravene the ESA, there is no requirement to contact MECP.

The ESA was recently updated following adoption of Bill 5, *Protect Ontario by Unleashing our Economy Act*, 2025. Subsequent to Royal Assent (June 5, 2025), several "interim" changes to the ESA have taken place. It is anticipated the ESA will be repealed and the new *Species Conservation Act*, 2025 will be implemented. At the time of this EIS Analysis, only the "interim" changes to the ESA were in effect. Information related to SAR may have to be revised/updated as new information is released by the province.

8.2 Migratory Breeding Birds and Bats

Tree removals will occur to facilitate the development, thus any future activities involving the removal of vegetation should be restricted from occurring during the breeding season. Migratory birds, nests, and eggs are protected by the *Migratory Birds Convention Act*, 1994 (MBCA) and the *Fish and Wildlife Conservation Act,* 1997 (FWCA). Environment Canada outlines dates when activities in any region have potential to impact nests at the Environment Canada Website (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html). In Zone C2 vegetation clearing should be avoided between **April 1 through August 31** of any given year. If work requires that vegetation clearing is required between these dates screening by an ecologist with knowledge of bird species present in the area could be undertaken to ensure that the vegetation has been confirmed to be free of nests prior to clearing.

Any future activities involving tree removal should be avoided between **March 15 through November 30** of any given year (recognizing the expanded window due for potential for Eastern Small-footed Myotis), during the active period for bat species that may utilize trees for maternity and day roosting purposes. It is anticipated that adherence to this timing restriction will avoid impacts to individual SAR bats, therefore remaining in compliance with Section 9 of the ESA affording individual protection to Endangered species.

8.3 Site Preparation and Operations

Diligent application of sediment and erosion controls (ESCs) and adherence to Best Management Practices (BMPs) for the duration of site works is recommended for the mitigation of direct, indirect, and cumulative impacts upon retained natural heritage features and functions. Recommendations related to implementation of ESCs and BMPs are listed below, and should be adhered to throughout the duration of the site activities:

- Installation and maintenance of ESCs are recommended for all future construction activities to minimize the extent of accidental or unavoidable impacts to adjacent vegetation communities and wildlife habitat.
- Prior to the commencement of site works, silt fencing should be applied along the west side of the work area.
- Routine inspection/maintenance of the silt fencing should occur throughout construction.
- ESCs should be maintained until vegetation is re-established post-construction.
- Materials storage on the property (*i.e*. soil stockpiles) should be located over 30m from natural features where feasible. Material storage areas should be contained with ESCs to avoid potential indirect impacts to natural features onsite.
- All site disturbance should be minimized to the extent possible.
- All maintenance activities (including refueling) required during future construction should be conducted at least 30m away from natural features 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 (note: the recommended silt fence can provide this function).
- The contractor is recommended to have a Contaminant and Spill Management Plan in place prior to initiation of works. This should include keeping an emergency spill kit on site at all times. In the event of a spill, the contractor must report it immediately to the provincial Spills Action Centre (SAC).

8.4 Fish and Fish Habitat

As specified above, future development on the property should have regard for the adjacent natural environmental features, and utilize BMPs during construction as follows:

- All ESC measures are to be installed prior to any ground disturbance, and shall be maintained until all disturbed soils have been restored and stabilized following construction.
- Should dewatering be required during construction, water should be discharged into a filter bag (*i.e.*, envirobag or equivalent). Filter bags should be placed a minimum of 30m from fish habitat and wetlands on stable, vegetated ground to allow fines to settle out of the water. Monitoring of dewatering operations should occur throughout the construction process to ensure water is free of fines before entering the watercourses or wetlands.
- Disposal of excess material should occur in a timely fashion to minimize risk of entry into the watercourse.

9.0 CONCLUSIONS

Based upon our analysis, it is concluded that subject to the incorporation of the environmental protection measures and criteria described throughout this report, the proposed development is not anticipated to result in a negative impact upon KNHFs or their ecological functions.

At this time, Azimuth's findings are summarized as follows:

- The proposed development is consistent with the applicable natural heritage policies of the Provincial Planning Statement, *Endangered Species Act*, 2007, City of Guelph Official Plan, O. Reg. 41/24 under the *Conservation Authorities Act*, and the federal *Fisheries Act*.

- Our impact assessment has given full consideration to the habitat requirements of all SAR assumed and documented to occur in the area and results indicate the proposed site development is not expected to result in negative direct or indirect impacts to habitat of SAR providing conformance is demonstrated to mitigation measures described in Section 8.

- The proposed works are not expected to negatively impact the ecological functions of the Other Wetland, Significant Valleyland, Candidate SWH or Ecological Linkages outlined in Section 5 if the appropriate mitigation measures outlined in Section 8 are followed.

- No intermittent or permanent watercourses, lakes, or other fish or fish habitat features are expected to be negatively impacted as a result of the proposed works if the appropriate mitigation measures described in Section 8 are followed during construction.

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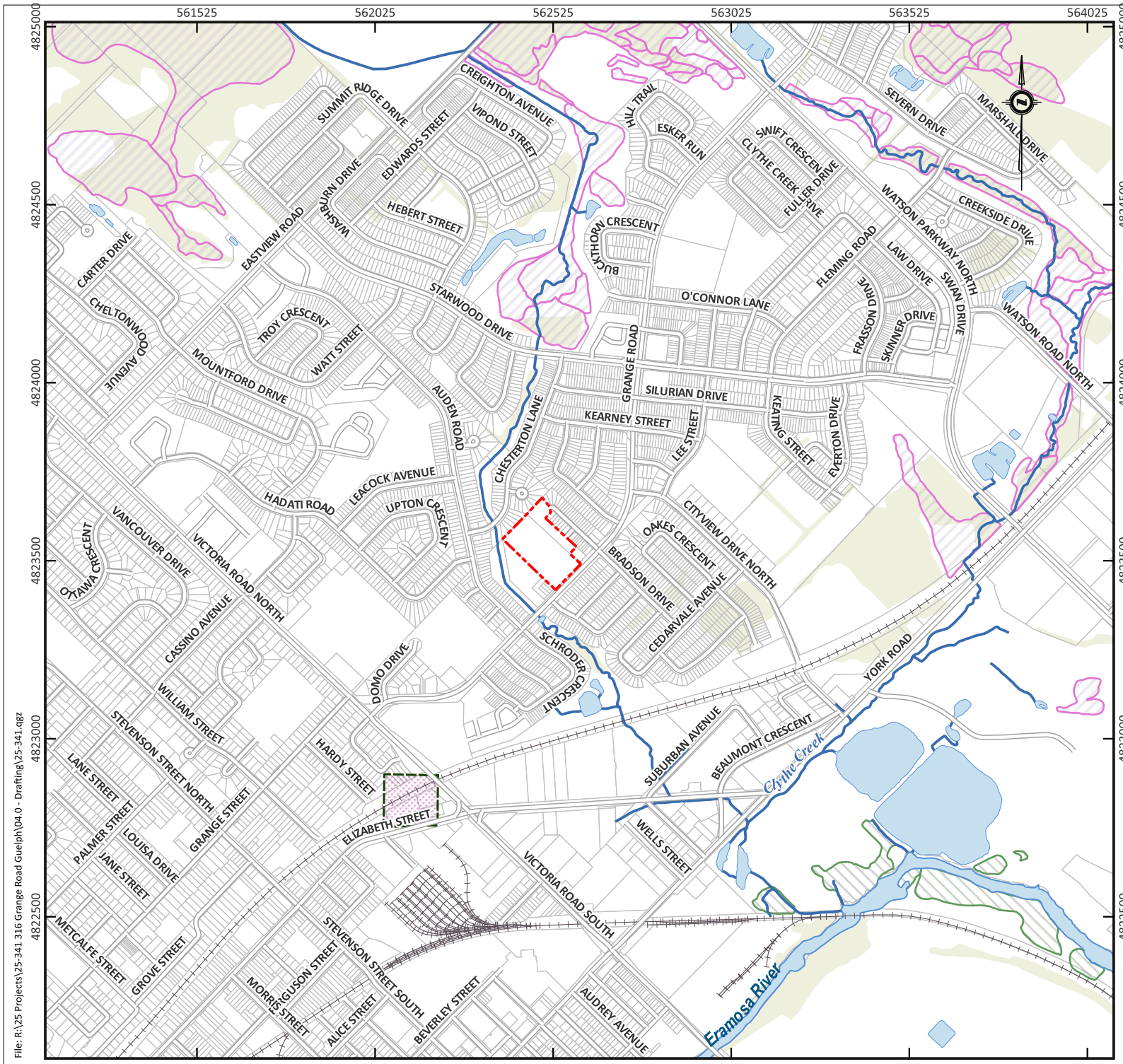
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LEGEND

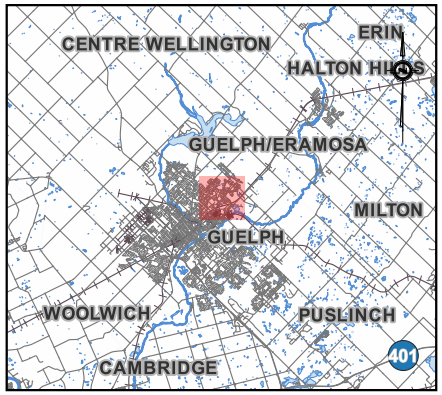
- Approx. Property Boundary
- Waterbody
- Mapped Watercourse
- Unevaluated Wetland
- Provincially Significant Wetland
- Rail
- Wooded Area
- Road
- ANSI, Earth Science

NOTES

1. Watercourse, Waterbody, Wetland, Woodland and ANSI layers are derived from MNRF GIS data, retrieved December 2022.
2. The metric grid displayed on the map corresponds to NAD83 / UTM zone 17N (EPSG:26917).

REGIONAL MAP

SCALE 1:500000



0 0.25 0.5 0.75

KILOMETERS

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

SITE LOCATION

316 GRANGE ROAD
GUELPH, ON

DATE ISSUED:	JANUARY 2026
CREATED BY:	A.L.
PROJECT NO.:	25-341
BASE MAP:	MNRF

Figure No. 1



LEGEND:

- APPROX. PROPERTY BOUNDARY
- MAPPED WATERCOURSE
- REGULATORY FLOODPLAIN (GRCA, 2026)

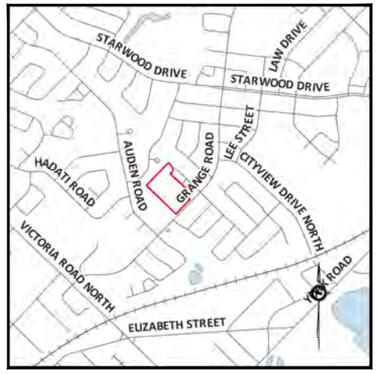
ELC UPLAND COMMUNITIES:

CGL_2	PARKLAND
CVR_4	LOW DENSITY RESIDENTIAL
MEM	MIXED MEADOW
OAG	OPEN AGRICULTURE

ELC WETLAND COMMUNITIES:

MAM	MEADOW MARSH

LOCATION PLAN



0 37.50 75.0

HORIZONTAL SCALE 1:1500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

ENVIRONMENTAL FEATURES

316 GRANGE ROAD
GUELPH, ON

DATE ISSUED:	JANUARY 2026	Figure No.
CREATED BY:	A.L.	2
PROJECT NO.:	25-341	
REFERENCE:	WELLINGTON COUNTY	

Plotted by: ALU on January 19, 2026 at 2:54pm
File: R:\25 projects\25-341 316 grange road guelph\04.0 - drafting\25-341 Site Layout.dwg Layout: EF Plotscale: 1

AUDEN ROAD

HEDGEROW (C)

HEDGEROW (D)

MAM

HADATI CREEK

MEM

OAG

HEDGEROW(B)

CGL_2

KEMP CRESCENT

GRANGE ROAD

HEDGEROW (A)

N44°16'30"E 99.636

N43°00'35"E 63.262

30.262

N39°54'50"W

N44°12'30"E 21.942

155.075

118.552

N46°37'45"W

N47°41'15"W

15.280

37.212

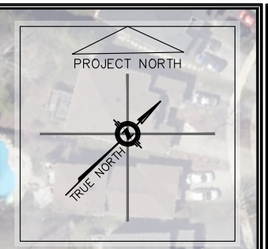
N47°17'20"W

N44°12'30"E 27.003

N47°17'20"W 2.781

N44°12'50"E

102.009



LEGEND:

- APPROX. PROPERTY BOUNDARY
- MAPPED WATERCOURSE
- REGULATORY FLOODPLAIN (GRCA, 2026)

ELC UPLAND COMMUNITIES:

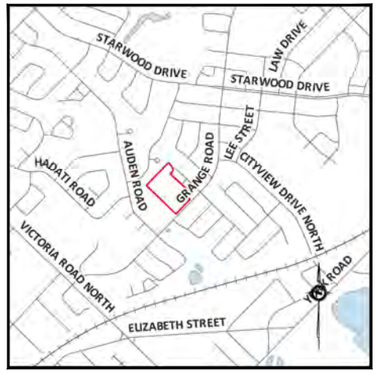
CGL_2	PARKLAND
CVR_4	LOW DENSITY RESIDENTIAL
MEM	MIXED MEADOW
OAG	OPEN AGRICULTURE

ELC WETLAND COMMUNITIES:

MAM	MEADOW MARSH

- 15m WATERCOURSE SETBACK

LOCATION PLAN



0 25.00 50.0

HORIZONTAL SCALE 1:1000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

PROPOSED DEVELOPMENT

316 GRANGE ROAD
GUELPH, ON

DATE ISSUED:	*JANUARY 2026*	Figure No.
CREATED BY:	*A.L.*	3
PROJECT NO.:	*25-341*	
REFERENCE:	*WELLINGTON COUNTY*	

Plotted by: ALil on January 19, 2026 at 2:54pm
File: R:\25_projects\25-341_316 grange road guelph\04.0 - drafting\25-341 Site Layout.dwg Layout: PD Plotscale: 1

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
Bank Swallow	*Riparia riparia*	THR	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Commonly found in sand or gravel pits, road cuts, lakeshore bluffs, and along riverbanks (COSEWIC, 2013a). ESA Protection: Species and habitat protection	No excavated vertical features, sand or gravel pits providing potential nesting habitat. No suitable habitat for the species.
Barn Swallow	*Hirundo rustica*	SC	THR	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, 2011a). ESA Protection: None	NHIC data query indicates records of Barn Swallow within 1km of the property. Barn Swallow nests were not observed on structures within the study area.
Black Ash	*Fraxinus nigra*	END	No status	Facultative wetland tree species frequently found in floodplain forests, swamps, seepage areas, shoreline margins and fens. Occupied sites are generally seasonally-flooded (COSEWIC, 2018). ESA Protection: Species and habitat protection	NHIC data query indicates records of Black Ash within 1km of the property. Not observed during the vascular plant survey.
Black Tern	*Chlidonias niger*	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	No potentially suitable wetland habitat located within the study area. No suitable habitat for the speices.
Bobolink	*Dolichonyx oryzivorus*	THR	THR	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 habitat protection	NHIC data query indicates records of Bobolink within 1km of the property. Open areas on the property are small and routinely maintained, not providing tall grass and variety of species required for the Bobolink. No suitable habitat for the species.
Butternut	*Juglans cinerea*	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, 2003). ESA Protection: Species and habitat protection	NHIC data query indicates records of Butternut within 1km of the property. Not observed during the vascular plant survey.
Canada Warbler	*Cardellina canadensis*	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, 2008a). ESA Protection: N/A	The study area does not feature the quality or quantity of forest required to provide suitable habitat for this species. No suitable habtiat for the species.
Cerulean Warbler	*Dendroica cerulea*	THR	END	Associated with large tracts of mature deciduous forest with tall trees and an open understory. Found in both wet bottomland forests and upland areas (COSEWIC, 2010b). ESA Protection: Species and habitat protection	The study area does not feature the quality or quantity of forest required to provide suitable habitat for this species. No suitable habitat for the species.
Chimney Swift	*Chaetura pelagica*	THR	THR	Nests primarily in chimneys though some populations (*i.e* . in rural northern areas) may nest in cavity trees (COSEWIC, 2007a). Recent changes in chimney design may be a significant factor in recent declines in numbers (Cadman *et al* ., 2007). ESA Protection: Species and habitat protection	The existing residence includes a capped chimney that would not allow for access of the species. No suitable habitat for the species.
Common Nighthawk	*Chordeiles minor*	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, 2007d). ESA Protection: N/A	No potentially suitable habitats present within the study area. No suitable habitat for the species.
Eastern Meadowlark	*Sturnella magna*	THR	THR	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, 2011b). ESA Protection: Species and habitat protection	NHIC data query indicates records of Eastern Meadowlark within 1km of the property. Open areas located on the property appear to be mowed throughout the growing season, is less than 5ha and do not feature the tall grass species required for suitable habitat. No suitable habitat for the species.
Eastern Red Bat	*Lasiurus borealis*	END	END	Roosting occurs among the foliage of trees and occasionally shrubs but tend to be on large diameter and tall trees reaching or exceeding height of surrounding canopy (COSEWIC, 2023). ESA Protection: Species and habitat protection	Observed snags and within the study area have potential to provide day roosting/maternity roosting opportunities for this species.
Eastern Ribbonsnake	*Thamnophis sauritus*	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, 2012a). ESA Protection: N/A	No wetland habitats are present within the study. No suitable habitat for the species.

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
Eastern Small-footed Myotis	*Myotis leibii*	END	END	Generally occurs in mountainous or rocky regions, 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 habitat protection	No rock bluffs, rock slabs, large stones, or similar habitats located within the property limits. No caves, abandoned minies, or similar features located within the study area limits. Observed snags within the study area have potential to provide day roosting/maternity roosting opportunities for this species.
Eastern Whip-poor-will	*Antrostomus vociferus*	SC	THR	Semi-open forests or patchy forests with clearings, such as barrens or forests that are regenerating following major disturbances, are preferred nesting habitats (COSEWIC, 2009a). ESA Protection: Species and habitat protection	No semi-open forests with patchy clearings, or other habitat characteristic of breeding and nesting habitat for the species. No barrens or open clearings that would be expected to provide potential breeding/nesting habitat located within the study area limits. No suitable habitat for the species.
Eastern Wood-pewee	*Contopus virens*	SC	SC	Mostly in mature and intermediate-age deciduous and mixed forests having an open understory. It is often associated with forests dominated by Sugar Maple and oak. Usually associated with forest clearings and edges within the vicinity of its nest (COSEWIC, 2012b). ESA Protection: N/A	NHIC data query indicates records of Eastern Wood-pewee within 1km of the property. Woodlands within the study area do not provide the necessary size or quality for this species.
Golden-winged Warbler	*Vermivora chrysoptera*	SC	THR	Areas of early successional scrub surrounded by mature forests including dry uplands, swamp forests, and marshes (COSEWIC, 2006). ESA Protection: N/A	Early successional scrubland (*i.e.* shrub-dominated thickets) not located within the study area limits. No suitable habitat for the species.
Grasshopper Sparrow *pratensis* subspecies	*Ammodramus savannarum pratensis*	SC	No status	Typically breeds 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, 2013b). ESA Protection: N/A	NHIC data query indicates records of Grasshopper Sparrow within 1km of the property. The property and adjacent lands would not be considered suitable breeding or nesting habitat for the species due to lack of sparse herbaceous vegetation. No suitable habitat for the species.
Hoary Bat	*Lasiurus cinereus*	END	END	Roosting occurs among the foliage of trees and occasionally shrubs but tend to be on large diameter and tall trees reaching or exceeding height of surrounding canopy (COSEWIC, 2023). ESA Protection: Species and habitat protection	Observed snags within the study area have potential to provide day roosting/maternity roosting opportunities for this species.
Least Bittern	*Ixobrychus exilis*	THR	THR	Breed strictly in marshes of emergents (usually cattails) that have relatively stable water levels and interspersed areas of open water (COSEWIC, 2009b). ESA Protection: Species and habitat protection	NHIC data query indicates records of Least Bittern within 1km of the property. Marshes of emergents that have relatively stable water levels and interspersed areas of open water not present wtihin the study area. No suitable habitat for the speices.
Little Brown Myotis	*Myotis lucifugus*	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 (MNRF, 2014) (COSEWIC, 2013c). ESA Protection: Species and habitat protection	Observed snags within the study area have potential to provide day roosting/maternity roosting opportunities for this species. Existing structures within the study area are well maintained and do not exhibit signs (guano) or building elements that would provide suitable roosting habitat. No caves or abandoned mines that could provide suitable overwintering habitat are present within the study area limits.
Monarch	*Danaus plexippus*	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, 2010c). ESA Protection: N/A	No potentially suitable breeding habitat observed within the study area. No suitable habitat for the species.
Northern Map Turtle	*Grapetemys geographica*	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, 2012k). ESA Protection: N/A	NHIC data query indicates records of Northern Map Turtle within 1km of the property. No large rivers, bays, lakes present within the study area that would be suitable for this species. No suitable habitat for the species.
Northern Myotis	*Myotis septentrionalis*	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, 2013c). ESA Protection: Species and habitat protection	Observed snags within the study area have potential to provide day roosting/maternity roosting opportunities for this species. No caves or abandoned mines that could provide suitable overwintering habitat are present within the study area limits.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	Occurs in open deciduous forests, particularly those dominated by oak and beech, groves of dead trees, floodplain forests, orchards, cemeteries, savannas and savanna-like grasslands. Although the species occupies a range of habitat types, key habitat is characteristically composed of woodlands where tall trees are of large crcumference (i.e.mature cover) and are at a low density. A high density of snag trees is also an indicator of key habitat types (COSEWIC, 2018f). ESA Protection: Species and habitat protection	The study area does not feature any woodlands that exhibit the mature, deciduous structure needed to provide habitat for the species. No suitable habitat for the species.

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
Snapping Turtle	*Chelydra serpentina*	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, 2008b). ESA Protection: N/A	NHIC data query indicates records of Snapping Turtle within 1km of the property. Haditi Creek adjacent to the property has potential to provide conveyance function for this species.
Silver-haired Bat	*Lasionycteris noctivagans*	END	END	Roosting occurs promarily under bark and in the cavities of trees, making them reliant on habitats where large, dacaying trees are available. (COSEWIC, 2023). ESA Protection: Species and habitat protection	Observed snags within the study area have potential to provide day roosting/maternity roosting opportunities for this species..
Tri-colored Bat	*Perimyotis subflavus*	END	END	Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013b). ESA Protection: Species and habitat protection	Observed snags within the study area have potential to provide day roosting/maternity roosting opportunities for this species. Existing structures within the study area are well maintained and do not exhibit signs (guano) or building elements that would provide suitable roosting habitat. No caves or abandoned mines that could provide suitable overwintering habitat are present within the study area limits.
Wood Thrush	*Hylocichla mustelina*	SC	THR	Found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches (COSEWIC, 2012c). ESA Protection: N/A	NHIC data query indicates records of Wood Thrush within 1km of the property. Woodlands within the study area do not provide the necessary size or quality for this species.
Yellow-banded Bumble Bee	*Bombus terricola*	SC	SC	Habitat generalist found in woodlands, grasslands, farmland and urban areas. Nests are often underground in burrows or under decomposing logs (MECP, 2025). ESA Protection: N/A	NHIC data query indicates records of Yellow-banded Bumble Bee 1km of the property. Property exhibits features that may provide suitable foraging habitat for the species.
Yellow Rail	*Coturnicops noveboracensis*	SC	SC	Nest in wet marshy areas of short grass-like vegetation. The habitat must remain wet throughout the breeding season (COSEWIC, 2009c). ESA Protection: N/A	No suitable wetland structure within the study area. No suitable habitat for the speices.

[1] Habitat as outlined within the MECP's Species at Risk in Ontario website files (https://www.ontario.ca/page/species-risk-ontario), or Species Specific COSEWIC Reports referenced in this document.

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COSEWIC. 2010b. COSEWIC assessment and update status report on the Cerulean Warbler *Dendroica cerulea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.
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Table 2: Significant Wildlife Habitat Assessment

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

Seasonal Concentration Areas of Animals

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale:** Habitat important to migrating waterfowl.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid-March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. Information Sources • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities • Sites documented through waterfowl planning processes (*e.g.* EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius area, dependant on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • SWHMiST Index #7 provides development effects and mitigation measures.	The study area is not associated with fields that flood in the spring. The property would not be expected to provide habitat function as a waterfowl stopover and staging area (terrestrial).
Waterfowl Stopover and Staging Areas (Aquatic) **Rationale:** Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). Information Sources • Environment Canada • Naturalist clubs often are aware of staging/stopover areas • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (*e.g.* EHJV implementation plan) • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Areas	Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. • The combined area of the ELC ecosites and a 100m radius area is the SWH. • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • SWHMiST Index #7 provides development effects and mitigation measures.	Open ponds, marshes, lakes, bays, coastal inlets, and watercourses are not present within the limits of the study area. Listed ELC Ecosites are not present within the study area.

Shorebird Migratory Stopover Area **<u>Rationale:</u>** High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Sewage treatment ponds and storm water ponds do not qualify as a SWH. <u>Information Sources</u> • Western hemisphere shorebird reserve network • Canadian Wildlife Service (CWS) Ontario Shorebird Survey • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area	Studies confirming: • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #8 provides development effects and mitigation measures.	Beach areas, seasonally flooded beach bars, and muddy unvegetated shoreline habitats were not observed within the study area limits. Listed ELC Ecosites are not present within the study area.
Raptor Wintering Area **<u>Rationale:</u>** Sites used by multiple species of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl **<u>Special Concern:</u>** Short-eared Owl Bald Eagle	<u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites (hawk/owl) need to be > 20 ha with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. • Field area of the habitat is to be windswept with limited snow depth or accumulation. • Eagle sites have open water, large trees and snags available for roosting. <u>Information Sources:</u> • OMNRF Ecologist or Biologist Field Naturalist Clubs • Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts Reports and other information available from Conservation Authorities.	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #10 and #11 provides development effects and mitigation measures.	The study area does not contain a combination of forest and upland habitat >20 ha. The property would not be expected to function as a raptor wintering area.
Bat Hibernacula **<u>Rationale:</u>** Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information Center (NHIC) Bat Hibernaculum Ministry of Northern • Development and Mines for location of mine shafts. • Clubs that explore caves (*e.g.* Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects. • SWHMiST Index #1 provides development effects and mitigation measures.	The property and surrounding area do not contain caves, karst topography and/or abandoned mines. The property would not be expected to provide habitat function as Bat Hibernacula.

Bat Maternity Colonies **Rationale:** Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario. • Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees. • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred. Information Sources • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by; o >10 Big Brown Bats o >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #12 provides development effects and mitigation measures.	The study area does not contain listed ELC Ecosite codes required for Bat Maternity Colonies. The property would not be expected to provide habitat function as Bat Maternity Colony.
Turtle Wintering Areas **Rationale:** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle **Special Concern:** Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	• For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. Information Sources • EIS studies carried out by Conservation Authorities. • Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. • OMNRF Ecologist or Biologist • Field Naturalist clubs • Natural Heritage Information Center (NHIC)	• Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) • Congregation of turtles is more common where wintering areas are limited and therefore significant • SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat.	Candidate Turtle Wintering Areas have been identified by the Clythe Creek Subwatershed Study associated with the addition of the Other Wetland mapped to the southwest of the property. Azimuth has determined Turtle Wintering Areas are not present within the study area based on the lack of permanent standing water deep enough not to freeze over winter.
Reptile Hibernaculum **Rationale:** Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**Snakes:** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake **Special Concern:** Milksnake Eastern Ribbonsnake **Lizard:** **Special Concern** (Southern Shield population)**:** Five-lined Skink	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. • Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures. Information Sources • In spring, local residents or landowners may have observed the emergence of snakes on their property (*e.g.* old dug	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (*e.g.* foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • Note: If there are Special Concern Species present, then site is SWH • Note: Sites for hibernation possess specific habitat parameters (*e.g.* temperature, humidity, *etc.*) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (*e.g.* mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH. • SWHMiST Index #13 provides development effects and	No features were identified within the study area that could provide suitable reptile hibernaculum. The property would not be expected to provide habitat function.

			wells). • Reports and other information available from Conservation Authorities. • Field Naturalists clubs • University herpetologists • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks.	mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • SWHMiST Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.	
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **<u>Rationale:</u>** Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. <u>Information Sources</u> • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #4 provides development effects and mitigation measures.	No exposed/eroding soil banks were identified within the study area. The study area would not be expected to provide colonially-nesting bird breeding habitat (bank and cliff).
Colonially-Nesting Bird Breeding Habitat (Tree/Shrubs) **<u>Rationale:</u>** Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. <u>I</u><u>nformation Sources</u> • Ontario Breeding Bird Atlas, colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Center (NHIC) Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from CAs. • MNRF District Offices • Local naturalist clubs	Studies confirming: • Presence of 5 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells. • SWHMiST Index #5 provides development effects and mitigation measures.	Nesting sites belonging to colonially-nesting bird species (trees/shrubs) not observed throughout the study area limits.
Colonially-Nesting Bird Breeding Habitat (Ground) **<u>Rationale:</u>** Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer’s Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer’s Blackbird) MAM1 – 6; MAS1 – 3; CUM CUT	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands. <u>Information Sources</u> • Ontario Breeding Bird Atlas , rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs. • Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices • Field Naturalist clubs	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer’s Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. • Studies would be done during May/June when actively nesting. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #6 provides development effects and	Not a rocky island/peninsula, on a lake/large river, or within farmland. The study area is not expected to serve as colonially-nesting bird breeding habitat (ground).

		CUS		mitigation measures.	
Migratory Butterfly Stopover Areas **<u>Rationale:</u>** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral <u>Special Concern</u> Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: <u>Field:</u> CUM CUT CUS <u>Forest:</u> FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes. <u>Information Sources</u> • OMNRF (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 **or** >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWHMiST Index #16 provides development effects and mitigation measures.	Study area not located within 5km of Lake Ontario.
Landbird Migratory Stopover Areas **<u>Rationale:</u>** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website. All migratory songbirds. Canadian Wildlife Service Ontario website:	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant. • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant. • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH . <u>Information Sources</u> • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #9 provides development effects.	Study area not located within 5km of Lake Ontario.
Deer Yarding Areas **<u>Rationale:</u>** Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of	White-tailed Deer	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT	• Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas	No Studies Required: • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations. • If a SWH is determined for Deer Wintering Area or if a	The study area does not fall within any Deer Yarding Areas as mapped by the MNR.

an areas summer range.			where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. • OMNRF determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual". • Woodlots with high densities of deer due to artificial feeding are not significant.	proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #2 provides development effects and mitigation measures.	
Deer Winter Congregation Areas **<u>Rationale:</u>** Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands . • If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. • Woodlots with high densities of deer due to artificial feeding are not significant. <u>Information Sources</u> • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #2 provides development effects and mitigation measures.	The property does not contain woodlots that meet size requirements to be considered candidate deer winter congregation areas.

<u>Rare Vegetation Communities</u>

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes **<u>Rationale:</u>** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO TAS TAT CLO CLS CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.	Most cliff and talus slopes occur along the Niagara Escarpment. <u>Information Sources</u> • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF District • Natural Heritage Information Center (NHIC) has location information available on their website • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • SWHMiST Index #21 provides development effects and mitigation measures.	No cliffs or talus slopes.
Sand Barren **<u>Rationale;</u>** Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.	A sand barren area >0.5ha in size. <u>Information Sources</u> • MNRF Districts • Natural Heritage Information Center (NHIC) has location information available on their website. • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.) • SWHMiST Index #20 provides development effects and mitigation measures.	No sand barren.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Alvar **Rationale;** Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 6E.	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	An Alvar site > 0.5 ha in size. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities	• Field studies that identify four of the five **Alvar Indicator Species** at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses. • SWHMiST Index #17 provides development effects and mitigation measures.	No alvar.
Old Growth Forest **Rationale;** Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. Information Sources • OMNRF Forest Resource Inventory mapping • OMNRF Districts. • Field Naturalist clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species are >140 years old, then the area containing these trees is Significant Wildlife Habitat. • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present). • The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics. • SWHMiST Index #23 provides development effects and mitigation measures.	No old growth forest.
Savannah **Rationale:** Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #18 provides development effects and mitigation measures.	No savannah.
Tallgrass Prairie **Rationale:** Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	No tallgrass prairie.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
			• Field Naturalist clubs • Conservation Authorities	• SWHMiST Index #19 provides development effects and mitigation measures.	
Other Rare Vegetation Communities **Rationale:** Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M The OMNRF/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST Index #37 provides development effects and mitigation measures.	No rare vegetation communities.

Specialized Habitat for Wildlife

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Nesting Area **Rationale;** Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 **Note: includes adjacency to Provincially Significant Wetlands**	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Information Sources • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from Conservation Authorities.	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWHMiST Index #25 provides development effects and mitigation measures.	Potential Waterfowl Nesting Areas were not identified during the field investigation. No applicable ELC Ecosite codes present within the study area.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **Rationale;**	Osprey **Special Concern** Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree’s canopy.	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or	No Bald Eagles, Ospreys, or nesting site for either species observed throughout field investigation.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.			• Nests located on man-made objects are not to be included as SWH (*e.g.* telephone poles and constructed nesting platforms). <u>Information Sources</u> • Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF Districts • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #26 provides development effects and mitigation measures.	
Woodland Raptor Nesting Habitat **<u>Rationale:</u>** Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <u>Information Sources</u> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH . (The 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest). • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial. (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • SWHMiST Index #27 provides development effects and mitigation measures.	Study area does not contain natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Study area not expected to serve as Woodland Raptor Nesting Habitat.
Turtle Nesting Areas **<u>Rationale:</u>** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle <u>Special Concern Species</u> Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <u>Information Sources</u> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them.	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles. • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Candidate Turtle Nesting Areas have been identified by the Clythe Creek Subwatershed Study on the northwest corner of the property and in areas along Hadati Creek. Azimuth has determined through the field investigation that these areas would not function as Turtle Nesting Areas due to the lack of suitable sand and gravel that would allow turtles to excavate nesting sites. The property is not expected to provide function for Turtle Nesting Areas.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• Natural Heritage Information Center (NHIC) • Field Naturalist clubs		
Seeps and Springs **Rationale;** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. Information Sources • Topographical Map • Thermography • Hydrological surveys conducted by Conservation Authorities and MOE. • Field Naturalists clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. • SWHMiST Index #30 provides development effects and mitigation measures.	No seeps or springs observed.
Amphibian Breeding Habitat (Woodland). **Rationale:** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m^2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records. • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District • OMNRF wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service • Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWHMiST Index #14 provides development effects and mitigation measures.	The study area does not contain wetlands, ponds, or woodland pools with associated woodland habitat. The property is not expected to provide habitat function as Amphibian Breeding Habitat (Woodland).
Amphibian Breeding Habitat (Wetlands) **Rationale;** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (*e.g.* Bull Frog) may be adjacent to woodlands.	• Wetlands>500m^2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. **or;** Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #15 provides development effects and mitigation	**Candidate Amphibian Breeding Habitat (Wetlands) has been identified by the Clythe Creek Subwatershed Study associated with the addition of the Other Wetland to the southwest of the property.** **Dedicated amphibian breeding surveys were not completed as a component of the field investigation. Candidate Amphibian Breeding Habitat (Wetlands) is treated as present for the Other Wetland southwest of the property.**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations • Reports and other information available from Conservation Authorities	measures.	
Woodland Area-Sensitive Bird Breeding Habitat **<u>Rationale:</u>** Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren **Special Concern:** Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. • Interior forest habitat is at least 200 m from forest edge habitat. <u>Information Sources</u> • Local bird clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #34 provides development effects and mitigation measures.	Mature woodland habitat >30 ha not present within the study area.

<u>1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)</u>

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Marsh Breeding Bird Habitat **<u>Rationale;</u>** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan **Special Concern:** Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <u>Information Sources</u> • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Center (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; **or** breeding by any combination of 5 or more of the listed species. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #35 provides development effects and mitigation measures.	**Candidate Marsh Breeding Bird Habitat has been identified by the Clythe Creek Subwatershed Study associated with the addition of the Other Wetland to the southwest of the property.** **Dedicated surveys were not completed as a part of the field investigation. Candidate Marsh Breeding Bird Habitat is treated as present for this study.**
Open Country Bird Breeding Habitat Sources Defining Criteria **<u>Rationale;</u>** This wildlife habitat is declining throughout Ontario and North	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha. • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories.	No large grassland areas >30 ha present within the study area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.			• The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. <u>Information Sources</u> • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	• Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #32 provides development effects and mitigation measures.	
Shrub/Early Successional Bird Breeding Habitat **<u>Rationale;</u>** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** Yellow-breasted Chat Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Large field areas succeeding to shrub and thicket habitats>10ha in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (*i.e*. no row-cropping, haying or live-stock pasturing in the last 5 years). • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. <u>Information Sources</u> • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #33 provides development effects and mitigation measures.	No large field areas succeeding to shrub and thicket habitats >10 ha.
Terrestrial Crayfish **<u>Rationale:</u>** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crayfish or Meadow Crayfish; (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. <u>Information Sources</u> • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998.	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. • Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult. • SWHMiST Index #36 provides development effects and mitigation measures.	**Candidate Terrestrial Crayfish Habitat has been identified by the Clythe Creek Subwatershed Study associated with the addition of the Other Wetland to the southwest of the property. No remnant Terrestrial Crayfish burrows were observed during the Azimuth review.** **Dedicated surveys were not completed as a part of the field investigation. Candidate Terrestrial Crayfish Habitat is treated as present for this study.**
Special Concern and Rare Wildlife Species **<u>Rationale:</u>** These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website "Get Information" : http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. have little	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species *e.g.* specific nesting habitat or foraging habitat. • SWHMiST Index #37 provides development effects and mitigation	**No provincially rare (S-Rank 1-3) species were observed within the study area limits.** **The following species provincially designated as Special Concern are treated as present as a result of the field program:** **Snapping Turtle and Yellow-banded Bumble Bee**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		information may lack accuracy.	information available about their requirements.	measures.	

Animal Movement Corridors

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Movement Corridors **Rationale;** Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	Movement corridors between breeding habitat and summer habitat. • Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (**Amphibian Breeding Habitat –Wetland)** of this Schedule. Information Sources • MNRF District Office • Natural Heritage Information Center (NHIC) • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. • Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. • SWHMiST Index #40 provides development effects and mitigation measures.	**Amphibian Breeding Habitat-Wetland is being treated as present for the purposes of this study.** **Further consideration presented in main text.**
Deer Movement Corridors **Rationale:** Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when **Deer Wintering Habitat** is confirmed as SWH from Table 1.1 of this schedule. • A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). Information Sources • MNRF District Office • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. • Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. • Shorter corridors are more significant than longer corridors. • SWHMiST Index #39 provides development effects and mitigation measures.	No deer wintering habitat is present within the study area, therefore deer movement corridors are not considered in this study.

Exceptions for Ecoregion 6E

EcoDistrict	Wildlife Habitat and Species	Candidate			Confirmed SWH	Assessment
		Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
6E-14 **Rationale:** The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast-producing tree species is important for bears.	**Mast Producing Areas** Black Bear	All Forested habitat represented by ELC Community Series: FOM FOD	• Black bears require forested habitat that provides cover, winter hibernation sites, and mast-producing tree species. • Forested habitats need to be large enough to provide cover and protection for black bears.	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech). Information Sources Important forest habitat for black bears may be identified by OMNRF.	All woodlands > 30ha with a 50%composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5 SWHMiST Index #3 provides development effects and mitigation measures.	Not on Bruce Peninsula.
6E- 17 **Rationale:** Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population	Lek Sharp-tailed Grouse	CUM CUS CUT	• The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. • Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated.	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting Information Sources • OMNRF district office • Bird watching clubs • Local landowners • Ontario Breeding Bird Atlas	Studies confirming lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat • SWHMiST Index #32 provides development effects and mitigation measures	Not on Manitoulin Island.

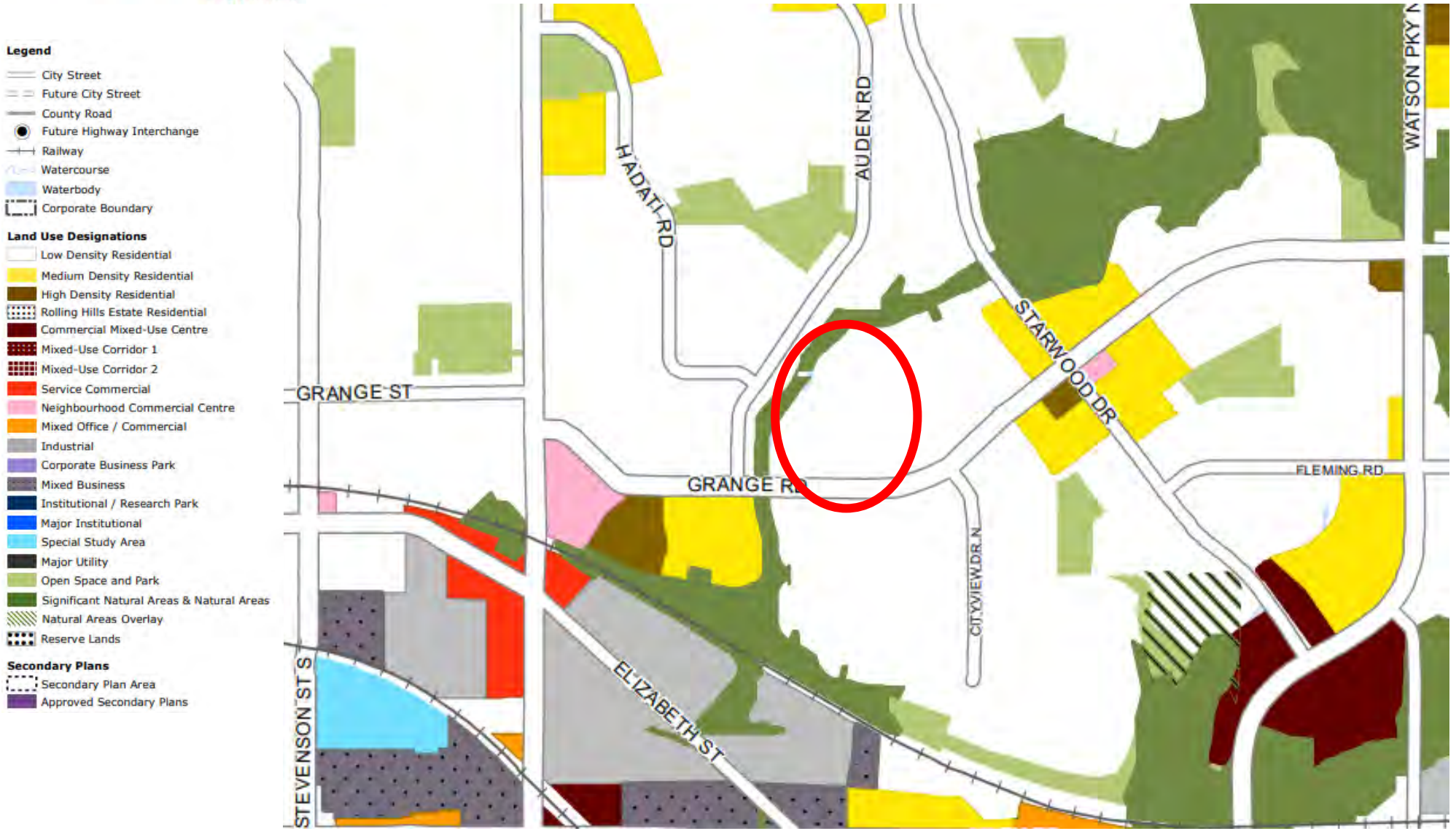
APPENDICES

Appendix A: Municipal and Provincial Background Information
Appendix B: Agency Correspondence
Appendix C: Photographic Record
Appendix D: Proposed Development Concept

APPENDIX A

Municipal and Provincial Background Information

SCHEDULE 2:
LAND USE PLAN



SCHEDULE 4A:
NATURAL HERITAGE SYSTEM
ANSIs and Wetlands



Legend

- City Streets
- Future City Streets
- County Roads
- Railways
- Watercourses
- Waterbodies
- Special Study Area
- Corporate Boundary
- City of Guelph Natural Heritage System

Significant Natural Areas

Significant Areas of Natural and Scientific Interest (ANSI)

- Provincially Significant Earth Science ANSIs
- Regionally Significant Earth Science ANSIs

Significant Wetlands

- Provincially Significant Wetlands

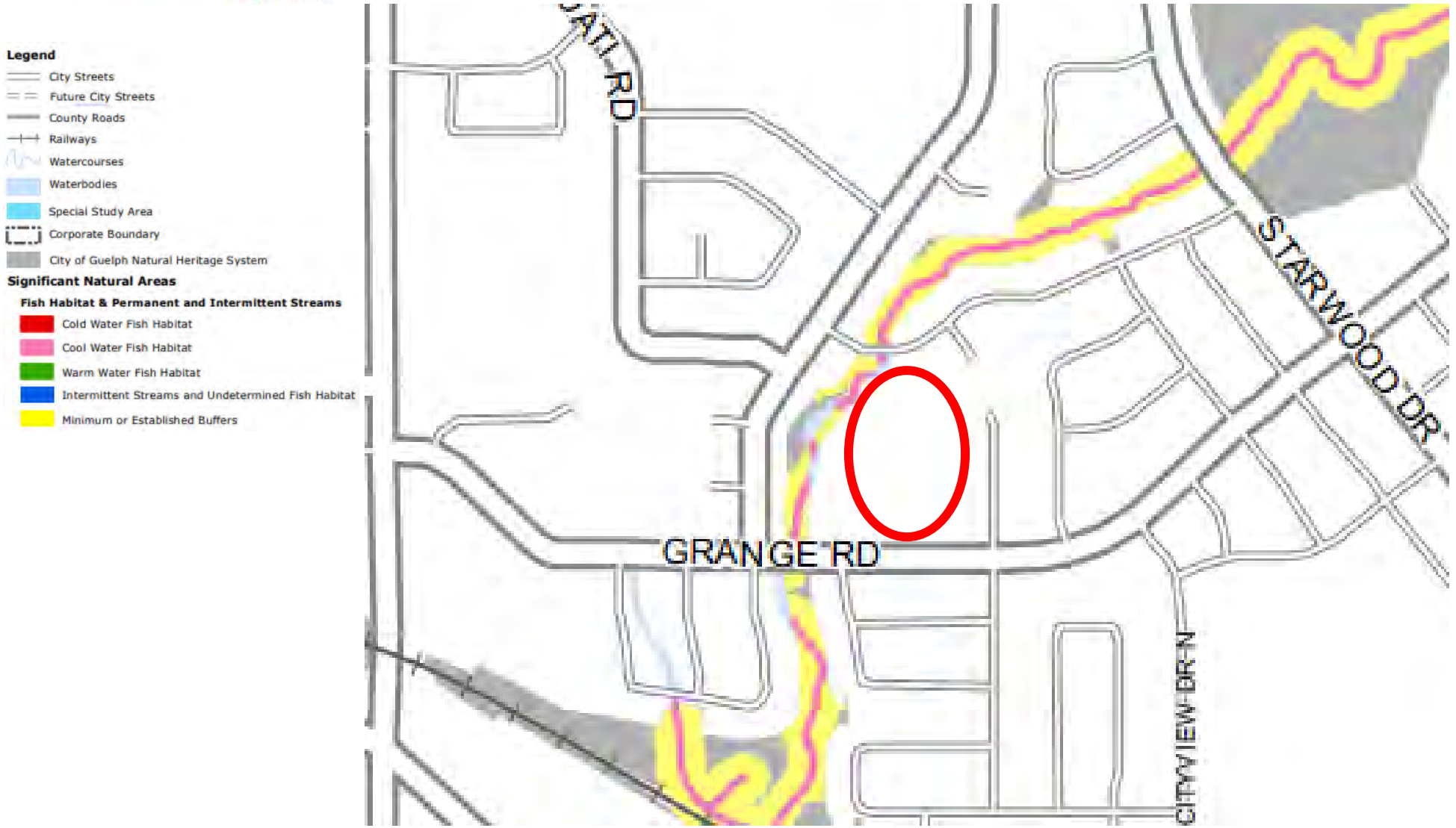
Locally Significant Wetlands

- Ontario Ministry of Natural Resources Defined
- City of Guelph Defined

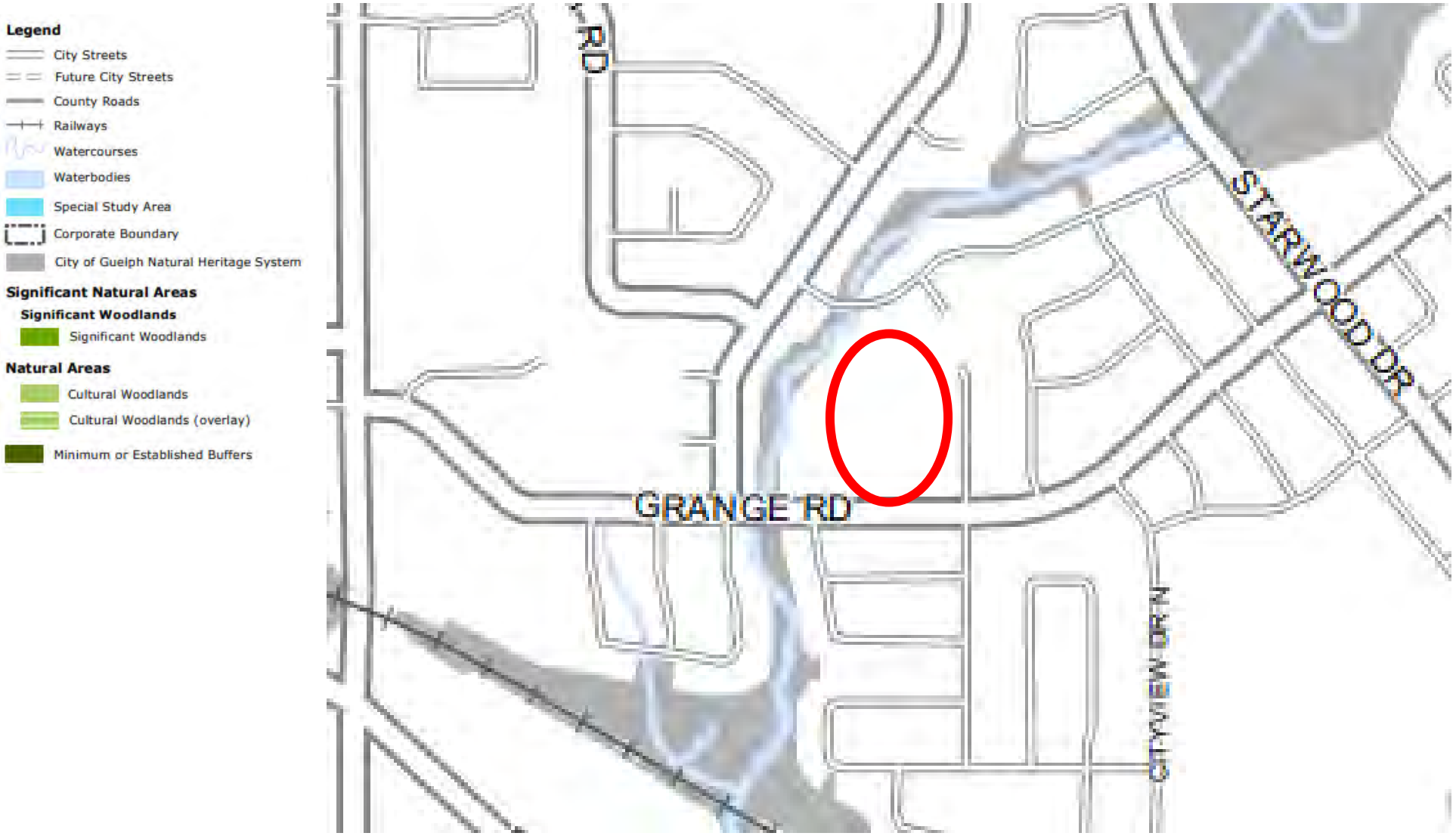
Natural Areas

- Other Wetlands
- Other Wetlands (overlay)
- Minimum or Established Buffers

SCHEDULE 4B:
NATURAL HERITAGE SYSTEM
Fish Habitat and Permanent and Intermittent Streams



SCHEDULE 4C:
NATURAL HERITAGE SYSTEM
Significant Woodlands



SCHEDULE 4D:
NATURAL HERITAGE SYSTEM
Significant Valleylands & Significant Landform

Legend

- City Streets
- Future City Streets
- County Roads
- Railways
- Watercourses
- Waterbodies
- Special Study Area
- Corporate Boundary
- City of Guelph Natural Heritage System

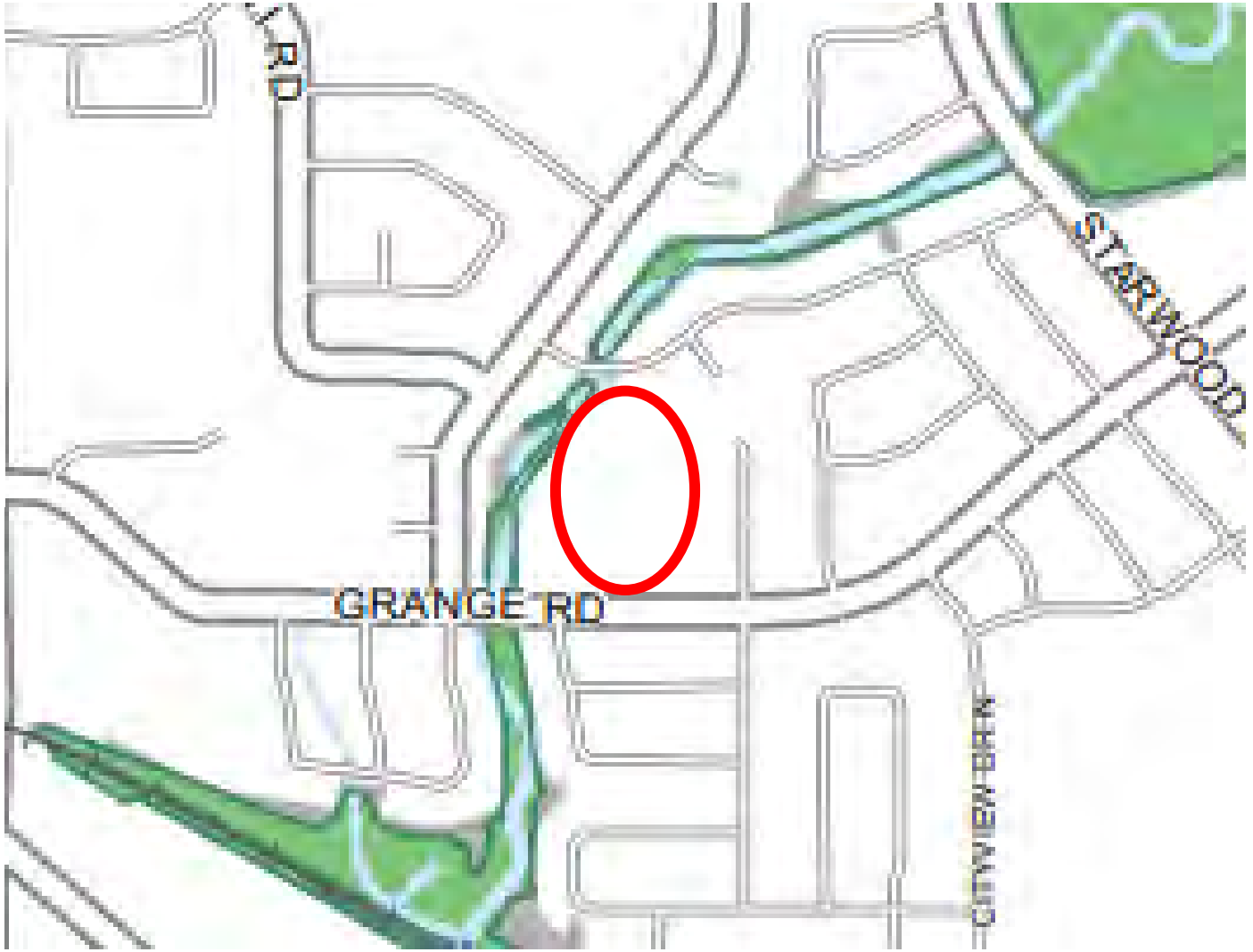
Significant Natural Areas

Significant Valleylands

- Undeveloped Portions of the Regulatory Floodplain
- Other Valleylands

Significant Landform

- Significant Portions of the Paris-Galt Moraine



Clythe Creek Subwatershed Study Update

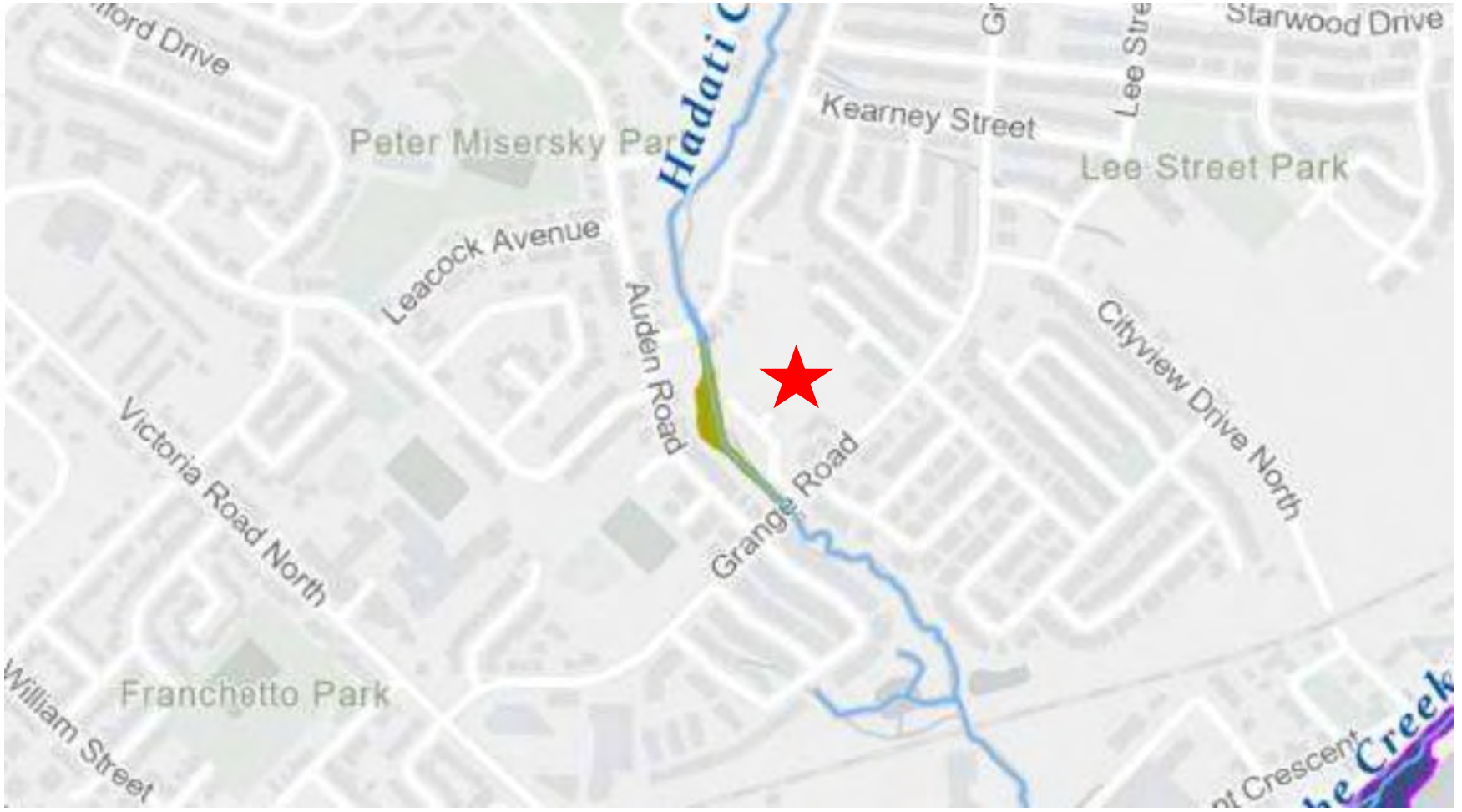
TE-4.1.1: Provincial Wetland Revisions

Clythe Creek Subwatershed Study Update Characterization Report

- Primary Study Area (PSA)
- Secondary Study Area (SSA)
- Watercourses [1]

Provincial Wetland Revisions [2]

- No change to wetlands (remain PSW)
- Wetland added (PSW)
- Wetland added (other wetland)
- Wetland removed (PSW)
- Wetland removed (unevaluated wetland)
- Wetland status change (unevaluated to PSW)
- Wetland boundary confirmed with GRCA



Clythe Creek Subwatershed Study Update

TE-4.2: Fish Habitat and Streams

Clythe Creek Subwatershed Study Update
Characterization Report

- Primary Study Area (PSA)
- Secondary Study Area (SSA)

Watercourses and HDFs [1]

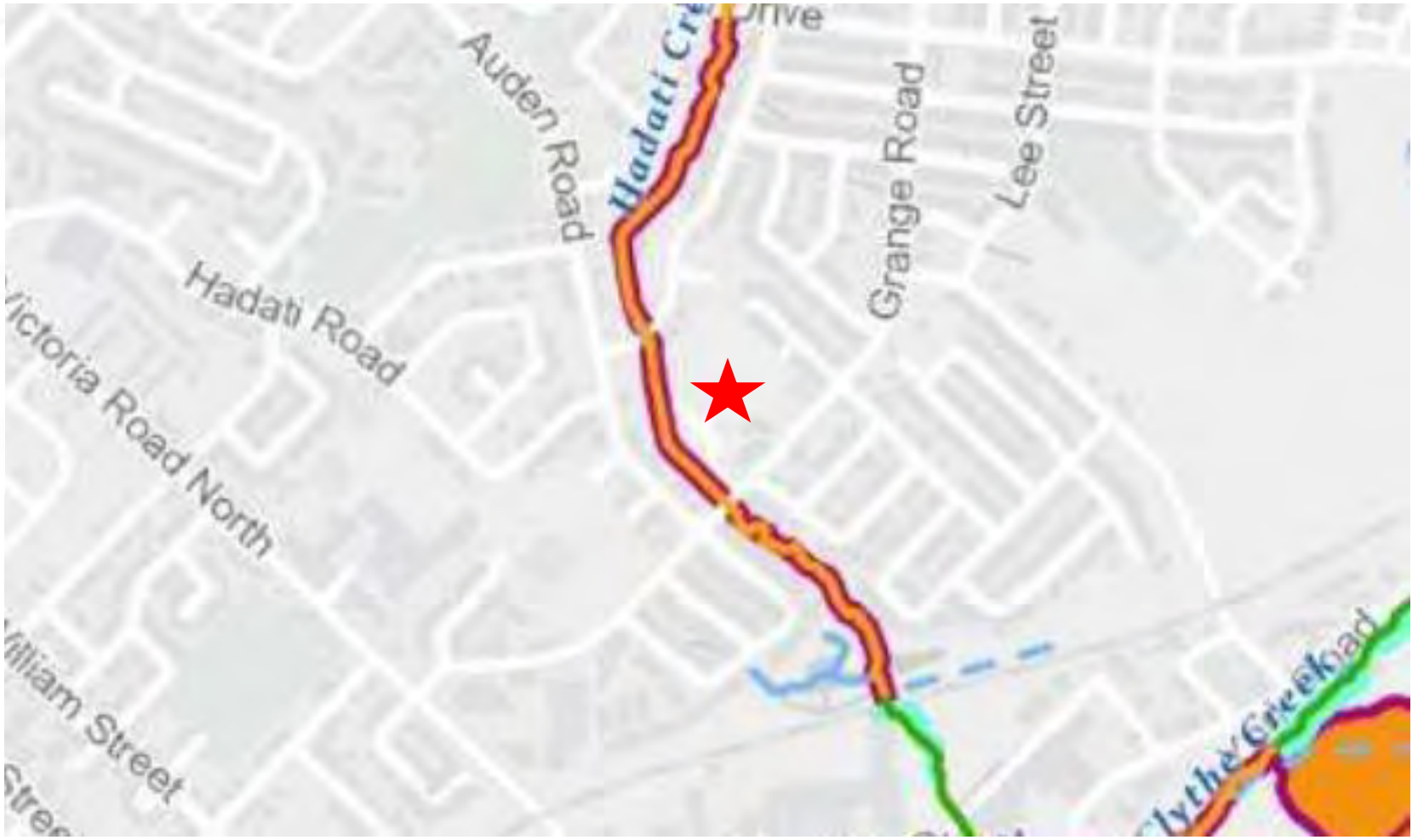
- Watercourses
- Unverified HDF
- Piped Watercourse

Fish Habitat - Watercourses and Waterbodies (Matrix and MNRF, 2025) [2]

- Coldwater
- Coolwater
- Warmwater

Fish Habitat Buffers [3]

- Coldwater and Coolwater Habitat (30m Buffer)
- Warmwater Habitat (15m Buffer)



Grand River Conservation Authority

Map Your Property Tool

☑ Regulation Limit (GRCA)

Regulation Limit (GRCA)

☑ Floodplain (GRCA)

Engineered

Estimated

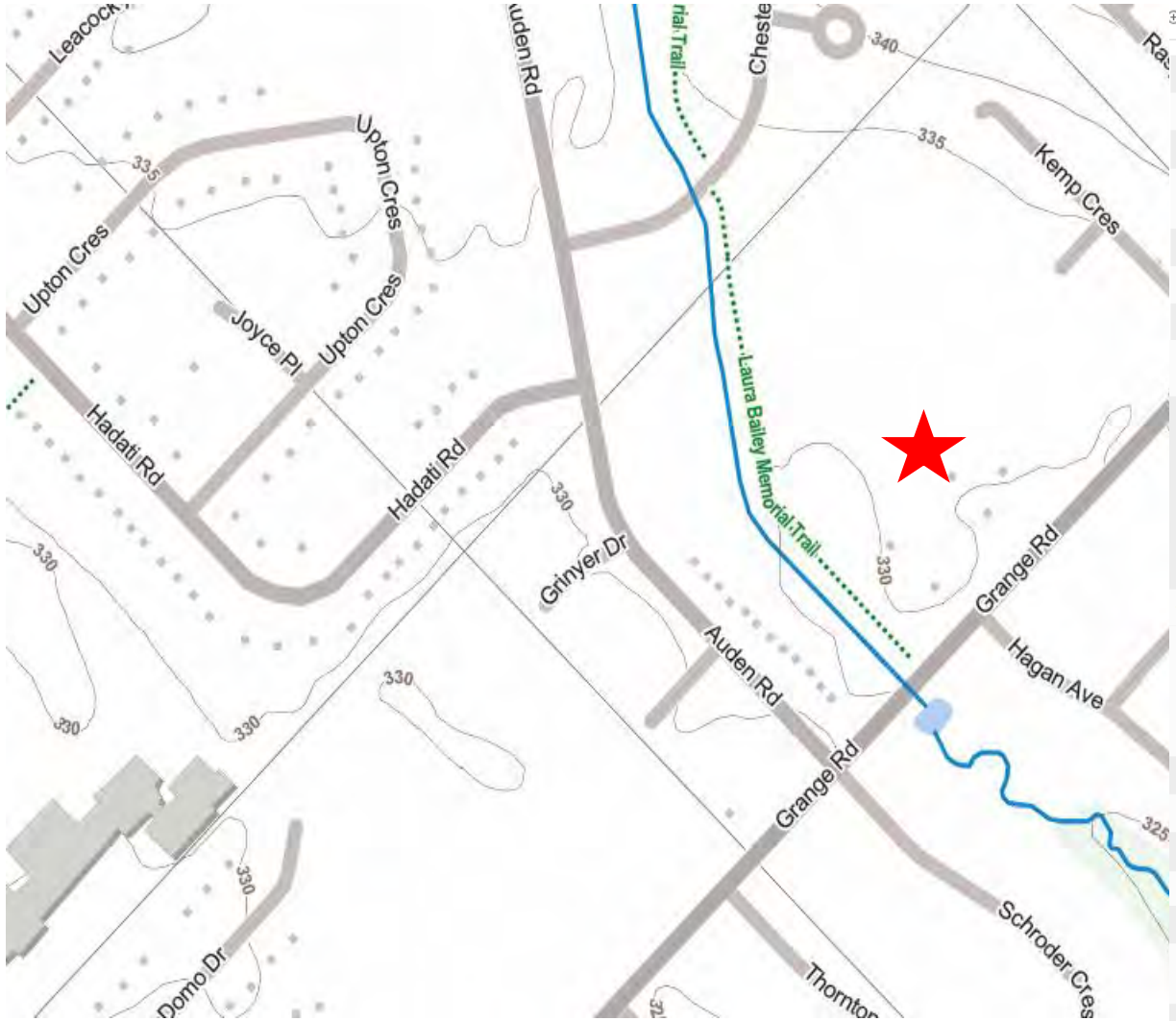
Approximate

Regulated Watercourse (GRCA)



Ontario GeoHub

Aquatic resource area line segment



ARA Water Line Segment

Zoom to

OGF_ID	127,442,427
ARA_IDENT	GU-1001-HAD
WATERBODY_LID	null
CORPORATE_WATERBODY_NAME	null
OFFICIAL_WATERBODY_NAME	null
WATERBODY_ALIAS_NAME1	Hadati Creek
WATERBODY_ALIAS_NAME2	2GA-05
FISHERIES_MANAGEMENT_ZONE_ID	16
FISH_SPECIES_SUMMARY	Blacknose Dace,Brook Stickleback,Central Mudminnow,Common Shiner,Creek Chub,Fathead Minnow,Goldfish,Northern Redbelly Dace,Pumpkinseed,Smallmouth Bass,White Sucker
CONDUCTIVITY	null
COMMENTS	This ARA includes all of Hadati Creek, from the mouth at Clythe Creek just under York Road, to the headwaters near the former Eastview Landfill site.
GEOMETRY_UPDATE_DATETIME	November 4, 2019
EFFECTIVE_DATETIME	November 4, 2019
SHAPE	undefined
OBJECTID	111979
WATERBODY_TYPE	Stream or River
WATERBODY_TYPE_COMBINATION	null
THERMAL_REGIME	Warm
THERMAL_REGIME_REASON	Fish Species Present

Ontario

Ministry of Natural Resources

Make-a-Map: Natural Heritage Areas

316 Grange Road

Map created:12/12/2025



Legend

- Assessment Parcel
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park
- Natural Heritage System

0.2 0 0.08 0.2 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources(OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

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APPENDIX B

Agency Correspondence

From:	Leah Lefler
To:	Kent Johnstone
Subject:	RE: 316 Grand Road - Terms of Reference for an Environmental Impact Study
Date:	October 29, 2025 4:16:24 PM
Attachments:	image001.png image002.png

Hi Kent,

Thank you for providing the following information. I have reviewed the proposed scope and can confirm that it is acceptable.

Please note that if an outlet to Hadati Creek is determined to be necessary, the EIS TOR will need to be expanded to include a water balance analysis.

Thank you,
Leah

Leah Lefler, PMP (she/her)
Environmental Planner
Planning and Building Services
City of Guelph
519-822-1260 extension 2362
TTY 519-826-9771
leah.lefler@guelph.ca

From: Kent Johnstone <kjohnstone@azimuthenvironmental.com>
Sent: Monday, October 27, 2025 4:08 PM
To: theywood@grandriver.ca; Leah Lefler <Leah.Lefler@guelph.ca>
Subject: 316 Grand Road - Terms of Reference for an Environmental Impact Study

[EXTERNAL EMAIL] This email originates outside the City of Guelph. Do not click links or attachments unless you recognize the sender and know the content is safe.

Hello Leah and Trevor,

Azimuth has been retained to complete a Scoped Environmental Impact Study (EIS) for the proposed development at 316 Grange Road, a component of which includes clearing of a Terms of Reference for our study. It is our understanding that an EIS is required to identify potential impacts to natural heritage features on and adjacent to the property and verify conformity with applicable environmental policies.

The proposed development area is located within the jurisdiction of the Grand River Conservation Authority (GRCA) with a small portion of the northwest corner of the property falling within regulated areas. Therefore, a permit under *Ontario Regulation 41/24* may be required to proceed with future development on the property.

The purpose of this study will be to identify natural heritage features and functions on the property including, but not limited to woodlands, wetlands, rare vegetation communities, significant wildlife

habitat, and potential habitat of Species at Risk (SAR) listed under the Ontario's *Endangered Species Act*, 2007 (ESA) associated with the property and adjacent lands. Where sensitive environmental features are identified, a strategy will be developed relative to the proposed development concept to avoid, mitigate, or offset potential impacts to natural heritage features and functions.

The following ToR is proposed towards the completion of the EIS:

- Search the City, County, Ministry of Natural Resources (MNR), Ministry of the Environment, Conservation and Parks (MECP), and Fisheries and Oceans Canada (DFO) records to obtain available background information and current data related to natural heritage features and functions in the area;
- Initiate consultation with the City and GRCA to confirm a Terms of Reference for the scope of the EIS;
- Conduct field studies to document existing natural heritage features, functions and species. Surveys include:
    - Evaluate/map vegetation community types based on Ecological Land Classification methods (fall 2025);
    - One (1) vascular plant inventory (fall 2025); and,
    - Record all incidental wildlife observations during the site visit.
- Complete an assessment of potential SAR and their habitat that could be present within the study area, including a screening for Butternut (*Juglans cinerea*) and Black Ash (*Fraxinus nigra*) trees (both Endangered);
- Assess the potential direct and indirect impacts of the proposed works on the natural heritage features and functions identified on or adjacent to the properties.

Please review the proposed Terms of Reference and provide comment as to its suitability to address potential concerns.

Thank you and please do not hesitate to contact me should you wish to discuss further.

Regards,

Kent

Kent Johnstone, B.A., T.FWC, CAN-CISEC
Ecologist
Azimuth Environmental Consulting, Inc.
642 Welham Road Barrie, ON L4N 9A1
Office: 705-721-8451 x216
Cell: 705-305-8582
www.azimuthenvironmental.com

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From:	Trevor Heywood
To:	Leah Lefler
Subject:	Re: 316 Grand Road - Terms of Reference for an Environmental Impact Study
Date:	October 28, 2025 8:47:56 AM
Attachments:	image001.png 2025-10-15 PRE25-015D GRCA comments.pdf

[EXTERNAL EMAIL] This email originates outside the City of Guelph. Do not click links or attachments unless you recognize the sender and know the content is safe.

Hi Leah,

It is, but I would not be request or review an EIS for it unless a watercourse re-alignment or other alteration was proposed. The focus of GRCA's review for this file will be ensuring the floodline is off of the property and not graded down to allow the hazard to come onto the site.

Regards,

Trevor Heywood
Resource Planner
Grand River Conservation Authority

From: Leah Lefler <Leah.Lefler@guelph.ca>
Sent: Monday, October 27, 2025 4:43 PM
To: Trevor Heywood <theywood@grandriver.ca>; Kent Johnstone <kjohnstone@azimuthenvironmental.com>
Subject: RE: 316 Grand Road - Terms of Reference for an Environmental Impact Study

Hi Trevor,

Is Hadati Creek not a regulated watercourse for flood hazard?

Leah

Leah Lefler, PMP (she/her)
Environmental Planner
Planning and Building Services
City of Guelph
519-822-1260 extension 2362
TTY 519-826-9771
leah.lefler@guelph.ca

From: Trevor Heywood <theywood@grandriver.ca>
Sent: Monday, October 27, 2025 4:40 PM
To: Kent Johnstone <kjohnstone@azimuthenvironmental.com>
Cc: Leah Lefler <Leah.Lefler@guelph.ca>
Subject: Re: 316 Grand Road - Terms of Reference for an Environmental Impact Study

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links or attachments unless you recognize the sender and know the content is safe.

Hi Kent,

As the primary purpose of the EIS is to analyze natural heritage features and functions, and GRCA has not identified wetlands in the vicinity of the project, we have no comments on the ToR. Natural heritage matters are outside of GRCA's scope of review.

Regards,

Trevor Heywood B.Sc.(Env.)
Resource Planner
Grand River Conservation Authority

400 Clyde Road, PO Box 729
Cambridge, ON N1R 5W6
Phone: 519-621-2761 ext. 2292
Email: theywood@grandriver.ca
www.grandriver.ca | Connect with us on social media

From: Kent Johnstone <kjohnstone@azimuthenvironmental.com>
Sent: Monday, October 27, 2025 4:07 PM
To: Trevor Heywood <theywood@grandriver.ca>; Leah Lefler <Leah.Lefler@guelph.ca>
Subject: 316 Grand Road - Terms of Reference for an Environmental Impact Study

Hello Leah and Trevor,

Azimuth has been retained to complete a Scoped Environmental Impact Study (EIS) for the proposed development at 316 Grange Road, a component of which includes clearing of a Terms of Reference for our study. It is our understanding that an EIS is required to identify potential impacts to natural heritage features on and adjacent to the property and verify conformity with applicable environmental policies.

The proposed development area is located within the jurisdiction of the Grand River Conservation Authority (GRCA) with a small portion of the northwest corner of the property falling within regulated areas. Therefore, a permit under *Ontario Regulation 41/24* may be required to proceed with future development on the property.

The purpose of this study will be to identify natural heritage features and functions on the property including, but not limited to woodlands, wetlands, rare vegetation communities, significant wildlife habitat, and potential habitat of Species at Risk (SAR) listed under the Ontario's *Endangered Species Act*, 2007 (ESA) associated with the property and adjacent lands. Where sensitive environmental features are identified, a strategy will be developed relative to the proposed development concept to avoid, mitigate, or offset potential impacts to natural heritage features and functions.

The following ToR is proposed towards the completion of the EIS:

- Search the City, County, Ministry of Natural Resources (MNR), Ministry of the Environment, Conservation and Parks (MECP), and Fisheries and Oceans Canada (DFO) records to obtain available background information and current data related to natural heritage features and functions in the area;
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- Conduct field studies to document existing natural heritage features, functions and species. Surveys include:
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    - One (1) vascular plant inventory (fall 2025); and,
    - Record all incidental wildlife observations during the site visit.
- Complete an assessment of potential SAR and their habitat that could be present within the study area, including a screening for Butternut (*Juglans cinerea*) and Black Ash (*Fraxinus nigra*) trees (both Endangered);
- Assess the potential direct and indirect impacts of the proposed works on the natural heritage features and functions identified on or adjacent to the properties.

Please review the proposed Terms of Reference and provide comment as to its suitability to address potential concerns.

Thank you and please do not hesitate to contact me should you wish to discuss further.

Regards,

Kent

Kent Johnstone, B.A., T.FWC, CAN-CISEC
Ecologist
Azimuth Environmental Consulting, Inc.
642 Welham Road Barrie, ON L4N 9A1
Office: 705-721-8451 x216
Cell: 705-305-8582
www.azimuthenvironmental.com

Providing services in hydrogeology, terrestrial and aquatic ecology, environmental engineering, and arborist assessments.

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APPENDIX C

Photographic Record



Vacant structure – November 13, 2025



Property overview facing west – November 13, 2025



Property overview facing north – November 13, 2025



Hedgerow along Grange Road (A) – November 13, 2025



Hedgerow (C)– November 13, 2025



Hedgerow (D) – November 13, 2025



Hedgerow (B) – November 13, 2025



Overview of MEM community – November 13, 2025

APPENDIX D

Proposed Development Concept



Stantec

Stantec Consulting Ltd.
100-300 Hagey Boulevard
Waterloo ON N2L 0A4
Tel: (519) 579-4410
www.stantec.com

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The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.
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Legal Description

Lot 7,
Registered Plan 53, Division C
City of Guelph,
County of Wellington

Information Required

Under Section 51(17) of the Planning Act,
R.S.O 1990 c.P 13 as Amended

a) - As Shown
b) - As Shown
c) - As Shown
d) - As Listed Below
e) - As Shown
f) - As Shown
g) - As Shown
h) - Municipal Water
i) - As Shown
j) - Municipal Sanitary and Storm Sewers
k) - None

Surveyor's Certificate

I hereby certify the boundaries of the subject lands and their relationship to the adjoining lands have been accurately and correctly shown.

Signed _____
Jamie Laws, O.L.S
Van Harten Surveying Inc.

Date _____

Owner's Certificate

I hereby authorize Stantec Consulting Ltd. to submit this Draft Plan of Subdivision on my behalf.

Signed _____
1001232683 Ontario Inc.

Date _____

Signed _____
Fabbian Homes Inc.

Date _____

Land Use Schedule

Lots/Blocks	Land Use	Area (ha)	Potential # of Units
Lots 1-2	Single Detached	0.137	2
Lots 3-12	Semi Detached	0.493	20
Blocks 13-23	Townhouse	1.263	60
Block 24	Park	0.109	
Blocks 25-26	0.3m Reserve	0.003	
Block 27	Road Widening	0.053	
Roads		0.610	
Total		2.668	82 Units

Revision		By	Appd	
	ISSUED FOR DRAFT PLAN APPROVAL	JJ	EE	2026.10.21
1.	REVISED AS PER CITY COMMENTS	JJ	EE	2026.08.18
	ISSUED FOR PRE-CONSULTATION	JJ	EE	2026.02.13
File Name:	161414698_R-DP	JJ	JJ	EE 2025.10.02
		Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit-Seal

Client/Project
1001232683 ONTARIO INC.

316 GRANGE ROAD

GUELPH, ON

Title
DRAFT PLAN OF SUBDIVISION

Owner
1001232683 ONTARIO INC.
275 Hanlon Creek Boulevard, Unit #2, Guelph, Ontario, N1C 0A1
Phone: (519) 824-0789 Fax: (519) 824-4189
Email: joe@geminihomes.ca

Applicant
MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE
540 Bingemans Centre Drive, Suite 200, Kitchener, Ontario, N2B 3X9
Phone: (519) 576-3650 Fax: (519) 576-0121
Email: eelliott@mhbcplan.com

Project No. 161414698
Scale 1:400 (0 4 12 20m)
Revision 1
Sheet 1 of 1
Drawing No. DP-1

V:\015\4\active\161414698\design\drawings\planning\sheet_files\161414698_R-DP.dwg
Mar 02, 2026 - 11:39:31 - 7258 By: Jaimie.Laws

ORIGINAL SHEET - ARCH D