Environmental Impact Study

Part of Lot 40, Concession 8
(The Gateway Centre)

Town of Collingwood

Prepared for:
Charis Developments Ltd.

Prepared by:
Azimuth Environmental
Consulting, Inc.

September 2024

AEC 24-153

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

September 9, 2024 AEC 24-153

Charis Developments Ltd.
186 Hurontario Street, Suite 204
Collingwood, Ontario L9Y 4T4

Attention: David Finbow

Re: **Environmental Impact Study for a Proposed Development on Part of Lot 40, Concession 8 (The Gateway Centre), Town of Collingwood**

Dear Mr. Finbow:

Azimuth Environmental Consulting, Inc. was retained to provide an Environmental Impact Study report for a proposed development at the location described above. The purpose of this report is to provide the Town of Collingwood, Nottawasaga Valley Conservation Authority, 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.

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 Charis Developments Ltd. (the "proponent"), to undertake an Environmental Impact Study (EIS) for a proposed development at Part of Lot 40, Concession 8 (also referred to as The Gateway Centre lands) within the Town of Collingwood (the "Town"), County of Simcoe (the "County"). A map illustrating the limits of the property in its regional context is shown on Figure 1. It is our understanding that the Town and the Nottawasaga Valley Conservation Authority (NVCA) have requested that an EIS be undertaken due to presence of mapped wetlands and the Hamilton Drain (off-property) within the study area. The study area including the proposed development footprint are mapped within the jurisdiction of the NVCA, and therefore a permit issued Ontario Regulation (O. Reg.) 41/24 under the *Conservation Authorities Act* may be required to proceed with the proposed development.

This purpose of this EIS is to identify the candidate Key Natural Heritage Features (KNHFs) present within the study area and address potential impacts to candidate KNHFs. A review of background information in combination with a detailed field program was undertaken in spring-summer 2024 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 comprises the approximate consolidated property boundaries ("the property") as shown on Figures 1-3 and adjacent lands (within approximately 120 metres (m)) of the property 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 Policy (2024)

The Provincial Policy 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 harassment, harm and/or killing of individuals and destruction of their habitats. Habitat is broadly characterized within the ESA as the area prescribed by a regulation as the habitat of the species or an area on which the species depends, directly or indirectly, to carry on its life processes including reproduction, rearing of young, hibernation, migration or feeding.

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 County of Simcoe

The County of Simcoe Official Plan ("Simcoe OP"; 2023) illustrates the property within the Settlements designation under Section 5.1 (Land Use Designations; Appendix A).

Natural features including Provincially Significant Wetland, Locally Significant Wetland, Watercourse, or Areas of Natural and Scientific Interest (ANSIs) are not shown in the vicinity of the property in Schedule 5.2.2 (Streams and Evaluated Wetlands) and Schedule 5.2.3 (Areas of Natural and Scientific Interest) of the Simcoe OP (Appendix A).

County of Simcoe Interactive Mapping (County of Simcoe, 2024) illustrates a segment of the Hamilton Drain beyond the northern property limit, approximately parallel with the northern property boundary (Appendix A), consistent with watercourse limits mapped through provincial resources (Appendix B). No Evaluated Wetlands or Unevaluated Wetlands are mapped within the study area, however a Waterbody is illustrated in the northeast portion of the property. A Woodlands unit is illustrated within 120m of the property on the west side of Hurontario Street, however a review of recent aerial imagery indicates that this unit is not present and its mapped location is currently occupied by a commercial facility (Appendix A).

2.4 Town of Collingwood

The Town of Collingwood Official Plan ("Collingwood OP"; 2018) illustrates the western and northern portions of the property as Highway Commercial, and eastern segments of the property as Residential within Schedule "A" – Land Use Plan (Appendix A).

Schedule "B" - Environmental Protection-Natural Heritage Resource Areas of the Collingwood OP (Appendix A) does not illustrate Category 1 Valleylands, Category 1 Wetlands, Category 1 Woodland, Category 2 Woodland, or Fish Spawning & Nursery Habitat associated with the property or adjacent lands (Appendix A).

The above policy review acknowledges pending updates to the Collingwood OP with the new Town of Collingwood Official Plan (2023) adopted by council but awaiting approval by the County at the time of writing. The new Collingwood OP illustrates a watercourse beyond the northern property limit, consistent with the Hamilton Drain shown on other municipal and provincial resources (Appendix A, Appendix B). No other relevant designations with regards for natural heritage features or functions are associated with the study area within the new Collingwood OP.

2.5 Nottawasaga Valley Conservation Authority

The northern portion of the study area is located within the jurisdiction of the NVCA, as illustrated in Appendix C, associated with the Hamilton Drain and its regulated area. Preliminary NVCA correspondence (Appendix C) also indicates presence of potential wetlands in the northern portions of the property. 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 NVCA may require that approvals be obtained for a proposed development or site alteration within areas regulated under the Conservation Authority's jurisdiction.

2.6 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 Terms of Reference

A combination of a background information and field data were used to fulfill the objectives of this EIS. Azimuth undertook the following activities for this study:

- Searched the Town, County, Ministry of Natural Resources (MNR), Ministry of the Environment, Conservation and Parks (MECP), and DFO records, in addition to other available background resources (*e.g.* Ontario Breeding Bird Atlas, Ontario Reptile and Amphibian Atlas; see Section 3.2 below) to obtain available background information, including obtaining current information related to natural heritage conditions including SAR in the nearby area;
- Conducted field surveys to document existing natural heritage features, functions, and species. Surveys included:
    - Evaluated/mapped vegetation communities onsite using Ecological Land Classification methods;

  - Three (3) vascular plant inventories (June 6, July 31, and August 22, 2024);
  - One (1) Butternut Health Assessment (BHA) for two (2) Butternut trees on the property (August 22, 2024) and submission of one (1) BHA Report to MECP according to provincial protocols;
  - Three (3) amphibian breeding surveys (April 26, May 20, and June 19, 2024);
  - Two (2) dawn breeding bird surveys (June 6 and June 27, 2024);
  - One (1) aquatic habitat assessment to document fish and fish habitat features on the property (August 22, 2024);
  - Recorded all incidental wildlife observations during site visits;
- Attended one (1) wetland staking exercise with NVCA to delineate wetland boundaries (August 22, 2024);
- Completed an assessment of potential SAR and Significant Wildlife Habitat (SWH) that could be present within the study area, including (but not limited to) a screening for Butternut and Black Ash trees, and potential habitat function for Eastern Meadowlark within the study area limits;
- Assessed the potential direct and indirect impacts of the proposed development on the natural heritage features and functions identified on or adjacent to the development parcel; and,
- Reviewed the conformity of the proposed development with the applicable municipal, provincial, and federal natural heritage policy framework.

A Terms of Reference for the field program and associated review was provided to the Town (via their peer reviewer Natural Resource Solutions Inc. (NRSI)) on June 21, 2024. A response from NRSI was received with requests for additional considerations in preparing the EIS (*e.g.* two-season plant inventory, specific attention to review for Eastern Meadowlark habitat function). Azimuth was agreeable to the suggested revisions to the Terms and provided a response indicating such on July 3, 2024, to which NRSI accepted the revised Terms in a reply on July 4, 2024. A record of relevant correspondence detailed above is included in Appendix A. Notably, in addition to the agreed Terms, Azimuth elected to complete a third vascular plant survey on August 22, 2024, in addition to a review of fish habitat features and functions by a fisheries ecology specialist on the same day.

Pre-consultation with NVCA was undertaken in early spring 2024 prior to Azimuth's engagement by the proponent. In a pre-consultation letter dated April 11, 2024 (Appendix C), NVCA indicated presence of potential wetlands in the northern portion of the property and included a proposed Terms of Reference for the corresponding EIS by a qualified ecologist. Field studies included in the Terms were incorporated within the list

presented above and provided to the Town. Notably, a feature-based water balance was not undertaken as a part of this EIS under Azimuth's scope; alternatively, a Stormwater Management (SWM) report (high level), Functional Servicing Report, Geotechnical Report, and Hydrology Report for the proposed development will be prepared by others as part of the project submission package.

3.2 Background Information

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

- MNR Natural Heritage Information Centre (NHIC; MNR, 2024a);
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman *et al.*, 2007);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2020);
- MECP's Species at Risk Ontario list (MECP, 2024);
- iNaturalist (NHIC) Rare Species of Ontario (iNaturalist, 2024);
- Air photos available for the Project Area (Google, VuMap);
- Government of Canada's Species at Risk Public Registry;
- Atlas of the Mammals of Ontario (Dobbyn, 1994)
- MNRF Aquatic Resource Areas Mapping (ARA; MNR, 2024b); and,
- DFO Aquatic Species at Risk Map (DFO, 2024).

3.3 Vegetation Community Mapping and Surveys

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 checked in the field on July 6, July 31, and August 22, 2024 during the growing season when the emergent ground cover vegetation layer was present. Vegetation community types were classified using ELC protocols.

A wetland site staking occurred with NVCA on August 22, 2024 to ensure wetland boundaries were delineated in accordance with ELC protocols, supported by Ontario Wetland Evaluation System (OWES; MNRF, 2022) methodology and carried out by a qualified ecologist certified by the province in OWES. Wetland boundaries were staked by a qualified surveyor (J.D. Barnes Limited) such that boundaries are illustrated on Figure 2 to a high level of accuracy.

The site visits were undertaken by qualified ecologists with existing knowledge related to rare, 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. A detailed survey including a screening for Butternut (Endangered) and Black Ash (Endangered) was also conducted within the study area.

3.4 Wildlife Surveys

Wildlife species utilizing the study area were identified from direct observation, auditory signs, and through interpretation of other signs (tracks, scats, vocalizations, *etc.*) as a matter of course while conducting field surveys.

3.4.1 Species at Risk

The SAR screening undertaken for the scope of this assignment includes an assessment of SAR with potential to occur in the overall planning area, compared with potential habitat features identified within the study area. Habitat requirements and appropriate designations (Endangered, Threatened, or Special Concern) are outlined in Table 1.

3.4.2 Amphibian Breeding

Azimuth conducted three (3) evening calling amphibian surveys on April 26, May 20, and July 19, 2024 to assess amphibian breeding within and adjacent to the development parcel in accordance with the Great Lakes Marsh Monitoring Program (Bird Studies Canada, 2008) protocol. In accordance with the protocol, the amphibian surveys were completed during the period between 30 minutes after sunset and midnight, on evenings with winds Beaufort <4. The survey occurred during the early, mid-, and late- spring periods (April 15-30, May 15-31, June 15-30) on evenings with a minimum temperature of 5°C, 10°C, and 17°C respectively. The location of the survey station is illustrated on Figure 2.

Wetland and associated permanent standing water in northwest portion of the property (SAS_1 (inclusion); Figure 2) was limited to the dug pond representing the historical manmade sedimentation pond, an area occupying approximately 236m^2 (0.02ha). In accordance with the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and accompanying the Ecoregion 6E Criteria Schedules (MNRF, 2015), candidate Amphibian Breeding Habitat (Wetland) features must exceed 500m^2 to be considered as potentially significant. Given the minimal extent of potentially suitable habitat for amphibian breeding, a dedicated amphibian evening breeding station was not established in proximity to this feature, however potential amphibians could be detected from the amphibian survey station illustrated on Figure 2.

3.4.3 Breeding Birds

Two (2) dawn breeding bird surveys were conducted within the study area on June 6 and June 27, 2023 guided by point count methodology presented in Appendix D of the OBBA Guide for Participants (2001). All surveys were conducted no earlier than one half hour before sunrise and were completed prior to 10:00a.m. Surveys were completed under suitable weather conditions (*i.e.* no precipitation and light winds (Beaufort wind scale ≤3)), with an observation period of 10 minutes carried out at the point count station shown on Figure 2.

3.5 Fish and Fish Habitat

Fish and fish habitat features within the study area were evaluated on August 22, 2024. The site evaluation was intended to understand the location of watercourses and drainage features on the property, noting channel features such as wetted width, water depths, flow, bank slopes, vegetation communities, substrate material, general morphometrics, and observations of fish to determine characteristics of fish habitat and fish habitat sensitivity.

4.0 EXISTING CONDITIONS

4.1 Land Use

The property consists of pioneer and early successional vegetation communities, primarily as a result of initiating conversion of the property from agricultural lands into a commercial facility between 2007-2008 as indicated by historical aerial imagery (County of Simcoe, 2024) and available background documentation. The majority of the property comprises a large gravel pad with minor vegetation establishment, surrounded by a fringe of early successional meadow and thicket communities on the east and west sides. A historical sedimentation pond and associated linear ditch was established in the northwest portion of the property between 2007-2008 as a part of early works associated with the development. A minor wetland unit is also located in the northeast portion of the property approximately consistent with the Waterbody illustrated on the site by County of Simcoe (2024) mapping.

The northern fringe of the property is occupied by an existing residential dwelling, hedgerows, and small old-field meadow community (approx. 0.2 hectares (ha)). Lands beyond the northern property limit include the Hamilton Drain and associated naturalized corridor, which abut the northern property boundary on an east-west axis. A residential subdivision is located beyond the east property limit and a commercial facility is located west of the property, on the opposite side of Hurontario Street. Lands beyond the southern property boundary (south of Poplar Sideroad) comprise agricultural lands which appeared primarily fallow in character during the 2024 site investigations.

4.2 Terrestrial Resources

4.2.1 Vegetation

The limits of all ELC communities identified within the property are illustrated in Figure 2. A complete list of vascular plant species identified within the development parcel limits is presented in Table 2, and summary descriptions of vegetation communities within the development parcel are presented in Table 3.

Vegetation communities within the property were determined in accordance with the ELC system, are illustrated on Figure 2 and summarized as follows:

- MAMM1-2/MASM1-1a (Cattail Mineral Meadow Marsh/Cattail Mineral Shallow Marsh)
    - with SAS_1 (Submerged Shallow Aquatic) inclusion
- MAMM1-2/MASM1-1b (Cattail Mineral Meadow Marsh/Cattail Mineral Shallow Marsh)
- SWDM2-2 (Green Ash Mineral Deciduous Swamp)
- MEGM4 (Fresh-Moist Graminoid Meadow)
    - with FODM11 (Naturalized Deciduous Hedgerow) inclusion
- MEMM4 (Fresh-Moist Mixed Meadow)
- THDM5/MEMM4 (Fresh-Moist Deciduous Thicket/Fresh-Moist Mixed Meadow)
    - with WODM5 (Fresh-Moist Deciduous Woodland) inclusion
- CVC_1 (Business Sector), representing pioneer vegetation on gravel pad
- CVR_4 (Rural Property), representing maintained residential dwelling and yard

None of the vegetation communities or species documented are of federal or provincial conservation concern (MNR, 2024a). A photographic record of vegetation communities and associated environmental features throughout the property limits is presented in Appendix D.

4.2.1.1 Rare and Uncommon Plants

There is are (2) of Element 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, 2024a):

- Butternut (Endangered); and,
- Stiff Yellow Flax (*Linum medium var. medium*; S-Rank 2).

Two (2) Butternut trees were identified within the study area, at the locations illustrated in Figure 2. As described in Section 4.3.1 below, Butternut #001 was determined to be a hybrid upon completion of genetic testing.

No other plant species considered Endangered or Threatened (including Black Ash) were identified during the site investigation. Further, no provincially rare (S1-S3) species (including Stiff Yellow Flax) were observed during the field program.

4.2.2 Wildlife

4.2.2.1 Mammals

Direct and indirect observations of wildlife (*e.g.* tracks, scat, fur) were collected as a matter of course during the course of the field program.

Evidence of two (2) mammalian species including Gray Squirrel (direct observation) and Eastern Cottontail (direct observation) were observed throughout the course of the field program. Given the proximity of the study area to the Hamilton Drain and fallow agricultural lands south of the property, it is expected the following other mammals could conceivably be encountered within the study area: small mammal species (various mice, voles, and shrews), Eastern Chipmunk, weasel species, Virginia Opossum, Striped Skunk, Raccoon, Groundhog, Red Fox, and Coyote.

4.2.2.2 Reptiles and Amphibians (Herpetofauna)

The wetland unit in the northeast portion of the property (Wetland #2; Figure 2) represents the only feature within the study area with standing water, vernal pools/breeding pools, and/or wetland sloughs and of sufficient size to potentially render significant amphibian breeding function. As a result of the three (3) spring 2024 evening amphibian breeding surveys, the following species were detected within Wetland #2:

- Gray Treefrog (3 calling; May 20, 2024)
- Green Frog (3 calling; June 19, 2024)

No salamanders were observed within the property limits, nor would be anticipated given the minimal extent of standing water on the property and generally disturbed character of the lands. No reptiles (turtles or snakes) were observed throughout the course of the field program.

4.2.2.3 Birds

A total of 17 bird species were recorded during dawn breeding bird surveys, all of which are typical of urban/semi-urban landscapes and woodland edge habitats (Table 4). An

additional 4 bird species were identified incidentally during the remainder of the field program, also documented on Table 4.

No Eastern Meadowlark were detected throughout the study area during the dawn breeding bird survey program, or incidentally throughout the remainder of the field program.

4.2.2.4 Insects

Invertebrate species were documented as a matter of course throughout the field program, and included observations of the following:

- Monarch (*Danaus plexippus*)
- Viceroy (*Limenitis archippus*)
- Black Swallowtail (*Papilio polyxenes*)
- Cabbage White (*Pieris rapae*)
- Green Darner (*Anax junius*)

Monarch is listed as Special Concern under Ontario's ESA, and is considered in the context of Candidate SWH (Habitat for Rare and Special Concern Species) below. None of the other observed invertebrates are of provincial conservation concern (MNR, 2024a).

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**: Butternut, Little Brown Myotis, Northern Myotis, Tri-colored Bat
- **Special Concern**: Monarch

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 Candidate SWH (Habitat for Special Concern and Rare Wildlife Species) below.

4.3.1 Butternut

Two (2) Butternut trees were documented during the site investigation and was subject to a Butternut Health Assessment (BHA) in accordance with provincial guidelines (MECP,

2021) undertaken on August 22, 2024. The BHA was completed by a qualified Butternut Health Expert Dan Stuart (Ecology Lead, Azimuth). A BHA report was prepared by Dan Stuart and submitted to MECP on September 5, 2024 (Appendix E). In accordance with provincial guidelines (MECP, 2021), MECP reserves a 30-day audit period following submission of BHA reports. MECP reserves the right to initiate the audit process within 30 days of received of a BHA. Should MECP not contact Azimuth to initiate such process before October 5, 2024, tree statuses will be considered accepted by the province.

With regards for Butternut #001, a leaf sample was collected from the individual which was submitted for genetic hybrid testing on August 23, 2024. The results of genetic testing completed by the Canadian Centre for DNA Barcoding determined that the individual is a hybrid between Butternut and Japanese Walnut (*Juglans cinerea* x *Juglans ailantifolia*), as outlined in a detailed report presented in Appendix E. In accordance with provincial guidelines (MECP, 2021), Butternut hybrids are **not** subject to protections under Ontario's ESA.

The BHA confirmed the assessed Butternut #002 as a Category 1 tree, considered "non-retainable" under BHA Guidelines and **not** subject to ESA protections.

4.4 Wetlands

Provincially or locally Significant Wetlands are not located within the study area limit according to municipal (Appendix A) and provincial (Appendix B) mapping resources.

Two (2) wetlands were identified within the study area limits, verified through the wetland staking exercise that took place with NVCA on August 22, 2024, at the locations illustrated on Figure 2.

<u>Wetland #1 (northwest feature)</u>
The northwest Wetland #1 (Figure 2) comprises a meadow marsh/shallow marsh complex (MAMM1-2/MASM1-1a) and minor interior offline pond inclusion (SAS_1). The total feature measures 0.27ha in size, including the interior offline pond measuring 236m^2 in area.

Wetland #1 was initially established as a sedimentation pond and connected drainage ditch as a component of early works toward the establishment of a commercial facility between 2007-2008, which was ultimately not constructed. An Erosion & Sedimentation Control Plan, Grading Plan associated with the previous development concept are available for reference in Appendix F, and the previous NVCA Permit (#2007-8832) is available in Appendix C. As illustrated on the above-referenced design drawings, the intent of the current Wetland #1 was to function as a sedimentation pond with

Hickenbottom Drain and emergency spillway into the adjacent roadside ditch along Hurontario Street. It is notable that the Hickenbottom Drain and evidence of the emergency spillway remain present and were identified during the site investigation. In accordance with discussions with NVCA during the wetland staking exercise on August 22, 2024, it is Azimuth's understanding that constructed sedimentation and/or stormwater management features are not subject to regulation under O. Reg. 41/24. The drawing package presented in Appendix F provides clear evidence of the sedimentation pond as an engineered feature for the purposes of water management, demonstrating that Wetland #1 should not be subject to NVCA Regulation.

Based on the above review, Wetland #1 should not be treated as a natural feature subject to contemplation under NVCA's regulatory framework, and is therefore not considered further in this assessment.

Wetland #2 (northeast feature)

The northwest Wetland #2 (Figure 2) comprises a meadow marsh/shallow marsh complex (MAMM1-2/MASM1-1b) with attached deciduous swamp dominated by Green Ash (*Fraxinus pennsylvanica*). The total feature measures 0.39ha in size, the marsh feature composing 0.26ha of the wetland unit and the treed swamp comprising 0.13ha of the feature. In accordance with updated provincial protocols described in the OWES Southern Manual (4th Edition, December 2022; MNRF, 2022) wetlands <0.5ha in size do not meet the minimum unit size for mapping and by extension, consideration for potential status as significant, therefore Wetland #2 is referred to as "Other Wetlands" for the purposes of this assessment.

Wetland #2 is isolated on the landscape and not directly connected to a watercourse or other drainage feature via surface flow. According to O. Reg. 41/24, a "wetland" means land that:

(a) is seasonally or permanently covered by shallow water or has a water table close to or at its surface,

(b) directly contributes to the hydrological function of a watershed through connection with a surface watercourse,

(c) has hydric soils, the formation of which have been caused by the presence of abundant water, and

(d) has vegetation dominated by hydrophytic plants or water tolerant plants, the dominance of which have been favoured by the presence of abundant water.

Based on discussions with NVCA during the wetland staking exercise on August 22, 2024, it is understood that provincial direction has clarified that isolated wetland features influenced by surface water input only should be not be interpreted as "wetland" in accordance with O. Reg. 41/24, and therefore not subject to NVCA regulation. Conversely, isolated wetland features influenced by groundwater input are to be considered "wetland" in accordance with O. Reg. 41/24 and therefore subject to NVCA regulation.

At the time of writing a groundwater study verifying presence/absence of groundwater input into Wetland #2 remains pending, therefore the status of NVCA Regulation of the feature remains unknown. It is recommended a future EIS addendum be prepared to verify the status of groundwater contribution to the feature and resulting status of NVCA regulation.

4.5 Candidate Significant Woodland

Significant Woodlands are not located within the study area limit according to municipal (Appendix A) and provincial (Appendix B) mapping resources.

Wooded areas within the study area are limited to a minor node of deciduous swamp and adjacent deciduous woodland inclusion (SWD/WODM5; Figure 2) associated with the wetland in the northeast portion of the property. The wooded unit demonstrates an average width of 20-25m (maximum width 37m) and measures approximately 0.19ha in size, below the minimum size threshold (>0.5ha) for consideration as a standalone vegetation community under the ELC system.

A series of hedgerows are also located within the northern portion of the property, connecting to off-property hedgerows associated with the Hamilton Drain and residential areas on adjacent lands. The Collingwood OP does not provide criteria for differentiation between a hedgerow and a woodland, therefore in lieu of such framework provincial guidance documents including the Natural Heritage Reference Manual (NHRM; OMNR, 2010) are utilized. The NHRM (Section 7.3.2; Delineation of Woodland Patches) suggests that for small woodlots <4ha, a minimum patch width of approximately 40m is an appropriate minimum width to differentiate a woodland from a linear hedgerow feature. In the case of wooded features within the study area, no wooded areas exceed 40m in width and therefore should not be considered of sufficient width to be considered as "woodland" in accordance with NHRM criteria.

The SWD/WODM5 feature illustrated on Figure 2 is mapped and discussed within this report to facilitate further review related to ecological features and functions (*e.g.* wetland, Candidate SWH), but should not be interpreted as meeting the definition of a

woodland in accordance with provincial criteria. No other ecological features meeting the definition of a woodland are located within the study area limits.

4.6 Candidate Significant Valleyland

No portion of the study area is identified as Significant Valleyland, nor assigned a similar designation (*e.g.* Category 1 Valleyland) on municipal (Appendix A) or provincial (Appendix B) mapping resources.

There are no valleyland features located within the property limits according standards presented in the NHRM or Collingwood OP, principally due to the lack of permanent or intermittent watercourses that constitute a defining component of a valleyland feature. The Hamilton Drain represents a municipal drainage feature on adjacent lands that does not demonstrate the well-defined valley morphology and/or landform prominence required to be considered Candidate Significant Valleyland.

4.7 Candidate Significant Wildlife Habitat

An assessment of the potential for SWH within study area was conducted, using the criteria outlined within the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the accompanying the Ecoregion 6E Criteria Schedules (MNRF, 2015). An assessment of Candidate Significant Wildlife Habitat categories relative to documented vegetation communities and habitats within the development parcel is presented in Table 5. The following Candidate SWH types were determined to be present, or have potential to be present within the study area based on the results of the field program:

- Habitat for Special Concern and Rare Wildlife Species
    - Monarch

4.8 Areas of Natural and Scientific Interest

There are no Areas of Natural and Scientific Interest located within the study area according to municipal (Appendix A), or provincial (Appendix B) mapping resources.

4.9 Fish and Fish Habitat

The property is located within the Blue Mountains subwatershed. The nearest mapped watercourse feature is the Hamilton Drain, which is located approximately 11m north of the property and flows in an easterly direction. The Hamilton Drain outlets into the Pretty River approximately 1km to the east. Pretty River is a known coldwater system that hosts species such as Brook Trout and migratory salmonids (MNR, 2024b). Hamilton Drain in proximity to the property consists of a straightened channel system with dense riparian and in-water vegetation consisting of cattails and watercress. A

concrete box culvert is located at the Hurontario Street crossing and minnows were observed upstream of this crossing within the Hamilton Drain. Given the direct connection to the Pretty River and observation of watercress, which indicates potential groundwater contributions, the Hamilton Drain is characterized as a permanent coldwater system and would be protected under the Federal *Fisheries Act*. The water depth (0.15m) and wetted channel width (1.0-1.5m) may limit direct fish use by coldwater species (*i.e.*, Brook Trout and migratory salmonids), but it is our understanding that the feature should still be managed as a coldwater system given the connection to the Pretty River downstream. No aquatic SAR are also known to occur within the Hamilton Drain as per DFO aquatic SAR mapping (DFO, 2024).

A pond feature and roadside ditch were also located on the property as shown on Figure 2. The roadside ditch was dry during the site visit, and was overgrown with cattails and terrestrial grasses. The roadside ditch outlets into the Hamilton Drain via a CSP culvert, which is perched 15cm at the outlet. No substrate sorting or defined banks were observed within the roadside ditch, and vegetation growth was dense throughout the flow path. These are indicators of an ephemeral feature and is typical for roadside drainage ditches. Therefore, the roadside ditch is not characterized as direct or indirect fish habitat and would not be protected under the Federal *Fisheries Act*.

The pond feature on the property is located at the northwest corner as shown on Figure 2. Based on aerial photographs, the pond was constructed in approximately 2007-2008 and was previously a cultivated farm field. During the site visit, a Hickenbottom outlet was located at the northwest corner of the pond and an overflow rip rap channel was present that would drain into the roadside ditch. The ditch and overflow channel were both dry during the site visit, and no pond drainage was observed. The discharge point of the Hickenbottom outlet could not be located, but it is assumed that it would also outlet to the roadside ditch if still functioning. The pond collects drainage from the property, which has been historically altered to direct drainage to lowland areas to the north and west of a large gravel/stone pad. An inlet to the pond is located at the southeast corner of the pond that would facilitate drainage during rain events, but no defined watercourse feature was located upstream of the pond. Therefore, the pond is not located along a watercourse feature and is not directly connected to a watercourse feature downstream (*i.e.*, fish cannot access the pond from the Hamilton Drain). Therefore, the pond is characterized as an offline feature and would not be protected under the Federal *Fisheries Act*.

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
    - Little Brown Myotis, Northern Myotis, Tri-colored Bat
- Other Wetland (Wetland #2)
- Candidate Significant Wildlife Habitat
    - Habitat for Special Concern and Rare Wildlife Species
        - Monarch
- Fish Habitat (Hamilton Drain; Coldwater)

6.0 PROPOSED DEVELOPMENT

The proposed development involves construction of a commercial and mixed-use facility at the northeast corner of Hurontario Street and Poplar Sideroad that will occupy the entire property described throughout this report. The proposed commercial facility includes retail space such as a supermarket and restaurants, with the majority of the central portion of the property comprising a parking lot. An interior access route will link Hurontario Street with Poplar Sideroad, north of which additional retail buildings and offices are proposed (*i.e.* along the southern edge of the Hamilton Drain Trail). A mixed-use building is proposed at the northwest corner of the property.

It is anticipated that grading and/or other disturbance will take place throughout the entire property limit to facilitate the proposed commercial facility. A proposed development concept is presented in Appendix G, and overlain on environmental features mapping in Figure 3.

7.0 IMPACT ASSESSMENT

This impact assessment is prepared with regards to the limits of the proposed concept plan, as described above and illustrated in Figure 3 and presented in Appendix G.

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, harming, or harassing living members of a species while Section 10 covers destruction or damage to habitat of Threatened or Endangered species. The following Threatened or Endangered species have the potential or are confirmed to occur within the limits of the study area:

- Little Brown Myotis, Northern Myotis, Tri-colored Bat

7.1.1 Little Brown Myotis, Northern Myotis, and Tri-colored Bat

Little Brown Myotis, Northern Myotis, and Tri-colored Bat may utilize woodlands as maternity roost sites, preferring trees >25cm DBH 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). Trees of any size with suitable opportunities for bat access may also be utilized for day roosting purposes during the remainder of the active period.

The site investigation was conducted outside of the "leaf-off" period when potential access points for bats can be reviewed in detail, however Green Ash in advanced stages of decline due to Emerald Ash Borer (EAB) infestation resulted in an abundance of dead/denuded tree cover within treed areas on the property. The majority of these trees (and others on the property) were generally young in age and are unlikely to provide high quality roosting function for bats during the active season. Tree cover on the property was limited to hedgerows and the minor deciduous swamp/woodland edge (SWDM2-2/WODM5; Figure 2) unit in the northeast portion of the property, in addition to occasional scattered tree cover throughout the remainder of the site. Based on the above, it is anticipated that bat habitat cover within the property boundaries provides minimal potential bat roosting function and would be limited to opportunistic day roosting activities during the active period. The proposed development would retain similar wooded areas directly north of the property boundaries associated with the Hamilton Drain and adjacent lands, which would continue to provide potential day roosting function for bats in the post-development setting.

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 small number of potential maternity or day roost trees in treed habitats) but 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.

Given that potential bat roosting habitat is expected to be of marginal quality and extent within the property limits, and such habitat opportunities would be retained north of the property boundary in the post-development setting, there is no expectation that the

proposed works involving removal of a small number of immature snag trees would result in a negative impact to Little Brown Myotis, Northern Myotis, Tri-colored Bat, or the habitat upon which they depend.

7.2 Other Wetland (Wetland #2)

At the time of writing a groundwater study verifying presence/absence of groundwater inputs into Wetland #2 remains pending, therefore the status of NVCA regulation of the feature remains unknown. It is recommended a future EIS addendum be prepared to verify the status of groundwater contribution to the feature and resulting status of NVCA regulation. If applicable, the EIS addendum should outline a mitigation hierarchy and associated recommendations for proposed wetland removal of 0.39ha of wetland in the context of NVCA's regulatory framework.

7.3 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 described below is treated as significant:

- Habitat for Special Concern and Rare Wildlife Species
    - Monarch

7.3.1 Monarch

Monarch can generally be identified in any old-field or cultural meadow habitat, often including disturbed ditches along road right of ways. Key habitat is typically associated with tracts of old-field meadow habitat containing an abundance of Common Milkweed (*Asclepias syriaca*). Common Milkweed was identified within open areas on the property, and the species (adults; larvae or eggs not observed) was observed directly on July 31 and August 22, 2024.

Habitat for Monarch is highly represented in the general area within and beyond the study area and in the local landscape. Breeding and nectaring habitat is anticipated to remain abundant in the post-development setting, and as such no negative impact to the species or its habitat function is anticipated as a result of the proposed development.

7.4 Fish Habitat

No direct or indirect fish habitat features are located on the property that are protected under the Federal *Fisheries Act*. Therefore, no direct impacts to fish habitat are expected to occur from the proposed developed. Indirect impacts to nearby fish habitat features

(Hamilton Drain) can still occur as a result of nearby works, but can be addressed through standard erosion and sediment control measures as mentioned in Section 8.

The existing riparian vegetation directly adjacent to the Hamilton Drain is outside of the property limits and will not be altered as a result of the proposed development. This existing riparian vegetation to the north of the Hamilton Drain Trail provides valuable shading of the coldwater system. Given the width and paved surface of the Hamilton Drain Trail, which disrupts the natural riparian vegetation further south, further riparian vegetation to the south for the purposes of additional shading/buffering of the watercourse is not warranted. The retained riparian vegetation to the north should be sufficient to provide shading and cooling of the Hamilton Drain.

At this time, a detailed SWM plan has not been developed for the property, however a high level SWM has been submitted by others as a component of the application package. A detailed SWM plan will need to be developed that will outline water quality and quantity controls, particularly how discharge to the Hamilton Drian will be managed. Given the coldwater nature of the Hamilton Drain and Pretty River downstream, measures should be incorporated into the SWM design to reduce sedimentation and thermal impacts. General thermal and sediment mitigation measures have been included in Section 8 for consideration in future design phases.

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 candidate KNHFs. This report is intended as a point in time assessment of the potential to impact SAR; not to provide long term “clearance” for SAR. While there is no expectation that the assessment should change significantly, it is the responsibility of the proponent to ensure that they are not in contravention of the ESA at the time that site works are undertaken. A review of the assessment provided in this report by a qualified person should be sufficient to provide appropriate advice at the time of the onset of future site works.

8.1.1 Worker Training

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

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

The contractor should educate all site personnel to ensure that, if identified, the SAR are not wantonly injured or killed, and to ensure that damage to features which could constitute habitat is avoided. Information should be conveyed through a SAR expert and include:

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

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

8.2 Migratory Breeding Birds and Bats

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 Zones C1 and 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.

Activities involving tree removal, particularly within wooded area on the property, should be avoided between **April 1 through September 30** of any given year, during the active period for bat species that may utilities 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 Sediment and Erosion Controls

Diligent application of ESCs is recommended for all future construction activities to minimize the extent of accidental or unavoidable impacts to adjacent vegetation communities, wildlife habitat and fish habitat. Prior to the commencement of site works, silt fencing should be applied along the length of directly adjacent natural or naturalized features, and routine inspection/maintenance of the silt fencing should occur throughout construction. It is recommended that ESCs 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.

8.4 Operations

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.

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).

8.5 Fish and Fish Habitat

As specified above, construction activities occurring on the property should have regard for nearby fish habitat features and utilize Best Management Practices (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;
- All dewatering is to discharge into a filter bag (*i.e.* envirobag or equivalent). Filter bags should be placed a minimum of 30m from fish habitat 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 and that dewatering operations do not erode sloped areas;
- All site disturbance should be minimized to the extent possible;

- All machinery maintenance/refueling is recommended to maintain a minimum distance of 30m from fish habitat to prevent accidental spillage of deleterious substances into natural areas; and,
- Disposal of material should occur in a timely fashion to minimize risk of entry into the watercourse.

Details on SWM design are unknown at this time and will need to be assessed once the design has been advanced, which can be incorporated into a future EIS addendum. Measures should be incorporated into the SWM design to reduce sedimentation and thermal impacts on the receiving watercourse. Stormwater runoff can be warmed significantly as it drains off warm pavement. Design considerations can include, but not be limited to:

- Incorporate Low Impact Development (LID) features within the site to address pollutants directly at the source and treats small, frequent rainfall events to reduce the volume of water in the holding tanks;
- Riparian plantings along drainage and outlet channels to shade water and reduce surface water temperatures;
- Install cooling trenches and/or lengthen the outlet channel if possible to increase the shading potential, reduce flows during storm events, and allow sediment to settle; and,
- Install an energy dissipation device at the outlet to reduce flows rates and potential scouring at the receiving channel outlet location.

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, our findings are summarized as follows:

- The proposed development is consistent with the applicable natural heritage policies of the Provincial Policy Statement, ESA, Town of Collingwood Official Plan, and County of Simcoe Official Plan.

- 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 will not 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 Candidate Significant Wildlife Habitat outlined in Section 5 if the appropriate mitigation measures outlined in Section 8 are followed.

- It is recommended a future EIS addendum be prepared to verify the status of groundwater contribution to Wetland #2 and resulting status of NVCA regulation. If applicable, the EIS addendum should outline a mitigation hierarchy and associated recommendations for proposed removal of 0.39ha of wetland in the context of NVCA's regulatory framework. It is anticipated that resolving the above will ensure the proposed development occurs in a manner compliant with O. Reg. 41/24 under the *Conservation Authorities Act*.

- No ephemeral, intermittent or permanent drainage/watercourse features or their associated fish habitat 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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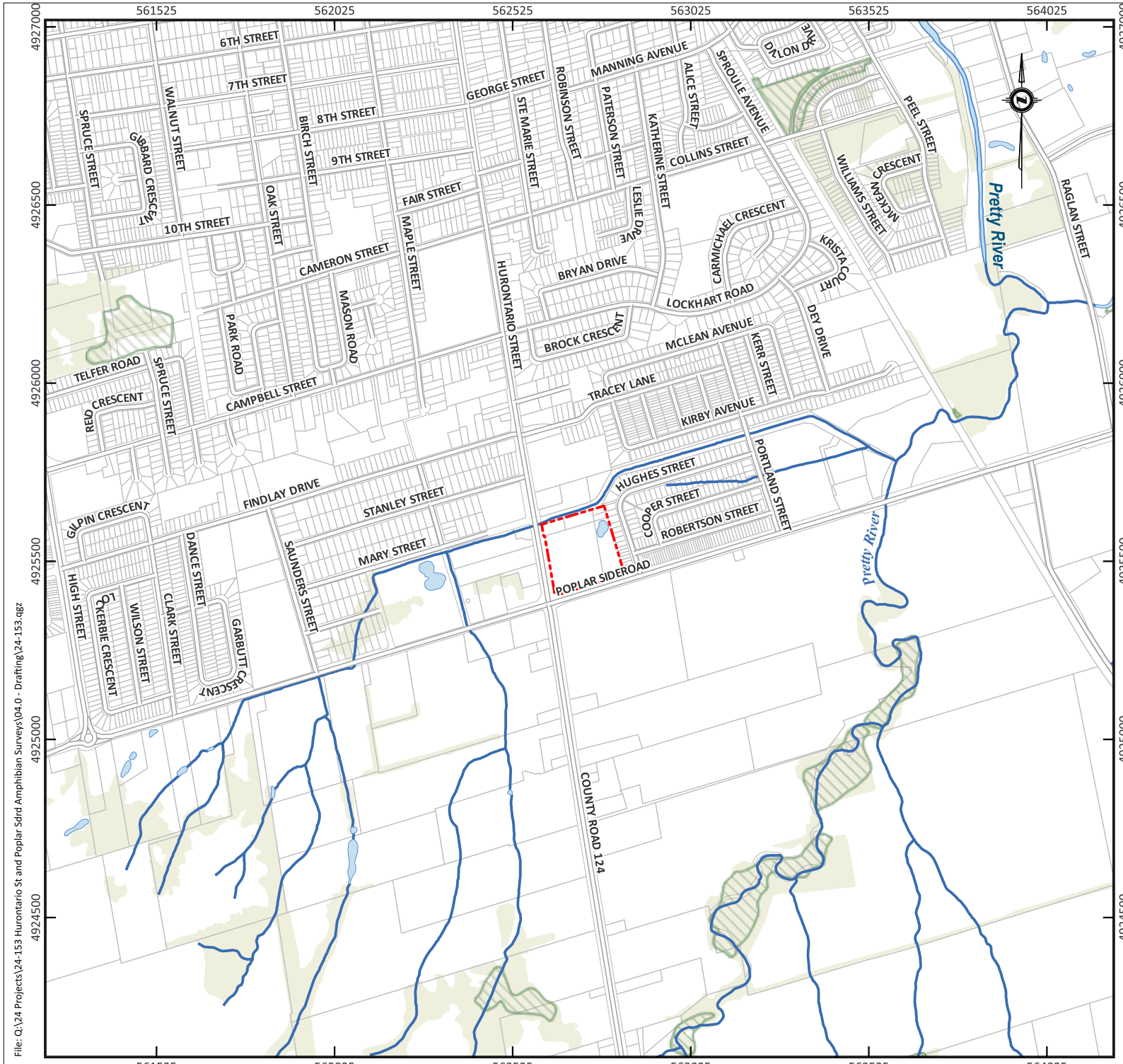


LEGEND

- Approx. Property Boundary
- Waterbody
- Mapped Watercourse
- Unevaluated Wetland
- Wooded Area
- Road

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

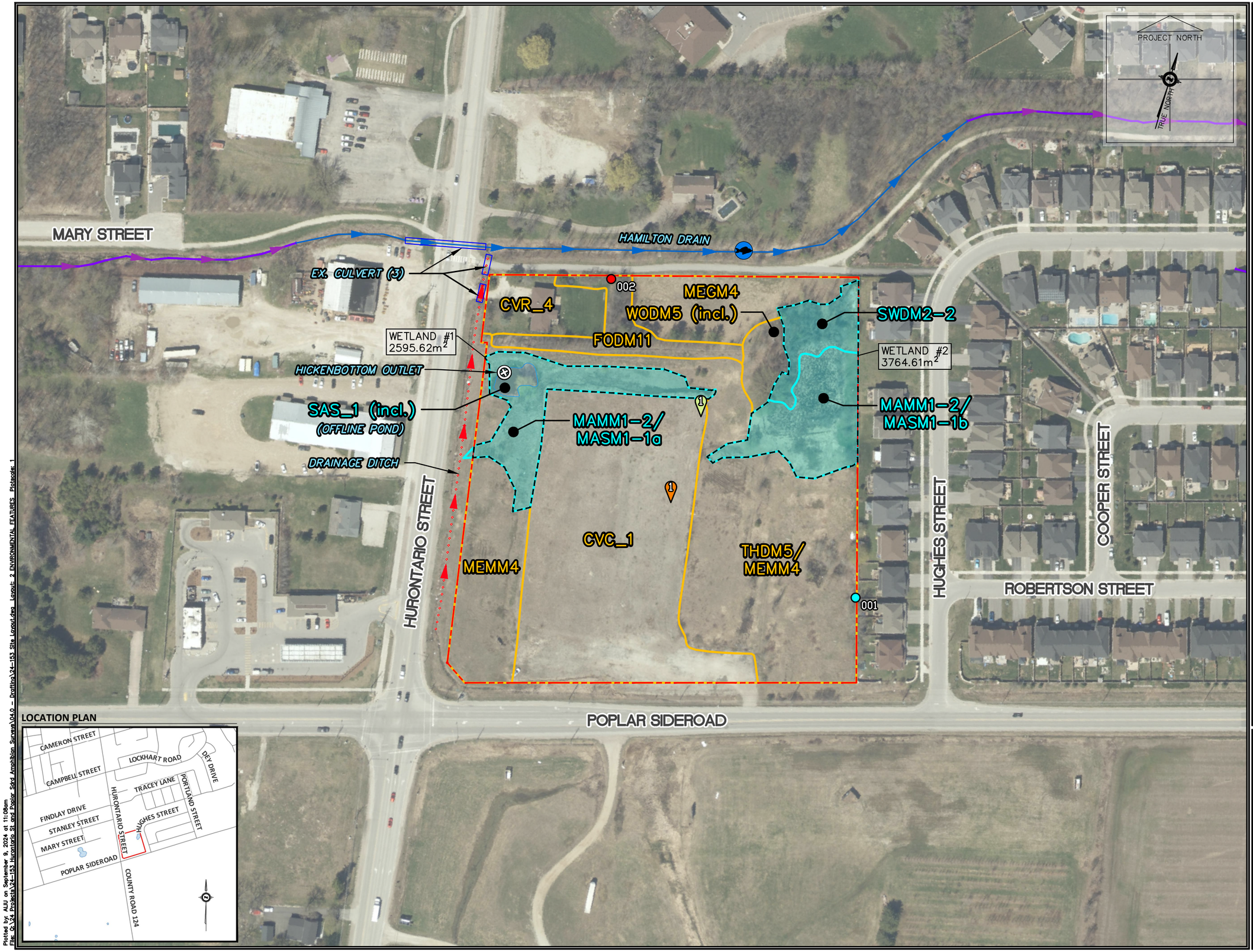
SITE LOCATION

THE GATEWAY CENTRE PHASE 2 & 3
COLLINGWOOD, ON

DATE ISSUED:	SEPTEMBER 2024
CREATED BY:	A.L.
PROJECT NO.:	24-153
BASE MAP:	MNRF

Figure No. 1

File: Q:\24 Projects\24-153 Hurontario St and Poplar Sdrd Amphibian Surveys\04.0 - Drafting\24-153.qgz



LOCATION PLAN

LEGEND:

- APPROX. PROPERTY BOUNDARY
- EXISTING CULVERT
- OUTLET LOCATION

FISH HABITAT:

- PERMANENT WATERCOURSE/ DIRECT FISH HABITAT
- EPHEMERAL DRAINAGE FEATURE/ NOT FISH HABITAT
- DRAINAGE FEATURE (NOT ASSESSED)
- COLDWATER THERMAL REGIME

ELC UPLAND COMMUNITIES:

CVC_1	BUSINESS SECTOR / GRAVEL AREA
CVR_4	RURAL PROPERTY
MEGM4	FRESH-MOIST GRAMINOID MEADOW
MEMM4	FRESH-MOIST MIXED MEADOW
THDM5	FRESH-MOIST DECIDUOUS THICKET
WODM5	FRESH-MOIST DECIDUOUS WOODLAND

ELC WETLAND COMMUNITIES:

MAMM1-2	CATTAIL MINERAL MEADOW MARSH
MASM1-1	CATTAIL MINERAL SHALLOW MARSH COMPLEX
SAS_1	SUBMERGED SHALLOW AQUATIC
SWDM2-2	GREEN ASH MINERAL DECIDUOUS SWAMP
incl.	INDICATES INCLUSION

- EVENING CALLING AMPHIBIAN SURVEY STATION
- DAWN BREEDING BIRD SURVEY STATION
- BUTTERNUT TREE – CATEGORY 1
- BUTTERNUT TREE – HYBRID

0 43.75 87.5

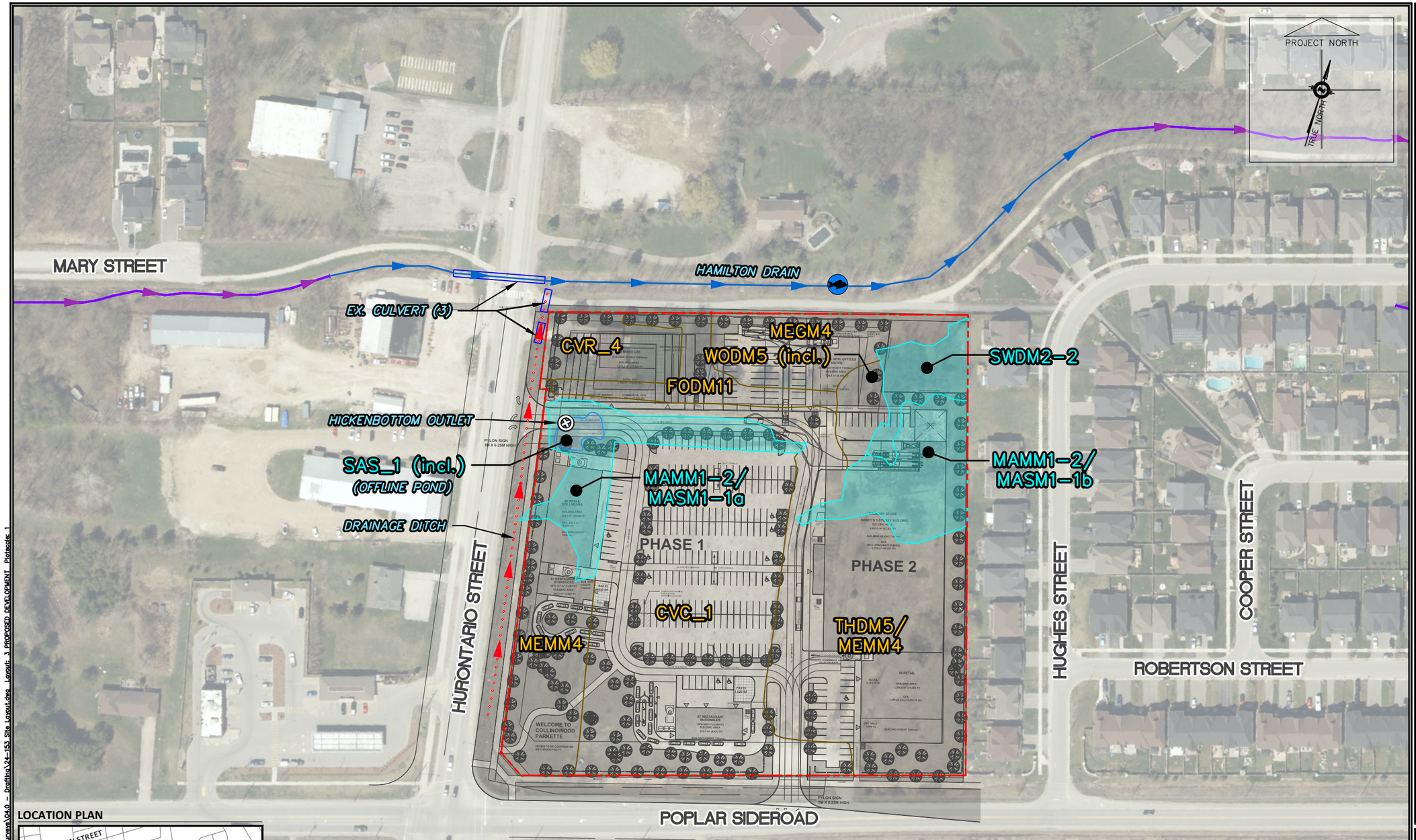
HORIZONTAL SCALE 1:1750

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

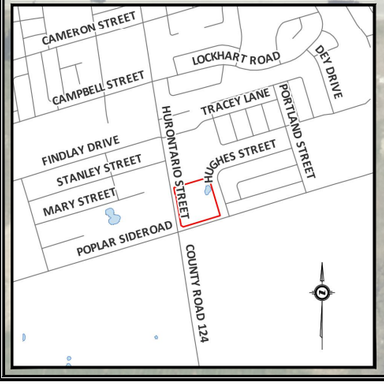
ENVIRONMENTAL FEATURES

THE GATEWAY CENTRE COLLINGWOOD, ON

DATE ISSUED:	SEPTEMBER 2024	Figure No. 2
CREATED BY:	A.L.	
PROJECT NO.:	24-153	
REFERENCE:	SIMCOE COUNTY	



LOCATION PLAN



LEGEND:

- APPROX. PROPERTY BOUNDARY
- EXISTING CULVERT
- OUTLET LOCATION

FISH HABITAT:

- PERMANENT WATERCOURSE/ DIRECT FISH HABITAT
- EPHEMERAL DRAINAGE FEATURE/ NOT FISH HABITAT
- DRAINAGE FEATURE (NOT ASSESSED)
- COLDWATER THERMAL REGIME

ELC UPLAND COMMUNITIES:

CVC_1	BUSINESS SECTOR / GRAVEL AREA
CVR_4	RURAL PROPERTY
MEGM4	FRESH-MOIST GRAMINOID MEADOW
MEMM4	FRESH-MOIST MIXED MEADOW
THDM5	FRESH-MOIST DECIDUOUS THICKET
WODM5	FRESH-MOIST DECIDUOUS WOODLAND

ELC WETLAND COMMUNITIES:

MAMM1-2	CATTAIL MINERAL MEADOW MARSH
MASM1-1	CATTAIL MINERAL SHALLOW MARSH COMPLEX
SAS_1	SUBMERGED SHALLOW AQUATIC
SWDM2-2	GREEN ASH MINERAL DECIDUOUS SWAMP
incl.	INDICATES INCLUSION

0 43.75 87.5

HORIZONTAL SCALE 1:1750

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

PROPOSED DEVELOPMENT

THE GATEWAY CENTRE
COLLINGWOOD, ON

DATE ISSUED:	SEPTEMBER 2024	Figure No.
CREATED BY:	A.L.	3
PROJECT NO.:	24-153	
REFERENCE:	SIMCOE COUNTY	

Plotted by: ALU on: September 9, 2024 at 11:08am
File: G:\24 Projects\24-153 Hurontario St and Poplar Sdrd Amabilion Surveys\04.0 - Drafting\24-153 Site Layout.dwg Layout: 3 PROPOSED DEVELOPMENT Plotscale: 1

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
Bald Eagle	*Haliaeetus leucocephalus*	SC	Not at Risk	Occupies a variety of habitats and forest types, but prefers sites in the vicinity of a major lake or river for hunting. Nests occur in large trees (*e.g.* pine, poplar) typically adjacent to large bodies of water (MECP, 2024). ESA Protection: N/A	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
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 general habitat protection	No excavated vertical features, sand or gravel pits providing potential nesting habitat. Species not observed during the dawn breeding bird survey program, or incidentally throuhgout the course of the field program.
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: N/A	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
Black Ash	*Fraxinus nigra*	END	END	Facultative wetland tree species frequently found in floodplain forests, swamps, seepage areas, shoreline margins and fens. Occupied sites are generally seasonally-flooded (COSEWIC, 2018a). ESA Protection: Species and general habitat protection	Species was not observed during the vascular plant inventory.
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	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
Bobolink	*Dolichonyx oryzivorus*	THR	No Status	Nests primarily in forage crops (*e.g.* hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. Also occurs in wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops (*e.g* . corn, soybeans, wheat) or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010a). ESA Protection: Species and general habitat protection	Grassland/meadow habitats hightly limited in size, and not considered sufficient to provide breeding/nesting potential for the species. Gravel pad area in central portion of property does not comrpise "old-field" conditions with developed thatch later that would be considered suitable fo the species. Species not observed during the dawn breeding bird survey program, or incidentally throuhgout the course of the field program.
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 general habitat protection	Local NHIC records occur within 1km of the study area for Butternut. Two (2) Butternut trees observed during the vascular plant inventory, noting Butternut #001 (Figure 2) was determined to be a hybrid upon genetic testing (refer to Section 4.3.1 for additional discussion).
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	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
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 general habitat protection	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
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 general habitat protection	No suitable chimney structures located within the study area. Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
Common Nighthawk	*Chordeiles minor*	SC	SC	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, 2018b). Microhabitat requirements for nesting include open, dry areas that will not overheat and provide shelter from the sun and predators. In urban areas, the species nests almost exclusively on roofs covered with pea gravel that have adjacent sources of shade (*e.g.* parapet)(COSEWIC, 2018b). ESA Protection: N/A	Species not observed incidentally during evening amphibian breeding surveys. Although the central portion of the property is occupied by a gravel pad, the site does not provide the necessary microhabitat conditions (*i.e.* pea gravel with nearby shaded areas for concealment from sun and predators) necessary for species' life functions. Study area is not consistent with typically suitable urban habitat conditions, comprising gravel roofs with built shaded features.
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 general habitat protection	Local NHIC records occur within 1km of the study area for Eastern Meadowlark. Grassland/meadow habitats hightly limited in size, and not considered sufficient to provide breeding/nesting potential for the species. Gravel pad area in central portion of property does not comrpise "old-field" conditions with developed thatch later that would be considered suitable fo the species. Species not observed during the dawn breeding bird survey program, or incidentally throuhgout the course of the field program.
Eastern Small-footed Myotis	*Myotis Lleibii*	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 general habitat protection	No rock bluffs, rock slabs, large stones, rock fencelines, or similar habitats located within the property limits. No caves, abandoned mines, or similar features located within the study area limits. No suitable habitat for the spcies.

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
Eastern Whip-poor-will	*Antrostomus vociferus*	THR	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 general habitat protection	Semi-open patchy forests typical of those occupied by the species not located within the study area limits. Species is also not expected to occur in an urbanized setting. 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, 2012a). ESA Protection: N/A	Local NHIC records occur within 1km of the study area for Eastern Wood-pewee. Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
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	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
Grasshopper Sparrow *pratensis* subspecies	*Ammodramus savannarum pratensis*	SC	SC	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	Grassland/meadow habitats hightly limited in size, and not considered sufficient to provide breeding/nesting potential for the species. Gravel pad area in central portion of property does not comrpise "old-field" conditions with developed thatch later that would be considered suitable fo the species. Species not observed during the dawn breeding bird survey program, or incidentally throuhgout the course of the field program.
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 general habitat protection	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
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 general habitat protection	Wooded areas consist of several linear hedgerows, not typical of woodland features utilized by the species for maternity roosting purposes. Residences and commercial buildings within the study area are relatively newly-built and well maintained, and are not anticipated to provide maternity roosting opportunities. Trees associated with hedgerows throughout the study area may provide marginal day roosting function for bats throughout the active period. No caves or abandoned mines that could provide suitable overwintering habitat located 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	Species was observed on the property during the field program. Milkweed (*Asclepias spp.*), a critical component of the speceis' life history, was documented within open portions of the property.
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, 2013b). ESA Protection: Species and general habitat protection	Wooded areas consist of several linear hedgerows, not typical of woodland features utilized by the species for maternity roosting purposes. Trees associated with hedgerows throughout the study area may provide marginal day roosting function for bats throughout the active period. No caves or abandoned mines that could provide suitable overwintering habitat located 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, 2007b). ESA Protection: Species and general habitat protection	Open deciduous forests dominated by oak and beech, not located within the study area limits; wooded areas consist of hedgerows comrpising immature to mid-aged tree cover that would not be expected to provide suitable breeding and nesting opportunities for the species. Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
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	Local NHIC records occur within 1km of the study area for Snapping Turtle; species was not observed throughout the course of the field program. Wetlands and drainage features within the study area contain minimal standing water, limited to a partially-naturalized created sedimentation pond approximatley 236m2 in size that would not be expected to provide suitable foraging opportunities for the species. Further, wetlands on the property are isolated and would not be anticipated to provide wildlife conveyance opportunities for the species. The sedimentation pond was dug to shallow depth (approx. 20cm) and is not anticipated to meet the necessary size and/or depth requirements to provide suitable overwintering habitat function for the species. No areas with potential to function as turtle nesting areas were identified within the study area throughout the course of the field program.
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 general habitat protection	Wooded areas consist of several linear hedgerows, not typical of woodland features utilized by the species for maternity roosting purposes. Residences and commercial buildings within the study area are relatively newly-built and well maintained, and are not anticipated to provide maternity roosting opportunities. Trees associated with hedgerows throughout the study area may provide marginal day roosting function for bats throughout the active period. No caves or abandoned mines that could provide suitable overwintering habitat located within the study area limits.

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Initial Assessment
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, 2012b). ESA Protection: N/A	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.
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	Species not observed during the dawn breeding bird survey program, or incidentally throughout the course of the field program.

[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. 2007b. COSEWIC assessment and status report on the Red-headed Woodpecker *Melanerpes erythrocephalu* s in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 27 pp.

COSEWIC. 2007c. COSEWIC assessment and update status report on the Redside Dace *Clinostomus elongates* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 59 pp.
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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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COSEWIC. 2018b. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada.
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Table 2: Vascular Plant List, The Gateway Centre (Collingwood) Surveyor: D. Stuart **AEC24-153**

			Vegetation Communities[2]							Conservation Rankings[3]			Regional[4]
FAMILY[1]	**SCIENTIFIC NAME[1]**	**COMMON NAME[1]**	**MAMM1-2/MASM1-1a**	**MAMM1-2/MASM1-1b**	**SWDM2-2**	**MEGM4**	**MEMM4**	**THDM5/MEMM4**	**CVC_1**	**GRANK**	**SRANK**	**TRACK**	**Simcoe**
Aceraceae	*Acer negundo*	Manitoba Maple				X		X		G5	S5	N	
Aceraceae	*Acer platanoides*	Norway Maple						X		GNR	SE5	N	
Aceraceae	*Acer saccharum*	Sugar Maple				X				G5	S5	N	
Alismataceae	*Alisma triviale*	Northern Water-plantain	X							G5	S5	N	
Anacardiaceae	*Rhus typhina*	Staghorn Sumac					X	X	X	G5	S5	N	
Anacardiaceae	*Toxicodendron radicans var. radicans*	Eastern Poison Ivy			X		X		X	G5T5	S5	N	
Apiaceae	*Daucus carota*	Wild Carrot					X	X	X	GNR	SE5	N	
Apocynaceae	*Apocynum cannabinum*	Hemp Dogbane						X		GNR	S5	N	
Apocynaceae	*Asclepias incarnata*	Swamp Milkweed						X		G5	S5	N	
Apocynaceae	*Asclepias syriaca*	Common Milkweed				X	X		X	G5	S5	N	
Apocynaceae	*Vinca minor*	Lesser Periwinkle				X				GNR	SE5	N	
Apocynaceae	*Vincetoxicum rossicum*	European Swallowwort						X		GNR	SE5	N	
Asteraceae	*Achillea millefolium*	Common Yarrow	X			X	X	X		G5	SE5?	N	
Asteraceae	*Arctium minus*	Common Burdock					X			GNR	SE5	N	
Asteraceae	*Bidens frondosa*	Devil's Beggarticks	X							G5	S5	N	
Asteraceae	*Centaurea stoebe*	Spotted Knapweed					X	X	X	GNR	SE5	N	
Asteraceae	*Cichorium intybus*	Wild Chicory				X	X		X	GNR	SE5	N	
Asteraceae	*Cirsium arvense*	Canada Thistle		X			X	X		G5	SE5	N	
Asteraceae	*Cirsium vulgare*	Bull Thistle				X	X	X	X	GNR	SE5	N	
Asteraceae	*Doellingeria umbellata*	Flat-top White Aster			X					G5	S5	N	
Asteraceae	*Erigeron annuus*	Annual Fleabane				X		X	X	G5	S5	N	
Asteraceae	*Euthamia graminifolia*	Grass-leaved Goldenrod	X	X	X	X	X	X	X	G5	S5	N	
Asteraceae	*Eutrochium maculatum*	Spotted Joe Pye Weed	X					X		G5	S5	N	
Asteraceae	*Inula helenium*	Elecampane						X		GNR	SE5	N	
Asteraceae	*Leucanthemum vulgare*	Oxeye Daisy					X	X		GNR	SE5	N	
Asteraceae	*Pilosella officinarum*	Mouse-ear Hawkweed						X		GNR	SE5	N	
Asteraceae	*Solidago altissima*	Tall Goldenrod		X	X	X	X	X	X	G5	S5	P	

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			Vegetation Communities[2]							Conservation Rankings[3]			Regional[4]
FAMILY[1]	SCIENTIFIC NAME[1]	COMMON NAME[1]	MAMM1-2/MASM1-1a	MAMM1-2/MASM1-1b	SWDM2-2	MEGM4	MEMM4	THDM5/MEMM4	CVC_1	GRANK	SRANK	TRACK	Simcoe
Asteraceae	*Solidago canadensis*	Canada Goldenrod						X		G5	S5	N	
Asteraceae	*Solidago nemoralis*	Grey-stemmed Goldenrod							X	G5	S5	P	
Asteraceae	*Sonchus arvensis*	Field Sow-thistle		X		X	X	X	X	GNR	SE5	N	
Asteraceae	*Symphyotrichum lanceolatum*	Panicled Aster	X		X	X	X	X		G5	S5	P	
Asteraceae	*Symphyotrichum lateriflorum*	Calico Aster			X	X				G5	S5	P	
Asteraceae	*Symphyotrichum novae-angliae*	New England Aster				X	X	X		G5	S5	N	
Asteraceae	*Symphyotrichum puniceum*	Purple-stemmed Aster	X	X	X					G5	S5	N	
Asteraceae	*Taraxacum officinale*	Common Dandelion			X	X			X	G5	SE5	N	
Asteraceae	*Tussilago farfara*	Coltsfoot	X							GNR	SE5	N	
Betulaceae	*Betula papyrifera*	Paper Birch							X	G5	S5	N	
Bignoniaceae	*Catalpa speciosa*	Northern Catalpa						X		G4?	SE1	N	
Boraginaceae	*Echium vulgare*	Common Viper's Bugloss					X		X	GNR	SE5	N	
Brassicaceae	*Alliaria petiolata*	Garlic Mustard						X		GNR	SE5	N	
Cannabaceae	*Cannabis sativa*	Hemp						X		GNR	SE1	N	
Caprifoliaceae	*Viburnum opulus var. opulus*	Cranberry Viburnum		X	X			X		G5TNR	SE4?	N	
Caryophyllaceae	*Dianthus armeria*	Deptford Pink	X				X			GNR	SE5	N	
Clusiaceae	*Hypericum perforatum*	Common St. John's-wort	X		X	X	X		X	GNR	SE5	N	
Convolvulaceae	*Convolvulus arvensis*	Field Bindweed						X		GNR	SE5	N	
Cornaceae	*Cornus sericea*	Red-osier Dogwood	X		X	X	X	X	X	G5	S5	N	
Cupressaceae	*Juniperus virginiana*	Eastern Red Cedar				X		X		G5	S5	N	
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar			X	X		X	X	G5	S5	N	
Cyperaceae	*Carex bebbii*	Bebb's Sedge	X	X						G5	S5	N	
Cyperaceae	*Carex granularis*	Limestone Meadow Sedge				X		X		G5	S5	N	
Cyperaceae	*Carex spicata*	Spiked Sedge		X				X		GNR	SE5	N	R-5
Cyperaceae	*Carex vulpinoidea*	Fox Sedge	X	X		X	X	X		G5	S5	N	
Cyperaceae	*Scirpus atrovirens*	Dark-green Bulrush	X	X	X		X	X		G5	S5	N	
Cyperaceae	*Scirpus cyperinus*	Common Woolly Bulrush		X	X			X		G5	S5	N	

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			Vegetation Communities[2]							Conservation Rankings[3]			Regional[4]
FAMILY[1]	**SCIENTIFIC NAME[1]**	**COMMON NAME[1]**	**MAMM1-2/MASM1-1a**	**MAMM1-2/MASM1-1b**	**SWDM2-2**	**MEGM4**	**MEMM4**	**THDM5/MEMM4**	**CVC_1**	**GRANK**	**SRANK**	**TRACK**	**Simcoe**
Cyperaceae	*Scirpus microcarpus*	Red-tinged Bulrush		X						G5	S5	N	
Elaeagnaceae	*Elaeagnus angustifolia*	Russian Olive				X				GNR	SE3	N	
Equisetaceae	*Equisetum arvense*	Field Horsetail	X	X	X			X	X	G5	S5	N	
Equisetaceae	*Equisetum hyemale*	Common Scouring-rush	X					X		G5	S5	N	
Equisetaceae	*Equisetum variegatum*	Variegated Scouring-rush	X							G5	S5	N	
Fabaceae	*Lathyrus latifolius*	Everlasting Pea						X		GNR	SE4	N	
Fabaceae	*Lotus corniculatus*	Garden Bird's-foot Trefoil	X			X	X	X	X	GNR	SE5	N	
Fabaceae	*Medicago lupulina*	Black Medick						X		GNR	SE5	N	
Fabaceae	*Medicago sativa*	Alfalfa							X	GNR	SE5	N	
Fabaceae	*Melilotus albus*	White Sweet-clover				X			X	G5	SE5	N	
Fabaceae	*Robinia pseudoacacia*	Black Locust				X		X		G5	SE5	N	
Fabaceae	*Trifolium pratense*	Red Clover				X			X	GNR	SE5	N	
Fabaceae	*Vicia cracca*	Tufted Vetch	X	X		X	X	X	X	GNR	SE5	N	
Fagaceae	*Quercus robur*	English Oak				X				GNR	SE1	N	
Haloragaceae	*Proserpinaca palustris*	Marsh Mermaidweed	X							G5	S4	N	
Juglandaceae	*Juglans cinerea*	Butternut				X				G3	S2?	Y	
Judlandaceae	*Juglans cinerea x Juglans ailantifolia*	Butternut Hybrid						X		GNA		N	
Juglandaceae	*Juglans nigra*	Black Walnut				X		X	X	G5	S4?	N	R-1
Juncaceae	*Juncus articulatus ssp. articulatus*	Jointed Rush	X					X		G5TNR	S5	N	
Juncaceae	*Juncus brevicaudatus*	Short-tailed Rush					X			G5	S5	N	
Juncaceae	*Juncus dudleyi*	Dudley's Rush	X	X			X	X		G5	S5	N	
Juncaceae	*Juncus effusus*	Soft Rush	X							G5	S5	N	
Juncaceae	*Juncus tenuis*	Path Rush	X	X		X		X		GNR	S5	N	
Lamiaceae	*Clinopodium vulgare ssp. vulgare*	Wild Basil							X	G5T5	S5	N	
Lamiaceae	*Leonurus cardiaca*	Common Motherwort						X		GNR	SE5	N	
Lamiaceae	*Lycopus uniflorus*	Northern Water-horehound			X					G5	S5	N	
Lamiaceae	*Prunella vulgaris*	Common Self-heal			X	X				G5	S5	N	

Table 2: Vascular Plant List, The Gateway Centre (Collingwood) Surveyor: D. Stuart **AEC24-153**

			Vegetation Communities[2]							Conservation Rankings[3]			Regional[4]
FAMILY[1]	**SCIENTIFIC NAME[1]**	**COMMON NAME[1]**	**MAMM1-2/MASM1-1a**	**MAMM1-2/MASM1-1b**	**SWDM2-2**	**MEGM4**	**MEMM4**	**THDM5/MEMM4**	**CVC_1**	**GRANK**	**SRANK**	**TRACK**	**Simcoe**
Lemnaceae	*Lemna minor*	Small Duckweed		X						G5	S5	N	
Liliaceae	*Asparagus officinalis*	Garden Asparagus			X		X	X		G5?	SE5	N	
Lythraceae	*Lythrum salicaria*	Purple Loosestrife	X	X			X	X		G5	SE5	N	
Oleaceae	*Fraxinus pennsylvanica*	Red Ash	X	X	X	X	X	X		G4	S4	N	
Onagraceae	*Epilobium coloratum*	Purple-veined Willowherb		X						G5	S5	N	R-4
Onagraceae	*Oenothera biennis*	Common Evening-primrose					X		X	G5	S5	N	
Pinaceae	*Pinus strobus*	Eastern White Pine				X				G5	S5	N	
Pinaceae	*Pinus sylvestris var. sylvestris*	Scots Pine				X		X	X	GNRTN	SE5	N	
Plantaginaceae	*Plantago lanceolata*	English Plantain				X		X	X	G5	SE5	N	
Poaceae	*Agrostis gigantea*	Redtop	X				X	X	X	G4G5	SE5	N	
Poaceae	*Agrostis stolonifera*	Creeping Bentgrass	X	X	X		X			G5	SE5	N	
Poaceae	*Bromus inermis*	Smooth Brome				X	X	X		G5T5	SE5	N	
Poaceae	*Dactylis glomerata*	Orchard Grass			X	X		X		GNR	SE5	N	
Poaceae	*Festuca rubra*	Red Fescue	X	X		X	X	X		G5	S5	P	
Poaceae	*Phalaris arundinacea*	Reed Canarygrass	X	X	X	X	X	X		G5	S5	N	
Poaceae	*Phleum pratense*	Common Timothy				X	X	X		GNR	SE5	N	
Poaceae	*Phragmites australis ssp. australis*	European Reed	X				X			G5T5	SE5	N	
Poaceae	*Poa compressa*	Canada Bluegrass				X				GNR	SE5	N	
Poaceae	*Poa palustris*	Fowl Bluegrass			X					G5	S5	N	
Poaceae	*Poa pratensis*	Kentucky Bluegrass	X							G5	S5	P	
Polygonaceae	*Persicaria amphibia*	Water Smartweed		X						G5	S5	N	
Polygonaceae	*Reynoutria japonica*	Japanese Knotweed						X		GNR	SE5	N	
Polygonaceae	*Rumex crispus*	Curled Dock				X	X			GNR	SE5	N	
Primulaceae	*Lysimachia nummularia*	Creeping Yellow Loosestrife			X					GNR	SE5	N	
Ranunculaceae	*Ranunculus acris*	Common Buttercup			X	X				G5	SE5	N	
Rhamnaceae	*Rhamnus cathartica*	European Buckthorn		X	X	X	X	X		GNR	SE5	N	
Rosaceae	*Crataegus sp.*	a Hawthorn						X		N/A	N/A	N/A	

Table 2: Vascular Plant List, The Gateway Centre (Collingwood) Surveyor: D. Stuart **AEC24-153**

			Vegetation Communities[2]							Conservation Rankings[3]			Regional[4]
FAMILY[1]	**SCIENTIFIC NAME[1]**	**COMMON NAME[1]**	**MAMM1-2/MASM1-1a**	**MAMM1-2/MASM1-1b**	**SWDM2-2**	**MEGM4**	**MEMM4**	**THDM5/MEMM4**	**CVC_1**	**GRANK**	**SRANK**	**TRACK**	**Simcoe**
Rosaceae	*Fragaria virginiana*	Wild Strawberry			X	X			X	G5	S5	N	
Rosaceae	*Geum aleppicum*	Yellow Avens				X				G5	S5	N	
Rosaceae	*Geum canadense*	Canada Avens			X					G5	S5	N	
Rosaceae	*Malus pumila*	Common Apple				X				G5	SE4	N	
Rosaceae	*Rosa multiflora*	Multiflora Rose						X		GNR	SE5	N	
Rubiaceae	*Galium palustre*	Common Marsh Bedstraw	X							G5	S5	N	
Salicaceae	*Populus balsamifera*	Balsam Poplar	X						X	G5	S5	N	
Salicaceae	*Populus grandidentata*	Large-toothed Aspen						X	X	G5	S5	N	
Salicaceae	*Populus tremuloides*	Trembling Aspen							X	G5	S5	N	
Salicaceae	*Salix alba*	White Willow	X	X				X		G5	SE4	N	
Salicaceae	*Salix bebbiana*	Bebb's Willow	X							G5	S5	N	
Salicaceae	*Salix discolor*	Pussy Willow	X							G5	S5	N	
Salicaceae	*Salix eriocephala*	Cottony Willow					X	X	X	G5	S5	N	
Salicaceae	*Salix euxina*	Crack Willow		X	X					GNR	SE	N	
Salicaceae	*Salix petiolaris*	Meadow Willow	X	X	X		X	X		G5	S5	N	
Solanaceae	*Solanum dulcamara*	Bittersweet Nightshade		X	X					GNR	SE5	N	
Tiliaceae	*Tilia americana*	Basswood						X		G5	S5	N	
Typhaceae	*Typha angustifolia*	Narrow-leaved Cattail	X	X			X	X		G5	SE5	N	
Typhaceae	*Typha latifolia*	Broad-leaved Cattail	X	X	X		X	X		G5	S5	N	
Ulmaceae	*Ulmus americana*	White Elm				X			X	G4	S5	N	
Ulmaceae	*Ulmus pumila*	Siberian Elm						X	X	GNR	SE3	N	
Vitaceae	*Parthenocissus vitacea*	Thicket Creeper	X		X					G5	S5	N	
Vitaceae	*Vitis riparia*	Riverbank Grape	X	X	X	X	X	X	X	G5	S5	N	

[1] Nomenclature based on Ministry of Natural Resources (MNR) Natural Heritage Information Centre (NHIC, 2024)

[2] ELC Codes based on Ecological Land Classification for Southern Ontario manual (Lee et al., 1998, 2008)

[3] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)

Table 2: Vascular Plant List, The Gateway Centre (Collingwood) Surveyor: D. Stuart **AEC24-153**

			Vegetation Communities[2]							Conservation Rankings[3]			Regional[4]
FAMILY[1]	**SCIENTIFIC NAME[1]**	**COMMON NAME[1]**	**MAMM1-2/MASM1-1a**	**MAMM1-2/MASM1-1b**	**SWDM2-2**	**MEGM4**	**MEMM4**	**THDM5/MEMM4**	**CVC_1**	**GRANK**	**SRANK**	**TRACK**	**Simcoe**

[4] Riley, J.L. 1989. Distribution and Status of the Vascular Plants of Central Region, Ontario. Ministry of Natural Resources. Parks and Recreational Areas Section, OMNR, Open File Ecological Report SR8902, Central Region, Richmond Hill, Ontario. XiX + 110 pp.

Table 3: Summary of Vegetation Communities, The Gateway Centre (Collingwood)

Unit	Description
MA (MARSH)	Tree and shrub cover ≤25%, dominated by emergent hydrophytic macrophytes; variable flooding regime with water depth <2m.
Meadow Marsh (MAM)/Shallow Marsh (MAS)	Meadow Marsh: Species less tolerant of prolonged flooding; includes facultative, facultative wetland, and obligate wetland plants; flooding seasonal (soils flooded in spring, moist to dry by summer); represents the wetland-terrestrial interface. Shallow Marsh: Species less tolerant of prolonged flooding; species restricted to facultative and obligate wetland plants.
MAMM1-2/MASM1-1a (Cattail Mineral Meadow Marsh/Cattail Mineral Shallow Marsh) complex	This community represents a cattail-dominated wetland complex occupying a historical sedimentation pond in the northwest portion of the property, including a connecting ditch established along the north side of a gravel pad. This wetland complex features a small number of standing White Willow (*Salix alba*) among a moderately sparse (10-25% cover) understory of Meadow Willow (*Salix petiolaris*), Red-osier Dogwood (*Cornus sericea*), White Willow, and Pussy-willow (*Salix discolor*). The ground layer is dense and comprises Narrow-leaved Cattail (*Typha angustifolia*), Creeping Bentgrass (*Agrostis stolonifera*), Dudley's Rush (*Juncus dudleyi*), Grass-leaved Goldenrod (*Euthamia graminifolia*), Reed Canary Grass (*Phalaris arundinacea*), Panicled Aster (*Symphyotrichum lanceolatum*), Purple Loosestrife (*Lythrum salicaria*), and Variegated Scouring Rush (*Equisetum variegatum*) in descending order of density. A minor (approx. 236m^2) open water inclusion is located in the northwest corner of the unit, representing a historical sedimentation pond with retained Hickenbotton Drain and emergency spillway. Permanent water within the pond is approx. 20cm deep and includes abundant Marsh Mermaid-weed (*Proserpinacea palustris*).
MAMM1-2/MASM1-1b (Cattail Mineral Meadow Marsh/Cattail Mineral Shallow Marsh) complex	This community represents a cattail-dominated wetland complex in the northeast portion of the property and is directly connected to the SWDM2-2 community. This wetland unit appears to be of natural origin and maintained (in part) by fluvial inputs from the adjacent residential subdivision to the east. This wetland complex features a large standing Crack Willow (*Salix euxina*) at the canopy level (>10m in height), with sparse (<10%) moderately-aged Crack Willow and Green Ash (*Fraxnus pennsylvanica*) <10m in height. A sparse (<10% cover) understory includes Green Ash, Meadow Willow, Common Buckthorn (*Rhamnus cathartica*), and White Willow. The ground layer is dense and is dominated by Narrow-leaved Cattail (*Typha angustifolia*) with Reed Canary Grass and Broad-leaved Cattail (*Typha latifolia*) associates, in addition to a more limited representation of Grass-leaved Goldenrod, Fox Sedge (*Carex vulpinoidea*), Swamp Aster (*Symphyotrichum puniceum*), Purple Loosestrife, Creeping Bentgrass, and Dudley's Rush.
SW (SWAMP)	Tree or shrub cover >25%; dominated by hydrophytic shrub and tree species. Variable flooding regimes, water depth <2m, standing water or vernal pooling >20% of ground coverage.
Deciduous Swamp (SWD)	Tree cover >25%; trees >5m in height; deciduous tree species >75% of canopy cover.
SWDM2-2 (Green Ash Mineral Deciduous	This community is located in the northeast corner of the property and is directly connected to the MAMM1-2/MASM1-1b complex community. This wetland unit

Table 3: Summary of Vegetation Communities, The Gateway Centre (Collingwood)

Unit	Description
Swamp)	appears to be of natural origin and maintained (in part) by fluvial inputs from the adjacent residential subdivision to the east. This community features a large standing Crack Willow (*Salix euxina*) at the canopy level (>10m in height), with moderately dense (25-60%) moderately-aged Green Ash and occasional Eastern White Cedar (*Thuja occidentalis*) <10m in height. The understory later is dense (>60% cover) and comprises Red-osier Dogwood, Common Buckthorn, Green Ash, and Meadow Willow in descending order of density. The ground layer is moderately dense (25-60% cover) and includes Calico Aster (*Symphyotrichum lateriflorum*), Panicled Aster, Grass-leaved Goldenrod, Bittersweet Nightshade (*Solanum dulcamara*), Tall Goldenrod (*Solidago altissima*), and Creeping Bentgrass in descending order of density.
CU (CULTURAL)	Community resulting from, or maintained by, cultural or anthropogenic-based disturbances.
ME (Meadow)	Tree and shrub cover <25%; open herbaceous communities; cover varies from scattered and patchy to continuous meadow; areas with a cultural legacy typically dominated by invasive plant species. Mineral soil >30cm deep; shrub and tree establishment inhibited by environmental or have been removed by land use practices; areas subjected to natural disturbance (*e.g.* fire) or recovering from cultural disturbance (*e.g.* clearing, pasture).
MEGM (Graminoid Meadow)	Meadow dominated by grass-like species (*e.g.* grass, sedge).
MEGM4 (Fresh-Moist Graminoid Meadow)	This community represents a minor old-field meadow unit in the northern portion of the property, adjacent to the Hamilton Drain Trail. This community is open in character with no canopy or subcanopy later. A very sparse shrub layer (<<10% cover) consists of Green Ash, Common Apple (*Malus pumila*), Red-osier Dogwood, and Eastern Redcedar (*Juniperus virginiana*). The ground layer is dense and dominated by meadow grasses and associated forbs, including Redtop (*Agrostis gigantea*), Red Fescue (*Festuca rubra*), Garden Bird's-foot Trefoil (*Lotus corniculatus*), English Plantain (*Plantago lanceolata*), Panicled Aster, and Grass-leaved Goldenrod in descending order of density. The southern and western edges of the meadow are bordered by a Naturalized Deciduous Hedgerow (FODM11) inclusion, with a canopy/subcanopy layer comprising Green Ash, Easter White Pine (*Pinus strobus*), Sugar Maple (*Acer saccharum*), Scot's Pine (*Pinus sylvestris*), and Common Apple. The ground layer within the hedgerow inclusion comprises Green Ash seedlings, occasional Red-osier Dogwood, Common Buckthorn, and White Elm (*Ulmus americana*) seedlings.
MEMM4 (Fresh-Moist Mixed Meadow)	This community represents a minor old-field meadow unit between the western edge of the gravel pad and Hurontario Street, comprising the majority of the wester border of the property. This community is open in character with no canopy or subcanopy later. A very sparse shrub layer (<<10% cover) consists of Green Ash, Staghorn Sumac (*Rhus typhina*), Meadow Willow, and Red-osier Dogwood. The ground layer is dense and dominated by

Table 3: Summary of Vegetation Communities, The Gateway Centre (Collingwood)

Unit	Description
	meadow grasses and associated forbs, including Red Fescue, Reed Canary Grass, Tall Goldenrod, Redtop, Common Milkweed (*Asclepias syriaca*), Grass-leaved Goldenrod, Creeping Bentgrass, and Smooth Brome (*Bromus inermis*) in descending order of density.
THDM5/MEMM4 (Fresh-Moist Deciduous Thicket/Fresh-Moist Mixed Meadow) complex	This community represents a fresh-moist regenerating deciduous thicket/meadow marsh complex, primarily open meadow with patchy areas of shrubs and young trees exceeding 25% cover. This community is located in the southeast portion of the property, occupying lands between the eastern edge of the gravel pad and the adjacent residential subdivision. This community features a sparse (<10%) canopy and subcanopy layer including occasional Large-tooth Aspen (*Populus grandidentata*), White Willow, Siberian Elm (*Ulmus pumila*), and Black Locust (*Robinia pseudoacacia*) in descending order of density. The understory layer is sparse (<10% cover) in some locations and moderately dense (25-60% cover) in others, comprising Green Ash with Meadow Willow, Red-osier Dogwood, and Eastern White Cedar associates. The ground layer is dense and includes Tall Goldenrod, Reed Canary Grass, Grass-leaved Goldenrod, Wild Carrot (*Daucus carota*), Smooth Brome, Red Fescue, Redtop, Creeping Bentgrass, and Panicled Aster in descending order of density. A minor Fresh-Moist Deciduous Woodland (WODM5) inclusion measuring approximately 650m^2 is located in the northern portion of the unit, and is directly connected to the adjacent SWDM2-2 and MAMM1-1/MASM1-2b wetland units. The woodland inclusion consists of low (<10m height) Green Ash, with a dense understory comprising Green Ash, Common Buckthorn, Red-osier Dogwood, and Hawthorn (*Crataegus spp.*).
CONSTRUCTED (CV)	Constructed features with anthropogenic histories.
CVC_1 (Business Sector)	This community includes the gravel pad established as a component of early works associated with a previous development. A pioneer meadow is located within the limits of the gravel pad area, with overall sparse vegetation growth. This community is open in character with no canopy or subcanopy later. A very sparse shrub layer (<<10% cover) consists of Balsam Poplar (*Populus balsamifera*), Eastern White Cedar, Siberian Elm, and Eastern White Cedar. The ground layer is moderately sparse (10-25% cover) and includes Wild Carrot, Tall Goldenrod, Garden Bird's-foot Trefoil, Wild Chicory (*Cichorium intybus*), Wild Basil (*Clinopodium vulgare*), and Wild Strawberry (*Fragaria virginiana*) in descending order of density.
CVR_4 (Rural Property)	This unit represents an occupied rural dwelling in the northwest corner of the property, with associated driveway, mowed/maintained lawn, gardening and landscaping.

			Location[1,2]				Conservation Rankings[3]				
			1								
FAMILY	SCIENTIFIC NAME	COMMON NAME	Visit 1	Visit 2	Adjacent Lands	Incidental	GRANK	SRANK	ESA	SARA	TRACK
Alcedinidae	*Megaceryle alcyon*	Belted Kingfisher				✓	G5	S5B,S4N			N
Ardeidae	*Ardea herodias*	Great Blue Heron			FO		G5	S4			N
Ardeidae	*Butorides virescens*	Green Heron				✓	G5	S4B			N
Charadriidae	*Charadrius vociferus*	Killdeer	FY/P/S	DD/A/H			G5	S4B			N
Columbidae	*Zenaida macroura*	Mourning Dove		P/H			G5	S5			N
Corvidae	*Corvus brachyrhynchos*	American Crow	H		H		G5	S5			N
Fringillidae	*Spinus tristis*	American Goldfinch	S				G5	S5			N
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird	FY/S	FY/S/H			G5	S5			N
Icteridae	*Quiscalus quiscula*	Common Grackle		P/H			G5	S5			N
Laridae	*Larus delawarensis*	Ring-billed Gull		FO	FO		G5	S5			N
Paridae	*Poecile atricapillus*	Black-capped Chickadee				✓	G5	S5			N
Parulidae	*Geothlypis trichas*	Common Yellowthroat		S			G5	S5B,S3N			N
Parulidae	*Setophaga petechia*	Yellow Warbler	S	S			G5	S5B			N
Parulidae	*Setophaga ruticilla*	American Redstart	S				G5	S5B			N
Passerellidae	*Melospiza melodia*	Song Sparrow	S	S			G5	S5			N
Passerellidae	*Spizella passerina*	Chipping Sparrow		S			G5	S5B,S3N			N
Picidae	*Colaptes auratus*	Northern Flicker				✓	G5	S5			N
Sturnidae	*Sturnus vulgaris*	European Starling	S				G5	SNA			N
Troglodytidae	*Troglodytes aedon*	House Wren			S		G5	S5B			N
Turdidae	*Turdus migratorius*	American Robin	H	S			G5	S5			N
Vireonidae	*Vireo gilvus*	Warbling Vireo	S	S			G5	S5B			N

1 Visit 1: 6 June 2024, Observer: A. Pompilio-Grant, Temperature 10°C, Cloud Cover 50% , Wind: B1, Precipitation: Nil, Search Time 07:10 to 07:20; Visit 2: 10 June 2024, Observer: A. Pompilio-Grant, Temperature 12°C, Cloud Cover 50% , Wind: B0, Precipitation: Nil, Search Time 06:18 to 06:28

[2] Breeding Bird Evidence Codes: X - Species observed, C - Call heard, FO - Flyover (Species presence); H - Species observed in its breeding season in suitable nesting habitat, S - Singing male (Possible Breeding); P - Pair observed , T - Territorial behaviour, A - Agitated behaviour or anxiety calls of adult, V - Visiting a probably nest site, N - Nest building or excavation of nest hole (Probable Breeding); DD - Distraction display or injury feigning, NU - Used Nest or egg shells, FY - Recently fledged young, AE - Adult leaving or entering nest sites, FS - Adult carrying fecal sac, CF - Adult carrying food for young, NE - Nest containing eggs, NY - Nest with young seen or heard (Confirmed Breeding).

			Location[1,2]				Conservation Rankings[3]				
			1								
FAMILY	SCIENTIFIC NAME	COMMON NAME	Visit 1	Visit 2	Adjacent Lands	Incidental	GRANK	SRANK	ESA	SARA	TRACK

[3] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)

Table 5: Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

Table 1.1 Seasonal Concentrations of 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.	Fields with sheet water not observed. No suitable habitat within the study area.
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.	Shoreline wetlands with potential for abundant food supply not observed. No suitable habitat within the study area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Shorebird Migratory Stopover Area **Rationale:** 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. Information Sources • 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, bars, and seasonally-flooded muddy shoreline habitat associated with shorebird migratory stopover areas not observed. No suitable habitat within the study area.
Raptor Wintering Area **Rationale:** 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 **Special Concern:** Short-eared Owl Bald Eagle	Hawks/Owls: 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. Bald Eagle: 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. Information Sources: • 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.	Idle/fallow meadow (MEMM4, MEGM4) minimal and highly localized within the study area limits, significantly below the 15ha threshold required for consideration as Raptor Wintering Area. No woodlands located within the study area limits. No suitable habitat within the study area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Bat Hibernacula **Rationale:** 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. Information Sources • 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.	No caves, mine shafts, underground foundations and karsts. No suitable habitat within the study area.
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; ○ >10 Big Brown Bats ○ >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.	Wooded areas within the study area are limited to linear hedgerow units in accordance with provincial guidelines presented in the NHRM. A minor (0.13ha) unit of Deciduous Swamp (SWDM2-2) is illustrated throughout Figure 2 in the northeast portion of the property, however this community is below the minimum size threshold (>0.5ha) for consideration as a standalone vegetation community under the ELC system and is dominated by relatively immature Green Ash. This vegetation unit is not anticipated to be of sufficient size or maturity to support SWH for Bat Maternity Colonies. Based on the above assessment, no portion of the study area is anticipated to provide suitable habitat conditions for Bat Maternity Colonies.
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.	Permanent standing water within the study area is limited to a highly localized unit (236m2) within a partially-naturalized sedimentation pond in the northwest portion of the property, dug shallow at an estimated 20cm in depth. This unit is not anticipated to meet the necessary size and/or depth requirements to provide suitable overwintering habitat function for turtles. No other natural features within the study area are expected to provide candidate SWH as Turtle Wintering Areas.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
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 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	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 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.	No features were identified on the property that could provide suitable reptile hibernacula. No suitable habitat within the study area.
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale:** 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. Information Sources • 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 within the study area. No suitable habitat within the study area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Colonially-Nesting Bird Breeding Habitat (Tree/Shrubs) **Rationale:** 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. Information Sources • 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.	Great Blue Heron and Green Heron were observed incidentally flying over the property, however no evidence of nesting activity by either species or another listed species was observed.
Colonially-Nesting Bird Breeding Habitat (Ground) **Rationale:** 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 CUS	• 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. Information Sources • 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 mitigation measures.	No rocky island/peninsula observed. No suitable habitat within the study area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
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.	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.	Not located within 5km of Lake Ontario.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
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 an areas summer range.	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 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.	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 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.	See Deer Winter Congregation Area assessment below. Not identified as a Deer Yarding Area by MNR.
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.	Not identified as Deer Winter Congregation Area by MNR, or by municipal mapping resources.

Table 1.2.1 Rare Vegetation Communities

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Cliffs and Talus Slopes **Rationale:** 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. Information Sources • 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 identified during the field program.
Sand Barren **Rationale;** 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. Information Sources • 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 barrens identified during the field program.
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 identified during the field program.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
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 within the study area.
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 identified during the field program.
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 Naturalist clubs • Conservation Authorities	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.). • SWHMiST Index #19 provides development effects and mitigation measures.	No tallgrass prairie identified during the field program.
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 identified during the field program.

1.2.2 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.	Wetlands and open water features do not exceed the minimum 0.5ha size requirement. Two (2) wetlands <0.5ha are identified, however a cluster of three (3) or more smaller wetlands are required for consideration as candidate Waterfowl Nesting Areas.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **Rationale;** 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.	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. • Nests located on man-made objects are not to be included as SWH (*e.g.* telephone poles and constructed nesting platforms). Information Sources • 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	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 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.	Large wetlands, rivers, lakes or similar open water features are not located within the study area limits. No active or inactive Osprey or Bald Eagle nests were observed during the field survey program.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
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.	No raptor nesting activity was observed during the field survey program. No portion of the study area occurs within interior forest located >200m from a woodland edge, or is connected to a woodland with interior habitat. No suitable habitat within the study area.
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. • Natural Heritage Information Center (NHIC) • Field Naturalist clubs	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.	No exposed mineral soils within 100m of permanent or semi-permanent standing water that could be utilized for turtle nesting. No suitable habitat within the study area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Seeps and Springs **<u>Rationale;</u>** 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. <u>Information Sources</u> • 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 and springs identified during Azimuth's field investigations.
Amphibian Breeding Habitat (Woodland). **<u>Rationale:</u>** 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. <u>Information Sources</u> • 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.	Refer to the amphibian habitat assessment described under Amphibian Breeding Habitat (Wetland) below.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SHW	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Breeding Habitat (Wetlands) **<u>Rationale:</u>** 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. <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations • Reports and other information available from Conservation Authorities	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 measures.	The evening amphibian breeding survey program (April, May, June 2024) was focused to the wetland unit in the northeast portion of the property. The results of the survey program identified breeding amphibians within the northeast unit as follows: • Gray Treefrog (3 individuals calling; May 2024) • Green Frog (3 individuals calling; June 2024) The minimum threshold for consideration as SWH requires demonstrated breeding by two (2) or more of the listed species with at least 20 breeding individuals documented. The survey program did not detect >20 breeding individuals of listed species and therefore is not considered Candidate SWH for Amphibian Breeding Habitat (Wetlands).
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.	No portion of the study area occurs within interior forest located >200m from a woodland edge, or is connected to a woodland with interior habitat. No suitable habitat within the study area.

1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Marsh Breeding Bird Habitat **Rationale;** 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. Information Sources • 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.	One (1) Green Heron was observed flying over the study area on July 31, 2024, however no evidence of nesting was detected throughout the course of the field program. No other listed species were detected throughout the course of the field program.
Open Country Bird Breeding Habitat Sources Defining Criteria **Rationale;** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	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. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. Information Sources • 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 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. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #32 provides development effects and mitigation measures.	The study area does not provide habitat for grassland birds exceeding the minimum 30ha threshold. No suitable habitat within the study area.
Shrub/Early Successional Bird Breeding Habitat **Rationale;** 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. Information Sources • 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.	The study area does not provide habitat for shrub/early successional birds exceeding the minimum 10ha threshold. No suitable habitat within the study area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Terrestrial Crayfish **Rationale:** 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. Information Sources • 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.	No crayfish chimneys were documented during Azimuth's field investigations.
Special Concern and Rare Wildlife Species **Rationale:** 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 information may lack accuracy.	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 Information Sources • 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 information available about their requirements.	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 measures.	Special Concern species including Monarch were detected during the site investigation.

1.4 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.	No significant Amphibian Breeding Habitat - Wetland function, therefore no potential Amphibian Movement Corridor function within study area.
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 present, therefore no potential Deer Movement Corridor function within study area.

1.5 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.	Site not located 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	Site not located on Manitoulin Island.

APPENDICES

Appendix A: Municipal Background and Correspondence
Appendix B: Provincial Background and Correspondence
Appendix C: Nottawasaga Valley Conservation Authority Background
Appendix D: Photographic Record
Appendix E: Butternut Documentation
Appendix F: 2004 Commercial Facility Drawings
Appendix G: Proposed Development Concept

APPENDIX A

Municipal Background and Correspondence

COUNTY OF SIMCOE

For the Greater Good

SCHEDULE 5.1

To the County of Simcoe Official Plan

LAND USE DESIGNATIONS

Designations

- Settlements
- Greenlands
- Agricultural
- Rural
- Strategic Settlement Employment Areas and Economic Employment Districts
- Lands not subject to this plan
- Settlement Area Boundary Under Appeal
- (1) General Location of Site-Specific Appeals
- Lands Subject to Non-Decision

Reference Data

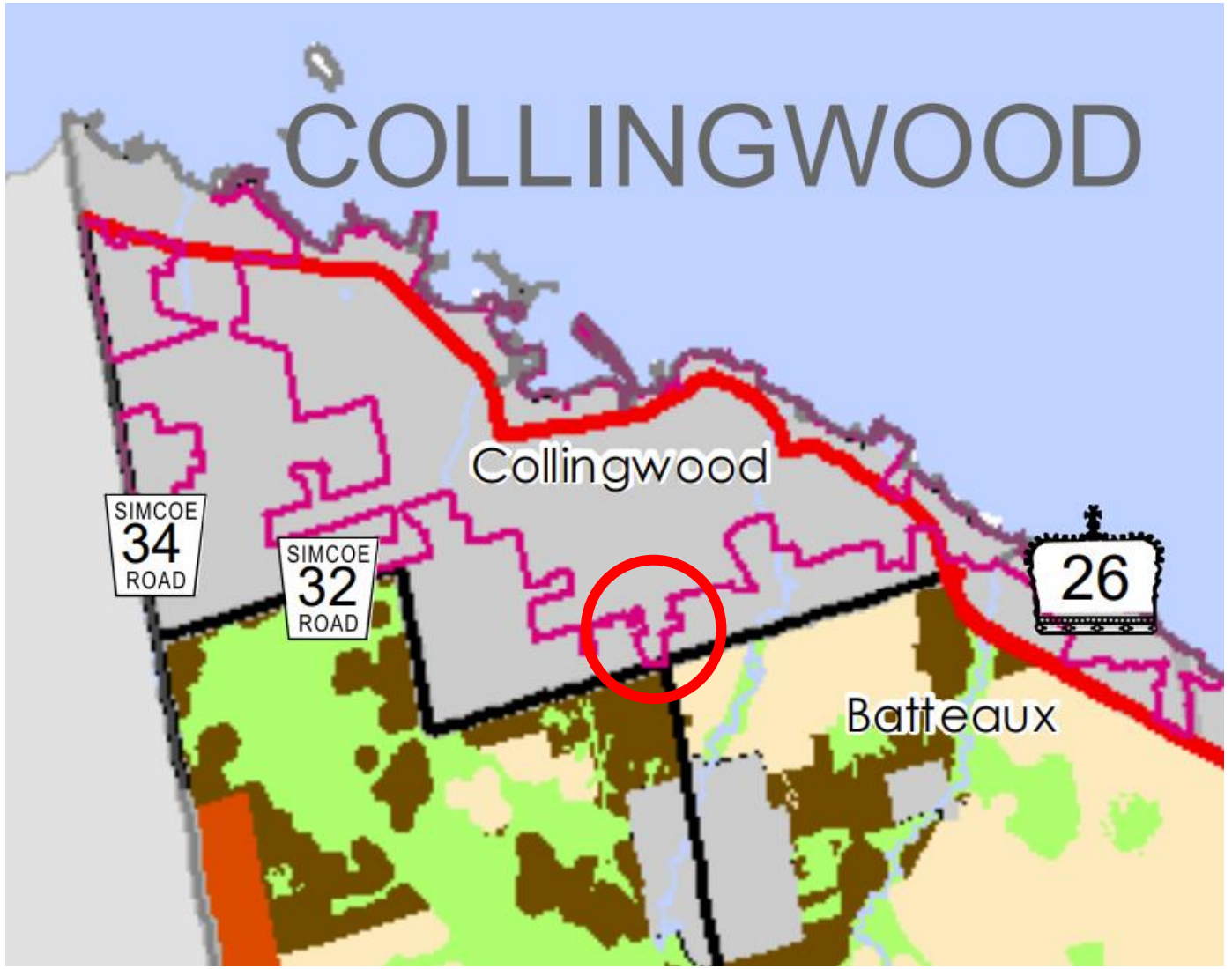
- Settlement Area Boundary
- Built Boundaries
- Special Development Area: Friday Harbour Resort
- Greenbelt Plan - Protected Countryside (Refer to Schedule 5.3.3 For Details)
- Niagara Escarpment Plan Area (Refer to Schedule 5.3.1 For Details)
- Oak Ridges Moraine Conservation Plan Area (Refer to Schedule 5.3.2 For Details)
- Provincial Highway
- County Road
- Trans Canada Pipeline
- Lake Simcoe Protection Plan - Watershed Boundary

** Greenbelt Plan – Protected Countryside, Oak Ridges Moraine Conservation Plan Area and Niagara Escarpment Plan Area are included within the Greenbelt Plan Area*

This schedule must be referred to in conjunction with the text of the County of Simcoe Official Plan

Office Consolidation February 2023

Printed: 2023/02/14



COUNTY OF SIMCOE

For the Greater Good

SCHEDULE 5.2.2

To the County of Simcoe Official Plan

STREAMS AND EVALUATED WETLANDS

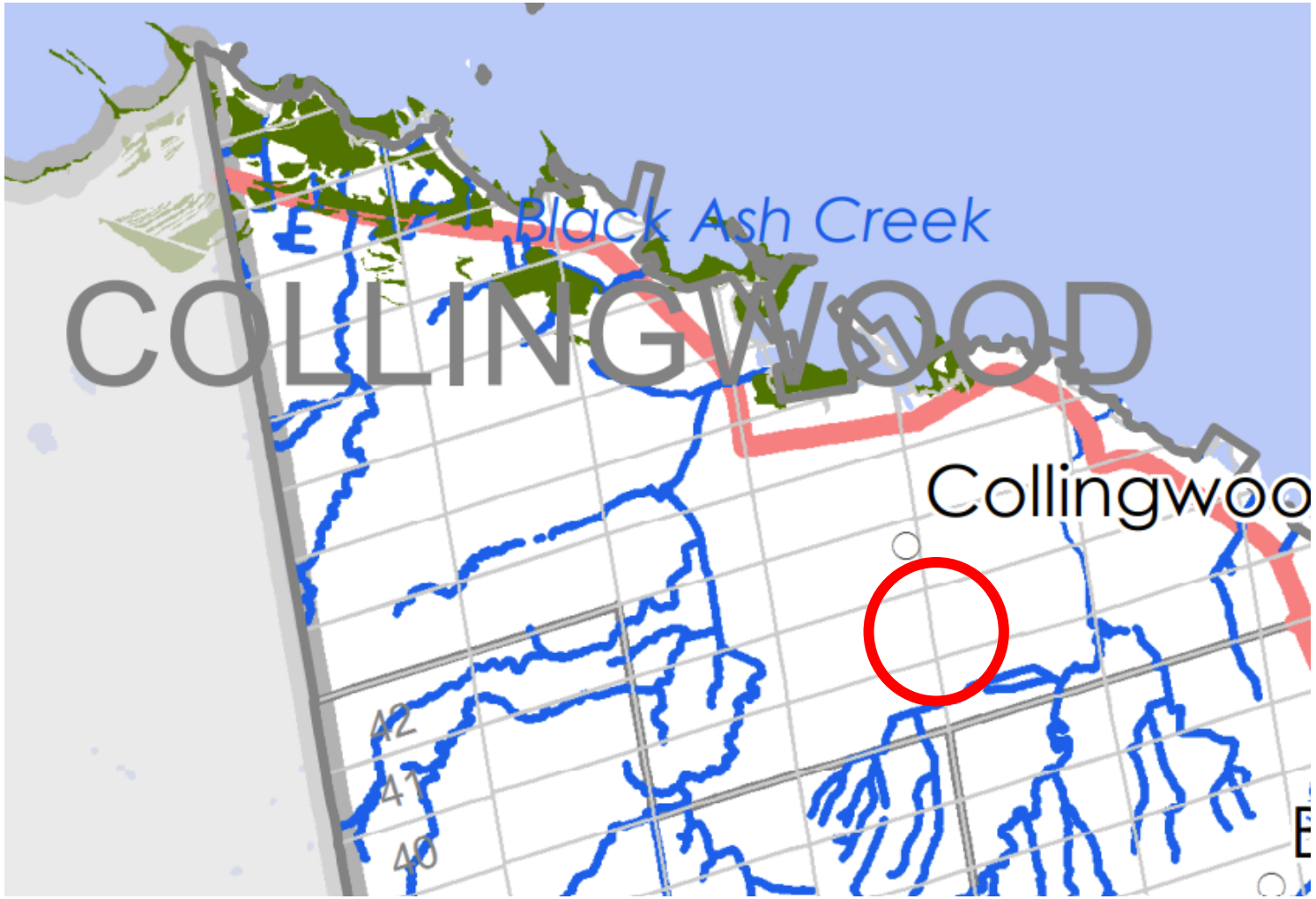
- Provincially Significant Wetland
- Locally Significant Wetland
- Watercourse
- Lands not subject to this plan

This schedule must be referred to in conjunction with the text of the County of Simcoe Official Plan - November 25, 2008

Source: Midhurst District MNR

Approved by OMB on May 9, 2016

Printed: 2016/05/19



COUNTY OF SIMCOE

For the Greater Good

SCHEDULE 5.2.3

To the County of Simcoe Official Plan

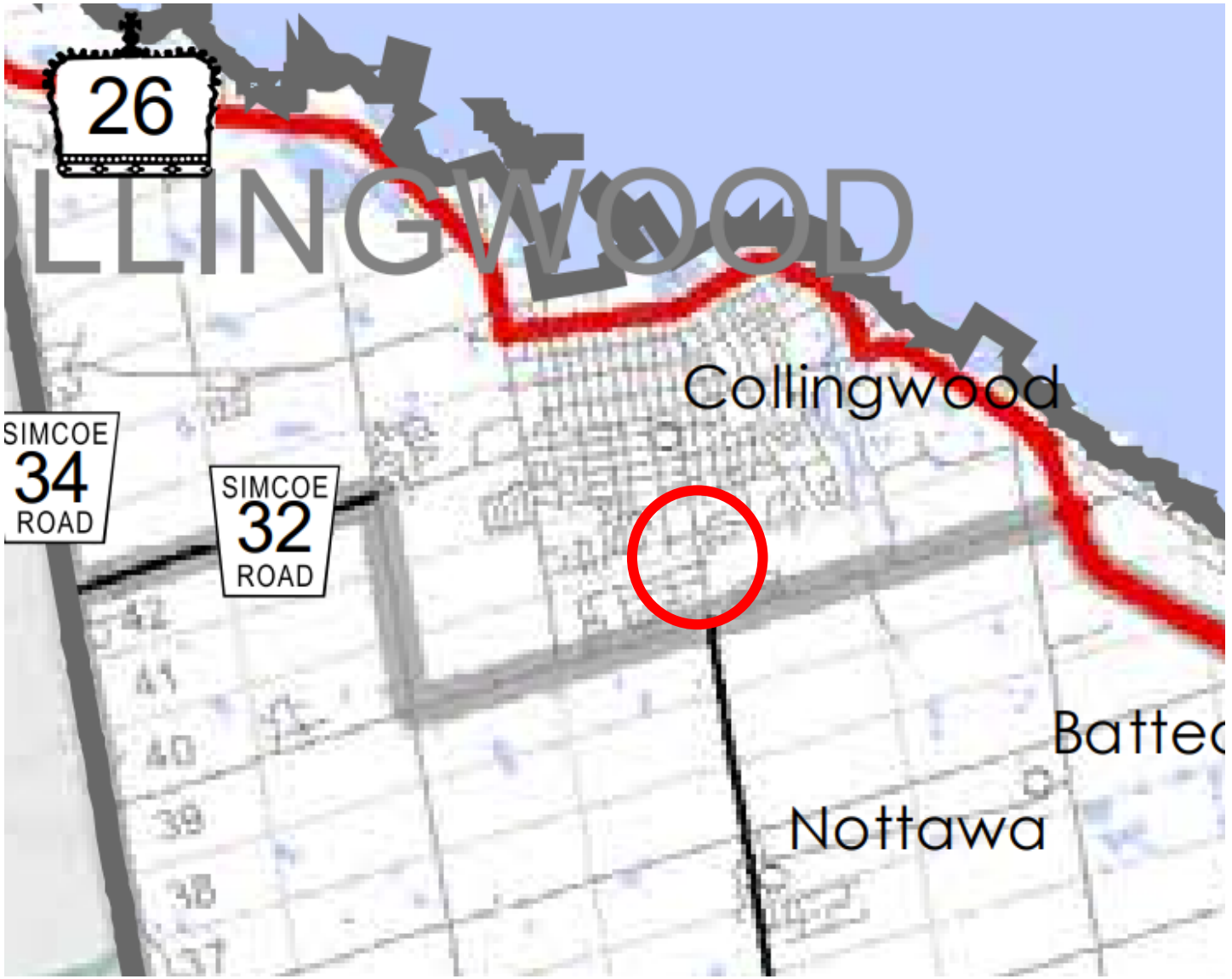
AREAS OF NATURAL AND SCIENTIFIC INTEREST

- Oak Ridges Moraine ANSI
- ANSI - Provincial
- ANSI - Regional
- Lands not subject to this plan

This schedule must be referred to in conjunction with the text of the County of Simcoe Official Plan - November 25, 2008
Source: Ministry of Natural Resources

Approved by the OMB on April 19, 2013

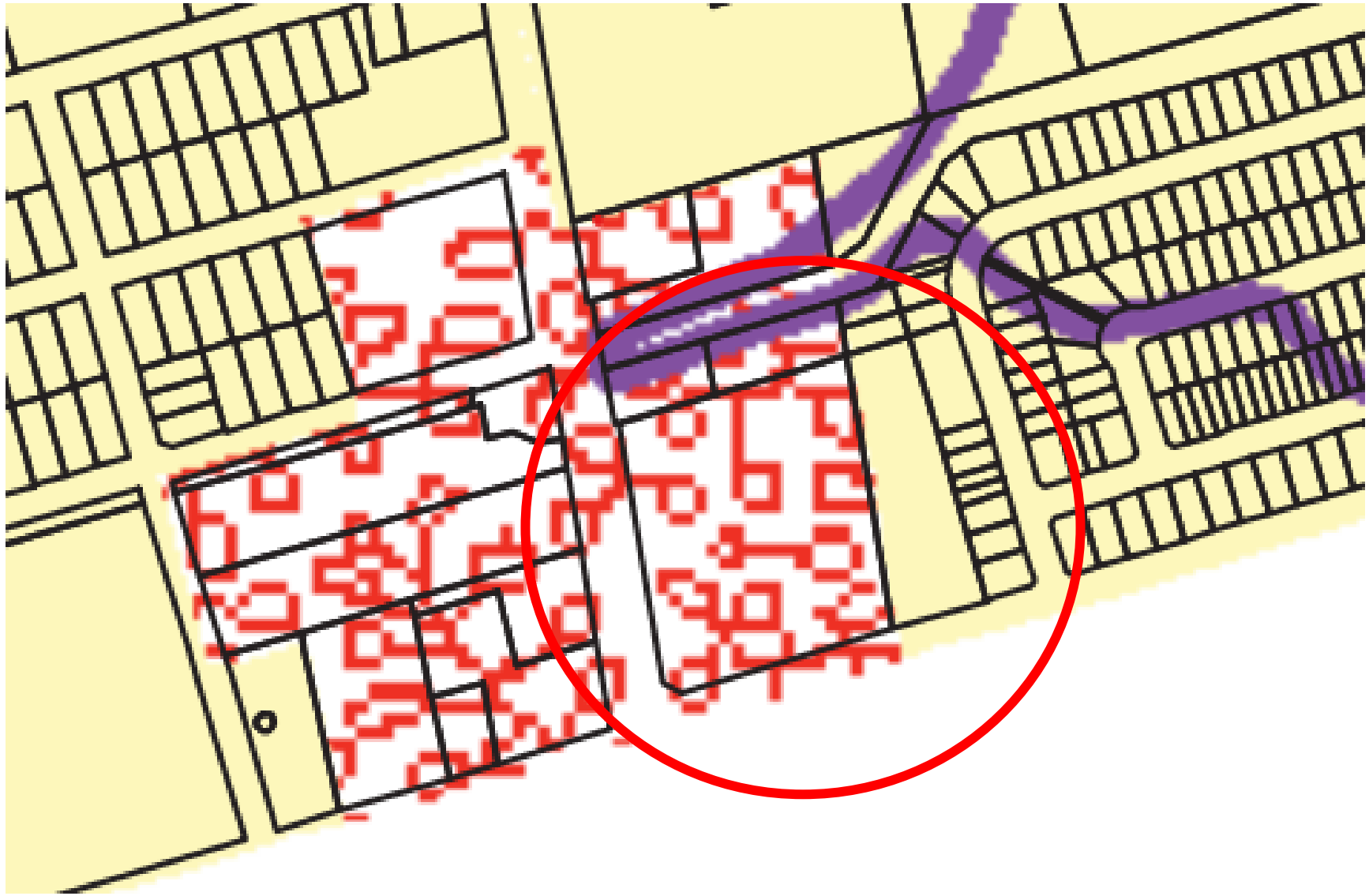
Printed: 5/17/2013



Official Plan of the Town of Collingwood
SCHEDULE 'A' - Land Use Plan

Legend

- Inactive Private Landfill
- Industrial Fringe
- Pretty River Flood Fringe
- Secondary Plan Boundary
- Waste Disposal Assessment Areas
- Business Park
- Downtown Commercial Core
- Environment Protection
- Highway Commercial
- Industrial Park
- Light Industrial
- Mixed Use Commercial
- Industrial
- Recreation
- Regional Commercial District
- Residential
- Resort Commercial
- Restrictive Commercial
- Rural
- Rural Residential
- Shipyards
- Special Policy Area- Health
- Well Head
- Residential-Mixed Use



Official Plan of the Town of Collingwood
SCHEDULE 'B' - Environmental Protection-
Natural Heritage Resource Areas

Legend

- - - - Fish

SCHEDULE B

NATURAL_FE

- CATEGORY 1 VALLEYLANDS
- CATEGORY 1 WETLANDS
- CATEGORY 1 WOODLAND
- CATEGORY 2 WOODLAND
- FISH SPAWNING & NURSERY HABITAT
- SCHEDULE B LINE
- WATERSHED

N

County of Simcoe - Web Map

0 20 40 60m

1 : 2,257

Aug. 21, 2024

From:	Erin Bannon
To:	Dan Stuart; Nathan Wukasch
Cc:	Meghan Douglas
Subject:	Re: AEC24-153 Gateway Centre Collingwood EIS Terms of Reference REVISED (proj3287B)
Date:	July 4, 2024 10:05:31 AM
Attachments:	oaflcpkqefihkidk.png bicmqqbdieodbffb.png mhkjpaklcmpiqkbf.png image001.png

---

Hi Dan,

We're happy to hear that consideration of both the additional background resources and review of EAME habitat will be included within the EIS. The early-June (spring) and late-July or early-August (summer) vegetation survey would also be acceptable assuming reasonable separation between survey dates to ensure capturing appropriate/separate seasonal growing conditions to satisfy a 2-season inventory, which it sounds like is what is planned. To confirm, NRSI is accepting of the ToR with these clarifications and happy to hear they're in the works!

Thanks!

Erin

Erin Bannon B.E.S. Certified Arborist
Terrestrial and Wetland Biologist
Natural Resource Solutions Inc.
Proudly Indigenous-owned
415 Phillip Street, Unit C
Waterloo, ON N2L 3X2
(p) 519-725-2227 Ext. 242 (f) 519-725-2575
(m) 519-998-6068
(w) www.nrsi.on.ca (e) ebannon@nrsi.on.ca
@nrsinews Natural Resource Solutions Inc.
Over 25 years of environmental consulting excellence

On 2024-07-03 8:01 p.m., Dan Stuart wrote:

> Hi Nathan,
>
> Azimuth has received the Town's response (via NRSI) regarding our proposed Terms of Reference for the Gateway Centre lands, and generally accepts the comments/additions provided by NRSI. At this time we would like to confirm/clarify the following:
>
> - Additional background resources listed in the first set of bullets (e.g. ORAA, OBBA) will be reviewed and referenced as part of the EIS.
> - A two-season vascular plant inventory is proposed as requested in a Terms

of Reference received from NVCA during pre-consultation. In order to capture an adequate complement of vascular plant species throughout the growing season Azimuth intends to carry out vegetation surveys in early-June (already completed) to inventory early-mid season species, and late-July or early-August to inventory mid-late season species.
- Potential habitat function for Eastern Meadowlark will be reviewed as part of the Species at Risk assessment to be included in the EIS.

Please confirm that the Town is accepting of the provided ToR with the above clarifications.

Best regards,

Dan Stuart, M.Env.Sc.
Ecology Lead/Partner
Azimuth Environmental Consulting, Inc.
642 Welham Road Barrie, ON L4N 9A1
Office: 705-721-8451 x208
Cell: 705-794-0975
www.azimuthenvironmental.com

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

From: Dan Stuart
Sent: June 21, 2024 10:09 AM
To: 'Nathan Wukasch' <nwukasch@collingwood.ca>
Cc: Erin Bannon <ebannon@nrsi.on.ca>; Meghan Douglas <mdouglas@nrsi.on.ca>
Subject: AEC24-153 Gateway Centre Collingwood EIS Terms of Reference REVISED (proj3287B)

Hi Nathan,

Please see Azimuth's revised Terms of Reference regarding the Environmental Impact Study for the Gateway Centre property in the Town of Collingwood, that incorporates 3x evening amphibian breeding surveys (April, May, June), already completed.

Azimuth has been retained to complete an Environmental Impact Study (EIS) for The Gateway Centre located at the northeast corner of Hurontario Street and Poplar Sideroad in the Town of Collingwood, a component of which includes clearing of a Terms of Reference for our study.

It is understood that the proponent is considering construction of a commercial facility that will occupy the majority of the property. In accordance with pre-consultation correspondence from the Nottawasaga Valley Conservation Authority (NVCA) we understand the requirement for a EIS has been triggered due to presence of mapped unevaluated wetland associated with the Pretty River Floodway located north of the property, and potentially two (2) other wetland units near the northern property boundary. Portions of the property are therefore located within NVCA's Regulation Limit per O. Reg. 41/24 under the *Conservation Authorities Act*. Azimuth's field program will focus on the proposed development envelope and adjacent lands (within 120m of the development limit; i.e. the "study area") in accordance with provincial standards.

The following Terms of Reference is proposed toward completion of the EIS:

<!--[if !supportLists]-->• <!--[endif]-->Search the Town, County, Ministry of Natural Resources and Forestry (MNRF), 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 Town and NVCA to confirm the Terms of Reference for the scope of the EIS;
- Conduct a field study to document existing natural heritage features, functions, and species. Surveys include:
    - Evaluate/ map vegetation community types based on Ecological Land Classification methods (spring-summer 2024);
    - Two (2) vascular plant inventories (spring and summer 2024);
    - Three (3) amphibian breeding surveys (April, May, June 2024);
    - Two (2) dawn breeding bird surveys (May-July 2024);
    - Record all incidental wildlife observations during site visits.
- Attend one (1) wetland staking exercise with NVCA, the Town, and/or other stakeholders to delineate wetland boundaries should the vegetation inventory verify presence of wetland units on the property;
- Complete an assessment of potential Species at Risk and Significant Wildlife Habitat that could be present within the study area, including a screening for Butternut and Black Ash trees (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 development parcel; and,
- Review conformity of the proposed development within the applicable municipal, provincial, and federal natural heritage policy framework.

At this time Azimuth requests that the Town/NVCA indicate concurrence with the above proposed Terms of Reference toward completion of the EIS. We would also like to take this opportunity to request any natural heritage background information from the Town/NVCA that may be helpful in completing the EIS.

Please feel free to contact me if you would like to discuss any aspects of the project.

Kind regards,

Dan Stuart, M.Env.Sc.
Ecology Lead/Partner
Azimuth Environmental Consulting, Inc.
642 Welham Road Barrie, ON L4N 9A1
Office: 705-721-8451 x208
Cell: 705-794-0975
www.azimuthenvironmental.com

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

APPENDIX B

Provincial Background and Correspondence

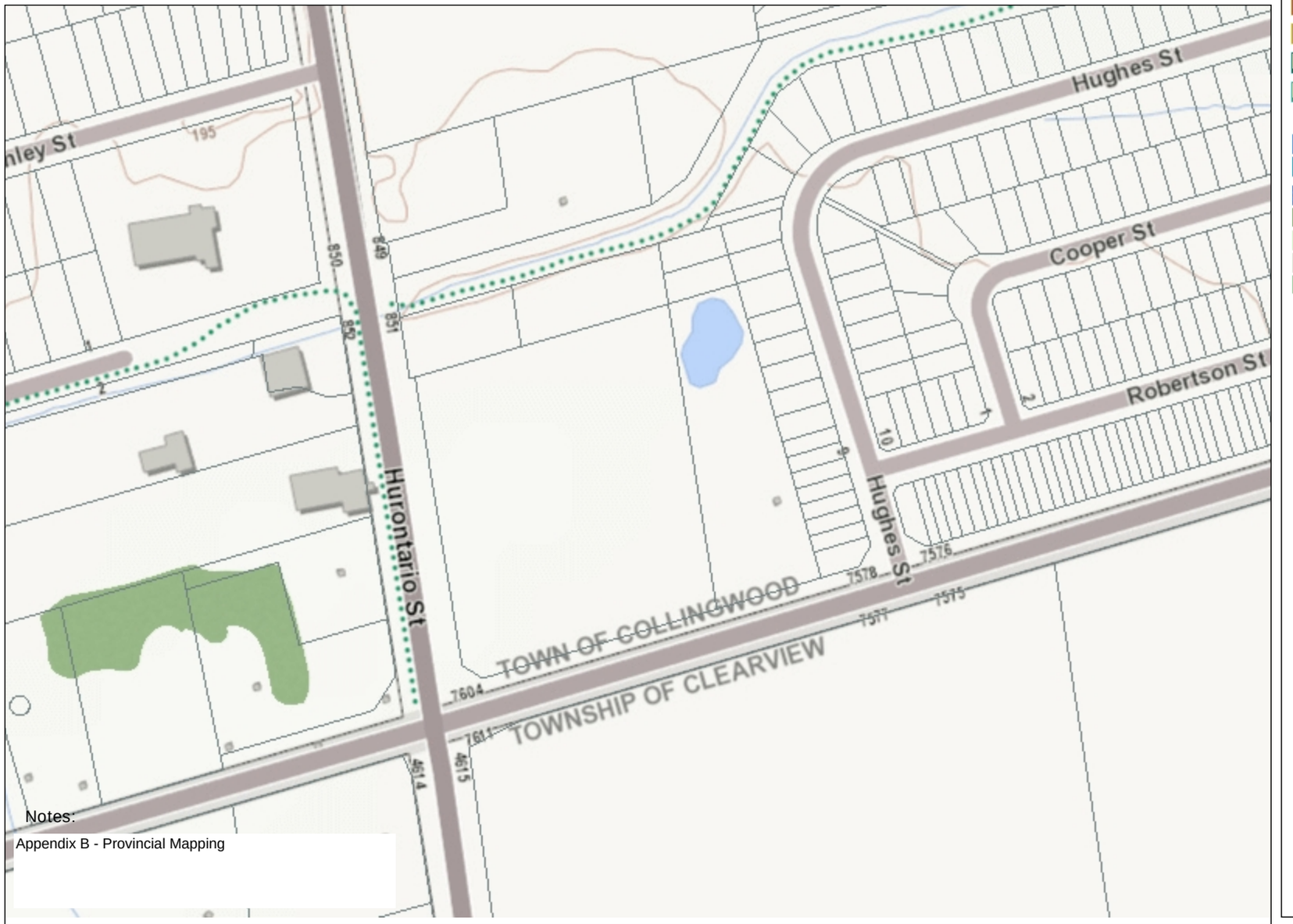
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

Natural Heritage Information Centre

Map created:8/21/2024



Notes:

Appendix B - Provincial Mapping

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 and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

APPENDIX C

Nottawasaga Valley Conservation Authority Background

Nottawasaga Valley
Conservation Authority

April 11, 2024 SENT BY EMAIL

Town of Collingwood
97 Hurontario Street
Collingwood, ON
L9Y 2L8

Attn: Nathan Wukasch
Senior Planner
nwukasch@collingwood.ca

Dear Nathan,

RE: Pre-consultation Comments for "The Gateway Centre – Phase Two and Three"
Town File No. D00224
869, 853, (portion of) 839 Hurontario Street and 7564 Poplar Sideroad (NE corner of Hurontario and Poplar Sideroad)
NVCA ID #27574

Nottawasaga Valley Conservation Authority [NVCA] staff has reviewed the above noted pre-consultation application for a proposed redevelopment of the site for residential and commercial purposes. The applicant proposes the construction of commercial buildings located on the portion of the subject lands designated Residential and in a Deferred Residential Zone, and a proposed 12-storey mixed-use building on the portion of the lands designated Highway Commercial and located within the Highway Commercial C5 Zone. It is staffs understanding that OPA and ZBA's will be required for the proposed developments in Phase 2 and 3.

NVCA staff have received and reviewed the following documents submitted with this application:

- DRAWING: Site Plan – Option C.01-D; Prepared by: Richard Ziegler Architects Inc.; Dated: January 9, 2024

Staff has reviewed this application as per our delegated responsibility from the Province to represent provincial interests regarding natural hazards identified in Section 3.1 of the Provincial Policy Statement (PPS, 2020) and as a regulatory authority under Ontario Regulation 41/24. The application has also been reviewed through our role as a public body under the Planning Act as per our CA Board approved policies. Finally, NVCA has provided comments as per our Municipal Partnership and Service Agreement with the Town of Collingwood.

Ontario Regulation 41/24

1. The property falls partially within an area affected by Ontario Regulation 172/06 (the Authority's Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation) where a permit is required from the NVCA under the Conservation Authorities Act prior to development.

The area is affected by the regulation due to the Pretty River Floodway, unevaluated wetland, floodplain, meander erosion hazard areas and associated buffers.

Natural Hazard - Regulatory Comments

2. Policies contained within the PPS restrict development to areas outside of hazardous lands adjacent to shorelines and large inland lakes as well as river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.
3. A natural hazard study should be completed in support of the proposed development.
4. A geotechnical study will be required in support of the development application which outlines the following;
    a. On-Site Soils;
    b. The feasibility of the use of low impact development measures;
    c. The feasibility of the stormwater detention design as per Section 2.3 of the NVCA SWM standards;
    d. Confirmation as to whether there are any hazardous soils on site and any mitigation measures that may be required;
    e. Identify the stable top-of-bank and confirmation of stable slopes.
5. In general, NVCA's Planning and Regulations Guidelines requires a 6 metre access allowance from natural hazard limits and valleylands top of bank.

Planning Ecology:

6. A various wetland features have been identified on the subject lands. Please see attached mapping which identifies the locations of the wetlands. NVCA's Planning and Regulations Guidelines stipulate a 30m setback to wetlands from development activities.
7. Due to the presence of confirmed natural heritage features within proximity to the proposed development, an EIS will be required to assess the potential impacts of development on such features, and evaluate conformity of the proposal with relevant natural heritage-related policies. The applicant will be required to retain a qualified ecologist to prepare this submission. Attached is a Terms of Reference identifying the studies and observations required as part of a complete EIS.

Stormwater Management:

8. A stormwater management report and associated plans will be required to current standards. More information can be found in the NVCA engineering guidelines available on our website at nvca.on.ca.

Hydrogeology

9. The applicant is encouraged to complete the Hydrogeological Assessment check List intended to support development applications, Found on Table 1 (page 6 and 7) of the document entitled "Hydrogeological Assessment Submissions, Conservation Authority Guidelines for Development Applications" June 2013 which is attached for reference.

Land Use Planning

10. In order to accurately determine the appropriate limits to development, NVCA staff request that a *scaleable* drawing be provided which illustrates the following items (as applicable):

    i. The wetland/woodlot boundaries and width of buffers

    ii. All applicable hazard limits (shoreline, erosion etc.) plus the 6 metre access allowance);

    iii. The floodplain limit plus the 6 metre access allowance;

    iv. The proposed site plan fabric.

    This information should be accompanied by an appropriate and complete legend. Constraint lines, access allowances, and buffer setbacks should be labelled. Please confirm that all works are outside of the limits of development. (i.e. all natural hazards, access allowances, natural heritage features and associated buffers and setbacks).

    The limits to development will be determined by the furthest extent of the hazard plus the required access allowance or the natural heritage feature and appropriate buffer; whichever is the greatest constraint.

11. Please provide copies of all draft by-law documents, including schedules for NVCA to review and provide comment.

Fees

NVCA will provide a formal request for fees upon submission and circulation of a Planning Act application.

Conclusion

NVCA staff appreciates the opportunity to comment at this stage in the process. These comments should be considered valid at the time of issuance and preliminary in nature. The information presented herein is based on a preliminary concept plan and should not be considered NVCA final comments at this time. We will require additional information (full application submission) in order to complete our review and additional comments may be provided in the future. The NVCA may at any point change our comments should new information become available which raises concerns pertaining to the NVCA core mandate.

Should you require any further information, please feel free to contact the undersigned.

Sincerely,

Davin Metheral
Planner

Terms of Reference

1. **General Information:**

Date: April 10, 2024

Address: 853 and 869 Hurontario Street and 7564 Poplar Sideroad

Proposed Development: The Gateway Centre

Contact information: _____

2. **Identify all <u>potential</u> features in the study area (check all that apply):**

**The NVCA recognizes that this is a preliminary assessment to determine what studies may be suitable for the property. A site visit may be required to verify the presence/absence of features.*

- ☒ Wetlands
- ☒ Organic soils
- ☐ Dunes / parabolic dune outliers
- ☐ Karst topography
- ☒ Intermittent drainage features
- ☒ Lakes, ponds
- ☐ Watercourses
- ☐ Georgian Bay Shoreline
- ☒ Groundwater seeps and springs

3. **Activities to be undertaken and studies required for a complete EIS submission**:**

*** Some activities/studies are pre-selected (☒) as they are a minimum requirement for EIS submissions.*

☒ Identify an appropriate study area - generally the area of anticipated disturbance plus 120 m.

☒ Collect and include applicable background information and current environmental mapping for wetland and hydrologic features within and surrounding the study area.

☒ Identify and provide detailed descriptions of hydrologic features in the study area, their function, and the broader sub-watershed that they are within.

☒ Delineate existing vegetation communities using Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998. Ecological Land Classification for Southern Ontario: first approximation and its applications. SCSS Field Guide FG-02) **including the soils assessment**. Provide a description of ELC communities in the study area. The EIS must classify the moisture regime of wetland soils in accordance with O. Reg. 41/24 to be deemed complete.

☒ Conduct a two -season vegetation inventory in the late spring/summer/fall. Include the inventory categorized by ELC community as an appendix and denote any Species at Risk and/or provincially/locally rare species.

☒ Provide a general description of the methodology, dates, timing, and locations of completed field surveys. Include all field sheets as an appendix.

☒ Provide a detailed description of the proposed development.

☐ Complete an aquatic characterization for all drainage features/watercourses in the study area, including characterization of hydrologic features (i.e. permanent, intermittent, ephemeral, headwater drainage feature). Include a description of instream and riparian cover, bank stability, substrate composition, stream morphology, dimensions and gradient, thermal regime indicators, potential barriers, woody debris distribution, aquatic vegetation, groundwater seepage areas, etc.

☑ Complete a feature-based water balance for the study area to assess how existing drainage conditions and moisture regimes that support sensitive hydrologic features (e.g. wetland, watercourse) may be impacted by the proposed development. Demonstrate how current hydrologic inputs will be maintained post-development. Please note, the water balance assessment may also be a requirement under other provincial policies, therefore the EIS should coordinate with/summarize the water balance work undertaken by others.

☑ Recommend the dimensions of an appropriate setback/buffer to wetland and hydrologic features required to mitigate impacts from the proposed development. Recommendations for restoration/plantings should be provided for all buffers.

☑ Confirm the boundaries of any wetland feature on the property through a staking exercise with the NVCA. Boundary points must be surveyed with a high-accuracy GPS device (accurate to within 10 cm). A professional Ontario Land Surveyor (OLS) may be required to attend. Wetland staking exercises must be completed between June 15 and September 30 (exceptions may apply). Note that a site visit fee may apply.

☒ Map the following information separately on current high quality ortho-air photos:

1) ELC vegetation communities, hydrologic features (including seeps and springs) and their associated buffers/setbacks, and the proposed development and anticipated limit of disturbance (e.g. grading limits); and,
2) ELC vegetation communities, survey locations, incidental environmental features and existing structures and/or trails.

☒ Assess the potential direct, indirect, and cumulative impacts of the proposed development on hydrologic features, natural hazards and related ecological and hydrologic functions.

☒ Develop and provide an appropriate avoidance/mitigation/restoration strategy to address the potential impacts of the proposed development.

☒ Demonstrate how the proposed development is in conformity with all federal, provincial, regional, and municipal policies applicable in the study area.

☒ Complete one final report for circulation and approval, prepared by qualified professionals, in an electronic format.

4. Additional studies or plans that may be required include:

- ☐ Landscape/Restoration/Planting Plan
- ☐ Edge Management Plan
- ☒ Hydrogeologic Study (Feature-based Water Balance)
- ☐ Trails Impact Study
- ☒ Ecological Offsetting Strategy (if eligible under NVCA's Ecological Offsetting Policy)
- ☐ Environmental Monitoring Plan/Report
- ☐ OWES Evaluation (to determine wetland significance)
- ☐ Natural Channel Design

5. Additional notes and/or requirements:

Updated NVCA wetland feature delineation has identified two wetlands within the subject sites which were not previously mapped. Wetland features are under NVCA regulation in accordance with O. Reg. 41/24. An EIS and feature-based water balance are required to support permit authorization from the NVCA for wetland interference.

Please note that changes to the study area, the proposed development, and/or policy changes may require additional information/studies. Please provide current field survey data in the EIS submission. Field survey data will be considered valid for five (5) years from the date the survey was conducted, except for Species at Risk screenings, which are valid for one (1) year. If outdated field data is provided, additional surveys may be required. Field data and reports by others referenced in any EIS must be appended for the EIS to be deemed complete.

NVCA Signature: 

Date: 10 April 2024

Reviewer: Emma Perry

Title: Planning Ecologist


NATURAL FEATURES
WetlandUpdates2024_MF
ORTHO IMAGERY
Simcoe 2023
BASEMAPS
ESRI Basemap
OpenStreetMap

November 08, 2007

Nottawasaga Valley Conservation Authority

PERMIT
#2007-8832

Centre for Conservation
Tiffin Conservation Area
Telephone: 705.424.1479

John Hix Conservation Administration Centre
8195 Concession Line 8, Utopia, Ontario L0M 1T0
Fax: 705.424.2115 Email: admin@nvca.on.ca

In accordance with Section 28 (1) of the Conservation Authorities Act, R.S.O. 1990 and Ontario Regulation 172/06, permission has been granted to the applicant, subject to the conditions below. If you do not agree with these conditions, you have a right to a Hearing under the Conservation Authorities Act. Please notify the Nottawasaga Valley Conservation Authority (NVCA) within 30 days of receipt of this permit to exercise your right to a Hearing. Should you fail to notify the NVCA within 30 days of receipt of this permit, you will agree to the conditions as set out below.

APPLICANT: Home Hardware Stores LTD
34 Henry Street W
St. Jacobs ON N0B 2N0

LOCATION: Part Lot 40, Concession 8, Town of Collingwood, County of Simcoe
869 Hurontario St SP-025-04 (Site Plan)

PROPOSAL: for the placement of fill / site alteration at the above noted location as indicated on the noted drawing(s)/report(s), subject to the following conditions:

This permit is valid from *November 08, 2007 to November 08, 2009*

SPECIAL PERMIT CONDITIONS

1) That consent is given to NVCA, its employees and other persons as required by NVCA, to access the property for the purpose of inspection, obtaining information, and or monitoring any and all works, activities and or construction pertaining to the property in addition to the works as approved under cover of any permit issued by NVCA.

2) That the works be carried out in accordance with the following submissions:
   - ***All reports, drawings and correspondence, as previously approved by the NVCA (on file).***

3) All materials and equipment used for the purpose of site preparation and project completion shall be operated and stored in a manner that prevents any deleterious substance from entering the water. Vehicular re-fuelling and maintenance should be conducted well away from the water.

4) That nothing herein authorizes any person to carry out any work or undertaking, which may result in harmful alteration, disruption or destruction of fish habitat or any fishery.

5) Please note that this permit is only valid if approvals, agreements or permits are received from all other agencies having jurisdiction.

STANDARD PERMIT CONDITIONS

6) That this permit does not confer upon you any right to occupy, develop or flood lands owned by other persons or agencies.

.../2

7) That all development and site alteration is subject to all other applicable federal, provincial and municipal statutes, regulations and by-laws, such as the Municipal Act, Zoning and Tree-Cutting By-Laws, the Federal Fisheries Act, Navigable Waters Act, Public Lands Act, Lakes and Rivers Improvement Act, Drainage Act, Environmental Protection Act and the Ontario Water Resources Act.

8) That appropriate erosion and sediment control measures are installed **prior to construction** and maintained until all disturbed areas are stabilized, to ensure that sediments do not enter any water-course, wetland, lake, pond or sensitive area within the development or adjacent properties. When an erosion and sediment control plan appears to be inadequate, the deficiencies must be addressed and additional measures or practices implemented as needed. It is the responsibility of the owner and the owner's representative (if contracted) to implement, monitor and maintain all erosion/sedimentation control structures and practices until vegetative cover has been successfully established.

9) That dewatering of the site (if any) must occur slowly and the pumped/drained water should be filtered by appropriate erosion control measures prior to entering any watercourse. Permission must be obtained from adjacent landowners prior to discharging overland water to their properties. Pumping shall be monitored and maintained on at least a daily basis.

10) The natural drainage patterns beyond the immediate work site area are to remain in their natural state and existing vegetation shall not be removed.

11) The soils disturbed during construction and access should be stabilized as soon as possible upon completion of work and restored to a pre-disturbed state or better. Disturbed areas should be re-vegetated/seeded when the growing season permits. From September 15th to April 30th, structural stabilization techniques (e.g. application of erosion control blankets) should be utilized.

12) That the owner provides copies of this permit to any contracting or construction supervisor(s) who must have a copy of the permit available on-site for inspection by an officer when requested and that the owner ensure that all of the contractors and site supervisors are aware of the obligations under this permit including any obligations assigned by the owner to the contractors and supervisors. All contractors and site supervisors must be aware that they may also be held responsible for any violations in relation to the obligations outlined under this permit.

Note: It is the responsibility of the applicant to carry out the works in accordance with the above conditions. Failure to due so may result in cancellation of the permit and possible action in accordance with the *Conservation Authorities Act*.

Should you have any questions regarding this permit, please contact Karen Dykxhoorn - Environmental Officer at (705) 424-1479 extension 238.

Marilyn F.V. Eger, MES, MCIP, RPP – Director of Planning

Karen Dykxhoorn, MLEO
Officer under the *Conservation Authorities Act*

Copy: Town of Collingwood – Planning Department
Town of Collingwood – Building Department
Sheidel Construction Inc. **Attn Fred Schiedel**, 405 Queen St. W, Cambridge ON N3C 1G6
File (1)

APPENDIX D

Photographic Record

Photograph 1: Overview of vegetation composition in southern portion of MAMM1-2/MASM1-1a complex – August 22, 2024

Photograph 2: Overview of historical sedimentation pond feature (SAS_1 incl.) in northwest portion of property – August 22, 2024

Photograph 3: Ditch/drain along eastern "tail" of sedimentation pond, showing transition to adjacent upland zone – August 22, 2024

Photograph 4: Overview of central portion of MAMM1-2/MASM1-1b complex in northeast portion of property – August 22, 2024

Photograph 5: Standing water present in wettest portion of MAMM1-2/MASM1-1b complex in northeast portion of property – August 22, 2024

Photograph 6: Transition to meadow marsh and adjacent upland zone in southern portion of MAMM1-2/MASM1-1b complex – August 22, 2024

Photograph 7: Canopy/subcanopy composition (Green Ash dominated) in SWDM2-2 feature – August 22, 2024

Photograph 8: Representative ground cover and understory layers in SWDM2-2 feature – August 22, 2024

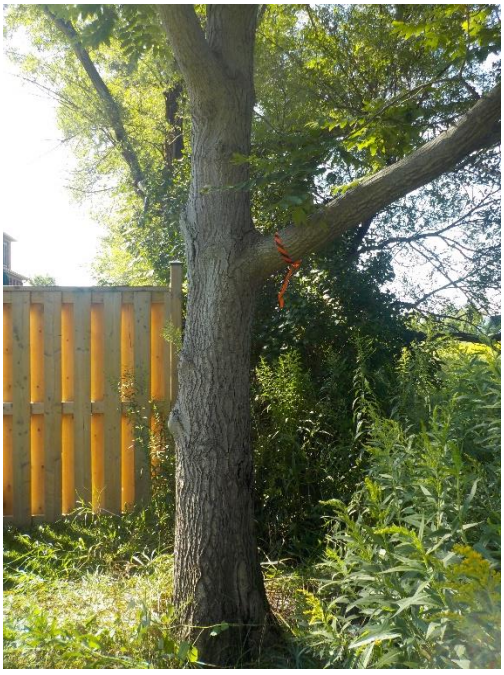
Photograph 9: Overview of MEGM4 and associated FODM11 (hedgerow) in northern portion of the property, from east edge facing west – July 31, 2024

Photograph 10: Representative ground cover and understory layers in FODM11 (hedgerow) feature – July 31, 2024

Photograph 11: Overview of MEMM4 community along Hurontario Street, from central area facing south – July 31, 2024

Photograph 12: Overview of THDM5/MEMM4 community in east portion of property, from southern area facing north – July 31, 2024

Photograph 13: Overview of CVC_1 (gravel pad) from northwest corner facing southeast toward Poplar Sideroad – July 31, 2024



Photograph 14: Main trunk of Butternut #001, located in close proximity to eastern property boundary – August 22, 2024

Photograph 15: Butternut #001 canopy overview, showing 100% live crown – August 22, 2024

Photograph 16: Butternut #002 located along northern property boundary; open canker (not pictured) documented on main stem – August 22, 2024

APPENDIX E

Butternut Documentation

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

September 5, 2024

Ministry of the Environment, Conservation and Parks
Client Services and Permissions Branch

Report issued via e-mail

Re: **Butternut Health Assessment Report # 609-010 for 869 Hurontario Street (Part Lot 40, Concession 8), Town of Collingwood**

To Whom It May Concern:

Per the instructions of the amended Butternut Health Assessment (BHA) Guidelines (December 2021, Version 3) attached please find a BHA report (Report # 609-010) prepared in regard to the above noted property.

Should you have any questions or concerns, please do not hesitate to contact the undersigned.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Dan Stuart, M.Env.Sc.
Ecology Lead/Partner
BHA #609/Butternut Health Expert

Attached: BHA Report # 609-010

cc: David Finbow, Charis Developments Ltd.

642 Welham Road, Barrie, Ontario L4N 9A1
telephone: (705) 721-8451 • fax: (705) 721-8926 • info@azimuthenvironmental.com • www.azimuthenvironmental.com

BHA Report Template – Version March 2015

Note to BHAs:

This BHA Report template identifies where you need to insert customized text in blue. Do **not** edit or delete black text.

Insert your cover letter to the client here and include the list of enclosures.

Please enter the BHA Report number in the footer of this document (6 digits, to be assigned by BHA using format: 3 digit BHA ID#, followed by BHA's own 3 digit report numbering system).

Delete this instructional text and save document as a pdf when completed.

Enclosures:

1. Information from the Ministry of Natural Resources and Forestry about Butternut and the *Endangered Species Act, 2007*
2. Butternut Health Assessor's Report
3. Original data forms
4. Electronic and printed copies of the Excel data spreadsheet (BHA Tree Analysis)

Ministry of Natural Resources and Forestry

Species At Risk
P.O. Box 7000, 300 Water Street
Peterborough ON K9J 8M5

Ministère des Richesses naturelles et des Forêts

Espèces en péril
C.P. 7000, 300, rue Water
Peterborough ON K9J 8M5

The enclosed Butternut Health Assessor's Report documents the results of the Butternut health assessment that was conducted by the designated Butternut Health Assessor (BHA) identified in the top section of the report. If there are other Butternut trees (of any size or age) at the site that may be affected by the activity and they are not identified in the enclosed BHA Report, they too must be assessed by a designated BHA.

Butternut is listed as an endangered species on the Species at Risk in Ontario List, and as such, it is protected under the *Endangered Species Act, 2007* (ESA) from being killed, harmed, or removed. If you are planning to undertake an activity that may affect Butternut, you may be eligible to follow the requirements set out in section 23.7 of Ontario Regulation 242/08 under the ESA, or you may need to seek an authorization under the ESA (e.g., a permit).

Please visit e-laws at the link provided below for the legal requirements of eligible activities under section 23.7 of Ontario Regulation 242/08 and conditions that must be fulfilled. Information about Butternut is also available at: http://www.ontario.ca/environment-and-energy/butternut-trees-your-property.

If you are eligible to kill, harm or take Butternut under section 23.7 of the regulation, your first step is to submit the BHA Report and the original data forms enclosed in this package to the local Ministry of Natural Resources and Forestry (MNRF) District Manager. Note that MNRF cannot accept photocopies or scanned electronic copies of the data forms.

Note regarding changes:

If the enclosed BHA Report does not identify which Butternut tree(s) are proposed to be killed, harmed, or taken in Table 1 (i.e., if "unknown" is indicated in the second last column of Table 1), or, if the information in the last two columns of Table 1 has changed since the date this BHA Report was produced, **do not make any edits to the BHA Report**. Instead, please attach a cover letter that identifies which Butternut tree(s) are proposed to be killed, harmed, or taken (by referencing the tree identification numbers) when you submit the enclosed BHA Report to the local MNRF District Manager.

The BHA Report must be submitted at least 30 days prior to registering an eligible activity to kill, harm, or remove a Butternut tree. During this 30 day period, no Butternut trees (of any category) may be killed, harmed, or removed, and MNRF may contact you for an opportunity to examine the trees. If MNRF chooses to examine the trees, a representative of MNRF will contact you using the information you supplied when you submitted the BHA Report.

If you are eligible to follow the rules in regulation under section 23.7, you may register your activity using the "Notice of Butternut Impact" form on the MNRF Registry **after the 30 day period has elapsed**.

If you are **not** eligible to follow the rules in regulation under section 23.7, please contact the local MNRF district office to determine whether you will need to seek an authorization (e.g., a permit). A link to the directory of MNRF offices is provided below.

Note that municipal by-laws and legislation other than the ESA may also be applicable to the removal or harming of trees.

Please retain this information and a copy of the BHA Report (including copies of all data forms) for your records, along with any other documentation you may receive from MNRF should an examination of the trees occur. If you have any questions, please contact your local MNRF district office.

Links:

Endangered Species Act, 2007:
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_07e06_e.htm

Ontario Regulation 242/08 (refer to section 23.7):
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080242_e.htm

MNRF Office Locations:
https://www.ontario.ca/government/ministry-natural-resources-and-forestry-regional-and-district-offices

Butternut Health Assessor's Report Number: **609-009** (6 digits, to be assigned by BHA using format: 3 digit BHA ID#, followed by BHA's own 3 digit report numbering system)

Dan Stuart, BHA#609/Butternut Health Expert
642 Welham Road
Barrie, Ontario
L4N 9A1
705.721.8451 x208
dstuart@azimuthenvironmental.com

David Finbow
Charis Developments Ltd.
705.607.3620
Dfinbow8@gmail.com

Site location: 869 Hurontario Street (Part Lot 40, Concession 8), Town of Collingwood

Date(s) of Butternut health assessment: August 22, 2024
Date BHA Report prepared: September 5, 2024

Map datum used: ☒ NAD83 ☐ WGS84

Total number of trees assessed in this BHA Report: 2

The assessed trees were numbered on site using black/orange flagging tape labeled with marker. The numbers at the site correspond to the tree numbers referenced in this report.

This BHA Report includes the following tables:

- Table 1: Butternut Trees Assessed
- Table 2: Trees Determined by BHA to be Butternut Hybrids
- Table 3: Summary of Assessment Results

Table 1: Butternut Trees Assessed

Tree #	UTM coordinates	Category[1] *(1, 2, or 3[2])*	dbh[3] (cm)	Cultivated? *(Y/N)*	Proposed to be: *(enter one: unknown[4], killed, harmed or taken)*	If tree is proposed to be killed, harmed, or taken, indicate reason tree is proposed to be killed, harmed or taken:
001	17T 562826 4925502	2	33	N	Harmed	Commercial Development
002	17T 562664 4925618	1	1	N	N/A	N/A

[1] The extent to which the tree is affected by Butternut Canker is presented in the Excel document titled, “BHA Tree Analysis” that accompanies this BHA Report.
[2] Category 3 trees are not eligible to be killed, harmed or taken under section 23.7 of Ontario Regulation 242/08.
[3] dbh: diameter at breast height, rounded to nearest cm (if tree is shorter than breast height, enter zero)
[4] In this column, “unknown” indicates that at the time of assessment, there are no proposals to kill, harm or take this tree that are known to the BHA.

Table 2: Trees Determined by BHA to be Butternut Hybrids

Tree #	UTM coordinates	Method used (genetic testing or field identification):
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Table 3: Summary of Assessment Results

Result:	**Total #:**	**Important information for persons planning activities that may affect Butternut:**
Category 1	1	• A Category 1 tree is one that is affected by butternut canker to such an advanced degree that retaining the tree would not support the protection or recovery of butternut in the area in which the tree is located; and is considered “non-retainable”. • During the 30 day period that follows your submission of this BHA Report to the MNRF District Manager, no Butternut trees (of Category 1, 2, or 3) may be killed, harmed, or taken, and MNRF may contact you for an opportunity to examine the trees. • Category 1 trees may be killed, harmed or taken **after** the 30 day period that follows submission of this BHA Report to the MNRF District Manager, unless the results of an MNRF examination indicate that the assessment has not been conducted in accordance with the document entitled “Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the *Endangered Species Act, 2007”*.
Category 2	1	• A Category 2 tree is one that is not affected by Butternut Canker, or is affected by Butternut Canker but the degree to which it is affected is not too advanced and retaining the tree could support the protection or recovery of butternut in the area in which the tree is located, and is considered “retainable”. • During the 30 day period that follows your submission of this BHA Report to the MNRF District Manager, no Butternut trees (of Category 1, 2, or 3) may be killed, harmed, or taken, and MNRF may contact you for an opportunity to examine the trees. • Activities that may kill, harm or take up to a **maximum of ten (10)** Category 2 trees may be eligible to follow the rules in section 23.7 of Ontario Regulation 242/08, in accordance with the conditions and requirements set out in the regulation. • Refer to e-Laws for the legal requirements of eligible activities under section 23.7 of Ontario Regulation 242/08 and conditions that must be fulfilled: http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_080242_e.htm • Activities that may kill, harm or take more than ten (10) Category 2 trees are not eligible to follow the rules in section 23.7 of Ontario Regulation 242/08. Contact the local MNRF district office for information on how to seek an ESA authorization (e.g., a permit) or consider an alternative that would be eligible for the regulation.
Category 3	0	• A Category 3 tree is one that may be useful in determining sources of resistance to Butternut Canker, and is considered “archivable”. • Category 3 trees are not eligible to be killed, harmed or taken under section 23.7 of Ontario Regulation 242/08. • Contact the local MNRF district office for information on how to seek an ESA authorization, or consider an alternative that will avoid killing, harming or taking any Category 3 trees.
Cultivated	0	• An activity that involves killing, harming, or taking a cultivated Butternut tree that was not required to be planted to fulfill a condition of an ESA permit or a condition of a regulation, may be eligible for the exemption provided by subsection 23.7 (11) of O. Reg. 242/08.

Result:	Total #:	Important information for persons planning activities that may affect Butternut:
		• Prior to undertaking the activity, the owner or occupier of the land on which the Butternut is located (or person acting on their behalf) will need to determine whether the exemption for cultivated trees is applicable by determining whether or not the tree was cultivated as a result of the requirements for an exemption under O. Reg. 242/08 or a condition of a permit issued under the ESA. This information can be accessed by contacting the local MNRF district office. • The owner or occupier of the land on which the Butternut is located (or person acting on their behalf) is encouraged to append the details regarding whether the tree was planted to satisfy a requirement (e.g., the permit number or registration number) to this BHA Report for their records.
Hybrid	0	• Hybrid Butternut trees are not protected under the ESA, but their removal may be subject to municipal by-laws and other legislation.

Butternut Health Assessor's Comments:

Butternut stem #001 subject to Butternut hybrid testing via collection of leaf sample and genetic test. Results not yet received at time of BHA submission (September 5, 2024).

This concludes the summary of the BHA Report. A complete BHA Report must also include:

1. All original (hard copy) data forms (i.e., all completed sets of Form 1 and Form 2), and
2. Electronic and printed copies of the Excel data analysis spreadsheet.

0cm 3cm 15cm

Butternut Data Collection Form 1 - 2010 Edition

Surveyor ID or BHA # 8609

(PLEASE USE BLOCK LETTERS)

Date (dd/mm/yyyy) 22 - 08 - 2024

Shaded fields are mandatory for Butternut Health Assessments

Surveyor Contact

First DANIEL Last STUART

Email DSTUART@AZIMUTHENVIRONMENTAL.COM

Telephone (705) 794-0975 Telephone Other (705) 721-8451 x208

Property Owner (check if same as surveyor) ☐

First Last

or Company CHARIS DEVELOPMENTS LTD.

Email DFINBOW8@GMAIL.COM

Telephone (705) 607-3620 Telephone Other ( ) - x

Property Owner's Mailing address

Address 186 HURONTARIO ST Postal Code L9Y4T4 Prov. ON

City COLLINGWOOD

Tree Location (if different from mailing address)

Address/(911#) 869 HURONTARIO ST

Township Lot 40 Con 08

City COLLINGWOOD

Directions

☒ Yes ☐ No Can Share Location Information with other Butternut Recovery Organizations?

☒ Yes ☐ No Site visits OK? (prior arrangments will always be made for a site vist)

> (Greater than)
< (Less than)

Butternut Trees Tally by Diameter Class

(Do a dot tally in blank space; write total# in box for each)

Tree Condition	< 3 cm	3-15 cm	16-30cm	>30 cm
Vigorous: > 50% Live Crown Minor or no cankers	00	00	00	01
Poor Vigor: <50% Live Crown or >50% Live Crown + heavily cankered stem	01	00	00	00
Dead	00	00	00	00

Historically, do some trees produce seeds? ☐ Y ☐ N ☐ Unkown

Estimated area containing butternut for properties > 1 acre (0.4 hectares): 00.1 ☐ Acres ☒ Hectares

2 individuals isolated, not in close proximity

Overall Property Description (area(s) containing Butternut)

☐ Rolling Upland ☐ Bottomland
☐ Valley Slope ☐ Variable
☒ Tableland ☐ Unknown

Vegetation Community/ies

☒ Open ☐ Fencerow
☒ Shrubland ☐ Roadside
☐ DeciduousForest ☐ Quary
☐ ConiferForest ☐ UrbanYard
☐ MixedForest ☐ UrbanPark

Other

Soil Drainage

☒ Well Drained
☐ Moderately Drained
☐ Poorly Drained
☐ Unknown

Soil Texture

☐ Clay ☐ Sand
☐ Clay Loam ☐ Variable
☐ Loam ☒ Unknown
☐ Loamy Sand

Soil Depth

☐ > 1metre
☐ 30 - 99cm
☐ < 30cm
☐ Variable
☒ Unknown

Please enter matching numerical page link code on forms 1 and 2

Page Link 609826

(Contact Information follows all applicable privacy policies and guidelines)

Please return forms to:
Forest Gene Conservation Association
Suite 233, 266 Charlotte St.
Peterborough, ON, K9J 2V4
www.fgca.net

49731

Butternut Data Collection FORM 2 (2010 Edition)

(PLEASE USE BLOCK LETTERS)

Shaded fields are mandatory for Butternut Health Assessments

Fill when Form 1 indicates canker is well established. The information opn Form 2 must be filled out for all trees when doing a Butternut Health Assessment.

Site Code(A,B,...Z, AA...) | Surveyor ID or BHA # 0609

Surveyor Last Name STUART

Date (dd/mm/yyyy) 22-08-2024

Tree ID Numbering: 1,2,3,...Starting from 1 for each site

Tree 001

Tree # 001 | Zone 17 | Easting 562826 | Northing 4925502

Crown Class: C | Live Crown %: 100 | Main Stem Length(m) Below crown: 02

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☒

#Stems: 1 | DBH(cm): 033

Butternut Origin: ☐ Natural ☐ Planted ☒ Unknown

Assess below live crown:

	#Open	#Sooty
#Epic-Live: 00		
#Epic-Dead: 00		
Bark Type: S	Root	01 / 02
# Callused Wounds: 02	=<2m	01 / 02
	>2m	00 / 00

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☒ None Found

Competing Species: ULMPUMI

Tree 002

Tree # 002 | Zone 17 | Easting 562664 | Northing 4925618

Crown Class: S | Live Crown %: 100 | Main Stem Length(m) Below crown: <1

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☒ None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐

#Stems: 1 | DBH(cm): 061

Butternut Origin: ☐ Natural ☐ Planted ☒ Unknown

Assess below live crown:

	#Open	#Sooty
#Epic-Live: 06		
#Epic-Dead: 00		
Bark Type: S	Root	00 / 00
# Callused Wounds: 00	=<2m	01 / 00
	>2m	00 / 00

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☒ None Found

Competing Species: FRAPENN / THUOCCI

Mechanical damage to main stem

Tree

Tree # | Zone 1 | Easting | Northing

Crown Class | Live Crown % | Main Stem Length(m) Below crown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐

#Stems | DBH(cm)

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Assess below live crown:

	#Open	#Sooty
#Epic-Live		
#Epic-Dead		
Bark Type	Root	
# Callused Wounds	=<2m	
	>2m	

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species

Tree

Tree # | Zone 1 | Easting | Northing

Crown Class | Live Crown % | Main Stem Length(m) Below crown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐

#Stems | DBH(cm)

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Assess below live crown:

	#Open	#Sooty
#Epic-Live		
#Epic-Dead		
Bark Type	Root	
# Callused Wounds	=<2m	
	>2m	

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species

Tree

Tree # | Zone 1 | Easting | Northing

Crown Class | Live Crown % | Main Stem Length(m) Below crown

Seed Signs: ☐ Male Flowers ☐ Female Flowers ☐ Seed Set ☐ None

Twig Dieback ☐ | Branch Dieback ☐ | Defoliation ☐ | Discolouration ☐

#Stems | DBH(cm)

Butternut Origin: ☐ Natural ☐ Planted ☐ Unknown

Assess below live crown:

	#Open	#Sooty
#Epic-Live		
#Epic-Dead		
Bark Type	Root	
# Callused Wounds	=<2m	
	>2m	

Metres from badly cankered tree: ☐ < 40 ☐ > 40 ☐ None Found

Competing Species

Please enter matching page link code on forms 1 and 2

Page Link 609826

(Contact Information follows all applicable privacy policies and guidelines)

Please return forms to:
Forest Gene Conservation Association
Suite 233, 266 Charlotte St.
Peterborough, ON, K9J 2V4
www.fgca.net

49731

BHA Tree Analysis (version: December 2013)

This table is to be completed by a designated Butternut Health Assessor (BHA).

BHA Report #	609-010	Assessment Date(s)	22-Aug-24	Total # Butternut Trees in BHA Report	2
BHA ID #	609	BHA Name	Daniel Stuart, Azimuth Environmental Consulting, Inc.		
Landowner / Client Name			Charis Developments Ltd.		
Property Location			869 Hurontario Street (Part Lot 40, Concession 8), Town of Collingwood		

input field data										automatic calculations from field data						Categories: 1: non-retainable, 2: retainable, 3: archivable				
			# bole cankers				# root flare (RF) cankers													
Tree #	Live Crown %	Tree dbh (cm)	sooty (S) (will be assigned 2.5 cm per canker)		open (O) (will be assigned 5 cm per canker)				<40 m from cankered tree? (Y or N)	Circ. (cm) = Pi x dbh	total bole canker width (sooty x 2.5 + open x 5)	total RF canker width (sooty x 2.5 + open x 5)	bole canker % of circ.	RF canker % of circ.	total bole & root canker % of 2xCirc	LC% >/= 50 & BC% = 0	LC% >70 & BRC% <20	LC% >70 & BC% <20	Preliminary tree call	FINAL TREE CALL a Cat 2, dbh>20cm <40m from a Cat 1
			S <2 m	S >2 m	O <2 m	O >2 m	RF S	RF O		Circ (cm)	BC (cm)	RC (cm)	BC%	RC%	BRC%					
1	100	33	2	0	1	0	2	1	N	103.6	10.0	10.0	**9.7**	**9.7**	**9.7**	1	2	2	**2**	**2**
2	100	1	0	0	1	0	0	0	N	3.14	5.0	0.0	**159.2**	**0.0**	**79.6**	1	1	1	**1**	**1**
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CANADIAN CENTRE FOR DNA BARCODING
DNA Testing Laboratory Report

Date of issue: September 6, 2024

CLIENT INFORMATION

Client Name:	Alison Phillips
Client Address:	Crozier Consulting Engineers 1 First Street, Suite 200 Collingwood, ON L9Y 1A1
Contact Name:	Alison Phillips (aphillips@cfcrozier.ca)

ITEMS

Description:	One plant sample (fresh leaves) from putative butternut species submitted for hybrid detection Sample ID: CCDBFR1478; Process ID: ABCBF1088-24
Dates Received:	August 23, 2024
Dates of Analysis:	August 26 – 30, 2024
Sample Received and Analyzed by:	Nguyen NguyenTX. / Canadian Centre for DNA Barcoding, Biodiversity of Ontario, University of Guelph, 50 Stone Road East, Guelph

METHODS

To ascertain the identity of the species from the submitted sample, an approximate 2mm by 2mm area of leave from sample was subsampled using sterile techniques. Sample was ground to a fine powder and then lysed. Total genomic DNA was extracted using validated spin column DNA extraction protocol. Two target genetic markers: the second internal transcribed spacer from the nuclear ribosomal DNA (ITS2), and an intergenic spacer between the chloroplast genes *trnL* and *trnF* (*trnL-trnF*) were amplified by using the Polymerase Chain Reaction (PCR) with the primers *ITS_S2F/ITS4* and *trnLUAA-c/trnFGAA-f*, respectively; followed by cycle sequencing with standardized commercially available BigDye Terminator v3.1 kit. Sequencing reactions were analyzed by high-voltage capillary electrophoresis using the automated ABI 3730xL DNA Analyzer. Bidirectional forward and reverse sequences were generated for each amplicon. Resulting trace files were assembled into contigs and consensus sequences, and then manually edited in CodonCode Aligner (version 9.1.1.) software. The sequences of ITS2 and *trnL-trnF* were compared against the BOLD reference libraries. Based on the percentage of nucleotide sequence divergence (a number of nucleotide substitutions) between sequences from the test samples and reference DNA barcodes, the closest match was used to infer species identity of the corresponding test sample provided by the contributor. The quality of the sequence traces for ITS2 was done by visual inspection to resolve hybridization. Images, sequences, and their associated trace files with quality scores were uploaded to the secure BOLD project called “CCDB forensic sampling [ABCBF]”.

IMAGING

The items were photographed in the Photography Lab Area by Nguyen NguyenTX., using a Canon ELPH 300 HS, 12.1 megapixels. Pictures were uploaded to the BOLD website into a secure project called “CCDB forensic sampling [ABCBF]”. See Appendix 1 for item images.

INTERPRETATION

The ITS2 marker demonstrates five nucleotide substitutions between *Juglans cinerea* (white walnut, commonly known as butternut) and *Juglans ailantifolia* (Japanese walnut) reference sequences across the amplified ~344 base pair length. Unlike the plastid genome, ribosomal nuclear DNA is inherited by both maternal and paternal organisms. Thus, hybridization events are reflected in the trace file chromatograms as mixed signals at the characteristic nucleotide positions.

The *trnL-trnF* marker demonstrates five nucleotide substitutions between *Juglans cinerea* (white walnut) and *Juglans ailantifolia* (Japanese walnut) reference sequences across the amplified ~950 base pair length. The marker is used as supplementary evidence to confirm species identity. The *trnL-trnF* marker is a part of the chloroplast genome and is inherited maternally. Therefore, this marker confirms the maternal lineage in a hybrid but on its own does not detect a hybridization event.

RESULTS

Sample ID	Process ID	Hybridity detected	Maternal organism
CCDBFR1478	ABCBF1088-24	Yes	*Juglans ailantifolia* (Japanese walnut)

ITS2 sequences of 344 base pairs were obtained for sample CCDBFR1478. Sample sequences were aligned against the known reference sequences for *Juglans cinerea* (white walnut), *Juglans ailantifolia* (Japanese walnut), and their hybrid *Juglans cinerea* x *Juglans ailantifolia*.

Across the amplified length of the ITS2 marker, five diagnostic nucleotide substitutions differentiate *Juglans cinerea* (white walnut) and *Juglans ailantifolia* (Japanese walnut). At these five nucleotide positions, sample CCDBFR1478 were identical to references for hybrid *Juglans cinerea x Juglans ailantifolia*. The chromatogram traces for these sequences showed evidence of mixed base calls at the diagnostic nucleotide positions, which confirms that sample CCDBFR1478 is of hybrid origin (Figures 1). The phylogenetic tree of the ITS2 marker for sample is shown in Figure 2.

trnL-trnF

Across the amplified length of the *trnL-trnF* marker, five diagnostic nucleotide substitutions differentiate *Juglans cinerea* (white walnut) and *Juglans ailantifolia* (Japanese walnut). At these five nucleotide positions, sample CCDBFR1478 was identical to references for *Juglans ailantifolia* (Japanese walnut). As the chloroplast genome is inherited maternally, our results indicate that *Juglans ailantifolia* (Japanese walnut) was the maternal organism for sample CCDBFR1478 (Figures 4). The phylogenetic tree of the *trnL-trnF* marker for this sample is shown in Figure 5.

CONCLUSIONS

The present testing has indicated that sample CCDBFR1478 is a hybrid between white and Japanese walnut species: *Juglans cinerea* x *Juglans ailantifolia*. The maternal organism belongs to *Juglans ailantifolia* (Japanese walnut).

Based on appropriate statistical BOLD match calculations and a reasonable degree of scientific certainty of the BOLD reference library, the taxonomic identity of the detected DNA source in these samples is considered practically proven.

RESULTS REPORTED BY:

Nguyen NguyenT.X., MSc; Wildlife Forensic Technician

RESULTS REVIEWED BY:

Maria Kuzmina, PhD; Plant Lead

Evgeny V. Zakharov, PhD; Director, CCDB

FIGURES

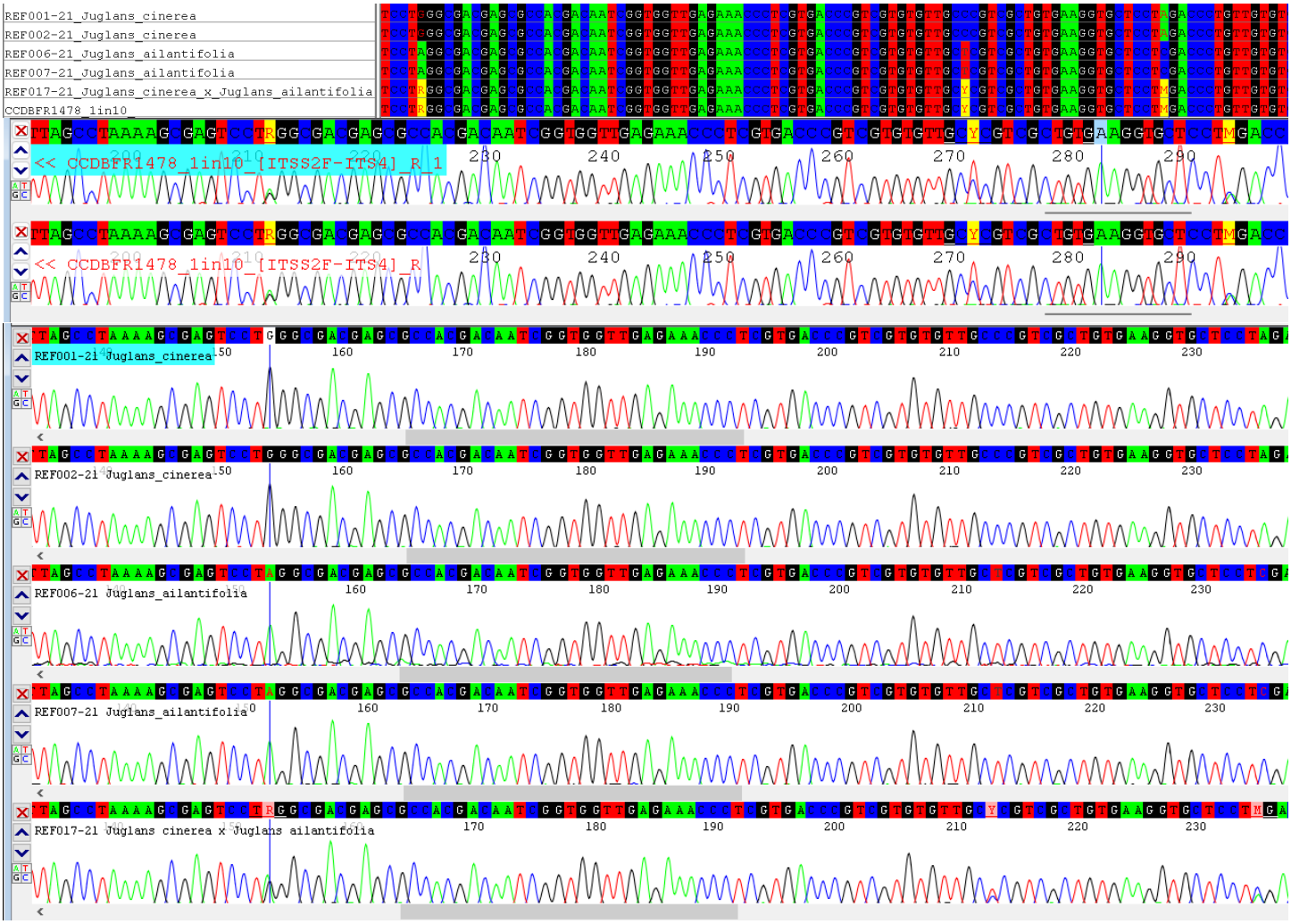


Figure 1 – ITS2 sequence comparison of sample CCDBFR1478 with references for *Juglans cinerea*, *Juglans ailantifolia*, and their hybrid *Juglans cinerea x Juglans ailantifolia*. Diagnostic nucleotide positions 3, 4 and 5 are shown.

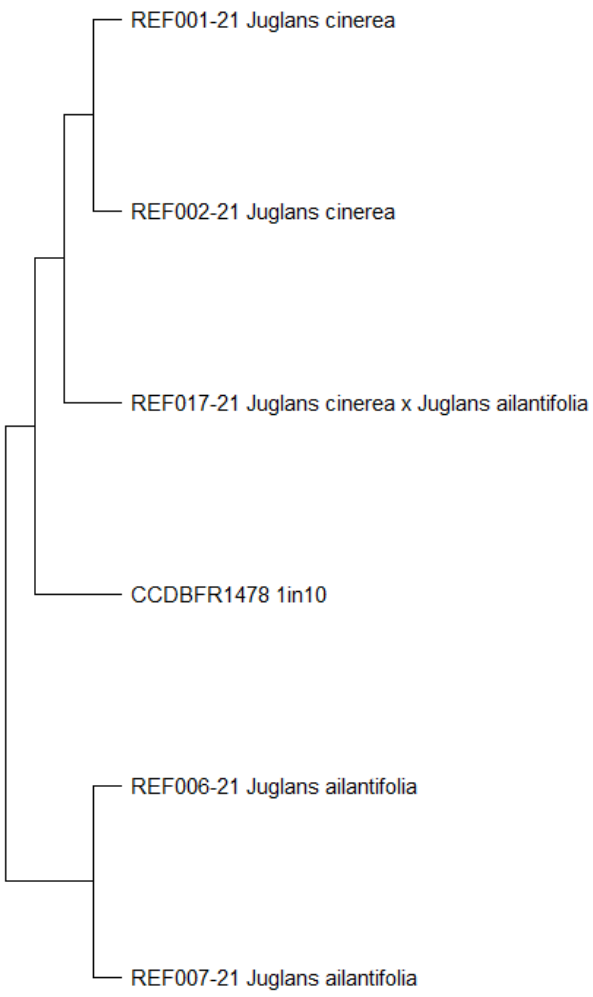


Figure 2 – Neighbour joining phylogenetic tree of ITS2 sequences of the query sample CCDBFR1478, and their references: *Juglans cinerea*, *Juglans ailantifolia*, and hybrid *Juglans cinerea x Juglans ailantifolia.*

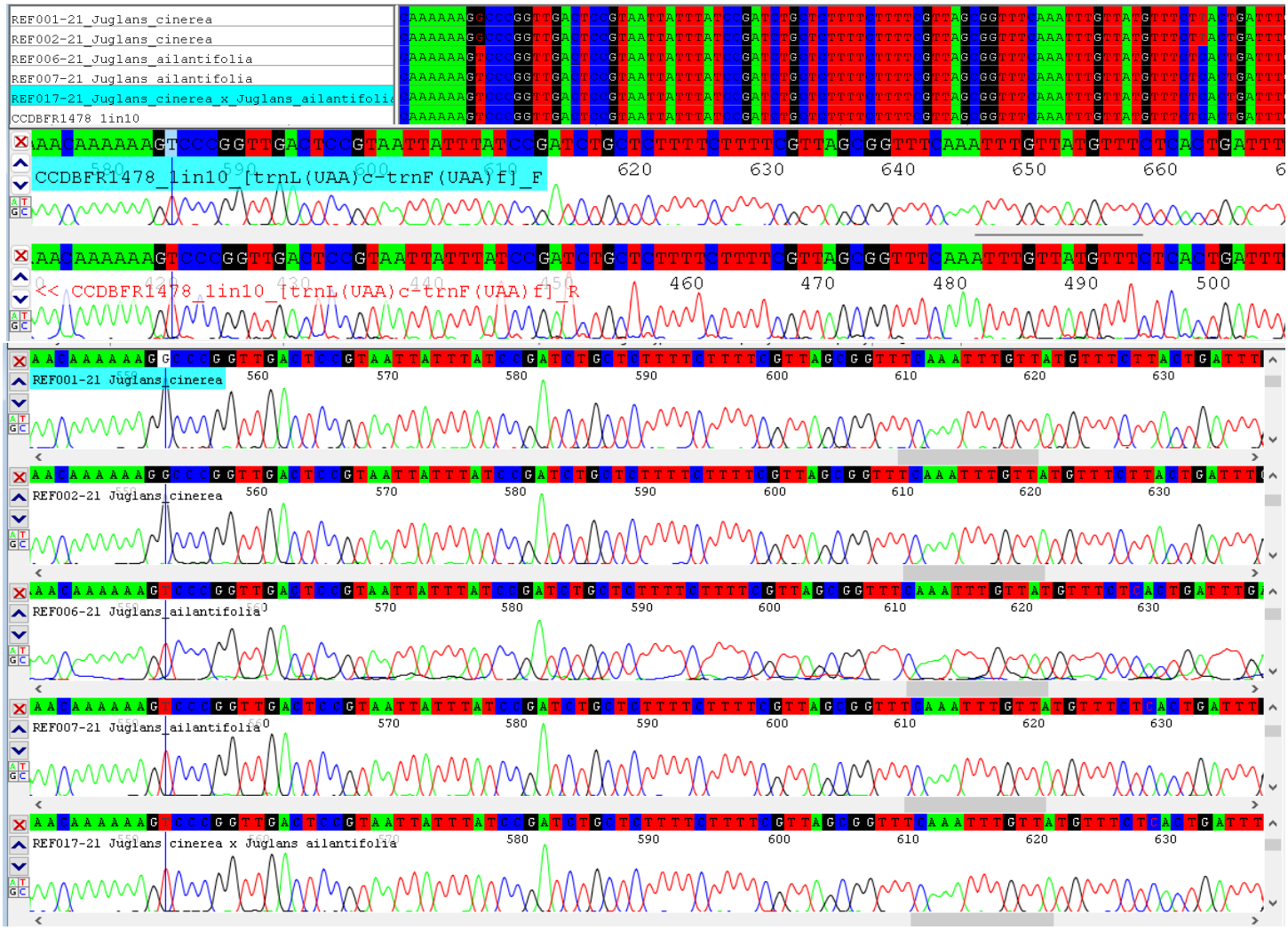


Figure 3 – trnL-trnF sequence comparison of sample CCDBFR1478 with references for *Juglans cinerea*, *Juglans ailantifolia, and* hybrid *Juglans cinerea x Juglans ailantifolia.* Diagnostic nucleotide positions 4 and 5 are shown.

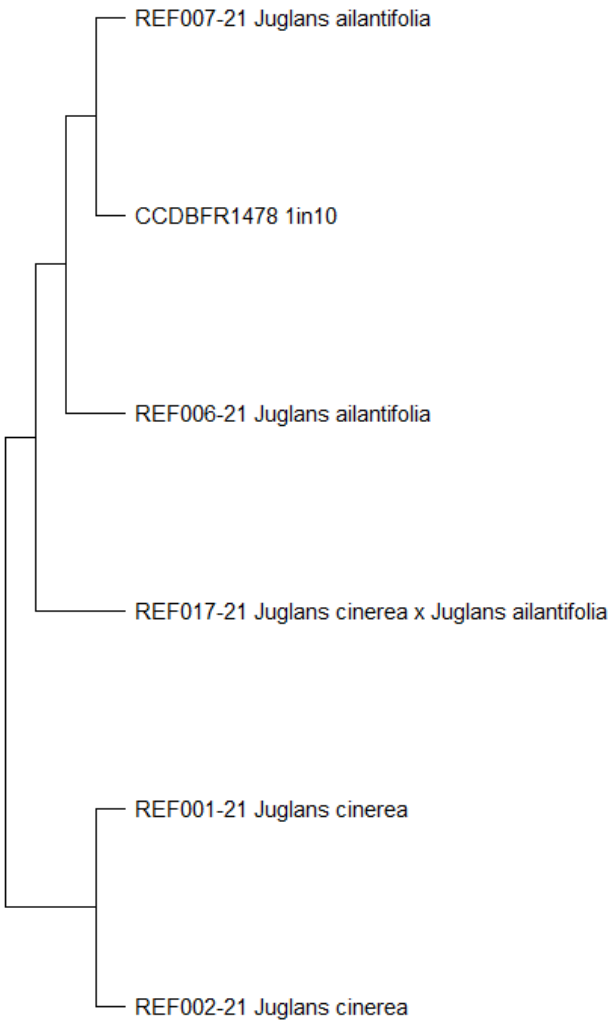
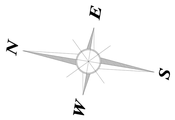
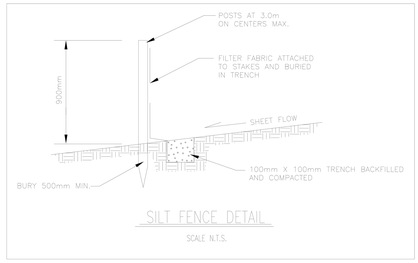


Figure 4 – Neighbour joining phylogenetic tree of *trnL-trnF* sequences of the query sample CCDBFR1478, and their references: *Juglans cinerea*, *Juglans ailantifolia*, and hybrid *Juglans cinerea x Juglans ailantifolia*.

APPENDIX F

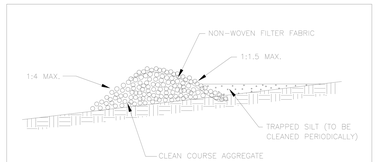
2004 Commercial Facility Drawings





SILT FENCE DETAIL

SCALE N.T.S.

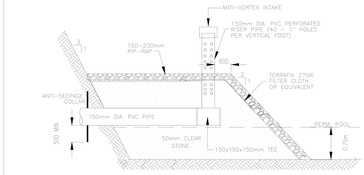


ROCK CHECK DAM

(N.T.S.)

NOTES:

1. POND BERMS TO CONSTRUCTED USING IMPERVIOUS MATERIAL, COMPACTED TO 95% S.P.D. AND INSPECTED BY A PROFESSIONAL ENGINEER.
2. A 1.5m HIGH BARRIER FENCE SHALL BE ERECTED ALONG PERIMETER OF SEDIMENT BASIN. WARNING SIGNS SHALL BE ATTACHED TO THE FENCING STATING THE AREA IS OFF LIMITS TO THE GENERAL PUBLIC, AND ADVISING THAT THE BASIN IS USED FOR SEDIMENT CONTROL PURPOSES, AND THAT THE SUBJECT AREA IS SUBJECT TO FLASH FLOODING.
3. THE BASIN IS TO BE CONSTRUCTED ON THE BASIS OF A MIN. LENGTH TO WIDTH RATIO OF 4 TO 1.



SECTION A-A

TEMPORARY SEDIMENT BASIN OUTLET DETAILS

SCALE N.T.S.

PART of LOT 40
CONCESSION 8
(FORMERLY TOWNSHIP of NOTTAWASAGA)
TOWN of COLLINGWOOD
COUNTY of SIMCOE

LEGEN

- EXISTING GRADES
- PROPOSED FINISHED GRADES
- ENTRANCE/EXIT DOORS
- LOADING/UNLOADING DOORS
- PROPOSED SILT FENCE LOCATION
- PROPOSED DITCH
- EXISTING DITCH

NOTE:
ALL GRAVEL AREAS ARE ASSUMED TO BE ASPHALT FOR STORM DESIGN PURPOSES.

NO.	DATE	REVISION	BY

GEORGE A. DAVIS
& ASSOC. LTD.
CONSULTING ENGINEERS
101 - 14TH AVENUE
HANOVER, ONTARIO
N4N 3W1

(519) 364-5700 Tel.
(519) 364-6937 Fax

PROJECT No. 4720

REGISTERED PROFESSIONAL ENGINEER G.A.DAVIS PROVINCE OF ONTARIO

SCHIEDEL
CONSTRUCTION INCORPORATED
GENERAL CONTRACTORS—PROJECT MANAGERS
405 QUEEN ST.W.CAMBRIDGE, ONT. N3C 1G6 658-9317

PROJECT

2004 NEW FACILITY

COLLINGWOOD HOME BUILDING CENTRE

COLLINGWOOD, ONTARIO

SCALE	DATE	DRAWN BY	PROJECT NO.
1:400	MAY/04	P.R.H.	4720

DRAWING

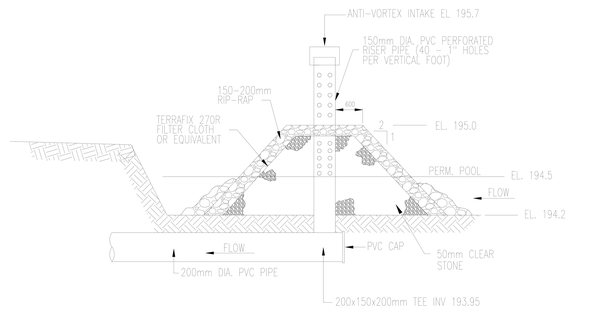
EROSION AND SEDIMENTATION CONTROL PLAN

DRAWING NO.

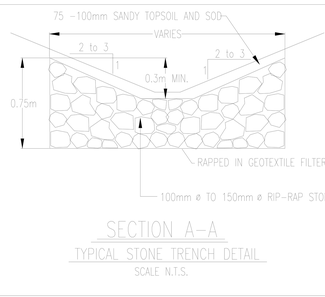
3

NOTE:

1. POND BERMS TO CONSTRUCTED USING IMPERVIOUS MATERIAL, COMPACTED TO 95% S.P.D, AND INSPECTED BY A PROFESSIONAL ENGINEER.



DETAIL A-1
HINCKENBOTTOM DRAIN DETAILS
SCALE N.T.S.



SECTION A-A
TYPICAL STONE TRENCH DETAIL
SCALE N.T.S.

NO.	DATE	REVISION	BY
2	08/16/04	AS PER N.V.C.A. COMMENTS	P.H.
1	06/04/04	BLDG AND PARKING LAYOUT	P.H.

GEORGE A. DAVIS
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CONSULTING ENGINEERS
101 - 14TH AVENUE
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PROJECT No. 4720

REGISTERED PROFESSIONAL ENGINEER
G.A.DAVIS
PROVINCE OF ONTARIO

SCHIEDEL
CONSTRUCTION INCORPORATED
GENERAL CONTRACTORS—PROJECT MANAGERS
405 QUEEN ST.W.CAMBRIDGE ONT. N3C 1G6 658-9317

PROJECT
2004 NEW FACILITY
COLLINGWOOD HOME BUILDING CENTRE
COLLINGWOOD, ONTARIO

SCALE	DATE	DRAWN BY	PROJECT NO.
1:400	JUNE 4, 2004	P.R.H.	4720

DRAWING
SURFACE WATER MANAGEMENT PLAN

DRAWING NO.
2

PART of LOT 40
CONCESSION 8
(FORMERLY TOWNSHIP of NOTTAWASAGA)
TOWN of COLLINGWOOD
COUNTY of SIMCOE

LEGEND

- EXISTING GRADES
- EXISTING GRADES TO REMAIN
- PROPOSED FINISHED GRADES
- DRAINAGE DIRECTION
- ENTRANCE/EXIT DOORS
- LOADING/UNLOADING DOORS
- PONDING LIMIT OF 100yr 6hr DESIGN STORM
- LIMIT OF PROPOSED DRAINAGE AREA
- PROPOSED DITCH
- EXISTING DITCH

NOTE:
ALL GRAVEL AREAS ARE ASSUMED TO BE ASPHALT FOR STORM DESIGN PURPOSES.

APPENDIX G

Proposed Development Concept

PARKING - COMMERCIAL

Parking aisle minimum width of 6.0 metres
Parking space minimum dimensions of 2.8 m x 6.0 m
Accessible parking space minimum dimensions 4.5 m x 6.0 m
Dual accessible parking spaces at 3.4 m x 6.0 m with 1.5 m shared aisle

Commercial							
Building	**Rate**	**Gross Area**	**Gross Floor Area***	**Parking Req'd**	**Parking Provided**	**Accessible Parking Req'd**	**Accessible Parking Prov'd**
01 Restaurant	8/100 m2	225.5 m2	157.0 m2	13			
02 Commercial	3/100 m2	929.0 m2	836.1 m2	26			
03 Commercial	3/100 m2	847.8 m2	727.0 m2	22			
04 Commercial	3/100 m2	1,799.4 m2	1,619.5 m2	49			
Grocery Store	3/100 m2	4,576.0 m2	3,204.0 m2	97			
06 Commercial	3/100 m2	1,384.8 m2	1,246.3 m2	38			
07 Restaurant	8/100 m2	410.9 m2	287.0 m2	23			
Total				**268**	**286**	**6**	**12**

**Gross Floor Area as defined by the Town of Collingwood Zoning By-law and is based on Gross Area –10% for general commercial uses and -30% for grocery store and restaurant uses.*

DELIVERY / LOADING SPACES

1 Delivery Space for GFA between 460.0 m2 and 2,500.0 m2
1 Loading Space for GFA between 2,501.0 m2 and 7,000.0 m2
Delivery Spaces at 3.5 m (w) x 7.5 m (l) x 3.0 (v)
Loading Spaces at 3.5 m (w) x 20.0 m (l) x 4.5 m (v)

Building	Use	Gross Area	Gross Floor Area	Type Required	Type Provided
Building 01	Restaurant	225.5 m2	157.0 m2	N/A	1 Delivery Space
Building 02	Commercial	929.0 m2	790.0 m2	1 Delivery Space	1 Delivery Space
Building 03	Mixed-Use	727.0 m2	618.0 m2	1 Delivery Space	1 Delivery Space
Building 04	Commercial	1,799.4 m2	1,619.5 m2	1 Delivery Space	1 Delivery Space
Grocery Store	Commercial	4,576.0 m2	3,204.0 m2	1 Loading Space	2 Loading Spaces
Building 06	Commercial	1,246.3 m2	1,060.0 m2	1 Delivery Space	1 Delivery Space
Building 07	Restaurant	410.0 m2	287.0 m2	N/A	1 Delivery Space

**Gross Floor Area as defined by the Town of Collingwood Zoning By-law and is based on Gross Area –10% for general commercial uses and -30% for grocery store and restaurant uses.*

QUEUING AISLES

Parking space minimum dimensions of 2.8 m x 6.0 m

Building	Use	# of Spaces Required	# of Spaces Provided	Comments
Building 01	Restaurant	10	12	Addn'tl Spaces Beyond Pick-up Window
Building 07	Restaurant	10	14	Addn'tl Spaces Beyond Pick-up Window

BICYCLE SPACES

Mixed-Use Building: 0.7 spaces per dwelling unit to a total maximum of 15 bicycle spaces
Non-Residential Buildings: 10% of the required parking spaces for motor vehicles but in no case shall shall the required bicycle spaces be less than 4

Building	Use	Parking Req'd	Bicycle Spaces Req'd	Bicycle Spaces Prov'd
Building 01	Restaurant	13	4	4
Building 02	Commercial	26	4	4
Building 03	Mixed-Use Comm.	20	4	16
Building 03	Mixed-Use Res.	207	15	15 (U/G)
Building 04	Commercial	49	5	4
Grocery Store	Commercial	97	10	8
Building 06	Commercial	34	4	4
Building 07	Restaurant	23	4	4
Total			49	59

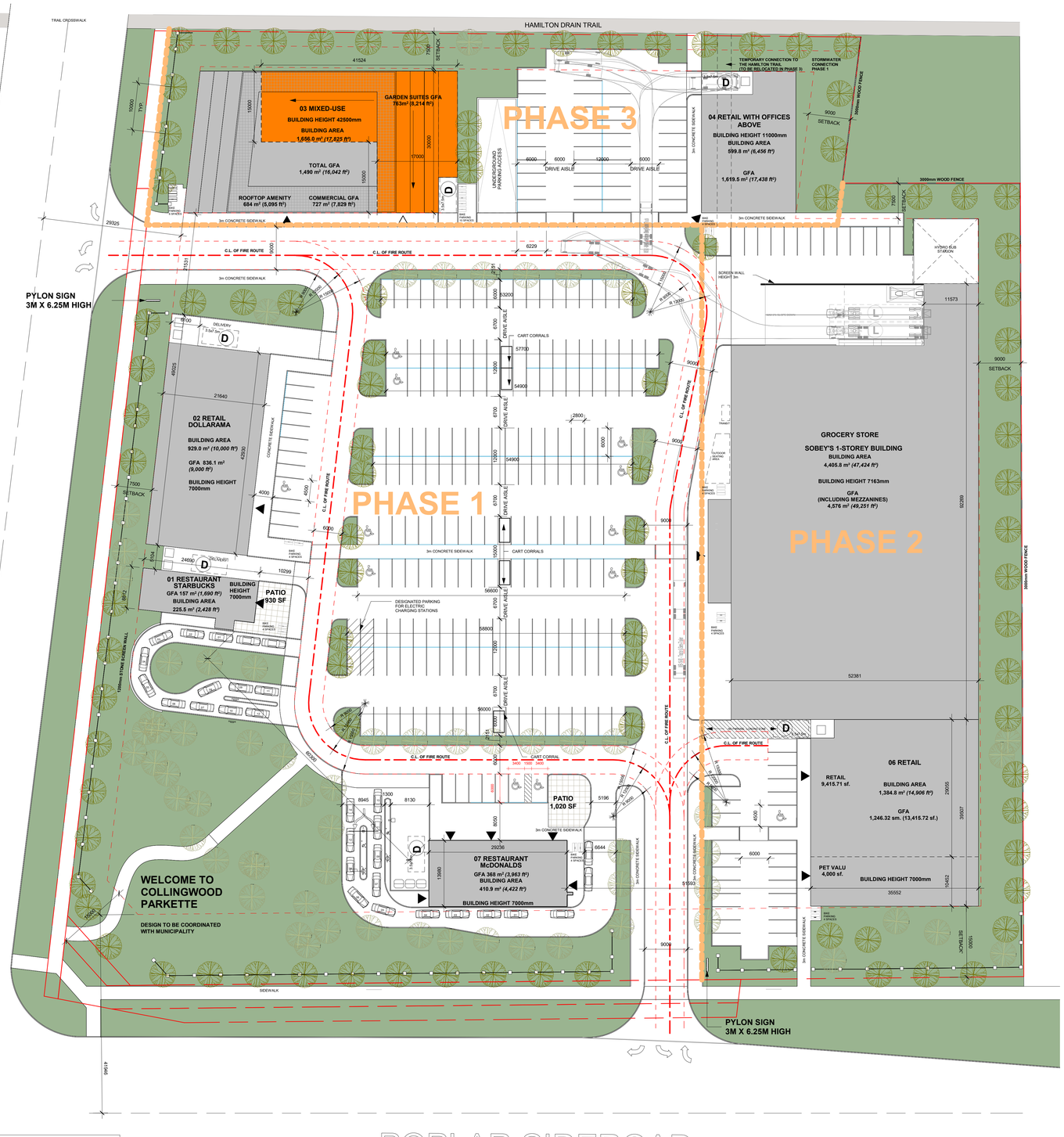
THE GATEWAY CENTRE - ZONE PROVISIONS

Provision	C4 Zone Requirement	Proposed
Minimum Lot Area	1,000.0 m2	37,604.1 m2
Minimum Lot Frontage (Hurontario Street)	30.0 m	194.0 m
Minimum Front Yard (Hurontario Street)	6.0 m	7.5 m
Minimum Exterior Side Yard (Poplar Sideroad)	9.0 m	15.0 m
Minimum County Setback @ Poplar Sideroad	15.0 m	15.0 m
Minimum Interior Side Lot Line (East Lot Line)	9.0 m	9.0 m
Minimum Rear Yard (North Lot Line)	7.5 m	7.5 m
Maximum Height	15.0 m	42.5 m
Maximum Lot Coverage	40%	26%
Minimum Landscape Open Space	10%	34%
Minimum Hurontario Street CL Setback	15.0 m	29.3 m
Minimum Poplar Sideroad CL Setback	18.0 m	41.9 m
Minimum Parking Space Setback	6.0 metres	6.0 metres
Entrance Width	7.5 m to 15.0 m	9.0 m
Maximum Number of Dwelling Units	N/A	165 units

PARKING - RESIDENTIAL

Parking aisle minimum width of 6.0 metres
Parking space minimum dimensions of 2.8 m x 6.0 m
Accessible parking space minimum dimensions 4.5 m x 6.0 m
Dual accessible parking spaces at 3.4 m x 6.0 m with 1.5 m shared aisle

Residential						
Building	**Rate**	**# of Units**	**Resident Parking Required**	**Visitor Parking Required**	**Total Required**	**Total Provided**
Building 03	1/unit + 0.25/unit for Visitors	165	165	42	207	297

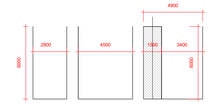


RICHARD ZIEGLER ARCHITECT INC.
39 POLSON STREET TORONTO, ONTARIO M5A 1A4
T: 416 461 1494 or 1 800 413 7992 F: 866 895 1488
www.rzorchitect.com E: mail @ rzorchitect.com

CHARIS DEVELOPMENTS
Built on Community Values

ISSUED FOR DISCUSSION
2024-08-23 9:47:07 AM

▽ RESIDENTIAL ENTRANCE
▼ RETAIL ENTRANCE



TYPICAL PARKING SPACE | BARRIER FREE PARKING SPACE TYPE 1 | BARRIER FREE PARKING SPACE TYPE 2

PARKING SPACE CONFIGURATIONS

NO.	ISSUANCE	DATE

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT

NORTH

STAMP

ONTARIO ASSOCIATION OF ARCHITECTS
RICHARD E ZIEGLER
LICENCE
4462

THE GATEWAY CENTRE

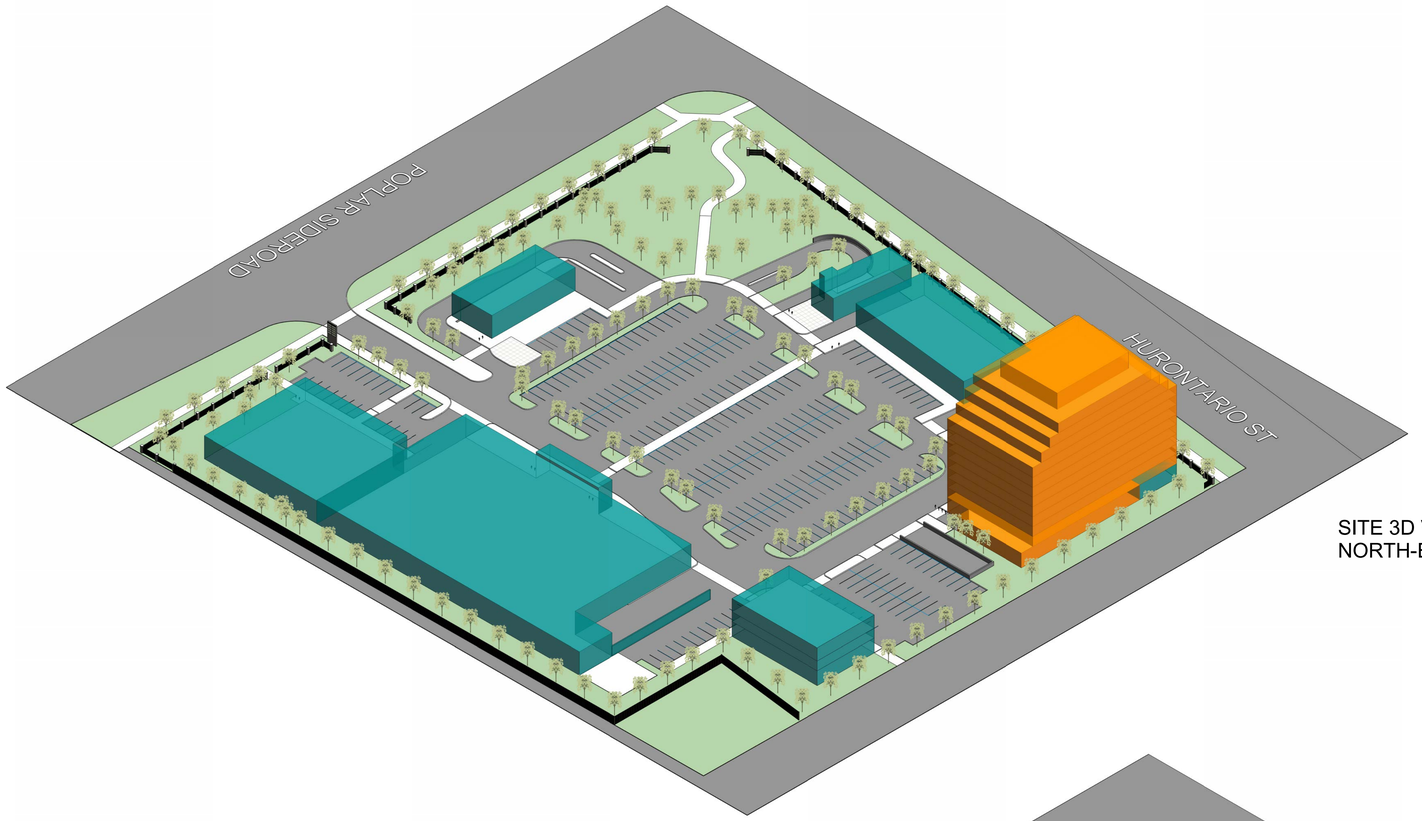
CHARIS DEVELOPMENTS
HIGHWAY 124 & POPLAR SIDE ROAD
COLLINGWOOD, ONTARIO

SITE PLAN - OPTION C3 BRANDED

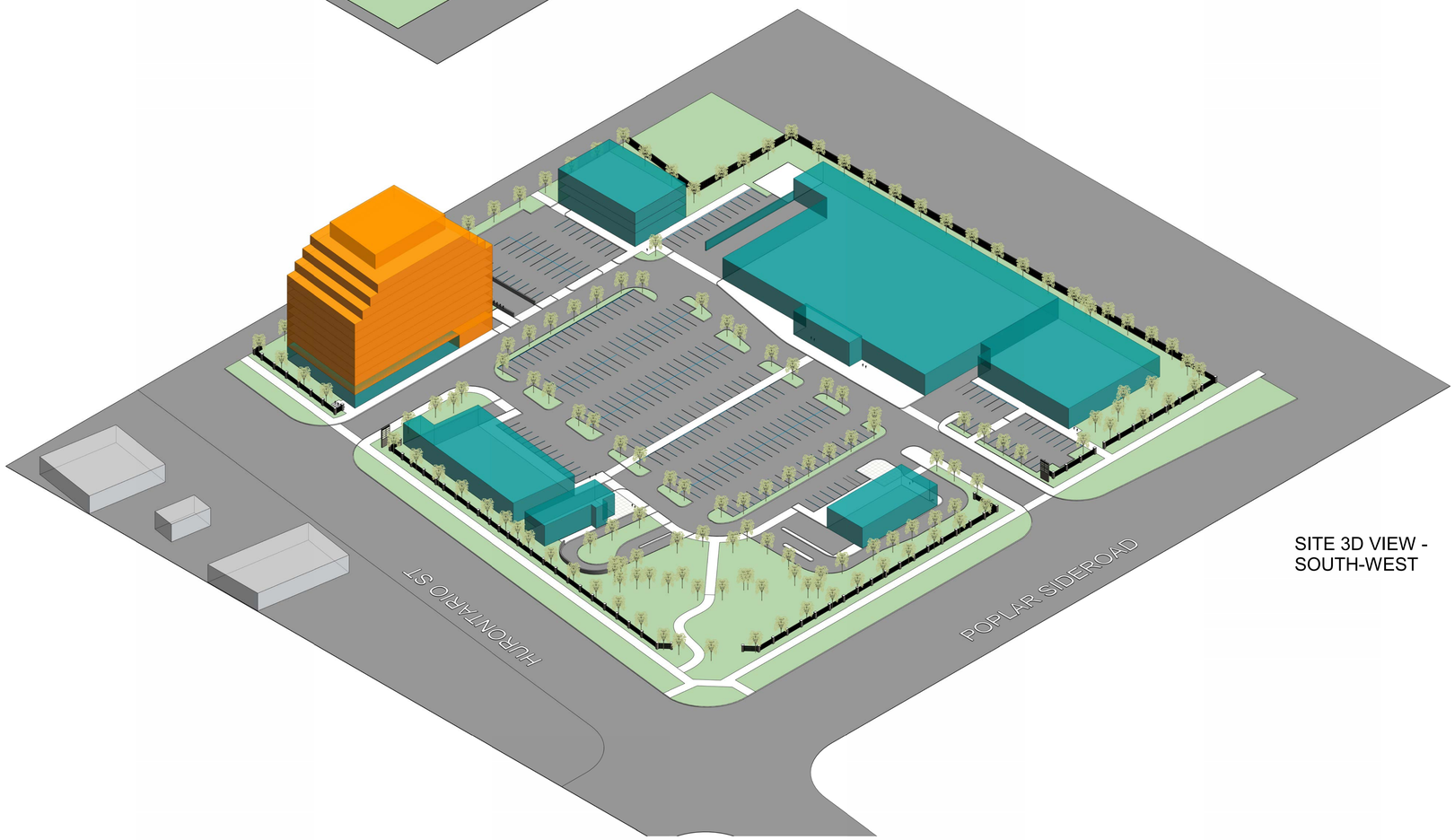
SCALE	As indicated	PROJECT NUMBER
DATE	2024-08-23 9:47:07 AM	202022
DRAWN	SO	
CHECKED	REZ	

SHEET A101 REVISION

FILE NAME: Y:\ 2020 Projects\ 202022 - Charis - The Gateway Centre\ 2.0 Design and Construction Documents Phase 3 rev1\ The Gateway Centre Option C3 - 2024-08-20.vwx
PLOT DATE: 2024-08-23 9:47:07 AM



SITE 3D VIEW -
NORTH-EAST



SITE 3D VIEW -
SOUTH-WEST

RICHARD ZIEGLER ARCHITECT INC.
39 POLSON STREET TORONTO, ONTARIO M5A 1A4
T: 416 461 1494 or 1 800 413 7993 F: 866 895 1488
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CHARIS
DEVELOPMENTS
Built on Community Values

ISSUED FOR DISCUSSION
2024-08-23 9:47:10 AM

NO.	ISSUANCE	DATE

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. DO NOT USE THIS DRAWING FOR CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.

NORTH

STAMP

ONTARIO ASSOCIATION OF ARCHITECTS
RICHARD E ZIEGLER
LICENCE
4467

THE GATEWAY CENTRE

CHARIS DEVELOPMENTS
HIGHWAY 124 & POPLAR SIDE ROAD
COLLINGWOOD, ONTARIO

SITE PLAN 3D VIEW

		PROJECT NUMBER
SCALE		202022
DATE	2024-08-23 9:47:10 AM	
DRAWN	BB	
CHECKED	RFZ	

SHEET A103

REVISION

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