Natural Heritage Evaluation (Update)

Hewitt's Central Subdivision

City of Barrie

Prepared for:
Pratt Construction Inc.

Prepared by:
Azimuth Environmental
Consulting, Inc.

July 2024 Update
December 2023

AEC 11-076c

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

July 11, 2024 AEC 11-076c

Pratt Construction Inc.
111 Bradford Street, Suite 300
Barrie, Ontario
L4N 3A9

Attention: Hugh Johnston

Re: **Natural Heritage Evaluation Update for a Proposed Subdivision Development Hewitt's Central Subdivision, City of Barrie**

Dear Mr. Johnston:

Azimuth Environmental Consulting, Inc. was retained to provide a Natural Heritage Evaluation (NHE) Update for a proposed residential development at the location described above. The property contains lands within the City of Barrie's Natural Heritage System which has triggered the need for an NHE. Agency review comments were received subsequent to the review of the 2023 NHE (update) with the original completed in 2017. Therefore, this NHE update is intended to address outstanding agency comments.

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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Terrestrial Ecologist

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1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by Pratt Construction Inc. ('the proponent') to prepare a Natural Heritage Evaluation (NHE) – update for properties (herein referred to as 'the property') located on the southern Part of Lot 17, 18 and 19 , Concession 11 (Hewitt's Central Subdivision lands), in the City of Barrie (the City) (Figure 1). The NHE is a component of the submission to acquire draft plan approval to permit the proposed residential development within the Hewitt's Central lands.

The property is located within the former Hewitt's Secondary Plan Area as a result; the development concept is part of a larger overall concept that extends onto adjacent lands within the former Secondary Plan Area. This Secondary Plan Area has been consolidated into the newly updated City of Barrie Official Plan. A portion of the property and adjacent lands have been identified within the Natural Heritage System according to the City's Official Plan. The Natural Core Areas are components of the Natural Heritage System that has been approved by Ontario's Municipal Board as part of the Secondary Plan process (OMB; now known as the Ontario Land Tribunal). The NHE is also a requirement according to the Lake Simcoe Protection Plan, has been prepared to identify potential Species at Risk (SAR) and/or SAR habitat and update/confirm field data collected during the initial field investigations.

The original NHE report was prepared by Azimuth in 2017 which includes the entire Hewitt's Gate parcel including the lands located to the north fronting onto Mapleview Drive East (approved and development complete/underway), Hewitt's Central Lands (subject lands) and lands to the south (*i.e.* Hewitt's South). As noted above and as depicted on Figures 1-3, this updated NHE is for the Hewitt's Central lands only. Information from the original 2017 NHE is utilized within this report with updated information, as required.

For the purposes of this NHE the study area comprises the Hewitt's Central lands as shown on Figures 1-3 and adjacent lands (within approximately 120 metres (m)) of the property. The field studies included the Hewitt's Central lands in addition to the lands immediately to the south (*i.e.* Hewitt's South) that are also owned by the proponent. Although the Impact Assessment focuses on the Hewitt's Central lands only, the Existing Conditions reports the findings of both parcels. The Hewitt's South NHE has been prepared under a separate cover and is part of a separate planning application. 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 (2020)

The Provincial Policy Statement (PPS) (MMAH, 2020a) outlines policies related to natural heritage features (Section 2.1) and water resources (Section 2.2). 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 2.1.5 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 2.1.4(b).

It is ultimately the responsibility of the Province and/or the Municipality to designate areas identified within Section 2.1.4 and 2.1.5 of the PPS as “significant”.

Section 2.1.6 of the PPS states that development and site alteration is not permitted in fish habitat except in accordance with federal and provincial requirements.

Section 2.1.7 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 2.1.8 of the PPS, no development or site alteration will be permitted on lands adjacent to natural heritage features and areas identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated 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 Growth Plan for the Greater Golden Horseshoe (2020)

The City of Barrie is within an identified Urban Growth Centre. Urban Growth Centres will be the focal areas for investment, commercial, recreational, cultural and entertainment uses. They will accommodate and support a transit network, will serve as a high-density major employment centre, and will accommodate significant population as per Section 2.2.3 of the Growth Plan for the Greater Golden Horseshoe (Growth Plan; MMAH, 2020b). The Growth Plan's Natural Heritage System excludes land within settlement areas (Section 4.2.2). Therefore, the policies related to the Natural Heritage System and features associated with the natural heritage system (*i.e.* key natural heritage features and key hydrologic features) are not applicable within the City of Barrie.

2.4 Lake Simcoe Protection Plan

The Lake Simcoe Protection Plan (LSPP; MOECC, 2009) was developed to protect and restore the ecological health of the Lake Simcoe watershed. The LSPP identifies Key Natural Heritage Features and Key Hydrologic Features within the natural heritage system. Key Natural Heritage Features include *wetlands*, *significant woodlands*, *significant valleylands*, and natural areas abutting Lake Simcoe. Key Hydrologic Features include *wetlands*, *permanent and intermittent streams*, and *lakes* other than Lake Simcoe. The NHE is required under the LSPP to assess the adequacy of the buffers approved by the OMB to protect the features and functions of the Natural Core Areas.

2.5 City of Barrie Official Plan 2051 (2023)

Originally, the property was part of the Hewitt's Secondary Plan Area, however, this secondary plan area has been incorporated entirely into the new City of Barrie Official Plan 2051 (April 2023).

As a part of the Hewitt's Secondary Plan process, a buffer of 30m from the edge of wetlands and forests has been approved by the OMB and has been accepted by the City and the LSRCA.

The property has been identified primarily as Neighbourhood Areas in addition to Community Hub, Green Space and Natural Heritage System as per Map 2: Land Use Designations within the City's current Official Plan (Appendix A). Uses permitted within the Neighbourhood Areas, Community Hub and Green Space are outlined in Sections 2.6.1, 2.6.4 and 2.6.7 respectively within the City's Official Plan.

Uses generally permitted within the Natural Heritage System include environmental conservation, preservation, stewardship, restoration, hazard management, naturalized trails, boardwalks and interpretive/wayfinding signage, low impact recreational facilities among others listed within Section 2.6.6.1 of the City's Official Plan. Supplementary to the Natural Heritage System designations are a series of natural heritage protection overlays identified on Map 3.

According to Map 3: Natural Heritage Protection Overlays, Natural Core, High Constraint Stream Corridor Area and a High (S) Constraint Stream Corridor – Special Policy Area is, in part, are present on the property with reference to Policy 5.4.5.3.2 (Note: it is our understanding that this reference is an error and should be in reference to Policy 5.4.5.3.1; Appendix A). As per Section 5.4.3, the Natural Core overlay includes natural heritage, hydrological and hydrogeological features including key natural heritage features and hydrological features. Set buffer widths are prescribed in Section 5.4.3 that includes a 30m setback to woodlands within the Lake Simcoe watershed and a 30m setback to wetlands and watercourses within the natural core area.

The High Constraint Stream Corridor areas include identified watercourses with associated riparian lands, and the corridor areas shall include buffers measured from stable top-of-bank.

As per Section 5.4.5.3.1, the location and boundaries of the floodplain related to the high (S) Constraint Stream Corridor Special Policy Area shall only be modified and/or relocated according to the following:

a) Such that the floodplain area, meander belt width and related features, including channel and required setbacks, are accommodated within the High (S) Constraint Stream Corridor Area overlay which will have a width of 60.0 metres.

b) Pursuant to the relocated floodplain area occurring within 60.0 metres of the corridor, cut/fill will be permitted on adjacent residential land as part of the floodplain area redesign.
c) Any proposed road crossings through the corridor area will be subject to road ecology principles, in order to maintain corridor function objectives and connectivity.

The information contained within the 2023 Official Plan related to the 60m EP corridor is consistent with the OMB Minutes of Settlement (2015) formerly referred to as "Area 2" (Appendix A).

2.6 Lake Simcoe Region Conservation Authority

The study area is located within the jurisdiction of the LSRCA. The study area includes lands subject to O. Reg. 41/24 – "Prohibited Activities, Exemptions and Permit" by the LSRCA (Appendix A). Under Regulation 41/24, the LSRCA may require that approvals be obtained for any proposed development or site alteration within areas regulated under the Conservation Authority's jurisdiction.

2.7 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

A combination of a background information and field data were used to fulfill the objectives of this NHE. Azimuth undertook the following activities within the original 2017 NHE:

- Initial reconnaissance survey undertaken in April 2014;
- ELC and vegetation surveys were completed in June (2014), October (2014) and May (2016). Ontario ELC for Southern Ontario (Lee *et al.*, 1998) was used as a guide to classification of vegetation community types;

- Three evening amphibian call surveys were undertaken in April, May and June 2014 as per Marsh Monitoring Protocol;
- Two dawn breeding bird surveys were undertaken in June (2014); and
- Staking of the Natural Heritage System July (2015).

Due to the time that has elapsed since the initial field studies, the following studies were included within the 2023 NHE Update for the Hewitt's Central lands (note: the field studies included lands within the Hewitt's Central and Hewitt's South lands (*i.e.* adjacent lands)). Therefore, Azimuth undertook the following activities for the 2023 NHE update:

- Consulted with LSRCA to confirm the need for a NHE update and the scope of work;
- Searched the County of Simcoe, City, Ministry of the Environment, Conservation and Parks (MECP), and Ministry of Natural Resources and Forestry (MNRF) records as required, to obtain available background information, including obtaining current information related to natural heritage conditions including SAR in the nearby area;
- Conducted the following field surveys to document/confirm the extent of existing natural heritage features, functions and species on the property:
    - Evaluated/ map/confirm vegetation community types based on Ecological Land Classification (ELC) methods (summer 2022);
    - Conducted a single in-season vegetation survey including a search for Butternut (Endangered) (summer 2022);
    - Conducted two dawn breeding birding surveys (June 2022) with the potential for a third survey depending on the initial results;
    - Searched the structures for Barn Swallow (Special Concern) nests;
    - Completed two visual exit surveys on the anthropogenic structures that have the potential to provide SAR bat habitat (June/July 2022);
    - and
    - Recorded all incidental wildlife observations during site visits.
- Updated the NHE report to reflect the most up to date planning policies and legislation; and,
- Assessed/updated the potential direct and indirect impacts of the proposed development on the natural heritage features and functions identified on or adjacent to the property.

A Terms of Reference for the above survey program was provided to the LSRCA on April 25, 2022. Through additional correspondence with LSRCA the scope of the NHE was revised and confirmed May 6, 2022. Through this correspondence, LSRCA indicated that the following should also be considered within the NHE:

- A third breeding bird survey should be completed should suitable grassland bird habitat be present;
- Protocols for SAR bird and bat surveys to be confirmed with MECP, as required;
- A catchment-based water balance will be required; and,
- Should trails be proposed through the Phase 3 lands, a Trail Impact Study will be required.

Additional details can be found within the consultation record between Azimuth and the LSRCA is provided in Appendix B. To supplement the existing data, Turtle Basking Surveys were undertaken in 2024. The Water Balance and Trail Impact Study are beyond the scope of this NHE. The detailed Feature Based Water Balance is being completed by others (R.J. Burnside & Associates Ltd.) and recommendations related to the Trail Impact Study are detailed below in Section 9.

3.1 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.

- Hewitt's Secondary Plan Area Subwatershed Impact Study (2016);
- Natural Heritage Evaluation Part of Lots 16, 17, 18, and 19 Concession 11, Hewitt's Secondary Plan Area, City of Barrie (Azimuth, 2017);
- Ministry of Natural Resources (MNR) Natural Heritage Information Centre (NHIC; MNRF, 2024);
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman *et al.*, 2007);
- Ontario Ministry of Natural Resources (OMNR) Natural Heritage Reference Manual (OMNR, 2010);
- 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);
- Fisheries and Oceans Canada (DFO) aquatic species at risk mapping (DFO, 2024);
- MNR Geohub database: Aquatic resource area line segment (MNRF, 2024b);
- Government of Canada's Species at Risk Public Registry; and,
- Atlas of the Mammals of Ontario (Dobbyn, 1994).

3.2 Natural Core Staking (2015)

Through the development and creation of the Hewitt's Secondary Plan (City of Barrie, 2014), the Natural Heritage System was defined. The Natural Heritage System was identified within a Natural Heritage System report prepared by Natural Resource Solutions Inc. (NRSI). Using a combination of field studies, the review of published background studies, and analysis of the applicable provincial natural heritage planning policies and guidelines (*i.e.,* PPS, LSPP, Natural Heritage Guidelines) NRSI developed their approach to defining the Natural Heritage System. Components of the Natural Heritage System, in general, are large contiguous tracts of natural features that contain a variety of key features including Significant Woodland, Significant Wetland, cultural meadow and thicket communities contiguous within the NHS and watercourses. The staking of the Natural Core Area took place in July 2015 for all the participating landowners in the Hewitt's Secondary Plan Area. The staking was undertaken with staff from the LSRCA, NRSI, City of Barrie, Azimuth, R.J. Burnside, The Jones Consulting Group and the affected landowners. The feature limits were defined, agreed to by all parties and staked. Each stake location was georeferenced and the final survey of the features was circulated to all participants. The buffer width as approved by the OMB was added to the feature limit to define the development limit for the preparation of the draft plans of subdivision. Therefore, our assessment will identify the significant features as approved by the province, City and LSRCA.

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.

As indicated above, this report represents an update to the original 2017 NHE therefore, existing ELC and vegetation information can be found within the Hewitt's Secondary Plan Area Subwatershed Impact Study (2016) and within the 2017 NHE. For this update, vegetation community boundaries were verified and/or updated in the field on August 18, 2022 during the growing season when the emergent ground cover vegetation layer was present (original surveys undertaken in 2014 and 2016). Vegetation community types were classified using the Ecological Land Classification for Southern Ontario: First Approximation (Lee *et al*., 1998, updated 2008).

The site visit was undertaken by a qualified ecologist 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 (*Juglans cinerea*; Endangered) and Black Ash (*Fraxinus nigra*; Endangered) was also conducted within the property.

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.

3.4.2 Dawn Breeding Birds

Two dawn breeding bird surveys were conducted within the study area on May 30, 2022 and June 13, 2022 to supplement the surveys undertaken in 2014 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.

3.4.3 Barn Swallow Nest Search

On June 29, 2022 the interior and exterior of the barn located at 864 Lockhart Rd., was searched for evidence of Barn Swallow nesting.

3.4.4 Bats and Bat Habitat (Anthropogenic Structure)

Several bat species including (but not limited to) Little Brown Myotis may utilize anthropogenic structures (such as old residential structures with attic space) as roosting habitat for the purposes of maternity colony roosting and day roosting during the late spring and summer seasons.

Two bat exit surveys were completed due to the presence of potentially suitable roosting habitat in the existing residential structures, garages, and barn on the Phase 3 subject lands. The existing house located at 912 Lockhart Road in Innisfil, Ontario is two storeys tall with probable attic space and potential access points in the roofline where gaps and loose shingles occur, which could be used by bats. The associated garage structure also contained gaps in the siding and roofline that bats could potentially exit from.

The existing house located at 830 Lockhart Road is a bungalow with probable attic space and potential access points along the roofline. The associated shed contained loose and missing wood features that bats could potentially exit from.

The existing house located at 864 Lockhart Road is two storeys tall with probable attic space and ageing siding, with potential access points were observed in the siding and roofline, specifically near the chimney. The associated garage also contained gaps in the siding, and the barn contained loose wood features and multiple open access points bats may utilize.

The features for each of these structures indicated that exit surveys would be required to determine the likelihood of use by roosting bats.

In accordance with provincial protocols for screening anthropogenic structures (MNRF, 2015a), the bat exit survey was conducted on two evenings, one on June 29, 2022, and one on July 18, 2022, which focused on the structures mentioned above. The focus of the surveys was to determine if maternity colonies of SAR bats were likely to be present within the structures.

During the June 29 survey two (2) Azimuth ecologists surveyed each of the three properties (total of six Ecologists). At 912 Lockhart Road one ecologist was positioned at the house and a second at the garage. The ecologists for 830 Lockhart Road survey were positioned at opposite corners of the house and shed. At 864 Lockhart Road the ecologists were positioned at opposite corners of the property to allow the optimal advantage point for all three structures (house, barn, and garage). Positions for each structure were selected to effectively screen possible exit gaps identified prior to the surveys. During the July 18th survey similar positions were utilize with the addition of a third ecologist at 864 Lockhart road to allow separate screenings for each structure (house, garage, and barn), for a total of seven (7) ecologists.

Stationary ultrasonic acoustic bat recorders (Song Meter SM3BAT Bioacoustics Recorder with SMM_U1 microphone, by Wildlife Acoustics, Inc.) were deployed around each identified structure, with a total of six (6) deployed during the June survey, and seven (7) deployed in July. At least one (1) ultrasonic phone microphone attachment (Echo Meter Touch 2 Pro, by Wildlife Acoustics, Inc.) was used during each survey to aid in detecting bat activity. These surveys were conducted for a minimum length of one hour, from one half hour before sunset to one half hour after sunset, (8:36 PM – 9:36 PM, sunset at 9:06 PM on June 29, 2022; 8:28PM-9:28PM, sunset at 9:58PM on July 18, 2022). The surveys were completed during suitable weather conditions.

3.4.5 Turtle Basking Surveys

To screen for the possible presence of SAR turtles, five visual encounter (basking) turtle surveys were completed in 2024 on April 26, April 30, May 3, May 6, and June 4 in accordance with the open water wetlands provincial protocol for Blanding's Turtle (MNRF, 2015b). As per the protocol, surveys were completed during the period between spring ice-off and June 15 between 08:00am and 5:00pm during sunny weather with air temperatures at least 10ºC, or on partly overcast days with air temperatures above 15ºC. Each survey was 20-30min in duration, with surveys spread out over at least three weeks (MNRF, 2015b). Potentially suitable basking habitat for turtles was limited to the dug pond and a small pond located within the Deciduous Swamp (SWD) community of the Natural Core Area (Figure 2).

Any observations for other reptiles such as snakes were undertaken as a matter of course during fieldwork.

4.0 EXISTING CONDITIONS

4.1 Land Use

The Hewitt's Central lands are approximately 35 hectares (ha) and are located north of Lockhart Road. The property is composed of a combination of agricultural lands, rural residential, hedgerows, and natural wetland and upland areas associated with the City's Natural Heritage System and the MNRF evaluated St. Paul's Swamp (Figure 2; Appendix A). Hewitt's Creek and a tributary to Hewitt's Creek traverse through the property. An intermittent drainage feature traverses the agricultural fields along the southern property boundary.

Adjacent lands are largely dominated by agricultural or residential lands. Lands to the north are the location of approved and/or future development. Lands to the south are also owned by this applicant and are part of a separate development application (*i.e.* Hewitt's South). Mapped Natural Heritage System composed of a mosaic of woodland, wetlands, and Hewitt's Creek occurs directly west of the property.

4.2 Terrestrial Resources

4.2.1 Vegetation

The limits of all ELC communities identified within the study area are illustrated in Figure 2. A summary description of vegetation communities is presented in Table 1, and a complete list of vascular plant species identified within the study area is presented in Table 2. An accompanying photographic record of the site is presented in Appendix C.

None of the vegetation communities or species documented are of federal or provincial conservation concern (MNRF, 2023a).

4.2.1.1 Rare and Uncommon Plants

There are no elements of occurrence (EO_ID) within the study area for provincially Endangered or Threatened, or provincially rare vegetation species according to the NHIC database (MNR, 2024).

Black Ash an Endangered tree was observed within the Natural Core Area during field investigation (Table 2, Figure 2). No Butternut was identified within Phase 3 lands during field investigations; Butternut was identified on Phase I lands previously and included on Figure 2-3 as these lands fall within the study area (*i.e.* are within 120m of property).

Four LSRCA (regionally) rare vegetative species were documented on-site: Red Pine, Bristly Black Currant, Heartleaf Foamflower, and Dewberry. All these species were located within the Natural Core Areas of the Phase 3 lands. See Figure 2 and Table 2 for the ELC vegetation communities in which these four species are found.

4.2.2 Wildlife

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

Mammals: Red Squirrel, Eastern Grey Squirrel, Coyote, White-tailed Deer, Eastern Chipmunk

Other: crayfish chimney

A review of the MNR NHIC database (1 x 1km squares 17PK1010, 17PK1011, 17NK1111, 17PK1211) identified records for SAR in proximity to the property, as follows:

- Eastern Meadowlark (Threatened)
- Barn Swallow (Special Concern)
- Snapping Turtle (Special Concern)

Within the MNRF's October 25, 2017 letter in response to the submitted Information Gathering Form, Azimuth was informed that there was a confirmed occurrence for Blanding's Turtle north of Mapleview Drive East (Appendix B).

4.2.2.1 Birds

A total of 54 bird species were recorded during dawn breeding bird surveys during the 2014 surveys and 2022 bird surveys. A bird list combining the 2014 surveys and 2022 surveys results are found in Table 3, majority of which are typical to agricultural landscapes and semi-urban landscapes. An additional three (3) bird species were identified incidentally during the remainder of the field program, and include, Turkey Vulture, Pine Warbler, and Great Horned Owl.

Two Special Concern species (Barn Swallow, Eastern Wood-pewee) were confirmed breeding or foraging in the study area.

Grasshopper Sparrow (Special Concern) was observed on one occasion (Table 3). Presence of a singing male on a single occasion is considered "possible" breeding activity and not sufficient breeding evidence to assign a "probable" or "confirmed" breeding activity designation for the species. Given the single observation occurred near the beginning of the generally accepted breeding season of May 24-July 10 in Southern Ontario (OBBA, 2001), it is anticipated that occurrence constituted a late migrant rather than an individual with intent of establishing a breeding territory as there is no potentially suitable breeding habitat for Grasshopper Sparrow on the property. At the time of the 1st breeding bird survey, the agricultural lands were tilled (in preparation for planting) with the exception of the westernmost field which was fallow and dominated by Common Dandelion (*Taraxacum officinale*). At the time of the 2nd breeding bird survey, all fields were planted with soy. The Grasshopper sparrow is a grassland bird that lives in open grassland areas, hayfields, pasture, alvars, prairies and occasionally grain crops such as barley (MECP, 2021). A third breeding bird survey was not undertaken due to the lack of potentially suitable habitat for this species.

Approximately 15 Barn Swallow nests were documented at 864 Lockhart Road in the vicinity of the barn (*i.e.* under awning and within smaller outbuilding associated with barn). Approximately twenty-four (24) Barn Swallow individuals were observed during the June 29, 2022 nest survey which included approximately eight (8) juveniles.

4.2.2.2 Reptiles and Amphibians (Herpetofauna)

Azimuth completed three evening calling amphibian surveys as part of the 2017 NHE scope of work (Azimuth, 2017). Sampling locations are shown on Figure 2. Activity was documented at Survey Station 5 and associated with the central portions of the MNRF evaluated St. Paul's Swamp (Figure 2). Species observed at Survey Station 5 include a full chorus of Spring Peepers and three Green Frogs (Table 4a).

Snapping Turtles and Painted Turtles were documented within pond 1 and 2 during the 2024 turtle basking surveys (Figure 2; Table 4b). Snapping Turtle is designated as Special Concern according to Ontario's ESA.

4.3 Species at Risk

The SAR assessment (Table 5) fully considers SAR with potential to occur in the study area. Based on this assessment in combination with vegetation communities, species-specific surveys, and other environmental features observed during the site investigation, the following species are considered below in this report:

- **Threatened or Endangered**: Butternut, Black Ash, Blanding's Turtle, Little Brown Myotis, Northern Myotis, Tri-colored Bat

- **Special Concern**: Barn Swallow, Eastern Musk Turtle, Eastern Ribbonsnake Eastern Wood-pewee, Snapping Turtle

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

4.3.1 Butternut

Three Butternut were identified as part of our previous study within Phase 1 lands to the north. These tress are on adjacent lands (Figure 2 and 2b).

4.3.2 Black Ash

Black Ash were observed within the Natural Core Area. Due to the timing of the field investigations (*i.e.* Black Ash only recently became protected according to Ontario's ESA), the precise locations of the Black Ash is unknown at this time, only the ELC community in which they were found (Figure 2 and 2b).

4.3.3 Blanding's Turtle

MNRF has confirmed Blanding's Turtle has been utilizing wetland habitat to the north of Mapleview Drive as per MNRF correspondence (Appendix B). Blanding's Turtle is a primarily aquatic turtle that occurs in a variety of wetland habitats. Largely a habitat generalist, the species is described as inhabiting 'lakes, permanent ponds, temporary ponds, slow flowing brooks, creeks, marshes, river sloughs, marshy meadows, man-made channels, farm fields, coastal areas, and the bays of Lake Erie' (COSEWIC, 2016). The

General Habitat Description Guidance document produced by the MNRF (2021) for the Blanding's Turtle describes habitat as follows:

- **Category 1 habitat** - confirmed nesting or overwintering location and an area within 30m of that site. Category 1 habitat has the lowest tolerance to alteration.
- **Category 2 habitat** - the wetland complex (*i.e.* all suitable wetlands or waterbodies within 500m of each other) that extends up to 2km from an occurrence, and the area within 30m around those suitable wetlands or water bodies. Category 2 habitat is considered to have a moderate level of tolerance to alteration before its function is compromised. This habitat may include the following functions on the property:
    - Feeding, mating, thermoregulation, aestivation, and movement are other life processes largely associated with suitable Category 2 habitat.
- **Category 3 habitat** - an area between 30m and 250m around suitable wetlands/waterbodies identified in Category 2, within 2km of an occurrence. Category 3 habitat has the highest tolerance to alteration. Blanding's Turtles use Category 3 habitat as a movement corridor between wetland features.

The dug pond and SWM1-1, MAM2-2, MAM3-3 wetlands complex (within St. Paul's Swamp) have the potential to provide suitable wetland habitat, therefore, these wetlands in addition to 30m around these features would be considered potential Category 2 habitat for Blanding's Turtles. Five turtle basking surveys were completed at two locations and did not reveal the presence of Blanding's Turtle. Nonetheless, air photo interpretation can aid in the conclusion that the wetland features within the central portion of the Evaluated MNRF St. Paul's Swamp has the potential to contain standing water for much of the year hence could provide potentially suitable habitat for the species. Figure 2b depicts areas that could be considered potential Category 2 habitat in accordance with Azimuth's assessment.

As indicated above, Category 3 habitat has the highest tolerance to alteration. Blanding's Turtles may use suitable Category 3 habitat as movement corridors that ideally confer protection from predators as the species moves under vegetation cover between wetlands. Category 3 habitat considered suitable for Blanding's Turtles that confers a natural and sheltered vegetated area is the FOM7-2 community. A large proportion of the Category 3 habitat is within actively cultivated lands which act as population sinks for turtle nesting (Environment Canada, 2016; Mui *et al*., 2016) and do not offer ideal travel corridors due to the lack of predator cover, wind exposure, frequent disturbance, and lack to water/wetland features. All areas identified as Category 3 located outside of the Natural

Core Area currently do not provide any linkage/corridor function to adjacent wetland features.

The treed swamp habitat (SWD4-3) within the southeast Natural Core Area was examined for possible Blanding's Turtle habitat suitability. No potential nesting habitat has been identified within the community, nor was standing water documented. The lack of standing water within the feature precludes it as potential overwintering, feeding, mating, thermoregulation, and protection habitat for the species. Due to the lack of potentially suitable wetland habitat, potentially suitable aestivation habitat is unlikely. The southeast treed swamp does not provide potentially suitable Blanding's Turtle habitat.

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

Little Brown Myotis, Northern Myotis, and Tri-colored Bat may utilize woodlands and other treed areas as maternity roost sites, preferring trees >25cm diameter at breast height with evidence of cracks, holes, splits, lifted bark, etc. (called "snags") to provide refuge for the rearing of young during the late spring and early summer months (approximately June). During the site investigation, potentially suitable snags were observed within the woodland communities of the Natural Core Areas (SWD4-3, FOM7-2; Figure 2) and may provide suitable roosting habitat for SAR bats.

At 912 Lockhart Road one (1) bat was observed by ecologists and one bat pass was recorded by acoustic monitors during the June 29 survey. The species were within the acoustic range of Big Brown Bat (*Eptesicus fuscus*) and Silver Haired Bat (*Lasionycteris noctivagans*), with at least one pass confirmed as Big Brown Bat. The bat likely originated from surrounding woodlands or anthropogenic structures off-site, and was observed to be flying around the structures on-site, which was picked up by the acoustic monitors on site. No bats were observed to be exiting from any of the structures during either survey.

At 864 Lockhart Road eight (8) bat passes were recorded between two monitors during the June 29 survey. Five (5) were within the acoustic range of Big Brown Bat and Silver Haired Bat, with at least one pass confirmed as Big Brown Bat. One (1) bat pass was within the acoustic range of *Myotis sp.*, and was potentially a Little Brown Myotis (*Myotis lucifugus;* Endangered). One SAR bat recording is not indicative of a maternity roost but is likely a bat transiting through the area. Two (2) bat passes occurred from an unknown species with a similar acoustic rang of Big Brown Bat. During the July 18 survey five (5) bat passes were recorded between three monitors. Three (3) were within the acoustic range of Big Brown Bat and Silver Haired Bat, and two (2) were within the

acoustic range of the Hoary Bat (*Lasiurus cinereus*) and Silver Haired Bat. One (1) bat was observed during the July 29 survey exiting the house near the chimney.

No SAR bats were detected by the ecologists or the wildlife acoustic recorders during either survey at 830 Lockhart Road. No bats were observed to be exiting from the structures during either survey.

Based on the June and July bat exit surveys maternity colonies of SAR bats are not anticipated to be present within the structures 912, 864 or 830 Lockhart Road (Figure 2).

4.4 Wetland

Wetland habitat exists on the central Phase 3 lands including wetland associated with the MNRF evaluated wetland, St. Paul's Swamp in addition to wetland identified by Azimuth during field investigations (Figure 2a, Appendix A). This swamp is an MNRF evaluated wetland (non-provincially significant). In the southeast corner of the property a deciduous swamp (SWD4-3) occurs (Figure 2). As indicated above, the limits of these features are within the Natural Core Areas, and have been confirmed on site by LSRCA and subsequently surveyed (Figure 2). The limits of the Natural Core Areas have been approved by the OMB. As the identified wetland habitats within the study area have been included as a part of the City's Natural Core Areas, they are considered Significant.

4.5 Significant Woodland

Woodland habitat exists on the property (Figure 2). As indicated above, the limits of the Natural Core Areas, which includes woodland habitat, have been confirmed on site by LSRCA and have subsequently been surveyed (Figure 2). The limit of the Natural Core Areas has been approved by the OMB. The identified woodland habitat has been included as part of the City's Natural Heritage System and defined as a Natural Core Area, and as such, are considered Significant.

4.6 Candidate Significant Valleyland

No portion of the study area is identified as Significant Valleyland, nor assigned a similar designation on municipal or provincial mapping resources.

There are no valleyland features located within the study area according standards presented in the NHRM, principally due to the lack of well-defined valley morphology and landform prominence required to be considered Candidate Significant Valleyland. The swale on the property lacks the topography required to be considered as valleyland.

4.7 Candidate Significant Wildlife Habitat

An assessment of the potential for Significant Wildlife Habitat (SWH) within study area was conducted, using the criteria outlined within the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the accompanying the Ecoregion 6E Criteria Schedules (MNRF, 2015b). An assessment of Candidate Significant Wildlife Habitat categories relative to documented vegetation communities and habitats within the development parcel is presented in Table 6. 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:

- Bat Maternity Colonies
- Turtle Wintering Areas
- Reptile Hibernaculum
- Waterfowl Nesting Area
- Turtle Nesting Areas
- Terrestrial Crayfish
- Habitat for Special Concern and Rare Wildlife Species
    - Eastern Ribbonsnake, Eastern Wood-pewee, Snapping Turtle

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 or provincial mapping resources (Appendix A).

4.9 Fish and Fish Habitat

The property is contained within the Hewitt's Creek subwatershed within the larger Lake Simcoe watershed. Two watercourses and one drainage feature were identified on the property. The two watercourses consist of the main branch of Hewitt's Creek and an unnamed tributary of Hewitt's Creek. The main branch of Hewitt's Creek flows north through the property and drains into Lake Simcoe approximately 4 kilometres (km) downstream. The unnamed tributary of Hewitt's Creek occurs near the southwest property edge and originates from a man-made pond on the property. The tributary drains west from the pond for approximately 200m before entering the main branch of Hewitt's Creek. Hewitt's Creek functions as a permanent coldwater system that is known to host the following species: Blacknose Dace, Brook Trout, Fathead Minnow, Johnny Darter, Longnose Dace, Common Shiner, Pumpkinseed, White Sucker, Northern Pearl Dace, and Rock Bass (MNRF, 2023b). Both Hewitt's Creek and the unnamed tributary had defined banks with substrate sorting observed, and would be characterized as permanent watercourse features that function as direct coldwater fish habitat. Both of these features, along with the pond location, are shown on Figure 2.

In addition to the two watercourses, a swale feature drains west across the property into the man-made pond. The swale feature is approximately 250m in length, and flows along the southern boundary of the central Phase 3 lands as shown on Figure 2. Based on site observations and aerial photographs, the swale does not have a defined flow path or channel bed/banks. The swale is contained within a 10-15m wide vegetated feature between two cropped agricultural fields. Vegetation within the swale feature consists of terrestrial grasses and sparse trees/shrubs. No aquatic vegetation was noted within the swale feature. The feature is expected to convey seasonal drainage between the farm fields during spring freshet and major storm events. Based on these site observations, the swale is characterised as an ephemeral feature that provides indirect fish habitat functions (*i.e.*, the conveyance of seasonal flow to downstream fish-bearing systems). The swale is considered hydrologically connected to the dug pond and subsequently Hewitt's Creek. Therefore, the feature is protected under the Federal *Fisheries Act*. LSRCA has confirmed the east-west drainage feature through the agricultural field is not a watercourse (Appendix B), however the function of the drainage feature is to be retained in a modified form.

5.0 NATURAL HERITAGE FEATURES AND FUNCTIONS

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

- Habitat for Threatened and Endangered Species
    - Butternut
    - Black Ash
    - Blanding's Turtle
    - Little Brown Myotis, Northern Myotis, Tri-colored Bat
- Wetland
- Significant Woodland
- Candidate Significant Wildlife Habitat
    - Bat Maternity Colonies
    - Turtle Wintering Areas
    - Reptile Hibernaculum
    - Waterfowl Nesting Area
    - Turtle Nesting Areas
    - Terrestrial Crayfish
    - Habitat for Special Concern and Rare Wildlife Species
        - Eastern Wood-pewee,
        - Snapping Turtle

        - Eastern Ribbonsnake
- Fish Habitat
    - Permanent direct coldwater fish habitat in Hewitt's Creek and the unnamed tributary
    - Indirect fish habitat in the ephemeral swale feature

6.0 PROPOSED DEVELOPMENT

The proposed development consists of residential lots including a combination of Singles and Street Townhomes, stormwater management areas, open space, Environmental Protection (EP) and future development lands. EP lands are proposed along the southern property boundary and encompass the Natural Heritage Core Areas in addition to the 30m setback (Figure 3, Appendix D)

The subdivision will include internal connections to Phase 1 lands to the north and ultimately to Mapleview Drive East. Similarly, connection to Lockhart Road to the south is via an internal road network to the adjacent development lands. Two road crossings are proposed over the EP corridor (block 162). The Plan of Subdivision for the central Phase 3 lands can be found in Appendix D.

Grading does not extend into the EP lands with the exception of Block 162 which will require grading/earthworks to facilitate the construction of a natural channel within the 60m EP corridor formerly referred to as "Area 2". Block 162 is the location of "Area 2" whereby an OMB decision was made to permit cut/fill activities within this 60m wide corridor (Figure 2 and 3). This is consistent with the policies within the City's Official Plan related to the High (S) Constraint Stream Corridor Special Policy Area (Appendix A). The specific details related to grading within Block 162 are unknown at this time and will be developed during the detailed design phase. There is potential that some grading will extend into the EP areas to the east and west of the "Area 2" corridor (*i.e.* Block 162) but will need to be assessed at detailed design.

The proposed stormwater management plan includes the use of a storm sewer system for conveyance of minor storm events (5-year and lower), with the major events (greater than the 5-year) being conveyed along the road surface and contained within the right-of-way limits. All lands are conveyed to the end-of-pipe SWM facility (SWMF #9). SWMF #9 is proposed to be an extended detention wet pond, providing Enhanced quality control (annual 80% Total Suspended Solids [TSS] removal) and the required quantity control to attenuate post-development peak flows for all storms up to the 100-year event to the allowable peak flow rates. SWMF #9 will outlet to the proposed tributary to Hewitt's Creek that traverses the south boundary of the subdivision (*i.e.* location of swale, Figure 2). It is important to note that the SWM design is analyzed for the entirety of

Subwatershed Impact Study (SIS) Catchment 9 (that is, all lands draining to SWMF #9). The proposed SWM design achieves all City and LSRCA criteria and requirements for SIS Catchment 9, including the subject site (Jones, 2024).

All proposed development will be serviced with municipal water and sewer.

Trails are proposed along the 60m corridor (*i.e.* Area 2, Block 162) with a connection to existing trails within the buffer lands associated with Block 163 EP lands (Appendix D). The proposed trail system is consistent with the City of Barrie's 2019 Transportation Master Plan.

7.0 IMPACT ASSESSMENT

This impact assessment is prepared with regards to the construction footprint of proposed development and associated grading limits, as described above and illustrated in Figure 3.

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 to occur within the limits of the study area:

- Butternut (Endangered)
- Black Ash (Endangered)
- Blanding's Turtles (Threatened)
- Little Brown Myotis, Northern Myotis, Tri-colored Bat (Endangered)

7.1.1 Butternut

All Butternut trees are located on adjacent lands and are situated >50m from any proposed development associated with the Hewitt's Central Subdivision. These Butternut individuals were considered within the NHE associated with the Hewitt's Gate NHE completed in 2017. No further action required related to Butternut.

7.1.2 Black Ash

Black Ash trees were observed within the woodland communities (FOM7-2, SWD4-3, SWM1-1) of the Natural Core Areas (Figure 2, Table 2). The proposed development will not result in the direct removal or alteration of woodland/wetland communities within the study area, or within a 30m buffer from the woodland dripline. As such, providing that conformance is demonstrated for environmental considerations and mitigation described

in Section 9 below, there is no expectation that negative impact to Black Ash would result from the proposed development.

Consideration for the Black Ash trees may be required once the details of the trails are known and should be included within a Trail Impact Study, if applicable.

Refer to Section 9.5.3 below regarding additional regulatory guidance with respect to Black Ash, for which provincial protections took effect on January 26, 2024.

7.1.3 Blanding's Turtle

Potential Category 2 habitat associated with the westerly wetland complex is contained in the Natural Core Area. No portion of the development is proposed within the Natural Core Area, and there no direct impacts to wetland habitat. A natural self-sustaining 30m buffer will remain adjacent to the identified Natural Core Area post-development to minimize indirect impacts to the wetlands associated with the Category 2 habitat.

Turtle basking surveys did not reveal the presence of Blanding's Turtle (Table 4b). Conservatively, we have continued to identify the dug pond as potential Category 2 habitat. It is our understanding that grading is required within the area of the dug pond in order to facilitate the creation of the natural channel corridor and to obtain the required floodplain storage capacity. As such, the dug pond will be de-commissioned. Mitigation measures will be required in order to ensure there is no contravention of Ontario's ESA. Provided the recommended mitigation is implemented, there is no expectation that there will be any impact to wetland habitat availability for Blanding's Turtle within the Natural Core Area. A buffer of at least 30m will remain adjacent to all wetland areas.

In addition, a small approximately 250m^2 area of Category 2 habitat (within agricultural field) in proximity to the dug pond feature (Figure 3). This small intrusion of the potential Category 2 habitat would be considered a relatively low level of impact that is not anticipated to impair potential function as habitat for Blanding's Turtle. The extent of loss would not be expected to impact Blanding's Turtles and the habitat in which they depend upon, providing conformance is demonstrated for environmental considerations and mitigation measures described in Section 9 below.

Category 3 habitat identified on Phase 3 lands includes the FOM7-2, active agricultural fields, and the EP area associated with the "Area 2" (*i.e* Block 162 EP lands). The portions of the identified Category 3 habitat that have the potential to function as potential movement corridor for Blanding's Turtle are contained within the Natural Core Area. This area will be maintained post-development and a 30m buffer will remain adjacent to all potentially functioning Category 3 habitat. All other Category 3 lands

(active agricultural fields and "Area 2") do not provide any significant function for Blanding's Turtle nor would the swale provide any movement corridor function due to the lack of cover. As such, the proposed development will primarily occur within non-functional Category 3 habitat, and is not expected to impact movement opportunities for the species on the property.

Ontario's ESA is a "proponent-driven" process. It is incumbent on a person completing an activity in an area having the potential to be occupied by species protected under the ESA to ensure that the activity does not result in "*kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species*" (ESA Section 9 [1] [a]); or, in keeping with ESA Section 10 (1) "*no person shall damage or destroy the habitat of, (a) a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species; or (b) a species that is listed on the Species at Risk in Ontario List as an extirpated species, if the species is prescribed by the regulations for the purpose of this clause 2007, c. 6, s. 10 (1)*". Under the ESA, "damage" to habitat occurs when the function or usefulness of habitat for a species is impaired. "Destruction" of habitat occurs when function is eliminated (MNRF, 2012). Based on these ESA definitions, provided that the recommended mitigation measures are adhered to, the proposed development will not result in killing, harming, harassing, capture or taking of Blanding's Turtle. Furthermore, the proposed development will not result in damage or destruction of habitat determined to be suitable for the species. The proposed development will not restrict movement opportunities for the species within functional Category 3 habitat.

As such, no potential contraventions of Section 9 or Section 10 of the ESA are expected to result from the proposed development as it relates to potentially suitable habitat for Blanding's Turtle, providing conformance is demonstrated for environmental considerations and mitigation measures described in Section 9.

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

Roosting Habitat

The proposed development will not result in the direct removal or alteration of the woodlands communities in the Natural Core Areas, and as such, there will be no direct impacts to SAR bats associated with these features. A 30m setback from the Natural Core Areas will ensure no indirect impacts occur to SAR bats and the woodland communities they depend upon.

The hedgerows associated with the northern property boundary and any individual trees elsewhere on the property may be associated with incidental day roosting occurrences. As such, the mitigation proposed in Section 9 is intended to avoid accidental contraventions

of Section 9 of the ESA should day roosting occur in the hedgerow. Providing conformance is demonstrated for environmental considerations and mitigations described below, the proposed clearing activities associated with the northern hedgerows are expected to have no negative impact upon SAR bats or the ability for these species to carry out their life processes.

Foraging Habitat

Foraging habitat for bats generally occurs over water, floodplains, in small forest openings, and occasionally in agricultural lands. There is no expectation that the proposed development would result in a significant reduction in insect production, as the proposed development is restricted to active agricultural lands (Figure 3). Large natural areas are retained within the Natural Core Areas, including mature forest and wetlands, which provide a higher quality source of insect populations, and thus foraging opportunities.

All open water habitat and forest openings present prior to development are retained within the Natural Core Area. These areas are expected to continue to provide readily available food sources for any SAR bats associated with the study area. As such, no potential contraventions of Section 10 of the ESA are expected to result from the proposed development as they relate to foraging activity for Species at Risk bats.

7.2 Wetlands

The identified wetland communities are encompassed within the identified Natural Core Area (Figure 2). There is no development proposed within the limits of the Natural Core Area therefore, no direct impacts associated with the Significant Wetland. A self-sustaining vegetated buffer of 30m will remain adjacent to the Natural Core Area (Figure 3). In time, the 30m buffer will provide a screen to the wetland features that will act as a barrier to noise and light associated with the development. It will also help to prevent access and encroachment from adjacent residents into the wetland itself.

The vegetated wetland buffer will aid in the attenuation of any excess nutrients and pollutants including sediments that may migrate towards the wetland community, and improve the water quality and clarity within the wetland itself (Boyd, 2001). As discussed further below, a 30m buffer is more than sufficient to maintain the quality of water by filtering excess sediment/nutrients/pollutants from the surface water runoff.

It is recommended that appropriate rear yard fencing is installed along the lots backing onto these Natural Core Areas to ensure that the future residents will not impact Wetland.

A water balance has been prepared by R.J. Burnside & Associates Ltd. (Burnside) based on wetland catchments. Within this report, catchment 5 includes the west portion of the study area including the lands within the Natural Core Area and Hewitt's Creek and associated tributaries. Catchment 7 includes the lands within the east portion of the study area including the wetland within the Natural Core Area. Catchment 9 includes lands within the northern portion of the site within the Sandy Cove Creek Subwatershed. Without mitigation, there could be a 24% reduction in infiltration (overall). Proposed Low Impact Development (LID) mitigation includes rear roof leader disconnection and discharge to pervious area within residential areas. Under these conditions, the remaining infiltration deficit is approximately 16% of the pre-development recharge with -12%, -9 % and -32% change within catchments 5, 7 and 9 respectively (Burnside, 2024). The reduction of infiltration <15% is not significant and is not expected to have any measurable impacts on the natural heritage features and functions. Furthermore, the increase in runoff (Block 159) will contribute additional surface runoff to the features. A deficit of 32% within catchment 9 could be considered significant, however, it is our understanding that mitigation opportunities are being explored on adjacent lands within the remaining catchment area including a stormwater management facility to be located immediately north of the subject lands with opportunity to offset through additional surface water inputs. Furthermore, it is our understanding that there are no wetlands to be retained within the study area (*i.e.* 120m) to the north of the Hewitt's Central lands. Opportunities to infiltrate additional quantities should be explored.

Dewatering may be required where construction extends below the water table but has not been confirmed. Over the long-term, dewatering activities have the potential to lower the groundwater table across the development area (Burnside, 2024). Mitigation measures could include installation of services below the water table in a manner that prevents redirection of groundwater flow through the use of anti-seepage collars or clay plugs surrounding the pipes (Burnside, 2024). Detailed groundwater impact assessment and monitoring plans will be completed should an Environmental Sector Activity Registry and Permit to Take Water be required (Burnside, 2024).

Providing that conformance is demonstrated for environmental considerations and mitigation described in Section 9 below, there is no expectation that negative ecological impacts to Significant Wetlands would result from the proposed development.

7.3 Significant Woodland

The Significant Woodland on the property is contained within the Natural Core Areas along the west and southeast corner of the property (Figure 2). The proposed development will not result in the removal or alteration of the Natural Core Areas, and as

such, there will be no direct impacts to the Significant Woodland associated with the central Phase 3 lands.

A 30m buffer will remain adjacent to Significant Woodlands to ensure that the residential development will not directly or indirectly impact the functions maintained within these features. A 30m setback from the dripline will ensure protection of the critical root zone for the trees within the woodland.

Currently, active agricultural lands dominate the landscape outside of the Natural Core Area. In time, the 30m buffer adjacent to Significant Woodland will provide a screen to the Natural Core Area features and act as a barrier to noise and light associated with the development.

It is recommended that appropriate rear yard fencing is installed along the lots backing onto these Natural Core Areas to ensure that the future residents will not impact Significant Woodland.

Providing that conformance is demonstrated for environmental considerations and mitigation described in Section 9 below, there is no expectation that negative ecological impacts to Significant Woodland would result from the proposed development.

7.4 Candidate Significant Wildlife Habitat

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

- Bat Maternity Colonies
- Turtle Wintering Areas
- Reptile Hibernaculum
- Waterfowl Nesting Area
- Turtle Nesting Areas
- Chimney Crayfish
- Habitat for Special Concern and Rare Wildlife Species
    - Eastern Wood-pewee, Eastern Ribbonsnake, Snapping Turtle

7.4.1 Bat Maternity Colonies

Bat Maternity Colonies can be found in tree cavities, vegetation and often in buildings (note: buildings are not considered SWH). According to MNRF (2015b), maternity

colonies are located in deciduous or mixed forested communities with large diameter (>25cm DBH height) trees. Based on this information, the woodland communities associated with the Natural Core Areas may provide suitable habitat for Bat Maternity Colonies. For the purpose of this assessment the presence SAR bats and suitable SAR bat habitat is treated as present in lieu of conducting a detailed bat snag inventory and acoustic monitoring.

As illustrated in Figure 3, the proposed development will not result in the removal or alteration of woodlands in the study area. As such, providing conformance is demonstrated for environmental considerations and mitigation described in Section 9 below, there is no expectation that the proposed development will result in a negative impact to Candidate Bat Maternity Colonies.

7.4.2 Turtle Wintering Areas

Turtles will spend winters in waterbodies and wetlands that consist of soft mud substrates with efficient water depths to remain unfrozen, and environments with adequate amounts of dissolved oxygen in the water; theses habitats are referred to as Turtle Wintering Areas. Potential Turtle overwintering habitat is present within the core of St. Paul's Swamp, particularly within areas where standing water is present throughout the year. These areas may have enough water in pockets to prevent freezing in the winter, and have the potential to have suitable substrate based on the surrounding lands.

As illustrated in Figure 3, the proposed development will not result in the direct removal or alteration of the St. Paul's Swamp, nor will any portion of the proposed development occur within 30m of a wetland feature. As such, providing that conformance is demonstrated for environmental considerations and mitigation described in Section 9 below, there is no expectation that the proposed development will result in a negative impact upon the availability of above SWH category.

7.4.3 Reptile Hibernaculum

Similar to the Turtle Wintering habitat, the wetland units within St. Paul's Swamp may provide suitable habitat for snakes in the winter, as wetland communities can provide important over-wintering habitat. No portion of the development is proposed in the Natural Core Area wetlands, and as such, potential function associated with Snake Hibernaculum will be maintained post-development. There is no expectation that a negative ecological impact to the above Candidate SWH would result from the proposed development, providing conformance is demonstrated for environmental considerations and mitigations described in Section 9 below.

7.4.4 Waterfowl Nesting Area

The MAM wetland units within St. Paul's Swamp may provide suitable habitat for waterfowl nesting. No portion of the development is proposed in the Natural Core Area wetlands and natural heritage lands within 120m of these lands will be maintained post-development therefore not limiting this potential SWH function on the landscape.

7.4.5 Turtle Nesting Areas

Although not confirmed, potential turtle nesting areas exist within the Natural Core Area in proximity to potentially suitable turtle habitat. No portion of the development is proposed in the Natural Core Area wetlands nor will any portion of the proposed development occur within 30m of a wetland feature. As such, providing that conformance is demonstrated for environmental considerations and mitigation described in Section 9 below, there is no expectation that the proposed development will result in a negative impact upon the above SWH category.

7.4.6 Chimney Crayfish

A crayfish chimney was observed within the buffer lands to the west of the proposed development (Figure 2 and 3). The anticipated infiltration deficit of 12% in conjunction with an increase in surface runoff is not expected to have any significant impact to this function (Refer to Section 7.2). All development is proposed 30m from the identified Natural Core Area, as such there will be no impact to the crayfish chimney. Provided mitigation measures are implemented, the anticipated infiltration deficit can be mitigated.

7.4.7 Habitat for Special Concern and Rare Wildlife Species

Species-specific surveys to target presence/absence of Special Concern reptiles were not conducted as a part of this assessment. For the purposes of this assessment, presence of Special Concern reptile species (for which suitable habitat may be present) is assumed in lieu of conducting appropriate screenings for these species.

Eastern Wood-pewee

Eastern Wood-pewee inhabits mature deciduous and mixed stands with an open understory. This species is usually associated with woodland clearings and edges within the vicinity of its nest (COSEWIC, 2012). The species was observed within the FOM7-2 community during dawn breeding bird surveys (Table 3). As shown in Figure 3, the proposed development will not encroach the woodland community within the study area, and as such, no negative impact to the above species or their habitats is anticipated as a result of the proposed development, providing that conformance is demonstrated for environmental considerations and mitigations described in Section 9 below.

Snapping Turtle

Snapping Turtle inhabit waterways such as rivers, ponds, and wetlands with slow currents and soft substrate (COSEWIC, 2008). The species prefers shallow waters with an abundance of vegetation. St. Paul's Swamp in addition to the dug pond has the potential to provide suitable habitat for Snapping Turtles. However, due to the anthropogenic nature of the pond, it is not considered SWH for the purposes of this NHE.

The proposed development will not result in the direct removal or alteration of St. Paul's Swamp and a 30m setback from the feature is proposed (Figure 3). Although, the dug pond will be removed post-development the habitat function for Snapping Turtle within the Natural Core Area will not be compromised. As such, it is not anticipated impacts turtles or their habitat will occur, providing conformance is demonstrated for environmental considerations and mitigations described in Section 9 below.

Eastern Ribbonsnake

Eastern Ribbonsnake occupies a variety of wetland habitats with both flowing and standing water present (COSEWIC, 2012b). This species can also be found in vernal pools and moist woodlands (COSEWIC, 2012b). The Natural Core Areas have the potential to provide suitable habitat for this snake species. As shown in Figure 3, no direct removal or alteration will occur to the Natural Core Areas, and all proposed works are setback 30m from the features. As such, it is not anticipated impacts to the Eastern Ribbonsnake will occur, providing conformance is demonstrated for environmental considerations and mitigations described in Section 9 below.

7.5 Fish Habitat

Hewitt's Creek and the Unnamed Tributary.

Based on the proposed concept plan, site alteration with respect to the proposed development will not result in direct alterations to Hewitt's Creek or the unnamed tributary, nor will any portion of the property be subject to disturbance within 30m of these features. Both of these watercourses are contained within the identified Natural Core Area associated with the western edge of the property. The Natural Core Area will be maintained post-development and a naturalized buffer (>30m) will be maintained adjacent to this feature. With a minimum 30m setback, the proposed development conforms to the City's OP and provincial guidelines in the NHRM (OMNR, 2010) with respect to riparian setback recommendations for coldwater creeks. The proposed trails within the Natural Core Area should also not impact fish habitat if the appropriate mitigation measures are implemented. A Trails Impact Study is proposed as per Section 9.3 below, which should outline mitigation measures during detail design to ensure no impacts occur to Hewitt's Creek or the riparian lands as a result of the trail design or construction.

Indirect impacts to fish habitat can still occur from nearby construction activities during development of the site, although these impacts can be mitigated with standard Best Management Practices (BMPs) for working near water. Providing that conformance is demonstrated for environmental considerations and mitigation measures described in Section 9 below, there is no expectation that the proposed development envelope will result in a negative impact to fish or fish habitat under the Federal *Fisheries Act.*

Swale Feature

The swale feature will be contained within the southern EP corridor as illustrated in Figure 3. As in compliance with the OMB decision, the EP corridor is 60m in width as to accommodate floodplain areas, meander belt width, and related channel features associated with the swale (Appendix A). The EP area should include native plantings and natural channel design, of which will be determined at the detailed design stage. Crossing of the EP area and swale feature for future access to the southern Phase 3 lands adjacent to Lockhart Road should follow road ecology principles (*i.e.*, wildlife passage accommodations), in order to maintain the features function and connectivity. As such, it is not anticipated the proposed development will have a negative impact on the southern swale feature post-development, providing conformance is demonstrated for environmental considerations and mitigation described in Section 9 below. It is assumed that the EP corridor and proposed channel feature will continue to convey seasonal flows in both quantity and quality to downstream receiving watercourses post-development. At the detail design stage, a "Fisheries Screening" will need to be completed by a qualified ecologist to determine if DFO review is required to maintain compliance with the Federal *Fisheries Act* during in-water and channel alteration works.

Road Crossings with EP Block

As illustrated on Figure 3, two road crossing are proposed within the EP Block. Details on the crossing structures (size, type, installation method) will be determined during detail design. In addition to the wildlife passage accommodations described previously, the crossing structures will be reviewed to determine potential impacts and mitigation measures related to fish and fish habitat during the design and construction stages. With the current swale feature functioning as indirect fish habitat, the critical function of the crossing structures will be to adequately convey flows (both baseflow and storm flows) to downstream receiving watercourses. The proposed swale and channel feature is to be designed with natural channel design principles, and it is assumed that the crossing structures will also be designed in such a manner to act as a continual natural channel feature. If feasible based on the design, the natural channel design (riffle/run/pool, natural substrate) will continue though the crossing structures. Typically, with the inclusion of wildlife passage accommodations at structure crossings, the structures are

oversized from a fisheries perspective which improves flow and natural channel functions (*i.e.,* meandering profile and bankfull/storm flow accommodation through the structure). Therefore, at a minimum the structures will convey seasonal flow and food sources to downstream receiving habitat. As such, it is not anticipated the proposed crossings will have a negative impact on the swale feature or fish habitat post-development, providing conformance is demonstrated for environmental considerations and mitigation described in Section 9 below. At the detail design stage, a "Fisheries Screening" will need to be completed by a qualified ecologist to determine if DFO review is required to maintain compliance with the Federal *Fisheries Act* during in-water and channel alteration works.

Online Pond Alterations

Based on our understanding of the proposed works, the online pond near the southwest property edge is proposed to be partially infilled to reinstate the channel from the proposed EP Block to the unnamed tributary at the pond outlet. This alteration would effectively create a natural channel corridor from the EP Block lands into the main branch of Hewitt's Creek. The alteration to the pond would result in the permanent alteration of fish habitat along the channel segment being reinstated, and the permanent infilling of the remaining pond sections. The pond measures approximately 30m wide and 30m long, and covers approximately 700m^2. The proposed infilling of direct fish habitat within the pond would require submission to DFO through a Request for Review. Submission to DFO would need to be completed during the detail design stage when exact impacts to fish habitat are known (*i.e.,* channel location, channel design, pond infilling extent, riparian plantings/restoration, construction methodology, etc.). It is commonly understood that online ponds can have detrimental impact to coldwater systems as they function as a thermal sink due to the larger surface water area exposed to the sun. As such, the pond likely discharges warmer water to the unnamed tributary and Hewitt's Creek, both of which are coldwater fish habitat. It is our expectation that natural channel design principles will also be utilized during reinstatement of the channel through the pond location, similar to those used in the EP Block. Overall, removing the online dug pond and reinstating the channel should function as an overall net benefit to fish habitat to the coldwater species in Hewitt's Creek. However, the infilling of direct fish habitat would result in a HADD to fish habitat as defined in the Federal *Fisheries Act*, which will require submission to DFO during detail design.

Stormwater Management

Details on the SWM pond and outlet construction are unknown at this time and will need to be assessed during detail design. At this time, a SWM facility is proposed to the north of the swale feature and will outlet into the swale feature contained within the EP corridor. Due to the receiving watercourse further downstream (*i.e*., Hewitt's Creek) being a coldwater system, measures should be incorporated into the design to reduce

sedimentation and thermal impacts on the receiving watercourse. Typically, design considerations can be incorporated into the SWM pond and outlet design to reduce both thermal and sediment impacts on receiving watercourses to avoid causing a HADD to fish habitat. These mitigation measures are also described in Section 9 below. At the detail design stage, a "Fisheries Screening" will need to be completed by a qualified ecologist to determine if DFO review is required to maintain compliance with the Federal *Fisheries Act* based on the stormwater management design.

8.0 POLICY CONFORMITY

The policy conformity comments on the applicable natural heritage policies within the relevant provincial, municipal and local policy.

Provincial Policy Statement: There is no development proposed within any of the identified significant natural heritage features. Proposed setbacks are sufficient to avoid negative impacts to the natural heritage features and their ecological functions – *conforms*.

Endangered Species Act: Provided the recommended mitigation measures are adhered to as outlined in Section 9.0 of the NHE, there is no expectation that there will be any contravention of Ontario's ESA – *conforms*.

Lake Simcoe Protection Plan and the City of Barrie Official Plan: As a part of the Hewitt's Secondary Plan process, a buffer of 30m from the edge of wetlands and forests has been approved by the OMB and has been accepted by the City and the LSRCA – *conforms*.

Lake Simcoe Region Conservation Authority: A permit will be required from LSRCA prior to any site alteration or development within regulated lands – *conforms*.

Federal Fisheries Act: A "Fisheries Screening" will need to be completed for various proposed works by a qualified ecologist during the detail design stage to determine if DFO review is required to maintain compliance with the Federal *Fisheries Act.* These activities include the design and construction of the swale feature and road crossings through the EP Block, and the Stormwater Management system (specifically the thermal impacts and outlet construction). In addition, the infilling of a portion of the online dug pond to reinstate the channel will require submission to DFO through a Request for Review, which will need to be completed by a qualified ecologist during the detail design stage as well. DFO correspondence and approval will be provided to the LSRCA and/or City following the review process. – *conforms*.

9.0 RECOMMENDATIONS

9.1 Setbacks

Significant Wetlands

A 30m setback should be maintained from the Wetland within the Natural Core Area. This buffer should be delineated with a fence. Wetland communities are to be protected at all times from any excavated and erodible soils entering the feature. This can be accomplished through the use of properly placed, installed and maintained sediment controls (sediment barriers, flow checks (straw or rock), envirobags, *etc.*) as per Section 9.7 below.

A Planting Plan for the 30m wetland setback should be established with native self sustaining vegetation.

Significant Woodlands

A 30m setback should be maintained from the FOM7-2 community within the Natural Core Areas.

A Planting Plan for the woodland setback should be established with native self sustaining vegetation.

9.2 Planting Plan

A Planting Plan should be prepared for the wetland/woodland setbacks and the EP corridor (associated with the swale) composed of natural self-sustaining vegetation species (including native trees, shrubs and perennials). The Planting Plan should aim to enhance and restore the ecological features and functions of lands historically subject to agricultural practices. As such, the proposed setbacks should be enhanced through the plantings of native vegetation to improve filtration of runoff flows entering the wetlands and swale, increase species diversity, provide pollinator resources, minimize establishment of invasive species, and enhance wildlife habitat. The Planting Plan should be prepared at detailed design stage and only include native, non-invasive species noting that nursery cultivars and hybrids are not acceptable. It is our understanding that LSRCA utilizes Conservation Halton Guidelines for Landscaping and Rehabilitation Plans (2024) as a guideline. Protective measures for Chimney Crayfish should be incorporated into the detailed planting plan which will also depict the location of the Chimney Crayfish. Consideration for invasive species management should be acknowledged for the proposed restoration area as invasive plant species were found within the property.

9.3 Trail Impact Study

As per the request of LSRCA, a Trails Impact Study will be required for any trails proposed within the Natural Heritage System.

Azimuth has reviewed the proposed trail locations as per the Trail Connections prepared by JDB Associated Ltd. (Appendix D) the conceptual trail locations are appropriate from a Natural Heritage perspective as they are proposed within either buffer lands or the outer edge of the 60m Environmental Protection corridor. This will negate the need for tree removals and avoid intrusion into the Natural Core Area.

Below is a list of general environmental considerations for the development of the pathway system:

- Where possible, minimize tree removal along the proposed pathway system. Based on the proposed location of the trails, there is no expectation that tree removals will be required;
- Where possible, limit the pathway that traverses through wetland habitat. Where unavoidable, mitigation measures such as a boardwalk could placed along segments of trail that traverses through wetland habitat. Based on the proposed location of the trails, there is no expectation that there will be any intrusion into wetland habitat;
- As per *Ontario's ESA*, development and/or site alteration may not kill, harm or harass any species or its habitat listed as Endangered or Threatened. Black Ash is a species that may require consideration should there be any Black Ash in proximity to the proposed trails within the buffer lands;
- A permit would be required from LSRCA for works within any lands regulated according to O. Reg. 41/24;
- During the design and construction phases of projects, efforts should be made to protect fish and fish habitat in order to comply with the *Fisheries Act*; and,
- Under the current Fisheries and Oceans Canada (DFO) review process, projects are to be evaluated to determine whether a project has the potential to result in the death of fish or a HADD to fish habitat, and whether DFO review is required to obtain either a Letter of Advice or Authorization. Once design plans are finalized, a 'Fisheries Screening' should be completed by a qualified ecologist to determine if DFO review is required.

9.4 Ecological Offsetting

The City of Barrie's Ecological Offsetting Policy recently came into effect (October, 2023). As per the City's Ecological Offsetting Policy, individual trees are eligible for

ecological offsetting compensation. The proponent will need to consult with the City to determine the appropriate offsetting amount for the loss of individual trees associated with the hedgerows. Although tree removals are required within the 60m EP corridor associated with the construction of a natural channel, naturalization in the form of native tree/shrub planting will occur subsequent to earthworks therefore replacing the trees that were temporarily lost.

9.5 Species at Risk

9.5.1 General SAR Recommendations

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.

9.5.2 Worker Training

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

9.5.3 Black Ash

Consideration for Black Ash may be required within the Trail Impact Study should protected Black Ash be identified in proximity to the proposed trail within the 30m buffer lands.

Should Black Ash be observed within 30m of the proposed trail, it is recommended that further species-specific investigation in the form of a Black Ash Health Assessment to confirm their health status and the extent to which any of the individual trees meet the criteria for protection under ESA O. Reg. 6/24 (MECP, 2024a) and 7/24 (MECP, 2024b).

9.5.4 Turtle Exclusion Fencing

It is recommended that sediment and erosion controls (silt fence) be installed around the Natural Core Area, prior to lot clearing and grading. This will help to delineate the work area and will prevent wildlife, including potential turtles from entering the work areas (refer to the MNRF Species at Risk Branch Best Practices Technical Note for Reptile and Amphibian Exclusion Fencing (July 2013)).

9.6 Migratory Breeding Birds, Bats and Monarch

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. 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 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.

Activities involving the removal of Common Milkweed plants should be avoided between (June 1 through September 30 of any given year, during the active season for Monarch. Where clearing activities must proceed within this window, Common Milkweed plants should be inspected for Monarch caterpillars or larvae prior to removal. If caterpillars or larvae are present, they should be moved to a Common Milkweed plant outside of the construction area, under the direction of a qualified professional.

9.7 Sediment and Erosion Controls

Diligent application of sediment and erosion controls (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. A double ESC fence with straw bales between will be required adjacent to any natural area. It is recommended that ESCs be maintained until vegetation is re-established post-construction.

The following Best Management Practices (BMPs) are recommended as part of an ESC plan:

- Prior to the commencement of property works silt fencing (and other ESCs as needed) should be applied around the Natural Core Area and buffer, and EP corridor associated with the swale. As requested by LSRCA, a double erosion and sediment control fence with straw bales between will be required adjacent to any natural areas (Natural Core Areas and EP Corridor);
- All installed ESCs should be regularly monitored to ensure they are functioning as intended. If deficiencies are identified, they should be rectified in a timely manner. Ongoing monitoring/maintenance is to occur until soils are stabilized and the site is deemed to be stable after construction;
- Materials storage on the property (*i.e.*, soil stockpiles) is to be located over 30m from natural heritage features, and is to be contained with ESCs. Soil stockpiles are to be sloped appropriately to mitigate the potential for nesting by Bank Swallows;
- Minimize vegetation removal, where possible, within the development area;
- Bare areas should be stabilized with topsoil and seed or sod as soon as possible following construction; and,
- All machinery and equipment must have regard for surrounding natural heritage features.

9.8 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 required 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 Spills Action Centre (SAC) at 1-800-268-6060.

As per Section 9.7, silt fencing is to be installed to prevent accidental intrusion of machinery operations into adjacent undisturbed natural areas outside of designated work areas.

Ensure all planting equipment are clean and free of invasive species (e.g. Common Reed [*Phragmites australis*] before entering the subject property.

9.9 Pond Decommissioning

9.9.1 Wildlife Collector's Permit

A Wildlife Collector's Permit will be required from the MNR prior to the decommissioning of the online pond and channel reinstatement project. The permit is required in order to facilitate the re-location of local wildlife, specifically turtles and frogs. Methodologies, timing and proposed re-location should be undertaken by a qualified ecologist and will be described and outlined in detail as part of this permit. It is recommended that wildlife be re-located within the Natural Heritage Core to similar suitable habitat such as that found at Turtle Survey Station 2 (Figure 2) as approved by MNR. Should any SAR be encountered, MNR (and MECP) will be contacted to determine how to proceed.

9.9.2 Licence to Collect Fish for Scientific Purposes Permit

Similarly, a fish salvage will need to be completed by qualified ecologists and a Licence to Collect Fish for Scientific Purposes (LSCFSP) will need to be acquired from MNR.

9.10 Fish and Fish Habitat

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

- All ESC measures are to be installed prior to any ground disturbance, and shall be maintained until all disturbed soils have been restored and stabilized following

construction. With respect to fish habitat, silt fencing should be applied along the length of the Natural Core Area to contain site runoff and avoid any unintentional intrusion into the setback/buffer area to direct fish habitat. As requested by LSRCA, a double erosion and sediment control fence with straw bales between will be required adjacent to any natural areas (Natural Core Areas and EP Corridor);

- 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 watercourse;
- All site disturbance should be minimized to the extent possible;
- Disposal of material should occur in a timely fashion to minimize risk of entry into the watercourse; and,
- All machinery maintenance/refueling is recommended to maintain a minimum distance of 30m from retained woodlands and wetland, and fish habitat, to prevent accidental spillage of deleterious substances.

Swale Feature and Road Crossings within EP Block

Once construction and restoration details along the swale feature and road crossings details within the EP corridor are known, a 'Fisheries Screening' should be completed by a qualified ecologist to determine potential impacts to fish habitat, and to provide mitigation measures to avoid a HADD to fish habitat. These mitigation measures will include specific details related to in-water work for the swale and crossing construction, such as bypass pumping requirements, substrate recommendations, riparian planting input, and timing window restrictions. As per the OMB decision, the incorporation of native plantings and natural channel design measures in the EP corridor should mitigate long-term residual impacts to fish habitat. However, the need for DFO review can only be determined during the detail design stage once impacts are known. If necessary, a DFO submission through a Request for Review will be completed at the detail design stage.

Online Pond Alterations

Once construction, channel reinstatement, and restoration details for the pond alteration work is known, a Request for Review should be completed by a qualified ecologist and submitted to DFO. The Request for Review will include a summary of known impacts to fish habitat, construction methodology, and mitigation/restoration measures. These mitigation measures will include specific details related to in-water work and construction activities, such as bypass pumping requirements, substrate recommendations, riparian planting input, and timing window restrictions. Due to the

downstream coldwater habitat, it is assumed that a coldwater timing window would be applicable for any in-water work at the pond location (i.e., no in-water work permitted from September 30-July 1). Fisheries timing windows should be confirmed during detail design with MNR.

Stormwater Management Pond

Details on the SWM pond and outlet design are unknown at this time and will need to be assessed once the design has been advanced. If a SWM pond outlet channel is constructed, measures should be incorporated into the design to reduce sedimentation and thermal impacts on the receiving watercourse. Stormwater runoff can be warmed significantly as it drains off warm pavement and experience further warming as it sits in a pond. Design considerations can include, but not be limited to, the following:

- Bottom-draw outlet design to discharge cool water along the pond bottom prior to warm surface water;
- Riparian plantings along the pond and outlet channel 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 pond outlet to reduce flows rates and potential scouring at the receiving channel outlet location.

During the detail design stage, a 'Fisheries Screening' should be completed by a qualified ecologist to determine potential impacts of the SWM design and outlet construction on nearby fish habitat, and to provide mitigation measures to avoid a HADD to fish habitat. During the detail design stage, the need for DFO review can also be determined once the impacts of the SWM pond discharge and outlet construction are known. If necessary, a DFO submission through a Request for Review is completed at the detail design stage.

10.0 CONCLUSIONS

Based upon our analysis, it is concluded that the environmental conditions are not limiting to the proposed development through incorporation of the environmental protection measures described in Section 9 of this report.

At this time, our findings are summarized as follows:

- The proposed development is consistent with the applicable policies of the Provincial Policy Statement, OMB decision, Official Plan for the City of Barrie, and direction provided by the LSRCA.

- An analysis of the proposed buffers has been undertaken and it has been determined that the proposed buffers adjacent to the Significant Natural Heritage Features within the Natural Core Area are sufficient to protect the overall form and ecological functions for which the Natural Heritage System has been identified.

- Our impact assessment has given full consideration to the habitat requirements of all Species at Risk assumed and documented to occur in the area. Provided that the appropriate measures are adhered to, results indicate the proposed development will not result in negative impacts to habitat of confirmed/potential Species at Risk, providing conformance is demonstrated to mitigation measures described in Section 9.

- The proposed works are not expected to negatively impact the ecological functions of the Significant Wetland, Significant Woodland or Candidate SWH if the appropriate mitigation measures outlined in Section 9 are followed.

- Alterations to the dug online pond to reinstate the channel will result in permanent infilling of direct fish habitat. Therefore, submission to DFO through a Request for Review will be required during the detail design stage for these works. No other impacts to fish or fish habitat (*i.e.*, Hewitt's Creek and the unnamed tributary) are expected to be negatively impacted as a result of the proposed works if the appropriate mitigation measures described in Section 9 are followed during construction.

- A 'Fisheries Screening' will need to be completed during detail design to determine impacts to fish habitat and DFO reporting requirements (if any) with respect to the SWM pond outlet construction and in-water works along the swale, EP corridor, and EP road crossings.

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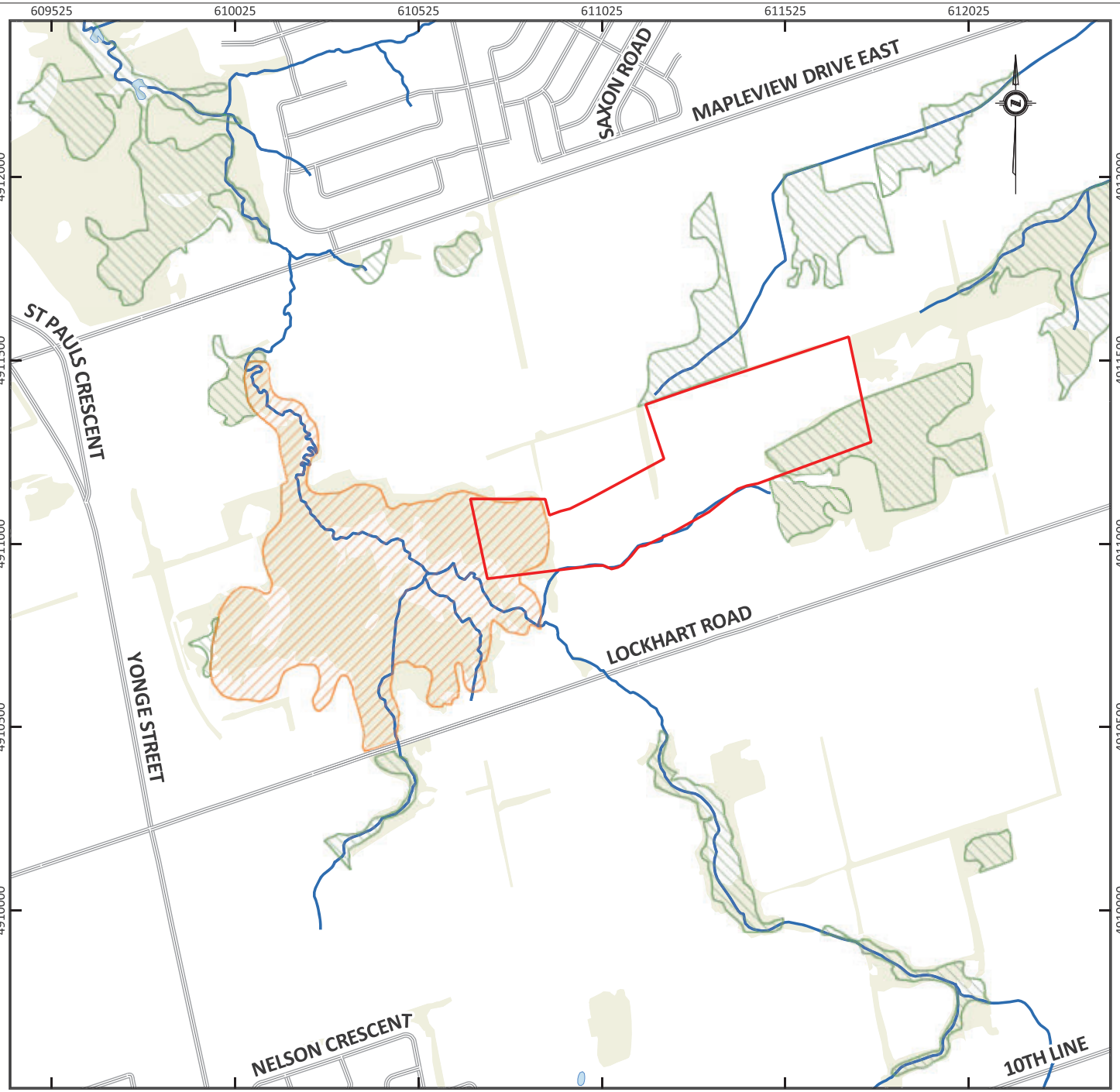

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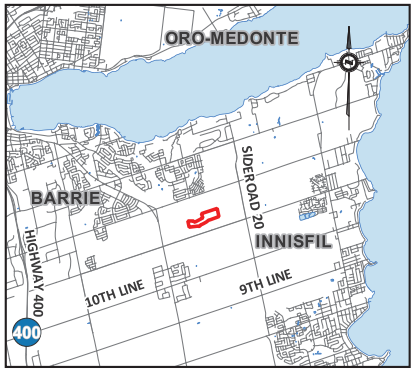
LEGEND

- Road
- Permanent Watercourse
- Waterbody
- Unevaluated Wetland
- Evaluated Wetland
- Wooded Area

REGIONAL MAP

SCALE 1:250000



0 0.25 0.5 0.75

KILOMETERS

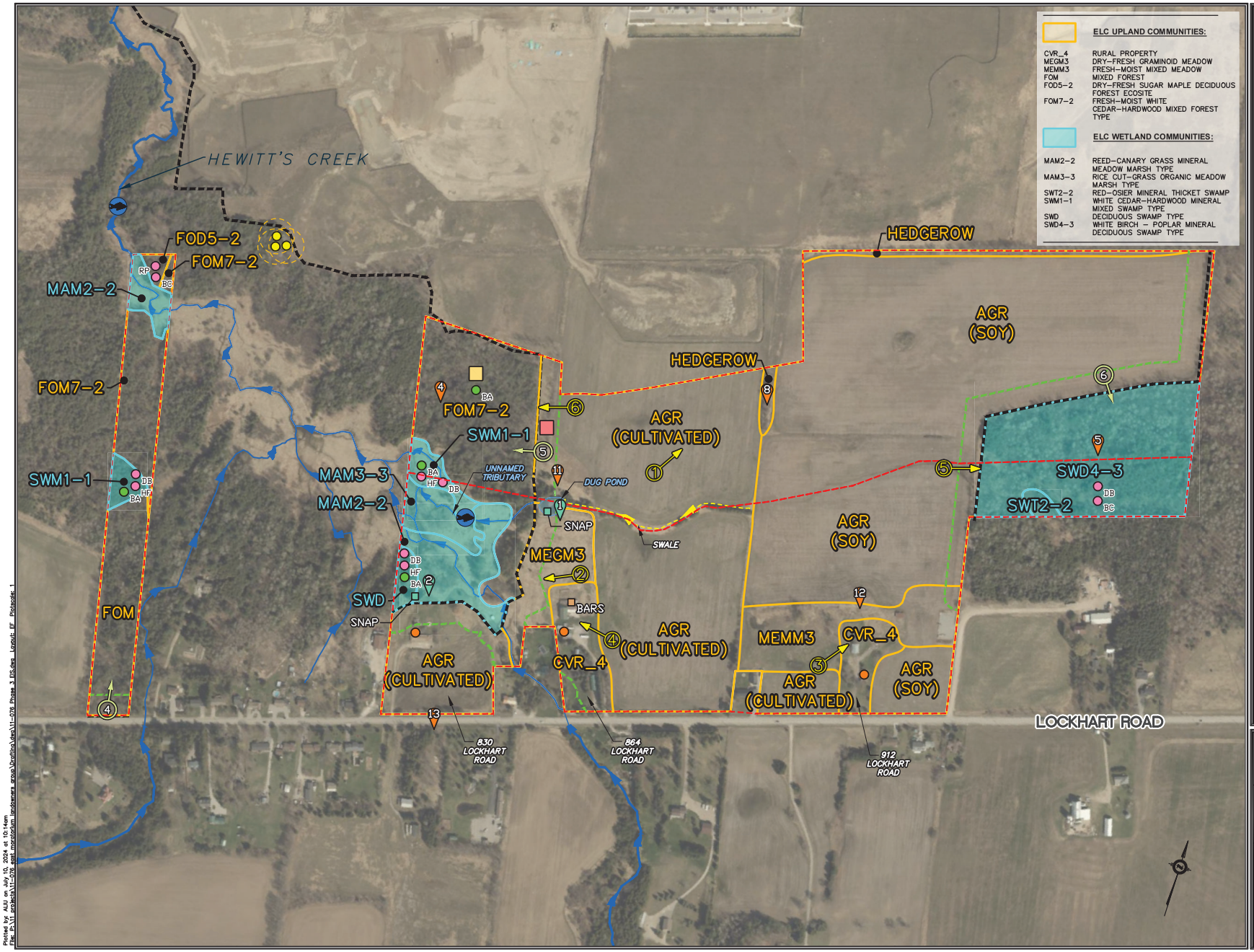
AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

HEWITT'S GATE PHASE 3 SITE LOCATION

HEWITT'S GATE CENTRAL
PHASE 3 NHE

DATE ISSUED:	JULY 2024
CREATED BY:	A.L.
PROJECT NO.:	11-076c
BASE MAP:	MNRF

Figure No.
1



LEGEND:

- PROPERTY BOUNDARY (PHASE 3 LANDS)
- PERMANENT WATERCOURSE/ DIRECT FISH HABITAT
- EPHEMERAL DRAINAGE FEATURE/ INDIRECT FISH HABITAT
- COLDWATER THERMAL REGIME
- EVALUATED WETLAND – ST. PAULS SWAMP (MNRF, 2022)
- AMPHIBIAN SURVEY STATION
- PHOTO LOCATIONS
- CAPPED CHIMNEY
- BIRD SURVEY STATION
- TURTLE SURVEY STATION
- BARS BARN SWALLOW (SPECIAL CONCERN)
- CHIMNEY CRAYFISH
- EASTERN WOOD-PEWEE
- SNAP SNAPPING TURTLE (SPECIAL CONCERN)

LSRCA WATERSHED RARE SPECIES NOTE 1

- HF HEARTLEAF FOAMFLOWER
- DB DEWBERRY
- RP RED PINE
- BC BRISTLY BLACK CURRENT
- BA BLACK ASH (Endangered) NOTE 1
- BUTTERNUT (Endangered) & 25m SETBACK
- SIGNIFICANT NATURAL HERITAGE FEATURE
- BUFFER TO SIGNIFICANT NATURAL HERITAGE FEATURE (NATURAL CORE AREA)

NOTES:

1. SPECIES WAS DOCUMENTED WITHIN THE COMMUNITY AND DOES NOT DEPICT THE SPECIFIC LOCATION OR NUMBER OF TREES/SHRUBS.

0 125.00 250.0

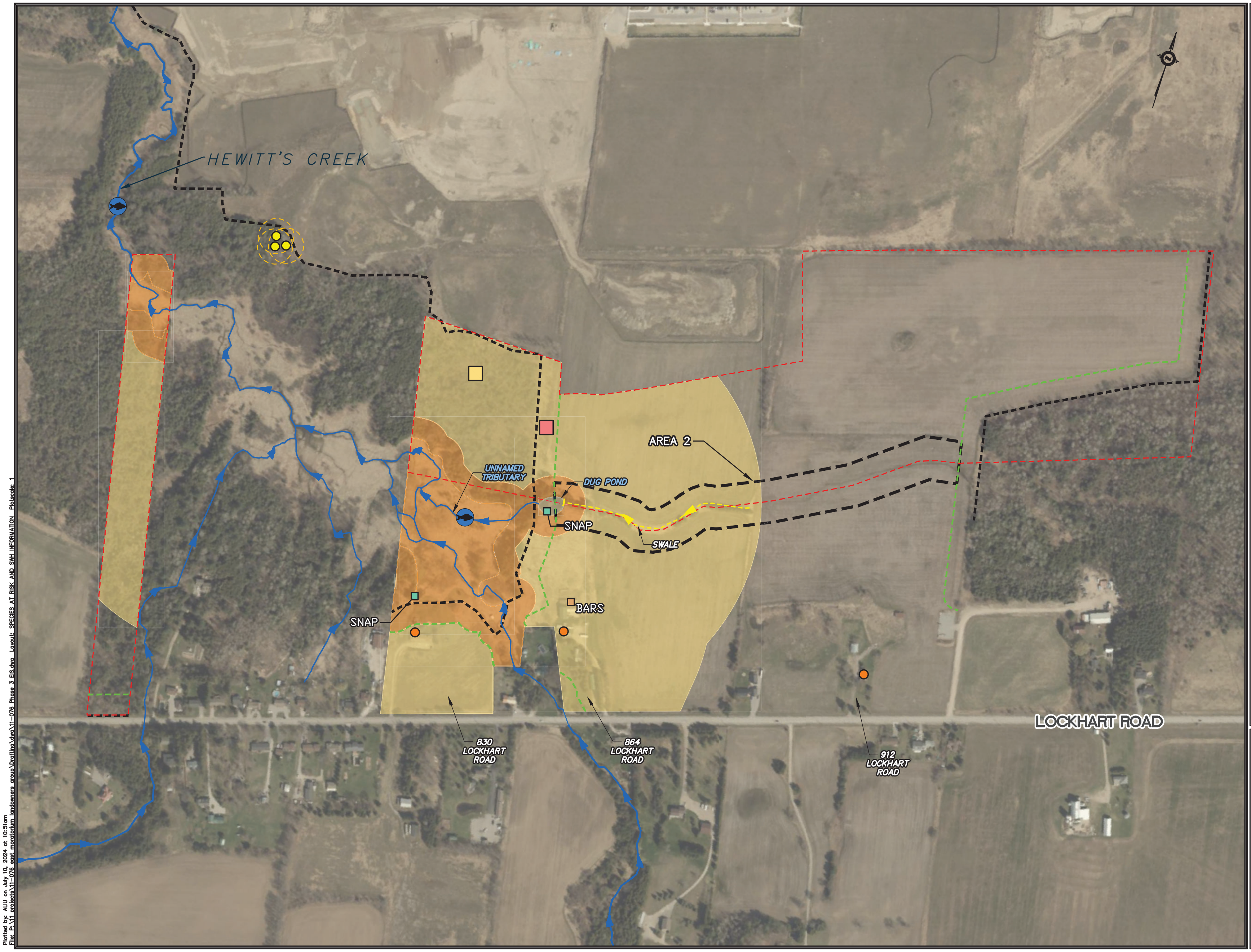
HORIZONTAL SCALE 1:5000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

ENVIRONMENTAL FEATURES

HEWITT'S GATE CENTRAL PHASE 3 NHE

DATE ISSUED:	JULY 2024	Figure No.
CREATED BY:	A.L.	2
PROJECT NO.:	11-076c	
REFERENCE:	SIMCOE COUNTY	



LEGEND:

- PROPERTY BOUNDARY (PHASE 3 LANDS)
- PERMANENT WATERCOURSE/ DIRECT FISH HABITAT
- EPHEMERAL DRAINAGE FEATURE/ INDIRECT FISH HABITAT
- COLDWATER THERMAL REGIME
- CAPPED CHIMNEY
- BARS — BARN SWALLOW (SPECIAL CONCERN)
- CHIMNEY CRAYFISH
- EASTERN WOOD-PEWEE
- SNAP — SNAPPING TURTLE (SPECIAL CONCERN)
- BUTTERNUT (END) & 25m SETBACK
- SIGNIFICANT NATURAL HERITAGE FEATURE
- BUFFER TO SIGNIFICANT NATURAL HERITAGE FEATURE (NATURAL CORE AREA)

BLANDING'S HABITAT RANKING:
(AEC, MAY 2023)

- CATEGORY 2 – SUITABLE WETLAND/ WATERBODY PLUS 30m
- CATEGORY 3 – 30m TO 250m FROM CATEGORY 2

0 125.00 250.0
HORIZONTAL SCALE 1:5000

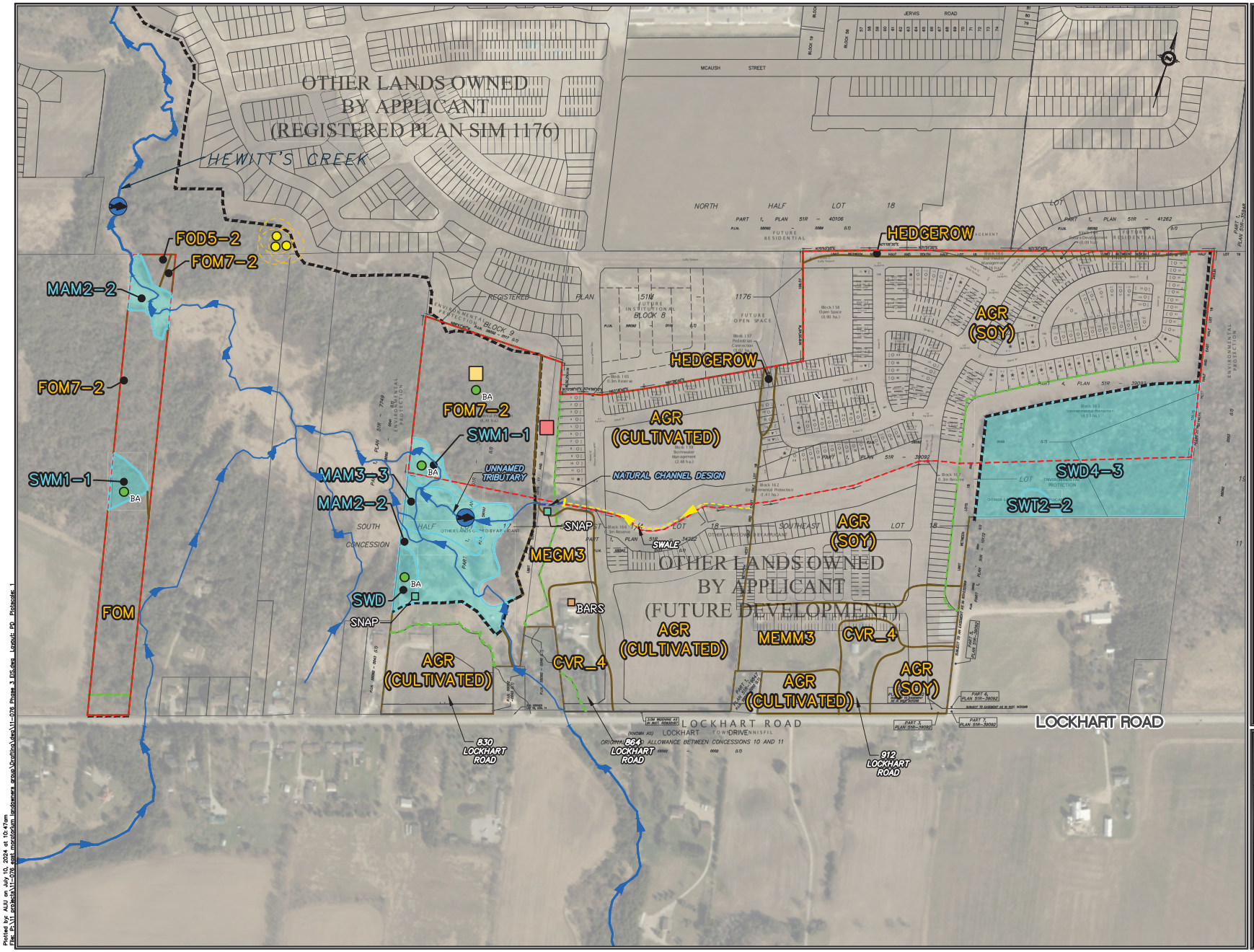
AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

SPECIES AT RISK AND SWH INFORMATION

HEWITT'S GATE CENTRAL PHASE 3 NHE

DATE ISSUED:	JULY 2024	Figure No.
CREATED BY:	A.L.	2b
PROJECT NO.:	11-076c	
REFERENCE:	SIMCOE COUNTY	

Plotted by: ALU on July 10, 2024 at 10:51am
File: P:\11 projects\11-076 east moratorium landowners group\Drafting\dwg\11-076 Phase 3 EIS.dwg Layout: SPECIES AT RISK AND SWH INFORMATION Plotscale: 1



LEGEND:

- PROPERTY BOUNDARY (PHASE 3 LANDS)
- PERMANENT WATERCOURSE/ DIRECT FISH HABITAT
- EPHEMERAL DRAINAGE FEATURE/ INDIRECT FISH HABITAT
- COLDWATER THERMAL REGIME
- BA — BLACK ASH (Endangered)[NOTE 1]
- BARS — BARN SWALLOW (SPECIAL CONCERN)
- CHIMNEY CRAYFISH
- EASTERN WOOD-PEWEE
- SNAP — SNAPPING TURTLE (SPECIAL CONCERN)
- BUTTERNUT (Endangered) & 25m SETBACK
- SIGNIFICANT NATURAL HERITAGE FEATURE
- BUFFER TO SIGNIFICANT NATURAL HERITAGE FEATURE (NATURAL CORE AREA)

ELC UPLAND COMMUNITIES:

CVR_4	RURAL PROPERTY
MEGM3	DRY-FRESH GRAMINOID MEADOW
MEMM3	FRESH-MOIST MIXED MEADOW
FOM	MIXED FOREST
FOD5-2	DRY-FRESH SUGAR MAPLE DECIDUOUS FOREST ECOSITE
FOM7-2	FRESH-MOIST WHITE CEDAR-HARDWOOD MIXED FOREST TYPE

ELC WETLAND COMMUNITIES:

MAM2-2	REED-CANARY GRASS MINERAL MEADOW MARSH TYPE
MAM3-3	RICE CUT-GRASS ORGANIC MEADOW MARSH TYPE
SWT2-2	RED-OSIER MINERAL THICKET SWAMP
SWM1-1	WHITE CEDAR-HARDWOOD MINERAL MIXED SWAMP TYPE
SWD	DECIDUOUS SWAMP TYPE
SWD4-3	WHITE BIRCH - POPLAR MINERAL DECIDUOUS SWAMP TYPE

- NATURAL CHANNEL DESIGN

NOTES:

1. BLACK ASH SPECIES WAS DOCUMENTED WITHIN THE COMMUNITY AND DOES NOT DEPICT THE SPECIFIC LOCATION OR NUMBER OF TREES/SHRUBS.

0 125.00 250.0

HORIZONTAL SCALE 1:5000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

PROPOSED DEVELOPMENT

HEWITT'S GATE CENTRAL PHASE 3 NHE

DATE ISSUED:	JULY 2024	Figure No.
CREATED BY:	A.L.	3
PROJECT NO.:	11-076c	
REFERENCE:	SIMCOE COUNTY	

Plotted by: ALU on July 10, 2024 at 10:47am
File: P:\11 projects\11-076 east moraine group\Drafting\Figs\11-076 Phase 3 EIS.dwg Layout: PD Plotscale: 1

Table 1: Ecological Land Classification (ELC) for Hewitt's Gate Central Phase 3 NHE, Barrie, ON

AEC11-076c

Ecological Land Classification						
System	**Community Class**	**Community Series**	**Ecosite**	**Vegetation Type**	**Canopy Composition**	**Ground Cover**
Terrestrial	ME, Meadow	MEM, Mixed Meadow	MEMM3, Fresh-Moist Mixed Meadow		White Ash, Green Ash, and Balsam Poplar were sporadically observed.	Occurance of Smooth Brome Grass, goldenrods, Tufted Vetch, Bird'sfoot Trefoil, Common Milkweed, Wild Carrot, Canada Thistle, Reed Canary Grass, Field Horsetail and Common Ragweed. Occurance of shrubs including Staghorn Sumac, Red-osier Dogwood, Thicket Creeper, Riverbank Grape, and Manitoba Maple.
Terrestrial	ME, Meadow	MEG, Graminoid Meadow	MEGM3, Dry-Fresh Graminoid Meadow		White and Green Ash were sporadically observed.	Dominated by Orchard Grass, Smooth Brome Grass, Common Timothy Grass, and Giant Goldenrod. Occasional Tufted Vetch, Birds-foot Trefoil, Black Raspberry, Common Mullein, Ostrich Fern, Wild Mock-cucumber, Common Milkweed, Common Ragweed, Chicory, Common Motherwort, White Meadowsweet, and Wild Carrot. Occurrence of shrubs, including Manitoba Maple, Riverbank Grape, Thicket Creeper, and willow species.
Terrestrial	FO, Forest	FOM, Mixed Forest			Occurrence of Sugar Maple, Norway Maple, White Birch, Eastern White Cedar, American Beech, Eastern Hemlock, White Ash, Wild Black Cherry, Common Apple, Large-toothed Aspen, Balsam Poplar, Quaking Aspen and American Basswood	Occurrence of New England Aster, Graceful Sedge, Herb-robert and Hooked Agrimony
Terrestrial	FO, Forest	FOD, Deciduous Forest	FOD5, Dry-Fresh Sugar Maple Deciduous Forest	FOD5-2, Dry-Fresh Sugar Maple-Beech Deciduous Forest	Canopy dominated by Sugar Maple, with occurrence of American Beech and Ironwood. Occasional Quaking Aspen, White Ash, White Birch, Red Oak, Basswood, Black Locust and Red Pine.	Occurrence of Graceful Sedge, Bristly Currant, Bloodroot, Virginia Waterleaf, Mountain Rice Grass, Helleborine, Blue-stemmed Goldenrod, Sharp-lobed Hepatica and Drooping Woodland Sedge
Terrestrial	FO, Forest	FOM, Mixed Forest	FOM7, Fresh-Moist White Cedar-Hardwood Mixed Forest	FOM7-2, Fresh-Moist White Cedar-Hardwood Mixed Forest	Dominated by White Cedar and Quaking Aspen. Occurrence of Balsam Poplar, White Birch, Sugar Maple, Basswood, White Ash, White Pine, Black Ash, Alternate-leaved Dogwood, Black Cherry	Milkweed, Bracken Fern, and mixed graminoids.
Wetland	MA, Marsh	MAM, Meadow Marsh	MAM2, Mineral Meadow Marsh	MAM2-2, Reed-canary Grass Graminoid Mineral Meadow Marsh	N/A	Dominated by Reed-canary Grass, with occasional goldenrod species, such as Canada Goldenrod. Occasional Spotted Joe-pye Weed, Broadleaf Cattail, Creeping Thistle. Occurrence of shrubs, including Manitoba Maple, Riverbank Grape, Pussy Willow, Highbush Cranberry and Eastern White Cedar.
Wetland	MA, Marsh	MAM, Meadow Marsh	MAM3, Organic Meadow Marsh	MAM3-3, Rice Cut-grass Graminoid Organic Meadow Marsh	N/A	Dominated by Rice Cut-grass, presence of several graminoid species.
Wetland	SW, Swamp	SWT, Thicket Swamp	SWT2, Mineral Thicket Swamp	SWT2-2, Willow Mineral Thicket Swamp	Dominated by several species of willows.	N/A
Wetland	SW, Swamp	SWM, Mixed Swamp	SWM1, White Cedar Mineral Mixed Swamp	SWM1-1, White Cedar-Hardwood Mineral Mixed Swamp	Canopy dominated by White Cedar and Black Ash. Occurrence of White and Yellow Birch, American Beech, Basswood, Quaking Aspen and Buckthorn. Understory with occurrence of Alternate-leaved Dogwood, Red-osier Dogwood and Highbush Cranberry	Dwarf Red Raspberry, Sensitive Fern, Royal Fern, Ladyfern, wood ferns, Spotted Joe-pye Weed, Spotted Jewelweed, Heartleaf Foamflower, Broadleaf Cattail, Bulblet Fern, Coltsfoot, Wild Lily-of-the-Valley, Swamp Aster, Monkey Flower, goldenrods and horsetails.
Wetland	SW, Swamp	SWD, Deciduous Swamp			Occurrence of Green Ash, Black Ash, Red Maple, Silver Maple, Balsam Poplar, Quaking Aspen, American Basswood, Paper Birch and Yellow Birch. Understory with Highbush Cranberry, Gray Dogwood, Red-osier Dogwood, Choke Cherry, Eastern White Cedar and Eastern Hemlock	Occurrence of Spotted Joe-pye Weed, Canada Goldenrod, Starved Aster, Spotted Jewelweed, Northeastern Ladyfern, Bulblet Fern, Crested Woodfern, Marginal Woodfern, Sensitive Fern, Royal Fern, horsetails, Fowl Managrass and mixed graminoids.

Table 1: Ecological Land Classification (ELC) for Hewitt's Gate Central Phase 3 NHE, Barrie, ON

AEC11-076c

Ecological Land Classification						
System	**Community Class**	**Community Series**	**Ecosite**	**Vegetation Type**	**Canopy Composition**	**Ground Cover**
Wetland	SW, Swamp	SWD, Deciduous Swamp	SWD4, Mineral Deciduous Swamp	SWD4-3, White Birch-Poplar Mineral Deciduous Swamp	Dominated by Quaking Aspen, with abundance of Balsam Poplar. Occurrence of American Elm, Eastern Hemlock, White Cedar, Green Ash, White Pine, White Spruce, White Birch, Red and Silver Maples. Understory occurrence of Chokecherry, Gray Dogwood, Red-osier Dogwood, Buckthorn	Dominated by Sensitive Fern. Occurrence of Bristly Black Currant, Dwarf Red Raspberry, horsetails, and mixed graminoids.

Table 2 - Vascular Plant Species List, Hewitt's Gate Central Phase 3 NHE, Barrie, ON

AEC11-076c

			ELC Units											Conservation Status			
Family	**Scientific Name**	**Common Name**	**FOM**	**FOM7-2**	**FOD5-2**	**MAM2-2**	**MAM3-3**	**MEMM3**	**MEGM3**	**SWM1-1**	**SWD**	**SWD4-3**	**SWT2-2**	**LSRCA**	**S-Rank**	**G-Rank**	**Provincial Status**
Aceraceae	*Acer negundo*	Manitoba Maple				X		X	X					+	S5	G5	
Aceraceae	*Acer platanoides*	Norway Maple	X											+	SE5	GNR	
Aceraceae	*Acer rubrum*	Red Maple									X	X			S5	G5	
Aceraceae	*Acer saccharinum*	Silver Maple									X	X			S5	G5	
Aceraceae	*Acer saccharum*	Sugar Maple	X	X	X										S5	G5	
Anacardiaceae	*Rhus Typhina*	Staghorn Sumac						X							S5	G5	
Apiaceae	*Daucus carota*	Wild Carrot						X	X					+	SE5	GNR	
Asclepiadaceae	*Asclepias syriaca*	Common Milkweed		X				X	X						S5	G5	
Asteraceae	*Ambrosia artemisiifolia*	Common Ragweed						X	X					(+)	S5	G5	
Asteraceae	*Arctium minus*	Common Burdock							X					+	SE5	GNR	
Asteraceae	*Cichorium intybus*	Chicory						X	X					+	SE5	GNR	
Asteraceae	*Cirsium arvense*	Creeping Thistle				X		X						+	SE5	G5	
Asteraceae	*Cirsium vulgare*	Bull Thistle						X						+	SE5	GNR	
Asteraceae	Cirsium sp.	Thistle sp.							X								
Asteraceae	Eupatorium perfoliatum	Common Boneset						X							S5	G5	
Asteraceae	*Euthamia graminifolia*	Grass-leaved Goldenrod				X				X					S5	G5	
Asteraceae	*Eutrochium maculatum var. maculatum*	Spotted Joe Pye Weed				X		X		X	X				S5	G5T5	
Asteraceae	*Solidago caesia*	Blue-stemmed Goldenrod			X										S5	G5	
Asteraceae	*Solidago canadensis var. canadensis*	Canada Goldenrod				X				X	X				S5	G5T5	
Asteraceae	*Solidago gigantea var. gigantea*	Giant Goldenrod						X	X						S5	G5T5	
Asteraceae	*Solidago sp.*	Goldenrod								X						N/A	
Asteraceae	*Sonchus arvensis ssp. arvensis*	Field Sow-thistle									X			+	SE5	GNRTNR	
Asteraceae	*Symphyotrichum lateriflorum*	Starved Aster									X				S5	G5	
Asteraceae	*Symphyotrichum novae-angliae*	New England Aster	X												S5	G5	
Asteraceae	*Symphyotrichum puniceum*	Swamp Aster								X					S5	G5	
Asteraceae	*Taraxacum officinale*	Common Dandelion						X	X					+	SE5	G5	
Asteraceae	*Tussilago farfara*	Colt's-foot						X		X	X			+	SE5	GNR	
Balsaminaceae	*Impatiens capensis*	Spotted Jewelweed								X	X				S5	G5	
Betulaceae	*Betula alleghaniensis*	Yellow Birch		X						X	X				S5	G5	
Betulaceae	*Betula papyrifera*	Paper Birch	X	X	X					X	X	X			S5	G5	
Betulaceae	*Ostrya virginiana*	Eastern Hop-hornbeam			X										S5	G5	
Caprifoliaceae	*Viburnum opulus var. americanum*	Highbush Cranberry				X				X	X			+	S5	G5T5	
Cornaceae	*Cornus alternifolia*	Alternate-leaved Dogwood		X						X					S5	G5	
Cornaceae	*Cornus racemosa*	Gray Dogwood									X	X			S5	G5	
Cornaceae	*Cornus sericea*	Red-osier Dogwood				X		X		X	X	X			S5	G5	
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar	X	X		X				X	X	X			S5	G5	
Cucurbitaceae	Echinocystis lobata	Wild Mock-cucumber							X						S5	G5	
Cyperaceae	*Carex arctata*	Black Sedge			X										S5	G5	
Cyperaceae	*Carex gracillima*	Graceful Sedge	X		X										S5	G5	
Cyperaceae	Carex vulpinoidea	Fox Sedge						X	X						S5	G5	
Cyperaceae	*Carex sp.*	Sedge						X			X	X				N/A	
Cyperaceae	*Scirpus atrovirens*	Dark-green Bulrush						X							S5	G5	
Dennstaedtiaceae	*Pteridium aquilinum*	Bracken Fern		X											S5	G5	

Table 2 - Vascular Plant Species List, Hewitt's Gate Central Phase 3 NHE, Barrie, ON

			ELC Units											Conservation Status			
Family	**Scientific Name**	**Common Name**	**FOM**	**FOM7-2**	**FOD5-2**	**MAM2-2**	**MAM3-3**	**MEMM3**	**MEGM3**	**SWM1-1**	**SWD**	**SWD4-3**	**SWT2-2**	**LSRCA**	**S-Rank**	**G-Rank**	**Provincial Status**
Dryopteridaceae	*Athyrium filix-femina var. angustum*	Northeastern Ladyfern								X	X				S5	G5T5	
Dryopteridaceae	*Cystopteris bulbifera*	Bulblet Fern								X	X				S5	G5	
Dryopteridaceae	*Dryopteris cristata*	Crested Woodfern									X				S5	G5	
Dryopteridaceae	*Dryopteris marginalis*	Marginal Woodfern									X				S5	G5	
Dryopteridaceae	*Dryopteris sp.*	Woodfern sp.								X							
Dryopteridaceae	Matteuccia struthiopteris	Ostrich Fern							X						S5	G5	
Dryopteridaceae	*Onoclea sensibilis*	Sensitive Fern								X	X	X			S5	G5	
Equisetaceae	*Equisetum arvense*	Field Horsetail						X			X				S5	G5	
Equisetaceae	Equisetum hyemale	Common Scouring-rush						X							S5	G5	
Equisetaceae	*Equisetum sp.*	Horsetail								X	X	X					
Fabaceae	Lotus corniculatus	Garden Bird's-foot Trefoil						X	X					+	SE5	GNR	
Fabaceae	*Robinia pseudoacacia*	Black Locust			X									+	SE5	G5	
Fabaceae	*Vicia cracca*	Tufted Vetch						X	X					+	SE5	GNR	
Fagaceae	*Fagus grandifolia*	American Beech	X		X					X	X				S4	G5	
Fagaceae	*Quercus rubra*	Northern Red Oak			X										S5	G5	
Geraniaceae	*Geranium robertianum*	Herb-Robert	X											+	S5	G5	
Grossulariaceae	*Ribes lacustre*	Bristly Black Currant			X							X		W	S5	G5	
Hydrophyllaceae	*Hydrophyllum virginianum*	Virginia Waterleaf			X										S5	G5	
Lamiaceae	Leonurus cardiaca	Common Motherwort							X					+	SE5	GNR	
Lamiaceae	*Prunella vulgaris ssp. lanceolata*	Self-heal	X											(+)	S5	G5T5	
Liliaceae	*Maianthemum canadense*	Wild Lily-of-the-valley								X	X				S5	G5	
Lythraceae	Lythrum salicaria	Purple Loosestrife						X						+	SE5	G5	
Oleaceae	*Fraxinus americana*	White Ash	X	X	X			X	X						S4	G4	
Oleaceae	*Fraxinus nigra*	Black Ash		X						X	X				S4	G5	END
Oleaceae	*Fraxinus pennsylvanica*	Green Ash						X	X		X	X			S4	G4	
Orchidaceae	*Epipactis helleborine*	Eastern Helleborine			X						X			+	SE5	GNR	
Osmundaceae	*Osmunda regalis*	Royal Fern								X	X				S5	G5	
Papaveraceae	*Sanguinaria canadensis*	Bloodroot			X										S5	G5	
Pinaceae	*Picea glauca*	White Spruce									X	X			S5	G5	
Pinaceae	*Pinus resinosa*	Red Pine			X									W	S5	G5	
Pinaceae	*Pinus strobus*	Eastern White Pine		X							X	X			S5	G5	
Pinaceae	*Tsuga canadensis*	Eastern Hemlock	X		X						X	X			S5	G4G5	
Poaceae	Agrostis gigantea	Redtop						X	X					+	SE5	G4G5	
Poaceae	*Bromus inermis*	Smooth Brome Grass						X	X					+	SE5	G5T5	
Poaceae	*Dactylis glomerata*	Orchard Grass							X					+	SE5	GNR	
Poaceae	*Echinochloa muricata var. microstachya*	Western Barnyard Grass		X											S5	G5T5	
Poaceae	*Glyceria striata var. striata*	Fowl Mannagrass									X				S5	G5T5	
Poaceae	*Leersia oryzoides*	Rice Cutgrass					X								S5	G5	
Poaceae	*Oryzopsis asperifolia*	White-grained Mountain-ricegrass			X										S5	G5	
Poaceae	*Phalaris arundinacea*	Reed Canary Grass				X		X	X		X			(+)	S5	G5	
Poaceae	Phleum pratense	Common Timothy Grass							X					+	SE5	GNR	
Poaceae	*Secale cereale*	Rye							X					+	SE3	GNR	

Table 2 - Vascular Plant Species List, Hewitt's Gate Central Phase 3 NHE, Barrie, ON

AEC11-076c

			ELC Units											Conservation Status			
Family	**Scientific Name**	**Common Name**	**FOM**	**FOM7-2**	**FOD5-2**	**MAM2-2**	**MAM3-3**	**MEMM3**	**MEGM3**	**SWM1-1**	**SWD**	**SWD4-3**	**SWT2-2**	**LSRCA**	**S-Rank**	**G-Rank**	**Provincial Status**
Polygonaceae	Rumex crispus	Curly Dock						X	X					+	SE5	GNR	
Ranunculaceae	*Hepatica acutiloba*	Sharp-lobed Hepatica			X										S5	G5T5	
Ranunculaceae	*Anemone cylindrica*	Long-fruited Anemone		X											S4	G5	
Ranunculaceae	*Caltha palustris*	Yellow Marsh Marigold				X									S5	G5	
Ranunculaceae	*Clematis virginiana*	Virginia Virgin's-bower									X				S5	G5	
Rhamnaceae	*Frangula alnus*	Glossy Buckthorn									X			+	SE5	GNR	
Rhamnaceae	*Rhamnus cathartica*	Common Buckthorn		X						X	X	X		+	SE5	GNR	
Rosaceae	*Agrimonia gryposepala*	Hooked Agrimony	X												S5	G5	
Rosaceae	*Crataegus sp.*	Hawthorn													N/A	N/A	
Rosaceae	*Fragaria virginiana*	Wild Strawberry						X							S5	G5	
Rosaceae	*Malus pumila*	Common Apple	X												SE4	G5	
Rosaceae	*Malus sp.*	Apple sp.						X									
Rosaceae	*Prunus serotina*	Wild Black Cherry	X	X											S5	G5	
Rosaceae	Spiraea alba	White Meadowsweet							X						S5	G5	
Rosaceae	*Prunus virginiana*	Choke Cherry			X						X	X			S5	G5	
Rosaceae	Rubus occidentalis	Black Raspberry						X	X						S5	G5	
Rosaceae	*Rubus pubescens*	Dewberry								X	X	X		W	S5	G5	
Salicaceae	*Populus balsamifera*	Balsam Poplar	X	X				X			X	X			S5	G5	
Salicaceae	*Populus grandidentata*	Large-tooth Aspen	X												S5	G5	
Salicaceae	*Populus tremuloides*	Quaking Aspen	X	X	X					X	X	X			S5	G5	
Salicaceae	*Salix discolor*	Pussy Willow				X									S5	G5	
Salicaceae	*Salix sp.*	Willow sp.				X		X	X				X				
Saxifragaceae	*Tiarella stolonifera*	Heartleaf Foamflower								X	X			W	S5	GNR	
Scrophulariaceae	*Mimulus ringens*	Square-stemmed Monkeyflower								X					S5	G5	
Scrophulariaceae	Verbascum thapsus	Common Mullein							X						SE5	GNR	
Solanaceae	*Solanum dulcamara*	Climbing Nightshade				X		X							SE5	GNR	
Tiliaceae	*Tilia americana*	American Basswood	X	X	X					X	X				S5	G5	
Typhaceae	*Typha angustifolia*	Narrowleaf Cattail								X	X				SE5	G5	
Typhaceae	*Typha latifolia*	Broadleaf Cattail				X		X		X					S5	G5	
Ulmaceae	*Ulmus americana*	American Elm									X	X			S5	G4	
Urticaceae	*Urtica gracilis ssp. Gracilis*	Slender Stinging Nettle									X				S5	G5T5	
Vitaceae	Parthenocissus vitacea	Thicket Creeper						X	X						S5	G5	
Vitaceae	*Vitis riparia*	Riverbank Grape				X		X	X						S5	G5	

LSRCA - W (Rare in the Lake Simcoe Watershed), + (Non-native), (+) (Invasive)
S-rank - S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common
G-Rank - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure
Provincial and Federal Status - EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern)

Table 3: Bird List, Hewitt's Gate Central Phase 3 NHE, Barrie, ON

AEC11-076c

			Point Count Stations (Phase 3)																							Conservation Ranks[G]		
			4				5				8				11				12				13		Adjacent Lands	Incidental[A,B,C]	Breeding Evidence[F]	S RANK	G RANK	SARO
Family	Scientific Name	English Common Name	A	B	D	E	A	B	D	E	A	B	D	E	A	B	D	E	A	B	D	E	D	E						
Accipitridae	*Buteo jamaicensis*	Red-tailed Hawk								P															S^{D}		Probable	S5	G5	NAR
Alaudidae	*Eremophila alpestris*	Horned Lark																	S							$S^{A,B}$	Possible	S4	G5	
Anatidae	*Anas platyrhynchos*	Mallard														H								H,X		FO^{A},X^{B}	Possible	S5	G5	
Anatidae	*Branta canadensis*	Canada Goose						FO							H							FO				H^{A},X	Observed	S5	G5	
Cardinalidae	*Cardinalis cardinalis*	Northern Cardinal						S		S				S	S					S	S	S		H	S^{D}		Possible	S5	G5	
Cardinalidae	*Passerina cyanea*	Indigo Bunting				S	H	S		S,FO				S		S		S			S	S		S			Observed	S5B	G5	
Cardinalidae	*Piranga olivacea*	Scarlet Tanager		S																						S^{B}	Possible	S5B	G5	
Charadriidae	*Charadrius vociferus*	Killdeer							H,C					S,H	H				H	S		S,FO	H	H			Possible	S4B	G5	
Columbidae	*Columba livia*	Rock Pigeon													H	H								H			Possible	SNA	G5	
Columbidae	*Zenaida macroura*	Mourning Dove															FO				H		FO	S			Possible	S5	G5	
Corvidae	*Corvus brachyrhynchos*	American Crow		S	S	S	H		S	C		H	C,FO	S		H		C	H		H,C			C			Observed	S5	G5	
Corvidae	*Cyanocitta cristata*	Blue Jay	S	S	S	C		S	C									C	H		FO		FO			H^{A},S^{B},X^{C}	Observed	S5	G5	
Emberizidae	*Melospiza melodia*	Song Sparrow		S		S		S		S	S	S	S	S		S	S			S		S	S	S		X^{C}	Possible	S5	G5	
Emberizidae	*Passerculus sandwichensis*	Savannah Sparrow						S			S	S	S	S	S	S	S		S	S		S		S	$S^{D,E}$	S^{A}	Possible	S5B,S3N	G5	
Emberizidae	*Pooecetes gramineus*	Vesper Sparrow												S							S						Possible	S4B	G5	
Emberizidae	*Spizella passerina*	Chipping Sparrow				S	S							S				S		S				S			Possible	S5B,S3N	G5	
Fringillidae	*Carduelis tristis*	American Goldfinch			S			S	S			H	S,H	S,H	H	H		S,H		H	S		S	S			Possible	S5	G5	
Fringillidae	Haemorhous mexicanus	House Finch																					S				Possible	SNA	G5	
Hirundinidae	*Hirundo rustica*	Barn Swallow											X	FO	H	H	X	X	P	N/P	X			X			Observed	S4B	G5	SC
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird				S									S	S	S,H	S	S				S	C	$S^{D,E}$		Possible	S5	G5	
Icteridae	*Icterus galbula*	Baltimore Oriole													S		S								S^{D}		Possible	S4B	G5	
Icteridae	*Molothrus ater*	Brown-headed Cowbird	S													S			H				S				Probable	S5	G5	
Icteridae	*Quiscalus quiscula*	Common Grackle										H			H		H						FO			X^{C}	Observed	S5	G5	
Icteridae	*Sturnella magna*	Eastern Meadowlark																								X^{C}	Probable	S4B,S3N	G5	THR
Laridae	*Larus delawarensis*	Ring-billed Gull												H							X						Observed	S5	G5	
Mimidae	*Dumetella carolinensis*	Gray Catbird			S				S	S		S						S									Possible	S5B,S3N	G5	
Mimidae	*Toxostoma rufum*	Brown Thrasher						S					H														Possible	S4B	G5	
Paridae	*Poecile atricapillus*	Black-capped Chickadee		S	S						H		H,S	S		S		S								S^{B},X^{C}	Observed	S5	G5	
Parulidae	Geothlypis philadelphia	Mourning Warbler							S																		Possible	S5B	G5	
Parulidae	*Geothlypis trichas*	Common Yellowthroat			S	S											S					S		S	S^{D}		Possible	S5B,S3N	G5	
Parulidae	Setophaga petechia	Yellow Warbler																							S^{D}		Possible	S5B	G5	

Table 3: Bird List, Hewitt's Gate Central Phase 3 NHE, Barrie, ON

AEC11-076c

			Point Count Stations (Phase 3)																							Conservation Ranks[G]		
			4				5				8				11				12				13		Adjacent Lands	Incidental[A, B, C]	Breeding Evidence[F]	S RANK	G RANK	SARO
Family	Scientific Name	English Common Name	A	B	D	E	A	B	D	E	A	B	D	E	A	B	D	E	A	B	D	E	D	E						
Passerellidae	Ammodramus savannarum	Grasshopper Sparrow															S										Possible	S4B	G5	SC
Passerellidae	Melospiza georgiana	Swamp Sparrow															S										Possible	S5B,S4N	G5	
Passerellidae	Sspizella pallida	Clay-colored Sparrow																							S^{D}		Possible	S4B	G5	
Phasianidae	*Bonasa umbellus*	Ruffed Grouse																								X^{C}	Observed	S5	G5	
Phasianidae	*Meleagris gallopavo*	Wild Turkey					H	H				H		H						H	H						Possible	S5	G5	
Picidae	*Colaptes auratus*	Northern Flicker			S					C	H													C			Possible	S5	G5	
Picidae	*Dryocopus pileatus*	Pileated Woodpecker		S					C,H																	S^{B}, X^{C}	Possible	S5	G5	
Picidae	Picoides pubescens	Downy Woodpecker				C								C													Possible	S5	G5	
Scolopacidae	*Scolopax minor*	American Woodcock																								S^{A}	Possible	S4B	G5	
Sittidae	*Sitta canadensis*	Red-breasted Nuthatch																								X^{C}	Observed	S5	G5	
Sittidae	*Sitta carolinensis*	White-breasted Nuthatch																								X^{C}	Observed	S5	G5	
Sturnidae	*Sturnus vulgaris*	European Starling							FO						H	H		H	H	FO			FO			H^{A},X^{C}	Observed	SNA	G5	
Troglodytidae	*Troglodytes aedon*	House Wren			S	S		S		S			S					S			S						Possibel	S5B	G5	
Turdidae	*Turdus migratorius*	American Robin		S		S						H			S	S			P	S				P	CD	X^{C}	Probable	S5	G5	
Tyrannidae	*Contopus virens*	Eastern Wood-pewee	S		S	S			S															S	S^{D}	S^{B}	Possible	S4B	G5	SC
Tyrannidae	*Myiarchus crinitus*	Great Crested Flycatcher		S	S				S				S														Possible	S5B	G5	
Tyrannidae	*Sayornis phoebe*	Eastern Phoebe																								X^{C}	Observed	S5B	G5	
Tyrannidae	*Tyrannus tyrannus*	Eastern Kingbird																									Possible	S4B	G5	
Vireonidae	*Vireo gilvus*	Warbling Vireo													S								S				Possible	S5B	G5	
Vireonidae	*Vireo olivaceus*	Red-eyed Vireo	S	S	S	S	S	S		S													S				Probable	S5B	G5	

Surveys Conditions:

[A]June 04, 2014; Start Time 0635hr/ End Time 0830hr; Temperature Start +12°C/ Temperature End+ 15°C; Wind Start B1 W/Wind End B3 W; Cloud Cover >5% - 10%; Precipitation Nil; Observer J. Broadfoot

[B]June 18, 2014; Start Time 0604hr/ End Time 0855hr; Temperature Start +15°C/ Temperature End +17°C; Wind Start B2 NW/Wind End B0; Cloud Cover 90 - 100%; Precipitation Nil; Observer J. Broadfoot

[C]April 09, 2014 (Reconnaissance survey, incidental observations only). Start Time 0745hr/ End Time 0945hr; Temperature -2ºC; Wind B0; Cloud Cover <5%; Precipitation Nil; Observer J. Broadfoot

[D]May 30, 2022; Start Time 0753hr/ End Time 0939hr; Temperature 19ºC; Wind B2; Cloud Cover <25%; Precipitation Nil; Observer L. Moran

[E]June 13, 2022; Start Time 0711hr/ End Time 0900hr; Temperature 11ºC; Wind B1; Cloud Cover <5%; Precipitation Nil; Observer L. Moran

[F]OBBA Breeding Evidence Codes:
OBSERVED
FO - Fly Over
X - Species observed

POSSIBLE
H - Species observed in its breeding season in suitable nesting habitat
S - Singing male present, or breeding calls heard, in suitable nesting habitat in nesting season.
C- Call heard
PROBABLE
A - Agitated behaviour or anxiety calls of an adult.
N - Nest building or excavation of nest hole.
P -Pair observed in suitable nesting habitat in nesting season.
T - Permanent territory presumed trhough registration of territorial behaviour (e.g. song) on at least two days, a week or more apart, at the same place.

[G]Conservation Rankings: From Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry, Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)
S-rank - S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common
G-Rank - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure
SARO - EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern)

Table 4a - Amphibian List, Hewitt's Gate Central Phase 3 NHE, Barrie, ON

AEC11-076c

			Survey Stations (4-6)											
			Survey Date (A, B, C)									Conservation Ranks[E]		
			4			5			6			SARO	G Rank	S Rank
Family	**Scientific Name**	**Common Name**	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**			
Hylidae	*Pseudacris crucifer*	Spring Peeper				3 [D]							G5	S5
Ranidae	*Lithobates clamitans*	Green Frog						1(3)					G5	S5

Observation Conditions

[A]April 28, 2014; Start Time 2058hrs/End Time 2154hrs; Temperature Start +9°C/End +8°C; Wind B2 SE; Cloud Cover 20%; Precipitation Nil; Observer L. Moran

[B]May 22, 2014; Start Time 2113hrs/End Time 2210hrs; Temperature +12°C; Wind Start B3 W/ End B2 NW; Cloud Cover 50%; Precipitation Nil; Observer L. Moran

[C]June 29, 2014; Start Time 2325hrs/End Time 0120hrs; Temperature +21°C; Wind B0; Cloud Cover 100%; Precipitation Nil; Observer L. Moran

[D] Codes (according to Marsh Monitoring Protocol) (Code (# of individuals counted))
Code 1: individual calls do not overlap and calling individuals can be discretely counted;
Code 2: calls of individuals sometimes overlap, but numbers of individuals can still be estimated;
Code 3: overlap among calls seems continuous (full chorus), and a count estimate is impossible;

[E]Conservation Rank - from OMNRF, NHIC and SAR Lists 2014
Provincial Rank (S-rank) - S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common
Global Rank (G-Rank) - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure
SARO - EXP (Extirpated), END (Endangered), THR (Threatened), SC (Special Concern)

Table 4b: Turtle Basking Survey Results, Hewitt's Gate Central Phase 3 NHE, Barrie ON

	Date									
	April 26, 2024 [1]		April 30, 2024 [2]		May 3, 2024 [3]		May 6, 2024 [4]		June 4, 2024 [5]	
	Painted Turtle [6]	Snapping Turtle [7]	Painted Turtle	Snapping Turtle	Painted Turtle	Snapping Turtle	Painted Turtle	Snapping Turtle	Painted Turtle	Snapping Turtle
Turtle Survey Station #1	**0**	0	1	0	2	1	0	0	3	0
Turtle Survey Station #2	**2**	0	1	0	3	0	2	1	1	1

[1] April 26, 2024; Start Time 11:10hrs/End Time 12:15hrs; Temperature Start +9°C; Wind B2 ; Cloud Cover 0%; Precipitation Nil; Observer J. Wrobel

[2] April 30, 2024; Start Time 15:30hrs/End Time 16:00hrs; Temperature Start +17°C; Wind B1 ; Cloud Cover 0%; Precipitation Nil; Observer J. Wrobel

[3] May 3, 2024; Start Time 14:05hrs/End Time 15:00hrs; Temperature Start +23°C; Wind B2 ; Cloud Cover 50%; Precipitation Nil; Observer J. Wrobel

[4] May 6, 2024; Start Time 11:40hrs/End Time 12:40hrs; Temperature Start +15°C; Wind B2 ; Cloud Cover 10%; Precipitation Nil; Observer J. Wrobel

[5] June 4, 2024; Start Time 9:15hrs/End Time 9:58hrs; Temperature Start +17°C; Wind B1 ; Cloud Cover 0%; Precipitation Nil; Observer R.Holmes

Table 5: Species at Risk Habitat Assessment, Hewitt's Gate Central Phase 3 NHE, Barrie ON AEC11-076c

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment
Restricted Species	*Not Applicable*	END	END	It typically grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and American Basswood (*Tilia americana*). . ESA Protection: Species and general habitat protection	Potentially suitable habitat present within FOD community. Restricted species was not observed during vegetation surveys.
Bald Eagle	*Haliaeetus leucocephalus*	SC	No status	They nest in a variety of habitats and forest types, almost always near a major lake or river. They usually nest in large trees such as pine and poplar (Cadman *et al.* , 2007). ESA Protection: none	No critical habitat, no evidence of nesting present within the study area.
Bank Swallow	*Riparia riparia*	THR	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Colonies commonly found in sand or gravel pits, lakeshores, and along river banks (COSEWIC, 2013a). ESA Protection: Species and general habitat protection	No key habitat, no evidence of nesting present within the study area.
Barn Swallow	***Hirundo rustica***	**SC**	**THR**	**Ledges and walls of man-made structures such as buildings, barns, boathouses, cliffs or caves (COSEWIC, 2011a). ESA Protection: N/A**	**Confirmed nesting habitat present on adjacent lands. Barn Swallows observed during Azimuth's dawn breeding bird surveys with active nests documented within barn on adjacent lands. Considered further in main text.**
Black Ash	***Fraxinus nigra***	**END**	**No status**	**Facultative wetland tree species frequently found in floodplain forests, swamps, seepage areas, shoreline margins and fens. Occupied sites are generally seasonally-flooded (COSEWIC, 2018a). ESA Protection: Species and general habitat protection (ESA protections take effect January 26, 2024)**	**Black Ash were observe within the Natural Heritage Core Area. Considered further in main text.**
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	Habitat within study area is not representative of key habitat.
Blanding's Turtle	***Emydoidea blandingii***	**THR**	**END**	**Blanding's Turtles are a primarily aquatic species that prefer wetland habitats, lakes, ponds, slow-moving streams, etc., however they may utilize upland areas to search for suitable basking and nesting sites. In general, preferred wetland sites are eutrophic and characterized by clear, shallow water, with organic substrates and high density of aquatic vegetation (COSEWIC, 2016a). ESA Protection: Species and general habitat protection**	**Potentially suitable habitat within wetland habitat that contains standing water for at least a portion of the season. Wetlands that meet this criteria are located within the Natural Heritage Core Area. A small pond feature provides potentially suitable habitat for turtles. Considered Further in main text**
Bobolink	*Dolichonyx oryzivorus*	THR	THR	Nests primarily in forage crops (*e.g.* hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. Also occurs in wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops (*e.g* . corn, soybeans, wheat) or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010).	No suitable habitat currently present on site. Lands primarily in row crop production. No Bobolink were observed on-site during Azimuth's field investigations.
Butternut	***Juglans cinerea***	**END**	**END**	**Occurs on a variety of sites, including dry rocker soils (particularly those of limestone origin); grows best on well-drained fertile soils in shallow valleys and on gradual slopes; singly or in small groups mixed with other species. Intolerant of shade (COSEWIC, 2017) ESA Protection: Species and general habitat protection**	**A total of 3 Butternut trees were observed within the Natural Heritage Core Area on adjacent lands (Figure 2). No Butternut identified within property during field investigations. Considered further in main text.**
Canada Warbler	*Wilsonia 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, 2020). ESA Protection: N/A	Potentially suitable habitat within mixed and coniferous forest habitat. Canada Warbler was not observed during Azimuth's field investigations.
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, 2018b). 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	All chimneys within the study area were capped to preclude the entry of wildlife. No Chimney Swift were observed during Azimuth's field investigations.
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, 2018c). ESA Protection: N/A	Habitat within study area is not representative of key habitat. Common Nighthawk was not observed during Azimuth's field investigations.
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).	Lands primarily in row crop production. Eastern Meadowlark was observed in April within the study area and was likely a migrant moving through the area to its breeding grounds as this observation was outside of the appropriate breeding period. Eastern Meadowlark was not documented during Azimuth's dawn breeding bird surveys therefore breeding is not probable nor confirmed. No suitable habitat currently present on site.
Eastern Musk Turtle	*Sternotherus oderatus*	SC	SC	Inhabit littoral zones of waterways such as rivers, lakes, bays, streams, ponds, canals, and swamps with slow to no current and soft bottoms. During the active season they prefer shallow water (<2m) with abundant vegetation. Most are found close to shore and do not venture onto land except to nest or access adjacent wetlands (COSEWIC, 2012a). ESA Protection: N/A	Habitat within the study area is not typical Eastern Musk Turtle habtiat.
Eastern Ribbonsnake	***Thamnophis sauritus***	**SC**	**SC**	**Found in wetland habitats with both flowing and standing water such as marshes, bogs, fens, ponds, lake shorelines and wet meadows. Most sightings occur near the water's edge (COSEWIC, 2012b). ESA Protection: N/A**	**Potentially suitable habitat within wetland habitat that contains standing water for at least a portion of the season. Wetlands that meet this criteria are located within the Natural Heritage Core Area. Considered further in main text.**
Eastern Small-footed Bat	*Myotis leibii*	END	No status	Generally occurs in mountainous or rocky regions where it has been noted to roost in large boulders and beneath slabs of rock and stones. Hibernation is typically confined to caves and abandoned mine adits. (Best and Jennings, 1997; MNRF, 2014). ESA Protection: Species and general habitat protection	Species not expected to be present on or adjacent to study area. Habitat is not representative of key habitat.
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, 2009). ESA Protection: Species and general habitat protection	Habitat within study area is not representative of key habitat.
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, 2012c).**	**Eastern Wood-pewee was identified within Natural Heritage Core forest lands (Figure 3). Considered further in main text.**
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	Habitat on site is no representative of ideal habitat for the species. Golden-winged Warbler was not observed during breeding bird surveys.
Grasshopper Sparrow	*Ammodramus savannarum*	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	Grasshoppeer Sparrow was observed on one occassion during Azimuth's 2022 dawn breeding bird surveys however, breeding was not confirmed (i.e. Not documented on 2nd dawn breeding bird survey). Habitat within the study area is not representative of key habitat (*i.e* not grassland) as the agricultural lands are being actively cultivated. The smaller meadow communities on the property are not of sufficient size to be considered potentially suitble habitat for the species.
Henslow's Sparrow	*Ammodramus henslowii*	END	END	Requires grassland habitat and occurs more frequently and at higher densities in large patches of suitable habitat. Nests in tallgrass prairie, wet meadow, and marsh habitats as well as agricultural grasslands, lightly grazed pasture and grasslands on reclaimed surface mines (COSEWIC, 2011c). ESA Protection: Species and general habitat protection	Habitat within the study area is not representative of key habitat. Henslow's Sparrow was not observed during breeding bird surveys.
King Rail	*Rallus elegans*	END	END	Wide variety of freshwater marsh habitat types with cattails. Large marshes, especially those that contain a range of water level conditions and a mosaic of habitats, are preferred (COSEWIC, 2011d). ESA Protection: Species and general habitat protection	Habitat within the study area is not representative of key habitat. Species was not observed during breeding bird surveys.

Table 5: Species at Risk Habitat Assessment, Hewitt's Gate Central Phase 3 NHE, Barrie ON AEC11-076c

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment
Least Bittern	*Ixobrychus exilis*	THR	THR	Least Bittern prefer large, freshwater marshes with dense aquatic vegetation (e.g. Cattails) with interspersed clumps of woody vegetation and open water (COSEWIC, 2009b). ESA Protection: Species and general habitat protection	Habitat on site is not representative of ideal habitat for the species.
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, but can often include buildings (COSEWIC 2013b).** **ESA Protection: Species and general habitat protection**	**Potentially suitable maternity roosting habitat is present within forested communities within the study area and within structures on adjacent lands. Considered further in main text.**
Louisiana Waterthrush	*Parkesia motacilla*	THR	SC	Occupies specialized habitat, showing a strong preferences for nesting and wintering along relatively pristine headwater streams and wetlands situated in large tracts of mature forest. Prefers running water, but also inhabits heavily wooded swamps and vernal or semi-permanent pools (COSEWIC, 2015).	Habitat within study area is not typical for Louisiana Waterthrush. Species was not observed during bird surveys.
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, 2016b). ESA Protection: N/A	No significant areas of Milkweed. No potentially suitable habitat on the property.
Northern Map Turtle	*Grapetemys geographica*	SC	SC	Northern Map Turtles prefer rivers and lakeshores with available emergent rocks and fallen trees for basking. Deep, slow-moving sections of rivers are utilized for hibernation (COSEWIC, 2012d). ESA Protection: N/A	Species not expected to be present on or adjacent to the property. Habitat is not representative of key habitat.
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, 2013).** **ESA Protection: Species and general habitat protection**	**Potentially suitable maternity roosting habitat is present within forested communities within the study area. Considered further in main text.**
Olive-sided Flycatcher	*Contopus cooperi*	SC	SC	Natural forest openings, forest edges near natural openings (such as wetlands) or open to semi-open forest stands. Occasionally human made openings (such as clear cuts). Presence of tall snags and residual live trees is essential. (COSEWIC, 2018d). ESA Protection: N/A	Olive-sided Flycatcher was not observed during breeding bird surveys. Habitat is not representative of key habitat.
Peregrine Falcon	*Falco peregrinus*	THR	END	Peregrine Falcons nest on tall, steep cliff ledges close to large bodies of water. Urban falcons raise their young on ledges of tall buildings. ESA Protection: Species and regulated habitat protection	Species not expected to be present on or adjacent to the study area. Habitat is not representative of key habitat.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	SC	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, 2018e).	Mature trees with open understorey is not characteristic of the forested lands within the study area. Red-headed Woodpecker was not identified during bird surveys.
Short Eared Owl	*Asio flammeus*	SC	SC	Short-eared Owl prefer large, dense, well-drained grasslands (such as tallgrass prairie) for breeding and nesting, preferably in proximity to large, coastal wetland units (COSEWIC, 2008b). Often Nest on the ground. ESA Protection: N/A	Species not expected to be present within study area. Habitat is not representative of key habitat.
Snapping Turtle	***Chelydra serpentina***	**SC**	**SC**	**Snapping Turtle utilize a wide variety of aquatic habitat, but prefer shallow waters with abundant leaf litter. Females travel overland during the nesting season in search of suitable nesting sites such as gravel shoulders of roadways, dams, and aggregate pite (MNRF, 2015).** **ESA Protection: N/A**	**Potentially suitable habitat within wetland habitat that contains standing water for at least a portion of the season. Snapping Turtle was documented during Azimuth's 2024 Turtle Basking Surveys within the dug pond and within the Natural Heritage Core Area. Considered further in main text.**
Tri-colored Bat	***Perimyotis subflavus***	**END**	**END**	**During the summer, the Tri-colored Bat is found in a variety of forested habitats. It forms day roosts and maternity colonies in older forest and occasionally in barns or other structures. They forage over water and along streams in the forest.** , **ESA Protection: Species and General Habitat Protection**	**Potentially suitable maternity roosting habitat is present within forested communities within the study area. Considered further in main text.**
Wood Thrush	*Hylocichla mustelina*	SC	THR	Typically associated with moist mature deciduous and mixed forests with a well developed understory. ESA Protection: N/A	Potentially suitable habitat present for this species within wooded areas. Wood Thrush not observed during Azimuth's Breeding Bird surveys.
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 was not observed during bird surveys.

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

Species at Risk in Ontario List (June 13, 2017)

Best, T., and J. Jennings. 1997. Mammalian Species, *Myotis leibii* . The American Society of Mammalogists. No. 547, pp. 1-6, 5 figs.

Cadman, M., D. Sutherland, G. Beck, D. Lepage and A. Couturier. 2007. Atlas of the Breeding Birds of Ontario 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario

COSEWIC. 2006. COSEWIC assessment and status report on the Golden-winged Warbler *Vermivora chrysoptera* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 30 pp.

COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp.

COSEWIC. 2009a. COSEWIC assessment and update status report on the Whip-poor-will *Caprimulgus vociferus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 28 pp.

COSEWIC. 2009b. COSEWIC assessment and update status report on the Least Bittern *Ixobrychus exilis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 36 pp.

COSEWIC. 2009c. COSEWIC assessment and status report on the Yellow Rail *Coturnicops noveboracensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 32 pp.

COSEWIC. 2010. COSEWIC assessment and update status report on the Bobolink *Dolichonyx oryzivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp.

COSEWIC. 2011a. COSEWIC assessment and update status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.

COSEWIC. 2011b. COSEWIC assessment and update status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.

COSEWIC. 2011c. COSEWIC assessment and update status report on the Henslow's Sparrow *Ammodramus henslowii* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 37 pp.

COSEWIC. 2011d. COSEWIC assessment and update status report on the King Rail *Rallus elegan* s in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 32 pp.

COSEWIC. 2012a. COSEWIC assessment and status report on the Eastern Musk Turtle *Sternotherus odoratus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 68 pp

COSEWIC. 2012b. COSEWIC assessment and status report on the Eastern Ribbonsnake *Thamnophis sauritus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 39 pp.

COSEWIC. 2012c. COSEWIC assessment and status report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp.

COSEWIC. 2012d. COSEWIC assessment and status report on the Northern Map Turtle *Graptemys geographica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 63 pp.

COSEWIC. 2012e. COSEWIC assessment and status report on the Wood Thrush *Hylocichla mustelina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp.

COSEWIC. 2013a. COSEWIC assessment and update status report on the Bank Swallow *Riparia riparia* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 48 pp.

COSEWIC. 2013b. COSEWIC assessment and status report on the Grasshopper Sparrow pratensis subspecies *Ammodramus savannarum pratensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 36 pp.

COSEWIC. 2013c. COSEWIC assessment and update status report on the Little Brown Myotis *Myotis lucifugus* , Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subfalvus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.

COSEWIC. 2015. COSEWIC assessment and status report on the Louisiana Waterthrush *Parkesia motacilla* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 58 pp.

COSEWIC. 2016a. COSEWIC assessment and status report on the Blanding's Turtle *Emydoidea blandingii* , Nova Scotia population and Great Lakes/St. Lawrence population, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xix + 110 pp.

COSEWIC. 2016b. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 59 pp.

COSEWIC. 2017. COSEWIC assessment and status report on the Butternut *Juglans cinerea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 74 pp.

COSEWIC. 2018a. COSEWIC assessment and status report on the Black Ash *Fraxinus nigra* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 95 pp.

COSEWIC. 2018b. COSEWIC assessment and status report on the Chimney Swift *Chaetura pelagic* a in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 49 pp.

COSEWIC. 2018c. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 50 pp.

COSEWIC. 2018d. COSEWIC assessment and status report on the Olive-sided Flycatcher *Contopus cooperi* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 52 pp.

COSEWIC. 2018e. 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. xii + 60 pp.

COSEWIC. 2020. COSEWIC assessment and status report on the Canada Warbler *Wilsonia Canadensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 54 pp.

Table 6.1: Seasonal Concentrations of Areas of Animals

Wildlife Habitat	Wildlife Species	Candidate SHW		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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.
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	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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.
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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.
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.**	**Potentially suitable habitat in woodland communities within Natural Heritage Core.**
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.**	• **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**	**Potentially suitable turtle wintering habitat in wetland habitat within Natural Heritage Core. The dug pond represents a feature of anthropogenic origin, therefore is not considered SWH.**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• 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)	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.	
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.	**Potentially suitable snake hibernacula habitat in wetland habitat within Natural Heritage Core.**
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale:** Historical use and	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	• 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.	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	Habitat with study area is not representative of key habitat. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
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.		ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• 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.	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.	
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.	Habitat with study area is not representative of key habitat. No heron nests or heronries observed on site. No further evaluation undertaken.
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;	• 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.	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.	Habitat with study area is not representative of key habitat. Not a rocky island or peninsula. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
		MAS1 – 3; CUM CUT CUS	• Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices • Field Naturalist clubs	• 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.	
Migratory Butterfly Stopover Areas **Rationale:** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral Special Concern Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: Field: CUM CUT CUS Forest: 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. Information Sources • 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.	Does not meet key criteria for proximity to Lake Ontario. No further evaluation undertaken.
Landbird Migratory Stopover Areas **Rationale:** 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 .	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.	Does not meet key criteria for proximity to Lake Ontario. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			Information Sources • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program		
Deer Yarding Areas **Rationale:** 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.	Currently not mapped by MNRF as deer yard.
Deer Winter Congregation	White-tailed Deer	All Forested Ecosites with these ELC Community Series;	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on	Studies confirm: • Deer management is an MNRF responsibility, deer	Geographically not within an area suitable for Deer Winter Congregation (see above

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Areas **Rationale:** 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.		FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	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. Information Sources • MNRF District Offices • LIO/NRVIS	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.	assessment).

Table 6.2: 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.	Not present within study area.
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.	Not present within study area.
Alvar	ALO1 ALS1	An alvar is typically a level, mostly unfractured calcareous	An Alvar site > 0.5 ha in size. Information Sources	• Field studies that identify four of the five **Alvar**	Not present within study area.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
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.	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.	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.	• 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	**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.	
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.	Not present within 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.	Not present within study area.
Tallgrass Prairie	TPO1	A Tallgrass Prairie has ground	No minimum size to site. Site must be restored or a	Field studies confirm one or more of the Prairie	Not present within study area.

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO2	cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	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	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.	
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.	Not present within study area.

Table 6.3: 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**	**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.**	**The MAM communities within the Natural Core Area could provide this potential SWH function. Specific surveys were not undertaken to confirm. No further evaluation undertaken.**

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		Note: includes adjacency to Provincially Significant Wetlands			
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 the entire 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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.
Woodland Raptor Nesting Habitat **Rationale:** 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. Information Sources • 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 Woodland Raptors or nests were observed on the property. No known raptor nests within the general area.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Turtle Nesting Areas **Rationale:** **These habitats are rare and when identified will often be the only breeding site for local populations of turtles.**	**Midland Painted Turtle** **Special Concern Species** **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.** **Information Sources** • **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 obvious potentially suitable turtle nesting areas were observed during Azimuth's field investigations. Potentially suitable turtle nesting habitat could be located in proximity to potential turtle habitat areas within the Natural Core Area.**
Seeps and Springs **Rationale:** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. Information Sources • Topographical Map • Thermography • Hydrological surveys conducted by Conservation Authorities and MOE. • Field Naturalists clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. • SWHMiST Index #30 provides development effects and mitigation measures.	No groundwater seeps identified on site.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Breeding Habitat (Woodland). **Rationale:** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m^2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records. • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District • OMNRF wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service • Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWHMiST Index #14 provides development effects and mitigation measures.	Amphibian survey did reveal a call code of 3, or at least 20 breeding individuals of two listed species at any of the amphibian survey stations. No further evaluation undertaken.
Amphibian Breeding Habitat (Wetlands) **Rationale;** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (*e.g.* Bull Frog) may be adjacent to woodlands.	• Wetlands>500m^2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count.	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.	Habitat with study area is not representative of key habitat. There are no isolated wetland ecosites located >120m from woodland. Bullfrogs not documented during Azimuth's field investigations. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
			• OMNRF Districts and wetland evaluations • Reports and other information available from Conservation Authorities		
Woodland Area-Sensitive Bird Breeding Habitat **Rationale:** 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. Information Sources • 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.	Habitat with study area is not representative of key habitat. Although the woodlands within the study area meet minimum area requirements, presence of nesting or breeding pairs of 3 or more of the listed species was not observed during Azimuth's field investigations. Cerulean Warbler and Canada Warbler not documented within the study area. No further evaluation undertaken.

Table 6.4: 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	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1	• 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.	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".	Habitat with study area is not representative of key habitat. Wildlife species not documented as part of Azimuth's field investigations. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
	Trumpeter Swan **Special Concern:** Black Tern Yellow Rail	For Green Heron: All SW, MA and CUM1 sites.	• Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas	• SWHMiST Index #35 provides development effects and mitigation measures.	
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.	There is no grassland habitat >30ha within the study area as the agricultural lands within the study area are planted with soy crop. Presence of nesting or breeding of 2 or more of the listed species was not confirmed during Azimuth's field investigations. No Short-eared owls were documented. Therefore, habitat with study area is not representative of key habitat. No further evaluation undertaken.
Shrub/Early Successional Bird Breeding Habitat **Rationale;** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for	Large field areas succeeding to shrub and thicket habitats>10haclxiv 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.	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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
significantly over the past 40 years based on CWS (2004) trend records.	**Special Concern:** Yellow-breasted Chat Golden-winged Warbler	some bird species	• Local bird clubs • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	• Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #33 provides development effects and mitigation measures.	
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.**	**Crayfish chimney documented within the west portion of the study area within the 30m buffer lands adjacent to the Natural Core Area (Figure 2).**
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.**	**Eastern Wood-pewee (SC) and Barn Swallow (SC) were probable/confirmed breeders during Azimuth's field surveys. However, to remain consistent with typical SWH direction, anthropogenic structures are not considered SWH. Therefore; the confirm nesting area (i.e. Barn on adjacent lands) will not be considered SWH. Although not documented on site, potentially suitable habitat for Eastern Ribbonsnake and Snapping Turtle are present on site.**

6.5: Animal Movement Corridors

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Movement Corridors	Eastern Newt American Toad	Corridors may be found in all ecosites	Movement corridors between breeding habitat and summer habitat.	• Field Studies must be conducted at the time of year when species are expected to be migrating or	Amphibian Breeding Habitat was not identified within study area, as such

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	• 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	entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. • Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. • SWHMiST Index #40 provides development effects and mitigation measures.	Amphibian Movement Corridor does not occur in study area. No further evaluation undertaken.
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.	Habitat with study area is not representative of key habitat. No further evaluation undertaken.

6.6: 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.	Habitat with study area is not representative of key habitat. The study area does not contain significant abundances of mast-bearing vegetation. No further evaluation undertaken.
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	Study area not located on Manitoulin Island. No further evaluation undertaken.

APPENDICES

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

APPENDIX A

Background Information

Barrie

OFFICIAL PLAN

MAP 2

Land Use Designations

As Modified and Approved by the Ministry of Municipal Affairs and Housing April 11, 2023

- Neighbourhood Area
- Medium Density
- High Density
- Strategic Employment and Economic District (SEED)
- Commercial District
- Community Hub
- Employment Area - Non Industrial
- Employment Area - Industrial
- Employment Area - Restrictive Industrial
- Natural Heritage System
- Greenspace
- Infrastructure and Utility
- Waste Disposal Assessment
- Extractive Industrial
- Defined Policy Area
- Application Before the Local Planning Appeal Tribunal (LPAT)
- TransCanada Pipeline Right of-way

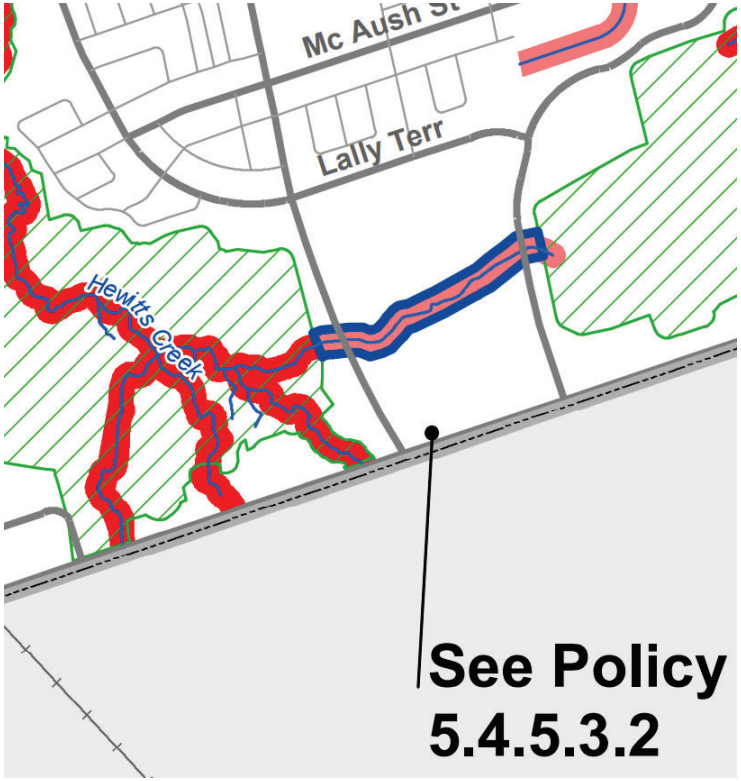
* All land use designations extend to the centre line of the right-of-way for streets. Land use designations, where applicable, extend to/terminate at the boundary of the right-of-way for provincial highways, rail corridors and utility corridors.

** Certain features like roads, parks and trails within the undeveloped designated greenfield area are conceptual and subject to change.

0 1 2 km

Development Services 4/21/202

Appendix A: Excerpt from the City of Barrie Official Plan (2023) (Note: Not to scale)



Appendix A: Excerpt from the City of Barrie Official Plan (2023) (Note: Not to scale)

Barrie

OFFICIAL PLAN
MAP 3
Natural Heritage Protection Overlays

As Modified and Approved by the Ministry of Municipal Affairs and Housing April 11, 2023

Environmental Protection Area Classification

- EPA - Level 1
- EPA - Level 1 with Existing Development Designation Subject to 5.4.2.1.d
- EPA - Level 2
- EPA - Level 3

- High Constraint Stream Corridor Area
- High (S) Constraint Stream Corridor Area - Special
- Medium Constraint Stream Corridor Area
- Low Constraint Stream Corridor Area

- High (S) Constraint Stream Corridor –Special Policy Area
- Natural Core
- Natural Linkage Area
- Waterbody
- Watercourse

* Where natural heritage protection areas are shown, they are often interconnected and continue beyond the municipal boundary.

** Certain features like roads, parks and trails within the undeveloped designated greenfield area are conceptual and subject to change.

0 1 2 km

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Development Services 4/21/2023

PL140770
PL140771
PL140772

ONTARIO MUNICIPAL BOARD

IN THE MATTER OF subsection 17(24) of the *Planning Act*, R.S.O. 1990, c. P. 13, as amended

Appellant:	Crisdawn Construction Inc.
Appellant:	1580532 Ontario Limited
Appellant:	Ministry of Municipal Affairs and Housing
Appellant:	Simcoe County District School Board; and others
Subject:	Proposed Official Plan Amendment No. 39
Municipality:	City of Barrie
OMB Case No.:	PL140771
OMB File No.:	PL140771

IN THE MATTER OF subsection 17(24) of the *Planning Act*, R.S.O. 1990, c. P. 13, as amended

Appellant:	War Horse Holdings Limited
Appellant:	Trans Canada Pole Ltd.
Appellant:	Finger Lakes Estates Inc.
Appellant:	Crisdawn Construction Inc.; and others
Subject:	Proposed Official Plan Amendment No. 40
Municipality:	City of Barrie
OMB Case No.:	PL140772
OMB File No.:	PL140772

MINUTES OF SETTLEMENT

BETWEEN:

CRISDAWN CONSTRUCTION INC. ("CRISDAWN")

- and -

THE CORPORATION OF THE CITY OF BARRIE (the "CITY")

WHEREAS, on July 16, 2014, Crisdawn appealed (Appeal #7) the City's proposed Official Plan Amendments No. 39 and 40 with respect to the Natural Heritage System ("NHS") designation and related policies on the portions of its lands referred to as Areas 1 and 2;

AND WHEREAS Crisdawn and the City's expert witnesses have met to try to reduce and resolve issues, without the need for a contested hearing;

AND WHEREAS those experts have reached agreement to recommend appropriate policy language and mapping for both Area 1 and Area 2 which Crisdawn and the City have agreed will resolve Crisdawn Appeal #7;

AND WHEREAS Crisdawn has also filed a supportive appeal, Appeal #19, which is not affected by this settlement;

NOW THEREFORE, in consideration of the payment by each Party to the other Party of the sum of two dollars ($2.00), the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. The Recitals above are true.

2. The parties agree to ask the Board to:

   (a) allow Crisdawn Appeal #7 to the extent that the Board will modify the text and schedules of Official Plan Amendment 39 and Official Plan Amendment 40 in accordance with what is set out in the attached Schedules A and B;

   (b) approve those instruments as they relate to Areas 1 and 2; and

   (c) dismiss the balance of Crisdawn Appeal #7.

3. The parties have also agreed upon the provisions of the Memorandum of Agreement attached as Schedule C.

4. Upon execution of these Minutes of Settlement, Crisdawn and the City will advise the Board and other parties involved in the NHS hearing that they have reached a settlement of Crisdawn's site-specific appeal (Appeal #7).

5. Subject to the direction of the Board, the City will call witnesses as it determines appropriate at the hearing starting on July 20, 2015 to give evidence in support of this settlement. Crisdawn will also call such witnesses as may be necessary to support the settlement.

6. If difficulties arise with respect to implementing this settlement, the parties agree that the Board may be spoken to.

7. These Minutes of Settlement constitute the entire agreement between the Parties with respect to the matters set out herein, and supersede all prior agreements, negotiations and understandings with respect thereto.

CO

8. These Minutes of Settlement may be executed in one or more counterparts, which together shall constitute a complete set of these Minutes of Settlement, and executed counterparts may be delivered by e-mail or facsimile transmission. A PDF or facsimile copy of these Minutes of Settlement will have the same force and effect as an original.

IN WITNESS WHEREOF the Parties have executed these Minutes of Settlement as of the date(s) indicated below:

Crisdawn Construction Inc.

Date: July 15, 2015

_____

Per: Don Panti

I have authority to bind the Corporation.

The Corporation of the City of Barrie

Date: July , 2015

_____

Per: **Jeff Lehman, Mayor**

_____

Per: **Dawn McAlpine, City Clerk**

Schedule "A"

Modifications to Official Plan Amendment 39 policies in respect of Area 1:

9.3.3.2 High (S) Constraint, Medium and Low Constraint Stream Corridor Areas

c) High (S) Constraint Stream Corridor Areas – Special Defined Policy Area 1

The High (S) Constraint Stream Corridor Area –Special Defined Policy Area 1 shown on Schedule 9B, the location and boundaries of the High (S) Constraint Stream Corridor Area designation may be modified and shall be determined based on satisfaction of the following tests:

i) Hydrologic connection to Hewitt's Creek will be maintained or enhanced; and,

ii) Enhancements or ecological offsetting will be completed within the Hewitt's Creek Subwatershed and/or Lake Simcoe Region Conservation Authority Watershed within the City of Barrie to provide an overall net benefit or net gain for the removal of any features and functions of this Natural Heritage System area.

Ecological offsetting will consider the following compensatory measures through the preparation of an Ecological Offsetting Strategy (EOS) to the satisfaction of the City and LSRCA:

- Replacement of woodland feature at a ratio of 2:1 (replacement : loss)
- Replacement of wetland feature at a ratio of 3:1 (replacement : loss)
- Creation or enhancement of watercourse corridors using natural channel design principles
- NHS compensation based on a Natural Capital Assessment or Ecological Goods and Services (EGS) Evaluation

The implementation of the ecological offsetting will be concurrent with the removal of the features and will be completed within one (1) year of the commencement of their removal. Monitoring will be required as part of the EOS in order to ensure the effectiveness of the ecological offset.

Provided that both the City of Barrie, and the Lake Simcoe Region Conservation Authority with respect to its own legislative and regulatory powers, are satisfied that the above tests have been met, and that the proposal fulfills the provisions of the federal Fisheries Act, residential development may be permitted without an amendment to the Official Plan. This may include, where the tests are met, all the lands in the Defined Policy Area 1 shown on Schedule 9B.

Subject to the satisfaction of the above tests, the lands or a portion of the lands adjacent to Mapleview Drive between Prince William Way and Royal Jubilee Drive (approximately 4 hectares) shall be developed for Medium Density Residential, in accordance with Section 9.5.8 for affordable housing in conformity with the provisions of Section 3.3. The remainder of the Defined Policy Area shall be developed as a "Residential Area" in accordance with Section 9.5.7.

Modifications to Official Plan Amendment 39 policies in respect of Area 2:

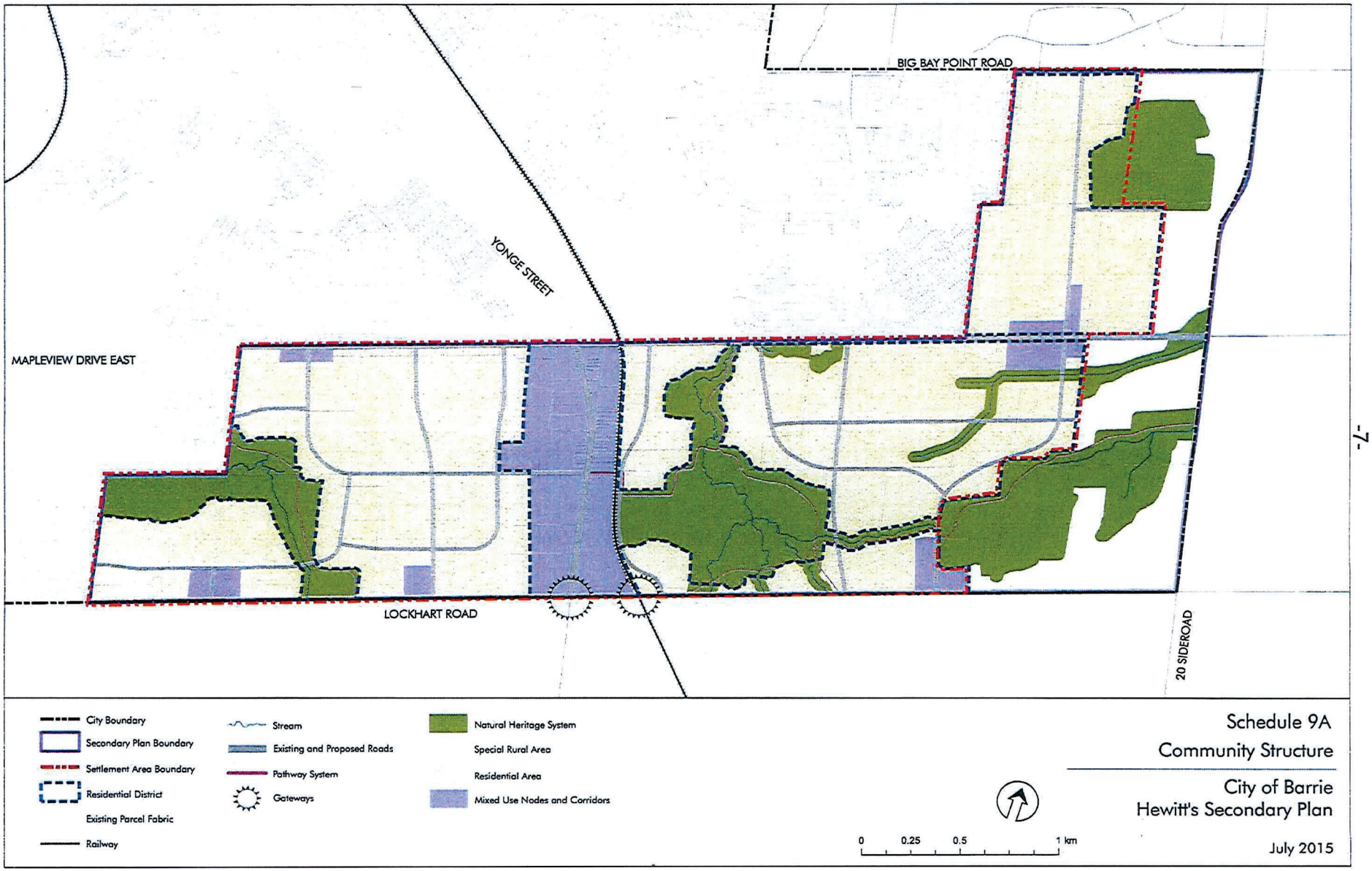
9.3.3.2 High (S) Constraint, Medium and Low Constraint Stream Corridor Areas

d) High (S) Constraint Stream Corridor Area –Special Defined Policy Area 2

In addition to the requirements of Sections 9.3.2.3 c) and 9.3.3.2 b), for the High (S) Constraint Stream Corridor Area –Special Defined Policy Area 2 shown on Schedule 9B, the location and boundaries of the floodplain related to the Stream Corridor Area shall be modified and/or relocated such that the floodplain area, meander belt width and related features, including channel and required setbacks are accommodated within the High (S) Constraint Stream Corridor Area designation which will have a width of 60 metres. As part of the redesign of the floodplain area, cut/fill will be permitted on the adjacent residential land, such that the relocated floodplain area occurs within the 60 metre Corridor Area. Further, any proposed road crossings through the Corridor Area will be subject to road ecology principles in order to maintain corridor function objectives and connectivity.

Schedule "B"

Modifications to Official Plan Amendment 39 and Official Plan Amendment 40 schedules in respect of Areas 1 and 2:

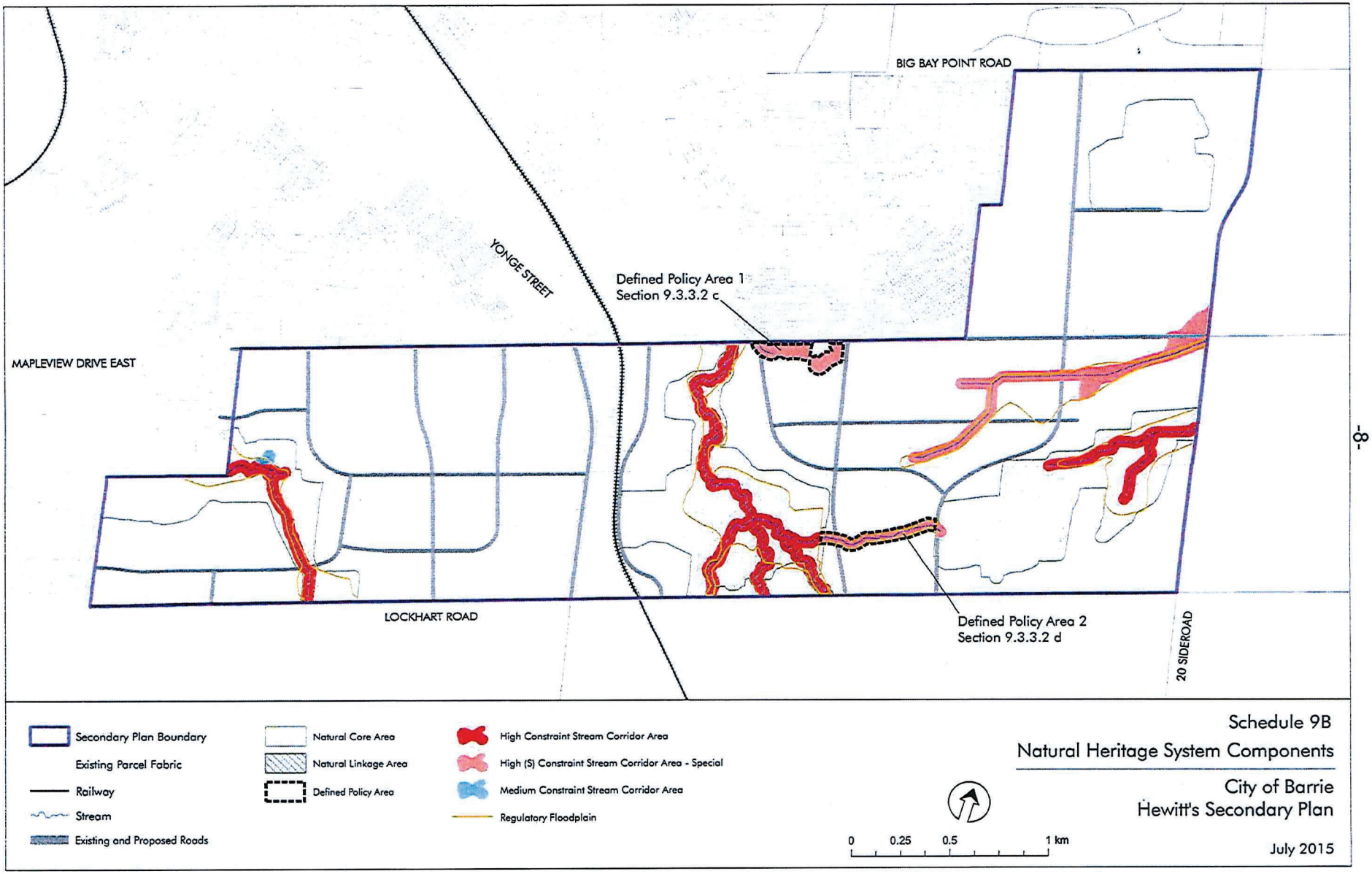


Schedule 9A
Community Structure

City of Barrie
Hewitt's Secondary Plan

July 2015

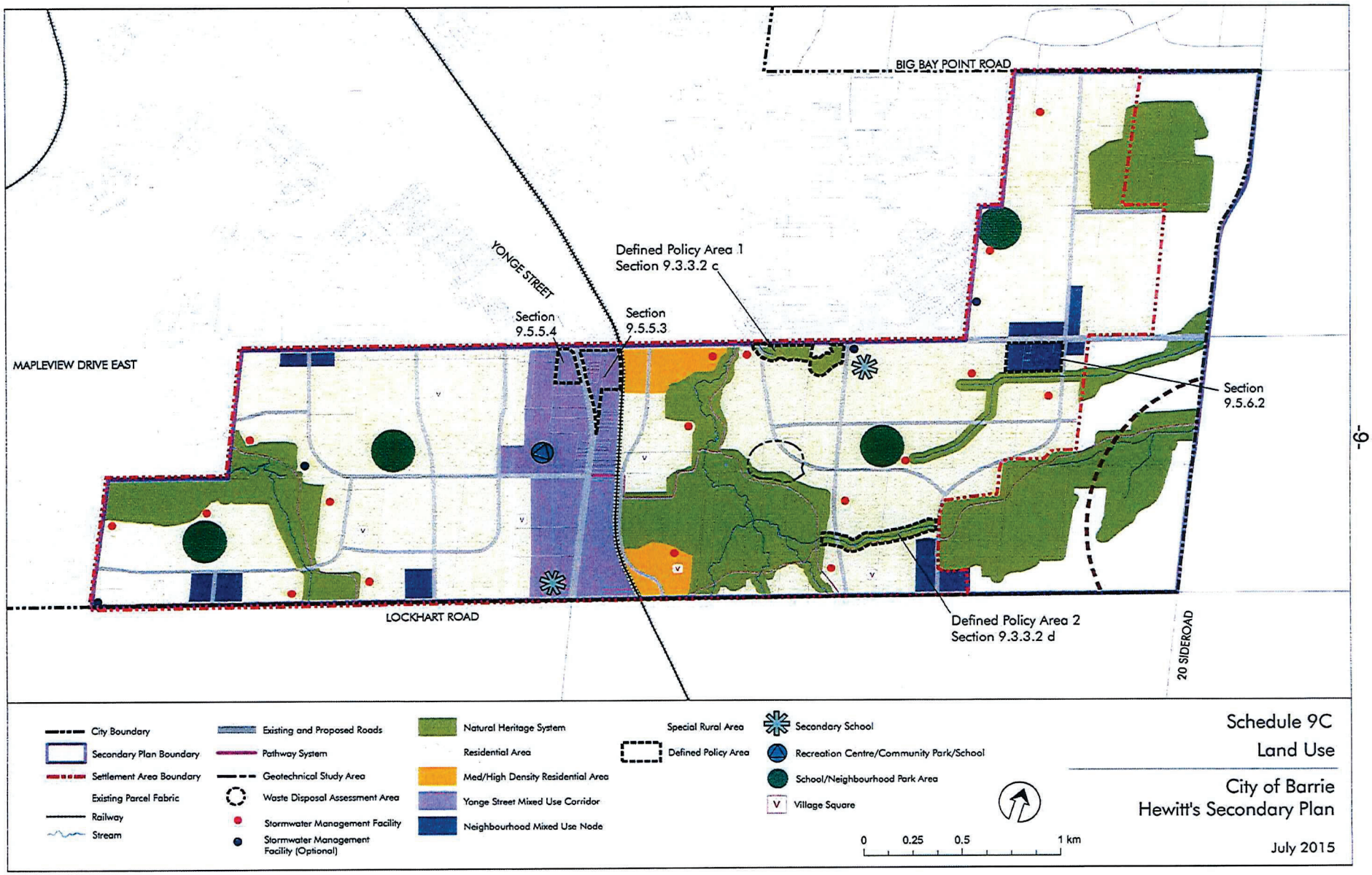
Q1

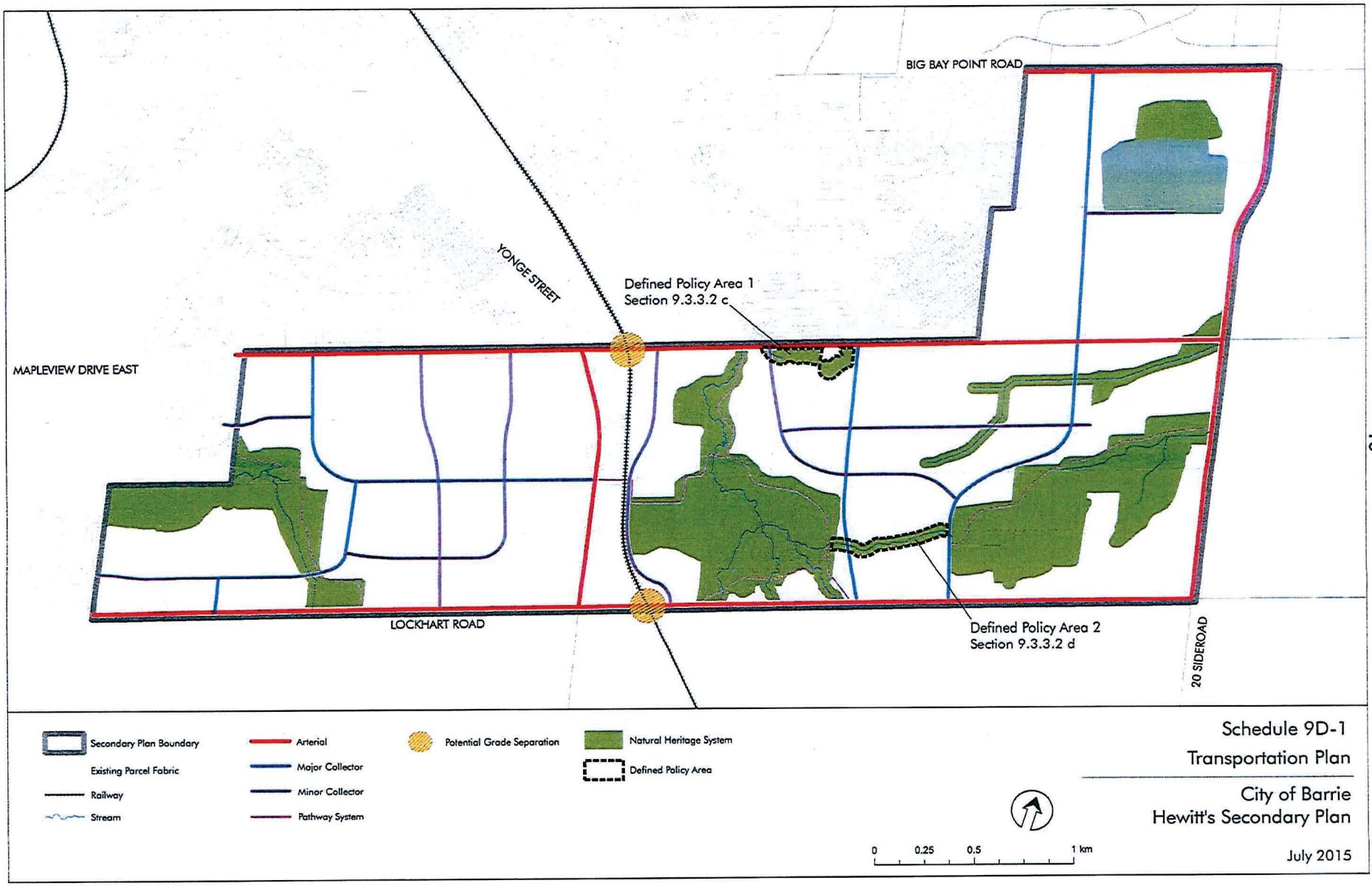


Schedule 9B
Natural Heritage System Components

City of Barrie
Hewitt's Secondary Plan

July 2015

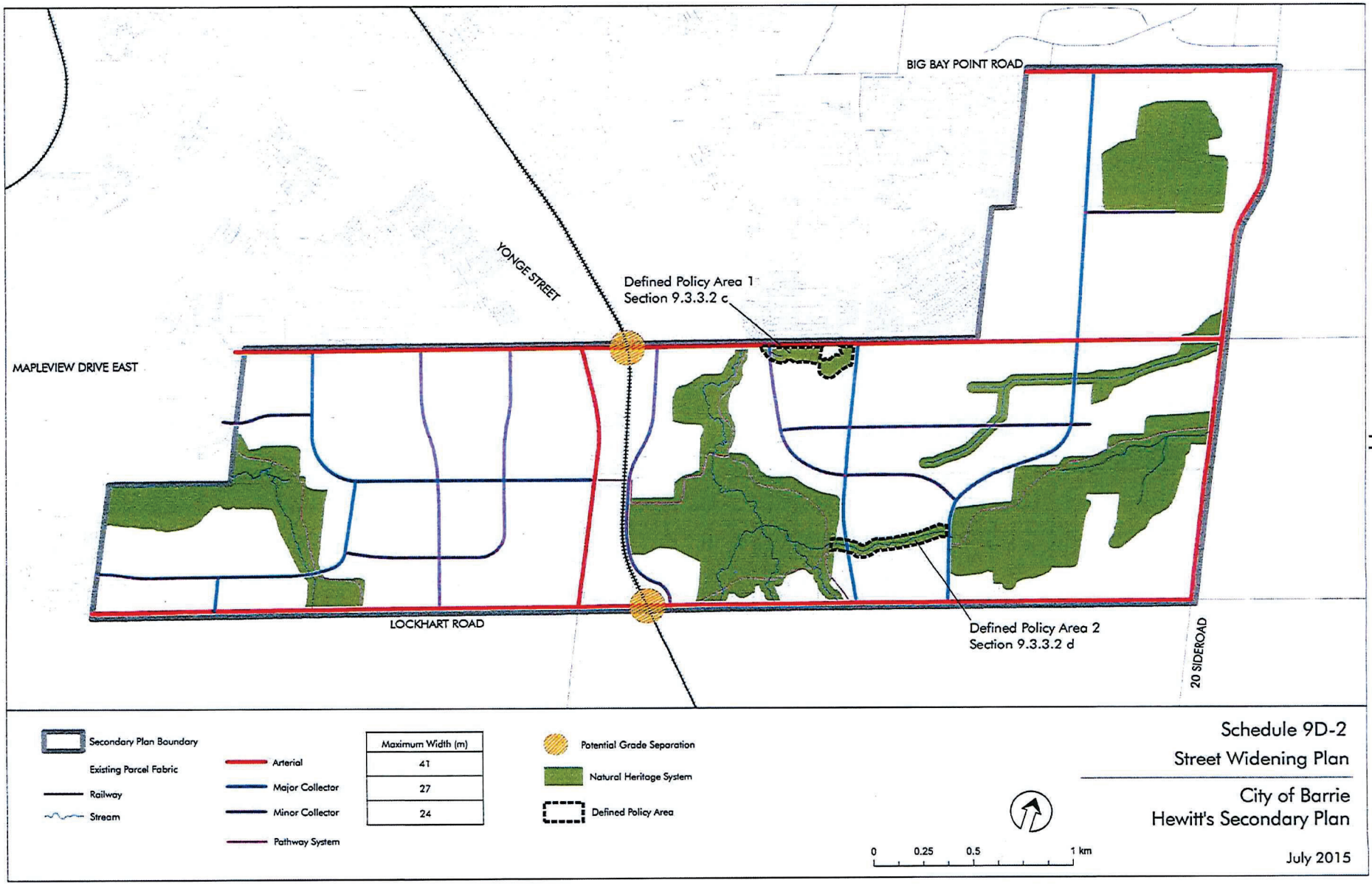

BIG BAY POINT ROAD
YONGE STREET
Defined Policy Area 1
Section 9.3.3.2 c
Section 9.5.5.4
Section 9.5.5.3
MAPLEVIEW DRIVE EAST
Section 9.5.6.2
LOCKHART ROAD
Defined Policy Area 2
Section 9.3.3.2 d
20 SIDEROAD
City Boundary
Secondary Plan Boundary
Settlement Area Boundary
Existing Parcel Fabric
Railway
Stream
Existing and Proposed Roads
Pathway System
Geotechnical Study Area
Waste Disposal Assessment Area
Stormwater Management Facility
Stormwater Management Facility (Optional)
Natural Heritage System
Residential Area
Med/High Density Residential Area
Yonge Street Mixed Use Corridor
Neighbourhood Mixed Use Node
Special Rural Area
Defined Policy Area
Secondary School
Recreation Centre/Community Park/School
School/Neighbourhood Park Area
Village Square
0
0.25
0.5
1 km
Schedule 9C
Land Use
City of Barrie
Hewitt's Secondary Plan
July 2015

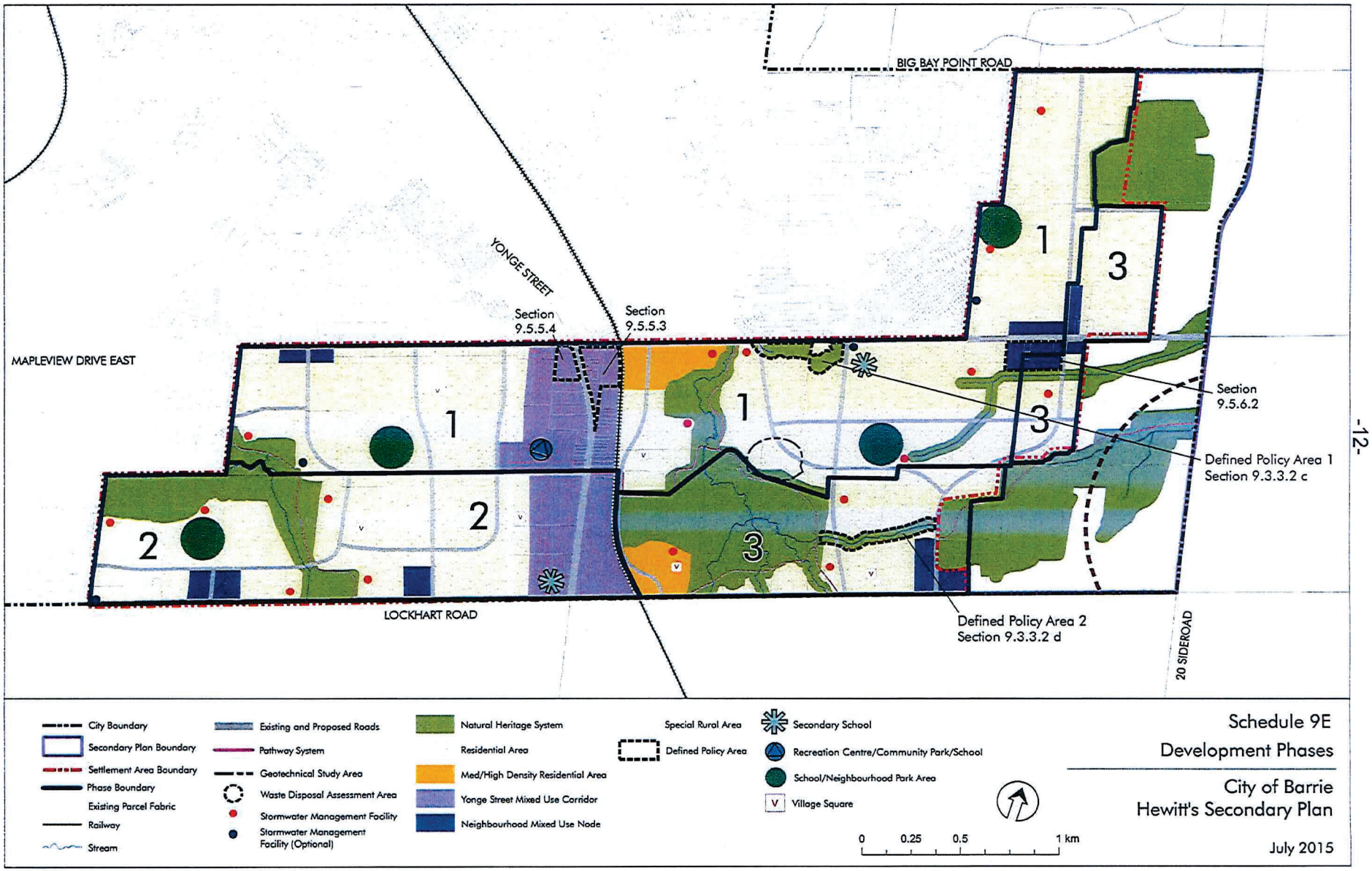


Schedule 9D-1
Transportation Plan

City of Barrie
Hewitt's Secondary Plan

July 2015

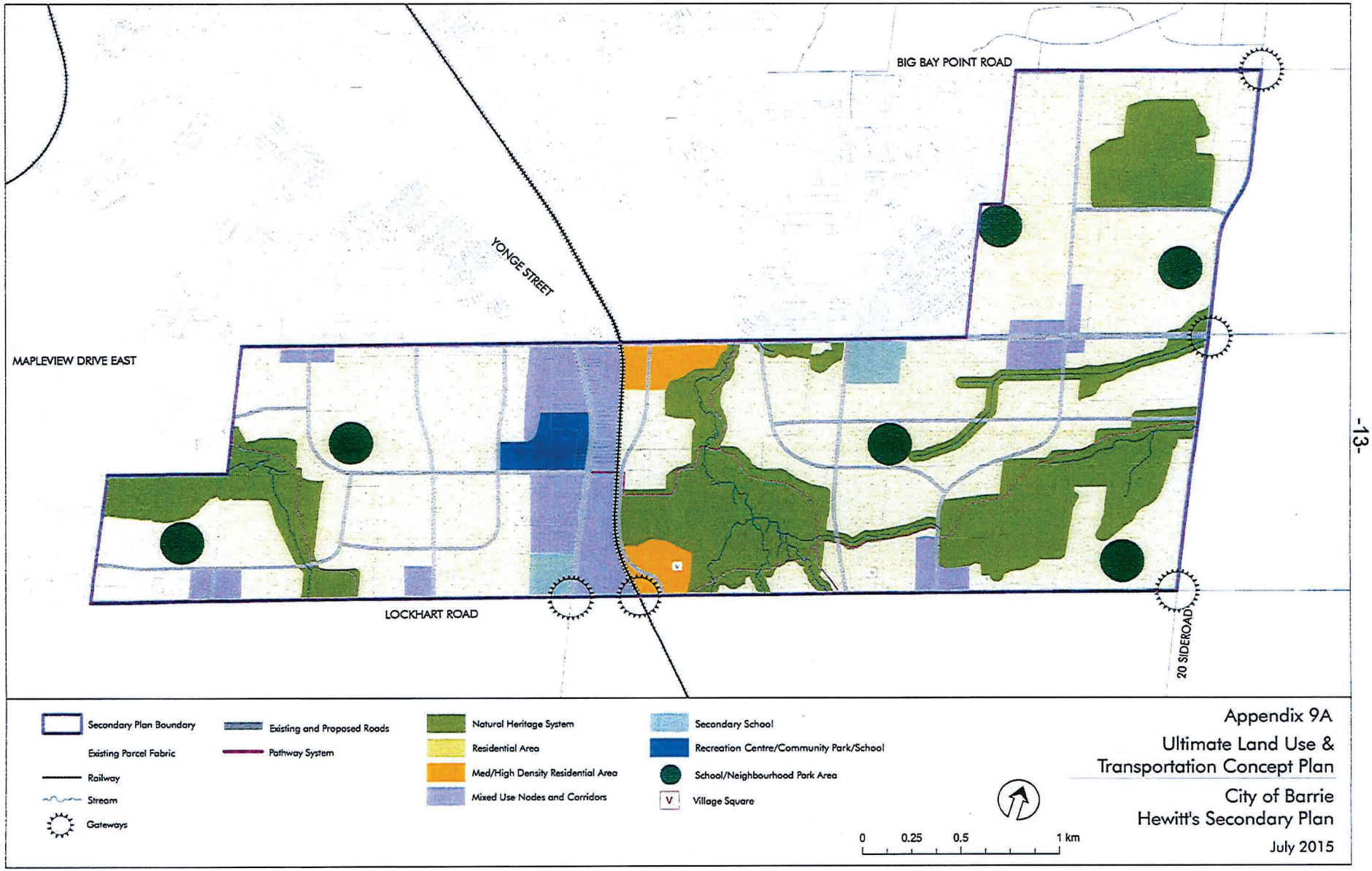

BIG BAY POINT ROAD
YONGE STREET
Defined Policy Area 1
Section 9.3.3.2 c
MAPLEVIEW DRIVE EAST
LOCKHART ROAD
Defined Policy Area 2
Section 9.3.3.2 d
20 SIDEROAD
Secondary Plan Boundary
Existing Parcel Fabric
Railway
Stream
Arterial
Major Collector
Minor Collector
Pathway System
Maximum Width (m)
41
27
24
Potential Grade Separation
Natural Heritage System
Defined Policy Area
0
0.25
0.5
1 km
Schedule 9D-2
Street Widening Plan
City of Barrie
Hewitt's Secondary Plan
July 2015



Schedule 9E
Development Phases

City of Barrie
Hewitt's Secondary Plan

July 2015



Appendix 9A
Ultimate Land Use &
Transportation Concept Plan

City of Barrie
Hewitt's Secondary Plan

July 2015

9A

APPENDIX 9B

HEWITT'S SECONDARY PLAN - MASTER PLAN

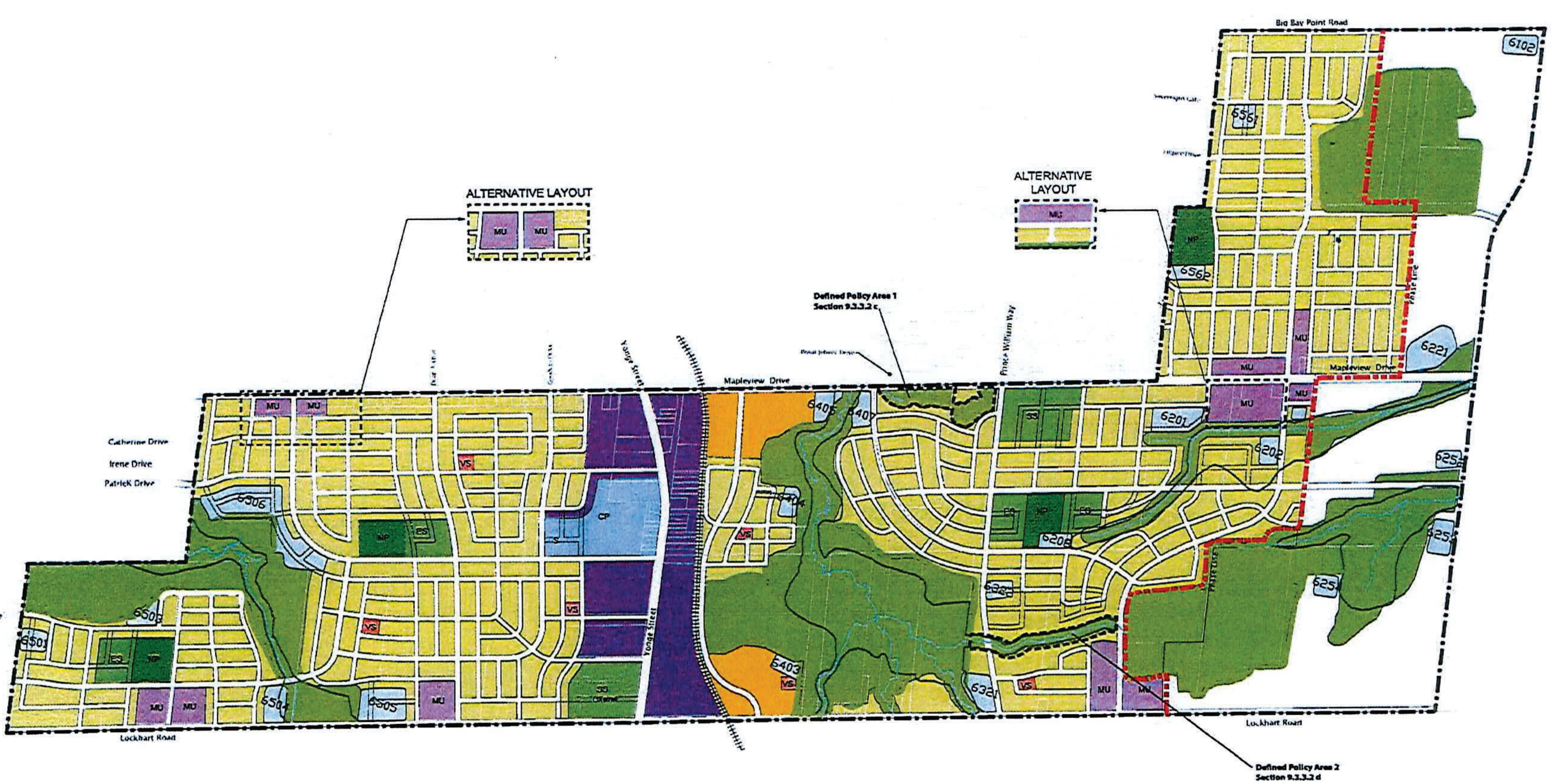
JULY 2015

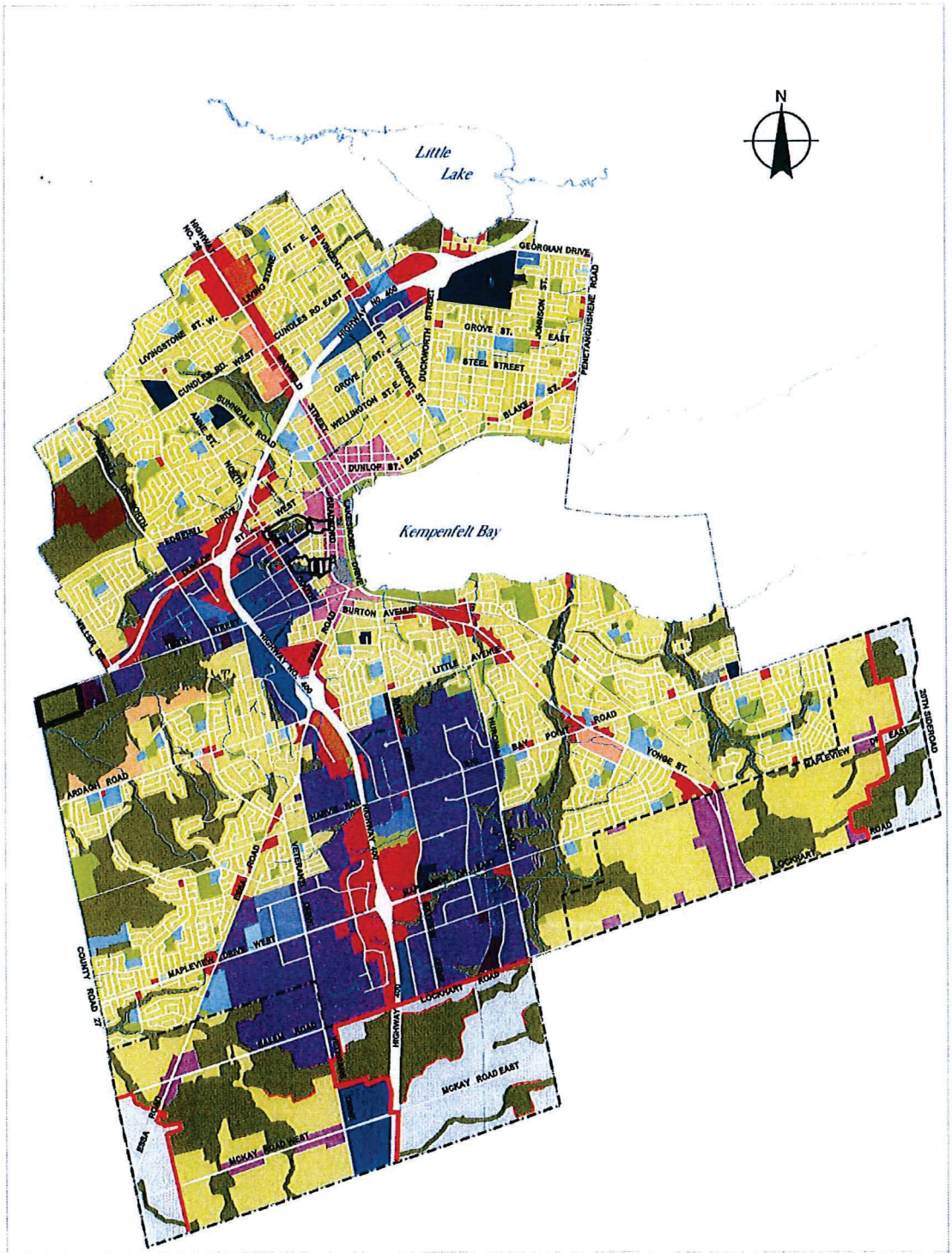
150 0 75 150 300 750m
SCALE 1:7500
N

LEGEND

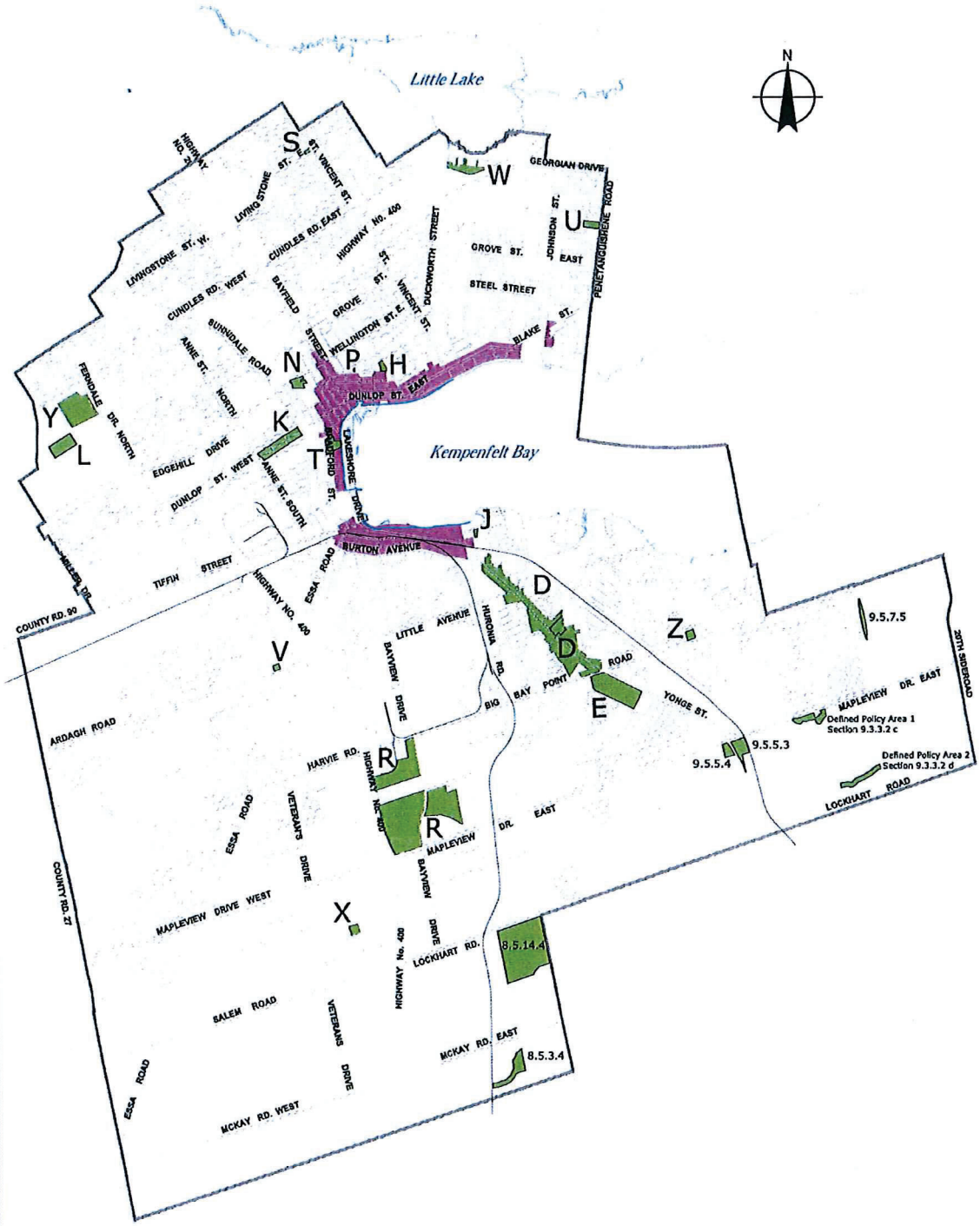
- Secondary Plan Boundary
- Settlement Area Boundary
- * Potential Floodline Boundary
- Existing and Proposed Roads
- Railway
- Natural Heritage System
- Residential Area
- Med / High Density Residential Area
- Yonge Mixed Use Corridor
- Neighbourhood Mixed Use Node
- Neighbourhood Park Area
- School
- Recreation Centre/Community Park/ School
- Village Square
- Stormwater Management Facility
- Special Rural Area

* The Potential Floodline reflects a floodline which could result from modifications such as culvert improvements which reduce areas subject to flooding. It is recognized that these floodlines have not been approved and that the detailed delineation of the Regulatory Floodplain is required to be completed at the planning/design stages of development. The actual developable area will be defined at that time.




N
Little Lake
Kempenfelt Bay
GEORGIAN DRIVE
GROVE ST. EAST
STEEL STREET
DUNLOP ST. EAST
BURTON AVENUE
LITTLE AVENUE
YONGE ST.
MAPLEVIEW
LOCKHART ROAD
MCKAY ROAD EAST
MCKAY ROAD WEST
HIGHWAY 400
The City of BARRIE
Schedule 1 to OFFICIAL PLAN AMENDMENT 40
Residential
City Centre
General Commercial
Mixed-Use Nodes and Corridors
Community Centre Commercial
Regional Centre Commercial
Business Park
General Industrial
Settlement Area Boundary
Highway 400 Industrial
Restricted Industrial
Institutional
Educational Institutional
Major Institutional
Open Space
Environmental Protection Area
Special Rural Area
Areas to be Designated Natural Heritage System
Water Treatment Centre
Waste Management Facility
Future Urban
Waste Disposal Assessment Area Non decision per section 4.7.2.8
City Boundary
Application currently before the Ontario Municipal Board (OMB)
Salem Secondary Plan Area
Hewitt's Secondary Plan Area
SCHEDULE A
Land Use
JULY 2015
500 0 500 1000 metres
Note: Office consolidation, please consult the Planning Services Department for an accurate reference. Not to be reproduced without permission from the City of Barrie Planning Services Department.

COA



The City of
BARRIE

Schedule 3 to OFFICIAL PLAN AMENDMENT 40

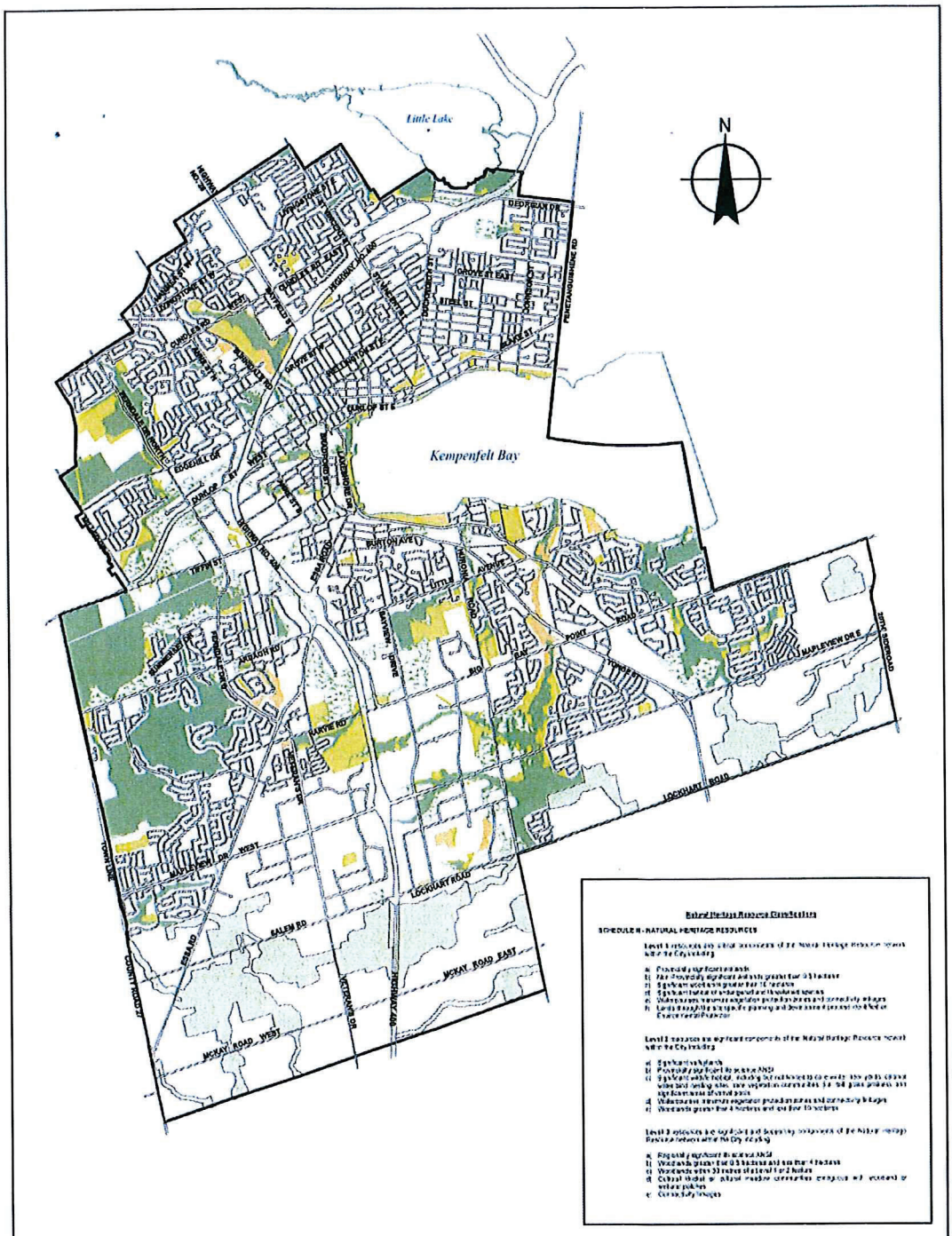
A DEFINED POLICY AREA

HEIGHT REVIEW STUDY

CITY BOUNDARY

SCHEDULE C
Defined Policy Areas

June 2015



The City of BARRIE

Schedule 8 to
OFFICIAL PLAN AMENDMENT 40

Level 1
Level 1 With Existing Development Designation Subject to 3.5.2.4 d)
Level 2
Level 3
Natural Heritage System Salem and Hewitt's Secondary Plan Areas

Schedule H
Natural Heritage Resources
July 2015

Note, Office consolidation, please consult the Planning Services Department for an accurate reference. Not to be reproduced without permission from the City of Barrie Planning Services Department.

Schedule "C"

MEMORANDUM OF AGREEMENT

BETWEEN:

CRISDAWN CONSTRUCTION INC.
("CRISDAWN")

- and -

THE CORPORATION OF THE CITY OF BARRIE
(the "CITY")

In conjunction with the text and schedule modifications that form part of the resolution of Crisdawn Appeal #7, Crisdawn and the City (the "Parties") also agree, in relation to Area 2, that:

1. The Regulatory Floodlines for the 60m corridor as shown on Drawing FL1, attached as Schedule 1, define the approximate extent of floodplain within the corridor subject to detailed grading and final approved hydrologic and hydraulic calculations.

2. Floodplain storage calculations have been completed balancing system storage over the length of the corridor based on future land use compared to existing conditions. The floodplain storage calculations include fill to be placed within the existing floodplain for construction of the proposed north south collector roads.

3. The fill area will be developed for residential development.

4. On Drawing FL1, attached as Schedule 1, the typical section includes a 60 m corridor. The corridor will include a constructed low flow channel (with a geometry to be determined at detailed design), a 36 m +/- constructed meander belt, side slopes varying from 7(h):1(v) to 4(h):1(v) with an average of 5(h):1(v) and a 6m wide erosion access on both the north and south sides. The edge of the 60m corridor will define the setback from the Regulatory Floodline. The principles of natural channel and bio-engineering shall be considered in the final design of the constructed channel.

5. The detailed design of the channel shall generally conform to the geometry and configuration shown on Drawing FL1, attached as Schedule 1. This configuration will need to demonstrate that it can safely convey proposed Regulatory flows from the east.

6. The elevations along the edge of the corridor may be adjusted to facilitate grading on adjacent lands so long as these adjustments do not impact the Regulatory Floodline.

7. The design of the culvert(s) at the collector roads is to consider hydraulics, terrestrial passage and stream stability and is to be completed at the detailed design stage.

CP

8. Subject to addressing the above requirements the City and LSRCA shall issue any required permits / approvals to allow for the construction of the channel within the 60m corridor and the placement of fill within the area designated residential.

IN WITNESS WHEREOF the Parties have executed this Memorandum of Agreement as of the date(s) indicated below:

Crisdawn Construction Inc.

Date: July 15, 2015

_____

Per: DON PRATT

I have authority to bind the Corporation.

The Corporation of the City of Barrie

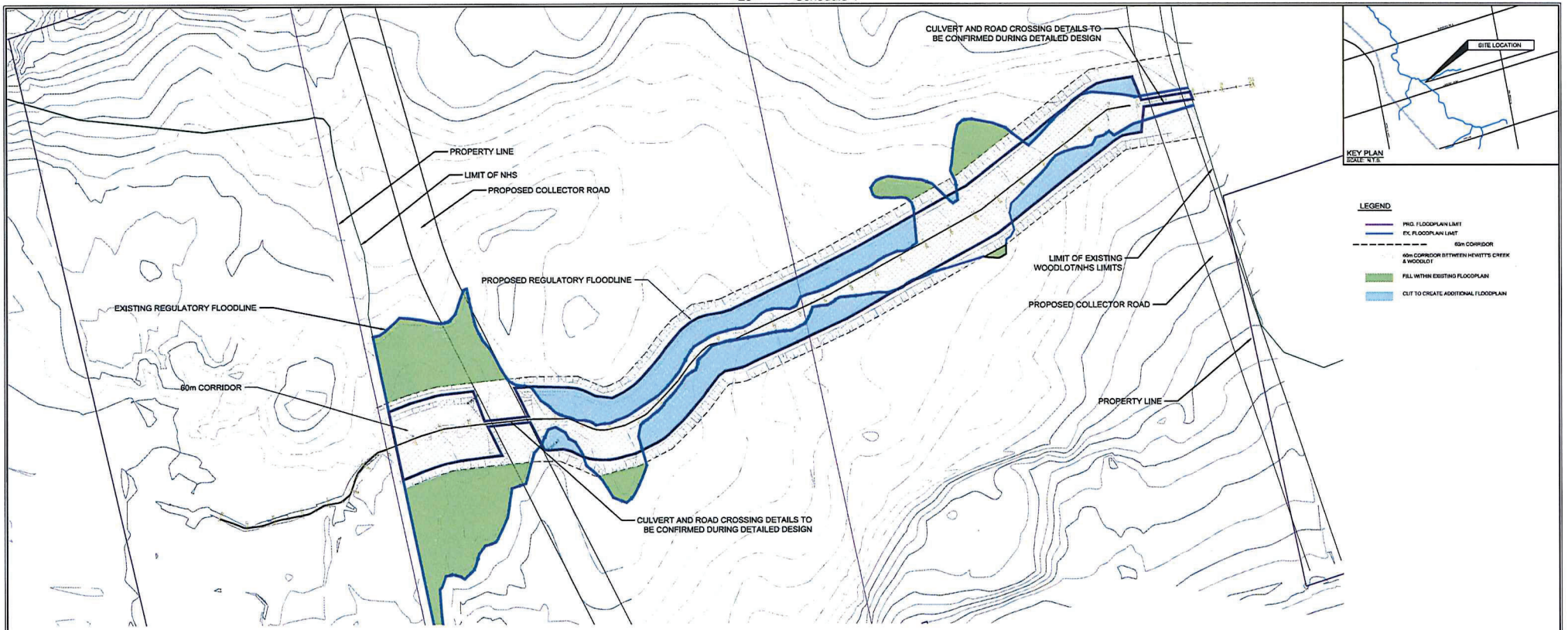
Date: July , 2015

_____

Per: **Jeff Lehman, Mayor**

_____

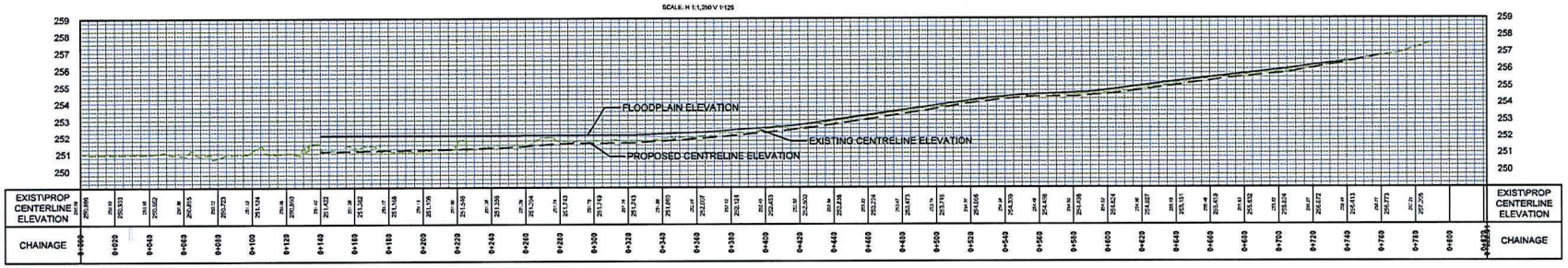
Per: **Dawn McAlpine, City Clerk**

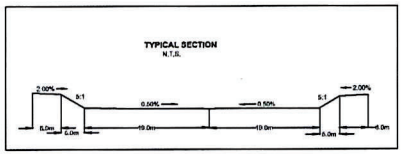


LEGEND

- PRO. FLOODPLAIN LIMIT
- EX. FLOODPLAIN LIMIT
- 60m CORRIDOR
- 60m CORRIDOR BITWEEN HEWITT'S CREEK & WOODLOT
- FILL WITHIN EXISTING FLOODPLAIN
- CUT TO CREATE ADDITIONAL FLOODPLAIN

SCALE: H 1:1,250 V 1:125





Notes:
1. This drawing is the exclusive property of R. J. Burnside & Associates Limited. The reproduction of any part without prior written consent of this office is strictly prohibited.
2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction.
3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.

NOT FOR CONSTRUCTION

No.	Issue / Revision	Date	Auth.

BURNSIDE

R.J. Burnside & Associates Limited
3 Ronell Crescent,
Collingwood, Ontario, L9Y 4J6
telephone (705) 445-0610
fax (705) 445-2369
web www.rjburnside.com

Client
CHRIS DAWN
300-27 CLAPPERTON STREET
BARRIE, ON
L4M 3E6

Drawing Title
HEWITT'S CREEK

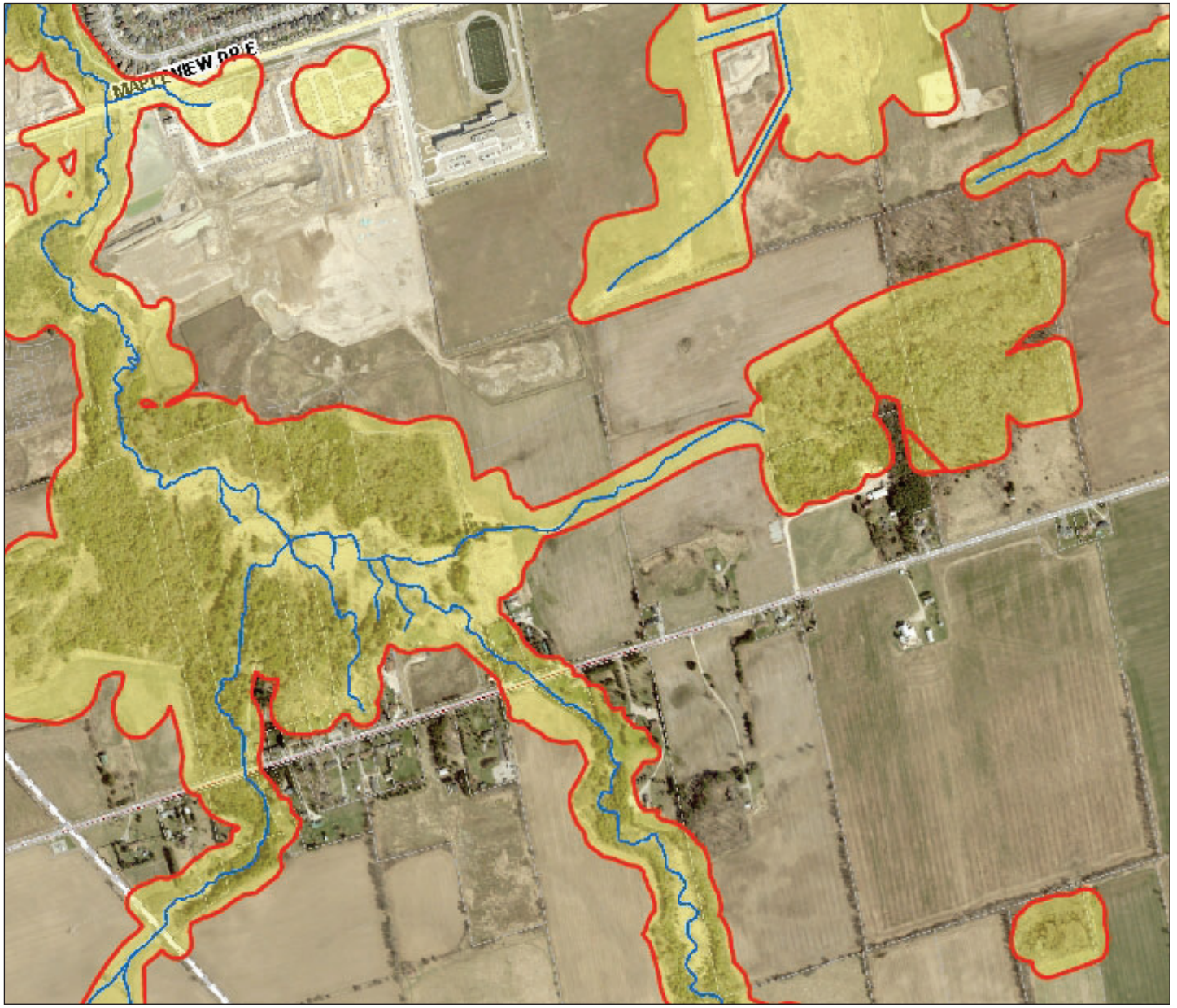
AREA 2 FLOODPLAIN STORAGE COMPENSATION
CUT AND FILL ANALYSIS

Drawn	Checked	Designed	Licensed	Date	Drawing No.
CAS	THL	CAS	THL	10/07/08	
Project No. 300016595		Contract No.		Revision No. 0	FL1
Scale 1:1,250	0	25	50	75m	

8253229.1

Lake Simcoe Region conservation authority

AEC11-076c



Features

- LSRCA Watershed Boundary
- Lake Simcoe
- Watercourse
- Regulated Area Boundary
- Regulated Area
- Road Labels
- Assessment Parcel
- Roads
  - Hwy 400 Series
  - Highway, Arterials
  - Local Road
- Railway

Printed On:
10/12/2023

WGS_1984_Web_Mercator_Auxiliary_Sphere

Mapped By:

Scale 1: 12,117

Meters

616 0 308 616

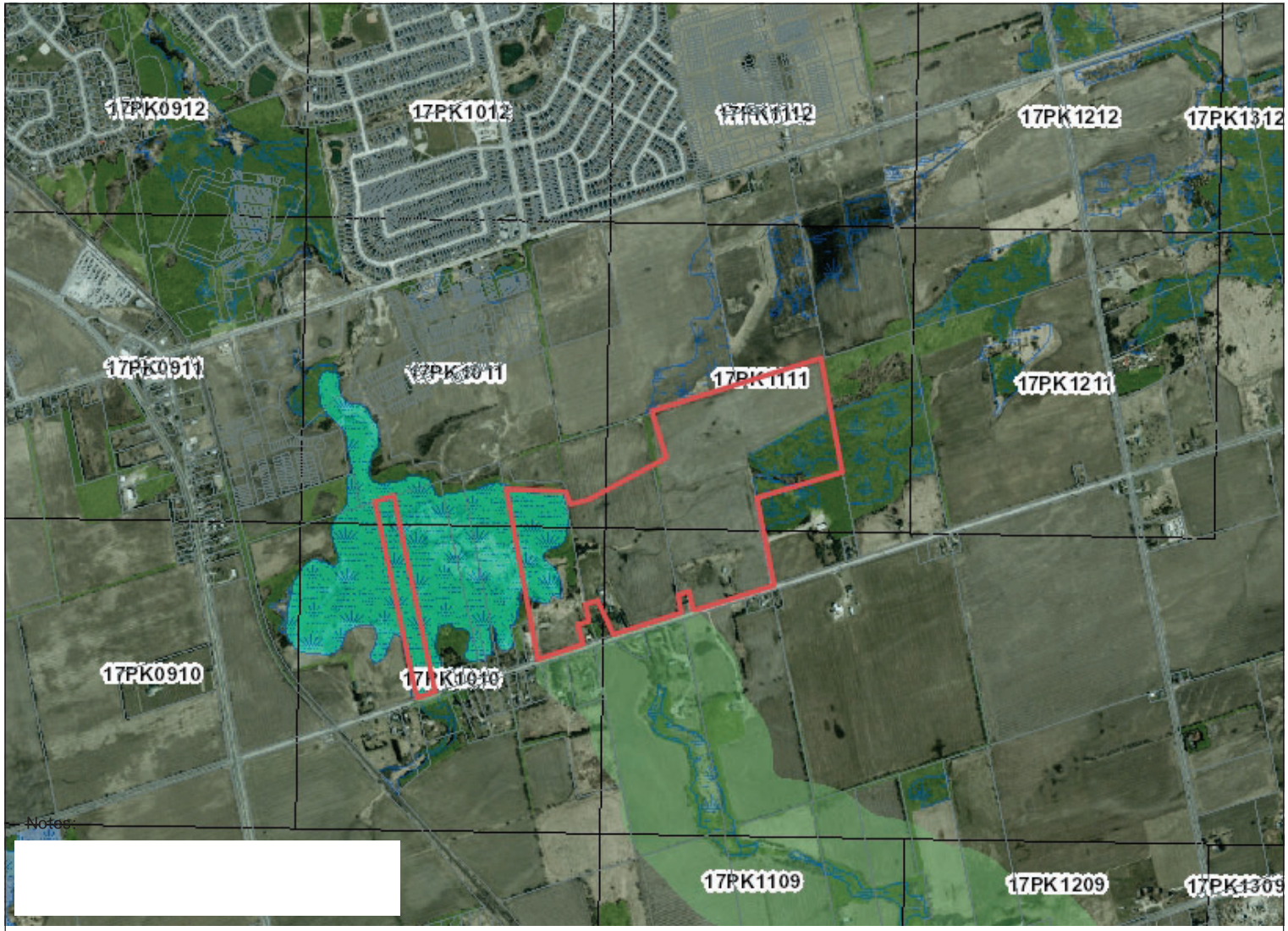
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

AEC11-076c Phase 3 Lands

Map created:10/12/2023

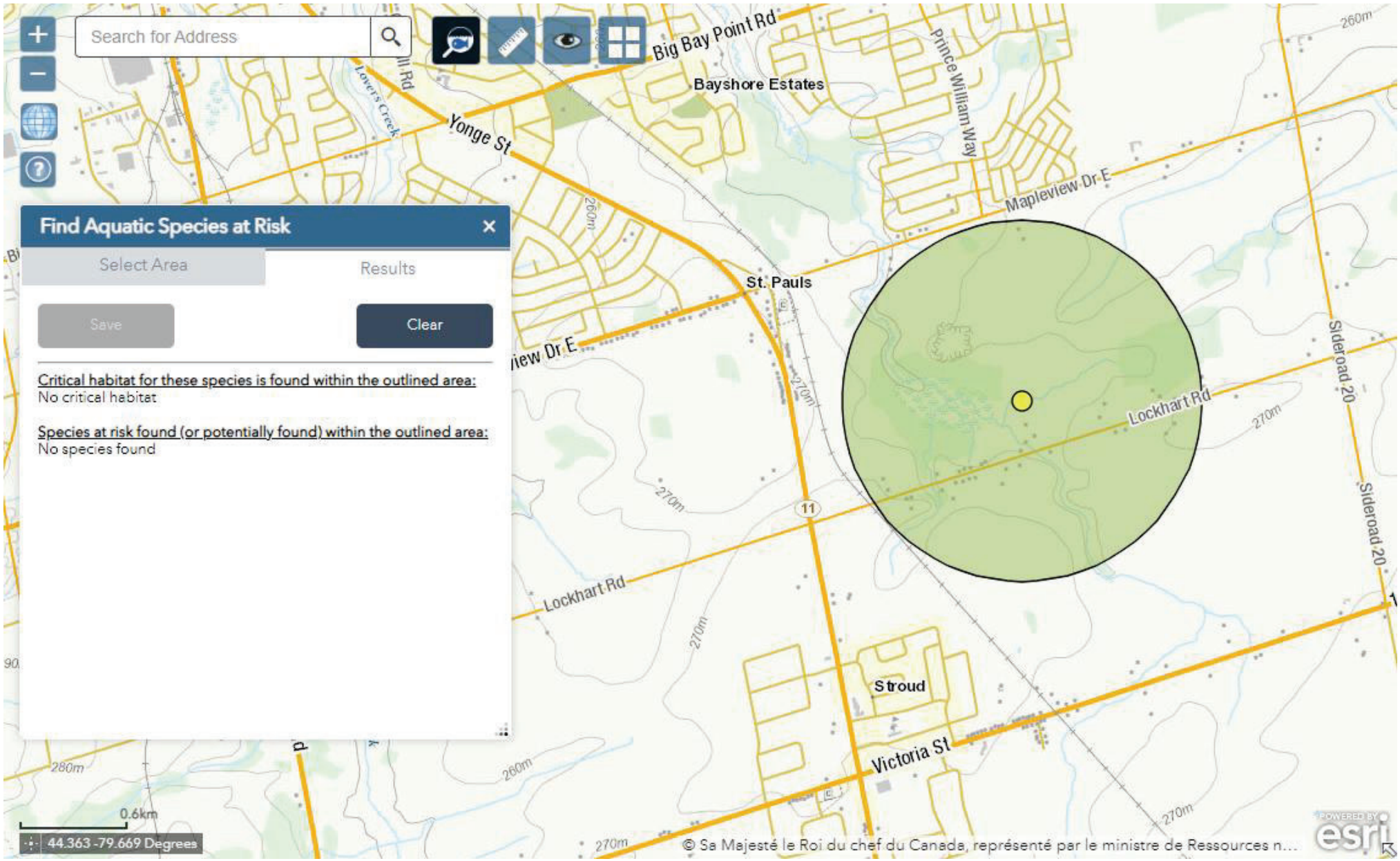


Legend

- Assessment Parcel
- NHIC 1 Km Grid
- 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

1.0 0 0.49 1.0 Kilometres

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



DFO Mapping, 2023

APPENDIX B

Agency Correspondence

Jordan Wrobel

Subject: FW: Terms of Reference - NHE 2022 Update - Phase 3 Lands

---

From: Erin Fitzpatrick [mailto:E.Fitzpatrick@lsrca.on.ca]
Sent: May-06-22 10:03 AM
To: Lisa Moran
Cc: Melinda Bessey
Subject: RE: Terms of Reference - NHE 2022 Update - Phase 3 Lands

Hi Lisa,

Thank you for providing the additional information. I have a few comments below in green.

Kind Regards,
Erin

Erin Fitzpatrick, M.Sc.
Natural Heritage Ecologist

Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3
905-895-1281 ext. 286 | 1-800-465-0437 | Mobile: 289-716-5840
e.fitzpatrick@LSRCA.on.ca | www.LSRCA.on.ca

Twitter: @LSRCA
Facebook: LakeSimcoeConservation

From: Lisa Moran <Lisa@Azimuthenvironmental.Com>
Sent: May 2, 2022 2:55 PM
To: Erin Fitzpatrick <E.Fitzpatrick@lsrca.on.ca>
Cc: Melinda Bessey <M.Bessey@lsrca.on.ca>
Subject: RE: Terms of Reference - NHE 2022 Update - Phase 3 Lands

Hi Erin,

Ok, thank you very much – we will incorporate those comments into the EIS as required.

I can confirm that 850 and 856 are not included within the proposed development. Understood.

I believe all NHS lands were part of the 2015 staking (see attached). Thanks for this. I expect the plans provide for the setback to the high constraint stream corridor area shown here, so we should be good!

The catchment based water balance will be completed by others (Burnside). Please ensure that the EIS interprets the results of relevant technical studies to confirm that the drainage conditions and moisture regimes that support the wetlands, woodlands and watercourses within the study area will be maintained post-development.

In terms of the Area 2, I have attached the minutes of settlement that describes what will be undertaken at this location. As part of the EIS update, we will include an Aquatic Assessment (and site visit) to discuss aquatic conditions of the site and to generally describe future works, recommended mitigation and anticipated approvals for these works. All design work related to Area 2 will be undertaken at detailed design stage. Thank you. The minutes of settlement seem to be consistent with the requirements in the secondary plan. I look forward to hearing more about the plans for this area.

Let me know if you have any questions but hopefully this helps!

Lisa

From: Erin Fitzpatrick [mailto:E.Fitzpatrick@lsrca.on.ca]
Sent: April 29, 2022 3:58 PM
To: Lisa Moran
Cc: Melinda Bessey
Subject: RE: Terms of Reference - NHE 2022 Update - Phase 3 Lands

Hi Lisa,

Thank you for connecting with us to confirm the scope of work for the updated EIS for the Phase 3 Lands. I have filled out our EIS Checklist for ease of reference, largely populating it with the scope you provided and the standard requirements for any EIS in our jurisdiction. I have suggested the following additions (some of which are captured in the checklist):

- Please complete a third breeding bird survey should suitable grassland bird habitat be present;
- Please confirm the protocols for SAR bird and bat surveys with the MECP, as required;
- A catchment-based water balance will be required to confirm that the proposed development will not negatively impact the hydrologic inputs to wetlands, woodlands and watercourses within the area of influence of the development; and,
- Should trails be proposed through the Phase 3 lands, a Trail Impact Study will be required;

Should any lands within Phase 3 include components of the NHS that were not staked during the Subwatershed Impact Study, a feature staking may be required (e.g. 850 and 856 Lockhart Rd). It is unclear if some of these areas are part of the proposed development footprint.

It is noted that your scope does not speak to any work related to the aquatic habitat assessments for the high constraint stream corridor associated with Defined Policy Area 2 (Section 9.3.3.2 d) identified on Schedule 9B of the Hewitt's Secondary Plan. Will there be any alteration to this area? If so, additional surveys to inform that work may be required. Please ensure that the EIS addresses applicable policies of the Secondary Plan in relation to this corridor and considers the role of this feature for wildlife passage, feature linkage, etc.

Please let me know if you have any questions or would like to discuss any of the points above.

Kind Regards,
Erin

Erin Fitzpatrick, M.Sc.
Natural Heritage Ecologist

Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3
905-895-1281 ext. 286 | 1-800-465-0437 | Mobile: 289-716-5840
e.fitzpatrick@LSRCA.on.ca | www.LSRCA.on.ca

Twitter: @LSRCA
Facebook: LakeSimcoeConservation

From: Melinda Bessey <M.Bessey@lsrca.on.ca>
Sent: April 25, 2022 1:43 PM
To: Lisa Moran <Lisa@Azimuthenvironmental.Com>; Erin Fitzpatrick <E.Fitzpatrick@lsrca.on.ca>
Subject: FW: Terms of Reference - NHE 2022 Update - Phase 3 Lands

Hi Lisa,

Thanks for your email. I hope that all is well with you and your family. By way of this email, I am forwarding your request to Erin Fitzpatrick to respond.

Also, I have attached a copy of our TOR checklist, going forward, if you could use this for proposed TORs to us, that would be great!!

Thank you!

Melinda Bessey, MSc., MCIP, RPP
Director, Planning
Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3
905-895-1281, ext. 151 | 1-800-465-0437 | Mobile- 905-955-3730
m.bessey@LSRCA.on.ca | www.LSRCA.on.ca

Please note: the LSRCA Board of Directors approved a change to our Fee Policy. The new fees took effect on January 3, 2022 and can be found here: https://www.lsrca.on.ca/permits/permit-fees

Twitter: @LSRCA
Facebook: LakeSimcoeConservation

From: Lisa Moran <Lisa@Azimuthenvironmental.Com>
Sent: April 25, 2022 12:08 PM
To: Melinda Bessey <M.Bessey@lsrca.on.ca>
Subject: Terms of Reference - NHE 2022 Update - Phase 3 Lands

Good afternoon Melinda,

Azimuth has been retained to prepare a Natural Heritage Evaluation (NHE) – Update for the lands located within the Southern Part of Lots 17,18 and 19, Concession 11, City of Barrie (Hewitt's Secondary Plan Area). The property contains lands within the City of Barrie's Natural Heritage System which has triggered the need for a NHE. This NHE will form a portion of the submission to acquire draft plan approval to permit a proposed development within the Phase 3 lands.

Azimuth completed a NHE in 2017 for lands within both the Phase I and III lands whereby development within the Phase I lands were approved and construction is currently underway in at least a portion of these lands.

The landowners are now moving ahead to acquire draft plan approval for the lands associated with Phase 3.

Within the 2017 NHE, the following scope of work was undertaken within the Phase 1 and 3 lands (field component):

- Initial reconnaissance survey undertaken in April 2014.
- ELC and vegetation surveys were completed in June (2014), August (2014), October (2014) and May (2016). Ontario ELC for Southern Ontario (Lee et al., 1998) was used as a guide to classification of vegetation community types.
- Three evening amphibian call surveys were undertaken in April, May and June 2014 as per Marsh Monitoring Protocol.
- Two dawn breeding bird surveys were undertaken in June (2014).
- Staking of the Natural Heritage System July (2015).

Due to the time that has elapsed since the initial field studies, we propose the following is included in the NHE update for the Phase 3 lands:

- Search the County of Simcoe, City of Barrie (City), Ministry of the Environment, Conservation and Parks (MECP), and Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) records as required, to obtain available background information, including obtaining current information related to natural heritage conditions including Species at Risk (SAR) in the nearby area;
- Conduct the following field surveys to document/confirm the extent of existing natural heritage features, functions and species on the property:
    - Evaluate/ map/confirm vegetation community types based on Ecological Land Classification (ELC) methods (summer 2022);
    - Conduct a single in-season vegetation survey including a search for Butternut (Endangered) (summer 2022);
    - Conduct two dawn breeding birding surveys (June 2022) with the potential for a third survey depending on the initial results;
    - Search the structures for Barn Swallow (Threatened) nests;
    - Complete two visual exit surveys on the anthropogenic structures that have the potential to provide SAR bat habitat (June/July 2022); and
    - Record all incidental wildlife observations during site visits.
- Update the NHE report to reflect the most up to date planning policies and legislation;
- Assess/update the potential direct and indirect impacts of the proposed development on the natural heritage features and functions identified on or adjacent to the property;
- The NHE Update will include information on impact mitigation/avoidance/restoration where required.

Our 2014 Amphibian surveys identified amphibian activity within the limits of the Natural Heritage Core only. Similarly, we are not proposing a full three-season vegetation inventory due to the level of study these lands have previously undergone. Provided the conditions of the site remain consistent with what was previously documented, we are not proposing amphibian surveys or additional vegetation surveys.

If you can please pass this request on to the most appropriate LSRCA staff, it would be appreciated. Please let me know if you have any questions or wish to discuss.

Regards,

Lisa Moran
Terrestrial Ecologist

Azimuth Environmental Consulting, Inc
642 Welham Road
Barrie, ON, L4N 9A1
ph: (705) 721-8451 ext 202
cell: (705) 331-1479
lisa@azimuthenvironmental.com
www.azimuthenvironmental.com

*Providing services in **hydrogeology**, **terrestrial** and **aquatic ecology** & **environmental engineering***

Ministry of Natural Resources and Forestry

Midhurst District Office
2284 Nursery Road
Midhurst, ON L9X 1N8
Tel: 705-725-7530
Fax: 705-725-7584

Ministère des Richesse naturelles et des Forêts

Bureau de district Midhurst
2284, rue Nursery
Midhurst, ON L9X 1N8
Tél: 705-725-7530
Téléc: 705-725-7584

Ontario

October 25, 2017

Azimuth Environmental Consulting, Inc
642 Welham Road
Barrie, Ontario,
L4N 9A1

Attention: Lisa Moran, Terrestrial Ecologist

Subject: Information Gathering Form – Hewitt's Creek Secondary Planning Area, Barrie

Ms. Moran the Ministry of Natural Resources and Forestry (MNRF) has reviewed the Information Gathering Form submitted in support of the review process of the proposed developments within the Hewitt's Creek Secondary Planning Area in the City of Barrie.

The Information Gathering Form (IGF) is intended to provide the details of site evaluations in support of the MNRF determining if a proposed activity might cause a contravention of Section 9 and/or Section 10 of the *Endangered Species Act, 2007* (ESA). The information provided in Tables 2, 3 and 4 of the IGF generally lacked the detail necessary to fully support the MNRF's assessment of the biological inventory work and conclusions made.

Specific evaluation reports (e.g. Butternut Health Assessment report) are referenced as sources for site specific data. Summary of the evaluations and results should be available directly in the IGF. The directions within the IGF document indicate relevant information from source documents can be cut and pasted into the Tables.

The IGF presents ecological assessments for properties involving three Phases of development within the Hewitt's Creek secondary planning area. Table 1 of the IGF summarizes target dates related to implementation stages of the proposed three phases of development – e.g. earthworks proposed in 2018, 2020 and 2022 for Phases 1, 2 and 3 respectively. The IGF summarizes the preliminary SAR surveys completed on all properties regardless of the intended phase of construction within the planning area. Many of the surveys completed date back to 2012-2014. Given the potential lag in time since the initial SAR surveys and implementation of construction activities in later phases, as well as the potential for additional species being designated threatened or endangered on the Species At Risk in Ontario (SARO) list clarification is required related to what follow-up surveys for SAR and/or habitats identified in the present IGF, and for how species added to the SARO list will be addressed.

The explanations in Table 4 concerning interpretation of how protected SAR may be positively or negatively affected should more clearly detail how and to what extent SAR species or habitats will be affected. Similarly, the proposed compensations should more clearly detail what measures and under what direction of the ESA and its regulations the proposed compensations are recommended.

Conceptual site plans were provided for most properties discussed in the IGF, there was a general lack of discussion concerning the presence of SAR or their habitats as that relates to the proposed development footprints provided. For example, should the protective buffer around a butternut tree overlap the proposed development footprint, the IGF should clearly address if a contravention of Sections 9 and 10 of the ESA might occur, and how potential impact can be avoided or might be addressed.

Keeping the above points in mind the following provides comments specific to the individual properties addressed in the IGF.

PHASE 1 Properties

BEMP Holdings 2

Butternut

- MNRF habitat protection guidance (see attached) for butternut is a 50m radius buffer around each butternut regardless of size. The protective buffer should be presented in the maps for the BEMP Holdings 2 property. Identified habitats should be evaluated for direct or indirect impacts from development.
- Regarding the butternut trees identified in the hedgerow along the BEMP2/Lockmaple shared boundary consideration of the butternut trees is required from a BEMP Holdings 2 perspective given the protected habitat zone overlaps onto the BEMP2 property. Given the location of the noted butternut trees and associated habitats (within the 50m buffers) BEMP2 would be non-compliant with the ESA should construction activities proceed within the 50m protection zone prior to the Lockmaple development removing the trees as indicated in the IGF per the O.Reg. 242/08 Exemptions Requiring Notice To Be Given On Registry – Exemption 23.7 for butternut.

Lockmaple Innisfil Investments Inc.

Butternut

- Tables 2 and 3 reference a Butternut Health Assessment (BHA) report had been submitted to MNRF, details of the trees assessed in the BHA report should be provided in the tables (e.g. health category of the trees).
- The 50m protective buffer around each butternut tree should be presented in the maps of the IGF. Identified habitats should be evaluated for direct or indirect impacts from development.
- Clarify the explanations in Table 4 per the comments above.

SAR Bats

- Tables 2 and 3 identify ELC forest community FOD5-8 had been surveyed for bat maternity roost habitat, referencing an Azimuth 2012 report. A summary of the survey methods and results should be provided in the Table 3 and Figure 2 (e.g. sample plot locations, a summary of the cavity trees enumerated).
- It is concluded that SAR bat habitat was absent. The survey protocol used does not address potential habitat from a Species at Risk (SAR) bats and ESA perspective. Based on the available information it cannot be determine if SAR bat habitats will be damaged or destroyed by the proposed activity. We recommend the woodlands be evaluated for potential SAR bat maternity roost habitat using the survey approach outlined in the MNRF Technical Note for SAR Bats in Ontario, 2015 (attached). Potential habitats should be evaluated for direct and indirect impacts of development.

Rainsong Land Development

SAR Bats

- Table 2 does not indicate SAR bat habitat surveys had been completed, however Table 3 indicates potential summer bat maternity roost habitat may be on site. We recommend the woodland communities be evaluated for potential SAR bat maternity roost habitat using the survey approach outlined in the MNRF Technical Note for SAR Bats in Ontario, 2015. Potential habitats should be evaluated for direct and indirect impacts of development.

Chrisdawn Construction (Phase 1 – north part and Phase 3 – south part)

Butternut

- Table 3 and Figure 2 identify three butternut trees in a forest unit (FOM7-2? This is not clear in Figure 2) in the Phase 1 lands. The supplemental mapping you provided on October 18, 2017 provided the 50m protection zone around each butternut tree. Although helpful to visualize the protection zones against the conceptual site plan an explanation regarding potential impacts to butternut habitat from development and implications under the ESA is required.

SAR Birds

- Table 3 indicates barn swallows were documented foraging during breeding bird surveys over both of the Phases 1 and 3 study areas; and nests were found on a house at the north end of Phase 1 study area. Supplemental mapping noted 2017 survey locations and results. This additional information should be provided in clearer detail within the appropriate sections of the IGF.
- Anthropogenic structures are identified in the south end of the Phase 3 study area, it is not clear that surveys for barn swallow nests at those locations have been completed. We recommend that prior to demolition of any buildings they be re-evaluated for SAR and habitats (e.g. barn swallows).

SAR Bats

- Table 2 does not indicate SAR bat habitat surveys had been completed, however Table 3 indicates forest and forest swamp habitats are on site, noting potential summer bat maternity roost habitat

may be present. We recommend the woodland communities be evaluated for potential SAR bat maternity roost habitat using the survey approach outlined in the MNRF Technical Note for SAR Bats in Ontario, 2015. Potential habitats should be evaluated for direct and indirect impacts of development.

- There are a number of anthropogenic structures on the Phases 1 and 3 study areas. Tables 2 and 3 do not indicate any buildings were evaluated for the presence of SAR bats maternity roost habitat/function. Prior to demolition we recommend all buildings be evaluated at the appropriate season for the presence of SAR bat maternity roosts.

Blanding's Turtle

- A Blanding's turtle was confirmed in 2017 on a property north of the Chrisdawn properties, on the north side of Mapleview Drive. Recognizing the IGF was submitted to this office prior to that turtle's occurrence confirmation the IGF should address the potential for Blanding's turtles or their habitats to be present. We recommend the IGF evaluate the potential for Blanding's turtle and their habitats to be present on site (e.g. potential nesting habitat in the ELC community noted as Disturbed in Figure 2). Potential habitats should be evaluated for direct and indirect impacts of development.

LM Barrie Holdings Inc. – 2121191 Ontario Inc.

Butternut

- Table 3 indicates the presence of five butternut trees in the forest community FOD5-8 (NW corner of property). The 50m radius protection zone around each of the identified butternut should be shown on Figure 2 for the property. An evaluation of the proposed activity and potential for impacts to butternut habitat should be provided in order to determine potential ESA authorization requirements.

SAR Bats

- Table 3 indicates there are unconfirmed potential summer bat maternity roost habitats on site. Clarify why SAR bat habitats have not been evaluated. Are any potential habitats at risk of direct or indirect impacts from development?

Blue Sky Private Equity Inc.

Butternut

- Table 3 indicates a butternut was on site during the 2014 site surveys; however it was no longer present in 2016. Table 4 indicates the butternut was mistakenly removed. Clarify the explanations in Table 4 per the comment above.

SAR Bats

- Table 2 does not indicate SAR bat habitat surveys had been completed, however Table 3 indicates forest habitat is on site, and notes potential summer bat maternity roost habitat may be present. We recommend the woodland communities be evaluated for potential SAR bat maternity roost

habitat using the survey approach outlined in the MNRF Technical Note for SAR Bats in Ontario, 2015. Potential habitats should be evaluated for direct and indirect impacts of development.

- Clarification is required concerning the ELC CUW1 community north of the forest community FOD5-2, and perhaps it should be included within the recommended bat habitat survey areas.

PHASE 2 Properties

BEMP Holdings 1

Butternut

- The 2014 surveys identified one butternut in the north end ELC mixed swamp community (SWM6-1). The 50m radius protection zone around the identified butternut should be shown on Figure 2 for the BEMP Holdings 1 property. An evaluation of the proposed activity and potential for impacts to butternut habitat should be provided in order to determine potential ESA authorization requirements.
- This property is in Phase 2 of the planning area development; clarify what additional surveys to confirm the presence of additional butternut on site might be necessary (e.g. potential regeneration of butternut over time). An evaluation of potential impacts to butternut habitat (i.e. the 50m protection zone) would be required at that time.

SAR Bats

- No surveys are noted for SAR bat maternity roost habitat on this property. Table 3 indicates SAR bat habitats are unconfirmed on site, however potential bat maternity habitat (summer) exist in forest communities FOD5-1, SWC3-1, SWM6-1 and SWD 7-1.
- The noted woodlands should be evaluated for potential SAR bat maternity roost habitat using the survey approach outlined in the MNRF Technical Note for SAR Bats in Ontario, 2015. Potential habitats should be evaluated for direct and indirect impacts of development.

Lockhart Innisfil Investments Inc.

SAR Birds

- Table 3 notes an eastern meadowlark (threatened species) was documented during breeding bird surveys in 2014. Table 4 provides no discussion concerning the presence of meadowlark on site as that relates to the proposed development. The potential negative impact to the area it was found relative to the proposed site plan could be noted; and relating recommended follow-up surveys prior to the implementation of Phase 2 of the Secondary Plan.
- Potential summer nesting (silo on site) and foraging habitats were noted for barn swallow (threatened); one foraging barn swallow was observed during 2014 breeding bird surveys. We recommend that prior to demolition the silo be re-evaluation for species and habitats.

SAR Bats

- Table 3 indicates there are unconfirmed potential summer bat maternity roost habitats on site. Clarify why SAR bat habitats have not been evaluated. Are any such habitats at risk of impacts from development?

PHASE 3 Properties

Finger Lakes Estates Inc.

SAR Bats

- Table 3 indicates there are unconfirmed potential summer bat maternity roost habitats on site. Clarify why SAR bat habitats have not been evaluated. Are any such habitats at risk of impacts from development?

Chrisdawn-Phase 3 - property is addressed above.

Should you have any questions contact the undersigned at this office.

Yours truly,

Graham Findlay

Graham Findlay
Management Biologist
Huronia Resource Management Team,
Midhurst District

c.c. Mr. Paul Neals, Orion Environmental Solutions

APPENDIX C

Photographic Record

Photograph 1: View of the active agricultural fields found on the property, facing north (August 18, 2022).

Photograph 2: View of the MEGM3 community adjacent to the west Natural Core Area, facing north (August 18, 2022).

Photograph 3: View of barn on adjacent southern Phase 3 lands, facing west (August 18, 2022).

Photograph 4: View of barn and shed on adjacent southern Phase 3 lands, facing south (August 18, 2022).

Photograph 5: View of MEMM3 community on southern Phase 3 lands, facing northeast (August 18, 2022).

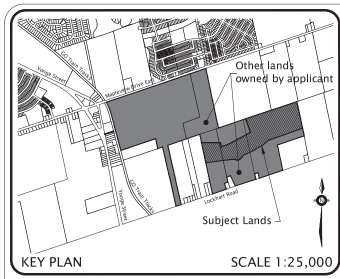
Photograph 6: View of typical vegetation composition of MEMM3 community on Phase 3 lands, facing west (August 18, 2022).

Photograph 7: View of southeast corner consisting of planted soy field and SWD4-3 community, facing northeast (August 18, 2022).

Photograph 8: Property's northwest corner with planted soy and FOM7-2 woodland (August 18, 2022).

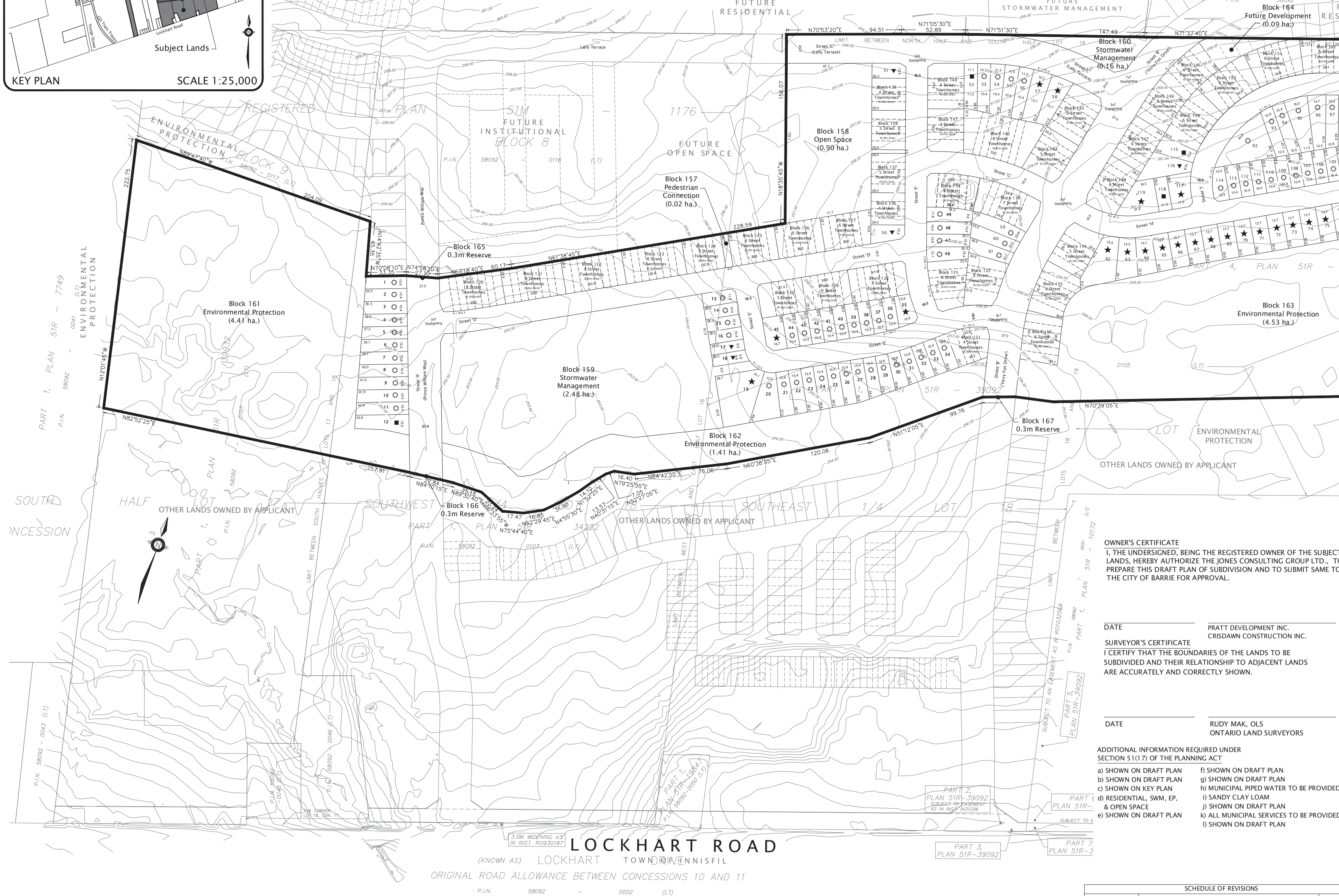
APPENDIX D

Proposed Development Concept



Draft Plan of Subdivision

Part of Lot 19, and Part of Lot 20, Concession 12
Former Township of Innisfil,
Now in the
City of Barrie
2024



STATISTICS	Area (ha.)	Units
★ 13.7m Singles (LOTS 19, 35, 45, 57 & 58, 62 – 80, 117 & 119)	1.38 ha.	26 units
■ 11.0m Singles (LOTS 12, 52, 91, 115 & 118)	0.21 ha.	5 units
○ 10.4m Singles (LOTS 1 – 11, 13 – 16, 20 – 34, 36 – 44, 46 – 49, 53 – 56, 59 – 61, 81 – 90, & 92 – 114)	3.08 ha.	83 units
▼ 9.0m Singles (LOTS 17 & 18, 50 & 51, & 116)	0.19 ha.	5 units
Street Townhomes (6.0m/unit) (BLOCKS 120 – 156)	4.33 ha.	213 units
Open Space and Pedestrian Connection (BLOCKS 157 & 158)	0.92 ha.	
Stormwater Management (BLOCKS 159 & 160)	2.64 ha.	
Environmental Protection (BLOCKS 161 – 163)	10.35 ha.	
Future Development (BLOCK 164)	0.09 ha.	2 units
Roads & Reserves: 0.3m Reserves Blocks 165 – 167; Major Collector – Street 'A' (Prince William Way) – Street 'B' (Terry Fox Drive); Minor Collector – Street 'C' (Lally Terrace); Local Roads – Streets 'D' – 'I'	4.85 ha.	
TOTAL	28.04 ha.	334 units

SCALE 1 : 1500 (A1)

Hewitt's Central
Draft Plan of Subdivision

OWNER'S CERTIFICATE
I, THE UNDERSIGNED, BEING THE REGISTERED OWNER OF THE SUBJECT LANDS, HEREBY AUTHORIZE THE JONES CONSULTING GROUP LTD., TO PREPARE THIS DRAFT PLAN OF SUBDIVISION AND TO SUBMIT SAME TO THE CITY OF BARRIE FOR APPROVAL.

DATE — PRATT DEVELOPMENT INC. CRISDAWN CONSTRUCTION INC.

SURVEYOR'S CERTIFICATE
I CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE — RUDY MAK, OLS ONTARIO LAND SURVEYORS

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT

a) SHOWN ON DRAFT PLAN
b) SHOWN ON DRAFT PLAN
c) SHOWN ON KEY PLAN
d) RESIDENTIAL, SWM, EP, & OPEN SPACE
e) SHOWN ON DRAFT PLAN
f) SHOWN ON DRAFT PLAN
g) SHOWN ON DRAFT PLAN
h) MUNICIPAL PIPED WATER TO BE PROVIDED
i) SANDY CLAY LOAM
j) SHOWN ON DRAFT PLAN
k) ALL MUNICIPAL SERVICES TO BE PROVIDED
l) SHOWN ON DRAFT PLAN

SCHEDULE OF REVISIONS

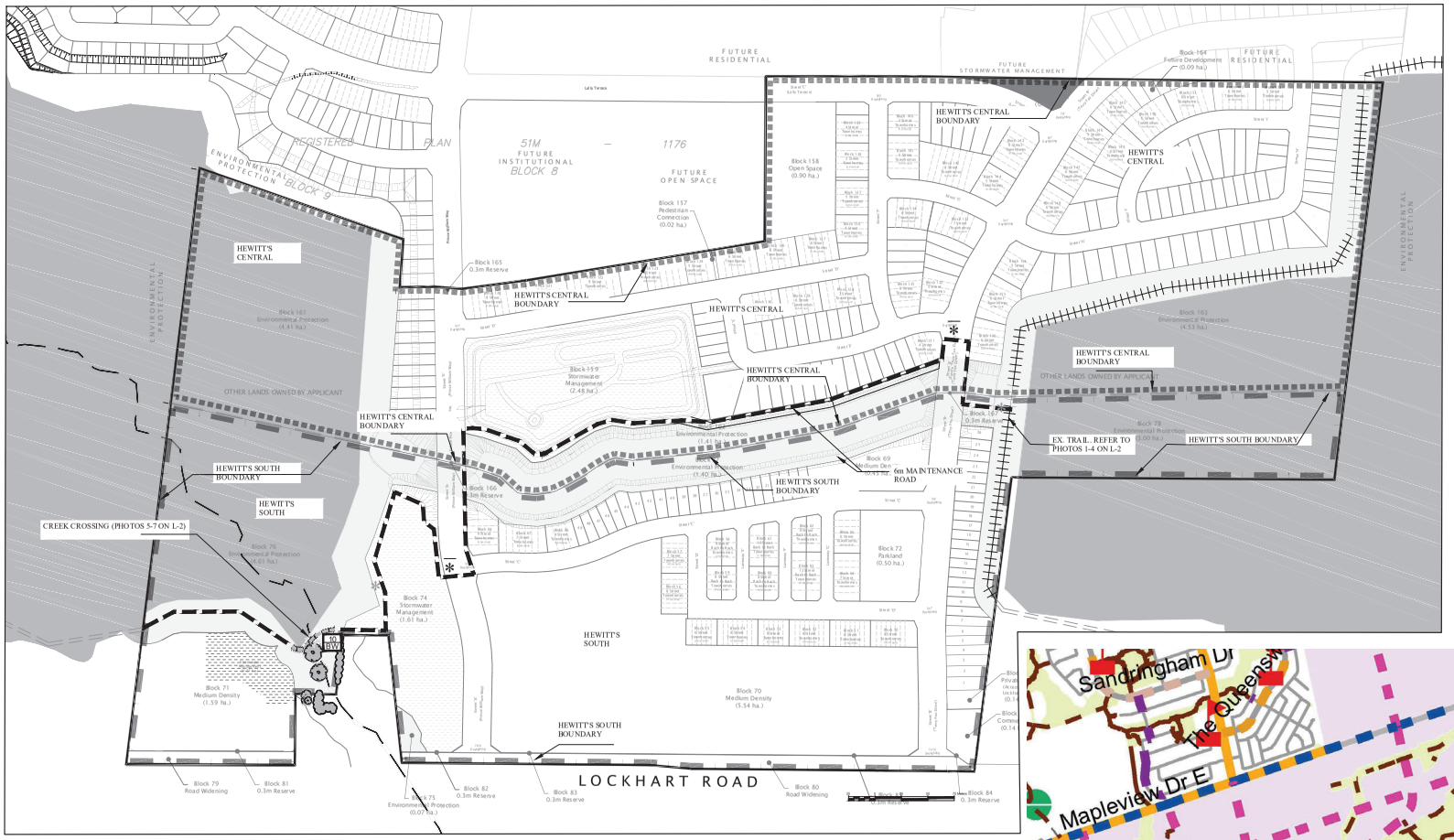
DATE	DESCRIPTION	DRAWN
AUG. 21, 2023	CHANGES AS PER COMMENTS	m.c.r.
AUG. 25, 2023	CHANGES AS PER COMMENTS	m.c.r.
SEPT. 14, 2023	CHANGES AS PER COMMENTS	m.c.r.
SEPT. 19, 2023	CHANGES AS PER COMMENTS	m.c.r.
MAY 8, 2024	CHANGES AS PER ENG COMMENTS	m.c.r.
MAY 29, 2024	CHANGES AS PER COMMENTS	m.c.r.

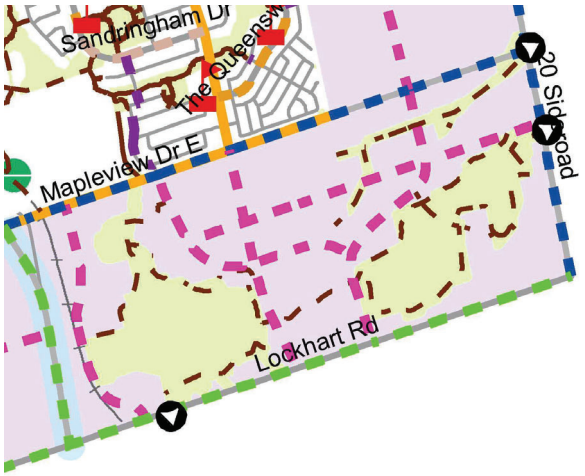
Raymond J. Duhamel — REGISTERED PROFESSIONAL PLANNER — R.P.P.

Date Issued:	MAY 11, 2023
Checked By:	RD
Project No.:	PRA-23041
Drawn By:	m.c.r.
Drawing Name:	PRA-23041-DP-2F.dwg

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS
229 Mapleview Drive East, Unit 1, Barrie, Ontario, L4N 0W5
Phone: 705-734-2538 Fax: 705-734-1056

HEWITT'S CENTRAL
CITY OF BARRIE





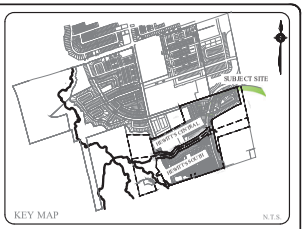
EXCERPT FROM CITY OF BARRIE "2019 TRANSPORTATION MASTER PLAN"

LEGEND

- PHASE 3 BOUNDARY
- 28 BW — BOARDS WALKS/ ±85m (28 modules) INCLUDING CREEK CROSSING
- PROPOSED CREEK CROSSING WITH BOARDWALKS
- HEWITT'S CREEK
- EX. TREES TO BE PRESERVED. REFER TO TREE PRESERVATION PLAN
- DEVELOPMENT LIMIT BETWEEN HEWITT'S CENTRAL AND HEWITT'S SOUTH
- EXISTING TRAIL ON SUBJECT SITE AS PER "C.O.B. 2019 TRANSPORTATION MASTER PLAN
- PROPOSED TRAIL ON ADJACENT LANDS AS PER "C.O.B. 2019 TRANSPORTATION MASTER PLAN
- PROPOSED TRAIL CONNECTION SUBJECT TO FINAL SWM POND GRADING PLAN/ MAINTENANCE ROAD LOCATION
- APPROXIMATE TRAIL ROAD CROSSING
- APPROXIMATE TRAIL CONNECTION
- 30m BUFFER ZONE
- E.P. ZONE
- PROPOSED S.W.M. POND. ACCESS ROAD TO BE DETERMINED.

HEWITT'S GATE TRAILS

SCALE 1 : 2000



KEY MAP N.T.S.

GENERAL NOTES

CONTRACTOR IS RESPONSIBLE FOR ALL LOCATES INCLUDING ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION OR INSTALLATIONS. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

ANY ACCOMPANYING DOCUMENTATION RELATING TO THE LANDSCAPE PLAN AND/OR PRESERVATION PLAN SUCH AS TENDER DOCUMENTS AND CHANGE NOTICES ARE TO BE ENDORSED BY J.D.B. ASSOCIATES LIMITED PRIOR TO THE BEGINNING OF ANY SITE WORKS. IN THE EVENT THAT OF A DISCREPANCY THE DRAWING SHALL BE ASSUMED CORRECT.

IT IS THE RESPONSIBILITY OF THE PERSON OR PERSONS RESPONSIBLE FOR THE CONSTRUCTED WORKS TO NOTIFY THE LANDSCAPE ARCHITECT WHEN PREPARED FOR ANY REQUIRED INSPECTIONS AND SIGN OFFS.

SCHEDULED MEETINGS SHALL TAKE PLACE AT THE CLOSEST MUTUALLY CONVENIENT TIME.

No.	REVISION	DATE	APRVD
1	CLIENT REVIEW	December 12, 2013	MT
2	REVISED AS PER CITY COMMENTS	July 8, 2024	MT

BASE PLAN REVISED: September, 2023

Client info:
Bradley Homes Inc.

L. ANDSCAPE ARCHITECTS STAMP
STAMP AND SIGNATURE VOID IF REPRODUCED

JDB ASSOCIATES LTD.
Urban Designers
Landscape Architects
Arborists
274 Burton Ave., Suite 1201
Barrie, Ontario
L4N 5W4
Fax: 705-728-5860
Tel: 705-728-5278

Hewitt's Central
and Hewitt's South
PART 1, PLAN 51R - 39932,
PART 1, PLAN 51R - 39092
PART 4, PLAN 51R - 39092
City of Barrie

TRAIL CONNECTIONS

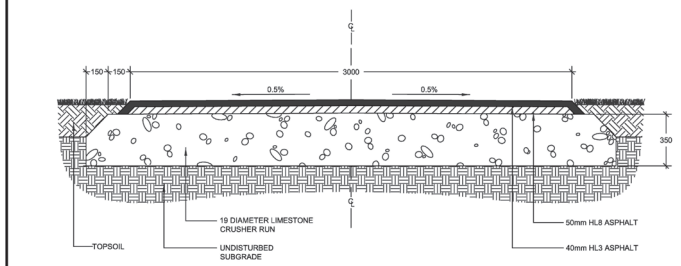
SCALE:	DESIGNED BY:	REVIEWED BY:
as shown	MT	NB
CITY FILE No.	OUR FILE REF.# 23-23	L-1

	TRAIL TYPE	USE	SURFACE	BASE DEPTH	WIDTH	CLEARANCE SETBACK	CLEARANCE SETBACK FOR SHRUBS ONLY
OPEN SPACE / ENVIRONMENTAL PROTECTION	NATURAL TRAIL	PEDESTRIAN	WOODCHIPS EARTHEN	0 - 150mm	1 - 2m	0 - 1.5m	N/A
	MULTI-USE TRAIL	PEDESTRIAN MIXED USE	LIMESTONE SCREENINGS GRANITE SCREENINGS GRANULAR A/CLEAR STONE	150mm	2 - 3m	1.5m	3.0m
	MULTI-USE TRAIL WITH MAINTENANCE	PEDESTRIAN VEHICULAR	LIMESTONE SCREENINGS GRANITE SCREENINGS GRANULAR A/CLEAR STONE	300 - 350mm	3 - 4m	1.5m	3.0m
PARKLAND	PATHWAY	PEDESTRIAN MIXED USE VEHICULAR	ASPHALT - (P1272, P1273) UNIT PAVERS CONCRETE	300 - 350mm	3 - 4m	1.5m	3.0m
	MIXED USE WATERFRONT TRAIL	MIXED USE VEHICULAR	ASPHALT - (P1272,P1273) CONCRETE	300 - 350mm	3 - 4m	2.0m	4.0m
	FULL SERVICE WATERFRONT TRAIL	PEDESTRIAN MIXED USE VEHICULAR	ASPHALT - P1272,P1273)	350mm	4 - 5m	1.5m	N/A
SWMF	STORMWATER MANAGEMENT FACILITY ROAD ACCESS	VEHICULAR	50mm TOPSOIL/GRASS ON GRANULAR BASE	350 - 400mm	4 - 5m	1.5m	N/A

Barrie

TRAIL AND PATHWAY CONSTRUCTION MATRIX

REV No. 2 | DATE: APR 2023 | SCALE: N.T.S. | P1274



1. ASPHALT SHALL BE PLACED AND SPREAD USING A MECHANICAL PAVER.
2. ASPHALT LAYERS (AFTER ROLLING) TO BE COMPACTED TO A MINIMUM 97% S.P.M.D.D.
3. IN THE EVENT OF UNSUITABLE SUB-GRADE MATERIAL, BASE IS TO BE OVER-EXCAVATED AND BACKFILLED WITH GRANULAR 'B' COMPACTED TO 98% S.P.M.D.D.
4. ALL BACKFILL TO BE COMPACTED IN LIFTS OF 100mm.
5. ENSURE POSITIVE DRAINAGE.
6. TAMP ALL EDGES TO A FIRM 45 DEGREE BEVEL.
7. ALL DIMENSIONS ARE IN MILLIMETRES.
8. REFER ALSO TO P1273.

Barrie

PARK WALKWAY WITH CENTRE CROWN

REV No. 3 | DATE: APR 2023 | SCALE: N.T.S. | P1272

GENERAL NOTES

CONTRACTOR IS RESPONSIBLE FOR ALL LOCATES INCLUDING ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION OR INSTALLATIONS. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

ANY ACCOMPANYING DOCUMENTATION RELATING TO THE LANDSCAPE PLAN AND/OR PRESERVATION PLAN SUCH AS TENDER DOCUMENTS AND CHANGE NOTICES ARE TO BE ENDORSED BY J.D.B. ASSOCIATES LIMITED PRIOR TO THE BEGINNING OF ANY SITE WORKS. IN THE EVENT THAT OF A DISCREPANCY THE DRAWING SHALL BE ASSUMED CORRECT.

IT IS THE RESPONSIBILITY OF THE PERSON OR PERSONS RESPONSIBLE FOR THE CONSTRUCTED WORKS TO NOTIFY THE LANDSCAPE ARCHITECT WHEN PREPARED FOR ANY REQUIRED INSPECTIONS AND SIGN OFFS.

SCHEDULED MEETINGS SHALL TAKE PLACE AT THE CLOSEST MUTUALLY CONVENIENT TIME.

No.	REVISION	DATE	APRVD.
1.	CLIENT REVIEW	October 12, 2023	ST
2.	REVISED AS PER CITY COMMENTS	May 9, 2024	ST

PHOTO 1 - EXISTING TRAIL ON THE EAST SIDE TO BE UPGRADED

PHOTO 2 - EXISTING TRAIL ON THE EAST SIDE/ CULVERT AREA

PHOTO 3 - EXISTING CULVERT EAST OF THE TRAIL

PHOTO 4 - EXISTING CULVERT WEST OF THE TRAIL

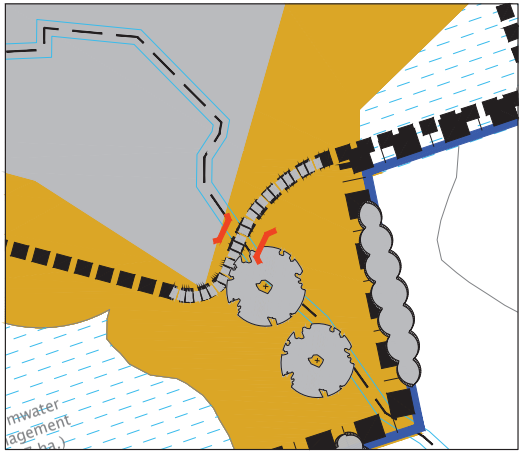
LOCATION OF THE EXISTING TRAIL AND CULVERT ON EAST SIDE OF THE SUBJECT SITE

AERIAL PHOTO OF THE PROPOSED CREEK CROSSING

PHOTO 5 - EX. CREEK, MAX 2m WIDE ADJACENT TO THE PROPOSED CREEK CROSSING LOCATION

PHOTO 6 - EX. CREEK CROSSING WITH CULVERT BY THE PREVIOUS OWNER TO BE UPGRADED

PHOTO 7 - NORTH-EAST VIEW OF THE PROPOSED CREEK CROSSING LOCATION



IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS ON THE SITE AND REPORT ANY DISCREPANCIES OR VARIATIONS FROM THE SUPPLIED INFORMATION TO THE LANDSCAPE ARCHITECT WITH THE PROJECT. JDB ASSOCIATES LIMITED IS NOT RESPONSIBLE FOR THE ACCURACY OF SURVEY, ARCHITECTURAL, MECHANICAL, ENGINEERING OR ELECTRICAL INFORMATION SHOWN ON THE DRAWING. FOR FURTHER INFORMATION REFER TO APPROPRIATE SURVEY, ARCHITECTURAL, MECHANICAL, ENGINEERING OR ELECTRICAL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORKS.

THIS DRAWING IS NOT TO BE SCALED.

JONES ENGINEERING

BASE PLAN REVISED: September, 2023

Client info:
Bradley Homes Inc.

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS — OALA MEMBER

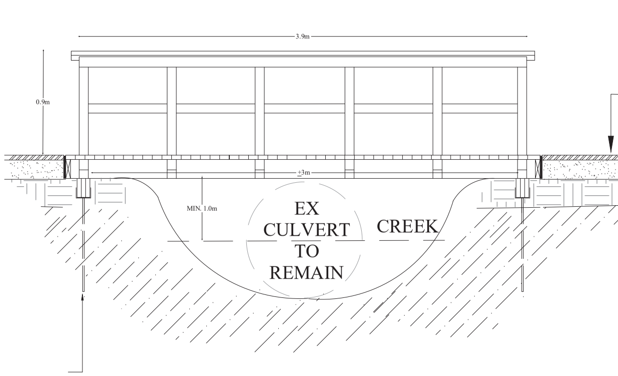
LANDSCAPE ARCHITECT'S STAMP
STAMP AND SIGNATURE VOID IF REPRODUCED

JDB ASSOCIATES LTD.
Urban Designers
Landscape Architects
Arborists
274 Burton Ave., Suite 1201
Barrie, Ontario
L4N 5W4
Fax: 705-722-6669
Tel: 705-722-6678

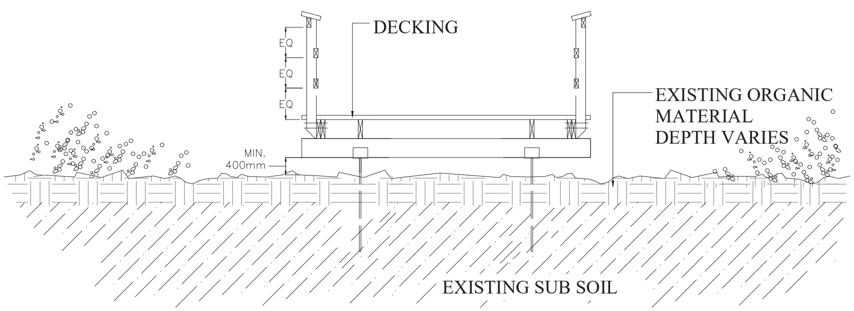
Hewitt's Central
and Hewitt's South
PART 1, PLAN 51R - 39032,
PART 1, PLAN 51R - 39092
PART 4,PLAN 51R - 39092
City of Barrie

TRAIL DETAILS

SCALE: as shown	DESIGNED BY: ST	REVIEWED BY: NB
CITY FILE No.	OUR FILE REF.: 23-23	L-2



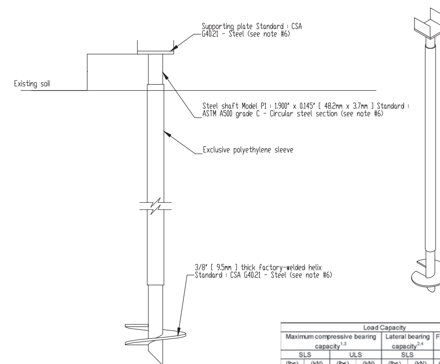
HELICAL PILES



BRIDGE RAILING DETAIL. REFER TO BRIDGE PHOTO

BRIDGE REFERENCE PHOTO

SHOP DRAWING SIGNED BY A STRUCTURAL ENGINEER TO BE PROVIDED BEFORE CONSTRUCTION FOR APPROVAL BY THE CITY OF BARRIE AND THE LANDSCAPE ARCHITECT.



techno Metal Post

1700, Setlakwe Street Thetford Mines (QC) G6G 8B2 CANADA
www.technometalpost.com

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REVISIONS

DATE	DESCRIPTION	REV.
26/06/2013	Revised Load capacity.	1

Client :

Client adress :

Project :

Drawing : Techno Metal Post Model P1 (Above ground light structure)

Approved by :

Date : 2011-10-31

Scale : N/A

Drawing no: P2-G-R1-A

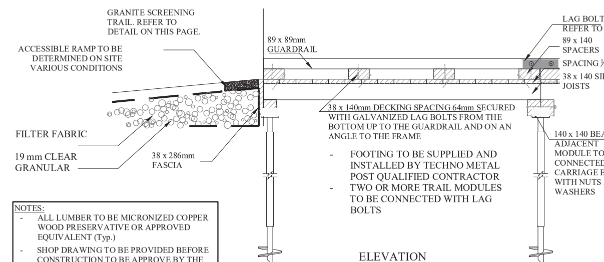
Page number : SHEET 1 OF 1

Load Capacity							
Maximum compressive bearing capacity[1,3]				Lateral bearing capacity[2,4]		Factored bending resistance	
SLS		ULS		SLS		ULS	
(lbs)	(kN)	(lbs)	(kN)	(lbs)	(kN)	(lbs.ft)	(kN.m)
9,600	42.7	13,440	59.8	450	2.0	1,785	2.4

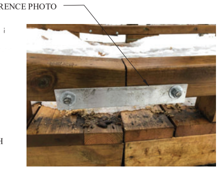
NOTES:

1	The maximum tensile load capacity can be obtained, conservatively, by halving the values of the bearing capacity in compression shown in the selection table.
2	The lateral capacity depends on the density of soil (to validate consult technical department of Techno Metal Post.)
3	When the pile is laterally unsupported (soil very loose / soft, liquefiable soils, water and air), the structural strength of the pile must be approved by the technical department of Techno Metal Post.
4	The values of lateral capacity are average values and can be modified, more or less, depending on the characteristics of the existing soil.
5	If required, piles may be field welded with extensions to achieve greater loading capacities in poor soil conditions.
6	If required, the helical pile and the supporting plate can be galvanized in compliance with standard CAN / CSA G-164-M92 610g / m²

REFER TO GEOTECHNICAL REPORT BY PML FOR EXISTING SOIL BEARINGS RESISTANCE.



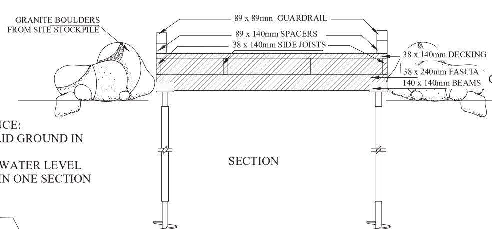
ELEVATION



GUARDRAIL CONNECTION REFERENCE PHOTO

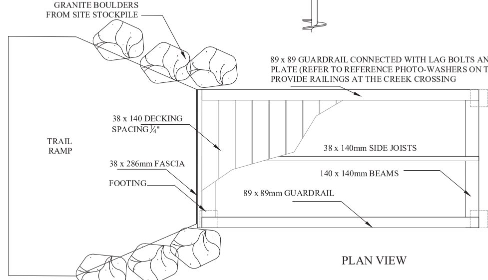
NOTES:
- ALL LUMBER TO BE MICRONIZED COPPER WOOD PRESERVATIVE OR APPROVED EQUIVALENT (Typ.)
- SHOP DRAWING TO BE PROVIDED BEFORE CONSTRUCTION TO BE APPROVE BY THE LANDSCAPE ARCHITECT AND THE CITY OF BARRIE

METAL POSTS TO BE INSTALLED UNDER THE SUPERVISION OF THE LANDSCAPE ARCHITECT/ ARBORIST TO AVOID ANY IMPACT ON THE ROOTS OF THE ADJACENT TREES.

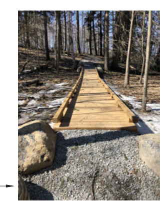


SECTION

BOARDWALK CLEARANCE:
- ± 0.4m ABOVE SOLID GROUND IN WETLAND AREAS
- MIN. 1.0m ABOVE WATER LEVEL FOR THE BRIDGE IN ONE SECTION 3m LONG



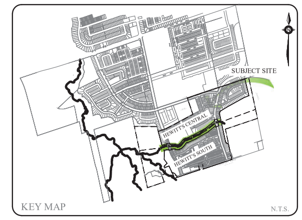
PLAN VIEW



BOARDWALK (REFERENCE PHOTO)

MODULAR BOARDWALK DETAILS - REFER TO LP-11 FOR LOCATION

SCALE 1:20



KEY MAP

N.T.S.

GENERAL NOTES

CONTRACTOR IS RESPONSIBLE FOR ALL LOCATES INCLUDING ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION OR INSTALLATIONS. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

ANY ACCOMPANYING DOCUMENTATION RELATING TO THE LANDSCAPE PLAN AND/OR PRESERVATION PLAN SUCH AS TENDER DOCUMENTS AND CHANGE NOTICES ARE TO BE ENDORSED BY J.D.B. ASSOCIATES LIMITED PRIOR TO THE BEGINNING OF ANY SITE WORKS. IN THE EVENT THAT OF A DISCREPANCY THE DRAWING SHALL BE ASSUMED CORRECT.

IT IS THE RESPONSIBILITY OF THE PERSON OR PERSONS RESPONSIBLE FOR THE CONSTRUCTED WORKS TO NOTIFY THE LANDSCAPE ARCHITECT WHEN PREPARED FOR ANY REQUIRED INSPECTIONS AND SIGN OFFS.

SCHEDULED MEETINGS SHALL TAKE PLACE AT THE CLOSEST MUTUALLY CONVENIENT TIME.

No.	REVISION	DATE	APRVD.
1.	CLIENT REVIEW	December 12, 2023	StT
2.	REVISED AS PER CITY COMMENTS	July 9, 2024	StT

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS ON THE SITE AND REPORT ANY DISCREPANCIES OR VARIATIONS FROM THE SUPPLIED INFORMATION TO THE LANDSCAPE ARCHITECT WITH THE PROJECT. JDB ASSOCIATES LIMITED IS NOT RESPONSIBLE FOR THE ACCURACY OF SURVEY, ARCHITECTURAL, MECHANICAL, ENGINEERING OR ELECTRICAL INFORMATION SHOWN ON THE DRAWING. FOR FURTHER INFORMATION REFER TO APPROPRIATE SURVEY, ARCHITECTURAL, MECHANICAL, ENGINEERING OR ELECTRICAL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORKS.

THIS DRAWING IS NOT TO BE SCALED.

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS
229 Mapleview Drive East, Unit 1, Barrie, Ontario, L4N 0W5
Phone: 705-734-2538 Fax: 705-734-1056
www.jonesconsulting.com

BASE PLAN REVISED: September, 2023

Client info:
Bradley Homes Inc.

ONTARIO ASSOCIATION OF LANDSCAPE ARCHITECTS
OALA
MEMBER

LANDSCAPE ARCHITECTS STAMP
STAMP AND SIGNATURE VOID IF REPRODUCED

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Tel: 705-722-6278

Hewitt's Central
Draft Plan of Subdivision
PART 1, PLAN 51R - 39932,
PART 1, PLAN 51R - 39092
PART 4, PLAN 51R - 39092
City of Barrie

TRAIL DETAILS

SCALE: as shown	DESIGNED BY: StT	REVIEWED BY: NB
CITY FILE No.	OUR FILE REF. # 23-23	L-3