



Environmental Impact Study
Park Lots 9-12 County Road 4
Durham
Grey County

Prepared for:
Khanani Developments – Durham Acquisitions Inc.

Prepared by:
Azimuth Environmental
Consulting, Inc.

May 2023

AEC 21-302



Environmental Assessments & Approvals

May 4, 2023

AEC 21-302

Khanani Developments – Durham Acquisitions Inc.
Unit 12 – 27 Roytec Road
Woodbridge, ON L4L 8E3

Attention: Bilal Khanani, President

Re: **Environmental Impact Study – Park Lots 9-12 County Road 4 Lands,
Durham, Municipality of West Grey, Grey County**

Dear Mr. Khanani:

As requested, we have completed an Environmental Impact Study related to development proposed for the Park Lots 9-12 County Road 4 Lands in Durham.

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

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Jim Broadfoot, H. B. Sc.
Terrestrial Ecologist



Table of Contents

Letter of Transmittal	i
1.0 INTRODUCTION	1
2.0 PLANNING CONTEXT	1
2.1 Provincial Planning Policy (2020).....	1
2.2 Endangered Species Act, 2007	2
2.3 Land Use Designation & Zoning	2
2.4 Saugeen Valley Conservation Authority.....	3
2.5 Federal <i>Fisheries Act</i>	3
3.0 STUDY APPROACH.....	3
3.1 Background Data	4
3.2 Vegetation Community Mapping and Surveys	4
3.3 Wildlife Surveys	5
3.3.1 Breeding Birds	5
3.3.2 Amphibian Breeding.....	5
3.3.3 Bats	5
3.4 Fish and Fish Habitat	6
4.0 EXISTING CONDITIONS.....	6
4.1 Land Use	6
4.2 Mapped Features	6
4.3 Topography, Soils, Groundwater	7
4.4 Terrestrial Resources.....	7
4.4.1 Vegetation.....	7
4.4.2 Wildlife.....	8
4.5 Species at Risk.....	9
4.6 Wetlands	9
4.7 Significant Woodland	10
4.8 Significant Valleyland.....	10
4.9 Significant Wildlife Habitat	10
4.10 Areas of Natural and Scientific Interest	10
4.11 Fish and Fish Habitat	10
5.0 NATURAL HERITAGE FEATURES AND FUNCTIONS	11
6.0 PROPOSED DEVELOPMENT	11
7.0 IMPACT ASSESSMENT	12
7.1 Habitat for Threatened or Endangered Species	12
7.2 Significant Woodland	12



7.3 Significant Wildlife Habitat	13
7.4 Unevaluated Wetlands.....	13
7.5 Fish Habitat	14
8.0 RECOMMENDATIONS	15
9.0 CONCLUSIONS.....	15
10.0 REFERENCES	16

List of Figures

- Figure 1: Site Location
- Figure 2: Environmental Features
- Figure 3: Development Plan Overlay

List of Tables

- Table 1: Vascular Plant List
- Table 2: Vegetation Community Description
- Table 3: Evening Calling Amphibian Survey Results
- Table 4: Bird Species List
- Table 5: Species at Risk Assessment
- Table 6: Significant Wildlife Habitat Assessment

List of Appendices

- Appendix A: Development Concept
- Appendix B: EIS Terms of Reference
- Appendix C: 1954 Air Photo
- Appendix D: Natural Features Mapping
- Appendix E: Post Development Drainage Plan



1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by Khanani Developments – Durham Acquisitions Inc., to complete an Environmental Impact Study (EIS) related to development proposed for an approx. 11ha property in Durham (Park Lots 9-12 County Road 4, Municipality of West Grey, Grey County (Figure 1).

A Terms of Reference was established for the EIS with the Saugeen Valley Conservation Authority (SVCA) (Appendix B). The EIS was completed based on field data collected over four seasons (spring, summer, autumn, winter).

A development concept was prepared by Georgian Bay Planning Solutions (Appendix A) that integrates the results of natural heritage and engineering/flood hazard constraints evaluated by Azimuth and Tatham Engineering, respectively.

2.0 PLANNING CONTEXT

2.1 Provincial Planning Policy (2020)

Ontario's *Planning Act*, (1990) requires that planning decisions shall be consistent with the Provincial Policy Statement (PPS). 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 out its life processes including reproduction, rearing of young, hibernation, migration or feeding.

The ESA protects individuals and habitat of species listed as extirpated, endangered, and threatened.

2.3 Land Use Designation & Zoning

As per mapping in Appendix D, the Grey County Official Plan (2019) identifies the lands as within a Primary Settlement Area with a portion identified as Hazard Lands.

Schedule A of the Official Plan of the Municipality of West Grey applies the following designations to the lands: Future Development and Environmental Protection. West Grey zoning applies: Future Development and Natural Environment. The Natural Environment zoning limits correspond with the Hazard Lands designation by the County. West Grey Official Plan Section D9.4.1 indicates that Environmental Protection lands have physical characteristics which could cause property damage or loss of life if developed upon. The physical characteristics may include flood susceptibility, erosion susceptibility, instability, and certain other conditions or combinations. Thus the Environmental Protection/Natural Environment overlays applied to the lands relate to flood hazard.



2.4 Saugeen Valley Conservation Authority

Portions of the subject and adjacent lands are located within lands mapped as approximate screening area by the Saugeen Valley Conservation Authority (SVCA) (Appendix D).

2.5 Federal Fisheries Act

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

3.0 STUDY APPROACH

A combination of a background information and field data were used to fulfill the objectives of this EIS as follows:

- Conducted field surveys to document existing natural heritage features, functions, and species:
 - Drainage feature/fish habitat assessment under high (spring) and low (summer) conditions;
 - Evaluate/map vegetation community types based on Ecological Land Classification methods (ELC; Ecological Land Classification for Southern Ontario: First Approximation and its Applications. SCSS Field Guide FG-02; Lee *et al.*, 1998, 2008);
 - Three vascular plant inventories (May/June [spring], July [summer] and August/September [autumn]);
 - Three evening calling amphibian surveys (April [early], mid-May [middle], June [late]) according to methods of the Marsh Monitoring Program;
 - Two dawn breeding bird surveys completed as combined roving and point count surveys following approach of the Ontario Breeding Bird Atlas program;



- Two nocturnal bird surveys following the general methods of the Canadian Nightjar Survey during recommended survey timing windows for Ontario in 2022 (optimal timing – 2 surveys between June 8 and June 14);
- Assessment of potential for woodlands of the subject and adjacent lands to function as potential bat habitat (leaf-off conditions March 4, 2022);
- Assessed winter wildlife use of the subject and adjacent lands (deer yarding, winter raptor activity) on March 4, 2022; and,
- Recorded all wildlife observations during site visits.
- Completed a SAR habitat assessment following provincial guidelines (MECP 2019). Note: the SAR assessment considers species designated extirpated, endangered or threatened under Ontario’s ESA. Species designated special concern are addressed as potential significant Wildlife Habitat along with rare wildlife – species assigned a provincial “S-rank” of S1, 2, 3 or H. S-ranks/provincial species rarity were assessed using the MNRF, NHIC Ontario Species List updated February 17, 2022; and,
- Assessed the potential direct and indirect impacts of the proposed development on significant natural heritage features and functions identified on or adjacent to the subject lands (Note: adjacent lands considered those within approx. 120m of the property though spatial extent of consideration of adjacent features and functions varied extending several kilometers from the property).

3.1 Background Data

The following background data were reviewed:

- Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Center (NHIC; MNRF, 2022);
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman *et al.*, 2007);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2022);
- Ministry of the Environment, Conservation and Parks (MECP) Species at Risk in Ontario list (MECP, 2022);
- Fisheries and Oceans Canada Aquatic Species at Risk Map (DFO, 2022);
- SVCA Approximate Regulated and Approximate Screening Areas (SVCA, 2022);
- Air photos (Google, VuMap);
- Government of Canada's Species at Risk Public Registry (2022); and,
- Atlas of the Mammals of Ontario (Dobbyn, 1994).

3.2 Vegetation Community Mapping and Surveys

Vegetation communities were classified according to the Ecological Land Classification (ELC) System for southern Ontario (Lee *at al.*, 1998 + 2008 update) based on field data collected on May 18, July 25 and September 13, 2022 (A. McClelland).



A detailed survey for Butternut (endangered) and Black Ash (endangered but not afforded protection under Ontario's ESA until January 2024) was completed (A. McClelland).

3.3 Wildlife Surveys

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

3.3.1 Breeding Birds

Dawn breeding bird surveys were completed on May 31 and June 13, 2022 using a combined roving and point count survey methodology (J. Broadfoot). Surveys were completed within the timespan - one half hour before sunrise and 10:00a.m. Surveys were completed under suitable weather conditions (*i.e.* no precipitation and light winds (Beaufort wind scale [B] ≤ 3)). Point count station duration was 5 minutes per station. Point count survey station locations are shown on Figure 2.

Evening breeding bird surveys were conducted based on the methods of the Canadian Nightjar Survey Protocol (Bird Studies Canada *et al.*, 2019). Surveys were completed during preferred timing windows for 2022 as defined by Bird Studies Canada on June 9 - mid-season Window (optimal timing) and July 7 - late window (breeding season) with the objective of sampling for Eastern Whip-poor-will (threatened) and Common Nighthawk (special concern) (A. McClelland). Surveys were completed under suitable weather conditions (winds ≤ 3 , low cloud cover, no precipitation, within the timespan - 30 minutes after sunset and to 90 minutes after sunset to capture crepuscular conditions. Point count survey duration was 6 minutes. A single point-count station was established to cover the subject and adjacent lands as shown on Figure 2.

3.3.2 Amphibian Breeding

Three evening calling amphibian surveys were completed - April 12 (early), May 18 (middle), and June 9 (late), 2022 to assess amphibian breeding on and adjacent to the subject lands following the methods of the Great Lakes Marsh Monitoring Program (Bird Studies Canada, 2008) (A. McClelland). Surveys were completed during the period between 30 minutes after sunset and midnight, on evenings with winds $B < 4$. The locations of survey stations are shown on Figure 2.

3.3.3 Bats

A leaf-off site visit was completed on March 4, 2022 to scrutinize composition and structure of woodlands of the property with respect to bat habitat requirements (J.



Broadfoot). Composition and structure were quantified based on standard prism plot sampling using a 2 factor, clear wedge prism.

3.4 Fish and Fish Habitat

Drainage features were evaluated on April 24 (A. Deurwaarder), May 31, June 13, 2022 (J. Broadfoot), July 25 and Sept 13, 2022 (A. McClelland) and June 21, 2021 (J. Broadfoot). Site evaluations were completed over multiple seasons to understand locations of seasonal and permanent drainage features noting channel features, flow (intermittent, permanent, clarity, etc.), channel substrate, etc. Observations of fish were recorded.

4.0 EXISTING CONDITIONS

4.1 Land Use

As per 1954 air photos (Appendix C), the property was historically farmed/cleared throughout. The drainage feature of the property was likely straitened/diverted as part of past farm operations. The on-line pond may have been created as a livestock watering pond.

The property is vacant – no dwellings or other structures.

In the past fill was placed and leveled in the south-central section of the property adjacent to County Road 4.

Adjacent lands to the north contain a mix of farmland (cash crop) and woodlands. Lands to the west are primarily wooded – coniferous plantation. Lands to the east are primarily wooded – coniferous forest. Lands to the south contain a mix of residential, institutional and commercial development and open agricultural lands.

4.2 Mapped Features

Provincial mapping (Appendix D) identifies unevaluated wetlands in the southwest section of the subject lands and on adjacent lands to the northeast. No ANSIs are identified on or adjacent to the lands.

Grey County mapping (Appendix D) identifies woodland cover to the west/northwest of the subject lands as Significant Woodlands. Woodland cover to the east is also mapped as Significant Woodland with a small portion extending onto the subject lands. Significant Valleylands are mapped in association with the Saugeen River approx. 200m



to the west. No wetlands are mapped on the property by the County. The County identifies other wetlands on adjacent lands approx. 250m to the north.

No watercourses/drainage features are mapped on the subject lands by the province or county. Regulation mapping of the SVCA (Appendix D) identifies an Approximate Screening Area (hazard land + 30m setback) on the central section of the lands. This Approximate Screening Area is consistent with the Natural Environment (NE) zoning and Environmental Protection (EP) designation applied to the lands.

The province (MNR) identified an area of deer wintering habitat (Stratum 2 deer yard) approx. 2km to the northeast (Appendix D).

Based on features and regulation mapping, it appears that the environmental land use designation and zoning applied to the subject and adjacent lands relates to hazard lands and not wetlands, watercourses, significant woodlands, etc.

4.3 Topography, Soils, Groundwater

The lands slope in a general north to south direction varying from approx. 350 masl in the northeast to 340 masl in the southwest (Appendix D). There are no valley features associated with the subject lands. Significant Valleylands are identified approx. 200m to the west.

According to Tatham (2022b) – citing geotechnical test pit investigation by GEI Consultants Limited, soils across the majority of the site is native silty-sand with trace clay. The fill material placed on-site is composed of silty-clay deposited over a later of topsoil/peat.

Groundwater occurs at depths below surface of approx. 1.0m (Tatham 2022b).

4.4 Terrestrial Resources

4.4.1 Vegetation

Figure 2 shows the locations of vegetation communities. Table 1 provides a list of vascular plants by vegetation community. Table 2 provides a summary of the composition and structure of vegetation communities.

The results of vascular plant surveys revealed one species of conservation concern – Butternut (endangered). Two saplings (approximately 4m and 1.5m tall) were observed in proximity to one another along the western property boundary as shown on Figure 2



Much of the property contains coniferous tree cover, including Dry-Fresh Scots Pine Naturalized Coniferous Plantation (FOCM6-3) and Dry-Fresh White Cedar Coniferous Forest (FOCM2-2). These woodlands have become established on lands that were historically farmed – woodlands not present in 1954 based on historic air photo coverage (Appendix C). Other upland communities include Dry-Fresh Mixed Meadows (MEMM3). Vegetation community MEMM3 on the southern end of the subject lands has become established on the area of past fill placement. The southeastern and southwestern sections of the property contain wetlands - Meadow Marsh (MAMM/MAMO) and Thicket Swamp (SWTM) communities. A treed Fencerow (TAGM5) occurs along the western boundary.

None of the vegetation communities are types considered provincially rare.

4.4.2 Wildlife

4.4.2.1 Mammals

General - The following mammals were detected on/adjacent to the property: Eastern Chipmunk (S5), Eastern Gray Squirrel (S5), Red Squirrel (S5), Striped Skunk (S5), Eastern Cottontail, Porcupine (S5), Northern Raccoon (S5), Red Fox (S5), Coyote (S5) and White-tailed Deer (S5). None is a species of conservation concern and all are common locally.

Bat Habitat - The results of basal area sampling on March 4, 2022 indicated that the naturalized plantation habitat (FOCM6-3) that makes up most of the woodland cover of the property had an basal area averaging $16\text{m}^2/\text{ha}$ composed of trees having average dbh = 21.8cm (range 10cm to 45cm). Stand composition was dominated by conifer (>98%) with Scotch Pine dominant (65%), Eastern White Pine co-dominant (29%). Basal area of trees with dbh $\geq 25\text{cm}$ was low at $5.7\text{m}^2/\text{ha}$, indicating low density of wildlife cavity trees as potential habitat for bats. The composition and structure of the naturalized coniferous plantation is not suitable to bats as maternity roost habitat (i.e., not mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees as per provincial Significant Wildlife Habitat criteria and the woodland is not an ELC type listed as potential habitat for SAR bats by the MNR (MNR 2015a). Basal area sampling of the Dry-Fresh White Cedar Coniferous Forest (FOCM2-2) revealed a dense – $54\text{m}^2/\text{ha}$, woodland dominated by mostly polewood sized (dbh 10 to 25cm) Eastern White Cedar (93%). This woodland community is not a type considered a candidate for maternity roost habitat function by the province (not an ELC community series listed in the Significant Wildlife Habitat Ecoregion 6 criteria, MNR 2015b) and not providing an abundance of wildlife trees with dbh > 25cm. Woodlands of the property do not have compositions or structures offering potential habitat for SAR bats or functioning potentially as bat maternity roost habitat.



4.4.2.2 Reptiles and Amphibians

A total of eight amphibian species were identified : Spring Peeper (S5), Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield Population S4), American Toad (S5), Wood Frog (S5), and Gray Treefrog (S5); American Bullfrog (S4), Green Frog (S5) and Northern Leopard Frog (S5).

The results of evening calling amphibian surveys (Table 3) revealed relatively high numbers of Spring Peeper (call code 5, full chorus) utilizing wetland habitat community MAMM3-1 and the eastern end of community SWTM2-1. Other species detected (Wood Frog, American Toad, Gray Treefrog, Western Chorus Frog) displayed low abundance (call code 1 only) in these same areas. Wetland communities MAMM2-3 and MAMO-1 displayed low levels of calling by Wood Frog only.

American Bullfrogs were observed using the farm pond. Green Frogs were detected in the farm pond and in various locations along the drainage feature downstream of the pond.

No snakes or turtles were observed during frequent site visits completed during the reptile active season under suitable observation conditions.

4.4.2.3 Birds

Twenty-eight (28) bird species were recorded during dawn breeding bird surveys. None is a species of conservation concern (Table 4).

Nocturnal breeding bird surveys did not detect presence of Eastern Whip-poor-will or Common Nighthawk.

4.5 Species at Risk

Table 5 provides an assessment of the potential of the subject and adjacent lands to function as habitat for the 27 species of Grey County designated extirpated, endangered or threatened (i.e., species protected under Ontario's ESA). Results indicate presence of 2 Butternut (endangered) saplings located on the west side of the property as shown on Figure 2.

4.6 Wetlands

There are no provincially significant wetlands identified on or adjacent to the subject lands (i.e., within 750m). The province identifies unevaluated wetlands in the southwestern section of the subject lands and on adjacent lands to the northeast



(Appendix D). The results of vegetation community mapping identify approx. 2.2ha of wetland in the vicinity of the area of placed fill as shown on Figure 2.

4.7 Significant Woodland

Significant Woodlands are identified by the County on adjacent lands to the west/northwest and to the east of the subject lands (Appendix D). A small extent of the area of Significant Woodland mapped to the east extends onto the lands (Appendix D).

4.8 Significant Valleyland

Significant Valleylands are mapped by the County to the west of the subject lands in association with the Saugeen River (Appendix D).

The watercourse on the east side of the subject lands is not confined within a discernable valley feature.

4.9 Significant Wildlife Habitat

An assessment of the potential for Significant Wildlife Habitat using the criteria outlined within the Ecoregion 6E Criteria Schedules (MNR, 2015b) is presented in Table 6. Observations of Bullfrog utilizing the farm pond qualify the feature as Significant Wildlife Habitat. The associated watercourse/riparian habitat are inferred as an Amphibian Movement Corridor as it connects the pond to wetlands on and off site.

4.10 Areas of Natural and Scientific Interest

There are no ANSIs located on or adjacent to the subject lands (Appendix D).

4.11 Fish and Fish Habitat

A watercourse traverses the east side of the subject lands before joining roadside drainage conveyed in the north ditch of County Road 4 as shown on Figure 2.

The watercourse flows through a farm pond that was created by installing a cement dam to impound water – perhaps for livestock watering. The cement dam is no longer functional and water simply flows past an eroded section of the dam.

Upstream of the pond the drainage feature has natural characteristic - riffle/pool morphology, bolder/cobble, sand/gravel substrate, forested riparian zone, etc. Approx. bankfull dimensions – width 0.75m, depth 0.3m. Repeated observations indicated continuous flow throughout the spring/summer. Fish were observed in this reach and within the farm pond.



Downstream of the pond the drainage feature has been channelized resulting in a relatively strait channel extending through mainly open lands. Approx. bankfull dimensions – width 0.5m, depth 0.25m. Substrate was mainly sand/gravel. Repeated observations indicated continuous flow throughout the spring/summer. Fish were not observed but are assumed present as there are no barriers to fish passage below the farm pond known to contain fish.

The watercourse connects to a drainage ditch located on the north side of County Road 4. The ditch flows west toward a culvert under County Road 4 where drainage continues southward toward the Saugeen River. Ditch flow is conveyed through the property access laneway via a plastic culvert.

5.0 NATURAL HERITAGE FEATURES AND FUNCTIONS

The results of Azimuth’s field studies combined with review of background information indicate that the following natural heritage features and functions are attributable to the subject and adjacent lands:

- Habitat for Threatened or Endangered Species – Butternut (2 saplings on subject lands);
- Significant Woodland – adjacent lands as per Grey County OP Mapping (Appendix D);
- Significant Wildlife Habitat - Amphibian Breeding Habitat (Wetlands) and associated Amphibian Movement Corridor;
- Unevaluated Wetlands; and,
- Fish habitat.

6.0 PROPOSED DEVELOPMENT

As per the site development concept (Appendix A), a potential developable area of approx. 6.8ha has been delineated based on constraints to development identified through natural heritage feature/function assessment and engineering considerations related to flood hazard (Tatham 2022b). Proposed development includes a total of 134 residential units: Single Detached - 66 Lots/Units; Townhouses - 68 Units.

Access to the development is from County Road 4.

The development would be fully serviced through connections to municipal services south of County Road 4.



As described in Section 3.2 of Tatham 2022c, under proposed conditions the majority of the developed portion of the site (identified as Catchment 201, Appendix E) will drain via Outlet 3, an underground storm sewer - to a proposed wet pond SWMF located on adjacent lands south of County Road 4. Water from the rear of lots aligned along the eastern side of the proposed development will drain uncontrolled to the east into Catchment 202 that contains the watercourse/farm pond (Appendix E). Similarly, drainage from the rear lots of the western section of the property will be conveyed uncontrolled to Catchment 203. As Catchments 202 and 203 consist mainly of open space and vegetated land cover, rooftops, and rear yards - runoff is considered clean from a water quality perspective.

7.0 IMPACT ASSESSMENT

Figure 3 provides an overlay of the proposed development concept on natural features mapping.

7.1 Habitat for Threatened or Endangered Species

Two sapling sized Butternut (endangered) occur on the west side of the property within/adjacent to the 10m wide woodland setback established in the development concept. A Butternut Health Assessment (BHA) will need to be completed to assess retention status under Ontario's ESA. BHAs are to be completed during leaf-on conditions – June through mid-August. Given the size of the trees (<20cm dbh) they can only score as Cat. 2 trees if found to be in good condition (i.e., healthy crown and little to no sign of Butternut canker disease). If they are assessed as Cat. 2, options exist under O. Reg. 830/21 to secure permitting for removal or potential harm (i.e., if grading/site alteration occurs within 25m of the trees). If assessed as Cat. 1 (non-retainable) the tree can be removed following submission of a BHA report and expiry of the mandated 30 day MECP audit period with no authorizations required under the ESA. Thus, Butternut are not a constraint to the proposed development.

7.2 Significant Woodland

The limits of Significant Woodland identified by the County on adjacent lands to the west and northwest are clearly defined along property boundaries. The proposed development provides a 10m setback to the property boundary/significant woodland limit. This setback is sufficient to protect root zones of trees contained in significant woodlands on adjacent lands. Results of field studies revealed no significant wildlife habitat functions associated with these adjacent woodlands and hence buffers larger than the 10m tree protection zone established in the plan are not required to prevent indirect impact to Significant Wildlife Habitat functions.



The limits of Significant Woodland on adjacent lands to the east that are shown to extend slightly onto the subject lands (Appendix D) are not as clearly defined as those on the west/northwest as the successional cedar woodland of adjacent lands grades onto the subject lands. The proposed development establishes a 30m setback to the watercourse that traverses significant woodlands to the east and enters the subject lands up-gradient of the farm pond. The development also protects additional woodland in part to establish hazard lands/flood limits sufficient to protect the proposed development from flood (Tatham 2022b). Therefore, the proposed development protects woodland habitat on the east side of the property that is continuous with woodland on adjacent land that is included in the County's depiction of Significant Woodland. A setback is not proposed as the development would establish a hard/new woodland edge as per the development limit established in the plan. We recommend that when a final grading plan is approved – an edge management plan is prepared for lands in the northeast section of the plan. The edge management plan should evaluate opportunities for tree protection and requirements for hazard tree removal. The limits of approved grading should be established in the field by survey to provide the arborist with an accurate point of reference to evaluate tree protection opportunities.

7.3 Significant Wildlife Habitat

Though not a natural feature, the farm pond was found to be used by a number of American Bullfrogs and hence the pond may be considered Significant Wildlife Habitat with respect to amphibian breeding. Connectivity to the pond along natural heritage corridors is required to protect the amphibian movement corridor function associated with the pond. The proposed development establishes a habitat corridor along the east side of the property and along County Road 4 allowing wildlife movement across the subject lands post-development and connecting lands to the northeast and southwest (ultimately to the Saugeen River). Setbacks to the pond exceed 30m and the setback/buffer area contains natural, self-sustaining vegetation sufficient to screen the pond from adjacent development. Therefore, amphibian breeding habitat function of the pond and amphibian movement will not be indirectly impacted.

7.4 Unevaluated Wetlands

Field studies revealed unevaluated wetlands on the southeast and southwest sections of the property. The proposed development results in a direct impact to approx. 0.6ha of unevaluated wetlands. The impact was deemed unavoidable given the geometry of the wetland units and the requirements of achieving a more or less regular shape for a development footprint. Portions of the wetlands proposed to be developed are located adjacent to the area of past fill placement and hence are areas influenced by past disturbance. In contrast, areas of wetlands preserved (1.6ha [$>70\%$] unevaluated wetland retained) within the development have associated natural heritage functions of value to



maintain. For example, wetlands preserved in the southeast section of the property are associated with the drainage feature that functions as direct fish habitat and areas of wetlands maintained functioned as woodland amphibian breeding habitat – though not at levels warranting identification as Significant Wildlife Habitat. Wetlands in the southwest section of property provide limited amphibian breeding habitat function and have a desirable wetland floristic composition and diversity.

No buffers to wetlands are proposed in the development plan as establishing the proposed development limits involves encroachment into wetland habitat along the margins of past fill placement. The results of field studies indicated that wetlands in the area of direct impact do not provide significant habitat functions and hence wetland buffers are not required to protect wildlife habitat functions. We recommend that opportunities for establishing native, self-sustaining vegetation within lands abutting retained areas of wetland are explored as detailed grading plans are established/approved.

The hydrology of wetlands appears to be governed to a large extent by surface water inputs as the wetlands occur in areas of flood hazard and hence are subject to periodic inundation. The wetlands are also supplied by continuous flows conveyed along the drainage feature that traverses the eastern and southern sections of the property. A seasonally high water table likely also contributes to wetland hydrology in areas of relatively low topography. As the development plan was established to accommodate flood hazard (Tatham 2022b) and to maintain on-site storage capacity post-development, the wetlands will continue to receive the same pattern and quantity of surface water inputs. Therefore, there will be no indirect impacts to the health or integrity of retained wetlands or associated functions.

7.5 Fish Habitat

The proposed development establishes a 30m+ setback to the watercourse on the east side of the property which is sufficient to protect the health and integrity of the direct fish habitat. The proposed development also provides a wider area of lands associated with the roadside ditch of County Road 4 than currently exists. This area is proposed to be a 30m wide natural channel corridor. We recommend that a restoration plan is established for the natural channel corridor that incorporates channel design to improve fish habitat quality and establish/maintain natural riparian vegetation. As the watercourse and roadside drainage ditch function as direct fish habitat, alterations to the channel will require scrutiny under the *Fisheries Act* to establish permitting requirements, timing restrictions for in-water works, etc. This process generally requires “90% design” to facilitate DFO review.



A watercourse crossing is required to establish a street entrance to the proposed development and to establish buried servicing connections (SWM outlet, water, sewer, etc.). The crossing appears to be in the same area as the existing property driveway access but it is expected that the current driveway culvert will have to be replaced. We recommend that an open bottom culvert is used if possible to conform with generally accepted fisheries design criteria. The crossing will require DFO review – at the detailed design stage.

8.0 RECOMMENDATIONS

- Complete a BHA of the 2 Butternut saplings located on the western property boundary and secure permitting for removal/potential harm following regulations issued under Ontario's ESA (if required);
- Following approval of grading plans, prepare an edge management plan for treed areas of the watercourse protection block established on the east side of the property;
- Clear trees outside of the woodland bird nesting season – clear trees between September 1 and March 31; and,
- At the detailed design stage, complete a fish habitat assessment of works involving channel modifications and watercourse crossing associated with the roadside ditch along County Road 4.

9.0 CONCLUSIONS

The proposed development can be achieved with no negative impact to Significant Woodlands associated with adjacent lands and Significant Wildlife Habitat functions attributable to the farm pond and associated watercourse/riparian habitat corridor consistent with the requirements of Section 2.1 of the PPS. The development retains >70% of unevaluated wetlands with no loss of wetland functions. The proposed natural channel corridor along County Road 4 provides an opportunity to enhance fish habitat and potential wildlife movement (amphibian) function of what is currently a relatively narrow roadside ditch. The proposed development was configured to accommodate requirements for flood control/conveyance and hence appears consistent with Section D9.4.1 of the West Grey Official Plan as it relates to Natural Environment (NE) and Environmental Protection (EP) overlays applied to the subject lands, as NE and EP functioning lands are established/maintained in the development concept.



10.0 REFERENCES

Bird Studies Canada. 2008. Marsh Monitoring Program Participant's Handbook for Surveying Amphibians. Bird Studies Canada, Environment Canada - Canadian Wildlife Service, U.S. Environmental Protection Agency. 16 pp.

Grey County. 2019. Recolour Grey County of Grey Official Plan, Adopted by Grey County Council October 25, 2018 Approved by the Province June 6, 2019 (Effective Date June 7, 2019).

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998, 2008. Ecological Land Classification for Southern Ontario. First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Sciences Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

MMAH. 2020. Provincial Policy Statement.

MNR. 2010. Natural Heritage Reference Manual for Policy 2.3 of the provincial policy statement, 2005 (2nd Ed.). Ontario Ministry of Natural Resources, Toronto, ON.

MNRF. 2015a. Technical Note Species at Risk (SAR) Bats. Region. 37 pp.

MNRF. 2015b. Significant Wildlife Habitat criterion schedules for Ecoregion 6E. MNRF Regional Operations Division & Northeast Region Resources Section. 39pp.

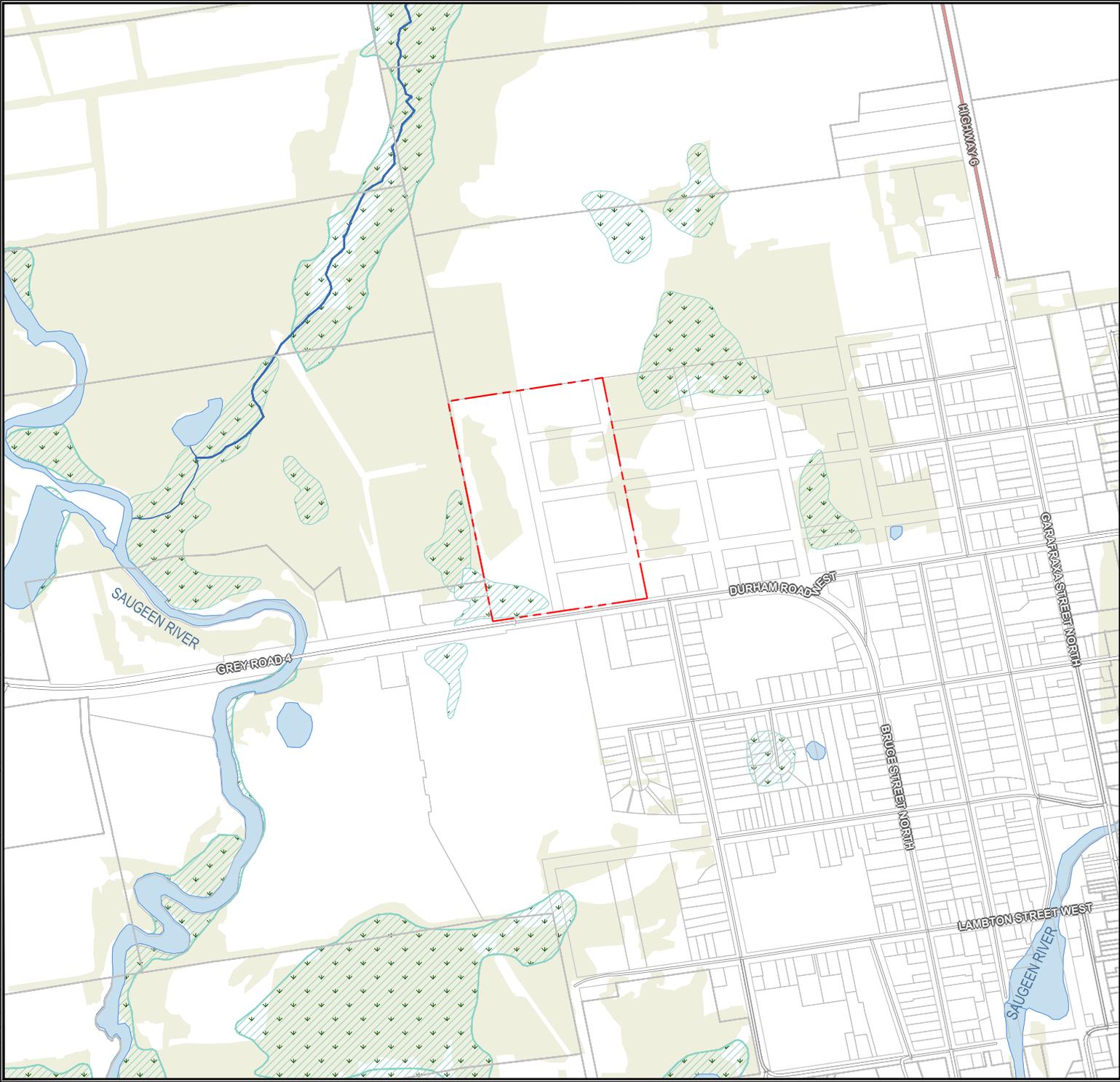
Municipality of West Grey (West Grey). 2020. Municipality of West Grey Official Plan Draft. Consolidated March 2020.

Tatham. 2022a. Durham (CR4) Residential Development Functional Servicing Report. Khanani Developments Durham Acquisition. File 121233 | September 2022

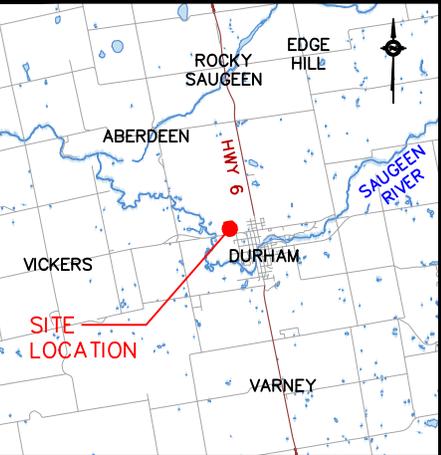
Tatham 2022b. Durham (CR4) Residential Development Floodplain Hazards Study. Stonebrook Developments. File 121233 | March 2022

Tatham. 2022c. CR4 Residential Development Preliminary Stormwater Management Report. Khanani Developments Durham Acquisition. File 121233 | October 2022

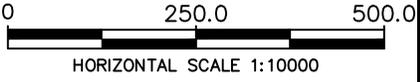
Plotted by: ALU on May 4, 2023 at 9:13am
File: C:\V1\projects\21-302_durham_env_fest\assessment\04.0 - draft\21-302_Site Location.dwg - Layout: Site Location - Plotsheet: 1



LEGEND:
- - - - - APPROXIMATE STUDY AREA BOUNDARY



REGIONAL MAP
SCALE 1:250000

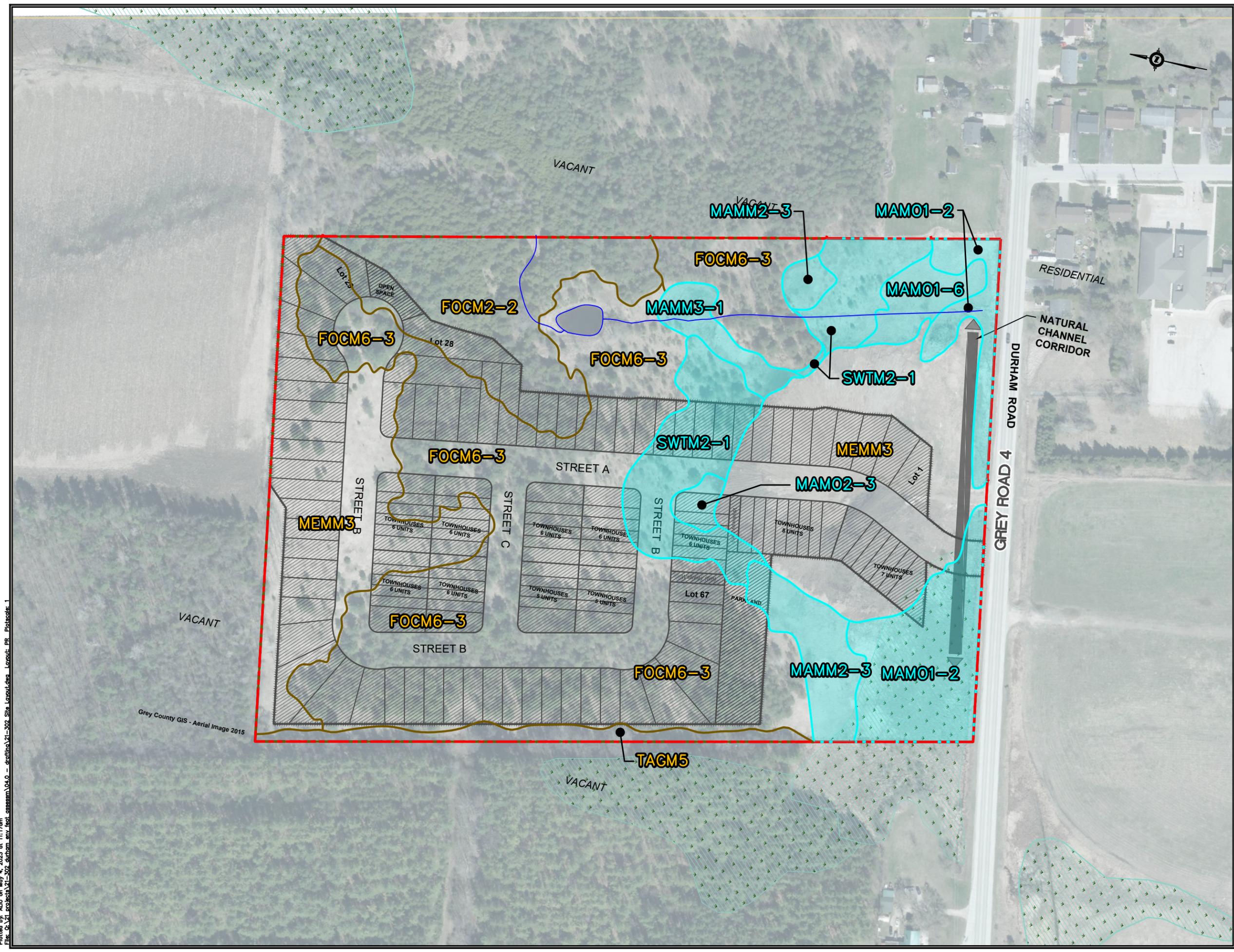


SITE LOCATION

LOT NORTH OF COUNTY RD 4
DURHAM, ON

DATE ISSUED: MAY 2023	Figure No. 1
CREATED BY: A.L.	
PROJECT NO.: 21-302	
REFERENCE: GREY COUNTY	

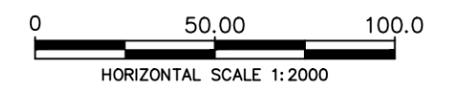
Plotted by: ALU on May 4, 2023 at 11:17am
 File: G:\21_302_projects\21-302_durham_env_fert_assessm\04.0 - draft\21-302_Site_Layouts\04_Layout_PR_Plotting.dwg



- LEGEND:**
- APPROX. PROPERTY BOUNDARY
 - WATERCOURSE
 - UNEVALUATED WETLAND (MNR, 2021)
- ELC UPLAND COMMUNITIES:**
- FOCM2-2 DRY-FRESH WHITE CEDAR CONIFEROUS FOREST
 - FOCM6-3 DRY-FRESH SCOTS PINE NATURALIZED CONIFEROUS PLANTATION
 - MEMM3 DRY-FRESH MIXED MEADOW FENCEROW
 - TAGM5
- ELC WETLAND COMMUNITIES:**
- MAMM2-3 PURPLE-STEM ASTER MINERAL MEADOW MARSH
 - MAMM3-1 MIXED MINERAL MEADOW MARSH
 - MAMO1-2 CATTAIL GRAMINOID ORGANIC MEADOW MARSH
 - MAMO1-6 SEDGE GRAMINOID ORGANIC MEADOW MARSH
 - MAMO2-3 MIXED FORB ORGANIC MEADOW MARSH
 - SWTM2-1 RED OSIER DOGWOOD MINERAL DECIDUOUS THICKET SWAMP
- 30m HAZARD SETBACK



LOCATION PLAN



PROPOSED DEVELOPMENT

**LOT NORTH OF COUNTY RD 4
DURHAM, ON**

DATE ISSUED: MAY 2023	Figure No.
CREATED BY: A.L.	3
PROJECT NO.: 21-302	
REFERENCE: GREY COUNTY	

Grey County GIS - Aerial Image 2015

Table 1. Vascular Plant List, Duram Lands

FAMILY ¹	SCIENTIFIC NAME	COMMON NAME	Vegetation Communities ²													Conservation Rankings ³			
			MEMM3	MEMM3	FOCM6-3	TAGM5	FOCM2-2	MAMM3-1	SWTM2-1	MAM01-2	SWTM2-1	MAM02-3	MAMM2-3	MAM01-2	MAM01-6	MAMM2-3	GRANK	SRANK	TRACK
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	X		X	X										X	G5	S5	N
Aceraceae	<i>Acer saccharum</i>	Sugar Maple			X	X											G5	S5	N
Alismataceae	<i>Sagittaria latifolia</i>	Broad-leaved Arrowhead			X												G5	S5	N
Apiaceae	<i>Cicuta maculata</i> var. <i>maculata</i>	Spotted Water-hemlock											X				G5T5	S5	N
Apiaceae	<i>Daucus carota</i>	Wild Carrot	X	X	X		X		X	X	X	X					GNR	SE5	N
Apocynaceae	<i>Apocynum cannabinum</i>	Hemp Dogbane							X								GNR	S5	N
Apocynaceae	<i>Asclepias syriaca</i>	Common Milkweed	X	X	X					X	X		X		X		G5	S5	N
Asteraceae	<i>Achillea millefolium</i>	Common Yarrow		X				X		X							G5	SE5?	N
Asteraceae	<i>Ambrosia artemisiifolia</i>	Common Ragweed	X	X													G5	S5	N
Asteraceae	<i>Arctium minus</i>	Common Burdock	X														GNR	SE5	N
Asteraceae	<i>Bidens cernua</i>	Nodding Beggarticks			X												G5	S5	N
Asteraceae	<i>Carduus acanthoides</i>	Spiny Plumeless Thistle	X														GNR	SE5	N
Asteraceae	<i>Centaurea x moncktonii</i>	(<i>Centaurea jacea</i> X <i>Centaurea nigra</i>)	X	X	X	X		X	X	X	X	X					GNRTM	SNA	N
Asteraceae	<i>Cichorium intybus</i>	Wild Chicory	X														GNR	SE5	N
Asteraceae	<i>Cirsium arvense</i>	Canada Thistle	X										X				G5	SE5	N
Asteraceae	<i>Cirsium vulgare</i>	Bull Thistle	X														GNR	SE5	N
Asteraceae	<i>Erigeron canadensis</i>	Canada Horseweed	X														G5	S5	N
Asteraceae	<i>Erigeron strigosus</i>	Rough Fleabane	X														G5	S5	N
Asteraceae	<i>Eupatorium perfoliatum</i>	Common Boneset	X					X		X			X	X			G5	S5	N
Asteraceae	<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	X	X	X				X	X	X	X			X		G5	S5	N
Asteraceae	<i>Eutrochium maculatum</i> var. <i>maculatum</i>	Spotted Joe Pye Weed						X	X	X			X	X	X		G5T5	S5	N
Asteraceae	<i>Lapsana communis</i>	Common Nipplewort			X	X											GNR	SE5	N
Asteraceae	<i>Leucanthemum vulgare</i>	Oxeye Daisy	X	X													GNR	SE5	N
Asteraceae	<i>Rudbeckia hirta</i> var. <i>hirta</i>	Black-eyed Susan		X	X												G5T4T	SNA	
Asteraceae	<i>Solidago altissima</i> var. <i>altissima</i>	Eastern Tall Goldenrod	X	X	X	X	X								X		G5	S5	N
Asteraceae	<i>Solidago canadensis</i> var. <i>canadensis</i>	Canada Goldenrod	X	X	X	X			X	X	X	X	X		X		G5T5	S5	N
Asteraceae	<i>Solidago rugosa</i> ssp. <i>rugosa</i> var. <i>rugosa</i>	Northern Rough-stemmed Goldenrod		X	X		X	X	X		X		X		X		G5T5	S5	N
Asteraceae	<i>Sonchus arvensis</i> ssp. <i>arvensis</i>	Glandular Sow-thistle	X														GNRTM	SE5	N
Asteraceae	<i>Symphotrichum ericoides</i> var. <i>ericoides</i>	White Heath Aster	X	X	X												G5T5	S5	N
Asteraceae	<i>Symphotrichum lanceolatum</i> ssp. <i>lanceolatum</i>	Eastern Panicked Aster	X	X				X	X	X	X	X		X	X		G5T5	S5	P
Asteraceae	<i>Symphotrichum lateriflorum</i>	Calico Aster	X	X	X	X	X							X			G5	S5	P
Asteraceae	<i>Symphotrichum novae-angliae</i>	New England Aster	X	X	X		X		X		X	X					G5	S5	N
Asteraceae	<i>Symphotrichum puniceum</i>	Purple-stemmed Aster						X	X	X	X	X	X	X	X		G5	S5	N
Asteraceae	<i>Symphotrichum urophyllum</i>	Arrow-leaved Aster				X											G4G5	S4	N
Asteraceae	<i>Taraxacum officinale</i>	Common Dandelion	X	X	X												G5	SE5	N
Asteraceae	<i>Tragopogon pratensis</i>	Meadow Goatsbeard			X												GNR	SE5	N
Asteraceae	<i>Tussilago farfara</i>	Coltsfoot	X														GNR	SE5	N
Balsaminaceae	<i>Impatiens capensis</i>	Spotted Jewelweed								X				X			G5	S5	N
Betulaceae	<i>Ostrya virginiana</i>	Eastern Hop-hornbeam				X											G5	S5	N
Boraginaceae	<i>Echium plantagineum</i>	Purple Viper's Bugloss	X														GNR	SEH	N
Brassicaceae	<i>Barbarea vulgaris</i>	Bitter Wintercress	X														GNR	SE5	N
Brassicaceae	<i>Hesperis matronalis</i>	Dame's Rocket				X											G4G5	SE5	N
Brassicaceae	<i>Rorippa sylvestris</i>	Creeping Yellowcress	X														G5	SE5	N

Table 1. Vascular Plant List, Duram Lands

FAMILY ¹	SCIENTIFIC NAME	COMMON NAME	Vegetation Communities ²													Conservation Rankings ³				
			MEMM3	MEMM3	FOCM6-3	TAGM5	FOCM2-2	MAMM3-1	SWTM2-1	MAM01-2	SWTM2-1	MAM02-3	MAMM2-3	MAM01-2	MAM01-6	MAMM2-3	GRANK	SRANK	TRACK	
Caprifoliaceae	<i>Lonicera tatarica</i>	Tatarian Honeysuckle				X												GNR	SE5	N
Caprifoliaceae	<i>Viburnum lentago</i>	Nannyberry			X	X						X						G5	S5	N
Caprifoliaceae	<i>Viburnum opulus</i>	Cranberry Viburnum				X												G5	S5	N
Caryophyllaceae	<i>Silene vulgaris</i>	Bladder Champion	X															GNR	SE5	N
Clusiaceae	<i>Hypericum perforatum</i>	Common St. John's-wort	X	X														GNR	SE5	N
Convolvulaceae	<i>Calystegia sepium</i>	Hedge False Bindweed	X															G5	S5	N
Cornaceae	<i>Cornus alternifolia</i>	Alternate-leaved Dogwood			X	X												G5	S5	N
Cornaceae	<i>Cornus sericea</i>	Red-osier Dogwood		X	X			X	X	X	X	X	X	X	X	X		G5	S5	N
Cucurbitaceae	<i>Echinocystis lobata</i>	Wild Cucumber												X				G5	S5	N
Cupressaceae	<i>Thuja occidentalis</i>	Eastern White Cedar		X	X		X	X		X								G5	S5	N
Cyperaceae	<i>Carex aquatilis var. aquatilis</i>	Water Sedge								X			X		X			G5T5	S5	N
Cyperaceae	<i>Carex bebbii</i>	Bebb's Sedge	X					X				X	X					G5	S5	N
Cyperaceae	<i>Carex flava</i>	Yellow Sedge		X				X	X		X							G5	S5	N
Cyperaceae	<i>Carex hystericina</i>	Porcupine Sedge	X					X										G5	S5	N
Cyperaceae	<i>Carex retrorsa</i>	Retorse Sedge	X										X					G5	S5	N
Cyperaceae	<i>Carex viridula</i>	Greenish Sedge								X	X							G5	S5	N
Cyperaceae	<i>Carex vulpinoidea</i>	Fox Sedge	X					X					X					G5	S5	N
Cyperaceae	<i>Scirpus atrovirens</i>	Dark-green Bulrush						X	X			X	X			X		G5	S5	N
Dryopteridaceae	<i>Dryopteris intermedia</i>	Evergreen Wood Fern				X												G5	S5	N
Dryopteridaceae	<i>Onoclea sensibilis</i>	Sensitive Fern											X					G5	S5	N
Equisetaceae	<i>Equisetum arvense</i>	Field Horsetail		X		X		X				X	X					G5	S5	N
Equisetaceae	<i>Equisetum palustre</i>	Marsh Horsetail							X									G5	S5	N
Euphorbiaceae	<i>Euphorbia esula</i>	Leafy Spurge	X															GNR	SE	N
Fabaceae	<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil	X															GNR	SE5	N
Fabaceae	<i>Medicago lupulina</i>	Black Medick	X															GNR	SE5	N
Fabaceae	<i>Melilotus albus</i>	White Sweet-clover	X															G5	SE5	N
Fabaceae	<i>Melilotus officinalis</i>	Yellow Sweet-clover	X															GNR	SE5	N
Fabaceae	<i>Robinia pseudoacacia</i>	Black Locust	X															G5	SE5	N
Fabaceae	<i>Securigera varia</i>	Purple Crown-vetch													X			GNR	SE5	N
Fabaceae	<i>Trifolium pratense</i>	Red Clover	X															GNR	SE5	N
Fabaceae	<i>Trifolium repens</i>	White Clover	X															GNR	SE5	N
Fabaceae	<i>Vicia cracca</i>	Tufted Vetch	X	X	X				X		X	X	X					GNR	SE5	N
Geraniaceae	<i>Geranium robertianum</i>	Herb-Robert			X	X												G5	S5	N
Grossulariaceae	<i>Ribes cynosbati</i>	Eastern Prickly Gooseberry				X												G5	S5	N
Juglandaceae	<i>Juglans cinerea</i>	Butternut				X												G3	S2?	Y
Juglandaceae	<i>Juglans nigra</i>	Black Walnut				X												G5	S4?	N
Juncaceae	<i>Juncus dudleyi</i>	Dudley's Rush									X	X	X					G5	S5	N
Juncaceae	<i>Juncus effusus</i>	Soft Rush			X			X										G5	S5	N
Juncaceae	<i>Juncus tenuis</i>	Path Rush	X						X									GNR	S5	N
Lamiaceae	<i>Clinopodium vulgare ssp. vulgare</i>	Wild Basil		X	X	X	X		X		X	X						G5T5	S5	N
Lamiaceae	<i>Lycopus americanus</i>	American Water-horehound						X										G5	S5	N
Lamiaceae	<i>Lycopus uniflorus</i>	Northern Water-horehound								X	X			X	X			G5	S5	N
Lamiaceae	<i>Mentha canadensis</i>	Canada Mint						X		X	X							G5	S5	N

Table 1. Vascular Plant List, Duram Lands

FAMILY ¹	SCIENTIFIC NAME	COMMON NAME	Vegetation Communities ²													Conservation Rankings ³					
			MEMM3	MEMM3	FOCM6-3	TAGM5	FOCM2-2	MAMM3-1	SWTM2-1	MAM01-2	SWTM2-1	MAM02-3	MAMM2-3	MAM01-2	MAM01-6	MAMM2-3	GRANK	SRANK	TRACK		
Lamiaceae	<i>Prunella vulgaris ssp. vulgaris</i>	Common Self-heal		X	X								X	X					G5TU	SE3	N
Lamiaceae	<i>Scutellaria galericulata</i>	Marsh Skullcap												X					G5	S5	N
Liliaceae	<i>Maianthemum stellatum</i>	Star-flowered False Solomon's Seal											X						G5	S5	N
Malvaceae	<i>Malva moschata</i>	Musk Mallow	X																GNR	SE5	N
Oleaceae	<i>Fraxinus americana</i>	White Ash		X	X	X	X						X						G4	S4	N
Oleaceae	<i>Fraxinus pennsylvanica</i>	Red Ash							X	X			X	X					G4	S4	N
Onagraceae	<i>Circaea canadensis</i>	Broad-leaved Enchanter's Nightshade				X													G5	S5	N
Onagraceae	<i>Epilobium hirsutum</i>	Hairy Willowherb												X					GNR	SE5	N
Onagraceae	<i>Epilobium parviflorum</i>	Small-flowered Hairy Willowherb									X								GNR	SE4	N
Onagraceae	<i>Oenothera biennis</i>	Common Evening-primrose			X														G5	S5	N
Pinaceae	<i>Larix laricina</i>	Tamarack											X						G5	S5	N
Pinaceae	<i>Picea glauca</i>	White Spruce		X		X				X			X						G5	S5	N
Pinaceae	<i>Picea mariana</i>	Black Spruce											X						G5	S5	N
Pinaceae	<i>Pinus strobus</i>	Eastern White Pine		X	X	X	X					X							G5	S5	N
Pinaceae	<i>Pinus sylvestris var. sylvestris</i>	Scots Pine		X	X		X	X	X			X		X					GNRTM	SE5	N
Plantaginaceae	<i>Plantago lanceolata</i>	English Plantain		X						X									G5	SE5	N
Plantaginaceae	<i>Plantago major</i>	Common Plantain	X																G5	SE5	N
Poaceae	<i>Agrostis gigantea</i>	Redtop		X						X	X	X	X	X					G4G5	SE5	N
Poaceae	<i>Bromus inermis</i>	Smooth Brome		X	X	X							X						G5T5	SE5	N
Poaceae	<i>Calamagrostis canadensis</i>	Bluejoint Reedgrass												X					G5	S5	N
Poaceae	<i>Dactylis glomerata</i>	Orchard Grass	X	X	X								X	X					GNR	SE5	N
Poaceae	<i>Echinochloa crus-galli</i>	Large Barnyard Grass	X																GNR	SE5	N
Poaceae	<i>Elymus repens</i>	Quackgrass	X			X													GNR	SE5	N
Poaceae	<i>Glyceria grandis</i>	Tall Mannagrass			X														G5	S5	N
Poaceae	<i>Lolium arundinaceum</i>	Tall Ryegrass	X						X				X						GNR	SE5	N
Poaceae	<i>Panicum capillare</i>	Common Panicgrass							X										G5	S5	N
Poaceae	<i>Phalaris arundinacea</i>	Reed Canarygrass	X	X	X	X			X	X		X	X	X	X		X		G5	S5	N
Poaceae	<i>Phleum pratense</i>	Common Timothy		X	X					X		X	X	X			X		GNR	SE5	N
Poaceae	<i>Poa pratensis ssp. pratensis</i>	Kentucky Bluegrass	X	X															G5T5	SE5	N
Poaceae	<i>Setaria pumila</i>	Yellow Foxtail	X																GNR	SE5	N
Polygonaceae	<i>Rumex crispus</i>	Curled Dock	X											X					GNR	SE5	N
Ranunculaceae	<i>Anemonastrum canadense</i>	Canada Anemone												X					G5	S5	N
Ranunculaceae	<i>Caltha palustris</i>	Yellow Marsh Marigold					X	X	X				X						G5	S5	N
Ranunculaceae	<i>Ranunculus acris</i>	Common Buttercup		X					X	X		X	X				X		G5	SE5	N
Rhamnaceae	<i>Rhamnus cathartica</i>	European Buckthorn		X	X	X	X	X											GNR	SE5	N
Rosaceae	<i>Agrimonia gryposepala</i>	Hooked Agrimony				X													G5	S5	N
Rosaceae	<i>Crataegus monogyna</i>	English Hawthorn				X						X							G5	SE4	N
Rosaceae	<i>Crataegus punctata</i>	Dotted Hawthorn				X													G5	S5	N
Rosaceae	<i>Fragaria virginiana</i>	Wild Strawberry		X	X	X						X							G5	S5	N
Rosaceae	<i>Malus pumila</i>	Common Apple			X	X	X	X											G5	SE4	N
Rosaceae	<i>Potentilla anserina ssp. anserina</i>	Common Silverweed	X	X					X	X	X	X	X			X			G5T5	S5	N
Rosaceae	<i>Potentilla norvegica</i>	Rough Cinquefoil	X																G5	S5	N
Rosaceae	<i>Potentilla recta</i>	Sulphur Cinquefoil		X	X														GNR	SE5	N

Table 1. Vascular Plant List, Duram Lands

FAMILY ¹	SCIENTIFIC NAME	COMMON NAME	Vegetation Communities ²													Conservation Rankings ³				
			MEMM3	MEMM3	FOCM6-3	TAGM5	FOCM2-2	MAMM3-1	SWTM2-1	MAMO1-2	SWTM2-1	MAMO2-3	MAMM2-3	MAMO1-2	MAMO1-6	MAMM2-3	GRANK	SRANK	TRACK	
Rosaceae	<i>Prunus serotina</i>	Black Cherry			X	X	X	X										G5	S5	N
Rosaceae	<i>Prunus virginiana</i>	Chokecherry				X												G5	S5	N
Rosaceae	<i>Rosa multiflora</i>	Multiflora Rose			X													GNR	SE5	N
Rosaceae	<i>Rubus idaeus ssp. idaeus</i>	European Red Raspberry			X	X	X											G5T5	SE1	N
Rosaceae	<i>Rubus occidentalis</i>	Black Raspberry	X		X	X												G5	S5	N
Rubiaceae	<i>Galium palustre</i>	Common Marsh Bedstraw										X						G5	S5	N
Salicaceae	<i>Populus balsamifera</i>	Balsam Poplar		X						X	X							G5	S5	N
Salicaceae	<i>Populus tremuloides</i>	Trembling Aspen		X								X	X					G5	S5	N
Salicaceae	<i>Salix bebbiana</i>	Bebb's Willow								X	X	X						G5	S5	N
Salicaceae	<i>Salix discolor</i>	Pussy Willow						X	X	X	X	X	X		X			G5	S5	N
Salicaceae	<i>Salix eriocephala</i>	Cottony Willow							X	X			X		X			G5	S5	N
Salicaceae	<i>Salix petiolaris</i>	Meadow Willow	X	X				X	X	X	X	X	X	X	X			G5	S5	N
Scrophulariaceae	<i>Chelone glabra</i>	White Turtlehead						X										G5	S5	N
Scrophulariaceae	<i>Linaria vulgaris</i>	Butter-and-eggs	X															GNR	SE5	N
Scrophulariaceae	<i>Verbascum thapsus</i>	Common Mullein	X															GNR	SE5	N
Solanaceae	<i>Solanum dulcamara</i>	Bittersweet Nightshade				X				X					X			GNR	SE5	N
Typhaceae	<i>Typha angustifolia</i>	Narrow-leaved Cattail						X										G5	SE5	N
Typhaceae	<i>Typha latifolia</i>	Broad-leaved Cattail						X	X	X			X					G5	S5	N
Typhaceae	<i>Typha x glauca</i>	(<i>Typha angustifolia</i> X <i>Typha latifolia</i>)												X				GNA	SNA	N
Ulmaceae	<i>Ulmus americana</i>	White Elm				X						X						G4	S5	N
Ulmaceae	<i>Ulmus pumila</i>	Siberian Elm										X						GNR	SE3	N
Verbenaceae	<i>Verbena hastata</i>	Blue Vervain	X															G5	S5	N
Verbenaceae	<i>Verbena urticifolia</i>	White Vervain	X															G5	S5	N
Vitaceae	<i>Parthenocissus vitacea</i>	Thicket Creeper				X	X											G5	S5	N
Vitaceae	<i>Vitis riparia</i>	Riverbank Grape		X	X	X	X											G5	S5	N

¹ Nomenclature based on Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC)

² ELC Codes based on Ecological Land Classification for Southern Ontario (Lee *et al.*, 1998, 2008) - see Figure 2 for locations

³ Conservation Rankings: From MNRF, NHIC Ontario Species List (February 2022 version)

Table 2. Vegetation Community Description, Durham Lands.

Ecological Land Classification ¹					
System	Community Class	Community Series	Ecosite/Vegetation Type	Canopy/Shrub Layer	Ground Cover
Terrestrial	Meadow	MEM, Mixed Meadow	MEMM3, Dry-Fresh Mixed Meadow	Tree and shrub cover on area of past fill placement	Vegetated with forb and graminoid species typical of disturbed areas. Common species included Goldenrod, Knapweed, Bird's-foot Trefoil Reed Canary Grass and Orchard Grass.
Terrestrial	Meadow	MEM, Mixed Meadow	MEMM3, Dry-Fresh Mixed Meadow	Old field habitat on north side of subject lands. Contains scattered tree/shrub cover - Scots Pine, White Pine, Poplar and Red Osier Dogwood	Densely vegetated with forb and graminoid species, and dominated by Reed Canary Grass and Knapweed. Other common species included Goldenrods, Asters and Wild Carrot.
Terrestrial	Forest	FOC, Coniferous Forest	FOCM6-3, Dry-Fresh Scots Pine Naturalized Coniferous Plantation	Community covers a large portion of the central and north portions of the subject lands. Canopy dominated by Scots Pine; other species observed included White Pine, White Cedar, White Ash and Manitoba Maple.	Dominated by graminoid and forb species, including Reed Canary Grass, Orchard Grass and Goldenrod.
Terrestrial	Cultural	TAG, Treed Agriculture	TAGM5b, Fencerow	Fencerow lies along the western edge of the property. Tree species observed included Sugar Maple, White Ash, Black Cherry and Hawthorn. Common shrub species included Choke Cherry, Tatarian Honeysuckle and Alternate-leaved Dogwood.	Common species included Reed Canary Grass, Canada Goldenrod, Thicket Creeper, Herb-robot and Riverbank Grape.
Terrestrial	Forest	FOC, Coniferous Forest	FOCM2-2, Dry-Fresh White Cedar Coniferous Forest	Canopy was dense and dominated by White Cedar with occasional White Pine, White Ash and Scots Pine.	Sparse/barren. Occasional canopy gap contained forb and graminoid species, including Goldenrod, Reed Canary Grass.
Wetland	Marsh	MAM, Meadow Marsh	MAMM3-1, Mixed Mineral Meadow Marsh	Scattered tree cover of Green Ash, Scots Pine and White Ash at the edges of the community.	Dense graminoid and forb species including large patch of Reed Canary Grass with Goldenrods, Asters, Silverweed, and Dark-green Bulrush.
Wetland	Swamp	SWT, Thicket Swamp	SWTM2-2, Red Osier Dogwood Mineral Deciduous Thicket Swamp	Little tree cover - Balsom Poplar, Scots Pine and Green Ash. Red Osier Dogwood was common, as were Willow species.	Primarily forb species, including Goldenrods, Asters and Spotted Joe-pyeweed with Cattail, Reed Canary Grass and Dark-green Bulrush.
Wetland	Marsh	MAM, Meadow Marsh	MAMO1-2, Cattail Graminoid Organic Meadow Marsh	Sparse shrub cover of Red Osier Dogwood and Pussy Willow.	Dominated by Cattail with sparse forb cover of Asters, Silverweed, Northern Bugleweed and Willow-herb.
Wetland	Swamp	SWT, Thicket Swamp	SWTM2-2, Red Osier Dogwood Mineral Deciduous Thicket Swamp	Shrub cover dense - Red Osier Dogwood and Willow species. Trees relatively abundant in places - dominated by Scots Pine with Green Ash, White Pine, White Spruce and Tamarack.	Dense forb and graminoid species, including Goldenrods, Asters, Silverweed, Knapweed and Reed Canary Grass.
Wetland	Marsh	MAM, Meadow Marsh	MAMO2-3, Mixed Forb Organic Meadow Marsh	Shrub cover minimal - Nannyberry and Pussy Willow.	Dense forb cover including Goldenrods, Asters, Silverweed and Tufted Vetch with pat of Reed Canary Grass.
Wetland	Marsh	MAM, Meadow Marsh	MAMM2-3, Purple-stem Aster Organic Meadow Marsh	Tree and shrub cover minimal - Balsom Poplar and Willow species.	Dense and dominated by Purple-stem Aster and sedges.
Wetland	Marsh	MAM, Meadow Marsh	MAMO1-2, Cattail Graminoid Organic Meadow Marsh	Shrub cover limited - Red Osier Dogwood and Meadow Willow.	Dominated by Cattail with sparse forb cover of Asters, Spotted Joe-pyeweed, Northern Bugleweed and Willow-herb.
Wetland	Marsh	MAM, Meadow Marsh	MAMO1-6, Sedge Graminoid Organic Meadow Marsh	Sparse tree cover - Manitoba Maple. Scattered shrubs including Red Osier Dogwood, Pussy Willow and Narrow-leaved Willow.	Dense and dominated by sedges with abundant forbs - Purple-stem Aster, Lance-leaved Aster and Spotted Joe-pyeweed.
Wetland	Marsh	MAM, Meadow Marsh	MAMM2-3, Purple-stem Aster Organic Meadow Marsh	No tree cover. Small patches of Red Osier Dogwood.	Dominated by forb species including Purple-stem Aster, Tall Goldenrod and Lance-leaved aster with patch of Reed Canary Grass

¹ See Figure 2 for location

Table 3. Evening Calling Amphibian Survey Summary, Duram Lands

Date	Sampling Station(s)*	Start Time	Species (S-rank)				
			Wood Frog (S5)	Spring Peeper (S5)	Western Chorus Frog (S4)	American Toad (S5)	Gray Treefrog (S5)
12-Apr-22	1	20:52	1-3	3	1-2	-	-
	2	21:06	1-2	-	-	-	-
18-May-22	1	21:28	-	2-7	-	-	-
	2	21:17	-	-	-	-	-
09-Jun-22	1	21:37	-	2-5	-	1-2	1-3

**see Figure 2 for locations*

Note: Station 2 not sampled on June 9 - no mid-season calls, no water

Weather Conditions

Date	Air Temperature (°C)	Wind (Beaufort/Direction)	Cloud Cover	Precipitation
12-Apr-21	11	B0	60%	nil
18-May-21	11	B1	50%	nil
09-Jun-22	12	B1	5%	nil

¹ **Call Code Levels**

0 = none heard

1 = males could be individually counted

2 = calls overlap but numbers could be estimated

3 = overlapping calls, not possible to estimate numbers involved in chorus.

Table 4. Dawn and Nocturnal Breeding Bird Survey Results, Durham Lands

FAMILY	SCIENTIFIC NAME	COMMON NAME	Point Count Station							Nocturnal Survey		Breeding Evidence	Conservation Rank					
			1	2	3	4	5	6	7	June 9	July 7		PROVINCIALY _TRACKED	S_RANK	SARO_ STATUS	COSEWIC_ STATUS	SARA_ STATUS	G_RANK
Alcedinidae	<i>Megaceryle alcyon</i>	Belted Kingfisher							X			None	N	S5B,S4N				G5
Cardinalidae	<i>Cardinalis cardinalis</i>	Northern Cardinal	H	,S	,S			S				Possible	N	S5				G5
Cardinalidae	<i>Passerina cyanea</i>	Indigo Bunting				S,S		S,S				Probable	N	S5B				G5
Columbidae	<i>Zenaida macroura</i>	Mourning Dove		S								Possible	N	S5				G5
Corvidae	<i>Corvus brachyrhynchos</i>	American Crow	C	C	,C			,C		C,C		Probable	N	S5				G5
Corvidae	<i>Corvus corax</i>	Common Raven			,C	,C						Possible	N	S5				G5
Corvidae	<i>Cyanocitta cristata</i>	Blue Jay			,C			C,C	C			Probable	N	S5				G5
Fringillidae	<i>Spinus tristis</i>	American Goldfinch	,C	,C		,H		S,C	S,S			Probable	N	S5				G5
Icteridae	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	C,S	C,C				,C	C	,C		Probable	N	S5				G5
Icteridae	<i>Molothrus ater</i>	Brown-headed Cowbird		,C								Possible	N	S5				G5
Mimidae	<i>Dumetella carolinensis</i>	Gray Catbird				,S						Possible	N	S5B,S3N				G5
Paridae	<i>Poecile atricapillus</i>	Black-capped Chickadee	S	S	,S	S,S		S				Probable	N	S5				G5
Parulidae	<i>Geothlypis trichas</i>	Common Yellowthroat	S	S		S		S	S,S			Probable	N	S5B,S3N				G5
Parulidae	<i>Seiurus aurocapilla</i>	Ovenbird		S	S (A-W), S(A-W)							Possible	N	S5B				G5
Parulidae	<i>Setophaga pinus</i>	Pine Warbler			S (A-W), S(A-W)							None	N	S5B,S3N				G5
Passerellidae	<i>Melospiza georgiana</i>	Swamp Sparrow	,S									Possible	N	S5B,S4N				G5
Passerellidae	<i>Melospiza melodia</i>	Song Sparrow	S,S	S,S		S		S,S	S	S,S		Probable	N	S5				G5
Passerellidae	<i>Passerculus sandwichensis</i>	Savannah Sparrow	S,									Possible	N	S5B,S3N				G5
Passerellidae	<i>Spizella passerina</i>	Chipping Sparrow		S,S	S			,S	,S			Probable	N	S5B,S3N				G5
Passerellidae	<i>Spizella pusilla</i>	Field Sparrow		S		S,H						Probable	N	S4B,S3N				G5
Phasianidae	<i>Bonasa umbellus</i>	Ruffed Grouse						H,H				Probable	N	S5				G5
Picidae	<i>Dryobates villosus</i>	Hairy Woodpecker				,H						Possible	N	S5				G5
Sturnidae	<i>Sturnus vulgaris</i>	European Starling		,C						,C		Possible	N	SNA				G5
Troglodytidae	<i>Troglodytes aedon</i>	House Wren	S,									Possible	N	S5B				G5
Turdidae	<i>Turdus migratorius</i>	American Robin	S,			S,C		,C				Probable	N	S5				G5
Tyrannidae	<i>Empidonax alnorum</i>	Alder Flycatcher	S,S									Probable	N	S5B				G5
Tyrannidae	<i>Myiarchus crinitus</i>	Great Crested Flycatcher			,C	C,C		C,C	,C			Probable	N	S5B				G5
Vireonidae	<i>Vireo olivaceus</i>	Red-eyed Vireo		,S	S(A-W)							Possible	N	S5B				G5

Evidence Codes: S = singing male, C = call, H = in suitable habitat during breeding season, X = observed no evidence of breeding, A-W = observation relates to adjacent land to west
 Observation Conditions:

Dawn Surveys May 31, 2022: Start Time 5:22a.m., Temp +17C, Cloud Cover 30%, Wind B0, Precip. Nil, Observer J. Broadfoot
 June 13, 2022: Start Time 6:23a.m., Temp +8C, Cloud Cover 25%, Wind B0, Precip. Nil, Observer J. Broadfoot
 Nocturnal Surveys June 9, 2022: Start Time 9:37p.m., Temp +12C, Cloud Cover 5%, Wind B1, Precip. Nil, Observer A. McClelland
 July 7, 2022: Start Time 9:58p.m., Temp +21C, Cloud Cover 0%, Wind B1, Precip. Nil, Observer A. McClelland

Table 5. Species at Risk Assessment, Duram Lands.

Taxa	Common Name¹	ESA Status²	Habitat Requirements	Habitat on or adjacent to subject lands?	Observed?	Issue Related to Proposed Development?
Bird	Bank Swallow	THR	Nest in burrows it constructs in sand banks associated with valleylands and in fill piles/gravel pits having near vertical faces.	No	No	No
Bird	Barn Swallow	THR	Build nests in manmade structures like sheds, barns, etc. and under bridges/in culverts, etc.	No	No	No
Bird	Bobolink	THR	Large grasslands	No	No	No
Bird	Chimney Swift	THR	Build nests in chimneys and/or on walls of built structures (barns, houses, churches, etc.)	No	No	No
Bird	Eastern Meadowlark	THR	Large grasslands	No	No	No
Bird	Eastern Whip-poor-will	THR	Open woodlands, disturbed areas	Potential - forest communities identified	No	No
Bird	Henslow's Sparrow	END	Large grasslands	No	No	No
Bird	King Rail	END	Large marshlands	No, no large wetlands with open water	No	No
Bird	Least Bittern	THR	Marsh wetlands with mix of open water and emergent vegetation (cattails)	No - open water water not present in wetlands	No	No
Bird	Loggerhead Shrike	END	Alvars, pasturelands	No	No	No
Bird	Louisiana Waterthrush	THR	Mature forests with coldwater creeks/waterfalls	No	No	No
Bird	Red-headed Woodpecker	END	Open woodlands, forests	Potential	No	No
Fish	American Eel	END	Great lakes and connected rivers	No	No	No
Fish	Lake Sturgeon	END	Georgian Bay and accessible reaches of large connecting rivers (spawning)	No	No	No

Taxa	Common Name ¹	ESA Status ²	Habitat Requirements	Habitat on or adjacent to subject lands?	Observed?	Issue Related to Proposed Development?
Fish	Redside Dace	END	Found in pools and slow-flowing sections of relatively small, clear headwater streams with both pool and riffle habitats and a moderate to high gradient.	No - DFO SAR mapping identifies Redside Dace Habitat associated with reaches of the Saugeen River located approx 3km to the east - upstream of subject lands.	No fish sampling	No
Insect	Rusty-patched Bumblebee	END	Mixed farmland, sand dunes, marshes, urban and wooded areas	No - study area located outside known range of the species	Not assessed	No
Mammal	American Badger	END	Farmland/meadows	Potential	No, and no sign of denning observed	No
Mammal	Eastern Small-footed Bat	END	Cliffs, caves, mines, talus slopes	No	No	No
Mammal	Little Brown Myotis	END	Mature woodlands (snag/cavity trees) and buildings (churches, older homes with attics, etc.)	No - forest cover does not provide suitable habitat features	Not assessed	No
Mammal	Northern Myotis	END	Mature woodlands (snag/cavity trees)	No - forest cover does not provide suitable habitat features	Not assessed	No
Mammal	Tri-coloured Bat	END	Mature woodlands (snag/cavity trees) and occasionally in barns or other buildings	No - forest cover does not provide suitable habitat features	Not assessed	No
Plant	American Ginseng	END	Mature deciduous forests	No - forest cover is coniferous	No	No
Plant	Black Ash ⁴	END	Swamps and floodpains	Potential - wetlands identified	No	No
Plant	Butternut ⁴	END	Forests, woodlands, fencerows, open lands	Potential - forest communities and fencerows identified	Yes, 2 saplings observed on west side of property	Yes
Plant	Eastern Prairie Fringed Orchid	END	Wetlands including fens, swamps and tallgrass prairie	Potential - wetlands identified	No	No
Reptile	Blanding's Turtle	THR	Wetlands with standing water	No - wetlands identified do not contain standing water. Nearest report is approx. 40km distant (Luther Marsh, Ontario Herp. Atlas)	No	No

Taxa	Common Name¹	ESA Status²	Habitat Requirements	Habitat on or adjacent to subject lands?	Observed?	Issue Related to Proposed Development?
Reptile	Massasauga	THR	Forests, woodlands, fencerows, wetlands	No - study area located outside known range of the species	No	No

¹List compiled based on records of extirpated, endangered and threatened species reported for Grey County overall.

² Designation under Ontario's Endangered Species Act, 2007 (ESA) - Endangered (END), Threatened (THR)

Table 6. SAR Assessment, Durham Lands

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E

Table 1.1 Seasonal Concentrations of Areas of Animals

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Waterfowl Stopover and Staging Areas (Terrestrial)</p> <p>Rationale: Habitat important to migrating waterfowl.</p>	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). <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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” <ul style="list-style-type: none"> 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. 	No fields containing sheet water in spring and during April 24, 2022 field observations related to drainage. Not Applicable.
<p>Waterfowl Stopover and Staging Areas (Aquatic)</p> <p>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.</p>	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> 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). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 	No lakes, bays, coastal inlets, large marshes with open water located on or adjacent to property. No accumulations of waterfowl observed during April 24, 2022 site visit. Not Applicable.

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Shorebird Migratory Stopover Area</p> <p>Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p>	<p>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</p>	<p>BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 	<p>Studies confirming:</p> <ul style="list-style-type: none"> 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. 	<p>No shorelines of lake, rivers or wetlands with beach areas or seasonally flooded muddy habitats on or adjacent to the property. Not Applicable.</p>
<p>Raptor Wintering Area</p> <p>Rationale: Sites used by multiple species of individuals and used annually are most significant</p>	<p>Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl</p> <p>Special Concern: Short-eared Owl Bald Eagle</p>	<p><u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources:</u></p> <ul style="list-style-type: none"> 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. 	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> 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. 	<p>No raptors (hawks or owls) observed during March 4, 2022 site visit. Field areas less than 15ha in size. No abundance of rodent tracks in snow evident during March 4, 2022 site visit. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Bat Hibernacula</p> <p>Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.</p>	<p>Big Brown Bat Tri-coloured Bat</p>	<p>Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 	<p>No caves, mine shafts, underground foundations or karsts evident on or adjacent to property. Not Applicable.</p>
<p>Bat Maternity Colonies</p> <p>Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p>	<p>Big Brown Bat Silver-haired Bat</p>	<p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF for possible locations and contact for local experts University Biology Departments with bat experts. 	<ul style="list-style-type: none"> Maternity Colonies with confirmed use by; <ul style="list-style-type: none"> >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. 	<p>Woodlands of the property and adjacent lands are successional conifer plantations and dense, Eastern White Cedar dominated coniferous forests – not mature deciduous or mixed forest stands. Not Applicable.</p>
<p>Turtle Wintering Areas</p> <p>Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Midland Painted Turtle</p> <p>Special Concern: Northern Map Turtle Snapping Turtle</p>	<p>Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> EIS studies carried out by Conservation Authorities. Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. OMNRF Ecologist or Biologist Field Naturalist clubs Natural Heritage Information Center (NHIC) 	<ul style="list-style-type: none"> Presence of 5 over-wintering Midland Painted Turtles is significant. One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) Congregation of turtles is more common where wintering areas are limited and therefore significant SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat. 	<p>Wetlands of subject and adjacent lands do not contain standing water year-round and do not provide suitable overwintering habitat. No turtles observed in association with farm pond during multiple site visits during the turtle active season and under suitable observation conditions. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Reptile Hibernaculum</p> <p>Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake</p> <p>Special Concern: Milksnake Eastern Ribbonsnake</p> <p>Lizard: Special Concern (Southern Shield population): Five-lined Skink</p>	<p>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.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p> <p>For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3</p>	<ul style="list-style-type: none"> 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. <p>Information Sources</p> <ul style="list-style-type: none"> 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 	<p>Studies confirming:</p> <ul style="list-style-type: none"> 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. 	<p>No rock crevices and other natural or naturalized rock features (rock piles or slopes, old stone fences, and abandoned crumbling foundations, etc.) noted on subject lands. No areas of broken and fissured rock associated with the subject or adjacent lands. Not Applicable.</p>
<p>Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</p> <p>Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<ul style="list-style-type: none"> Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation. <p>Information Sources</p> <ul style="list-style-type: none"> Reports and other information available from Conservation Authorities. Ontario Breeding Bird Atlas Bird Studies Canada; <i>NatureCounts</i> http://www.birdscanada.org/birdmon/ Field Naturalist Clubs. 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 1 or more nesting sites with 8or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #4 provides development effects and mitigation measures. 	<p>No exposed/eroding soil banks or other suitable features on or adjacent to property. No Cliff or Northern Rough-winged Swallows detected during breeding bird surveys. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Colonially-Nesting Bird Breeding Habitat (Tree/Shrubs)</p> <p>Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron</p>	<p>SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 	<p>Studies confirming:</p> <ul style="list-style-type: none"> 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. 	<p>No stick nests or individuals of listed species observed on or adjacent to the property. Not Applicable.</p>
<p>Colonially-Nesting Bird Breeding Habitat (Ground)</p> <p>Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)</p> <p>MAM1 – 6; MAS1 – 3; CUM CUT CUS</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Breeding Bird Atlas , rare/colonial species records. Canadian Wildlife Service Reports and other information available from CAs. Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area MNRF District Offices Field Naturalist clubs 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. Presence of 5 or more pairs for Brewer's Blackbird. Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". SWHMiST Index #6 provides development effects and mitigation measures. 	<p>Subject and adjacent lands not associated with an island or peninsula of a lake. No Brewer's Blackbirds observed during breeding bird surveys. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Migratory Butterfly Stopover Areas</p> <p>Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Painted Lady Red Admiral</p> <p><u>Special Concern</u> Monarch</p>	<p>Combination of ELC Community Series; need to have present one Community Series from each land class:</p> <p><u>Field:</u> CUM CUT CUS</p> <p><u>Forest:</u> FOC FOD FOM CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p>	<p>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.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF (NHIC) Agriculture Canada in Ottawa may have list of butterfly experts. Field Naturalist Clubs Toronto Entomologists Association Conservation Authorities 	<p>Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>The subject lands are not located within 5km of Lake Ontario. Not Applicable.</p>
<p>Landbird Migratory Stopover Areas</p> <p>Rationale: Sites with a high diversity of species as well as high numbers are most significant.</p>	<p>All migratory songbirds. Canadian Wildlife Service Ontario website.</p> <p>All migratory songbirds. Canadian Wildlife Service Ontario website:</p>	<p>All Ecosites associated with these ELC Community Series;</p> <p>FOC FOM FOD SWC SWM SWD</p>	<p>Woodlots need to be >10 ha in size and within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> 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 . <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Bird Studies Canada Ontario Nature Local birders and naturalist club Ontario Important Bird Areas (IBA) Program 	<p>Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>The subject lands are not located within 5km of Lake Ontario. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Deer Yarding Areas</p> <p>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.</p>	White-tailed Deer	<p>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.</p> <p>Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT</p>	<ul style="list-style-type: none"> 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. 	<p>No Studies Required:</p> <ul style="list-style-type: none"> 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. 	Provincial mapping identified a deer yarding area (Stratum 2) approx. 2km to the northeast of the subject lands. March 4, 2022 site visit revealed no accumulations of deer tracks, trails or beds consistent with winter deer use as deer yarding habitat. Not Applicable.
<p>Deer Winter Congregation Areas</p> <p>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.</p>	White-tailed Deer	<p>All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands . If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not significant. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Offices LIO/NRVIS 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHMiST Index #2 provides development effects and mitigation measures. 	See Deer Yarding Area assessment. Property is located in an area of the province where traditional yarding behaviour occurs (i.e., deep snow accumulation in most years).

Table 6. SAR Assessment, Durham Lands
Table 1.2.1 Rare Vegetation Communities

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Cliffs and Talus Slopes</p> <p>Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p>	<p>Any ELC Ecosite within Community Series:</p> <p>TAO TAS TAT CLO CLS CLT</p>	<p>A Cliff is vertical to near vertical bedrock >3m in height.</p> <p>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.</p>	<p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Cliffs or Talus Slopes SWHMiST Index #21 provides development effects and mitigation measures. 	<p>No cliffs or talus slopes were identified. Not Applicable.</p>
<p>Sand Barren</p> <p>Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p>	<p>ELC Ecosites:</p> <p>SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</p>	<p>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%.</p>	<p>A sand barren area >0.5ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF Districts Natural Heritage Information Center (NHIC) has location information available on their website. Field Naturalist clubs Conservation Authorities 	<ul style="list-style-type: none"> 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. 	<p>No sand barrens were identified. Not Applicable.</p>
<p>Alvar</p> <p>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.</p>	<p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2</p> <p>Five Alvar Species:</p> <ol style="list-style-type: none"> <i>Carex crawei</i> <i>Panicum philadelphicum</i> <i>Eleocharis compressa</i> <i>Scutellaria parvula</i> <i>Trichostema brachiatum</i> <p>These indicator species are very specific to Alvars within Ecoregion 6E.</p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.</p>	<p>An Alvar site > 0.5 ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Field studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses. SWHMiST Index #17 provides development effects and mitigation measures. 	<p>No alvars were identified. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Old Growth Forest</p> <p>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.</p>	<p>Forest Community Series: FOD FOC FOM SWD SWC SWM</p>	<p>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.</p>	<p>Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • 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 	<p>Field Studies will determine:</p> <ul style="list-style-type: none"> • 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. 	<p>Woodlands of the subject and adjacent lands successional/young having become established on lands historically farmed – woodlands of property not present in 1954 based on air photo interpretation. Not Applicable.</p>
<p>Savannah</p> <p>Rationale: Savannahs are extremely rare habitats in Ontario.</p>	<p>TPS1 TPS2 TPW1 TPW2 CUS2</p>	<p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.</p>	<p>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.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities 	<p>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.</p> <ul style="list-style-type: none"> • 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. 	<p>No savannahs were identified. Not Applicable.</p>
<p>Tallgrass Prairie</p> <p>Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.</p>	<p>TPO1 TPO2</p>	<p>A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.</p>	<p>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.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities 	<p>Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used.</p> <ul style="list-style-type: none"> • 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. 	<p>No tallgrass prairies were identified. Not Applicable.</p>
<p>Other Rare Vegetation Communities</p> <p>Rationale: Plant communities that often contain rare species which depend on the habitat for survival.</p>	<p>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.</p>	<p>Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.</p>	<p>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M</p> <p>The OMNRF/NHIC will have up to date listing for rare vegetation communities.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities 	<p>Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG.</p> <ul style="list-style-type: none"> • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST Index #37 provides development effects and mitigation measures. 	<p>Vegetation communities of the subject and adjacent lands are not types considered provincially rare. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands
1.2.2 Specialized Habitat for Wildlife

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Waterfowl Nesting Area</p> <p>Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p>	<p>American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard</p>	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to Provincially Significant Wetlands</p>	<p>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.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. 	<p>Studies confirmed:</p> <ul style="list-style-type: none"> 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. 	<p>No use of the property or adjacent lands by waterfowl detected during April 24, 2022 site visit or breeding bird surveys completed on May 31 and June 13, 2022. Not Applicable.</p>
<p>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</p> <p>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.</p>	<p>Osprey Special Concern Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <ul style="list-style-type: none"> 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). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. Nature Counts, Ontario Nest Records Scheme data. OMNRF Districts Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented Reports and other information available from Conservation Authorities. Field Naturalists clubs 	<p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> 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. 	<p>Subject and adjacent lands are not associated with lakes, rivers or large wetlands utilized by Osprey or Bald Eagle. Neither species observed during the breeding bird surveys, Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Woodland Raptor Nesting Habitat</p> <p>Rationale: Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.</p>	<p>Northern Goshawk Cooper’s Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk</p>	<p>May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3</p>	<p>All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>Woodlands of the property and adjacent lands do not contain >10ha of 200m interior habitat. None of listed species observed during breeding bird surveys. No stick nests observed. Not Applicable.</p>
<p>Turtle Nesting Areas</p> <p>Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p>	<p>Midland Painted Turtle</p> <p><u>Special Concern Species</u> Northern Map Turtle Snapping Turtle</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 	<p>Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>No turtles observed during multiple site visits completed during the turtle active season under suitable observation conditions. No signs of turtle nesting (egg shells/predated nests) detected. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Seeps and Springs</p> <p>Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	<p>Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.</p>	<p>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.</p>	<p>Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.</p> <ul style="list-style-type: none"> Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>No seeps or springs were identified on the subject lands. Not Applicable.</p>
<p>Amphibian Breeding Habitat (Woodland).</p> <p>Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.</p>	<p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>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.</p>	<ul style="list-style-type: none"> Presence of a wetland, pond or woodland pool (including vernal pools) >500m² (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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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 	<p>Studies confirm;</p> <ul style="list-style-type: none"> 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. 	<p>The results of evening calling amphibian surveys revealed a full chorus (Code 3) of only 1 listed species (Spring Peeper). Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Amphibian Breeding Habitat (Wetlands)</p> <p>Rationale: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	<p>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</p>	<p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p> <p>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.</p>	<ul style="list-style-type: none"> Wetlands >500m² (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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. OMNRF Districts and wetland evaluations Reports and other information available from Conservation Authorities 	<p>Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>Bullfrogs (approx. 10) were observed within the farm pond in the center region of the study area on May 31, 2022. Assumed to be breeding in the pond - Applicable</p>
<p>Woodland Area-Sensitive Bird Breeding Habitat</p> <p>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.</p>	<p>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</p> <p>Special Concern: Cerulean Warbler Canada Warbler</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p>	<p>Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha.</p> <ul style="list-style-type: none"> Interior forest habitat is at least 200 m from forest edge habitat. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>Woodland cover of the subject and adjacent lands is successional and forest stands are < 30ha in size. Only one of listed species (Ovenbird) was detected during breeding bird surveys – associated with adjacent lands. No special concern species observed. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands
1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Marsh Breeding Bird Habitat</p> <p>Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p>	<p>American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan</p> <p>Special Concern: Black Tern Yellow Rail</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p>	<ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF District and wetland evaluations. Field Naturalist clubs Natural Heritage Information Center (NHIC) Records. Reports and other information available from Conservation Authorities. Ontario Breeding Bird Atlas 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species. Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. Area of the ELC ecosite is the SWH. Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #35 provides development effects and mitigation measures. 	<p>Wetlands contain minimal standing water and do not provide suitable habitat. No Sedge wren, Marsh Wren or Sandhill Crane observed during breeding bird surveys. None of listed or special concern species detected. Not Applicable.</p>
<p>Open Country Bird Breeding Habitat Sources Defining Criteria</p> <p>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.</p>	<p>Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow</p> <p>Special Concern Short-eared Owl</p>	<p>CUM1 CUM2</p>	<p>Large grassland areas (includes natural and cultural fields and meadows) >30 ha.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Agricultural land classification maps, Ministry of Agriculture. Local bird clubs. Ontario Breeding Bird Atlas Reports and other information available from Conservation Authorities. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> 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. 	<p>No large grasslands (>30ha) associated with subject or adjacent lands. Possible nesting by only one listed species (Savannah Sparrow). No Shore-eared Owls observed. Not Applicable.</p>
<p>Shrub/Early Successional Bird Breeding Habitat</p> <p>Rationale: This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.</p>	<p>Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p>Special Concern: Yellow-breasted Chat Golden-winged Warbler</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p>	<p>Large field areas succeeding to shrub and thicket habitats >10ha in size.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Agricultural land classification maps, Ministry of Agriculture. Local bird clubs Ontario Breeding Bird Atlas Reports and other information available from Conservation Authorities. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. The area of the SWH is the contiguous ELC ecosite field/thicket area. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #33 provides development effects and mitigation measures. 	<p>No large thicket habitat (>10ha) associated with subject or adjacent lands. None of the indicator species observed during breeding bird surveys. Probable nesting by only one common species (Field Sparrow). None of the special concern species observed. Not Applicable.</p>

Table 6. SAR Assessment, Durham Lands

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Terrestrial Crayfish</p> <p>Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p>	<p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crayfish or Meadow Crayfish; (<i>Cambarus Diogenes</i>)</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM</p> <p>CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.</p>	<p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998. 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> 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. 	<p>No crayfish chimneys observed. Not Applicable.</p>
<p>Special Concern and Rare Wildlife Species</p> <p>Rationale: These species are quite rare or have experienced significant population declines in Ontario.</p>	<p>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.</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</p>	<p>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</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> 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. 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> 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. 	<p>Field studies revealed no special concern or provincially rare (S1, 2, 3 or H) wildlife or plants associated with the subject lands.</p>

Table 6. SAR Assessment, Durham Lands
1.4 Animal Movement Corridors

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p>Amphibian Movement Corridors</p> <p>Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. <ul style="list-style-type: none"> Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1 	Movement corridors between breeding habitat and summer habitat. <ul style="list-style-type: none"> 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. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Office Natural Heritage Information Center (NHIC) Reports and other information available from Conservation Authorities. Field Naturalist Clubs 	<ul style="list-style-type: none"> Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. SWHMiST Index #40 provides development effects and mitigation measures. 	The watercourse flowing into and out of the pond may act as a movement corridor to wetlands within the study area, as well as wetlands to the northeast of the study area.
<p>Deer Movement Corridors</p> <p>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.</p>	White-tailed Deer	Corridors may be found in all forested ecosites. <p>A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.</p>	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule. <ul style="list-style-type: none"> 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). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Office Natural Heritage Information Center (NHIC). Reports and other information available from Conservation Authorities. Field Naturalist Clubs 	<ul style="list-style-type: none"> Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. Shorter corridors are more significant than longer corridors. SWHMiST Index #39 provides development effects and mitigation measures. 	No deer wintering habitat was identified.

**Table 6. SAR Assessment, Durham Lands
1.5 Exceptions for EcoRegion 6E**

EcoDistrict	Wildlife Habitat and Species	Candidate			Confirmed SWH	Assessment
		Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
<p>6E-14</p> <p>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.</p>	<p>Mast Producing Areas</p> <p>Black Bear</p>	<p>All Forested habitat represented by ELC Community Series:</p> <p>FOM FOD</p>	<ul style="list-style-type: none"> 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. 	<p>Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech).</p> <p><u>Information Sources</u> Important forest habitat for black bears may be identified by OMNRF.</p>	<p>All woodlands > 30ha with a 50% composition of these ELC Vegetation Types are considered significant:</p> <p>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</p> <p>SWHMiST Index #3 provides development effects and mitigation measures.</p>	<p>The study area is not located on Bruce Peninsula.</p>
<p>6E- 17</p> <p>Rationale: Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population</p>	<p>Lek</p> <p>Sharp-tailed Grouse</p>	<p>CUM CUS CUT</p>	<ul style="list-style-type: none"> 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. 	<p>Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland.</p> <ul style="list-style-type: none"> 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 <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF district office Bird watching clubs Local landowners Ontario Breeding Bird Atlas 	<p>Studies confirming lek habitat are to be completed from late March to June.</p> <ul style="list-style-type: none"> 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 	<p>The study area is not located on Manitoulin Island.</p>



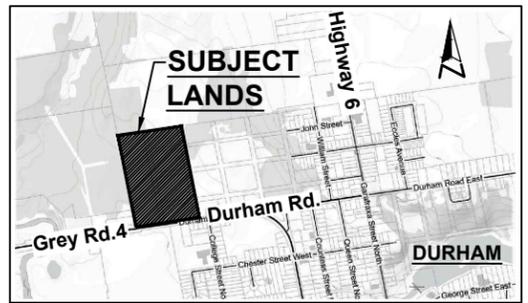
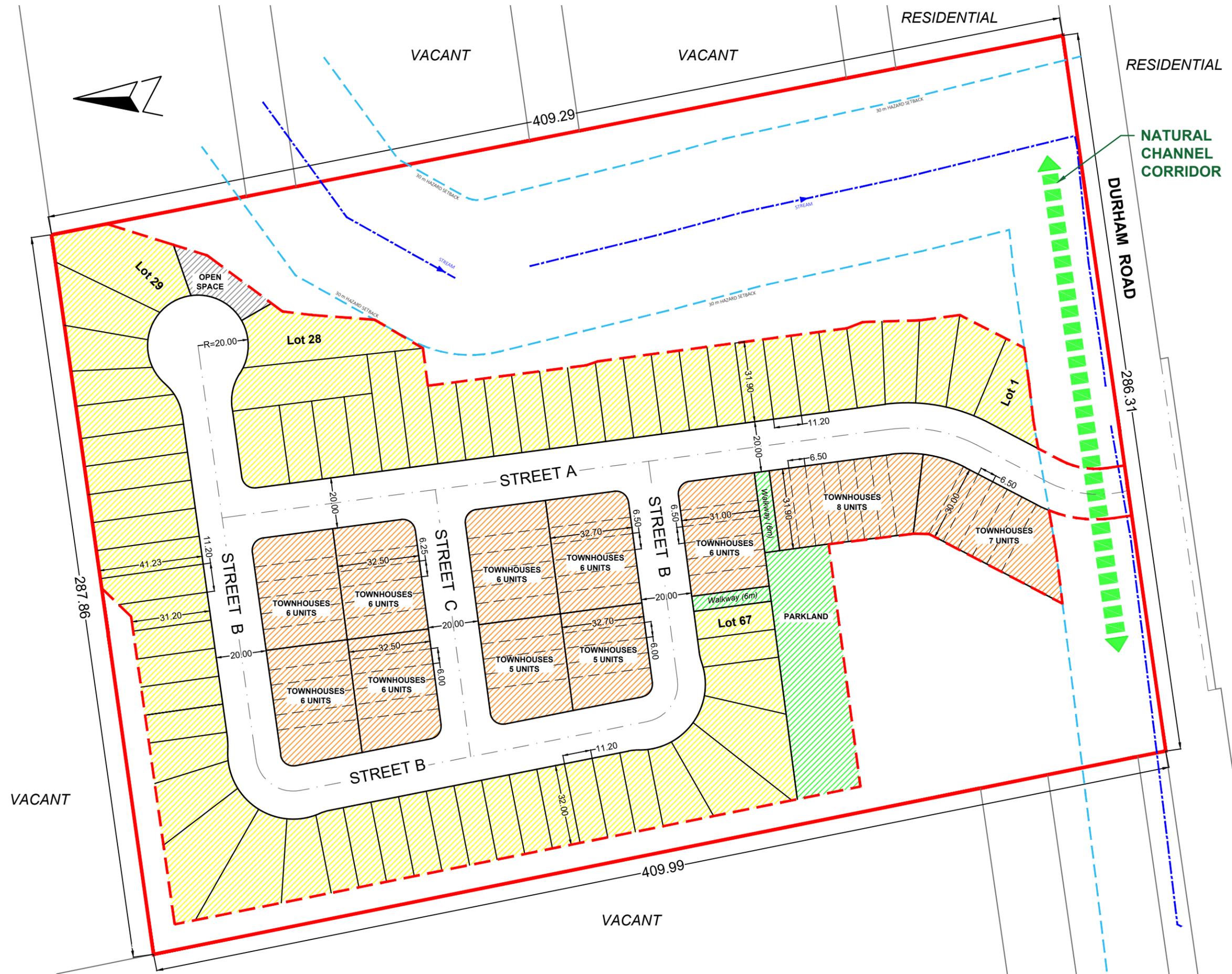
APPENDICES

- Appendix A:** Development Concept
 - Appendix B:** EIS Terms of Reference
 - Appendix C:** 1954 Air Photo
 - Appendix D:** Natural Features Mapping
 - Appendix E:** Post Development Drainage Plan
-
-



APPENDIX A

Development Concept



Key Map (n.t.s.)

LEGEND

- SUBJECT LANDS BOUNDARY
Total Area +/-11.73ha
- POTENTIAL DEVELOPMENT AREA
Total Area +/-6.93ha
- RESIDENTIAL SINGLE DETACHED (67 Lots)
Min. Lot Frontage 11.2m & Lot Depth 31m
- RESIDENTIAL TOWNHOUSES (67 Units)
Min. Lot Frontage 6m & Min. Lot Depth 30m
- PARKLAND & OPEN SPACE - Total Area: +/-0.33ha
(Approx. 4.0% of the Potential Development Area)

ROADS (Streets A, B, C) - Total Area: +/-1.78ha

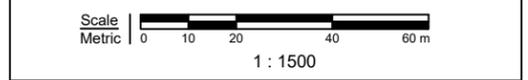
SITE DEVELOPMENT CONCEPT SUMMARY
Total Subject Lands Area: +/-11.73ha
Total Potential Development Area: +/-6.93ha
 (per Environmental Considerations)
Total NET Development Area: +/-4.82ha
 (calculated as Potential Development Area less Open Space, Parkland, and Roads)

Total Number of Units: 134 Units
 Single Detached: 67 Lots/Units
 Townhouses: 67 Units

Density: +/-28 u/ha
 (Total Number of Units per NET Development Area)

GENERAL NOTES:
 All measurements are in metric.
 All proposed site development features are illustrated for site development concept review.

PLAN REFERENCES:
 Grey County GIS, Site Location (2022)
 Azimuth Environmental, Environmental Constraints (2021)
 Tatham Engineering, Khanani Development / Preliminary (2022)
 Van Harten Surveying Inc., Draft Plan of Subdivision (2023)



563 DURHAM ROAD
 DURHAM, COUNTY OF GREY
 SITE DEVELOPMENT CONCEPT

GEORGIAN PLANNING SOLUTIONS Land Use Planning & Project Management 17 Brock Cres., Collingwood, ON L9Y 4A4 O: 705.446.0530 / C: 705.606.7526	Drawing: GPS_563DurhamRd-D1
	Drawn By: D.C.
	Date: May/25/2022
Revisions	
1:	May/27/2022
2:	Jan/26/2023
3:	Apr/27/2023



APPENDIX B

EIS Terms of Reference

Jim Broadfoot

From: Jim Broadfoot
Sent: December-22-21 4:25 PM
To: 'Brandi Walter'
Cc: Paul Bonwick (Paul@stonebrookdevelopments.com); 'Remo Niceforo' (remo@stonebrookdevelopments.com)
Subject: EIS Terms of Reference - Durham (Stonebridge), Part Lot 9-12/Grey Road 4

Brandi Walter, Ecological Planning Coordinator – Saugeen Valley Conservation Authority

Hello Brandi

As per discussions during the virtual meeting of September 23, 2021 organized by the Municipality of West Grey, we propose the following terms of reference for the Environmental Impact Study (EIS) related to development proposed for the Stonebridge Durham lands.

Field Program

- Complete the following field surveys in 2022:
 - Drainage feature/fish habitat assessment (early spring and as surface water diminishes later in the growing season) – include descriptions of bank full width/depth, wetted width/depth, flow (descriptive – continuous/discontinuous, clear/turbid); substrate characteristics; observations of fish;
 - Evaluate/ map vegetation community types based on Ecological Land Classification for southern Ontario (May/June and July/August);
 - Three vascular plant inventories (May/June, July, and August/September);
 - Three evening calling amphibian surveys (April, mid-May, end of June) according to methods of the Marsh Monitoring Program;
 - Assessment of potential for woodlands of the subject and adjacent lands to function as potential bat habitat (leaf off conditions prior to May);
 - Two dawn breeding bird surveys completed as combined roving and point count surveys following approach of the Ontario Breeding Bird Atlas program;
 - Two nocturnal bird surveys Canadian Nightjar Survey methods and recommended survey timing windows for Ontario in 2022 (optimal timing – 2 surveys between June 8 and June 14);
 - Stake limits of *woodland* and *wetland* on the subject lands for field review, adjustment and approval by SVCA. With subsequent survey to reflect on site plans; and,
 - Record all wildlife observations during site visits to compile a comprehensive species list.

Biophysical Assessment

- Complete a Species at Risk assessment according to the guidelines of the MECP;
- Assess potential for Significant Wildlife Habitat functions based on provincial (MNRF) Ecoregion 6E Criteria; and,
- Assess fish habitat function or watercourse/drainage features based on presence/absence of fish and flow characteristics (i.e., direct/indirect, intermittent/permanent).

Impact Assessment

- Evaluate the results and recommendations of engineering and other associated studies prepared with respect to the proposed development;

- Evaluate the potential for direct and indirect impacts to significant natural heritage features and functions;
- Provide recommendations for impact mitigation; and,
- Evaluate consistency to applicable environmental policy and regulation.

Please advise if this study approach is deemed sufficient by the SVCA to provide an adequate characterization of existing conditions on which to base an impact assessment. **Please advise** if the Municipality of West Grey and/or the County of Grey should be consulted for input on the EIS terms of reference.

Please do not hesitate to call to discuss.

Thank you.

Jim Broadfoot, Terrestrial Ecologist

Azimuth Environmental
642 Welham Road
Barrie, ON
L4N 9A1
(705) 721-8451 x 206
Mobile (705) 623-1161

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

Jim Broadfoot

From: Erik Downing <E.Downing@SVCA.ON.CA>
Sent: July-12-22 3:19 PM
To: Jim Broadfoot
Cc: Paul Bonwick (Paul@stonebrookdevelopments.com); Adam McClelland
Subject: RE: EIS Terms of Reference - Durham (Stonebridge), Part Lot 9-12/Grey Road 4

Hi Jim,

SVCA staff do not typically require a staking and review of staking in our review of EIS reports. The plan for the report is looking adequate. There is always our interest in hydrology near the wetlands as well and if changes are proposed in influence area a water balance can be an interest.

Thanks,



Erik Downing, Manager, Environmental Planning and Regulations
1078 Bruce Rd. 12, P.O. Box 150
Formosa, ON N0G 1W0
519-364-1255 ext. 241
E-mail: e.downing@svca.on.ca
www.saugeenconservation.ca

From: Jim Broadfoot <Jim@Azimuthenvironmental.Com>
Sent: July 7, 2022 11:14 AM
To: Erik Downing <E.Downing@SVCA.ON.CA>
Cc: Paul Bonwick (Paul@stonebrookdevelopments.com) <Paul@stonebrookdevelopments.com>; Adam McClelland <AMcClelland@azimuthenvironmental.com>
Subject: FW: EIS Terms of Reference - Durham (Stonebridge), Part Lot 9-12/Grey Road 4

****[CAUTION]:** This email originated from outside of the organization. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Erik Downing, SVCA

Hello Eric

Submitting this email to you as I have been advised via email reply that Brandi Walter is on leave from May 30, 2022 to Mid-August, 2022.

Please do not hesitate to call to discuss.

Thank you.

Jim Broadfoot, Terrestrial Ecologist

Azimuth Environmental

642 Welham Road

Barrie, ON

L4N 9A1

(705) 623-1161 Mobile – Currently working remotely, please use mobile #

(705) 721-8451 x 206

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

From: Jim Broadfoot

Sent: July-07-22 11:10 AM

To: Brandi Walter (b.walter@svca.on.ca)

Cc: Paul Bonwick (Paul@stonebrookdevelopments.com); Adam McClelland

Subject: FW: EIS Terms of Reference - Durham (Stonebridge), Part Lot 9-12/Grey Road 4

Brandi Walter, Ecological Planning Coordinator – Saugeen Valley Conservation Authority

Hello Brandi

We have not received a reply to the Terms of Reference we proposed for the Durham lands EIS (see below) – apologies if I missed an email along the way.

Below we indicate the field studies that have been completed. We are uncertain if the SCVA is wanting to complete a field review of wetland/woodland delineation and hence if these features would need to be staked/surveyed.

Please do not hesitate to call to discuss.

Thank you.

J b'foot

Jim Broadfoot, Terrestrial Ecologist

Azimuth Environmental

642 Welham Road

Barrie, ON

L4N 9A1

(705) 623-1161 Mobile – Currently working remotely, please use mobile #

(705) 721-8451 x 206

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

From: Jim Broadfoot
Sent: December-22-21 4:25 PM
To: 'Brandi Walter'
Cc: Paul Bonwick (Paul@stonebrookdevelopments.com); 'Remo Niceforo' (remo@stonebrookdevelopments.com)
Subject: EIS Terms of Reference - Durham (Stonebridge), Part Lot 9-12/Grey Road 4

Brandi Walter, Ecological Planning Coordinator – Saugeen Valley Conservation Authority

Hello Brandi

As per discussions during the virtual meeting of September 23, 2021 organized by the Municipality of West Grey, we propose the following terms of reference for the Environmental Impact Study (EIS) related to development proposed for the Stonebridge Durham lands.

Field Program

- Complete the following field surveys in 2022:
 - Drainage feature/fish habitat assessment (early spring and as surface water diminishes later in the growing season) – include descriptions of bank full width/depth, wetted width/depth, flow (descriptive – continuous/discontinuous, clear/turbid); substrate characteristics; observations of fish; **completed**
 - Evaluate/ map vegetation community types based on Ecological Land Classification for southern Ontario (May/June and July/August); **in process**
 - Three vascular plant inventories (May/June, July, and August/September); **May/June survey completed**
 - Three evening calling amphibian surveys (April, mid-May, end of June) according to methods of the Marsh Monitoring Program; **completed**
 - Assessment of potential for woodlands of the subject and adjacent lands to function as potential bat habitat (leaf off conditions prior to May) **completed**;
 - Two dawn breeding bird surveys completed as combined roving and point count surveys following approach of the Ontario Breeding Bird Atlas program **completed**;
 - Two nocturnal bird surveys Canadian Nightjar Survey methods and recommended survey timing windows for Ontario in 2022 (optimal timing – 2 surveys between June 8 and June 14) **completed**;
 - Stake limits of *woodland* and *wetland* on the subject lands for field review, adjustment and approval by SVCA. With subsequent survey to reflect on site plans **Not sure if SVCA is requiring this given that wetland delineation and ELC vegetation classification is being completed by provincially certified wetland evaluators and experienced field staff – Please Advise**; and,
 - Record all wildlife observations during site visits to compile a comprehensive species list **ongoing**.

Biophysical Assessment

- Complete a Species at Risk assessment according to the guidelines of the MECP;
- Assess potential for Significant Wildlife Habitat functions based on provincial (MNRF) Ecoregion 6E Criteria; and,
- Assess fish habitat function or watercourse/drainage features based on presence/absence of fish and flow characteristics (i.e., direct/indirect, intermittent/permanent).

Impact Assessment

- Evaluate the results and recommendations of engineering and other associated studies prepared with respect to the proposed development;
- Evaluate the potential for direct and indirect impacts to significant natural heritage features and functions;

- Provide recommendations for impact mitigation; and,
- Evaluate consistency to applicable environmental policy and regulation.

Please advise if this study approach is deemed sufficient by the SVCA to provide an adequate characterization of existing conditions on which to base an impact assessment. **Please advise** if the Municipality of West Grey and/or the County of Grey should be consulted for input on the EIS terms of reference.

Please do not hesitate to call to discuss.

Thank you.

Jim Broadfoot, Terrestrial Ecologist

Azimuth Environmental

642 Welham Road

Barrie, ON

L4N 9A1

(705) 721-8451 x 206

Mobile (705) 623-1161

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



APPENDIX C

1954 Air Photo



1954 Air Photo (<https://mdl.library.utoronto.ca/collections/air-photos/1954-air-photos-southern-ontario/index>)



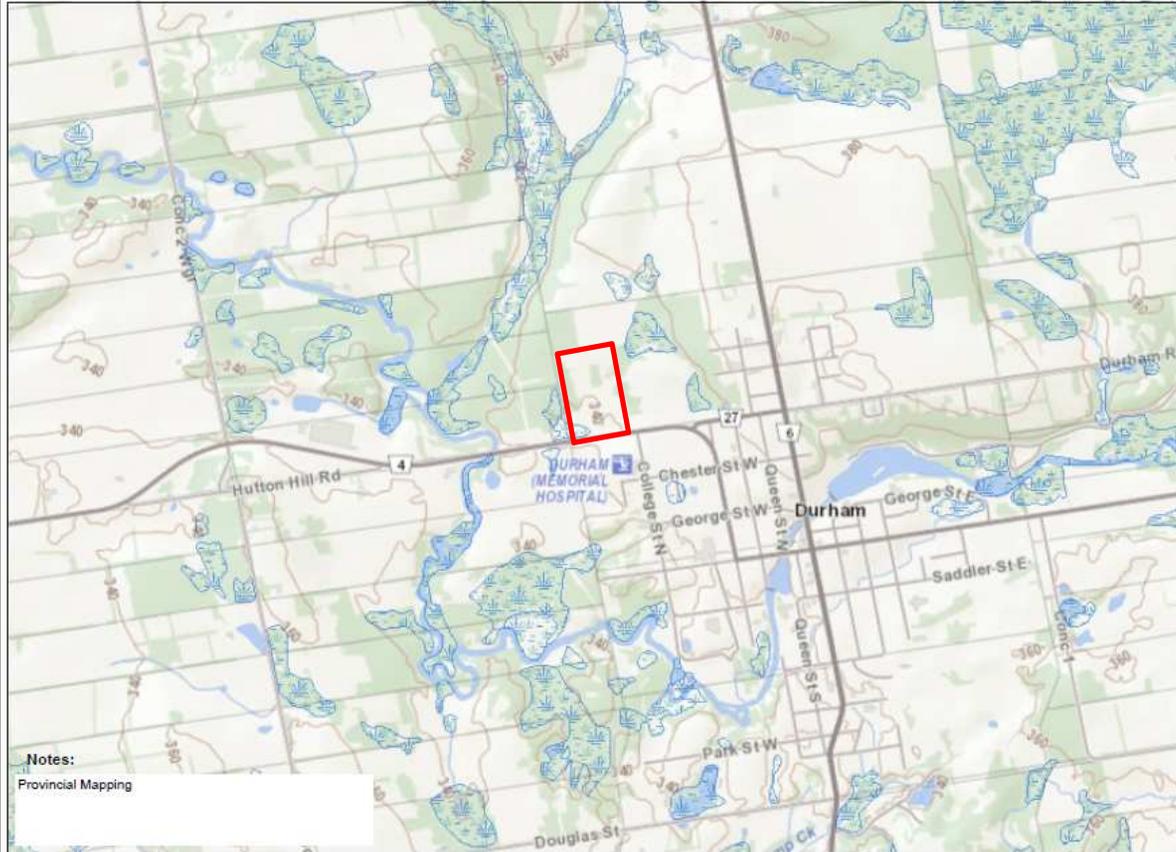
APPENDIX D

Natural Features Mapping



Durham Lands

Map created:10/21/2022



Notes:
Provincial Mapping

1.3 0 0.66 1.3 Kilometres Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.
© Copyright for Ontario Parcel data is held by King's Printer for Ontario and its licensors and may not be reproduced without permission. THIS IS NOT A PLAN OF SURVEY.

Imagery Copyright Notices: DRAPE © Aéro-Photo (1961) Inc., 2008 - 2009
GTA 2005 / SWOOP 2006 / Simcoe-Muskoka-Dufferin © FirstBase Solutions, 2005 / 2006 / 2008
© King's Printer for Ontario, 2022

Legend

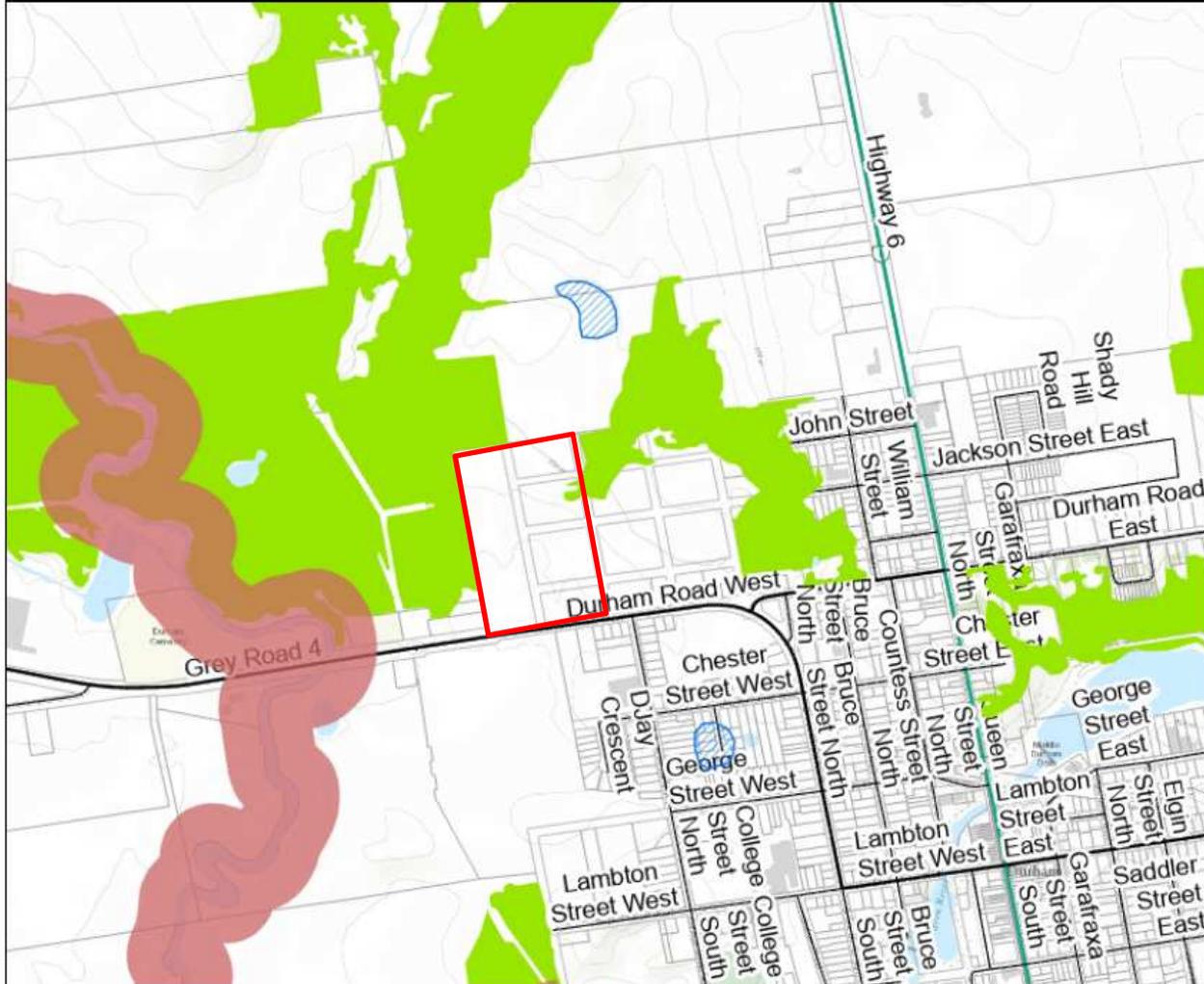
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
 - Earth Science Regionally Significant/sciences de la terre d'importance régionale
 - Life Science Provincially Significant/sciences de la vie d'importance provinciale
 - Life Science Regionally Significant/sciences de la vie d'importance régionale
 - Evaluated Wetland
 - Provincially Significant/considérée d'importance provinciale
 - Non-Provincially Significant/non considérée d'importance provinciale
 - Unevaluated Wetland

Subject Lands (approx.)





Grey County



- Legend**
- ANSI
 - ANSI, Earth Life Science
 - ANSI, Earth Science
 - ANSI, Life Science
 - Other Wetlands
 - Significant Valleylands
 - Significant Woodlands
 - Large Scale Roads
 - Provincial Highway
 - County Road
 - Township Road
 - Seasonal Road
 - Parcels - Current
 - Grey County Boundary

Subject Lands (approx.)



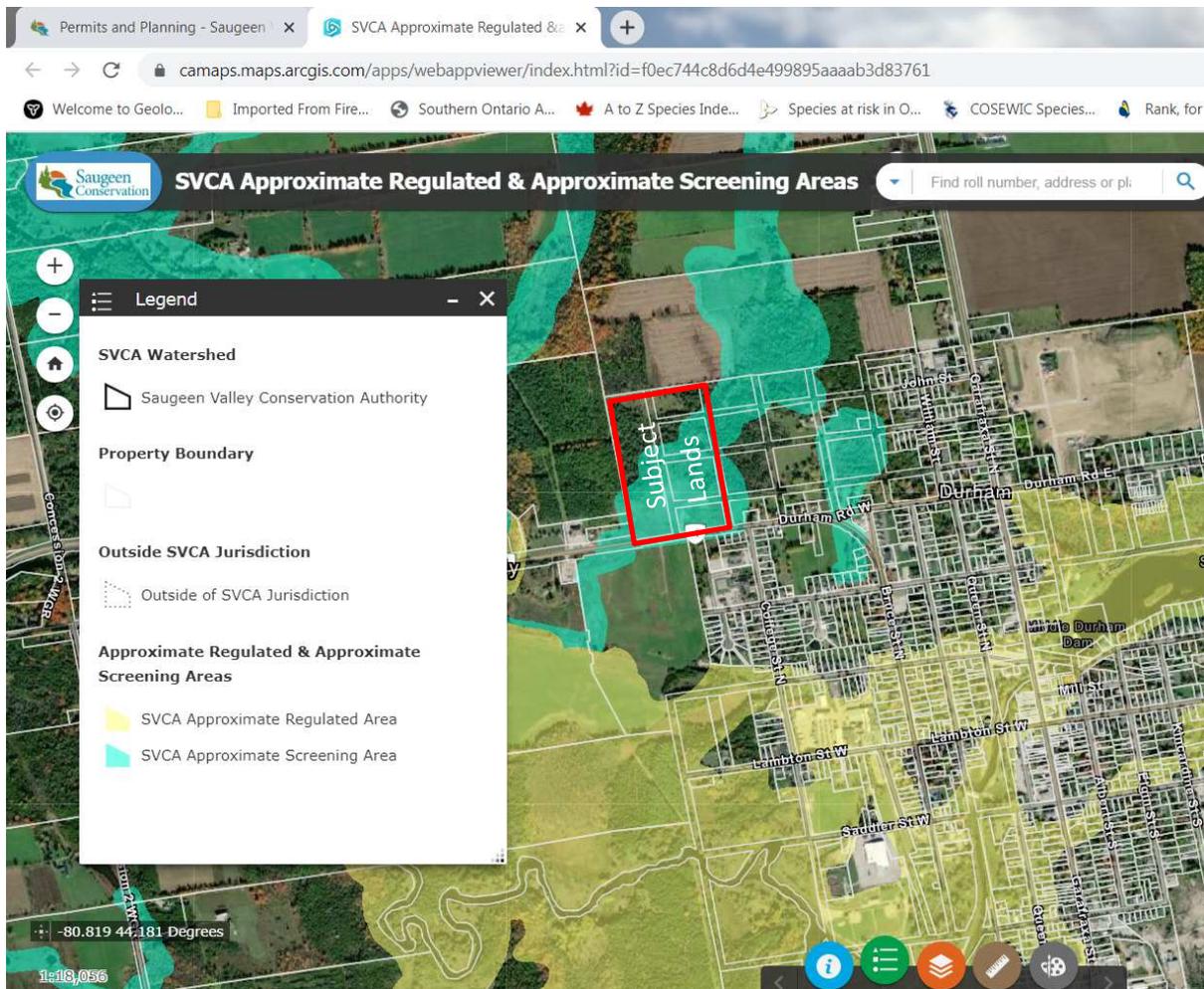
WGS_1984_Web_Mercator_Auxiliary_Sphere
© County of Grey



This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed October 24, 2022 THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes
Significant Woodlands



Information ✕

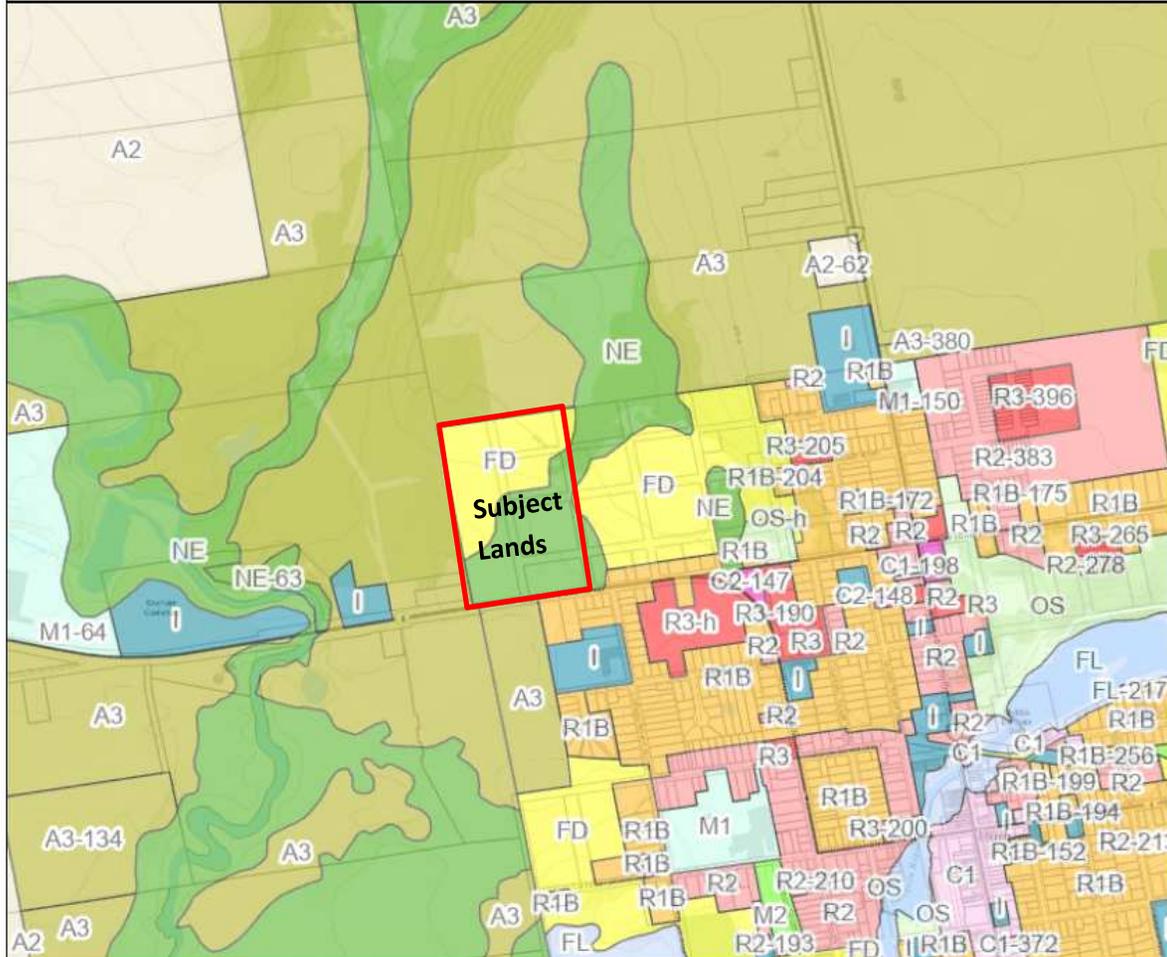
The **approximate regulated** area indicated on this map is a compilation of various information sources. Floodplain mapping and shoreline hazard mapping were previously prepared for the SVCA by engineering consultants in select areas. SVCA applied the approximate regulated area, and offsets, to areas where such mapping is available. Slope and erosion hazards, and their associated offsets, were determined by the SVCA using the detailed topographical data contained in the shoreline or floodplain mapping.

The **approximate screening area** represents the SVCA's hazard land mapping plus 30 metres where detailed topographical information was not available and was completed via aerial photo interpretation. Associated with the approximate screening area, the SVCA's Regulation will apply to the appropriate features and an offset from these features, as determined when the SVCA is asked to review a proposal in, or in close proximity to, the approximate screening area. The Provincially Significant Wetlands are assigned an area of interference of 120 metres from the wetland boundary, which is included in this map.

<https://camaps.maps.arcgis.com/apps/webappviewer/index.html?id=f0ec744c8d6d4e499895aaaab3d83761>

Legend

- Zoning - West Grey
- A1 Agricultural
 - A2 Rural
 - A3 Restricted Rural
 - C1 General Commercial
 - C2 Highway Commercial
 - C3 Neighbourhood Commercial
 - C4 Shopping Centre Commercial
 - C5 Hamlet Commercial
 - C6 Rural Commercial
 - FD Future Development
 - FL Flood Way
 - I Institutional
 - M1 Industrial
 - M2 Restricted Industrial
 - M3 Rural Industrial
 - M4 Extractive Industrial
 - MH Mobile Home Park
 - MU1 Mixed Use
 - ND No Development
 - NE Natural Environment
 - NE2 Natural Environment 2
 - OS Open Space
 - ER Estate Residential
 - R1A Unserved Residential
 - R1B Low Density Residential
 - R2 Medium Density Residential
 - R3 High Density Residential
- Parcels - Current



889 0 444 889 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere
© County of Grey



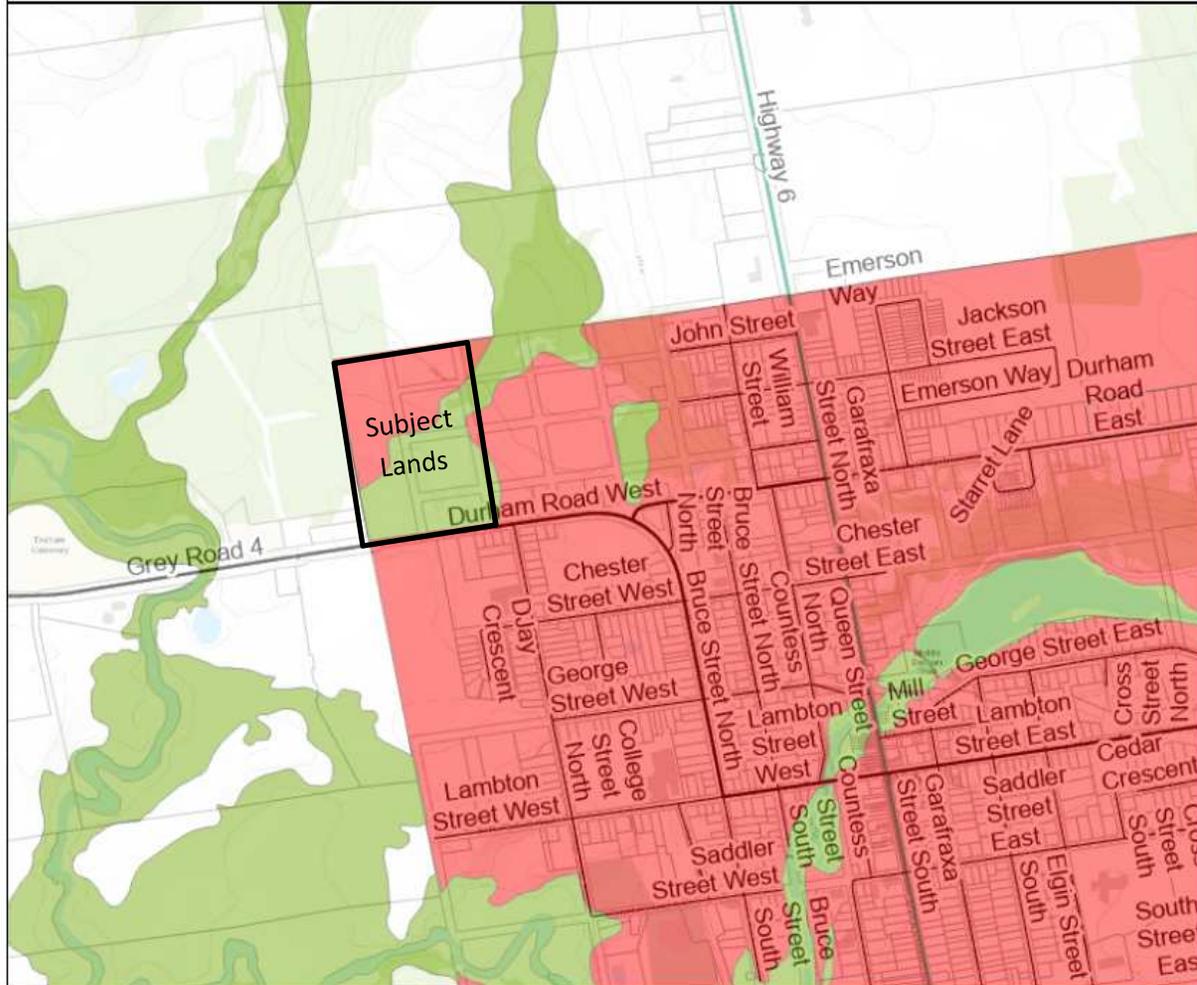
This map is a user generated static output from an Internet mapping site and is for reference only.
Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed October 24, 2022 THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes



Grey County OP



Legend

Land use

- Primary Settlement Area
- Secondary Settlement Area
- Agricultural
- Escarpment Recreation Area
- Hazard Lands
- Escarpment Natural Area
- Inland Lakes & Shoreline
- Niagara Escarpment Plan Area
- Rural
- Space Extensive Industrial and Commercial
- Sunset Strip Area
- Industrial Business Park
- Special Agriculture
- Provincially Significant Wetlands
- Recreation Resort Area

Large Scale Roads

- Provincial Highway
- County Road
- Township Road
- Seasonal Road

- Parcels - Current
- Grey County Boundary

Notes

889 0 444 889 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere
© County of Grey

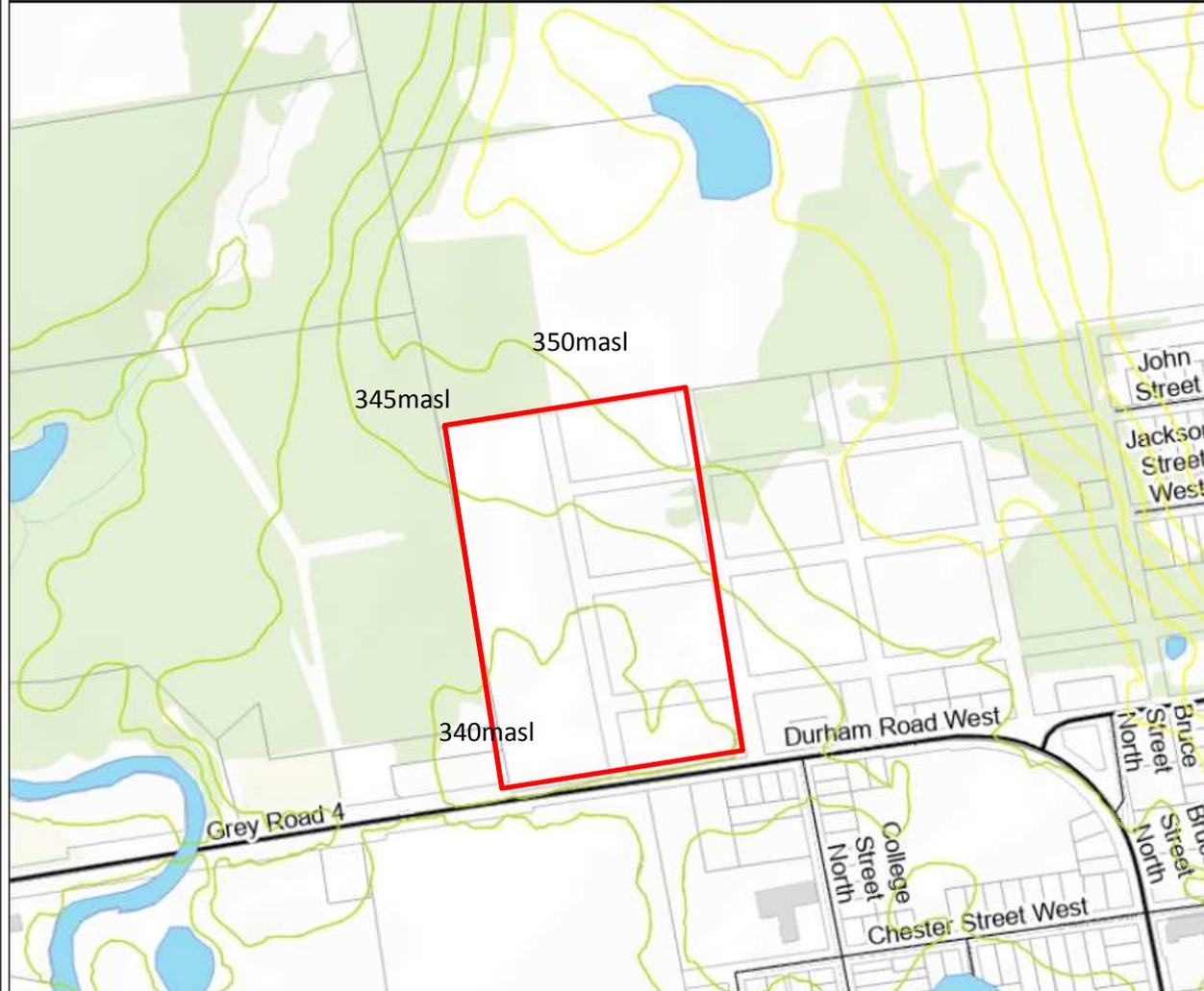


This map is a user generated static output from an Internet mapping site and is for reference only.
Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed October 25, 2022 THIS MAP IS NOT TO BE USED FOR NAVIGATION



Grey County Mapping



Legend

- Wet Areas - GSCA
- Wet Areas - GRCA
- Water Features
- Watercourses
- Large Scale Roads
 - Provincial Highway
 - County Road
 - Township Road
 - Seasonal Road
- Parcels - Current
- Contours (Meters ASL)
 - 180
 - 185
 - 190
 - 195
 - 200
 - 205
 - 210
 - 215
 - 220
 - 225
 - 230
 - 235
 - 240
 - 245
 - 250
 - 255
 - 260
 - 265
 - 270
 - 275
 - 280
 - 285
 - 290
 - 295
 - 300

Notes

contours, waterfeatures



WGS_1984_Web_Mercator_Auxiliary_Sphere
 © County of Grey



This map is a user generated static output from an Internet mapping site and is for reference only.
 Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Printed October 24, 2022 THIS MAP IS NOT TO BE USED FOR NAVIGATION

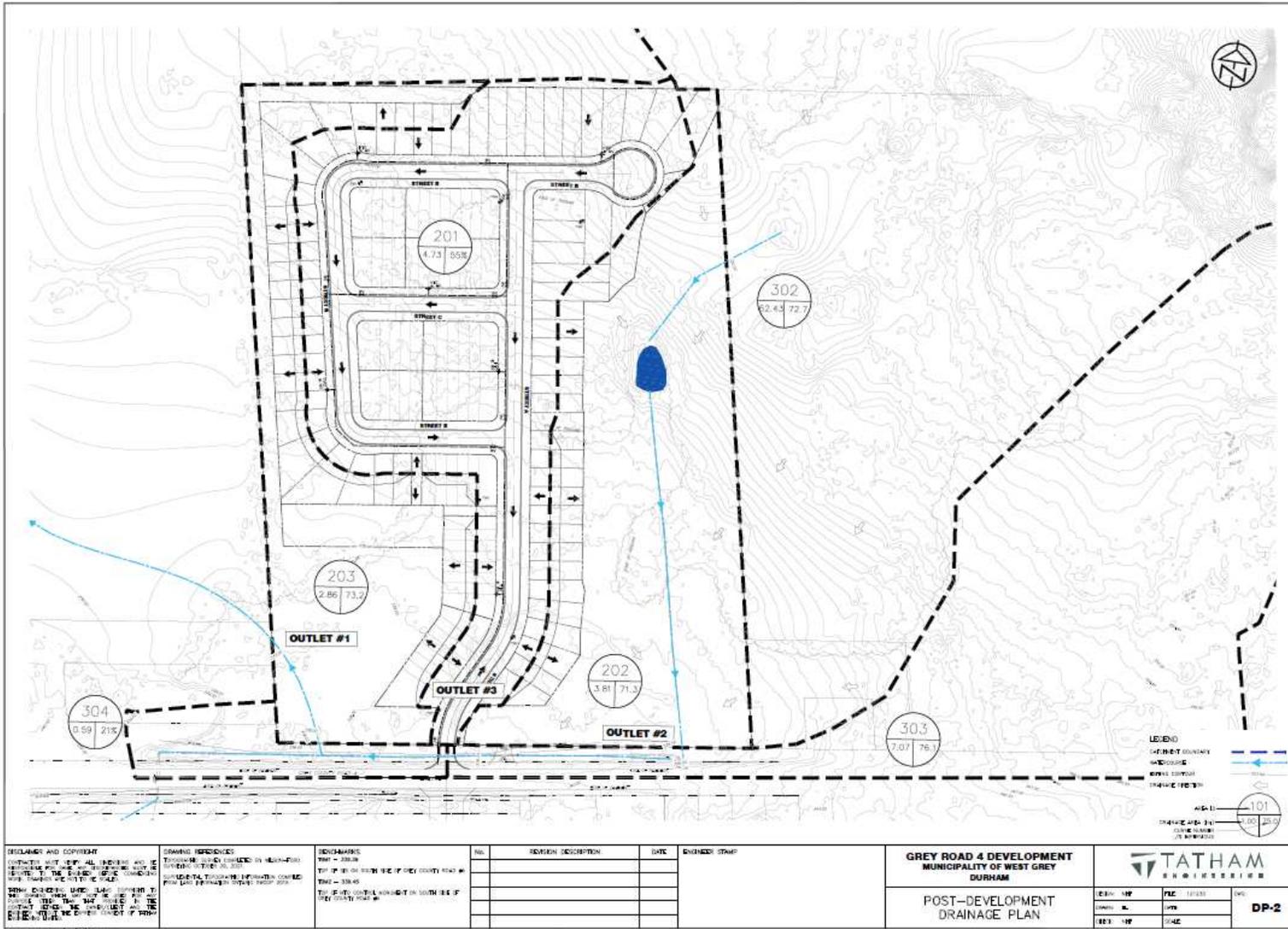


MNRF Mapping – Deer Wintering Area (Stratum 2), approx. 2km to northeast



APPENDIX E

Post Development Drainage Plan



From: Tatham 2022 - CR4 Residential Development, Preliminary Stormwater Management Report, Khanani Developments Durham Acquisition, File 12 12 33